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The effects of climate-related age-stereotypes on older adults'
pro-environmental behavior

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Abstract

Der Klimawandel ist eine große gesellschaftliche Herausforderung, wobei in der öffentlichen Debatte älteren Menschen oft ein geringeres Umweltbewusstsein oder eine geringere Bereitschaft zu umweltfreundlichem Handeln unterstellt wird. Basierend auf der Stereotype Threat Theory wird angenommen, dass die Aktivierung negativer gruppenbezogener Stereotypen das Selbstkonzept älterer Erwachsener beeinträchtigen und somit ihre Umwelteinstellungen und Handlungsabsichten beeinflussen kann. Ziel der vorliegenden Studie war es, experimentell zu untersuchen, ob die Aktivierung positiver oder negativer klimabezogener Altersstereotypen das umweltfreundliche Verhalten beeinflusst, gemessen an der Bereitschaft von Einzelpersonen, für Umweltschutzorganisationen zu spenden, sowie an selbst berichteten psychologischen Komponenten des Umweltbewusstseins, darunter Überzeugungen, Einstellungen, Sorgen und Motivation in Bezug auf den Klimawandel.

In einem experimentellen Between-Subjects-Design wurden ältere Erwachsene nach dem Zufallsprinzip einer von mehreren Versuchsbedingungen zugewiesen, in denen entweder positive, negative oder keine klimabezogenen Altersstereotypen aktiviert wurden. Zur Messung der umweltfreundlichen Verhaltensabsicht wurde ein verhaltensbasiertes Maß verwendet, bei dem die Bereitschaft zur Spende an eine Umweltschutzorganisation bewertet wurde. Darüber hinaus wurden verschiedene Facetten des Umweltbewusstseins und der Umwelteinstellung mit standardisierten Selbstauskunftsinstrumenten gemessen. Die Datenanalyse erfolgte mittels Varianzanalyse und regressionsbasierten Methoden.

Entgegen den theoretisch abgeleiteten Hypothesen wurden keine signifikanten Unterschiede zwischen den Versuchsbedingungen hinsichtlich der Einstellung zur Umwelt oder der Absichten zum Umweltverhalten festgestellt. Die Ergebnisse deuten darauf hin, dass die kurzfristige Aktivierung klimabezogener Altersstereotypen keinen eindeutigen Einfluss auf das selbst berichtete Umweltverhalten und die Einstellung älterer Erwachsener hat. In der Diskussion wird erörtert, ob die verwendete Manipulation möglicherweise nicht stark genug war, um stabile Effekte auszulösen, und ob Gegenreaktionsmuster zur Aufhebung potenzieller Effekte beigetragen haben könnten.

Zusammenfassend werden die Implikationen für die zukünftige Forschung und für die Gestaltung der altersbezogenen Umweltkommunikation beleuchtet.

Abstract

Climate change is a major social challenge, whereby public discourse often attributes older people with lower environmental awareness or a reduced willingness to act in an environmentally friendly manner. Based on stereotype threat theory, it is assumed that the activation of negative group-related stereotypes can impair the self-concept of older adults and thus affect their environmental attitudes and intentions to act. The aim of the present study was to experimentally investigate whether the activation of positive or negative climate-related age stereotypes influences the pro-environmental behavior, measured by individuals' willingness to donate to environmental protection organizations, and self-reported psychological components of environmental awareness, including beliefs, attitudes, concerns and motivation about climate change.

In an experimental between-subjects design, older adults were randomly assigned to one of several experimental conditions in which either positive, negative, or no climate-related age stereotypes were activated. A behavior-based measure was used to measure pro-environmental behavioral intention by assessing willingness to donate to an environmental protection organization. In addition, various facets of environmental awareness and environmental attitudes were measured using standardized self-report instruments. Data analysis was performed using variance analysis and regression-based methods.

Contrary to the theoretically deduced hypotheses, no significant differences were found between the experimental conditions in terms of environmental attitudes or environmental behavioral intentions. The results suggest that short-term activation of climate-related age stereotypes has no clear influence on older adults' self-reported environmental behavior and attitudes. The discussion considers whether the manipulation used may not have been strong enough to trigger stable effects, and whether counter-reaction patterns may have contributed to the cancellation of potential effects.

In conclusion, implications for future research and for the design of age-related environmental communication are highlighted.

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Introduction

Climate change is one of the biggest global challenges of the 21st century (Nikendei et al., 2020; Prina et al., 2024). Its environmental, social, and economic consequences affect all generations, but do so in different ways (Ayalon & Roy, 2022; Diehl, 2022). In addition to the physical and mental health risks posed by extreme weather events, rising temperatures, and environmental changes, it also causes considerable social tensions, as questions of responsibility and capacity to act are increasingly coming into focus (Nikendei et al., 2020; Ayalon & Roy, 2022). Within this discourse, older individuals are blamed for their role in contributing to the present climate crisis, particularly for not having taken earlier action to preserve the environment or reduce carbon emissions (Ayalon & Roy, 2022). Moreover, the political power of older adults is sometimes viewed as being exercised in ways that fail to prioritize environmental sustainability or the interests of younger generations (Ayalon & Roy, 2023a). Indeed, some studies shows that older adults are more likely to hold climate-skeptic views (McCright & Dunlap, 2011; Milfont et al., 2021).

However, such generalizations neglect the fact that at the time when older persons were growing up there was limited knowledge available about the human impacts on the environment and the climate. Furthermore, they overlook the fact that many older adults actively support climate action and advocate for environmental justice, often motivated by a concern for future generations (Roy & Ayalon, 2023). Thus, generalizing the responsibility of older persons for climate change is unfair and could, in turn, affect motivation, pro-environmental behavior or well-being and emotions in this population. According to social identity threat theory, negative group-based stereotypes may lead individuals to disengage from socially valued behaviors to avoid reinforcing negative perceptions (Branscombe et al., 1999). To date, the impact of stereotypes related to older persons' contribution to climate change on their behavioral intentions or climate-change beliefs has received little attention in research. Given that older adults have the potential to be key contributors to climate action, through accumulated knowledge, time resources, and a sense of generativity and legacy (Diehl, 2022; Frumkin et al., 2012) understanding factors that hinder or promote their engagement is of great importance. Research suggests that older adults can make substantial contributions to sustainability efforts if the right motivational conditions are met (Silvi & Padilla, 2021).

The present study addresses this gap by examining the influence of societal stereotypes about older adults on climate-related behavioral intentions. To achieve this, the manipulation used in this study is designed to reflect perceptions held by the general population, thereby providing a more comprehensive understanding of the stereotype's impact.

Theoretical Background

Stereotypes: Definition, Formation and Impact

Stereotypes represent widely shared “beliefs about the characteristics, attributes, and behaviors of members of certain groups” (Hilton & Von Hippel, 1996). This involves attributing the same characteristics and traits to all members of a social group, while neglecting the individuality of each member (Lippmann, 1922). Stereotypes are predominantly cognitive in nature, meaning they are subjective assumptions or attributions of characteristics that influence how we think about people based on their group membership. These can be negative, neutral, or positive in their valence. Therefore, a stereotype is not necessarily associated with hostile feelings or discrimination (Schneider, 2004). They function as cognitive shortcuts that simplify the complexity of social information, allowing individuals to process and interpret the social world more efficiently (Macrae & Bodenhausen, 2000). By categorizing people into groups, stereotypes reduce uncertainty and provide expectations about others' behavior (Aronson et al., 2023; Fiske, 1993).

Importantly, stereotypes must be distinguished from related constructs such as social norms and prejudice. While stereotypes reflect shared beliefs about groups, social norms refer to perceived behavioral rules and expectations within a given society or context (Cialdini & Trost, 1998). Norms regulate what is seen as acceptable or unacceptable behavior, often independent of specific group membership. Prejudice, in contrast, entails evaluative judgments that are often emotionally charged and negative, going beyond descriptive expectations toward discriminatory attitudes and behavior (Allport, 1954). This distinction is crucial for the present study, as the experimental manipulation focuses on stereotypical beliefs about older adults' environmental engagement, rather than on societal rules or explicit prejudice.

The formation of stereotypes is closely tied to processes of social categorization, whereby individuals divide the social environment into in-groups and out-groups. Similarly, every categorization involves evaluation processes between one's own group (in-group) and other groups (out-group), a process that is both automatic and pervasive (Tajfel, 1982). Building on this, the social identity theory (Tajfel & Turner, 1979/2000) points that individuals derive part of their self-concept from group memberships, which can lead to intergroup comparisons and reinforce stereotypical beliefs. These processes highlight how stereotypes are not merely individual cognitions but also serve broader social functions, helping individuals to orient themselves within the social world and to maintain positive distinctiveness for their in-groups.

Social Identity Theory

The Social Identity Theory (Tajfel & Turner, 1979/2000) provides an influential framework for understanding how stereotypes emerge and persist within intergroup relations. The theory posits that identity exists on a continuum between personal and social identity. Personal identity refers to self-knowledge about one's traits, abilities, and characteristics, often established through interpersonal comparisons (Stets & Burke, 2000). In contrast, social identity arises from the perception of belonging to a particular group, with comparisons occurring at the group level rather than the individual level. In this process, the attributes of the in-group are typically evaluated more favorably than those of the out-group, which in turn enhances members' self-esteem (Stets & Burke, 2000; Tajfel & Turner, 1979/2000).

A key aspect of SIT is the process of depersonalization: when social identity is highly salient, individuals tend to perceive both in-group and out-group members as more homogeneous and interchangeable. This homogenization fosters the development of stereotypes and can form the basis of discriminatory attitudes toward out-groups (Park & Rothbart, 1982). Central to the theory is the assumption that individuals have a fundamental need for a positive social identity, which motivates them to establish favorable comparisons between their in-groups and relevant out-groups (Park & Rothbart, 1982; Tajfel & Turner, 1979/2000, 1986). While this process can lead to intergroup discrimination and conflict, it also has protective effects. Belonging to a positively valued group can buffer members against external

discrimination and enhance self-esteem, even in the context of belonging to a low-status or disadvantaged group (Rubin & Hewstone, 1998).

In the context of aging, SIT helps to explain why older adults are often subject to age-related stereotypes. When younger individuals define their in-group in contrast to an older out-group, processes of homogenization and negative distinctiveness may reinforce the perception of older people as a uniform category characterized by particular traits, such as being less competent or less engaged in societal issues (Kite & Johnson, 1988; North & Fiske, 2012). Such age-related stereotypes not only serve to bolster the positive identity of the younger in-group but may also lead to discrimination against older adults, particularly in domains where competence and social participation are highly valued, such as environmental engagement. In addition, Levy (2009) shows with her Stereotype Embodiment Theory that age stereotypes are not just passive beliefs, but are internalized over the course of a lifetime and thus become self-relevant. For example, after being confronted with negative age stereotypes, older people showed immediate consequences such as an increased cardiovascular response and impaired memory performance (Levy, 1996; Levy et al., 2000). Long-term consequences were also demonstrated: for example, health and life expectancy are significantly improved when a positive image of age is internalized (Levy, 2009; Levy & Bavishi, 2016). Thus, SIT provides a critical lens for understanding how intergroup dynamics contribute to the persistence and societal impact of age-related stereotypes.

Stereotype Threat Theory

Stereotype Threat refers to the situational predicament in which individuals fear confirming negative stereotypes about their social group, which in turn can impair performance and motivation (Steele & Aronson, 1995). This phenomenon has been widely documented across different domains and social categories, including race, gender, and age (Kang & Chasteen, 2009; Schmader, 2002; Steele & Aronson, 1995). For older adults, Stereotype Threat is particularly relevant in contexts where negative age-related stereotypes are salient, such as assumptions of cognitive decline, resistance to change, or lack of engagement in societal issues (Abrams, 2015; Kang & Chasteen, 2009). Research has consistently shown that stereotype activation impairs older adults' performance in areas central to active aging,

including memory, executive functioning, driving skills, and even physical strength (Abrams et al., 2016; Hess et al., 2003; Swift et al., 2017). These findings highlight the pervasive impact of stereotype-driven expectations on both cognitive and behavioral domains. Meta-analytic evidence demonstrates the robustness of this effect: a review of 37 studies with a combined sample of 3,882 participants found that age-based Stereotype Threat reliably impaired older adults' performance in cognitive domains, with a small-to-moderate effect size ($d = .28$; Lamont et al., 2015). The underlying mechanism requires that individuals perceive the stereotype as self-relevant. They must be aware of belonging to the stereotyped group and of the stigma attached to it, even if they do not endorse the stereotype (Steele & Aronson, 1995). Moreover, Stereotype Threat is inherently situational. It arises when the context makes a negative stereotype salient and simultaneously creates the possibility of confirming it (Abrams, 2015; Tajfel & Turner, 1979/2000).

Branscombe et al. (1999) distinguished between different types of Social Identity Threat, which represent mechanisms through which stereotypes influence self-perception and behavior. Among these, *threats to the value of social identity* and *distinctiveness threats* are particularly relevant. Value threats arise when a group's social standing is undermined, reducing members' motivation to participate in valued domains. Applied to older adults, stereotypes portraying them as inflexible or environmentally indifferent lower the perceived worth of their social identity and may reduce willingness to engage in pro-environmental behavior (Branscombe et al., 1999; B. Levy, 2009). Distinctiveness threats, by contrast, occur when group heterogeneity is ignored, and individuals are perceived as a homogeneous category, "the elderly." The homogenization of older adults reinforces the perception that they share similar, often negative, traits like resistance to change or disinterest in environmental issues, which in turn can actively influence their behavior. Research by Steele and Aronson (1995) on stereotype threat in academic contexts demonstrated how individuals may underperform in line with negative group expectations. Similarly, Hess et al. (2003) found that older adults exposed to negative cognitive aging stereotypes performed worse on memory tasks than a control group. These findings suggest that when older adults are portrayed as a homogeneous group lacking environmental concern, they may internalize these expectations. This internalization can lead to a self-fulfilling prophecy, causing them

to disengage from sustainability efforts or to show reduced confidence in their potential to contribute.

In sum, Stereotype Threat offers a theoretical framework for understanding how stereotypes not only reflect but also actively shape the behavior of older adults. By threatening the value and distinctiveness of their social identity, stereotypes can become embodied (Levy, 2009) and lead to reduced engagement, conformity to negative expectations, or, under certain conditions, compensatory efforts in the form of reactance. These mechanisms are particularly relevant in the context of environmental engagement, where older adults are often stereotyped as passive or resistant (Ayalon & Roy, 2022). The present study builds on this framework by examining how stereotype activation influences older adults' willingness to contribute to climate action.

Older Age in the Context of Climate Change

Climate change poses the biggest threat to human civilization in the 21st century (Nikendei et al., 2020; Prina et al., 2024). The scientific evidence clearly shows the anthropogenic influence on the climate, yet current measures to counteract climate change appear insufficient. Avoiding the most severe consequences of climate change is still possible, but only through urgent and collective efforts across all sectors and age groups (Hayhoe, 2021). Despite growing awareness of the human causes of climate change, responsibility for addressing its effects is not equally shared among social groups. In particular, the contribution of different generations to both the problem and its solutions has become a subject of increasing debate (Ayalon & Roy, 2022, 2023b).

Older people are particularly vulnerable to the negative consequences of climate change primarily because of age-related health limitations, reduced adaptability, and a higher incidence of chronic illnesses (Montoro-Ramirez et al., 2022). Beyond the direct health risks, socioeconomic disparities also contribute to this vulnerability, as older adults often have lower incomes, which can hinder their ability to afford climate adaptation strategies, such as investing in energy-efficient homes or air conditioning systems (Nunes, 2018). While younger people will be more affected by long-term consequences such as ecological and economic

transformation, older people bear the immediate burden of current climate change due to age-related vulnerability (Ayalon et al., 2022; Diehl, 2022).

At the same time, focusing exclusively on vulnerability risks obscuring another important narrative, namely the potential of older adults to act as active agents in climate mitigation and adaptation. In later midlife and early old age, individuals increasingly orient themselves toward generativity (McAdams & de St. Aubin, 1998, cited in Diehl, 2022), as well as toward reflections on the legacy they wish to leave behind (Moody, 2009, cited in Diehl, 2022). Both generativity and legacy concerns have been identified as important motivational drivers for engagement in climate-related and environmentally responsible behaviors (Diehl, 2022). This future-oriented perspective may foster a stronger willingness among older adults to engage in environmental volunteering and civic activities aimed at protecting natural resources for subsequent generations. Experimental and longitudinal research further supports this assumption, showing that activating legacy-related motives can increase older adults' pro-environmental intentions and behaviors, such as higher donation willingness or changes in climate-related beliefs (Wickersham et al., 2020, cited in Diehl, 2022; Zaval et al., 2015).

In addition, later adulthood is often characterized by an increased orientation toward meaning and purpose. Psychological theories of successful aging emphasize that a sense of purpose, including commitment to the common good, constitutes a central component of well-being in older age (Ryff, 1995). Volunteering, including engagement in environmental causes, can strengthen this sense of purpose (Anderson et al., 2014; Pinguart, 2002, cited in Diehl, 2022; Pillemer et al., 2010, cited in Diehl, 2022). Engagement with climate-related issues may therefore provide a particularly suitable context in which older adults can connect personal values with generative concerns and contribute meaningfully to society.

Beyond motivational factors, older adults also have resources that are highly relevant for climate action. Over the course of their lives, they acquire extensive professional, personal, and cultural knowledge that can be valuable when dealing with complex challenges such as climate change. Contrary to common deficit-oriented stereotypes, older adults continue to contribute actively to society and possess important human and social capital, including professional expertise and experience with technological and societal change (Diehl et al., 2020). Their

experience with decision-making and social interaction may help them address controversial issues like climate change in a realistic and constructive way. In addition, older adults often have considerable financial and political influence, which can further support sustainability-related efforts (Diehl, 2022). Taken together, these aspects highlight that older adults should not only be seen as vulnerable to climate change but also as a group with strong potential to contribute meaningfully to climate action. Negative age-related stereotypes may therefore be particularly problematic, as they risk discouraging engagement at a life stage where motivation and capacity for societal contribution are often high.

Age related Stereotypes in the Context of Climate Change

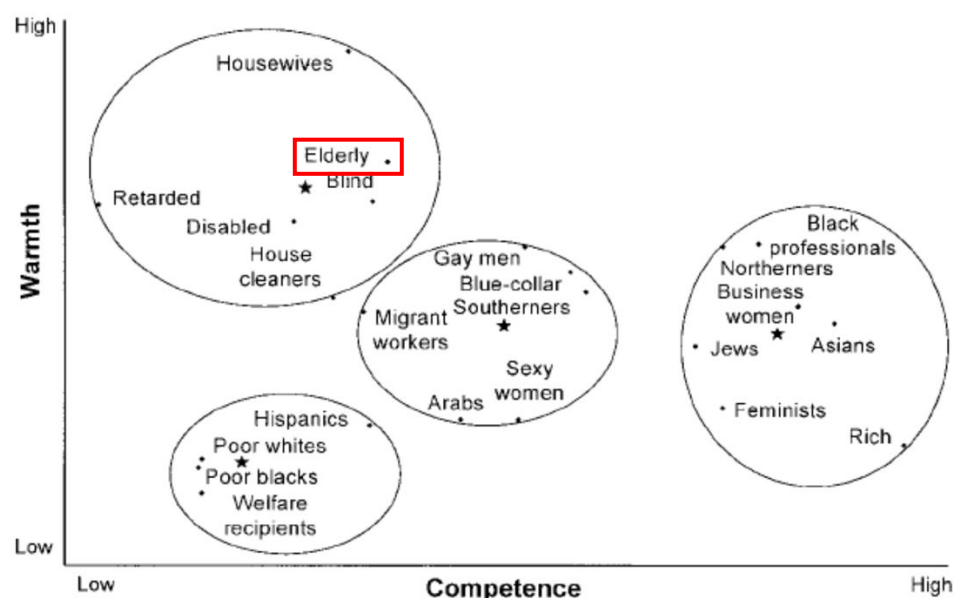
The association between stereotypes and the environmental behavior of older people can be explained using the *Stereotype Content Model* (Fiske et al., 2002), which assumes that stereotypes are organized along two fundamental dimensions: *warmth* and *competence*. The warmth dimension captures the extent to which a group is seen as friendly, trustworthy, and cooperative, while the competence dimension reflects perceptions of capability, intelligence, and effectiveness. Within this conceptualization, older adults are frequently viewed as warm, yet less competent (see Figure 1). This combination portrays them as kind and benevolent but simultaneously as dependent and less efficient in contributing to societal or environmental challenges (Fiske et al., 2002). Within the climate discourse, this competence deficit is often moralized, portraying older generations as responsible for the crisis or too passive to contribute to its solution (Ayalon & Roy, 2023a). Such portrayals represent a form of negative climate-related age stereotyping, suggesting that “older people don’t care or act enough” to protect the environment.

Complementary evidence from Li et al. (2023) illustrates how pro-environmental behavior itself functions as a marker of social desirability and moral virtue. They have found that people who behave in an environmentally conscious way are perceived as warmer and more competent than those who do not. Furthermore, individuals with stronger pro-environmental motivation were rated higher in both

warmth and competence. These findings indicate that environmental engagement serves as a socially valued trait associated with moral integrity and social worth. Integrating these insights, it becomes apparent that climate-related age stereotypes may interact with these social evaluations. If older adults are perceived as lacking environmental engagement, they might simultaneously be judged as less competent and less morally aligned with societal values. Such perceptions can reinforce stigmatizing narratives and potentially influence older adults' self-concept and motivation. Conversely, presenting older individuals as active and generative contributors to climate protection could counteract these negative biases by enhancing perceptions of both competence and warmth.

Figure 1

Stereotype Content Model: Four-cluster solution



Note. Long survey. Student sample, n=73. Adapted from “A Model of (Often Mixed) Stereotype Content: Competence and Warmth Respectively Follow From Perceived Status and Competition” by Fiske et al., 2002, p.885.

In public and medial debate, older people are portrayed ambivalently. On the one hand, they are considered a particularly vulnerable group, while on the other hand, they are blamed for the current climate situation (Ayalon & Roy, 2022, 2023). In particular, they are accused of failing to take earlier action to protect the environment and lower their carbon footprint, thereby increasing the burden on future generations (Ayalon & Roy, 2023). Additionally, the political power of older adults is

often perceived as being utilized in ways that do not prioritize the welfare of younger generations or environmental conservation (Ayalon & Roy, 2022). For example, some studies suggest that older men are more likely to hold climate-skeptic views (Ritchie, 2021). In this context, the stereotypical image of “greedy geezers” repeatedly emerges, an attribution that characterizes older adults as self-serving and unconcerned about the well-being of future generations (Ayalon & Roy, 2023).

However, it is important to note the limited awareness and understanding of human impacts on the environment and climate in time when today’s older adults were growing up. Moreover, it is worth positioning that older adults do invest effort in pro-environmental behavior (Roy & Ayalon, 2022; Wang et al., 2021; Wiernik et al., 2016). Meta-analytic findings suggest that age differences in pro-environmental behaviors are subtle (Wiernik et al., 2016), and it has been demonstrated that older adults are more inclined to conserve resources and maintain nature-based practices (Ayalon et al., 2022). In addition, international comparative studies suggest that societies with a higher proportion of older people act more sustainably (Ayalon et al., 2022). These findings contradict the common perception that older people are passive actors in the context of climate change. Moreover, participation in collective engagement is found to be beneficial for older adults, offering both social value and individual benefits (Pillemer et al., 2022). For instance, Ayalon et al. (2022) demonstrate that such involvement is not only associated with higher well-being, increased physical activity, and a strengthened sense of generativity among older activists, but also creates opportunities to pass on knowledge and practices to younger generations, thereby fostering intergenerational solidarity. Despite these potential benefits, older adults remain underrepresented in the climate movement, which continues to be predominantly associated with youth (Bergmann & Ossewaarde, 2020). Recognizing these perspectives is crucial, as it helps to counterbalance prevailing negative narratives and allows for a more nuanced understanding of the diverse roles older adults can play in the climate discourse. Highlighting only negative stereotypes neglects the valuable contributions that older people can and do contribute to climate action. In fact, it is important to consider the positive images of older people, which highlight their role as preservers of knowledge and transmitters of tradition. Their experience with resource management can be particularly valuable for younger generations (Ayalon & Roy, 2023). Thus,

generalizing the responsibility of older persons for climate change is unfair and could, in turn, affect motivation, pro-environmental behavior or well-being and emotions in this population.

Negative stereotypes about older persons in the context of climate change may not only misrepresent their actual engagement in pro-environmental behavior but could also have harmful psychological and behavioral consequences. From the perspective of Social Identity Threat Theory (Branscombe et al., 1999), repeatedly confronting older individuals with the notion that their age group is mainly responsible for climate change can trigger feelings of devaluation and exclusion. Such threats to social identity may lead to defensive reactions, lower well-being, and disengagement from social and collective efforts (Lamont et al., 2015). In the climate context, this could manifest in reduced motivation to adopt or maintain pro-environmental behaviors, distancing from climate activism, or even reactance against sustainability discourses that are perceived as stigmatizing. Consequently, framing older adults as primarily responsible for climate change risks undermining their constructive contribution to climate protection.

To date, the impact of stereotypes related to older persons' contribution to climate change on their behavioral intentions or climate-change beliefs has received little attention in research. Ayalon and Roy (2023) found insignificant effects on climate change-related attitudes, feelings, and behavioral intentions when older persons were blamed for the climate change. However, this study investigated whether attributing responsibility for climate change to either younger or older individuals by a specific group (climate activists) influences climate-related attitudes and behavioral intentions, rather than addressing social stereotypes about older adults prevalent in the society, i.e., reflecting broader societal views.

Research on stereotypes highlights that they do not merely reflect social observations but also convey implicit social expectations about group behavior (Aronson et al., 2023; Fiske, 1993). In this sense, stereotypes share conceptual similarities with social norms, as both communicate information about what is typical or desirable within a social group (Cialdini & Trost, 1998). This distinction is central to the present study: unlike many previous investigations that directly manipulated social norms, the current work uses a stereotype-based manipulation to examine how exposure to a climate-related age stereotype influences pro-environmental

responses. Findings from research on social norms nonetheless provide a valuable theoretical context. Social norms have been shown to promote sustainable behavior by signaling what is socially approved or commonly practiced (Saracevic & Schlegelmilch, 2021; White & Simpson, 2013). White and Simpson (2013), for example, demonstrated that messages emphasizing collective environmental engagement increased sustainable actions such as composting. Their study compared different persuasive strategies, including injunctive appeals (what others believe one should do), descriptive appeals (what others are doing), and benefit appeals (advantages of the behavior). The results showed that perceived collective behavior can motivate individuals more effectively than personal benefits. In contrast to the current study, which focuses on stereotypes that describe the specific social group of the elderly, the descriptive norms examined by White and Simpson (2013) referred to general behavioral tendencies within the broader population.

Therefore, it seems necessary to focus future research specifically on the mechanisms and consequences of age-related stereotypes in the context of climate change in order to gain a more comprehensive understanding of their influence on behavior and attitudes.

Research question and hypotheses

Research question

Building on the theoretical framework outlined above, the present study investigates the following central question:

“Do climate-related age stereotypes influence older adults’ attitudes and behaviors toward climate change?”

More specifically, the study examines whether exposure to positive or negative climate-related stereotypes influences older people’s willingness to behave in an environmentally friendly manner, as well as their affective attitudes and beliefs about climate change.

Hypotheses

Based on the theoretical framework and previous research, the following hypotheses were formulated. H1 refers to the actual behavior of the participants, namely the amount of donations to environmental protection organizations, whereas H2–H4 refer to self-reported attitudes and evaluations (motivation, concerns, and beliefs).

Primary hypotheses

H1 (behavioral outcome):

Older adults who are exposed to positive climate-related stereotypes will donate more money to environmental protection organizations than those exposed to negative climate-related stereotypes and to both control conditions (positive and negative). Conversely, individuals exposed to negative stereotypes are expected to donate less than those in the control conditions (both positive and negative control condition).

H2 (motivation):

Older adults who are exposed to positive climate-related stereotypes report higher motivation to engage in climate-related actions than those exposed to negative climate-related stereotypes and to both control conditions (positive and

negative). In contrast, participants exposed to negative stereotypes are expected to report lower motivation than those in the control conditions (positive and negative).

H3 (concerns):

Older adults exposed to positive climate-related stereotypes report greater concern about the consequences of climate change compared to those exposed to negative climate-related stereotypes and to both control conditions (positive and negative). Participants in the negative condition are expected to report less concern than those in the control conditions (positive and negative).

H4 (beliefs):

Older adults exposed to positive climate-related stereotypes express a stronger belief in the relevance and reality of climate change compared to those exposed to negative climate-related stereotypes and to both control conditions (positive and negative). Those exposed to negative stereotypes are expected to show weaker beliefs than those in the control conditions (positive and negative).

Exploratory hypotheses

In addition to the primary hypotheses, an exploratory analysis was conducted to examine whether group identification moderates the effects of climate-related age stereotypes on environmental behavior intention and attitudes.

Research on social identity and stereotype threat suggests that the impact of group-related stereotypes depends not only on the content of the stereotype, but also on how strongly individuals identify with the targeted group (Brown & Pinel, 2002; Steele & Aronson, 1995). More generally, group identification has been shown to amplify stereotype threat effects across several social categories, including race and gender (e.g. Mendoza-Denton et al., 2002; Nosek et al., 2002; Pronin et al., 2004; Schmader, 2002; cited in Kang & Chasteen, 2009). For example, women who strongly identify with their gender group are more affected by negative stereotypes about women's mathematical abilities than women with weaker gender identification (Schmader, 2002).

With regard to aging, Kang and Chasteen (2009) explicitly examined whether identification with the older adult age group moderates stereotype threat effects. Their findings suggest a differentiated pattern. While age group identification was

associated with lower memory performance in general, it did not consistently interact with stereotype threat conditions across cognitive tasks. However, for affective outcomes, a significant interaction emerged, indicating that age group identification influenced emotional responses depending on the presence or absence of stereotype threat.

In the context of the present study, this literature suggests that climate related age stereotypes may not affect all older adults equally. Instead, the degree to which individuals identify with the category of older adults may determine whether such stereotypes are perceived as self-relevant and thus influence motivation, attitudes, or behavior. Therefore, group identification represents a theoretically well-grounded moderator that may explain variability in responses to climate related age stereotypes beyond chronological or subjective age alone. On this basis, the following moderation hypothesis is proposed:

The effect of climate related age stereotypes on (a) donation behavior, (b) motivation to engage in climate related actions, (c) concern about the consequences of climate change, and (d) beliefs about the relevance and reality of climate change is moderated by identification with one's age group. It is expected that stereotype effects are stronger among individuals who identify more strongly with their age group than among those with weaker age group identification.

Methods

Research design

This study employs a 2×2 experimental design with the factors *condition* (experimental/climate-related stereotypes vs. control) and *statement valence* (positive vs. negative). The data was collected using an online questionnaire via SoSci Survey (Barber & Mather, 2013). Participants were randomly assigned to one of the individual test groups (see “*Manipulation*”). The study design is based on Social Consensus Feedback (SCF) framework, which has been proven to be a successful tool for investigating effects of prescriptive stereotypes in older adults (Wirth et al., 2023).

At the beginning, the participants were informed about the objectives of the study and their rights. After consent was given, the survey began with the collection of demographic data (gender, age, education, employment situation, income). Participants under the age of 50 were automatically excluded from the survey and their participation was terminated. After that, two statements are presented, one on the right (negative statement) and one on the left side of the screen (positive statement). The experimental group is presented with climate-related age stereotypes, while the control group is presented with an unrelated statement. The participants are first asked to state their own agreement. After that, they were asked to estimate the distribution of agreement in the general population using a continuous slider. The slider ranged from the negative statement at one end to the positive statement at the other end and was initially positioned at the midpoint, corresponding to a neutral estimate of 50%–50%. Participants could move the slider toward either side to indicate their belief about how strongly the majority of society endorses one statement relative to the other. This was followed by manipulation using social consensus feedback (Wirth et al., 2023). In the next step participants took part in a lottery-design (see “*measured variables*”), where they could decide to either keep the price for themselves or to spend the money on a pro-environmental organization of their choice, as a direct measurement of their willingness to act. After that, participants completed measures of pro-environmental behavior intentions, beliefs and emotions (see “*Variables and Instruments*”), as well as a manipulation check. In addition, control variables including group identification (Weiss & Lang, 2009), age stereotypes (De Paula Couto et al., 2022), nature connectedness (Nisbet

& Zelenski, 2013), as well as one-item on subjective health and subjective age was collected. At the end, participants received a debriefing about the study purpose and the SCF manipulation.

Sample description

Participation requirements were a good knowledge of German, an internet-enabled device and a minimum age of 50 years. The age limit is based on the stereotype embodiment theory according to Levy (2009) which states that age stereotypes are internalized from the age of 50 and can have an impact on motivation to act. Participants were recruited on social media and were not financially compensated but could enter a lottery in which a randomly assigned participant could win €50.

For the present study, a required sample size of 252 individuals was calculated using G*Power ($\eta^2 = .05$, $f = .25$, power = .90; Faul et al., 2007). A total of $n=377$ valid cases were included in the evaluation, i.e., those participants who had answered the central variable ("lottery"). This significantly exceeded the target sample size. The mean age of the sample was $M = 60.12$ years ($SD = 7.04$) with a minimum of 50 and a maximum of 81 years (see Figure 1).

In total, 297 participants were female, 76 were male, and one person was non-binary. Three people did not provide any information about their gender. The participants were randomly divided into four groups: two experimental groups (positive climate norm, $n = 89$; negative climate norm, $n = 95$) and two control groups (control item with positive valence, $n = 94$; control item with negative valence, $n = 99$).

In terms of educational qualifications, the sample was found to be relatively highly educated: 48.5% had graduated with a university or FH degree, 19.6% had Matura or Abitur and 6.1% had a master craftsman's certificate or comparable qualification. In total, 11.9% had completed an apprenticeship, while only 3.7% reported having a lower or no formal educational qualification. Socioeconomic status, measured by net household income, was widely dispersed: 17.8% were below €2,000, 39.8% were between €2,000 and €4,000, 17.0% were between €4,000 and €6,000, and 13.0% reported an income above €6,000. Two people had no income of their own, and 45 people did not answer the question. Overall, the sample can thus be described as predominantly in the middle-income range (€2,000–€4,000), although the range from less than €250 to over €9,000 indicates a high level of heterogeneity.

Variables and Instruments

Manipulation

The manipulation was based on an adapted version of the second experiment by (Wirth et al., 2023) in which *social consensus feedback* (SCF) was used to manipulate *prescriptive views of aging* (pVoA). The SCF is based on the assumption that one's own opinion is strengthened if it is perceived that the majority holds a similar view. At the same time, it is assumed that individuals adapt their opinion to that of the majority in order to gain acceptance, attention and support from others (Puhl et al., 2005; Puhl & Brownell, 2003). In line with the *social identity threat theory* (Branscombe et al., 1999), this approach is expected to elicit effects on behavioral intentions, as individuals may be more motivated to align their actions with or counteract the perceived societal expectations associated with their age group.

The manipulation was done step by step: First, participants were presented with two opposing statements, between which there was a seven-point scale in the form of boxes. These statements were “*Ältere Menschen verleugnen den Klimawandel und tun nicht genug, um diesen zu stoppen*” (negative climate stereotype) as well as “*Klimawandel ist ein wichtiges Anliegen für ältere Menschen und sie geben ihr Bestes unsere Erde zu retten*” (positive climate stereotype).

Participants indicated their agreement with one of the two statements by selecting one of the boxes. The further to the left (right) they clicked, the more strongly they agreed with the left (right) statement. The participants were then asked to assess the level of agreement in the general population in each case. To do so, they were again presented with both statements and asked to use a slider to indicate the percentage distribution of approval in the population. This is done because estimating a level of consensus before receiving consensus feedback has been shown to enhance the acceptability of that feedback (Myers et al., 2015; Wirth et al., 2023).

In the next step, the participants received social consensus feedback in the form of a pie chart. This showed that 65% of the general population agreed with one of the two statements, while 35% agreed with the other. The percentage distribution was taken directly from (Wirth et al., 2023). The corresponding figures were shown in the diagram; the two statements appeared to the left and right of the diagram. To emphasize which statement received majority support, both the percentage of 65%

and the corresponding statement were written in bold font. Additionally, participants will complete a comprehension check, asking which of the two statements received majority support.

It was randomly assigned which SCF participants see. Also, participants are randomly assigned to either climate-related stereotype (experimental) or control group. The procedure for the control group was identical, except that they received different statements: „*Im Radio wird immer wieder die gleiche Musikrichtung gespielt*“ (negative control statement) as well as „*In den Medien findet sich für jeden Musikgeschmack ein passendes Angebot*“ (positive control statement).

Lottery

To capture an actual behavioral expression of pro-environmental engagement rather than merely self-reported intentions, a behavioral measurement approach was employed. Numerous studies have highlighted the so-called attitude–behavior gap, which describes the discrepancy between individuals’ expressed pro-environmental attitudes and their actual behavior (Khan et al., 2024; Silvi & Padilla, 2021; Tucholska et al., 2024). This gap is particularly evident in the environmental domain, where social and cultural factors often hinder the translation of positive environmental attitudes into concrete action (Kollmuss & Agyeman, 2002). To address this limitation, the present study adopted a behavioral paradigm originally introduced by Zaval et al. (2015). In their design, participants were entered into a lottery to win a monetary bonus and were asked to indicate how much of the bonus they would like to donate to an environmental organization. The actual donation was then executed based on the randomly selected winner’s indicated amount, thereby providing a real behavioral measure of environmental commitment. This design was adopted for the present study. Participants were informed that they would be entering a prize draw in which they could win up to €50. They had the option of donating any portion of this amount to an environmental organization of their choice. A list of well-known organizations was provided, as well as a free text field in which participants could also enter an organization of their choice.

After the data collection was complete, one participant was selected at random and the donation or payout was made according to the amount they had specified, while the remaining amount (if any) was transferred to the participant. This

procedure served as the main behavioral outcome variable, representing participants' willingness to act pro-environmentally. The variable "Lottery" reflects the amount participants indicated as a donation (ranging from 0 € to 50 €). In the original study by Zaval et al. (2015), the donation task proved to be a valid behavioral indicator of pro-environmental engagement. The authors demonstrated convergent validity by showing that the behavioral donation measure aligned with participants' self-reported environmental intentions. Specifically, individuals who were primed with legacy-related motives not only expressed stronger pro-environmental intentions in questionnaires but also donated significantly larger portions of their experimental earnings to an environmental organization. Moreover, the statistically significant effect size ($F(1, 310) = 8.79, p = .003, d = 0.34$) supports the sensitivity of this measure in detecting differences between experimental conditions, thereby reinforcing its construct validity (Zava et al., 2015). Additionally, correlations with conceptually related variables were examined in the current study. The lottery variable was not normally distributed (Shapiro–Wilk = .637, $p < .001$). As expected, it correlated positively with the item "I am willing to pay higher taxes to combat climate change" (WTA_01; Spearman's $\rho = .258, p < .001$) as well as with the index for Pro-Environmental Behavior Intention (PBI_Index; Spearman's $\rho = .155, p = .001$). These results indicate moderate but significant associations, supporting the construct validity of the behavioral measure.

Pro-environmental Behavior Intention

Pro-environmental behavioral intentions were measured using the scale developed by Zaval et al., (2015). Participants indicated how frequently they intended to engage in six specific pro-environmental behaviors over the following month (e.g., "*Take showers that are 5 minutes or less*" or "*Buy green products instead of regular products even though they cost more*"). Responses were recorded on a 6-point Likert scale ranging from 1 (*never*) to 6 (*all the time*). In the present sample, the six-item pro-environmental behavioral intention scale demonstrated acceptable internal consistency, with a Cronbach's alpha of .638. In addition, willingness to act was assessed using a single item from (Ayalon & Roy, 2022): "*I am willing to pay higher taxes to fight against climate change.*" Responses were given on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly*

agree). When the additional item assessing willingness to act was included, internal consistency increased to $\alpha = .685$. A mean score across the seven items was calculated to represent participants' overall pro-environmental behavioral intentions.

Climate Change Beliefs

Environmental attitudes and beliefs were measured according to Zaval et al., (2015) using the average score of four randomly ordered items: (1) *"I feel that it is important to maintain the environment for future generations,"* (2) *"I feel a responsibility to reduce my personal contribution to climate change,"* (3) *"The so-called 'global warming crisis' facing humankind has been greatly exaggerated,"* and (4) *"I am in favor of national policies and regulations that decrease fossil fuel burning, even if they increase energy and electricity costs today."* In addition, one item adapted from (Häkkinen & Akrami, 2014) was included: *"Global warming caused by humans is happening."* In the present sample, the four items from Zaval et al. (2015) showed acceptable internal consistency (Cronbach's $\alpha = .703$). When the additional item from Häkkinen and Akrami (2014) was included, internal consistency increased to $\alpha = .799$ for the five-item scale. Participants responded to each statement on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*).

Climate change worries were measured using three items from (Ayalon & Roy, 2022): (1) *"I feel fearful when I think about the impact of climate change on my life,"* (2) *"I worry about the impact of climate change on younger members (under 18) of my family,"* and (3) *"I worry about the impact of climate change on older members (over 60) of my family."* The variable Concern about Climate Change (CCW_Index) consisted of three items (Cronbach's $\alpha = .799$) and was calculated as the mean score across items. Participants responded to each statement on a 7-point Likert scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). A mean score across the three items was computed to represent participants' overall level of climate-related worry.

Generativity

Social and ecological generativity, assessing the motivation to preserve social and natural resources for future generations, was measured using an adapted

questionnaire from (Schoklitsch & Baumann, 2011). Participants responded to the following three items: (1) *"I am politically, socially or environmentally active,"* (2) *"I create works that are an enrichment for other people,"* and (3) *"I transmit social, political or cultural values to other people."* Internal consistency of the scale was adequate, with a Cronbach's alpha of .724. Responses were given on a 7-point scale ranging from 1 (*does not apply at all*) to 7 (*fully applies*).

In addition, participants answered five items regarding the personal importance of socially and ecologically generative behaviors, which were used to operationalize motivation. The items were introduced with the prompt: *"How important is it to you ..."*: (1) *"... to do something good for society?"*, (2) *"... to take care of nature and the environment?"*, (3) *"... to pass on your experiences to younger people?"*, (4) *"... to convey social values (e.g., helpfulness) to younger people?"*, and (5) *"... to be a role model for younger people?"*. Responses were made on a 7-point scale ranging from 1 (*not important at all*) to 7 (*very important*). The dependent variable for motivation was generated as a mean index from five items (MOT_Index; Cronbach's $\alpha = .797$).

Nature Connectedness

Nature connectedness was measured using the Nature Relatedness Scale – short form (NR-6) developed by (Nisbet & Zelenski, 2013). Participants responded to six items: (1) *"My ideal vacation spot would be a remote, wilderness area,"* (2) *"I take notice of wildlife wherever I am,"* (3) *"My connection to nature and the environment is a part of my spirituality,"* (4) *"I always think about how my actions affect the environment,"* (5) *"My relationship to nature is an important part of who I am,"* and (6) *"I feel very connected to all living things and the earth."* Responses were made on a 7-point scale ranging from 1 (*strongly disagree*) to 7 (*strongly agree*). The NR-6 is a validated short version of the NR-21, with which it strongly correlates ($r = .90$, $p < .01$), indicating strong convergent validity. Predictive validity has also been established by Nisbet and Zelenski (2013). The internal consistency of the items was good, demonstrating a Cronbach's alpha coefficient of .817 across the 6 items. While some reliability is reduced compared to the full NR-21 scale, the NR-6 maintained sufficient reliability for research purposes. Furthermore, the scale showed high test-retest reliability ($r = .84$), indicating stability over time (Nisbet & Zelenski, 2013). In

summary, the NR-6 provided a reliable and valid short assessment of nature relatedness.

Group Identification and Age-Related Norms

Identification with one's age group was assessed as a covariate. This is based on findings that older adults, in response to age-related discrimination, may distance themselves from their own age group, which can influence the outcome of relevant measures (Weiss & Lang, 2012). This assumption is grounded in social identity theory (Tajfel & Turner, 1979/2000), which posits that individuals derive a significant part of their self-concept from membership in social groups. Group identification was measured using adapted items from (Weiss & Lang, 2009): (1) *"I identify with people my age,"* (2) *"I feel strong bonds with people my age,"* (3) *"I am different from people my age,"* and (4) *"I have a sense of belonging to people my age."* The four-item scale showed acceptable internal consistency (Cronbach's $\alpha = .685$).

The study also examined the prescriptive age images that are represented in relation to the role in climate change, as well as the associated norm endorsement. For this purpose, three additional items were created based on the study by North & Fiske (2013): (1) *"As an older person, I see myself as having a responsibility to do something about climate change,"* (2) *"Other people see older generations as having a responsibility to do something about climate change,"* and (3) *"In my opinion, it is the responsibility of older people to do something about climate change."* When combined with the four group identification items, the resulting seven-item scale showed acceptable internal consistency (Cronbach's $\alpha = .691$). All items were rated on a 7-point scale from 1 (*strongly disagree*) to 7 (*strongly agree*).

Two additional variables were collected, including age stereotypes and subjective age through open-ended questions: (1) *"At what age would you describe a person as 'old'?"* and (2) *"I feel like I'm ____ years old."* Subjective health was assessed with a single item on a 7-point scale ranging from 1 (*very bad*) to 7 (*very good*).

Data collection and processing

Data collection took place between January 15, 2025, and February 23, 2025. The questionnaire was created using SoSci Survey and was completed

independently and online by participants. Recruitment followed a snowball sampling approach, initially involving individuals from the researcher's family and personal network, who were encouraged to share the link further. Additional participants were recruited via social media platforms (e.g., Facebook groups, Instagram, WhatsApp). In order to achieve the required sample size, a budget of €50 was spent on advertising the questionnaire on Facebook. Furthermore, flyers were distributed at bus stops and in medical practices, and newsletters from senior citizens' associations were used to promote participation.

Data processing was conducted using IBM SPSS Statistics (Version 29; IBM Corp., 2023). All variables were named, labeled, and documented in the codebook (see Appendix). Only cases in which the main variable ("Lottery") was completed were retained for analysis. Group assignment was based on the variable *Group*. Additionally, two auxiliary variables were created: one representing valence (*Group_Valence*) and another distinguishing between the experimental and control conditions (*Group_Condition*). Based on participants' reported donation behavior, a dichotomous variable named "*Spendebereitschaft*" ("*Donation willingness*") was constructed. Participants who did not donate any amount were categorized as not willing to donate, whereas those who contributed any positive amount were categorized as willing to donate. For the open-ended questions on subjective age and age stereotypes, responses that did not contain a numeric value or were implausible (e.g., answers such as "13 years" or "85686 years" to the question "At what age would you describe a person as old?") were coded as missing values. Within the "Environmental Awareness" scale, the third item EA_03 was reverse coded, and within the "Group Identification" scale, the third item GI_03 was also reverse coded to ensure consistency in the direction of the ratings. For the variables Climate Change Worries (CCW_02 and CCW_03), which assess concerns about the effects of climate change on family members under the age of 18 and over the age of 60, additional variables were created that exclude all cases in which respondents stated that they had no family members under the age of 18 or over the age of 60. Furthermore, categorical variables were generated for age, income and education. Composite mean indices were computed for the following constructs: Environmental Attitude, Nature Connectedness, Climate Change Worries, Generativity, Motivation, Willingness to Act, and Pro-environmental Behavior Intention.

All statistical analyses were conducted using IBM SPSS Statistics as well (Version 29; IBM Corp., 2023). To test hypothesis H1 a two-way ANOVA was conducted. The independent variables were condition (climate-related vs. neutral) and valence (positive vs. negative), and the dependent variable was the amount of money donated to an environmental organization. This analysis examined the main effects of condition and valence, as well as their interaction effect. The significance level was set at $\alpha = .05$. Effect sizes were calculated using partial eta-squared (η^2) to assess the practical relevance of the effects. According to Cohen's (1988) guidelines, η^2 values between 0.01 and 0.06 indicate small effects, between 0.06 and 0.14 indicate medium effects, and values above 0.14 indicate large effects. Since donation behavior shows an almost dichotomous pattern (either €0 or €50), a nonparametric Kruskal–Wallis test was subsequently performed, as well as a chi-square test with a dichotomous variable for willingness to donate. For exploratory data analysis, moderation analyses were performed using MACRO PROCESS (Hayes, 2018).

Results

Descriptive Statistics

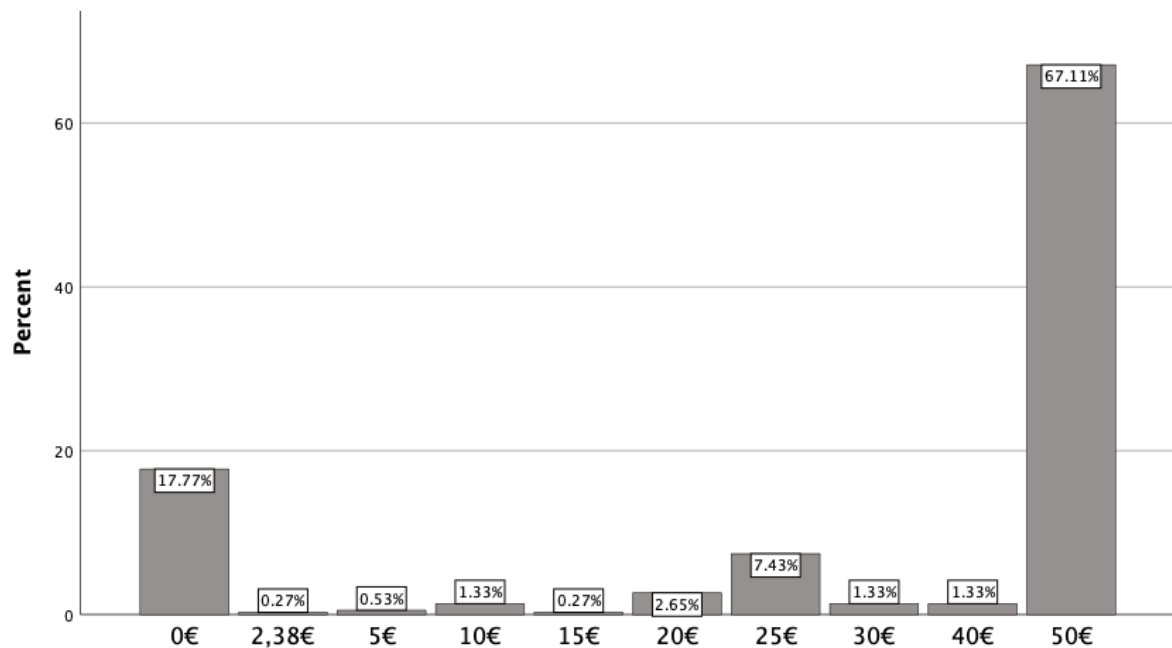
The demographic characteristics of the sample have already been presented in the chapter “Sample Description.” Descriptive parameters (mean values, standard deviations, minimum and maximum) of other metric variables were collected (see appendix). The review of the covariates showed no significant differences between the experimental groups, thus ensuring the comparability of the groups.

The subjective age was $M = 49.54$ years ($SD = 10.90$; $\min = 25$; $\max = 95$, $\text{mode} = 80$). On average, participants subjectively felt noticeably younger than they actually were ($M = 10.576$ years, $SD = 9.057$). In terms of the number of participants, a younger subjective age can also be assumed, as the majority (79.3%) stated that they felt younger than they actually were. 11.7% stated a subjective age corresponding to their chronological age, and only 3.4% stated that they felt older than they actually were. When asked at what age a person is considered “old,” respondents gave an mean age of 72.42 years ($SD = 10.93$; $\min = 38$; $\max = 100$; $\text{mode} = 80$). This means that they named an age that was, on average, higher than their own actual age ($M = -12,421$ years, $SD = 12,144$), as well as their subjective age ($M = -23.169$, $SD = 16.213$). Overall, it can be seen that participants perceive themselves as younger and identify “old age” as occurring at a higher age.

The distribution of donation amounts showed a skewness of -1.08 and a kurtosis of $-.59$, which, according to Field (2018), are within an acceptable range, indicating a slightly left-skewed distribution. However, the majority of participants (67,11%; $n_1 = 253$) donated the full available amount (€50), 67 participants (17,77%) donated nothing, and the remaining 57 participants (15,12%) donated intermediate amounts. This pattern reflects an approximately dichotomous donation behavior (see Figure 2).

Figure 2

Donation behavior distribution



Correlation matrix: In the correlation matrix (Table 1), the relationships between the metric dependent variables and the covariates were examined using Pearson's correlation. The main variable, donation amount, as a measure of environmentally conscious behavior, correlated significantly at the 0.01 level with generativity, nature connectedness, pro-environmental behavior intention, motivation, and environmental attitudes and beliefs. At the 0.05 level, donation amount also significantly correlated with group identification and climate change worries, while no significant correlations were found with age, subjective age, or perceived onset of old age. However, according to Cohen's (1988) guidelines, the correlations between donation amount and the other variables were small overall ($r < .300$). It is noteworthy that age correlated positively with self-reported pro-ecological behavioral intention ($r = .157$, $p < .001$), which, despite its low correlation, could indicate a possible discrepancy between attitude and behavior. Moderate correlations ($r \geq .300$) were found in this sample, particularly between generativity, group identification, and pro-environmental behavior intention. Overall, the variable generativity showed the strongest and most consistent correlations with the other

constructs. The experimental factors condition and valence were included in the correlation matrix as dummy-coded variables. Neither condition nor valence showed significant correlations with the dependent variables

Table 1*Pearson correlation of all metric variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13
1. age	-												
2. subjective age	,562**	-											
3. perceived onset of age	,131*	-,130*	-										
4. generativity	,016	-,045	-,025	-									
5. group identification	-,007	,159**	-,071	,340**	-								
6. nature connectedness	-,026	-,068	,036	,348**	,114*	-							
7. pro-environmental behavior intention	,157**	,151**	-,053	,458**	,432**	,251**	-						
8. motivation	,053	-,063	,080	,493**	,300**	,414**	,346**	-					
9. climate change worries	,004	,118*	-,005	,334**	,360**	,183**	,483**	,334**	-				
10. environmental attitudes and beliefs	,019	,070	-,039	,326**	,411**	,156**	,590**	,320**	,575**	-			
11. donation amount	,025	,011	,084	,135**	,127*	,136**	,164**	,161**	,123*	,217**	-		
12. condition	,051	-,034	,087	-,077	-,003	,027	-,081	-,018	-,009	,025	-,012	-	
13. valence	-,017	-,012	,036	-,031	-,040	,046	-,013	,020	,060	,028	,000	-,003	-

* p < .05, ** p < .01

A Spearman rank correlation matrix was computed to examine associations between sociodemographic variables and the dependent variables (see appendix). Several small to moderate correlations emerged. Educational level showed positive associations with pro-environmental behavioral intention (PBI; $r = .146$, $p = .004$), environmental attitudes (EA; $r = .179$, $p < .001$), generativity (GEN; $r = .204$, $p < .001$) and group identification (GI; $r = .151$, $p = .004$) as well as subjective Health ($r = .189$, $p < .001$). Gender was weakly associated with PBI ($r = -.128$, $p = .013$) and climate change worries (CCW; $r = -.131$, $p = .001$) and was also negatively correlated with the perceived onset of age ($r = -.165$, $p = .002$). Subjective health showed positive associations with donation amount ($r = .166$, $p = .002$) and motivation (MOT; $r = .172$, $p = .001$). Beyond these outcomes, subjective health was also positively related to education ($r = .189$, $p < .001$) and negatively associated with experimental condition and subjective age ($r = -.156$, $p = .003$). Income showed small to moderate correlations with donation amount ($r = .247$, $p < .001$), group identification (GI; $r = .135$, $p = .010$) and environmental attitudes ($r = .161$, $p = .001$), and a negative association with nature connectedness (NC; $r = -.147$, $p = .005$) and statement valence ($r = -.115$, $p = .026$). Furthermore, income was related to several sociodemographic characteristics, including age ($r = -.146$, $p = .005$), education ($r = .173$, $p < .001$), gender ($r = .196$, $p < .001$), subjective health ($r = .188$, $p < .001$), a later perceived onset of age ($r = -.127$, $p = .001$). Employment status was strongly associated with chronological age ($r = .646$, $p < .001$) and subjective age ($r = .407$, $p < .001$) and showed additional correlations with subjective health ($r = -.164$, $p = .002$), income ($r = -.247$, $p < .001$) and perceived onset of old age ($r = .133$, $p = .013$). Correlations above $r = .300$ were not observed, indicating that associations between sociodemographic factors and outcome variables were generally weak.

Manipulation Check

The manipulation check comprised two separate analyses.

Manipulation check 1 – Agreement with the SCF: A one-way ANOVA was conducted to compare levels of agreement with the SCF presented (1 = agreement, 2 = uncertain, 3 = disagreement) across the four experimental groups (stereotype positive, stereotype negative, control positive, control negative). The analysis revealed a significant overall effect ($p < .001$). Post hoc tests according to Bonferroni

showed that agreement was significantly higher in the stereotype-positive group than in the stereotype-negative group (mean difference = 0.334, $p = .008$) and higher than in the control-negative group (mean difference = 0.402, $p < .001$). In addition, there was significantly higher agreement in the control-positive group compared to the control-negative group (mean difference = 0.475, $p < .001$). No significant differences were found between the stereotype-positive and control-positive groups or between the stereotype-negative and control-negative groups.

Manipulation check 2 – Perception of realism: A one-factor ANOVA to assess whether the distribution presented was perceived as realistic revealed no significant difference between the groups ($p = .505$). This rules out the possibility that differences in the outcome variables are due to differences in the credibility of manipulation.

However, caution is advised when interpreting the manipulation checks. In both cases, the answer option “No” included an open text field in which participants could justify their decision. The information provided there shows that several people did not understand that the question referred to the SCF illustration or used the text field for comments that were not relevant to the content. Some, for example, gave their own opinions on climate change or personal recommendations for action. It can therefore be assumed that the manipulation check did not work reliably, which is why the results were not used for further calculations.

At the beginning of the study, participants were additionally asked to report their own agreement with the statements and to estimate how strongly they believed the majority of society would agree with each statement. Due to the limited reliability of the manipulation checks, these two variables were explored as proxy indicators: (a) whether participants' own opinion matched the valence of the presented statement and (b) whether their estimation of societal agreement corresponded to the statement's valence. These analyses were conducted exploratively and must be interpreted with caution, as these variables were not designed or collected as manipulation checks. Instead, they were originally included to strengthen the manipulation in line with the procedure described by Wirth et al., (2023) and to assess potential moderating influences on the effectiveness of the SCF.

Alternative manipulation check

Across conditions, a substantial proportion of participants already held opinions that did not correspond to the valence of the statement presented in the manipulation. Within the climate stereotype conditions, 38.6 percent of participants reported personal views that were opposite in valence to the statement shown, and 37.7 percent estimated societal opinion in a direction inconsistent with the manipulation. Comparable discrepancies were also observed in the control conditions, indicating that mismatches between pre-existing beliefs and the presented statements were not specific to the experimental manipulation.

Manipulation Check 1: Own Agreement with the Statement

To examine whether participants' own agreement corresponded systematically to the valence of the presented statement in different groups, a one-way ANOVA was conducted. This analysis revealed no significant differences between the four experimental groups ($p = .307$). Although descriptively higher proportions of agreement were observed in the positive conditions than in the negative conditions, these differences were not statistically reliable.

Specifically, agreement with the statement was reported by 64.0% of participants in the stereotype positive condition and 73.1% in the control positive condition, compared to 24.2% in the stereotype negative condition and 27.3% in the control negative condition.. Accordingly, this alternative manipulation check does not provide sufficient evidence that the manipulation altered or overrode pre-existing opinions.

Manipulation Check 2: Estimation of Society's Opinion

A second one way ANOVA examined whether the manipulation influenced participants' estimation of how strongly the majority of society would agree with the presented statements in four observed groups. This analysis also showed no significant differences between the experimental groups ($p = .692$), indicating that exposure to the statements did not systematically shape participants' perceptions of societal opinion.

Descriptively, alignment between the estimated societal opinion and the statement valence was reported by 43.2 percent of participants in the stereotype positive condition, 25.3 percent in the stereotype negative condition, 37.2 percent in the control positive condition, and 33.7 percent in the control negative condition. The absence of clear group differences suggests that the manipulation did not successfully influence perceived social consensus.

Hypothesis 1:

To test hypothesis H1, whether the amount donated varied depending on the type of information presented, a two-way ANOVA was conducted. To test all hypotheses, a two-way analysis of variance (ANOVA) was conducted. Given that ANOVA has been shown to be robust to moderate violations of the normality assumption when group sizes are approximately equal and the sample size is sufficiently large ($N = 377$), this analytical approach was considered appropriate for the present data (Blanca et al., 2017). Prior to conducting the ANOVA, the relevant assumptions were examined for each analysis. A more detailed report of the assumption checks is provided in the Appendix.

The analysis of the effects between subjects revealed no significant main effect of condition ($p = .79$; $\eta^2_p = 0.00$) and no significant main effect of valence ($p = .97$; $\eta^2_p = 0.00$). Similarly, the interaction between condition and valence was not significant ($p = .15$; $\eta^2_p = 0.01$). The overall model was also not significant ($p = .55$; $\eta^2_p = 0.01$). The results showed no significant effect of statement type (stereotype vs. control) or affective valence (positive vs. negative) on the amount of the donation. All effect sizes were negligible ($\eta^2 \leq 0.01$).

Due to the violation of the assumptions required for conducting an ANOVA and the previously reported non-significant results, additional robust non-parametric analyses were carried out. These tests likewise yielded no significant effects. Specifically, the Kruskal–Wallis test for the donated amount (metric variable) was non-significant, $H(3) = 1.657$, $p = .647$. No post hoc or planned contrast analyses were conducted, as additional comparisons would not have been meaningful given the lack of significant differences and the small rank variations (stereotype-positive: $M_{(R)} = 195.60$; stereotype-negative: $M_{(R)} = 187.21$; neutral-positive: $M_{(R)} = 180.02$; neutral-negative: $M_{(R)} = 193.31$). Similarly, chi-square test of independence was

performed to examine whether the four groups differed in their willingness to donate (binary variable: donation made yes/no). The results showed no significant correlation between the statement displayed and the probability of donating ($\chi^2 = 2.01$; $p = .57$). All expected cell frequencies were greater than five, so no corrections (e.g., Monte Carlo or Yates) were necessary. Detailed results of the non-parametric tests for this and the subsequent hypotheses can be found in the appendix.

In addition, it was examined whether the subjective assessment of the majority opinion in society moderated the effect of the experimental condition on environmentally conscious behavior. Due to the pronounced dichotomy in the behavior-based outcome variable donation amount, moderation effects were assessed not only for actual donation behavior but also for the self-reported pro-environmental behavioral intention. No moderation effect of the subjective assessment of societal opinion was found for donation amount.

A further moderation analysis examined whether the subjective assessment of the majority opinion in society influenced the relationship between experimental condition and pro-environmental behavioral intention. The overall moderation model did not reach statistical significance (Model Summary: $p = .093$). While significant main effects were observed for experimental condition ($p = .015$) and for the estimation of societal opinion ($p = .045$), these effects should be interpreted with caution given the non-significant overall model. The interaction term between condition and the estimation of societal opinion reached the conventional threshold of significance ($p = .050$) but did not fall below it and therefore cannot be interpreted as statistically significant. At most, this result may be described as indicating a tentative trend toward moderation, which requires careful interpretation and further empirical investigation. Participants' own agreement with the statements assessed prior to the manipulation did not significantly influence the relationship between condition and the outcome variables (see Appendix).

Overall, these analyses suggest that neither participants' prior beliefs nor their perception of societal consensus reliably moderated the effects of the experimental manipulation. Given that these variables were not originally designed as manipulation checks but were assessed to strengthen the manipulation in line with previous research, all findings should be interpreted as exploratory.

Hypothesis 2:

To test hypothesis H2, which states that older people who are exposed to positive climate-related age-stereotypes show greater motivation to engage with climate change issues than people who are exposed to negative or neutral statements, a two-factor ANOVA (2×2 ANOVA) was conducted. The results of the ANOVA showed no significant main effects for the condition ($F(1, 363) = 0.112, p = .738, \eta^2_p = .000$) or the valence of the statements ($F(1, 363) = 0.149, p = .700, \eta^2_p = .000$). Similarly, the interaction effect between condition and valence was not significant ($F(1, 363) = 0.018, p = .894, \eta^2_p = .000$). The planned contrast analyses also revealed no significant differences between the groups. Neither the comparison between positive and negative climate-related age-stereotypes ($F(2, 354) = 0.126, p = .882$) nor between the positive condition and all other groups ($F(1, 367) = 0.011, p = .916$) reached significance. Similarly, there were no differences between the negative condition and all other groups ($F(1, 365) = 0.003, p = .960$). The mean values show that there was only a slight difference in the motivation of the participants between the conditions. In the experimental group, the average motivation was $M = 6.092$ ($SD = 0.900$) in the condition with positive valence and $M = 6.140$ ($SD = 0.909$) in the condition with negative valence. Participants in the control group reported very similar values, with $M = 6.073$ ($SD = 0.823$) in the positive condition and $M = 6.097$ ($SD = 0.943$) in the negative condition. Overall, there were only minimal differences across all conditions (total mean $M = 6.101, SD = 0.891$), indicating a high level of motivation among respondents. Overall, there was no evidence that exposure to positive climate-related age-stereotypes had a greater influence on older people's motivation to engage with age- change than negative or neutral representations.

Hypothesis 3:

Hypothesis H3 stated that older people who are exposed to positive climate-related age-stereotypes report higher levels of concern about the consequences of climate change than people who are exposed to negative stereotypes or neutral statements.

A two-way ANOVA with the factors condition (stereotype vs. control) and valence (positive vs. negative) revealed no significant main effects for condition, $F(1, 366) = 0.046$, $p = .831$, $\eta^2_p = .000$, or valence, $F(1, 366) = 1.242$, $p = .266$, $\eta^2_p = .003$. The interaction between condition and valence was also not significant, $F(1, 366) = 3.786$, $p = .052$, $\eta^2_p = .010$. Similarly, the planned contrasts did not reveal any significant group differences. There was no significant difference between the positive and negative climate-related conditions, $F(2, 367) = 0.184$, $p = .832$, $\eta^2_p = .001$. No significant difference was found between the positive climate-related condition and all other groups, $F(1, 368) = 0.337$, $p = .562$, $\eta^2_p = .001$, or between the negative climate-related condition and all other groups, $F(1, 368) = 2.811$, $p = .094$, $\eta^2_p = .008$. The comparison of positive and negative valence across all conditions also revealed no significant difference as well, $F(1, 368) = 2.817$, $p = .252$, $\eta^2_p = .004$. Participants in the positive climate-related condition reported an average score of $M = 4.469$ ($SD = 1.596$), those in the negative climate-related condition $M = 4.324$ ($SD = 1.622$), the positive control group $M = 4.093$ ($SD = 1.711$), and the negative control group $M = 4.626$ ($SD = 1.757$). Overall, these results indicate that neither the type of statement (stereotype vs. control) nor its affective valence (positive vs. negative) significantly affected participants' concern about the consequences of climate change.

Hypothesis 4:

To test hypothesis H4 ("Older adults exposed to positive climate-related age-stereotypes show stronger beliefs about the relevance of climate change than those exposed to negative or neutral statements"), a two-factor analysis of variance (2×2 ANOVA) was conducted with the factors condition (stereotype vs. control) and valence (positive vs. negative). The ANOVA revealed no significant main effects of condition, $F(1, 366) = 0.212$, $p = .645$, $\eta^2_p = .001$, or valence, $F(1, 366) = 0.276$, $p = .600$, $\eta^2_p = .001$. Similarly, there was no significant interaction between condition and valence, $F(1, 366) = 1.097$, $p = .296$, $\eta^2_p = .003$. The planned contrast analyses confirmed this pattern. None of the specific comparisons revealed significant differences between the groups. Contrast 1 (comparison between the climate-positive and climate-negative conditions) showed no significant difference, $F(2, 367) = 0.183$, $p = .833$, $\eta^2_p = .001$. Contrast 2, which compared the climate-positive group

with all other conditions, was also not significant, $F(1, 368) = 0.001$, $p = .975$, $\eta^2_p = .000$. The same applies to contrast 3 (climate-negative group vs. all other conditions), $F(1, 368) = 1.431$, $p = .232$, $\eta^2_p = .004$; Mean scores were comparable across conditions, with the stereotype-positive group showing a mean of 5.664 ($SD = 1.433$), the stereotype-negative group a mean of 5.594 ($SD = 1.254$), the control-positive group a mean of 5.585 ($SD = 1.308$), and the control-negative group a mean of 5.798 ($SD = 1.211$). Overall, there was no evidence that older people who were exposed to positive climate-related stereotypes were more convinced of the relevance of climate change than those who encountered negative or neutral statements.

Exploratory Analysis

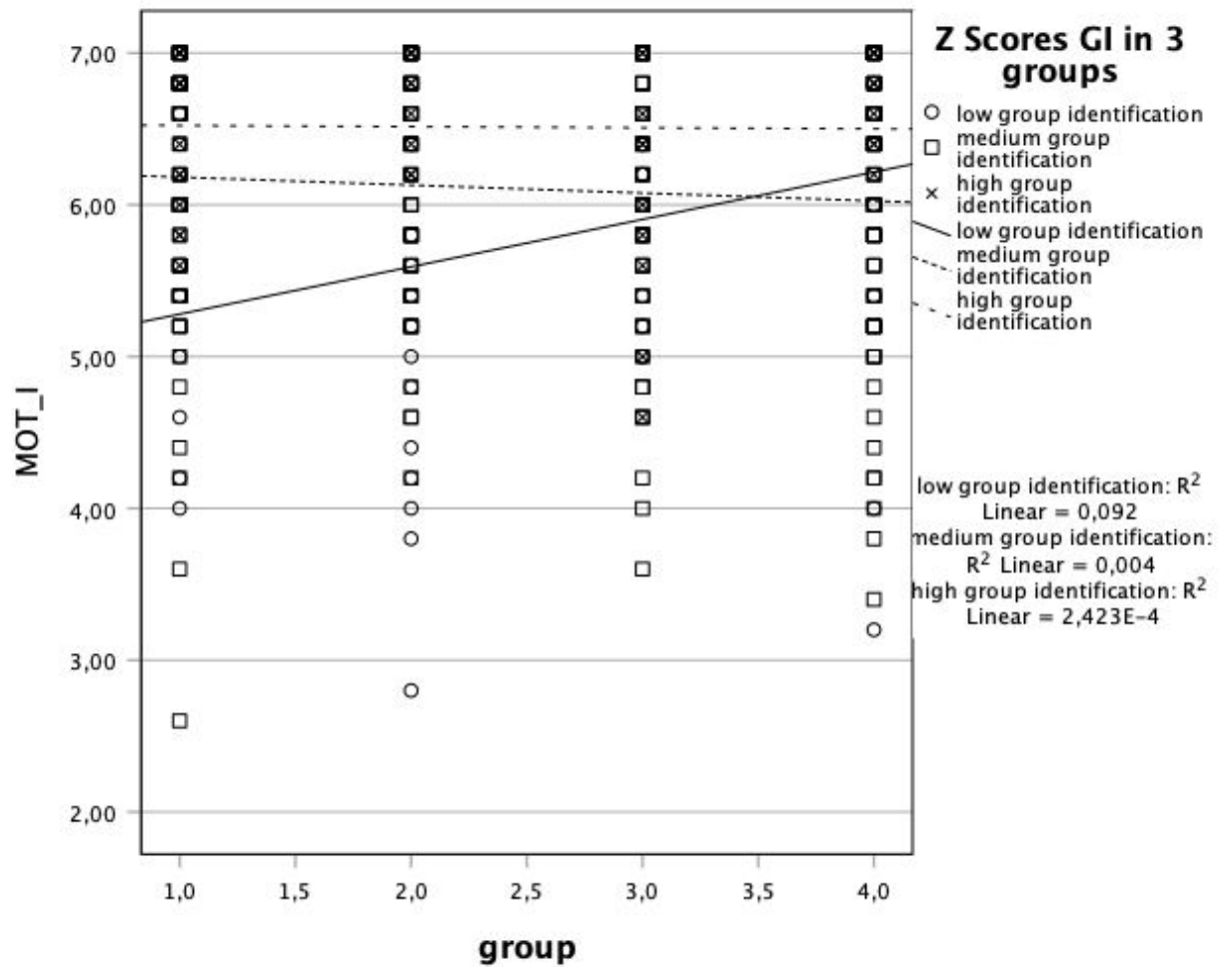
To further examine potential influencing factors, an exploratory moderation analysis was conducted using the PROCESS macro (version 5.0; Hayes, 2018, model 1) with 1,000 bootstrap samples. Since most interaction effects were not significant, the complete results are presented in the appendix. The key findings are summarized below.

Moderator: Group identification

The analysis examined whether the relationship between the experimental condition (group) and motivation (MOT) was influenced by group identification (GI). The overall model was significant (Model Summary: $p = .000$), as were the main effects of condition ($p = .038$) and group identification ($p = .000$). In addition, there was a significant interaction effect between group and group identification ($p = .036$; $\Delta R^2 = .011$; $F(1, 357) = 4.416$, $p = .036$), indicating a moderating influence of group identification on the relationship between condition and motivation. Simple slope analyses revealed that none of the conditional effects of condition on motivation reached conventional levels of statistical significance (low GI, $p = .062$; medium GI, $p = .882$; high GI, $p = .882$; see Figure 3). At low levels of group identification, the association between condition and motivation showed a tendency toward a stronger effect, but this trend did not reach statistical significance. At medium and high levels of group identification, no meaningful association between condition and motivation was observed.

Figure 3

Simple slopes of the relationship between experimental condition and motivation at different levels of group identification



Discussion

The present study aimed to investigate whether exposure to positive versus negative climate-related age stereotypes influences environmental engagement among older adults. Building on assumptions derived from Social Identity Threat and Stereotype Threat Theory, it was hypothesized that exposure to positive climate-related stereotypes would be associated with higher levels of pro-environmental behavior, measured via donation amount, as well as stronger pro-environmental attitudes, including motivation, concerns, and beliefs. In contrast, exposure to negative climate-related stereotypes was expected to result in comparatively lower levels on these outcomes, as negative stereotypes may threaten social identity and thereby undermine engagement. Participants exposed to neutral statements were expected to fall between these two conditions. Additionally, an exploratory analysis was conducted to examine whether group identification moderates the effects of climate-related age stereotypes on environmental behavior intention and attitudes.

None of the a priori hypotheses could be confirmed. The presented stereotype did not significantly affect either behavioral or attitudinal outcomes. These results indicate that, within the present sample, exposure to climate-related age stereotypes did not produce measurable differences in actual or self-reported pro-environmental engagement. These null findings are in line with previous experimental research in this area. For example, Ayalon and Roy (2023) similarly reported null effects when experimentally manipulating the age group blamed for the climate crisis. In their second study, attributing responsibility for climate change to either younger or older people did not affect climate-related attitudes, emotions, or behavioral intentions, nor did it interact with the age of the respondent. Together, these findings suggest that experimentally induced age-based framings may have limited influence on climate-related engagement.

While the lack of significant effects may initially appear inconclusive, these findings nonetheless contribute valuable insights to the growing body of research on climate-related age stereotypes and environmental engagement. Possible explanations for the observed patterns and for the absence of expected effects are discussed in the following sections.

Based on stereotype threat theory, it would have been expected that the activation of positive or negative climate-related age stereotypes would lead to corresponding changes in environmental awareness. The underlying mechanism is that individuals develop a fear of confirming a negative stereotype about their own social group, which leads to increased stress and impaired performance (Steele & Aronson, 1995). These effects are particularly evident when performance is objectively measurable and a social comparison alert is triggered (Steele & Aronson, 1995). Although individual studies indicate that stereotype threat can influence self-image in the long term, this has been demonstrated in studies with much more intensive and repeated conditions (Woodcock et al., 2012). The one-time, brief exposure in the present study may therefore have been too weak to cause comparable changes in environmental awareness.

At the same time, it is possible that the manipulation contradicted participants' initial assumptions about societal views, thereby neutralizing the intended effects of the experimental conditions, potentially through psychological reactance. Reactance theory assumes that individuals experience a motivational state aimed at restoring threatened freedoms when they perceive external attempts to influence their attitudes or behaviors (Brehm, 1966; Steindl et al., 2015). In the context of the present study, a significant proportion of participants already had opinions that deviated from the valence presented in the manipulation prior to the manipulation. Under the climate stereotype conditions, 38.6% reported an opposite valence in their own views, and 37.7% assessed societal opinion in a direction that was inconsistent with the manipulation. Similar discrepancies were observed in the control group (see Appendix). Such a discrepancy suggests that for many participants, the manipulation may have implied that their personal or perceived societal beliefs were incorrect, potentially causing a sense of restriction or pressure. If participants perceived the stereotypical statements as normative or as an attempt to influence their attitudes toward environmental protection, this could have triggered reactance motivation. Findings from stereotype-related research also support this possibility: women who were confronted with negative gender stereotypes showed *counterstereotypical* reactions and improved their performance (Kray et al., 2004). Psychological reactance has also been documented specifically in the field of environmental behavior and climate communication. Studies show that people who perceive climate

messages as controlling or normatively oppressive may respond with less pro-environmental behavior and intentions (Bilfinger et al., 2023; Contzen et al., 2021). Given these findings, it is possible that the present manipulation was perceived by some participants as an attempt to influence their views on climate engagement. In such cases, reactance may have neutralized possible stereotype-based effects and thus contributed to the observed zero results. Future research may therefore benefit from directly assessing individual differences in reactance, or by incorporating measures of perceived threat to freedom, to determine whether reactance processes systematically moderate responses to climate-related stereotype cues.

While reactance may thus have emerged from a perceived attempt to influence participants' views on climate engagement, this explanation alone does not fully capture the complexity of the present findings. A second, closely related perspective concerns *how* participants positioned themselves in relation to the social category that was activated by the manipulation. Categorization threat represents another form of Social Identity Threat, arising when individuals are assigned to a social group against their will or in a context where the categorization is perceived as inappropriate (Branscombe et al., 1999). For example, an older adult may see themselves as active and youthful yet still be categorized as "old" in ways that carry negative connotations for climate engagement. Extending this finding to age, Barber and Mather (2013) found similar effects for older adults' memory under age-related stereotype activation. Whether assimilation or reactance occurs depends on contextual and individual factors, such as the salience of personal identity versus group identity (Oakes, 1987), or the degree of mismatch between self-concept and group image (Wetherell et al., 2025). Originally, it was assumed that a stronger identification with one's age group would amplify the effects of climate related age stereotypes, in line with stereotype threat research showing that group-based threats tend to be more influential when individuals feel a strong sense of belonging to the relevant social group (Steele & Aronson, 1995). However, this assumption may not fully apply to the present sample. Participants were, on average, at the lower end of the older adult age range and the distribution of age group identification indicated that most individuals reported only moderate identification with their age group, with relatively few participants showing high identification (12.73%). This suggests that

many participants may not have strongly perceived themselves as belonging to the social category of “older adults,” potentially limiting the relevance of age related stereotypes for their self-concept. Although the interaction between experimental condition and group identification reached statistical significance at the model level, the simple slope analyses provide a more nuanced picture. None of the conditional effects of condition on motivation reached conventional levels of statistical significance at low, medium, or high levels of group identification (low identification: $p = .062$; medium identification: $p = .882$; high identification: $p = .882$). At low levels of group identification, there was a tendency toward a stronger association between condition and motivation, but this effect remained below the threshold for statistical significance and should therefore be interpreted with caution. One possible explanation for this pattern may relate to self-protective strategies in response to age related stereotypes. Research suggests that older adults often cope with negative age stereotypes by distancing themselves from the category of “old people,” for example by denying or downplaying their own age group membership (Allport, 1954; Tajfel, 1978; Heckhausen & Brim, 1997; Hummert et al., 2002; Weiss & Lang, 2012). This paradox of aging, in which individuals are chronologically older but do not subjectively experience themselves as belonging to the stereotyped group, may lead those with lower age group identification to be more sensitive to age related information precisely because it challenges their preferred self-definition. However, given that the conditional effects did not reach statistical significance, this interpretation remains speculative.

A further consideration concerns the well documented attitude behavior gap, which denotes the discrepancy between individuals expressed pro environmental attitudes and their actual ecological behavior (Khan et al., 2024; Silvi and Padilla, 2021; Tucholska et al., 2024). Although such a gap is typically discussed in the context of self-report measures, the present study included a behavioral indicator through the lottery based donation task. However, this measure likewise did not reveal differences between conditions. One possible explanation can be derived from prospect theory, which posits that individuals evaluate potential outcomes relative to a reference point and weigh losses more heavily than equivalent gains (Kahneman and Tversky, 1979). In the current design, participants only had a slight

chance to win the 50€ reward, since the prize was ultimately allocated to a single randomly selected person. Consequently, choosing to donate the available amount was unlikely to be construed as a loss, because participants could not expect the money with certainty. Instead, the donation option may have been perceived as cost free or hypothetical, which could diminish sensitivity to the experimental manipulation. This interpretation is consistent with the response pattern in the data: 82.2% of participants stated that they donate to an environmental organization of their choice, and of these, 81.61% donated the entire available amount of fifty euros, which corresponds to 67.11% of the total sample. The high level of hypothetical generosity suggests that the task did not represent a significant compromise from the participants' perspective and therefore lacked the psychological tension necessary to detect subtle changes in motivation or environmental orientation. To address this limitation, future research could employ behavioral measures that involve genuine effort and conditional outcomes. One promising alternative is the “work for environmental protection task” (WEPT), in which participants make a quantifiable effort that directly translates into the amount of an environmental donation (Lange and Dewitte, 2022). Since the effort expended by the test subjects cannot be separated from the participants' awareness of their actions, such a task may offer greater sensitivity to stereotypical influences or shifts in motivation than a lottery-based procedure.

The correlations observed in this study with environmentally conscious behavior and attitudes largely correspond to previous empirical findings on environmental awareness. Williams (2023) showed that people who believe in human influence on climate change are more willing to provide financial resources for emission reduction. A comparable direct relationship between attitudes and behavior can be found in the present data: willingness to accept higher taxes for climate protection (WTA) shows a strong positive correlation with pro-ecological attitudes ($p = .588$, $p < .001$). The actual amount donated also has a significantly positive, although much weaker, correlation with environmental attitude ($p = .214$, $p < .001$). These findings are consistent with the assumption that environmental beliefs are at least partially associated with corresponding behavioral dispositions, although the strength of this correlation may vary.

A particularly informative pattern in the present study concerns the role of generativity. Across the present data, generativity was consistently linked to a broad range of variables relevant to environmental engagement. Individuals who reported higher levels of generativity also tended to feel more strongly connected to their age group, expressed greater motivation to engage in climate related actions, reported higher concern about the consequences of climate change, and endorsed stronger environmental attitudes. In addition, generativity was associated with a greater intention to engage in pro environmental behavior and, to a lesser extent, with actual donation behavior (see Appendix). This pattern aligns closely with theories proposing that later adulthood is characterized by an increased motivation to contribute to the common good and to leave a meaningful legacy for future generations (Pillemer et al., 2010). Prior research has shown that activating legacy related motives can increase willingness to donate to environmental causes and strengthen climate related beliefs among older adults (Zaval et al., 2015), indicating that generativity is not merely an abstract value orientation but can translate into concrete action. In the context of the present null effects of stereotype activation, these findings point to an important theoretical extension. Rather than viewing generativity as an alternative to stereotype-based processes, the present results suggest that it may interact with them. While stereotype activation may elicit disengagement or reactance in some older adults, generative motives could shape how age-related climate stereotypes are interpreted, internalized, or resisted. To date, however, there is a lack of research that explicitly examines generativity within a stereotype threat framework. Investigating whether generativity buffers against negative stereotype effects, amplifies positive age-related messages, or alters the relevance of age-based categorizations represents a promising direction for future research.

Furthermore, the correlations with sociodemographic variables reflect known patterns. Higher education correlates positively with self-reported behavioral intention (PBI) and pro-environmental attitudes (EA). This finding is also supported by previous literature, according to which education is a reliable predictor of sustainable behavior (Qadri et al., 2025). Income effects were also evident: higher incomes were moderately positively correlated with donation amounts and

environmental attitudes. In addition, income showed a small negative correlation with nature connectedness ($\rho = -.147$, $p = .005$), indicating that participants with higher income levels reported slightly lower connectedness to nature. This pattern aligns with prior findings indicating that income is associated with environmental engagement in a complex way. While higher-income individuals may have greater financial capacity to engage in pro-environmental actions, previous research shows that they are, particularly in wealthier countries, less likely to prioritize environmental protection over economic growth (Qadri et al., 2025). Gender differences are also consistent with previous findings as female participants reported higher concern scores (CCW) and higher PBI scores than men, which is also in line with previous literature (Qadri et al., 2025).

Strengths and Limitations

This study has several methodological strengths that contribute to the quality of the results. One significant advantage is the sufficiently large sample size: the target size of 252 individuals calculated using G*Power (Faul et al., 2007) was significantly exceeded, resulting in high statistical power with 377 valid cases. However, data collection took place entirely online, which is efficient but poses particular challenges when studying older target groups. Participation required technical understanding and access to digital devices, such as the ability to open links. Furthermore, it can be assumed that recruiting participants via social media already presupposes a high level of digital literacy among them. However, a study by König et al. (2018) shows that in 2018, only about 12% of 80- to 84-year-olds used the internet. This suggests a significant selection bias, with tech-savvy and better-educated older people being overrepresented. Consequently, it can be assumed that the sample does not represent the entire older population but rather reflects those individuals who already have higher digital literacy and possibly also a stronger interest in the environment. Therefore, it seems necessary to reach out to older population groups through more diverse recruitment channels in order to reduce digital access barriers and selection biases.

Another positive aspect is that the study used an experimental 2x2 design, which allows the effects of condition and valence to be considered separately, thus

enabling a differentiated analysis of the mechanisms of action. In addition, the inclusion of a behavior-based measurement instrument represents an important methodological strength, as it complements the typical self-reported measures of environmental awareness and offers more direct access to actual behavior.

However, the sample was relatively young on average ($M = 60.12$ years). As explained in the discussion above, a low level of identification with the social category “older people” could have weakened the effects of stereotypical threat and thus contributed to the zero effect.

Another important aspect concerns the limited diversity of the sample. There is a prominent overrepresentation of women (297 women compared to 76 men), while people of other gender identities were hardly represented. The educational level of the participants was also unevenly distributed, since the sample was above average in terms of education, which represents a systematic bias and reduces the external validity of the results. Previous research shows that education is positively correlated with environmentally conscious behavior (Qadri et al., 2025). Accordingly, the homogeneous educational structure of the sample could reflect an already strong environmental awareness and thus weaken the effect of the experimental manipulation.

Finally, improvements are needed in the implementation of the manipulation check. This was conducted at the end of the study and comprised two aspects: First, participants were asked to indicate whether they considered the distribution presented in the manipulation to be realistic, and second, whether they agreed with it. However, the option to provide an open-ended explanation revealed a systematic problem during the evaluation. Many participants did not recognize that the question referred to the manipulation graphic presented earlier or instead commented on general beliefs about climate change. Since it remained unclear whether the answers actually referred to the manipulation stimulus, the manipulation check could not be used meaningfully for data analysis.

Conclusion and outlook

This study was the first to experimentally investigate whether climate-related age stereotypes influence the environmental awareness and environmental actions of older adults. No significant differences between the experimental conditions were

found in either behavior (donation amount) or self-reported measures of environmental awareness. Nevertheless, the exploratory analyses provide important starting points. In particular, group identification proved to be a relevant moderator in the relationship between condition and motivation. Furthermore, it cannot be excluded that psychological reactance contributed to a weakening or neutralization of possible manipulation effects. Overall, it appears that the influence of climate-related age stereotypes on environmental awareness is more complex than initially assumed in theory. The results suggest that stereotypical threats in this context either do not have a strong enough effect or are overshadowed by other social and individual factors, such as a lack of identification with the category “older people” or psychological reactance processes.

In summary, despite its strengths, the study offers only limited generalizability, as several demographic and methodological factors could potentially have led to a systematic bias in the results. At the same time, the limitations identified provide valuable insights for future research, particularly with regard to the need for more diverse samples, more robust manipulations, and alternative survey modes for older population groups.

The results of the present study thus not only highlight the need to talk about age stereotypes in the context of climate change in a differentiated way, but also provide valuable impulses for further research that focuses more closely on the potential of older people for climate protection and social engagement.

Bibliography

Abrams, D. (2015). Social identity and intergroup relations. In M. Mikulincer, P. R.

Shaver, J. F. Dovidio, & J. A. Simpson (Eds), *APA handbook of personality*

and social psychology, Volume 2: Group processes. (pp. 203–228). American

Psychological Association. <https://doi.org/10.1037/14342-008>

Abrams, D., Swift, H. J., & Drury, L. (2016). Old and Unemployable? How Age-

Based Stereotypes Affect Willingness to Hire Job Candidates. *Journal of*

Social Issues, 72(1), 105–121. <https://doi.org/10.1111/josi.12158>

- Allport, G. W. (1954). *The Nature of Prejudice*. Addison-Wesley Publishing Company, Inc.
- Anderson, N. D., Damianakis, T., Kröger, E., Wagner, L. M., Dawson, D. R., Binns, M. A., Bernstein, S., Caspi, E., Cook, S. L., & The BRAVO Team. (2014). The benefits associated with volunteering among seniors: A critical review and recommendations for future research. *Psychological Bulletin*, 140(6), 1505–1533. <https://doi.org/10.1037/a0037610>
- Aronson, E., Wilson, T. D., & Sommers, S. R. (2023). *Sozialpsychologie* (M. Reiss, Trans.; 10., aktualisierte Auflage). Pearson.
- Ayalon, L., & Roy, S. (2022). The Role of Ageism in Climate Change Worries and Willingness to Act. *Journal of Applied Gerontology*, 42(6), 1305–1312. <https://doi.org/10.1177/07334648221130323>
- Ayalon, L., & Roy, S. (2023a). The Perceived Contribution of Older People to Climate Change Impact, Mitigation, and Adaptation: Measurement Development and Validation. *Innovation in Aging*, 7(8), igad095. <https://doi.org/10.1093/geroni/igad095>
- Ayalon, L., & Roy, S. (2023b). The role of chronological age in climate change attitudes, feelings, and behavioral intentions: The case of null results. *PLOS ONE*, 18(6), e0286901. <https://doi.org/10.1371/journal.pone.0286901>
- Barber, S. J., & Mather, M. (2013). Stereotype Threat Can Both Enhance and Impair Older Adults' Memory. *Psychological Science*, 24(12), 2522–2529. <https://doi.org/10.1177/0956797613497023>
- Branscombe, N. R., Schmitt, M. T., & Harvey, R. D. (1999). Perceiving pervasive discrimination among African Americans: Implications for group identification

- and well-being. *Journal of Personality and Social Psychology*, 77(1), 135–149.
<https://doi.org/10.1037/0022-3514.77.1.135>
- Brown, R. P., & Pinel, E. C. (2002). Stigma on my mind: Individual differences in the experience of stereotype threat. *Journal of Experimental Social Psychology*, 39, 626–633.
- Cialdini, R. B., & Trost, M. R. (1998). Social influence: Social norms, conformity and compliance. In D. T. Gilbert, S. T. Fiske, & G. Lindzey (Eds), *The handbook of social psychology* (4th edn, pp. 151–192). McGraw-Hill.
- De Paula Couto, M. C., Huang, T., & Rothermund, K. (2022). Age Specificity in Explicit and Implicit Endorsement of Prescriptive Age Stereotypes. *Frontiers in Psychology*, 13, 820739. <https://doi.org/10.3389/fpsyg.2022.820739>
- Diehl, M., Smyer, M. A., & Mehrotra, C. M. (2020). Optimizing aging: A call for a new narrative. *American Psychologist*, 75(4), 577–589.
<https://doi.org/10.1037/amp0000598>
- Fiske, S. T. (1993). Controlling other people: The impact of power on stereotyping. *American Psychologist*, 48, 621–628.
- Häkkinen, K., & Akrami, N. (2014). Ideology and climate change denial. *Personality and Individual Differences*, 70, 62–65.
<https://doi.org/10.1016/j.paid.2014.06.030>
- Hess, T. M., Auman, C., Colcombe, S. J., & Rahhal, T. A. (2003). The Impact of Stereotype Threat on Age Differences in Memory Performance. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, 58(1), P3–P11. <https://doi.org/10.1093/geronb/58.1.P3>
- Hilton, J., & Von Hippel, W. (1996). Stereotype. *Annual Reviews*, 47(1), 237–271.

- Kang, S. K., & Chasteen, A. L. (2009). The Moderating Role of Age-Group Identification and Perceived Threat on Stereotype Threat among Older Adults. *The International Journal of Aging and Human Development*, 69(3), 201–220.
<https://doi.org/10.2190/AG.69.3.c>
- Kite, M. E., & Johnson, B. T. (1988). Attitudes toward older and younger adults: A meta-analysis. *Psychology and Aging*, 3(3), 233–244.
<https://doi.org/10.1037/0882-7974.3.3.233>
- Lamont, R. A., Swift, H. J., & Abrams, D. (2015). A review and meta-analysis of age-based stereotype threat: Negative stereotypes, not facts, do the damage. *Psychology and Aging*, 30(1), 180–193. <https://doi.org/10.1037/a0038586>
- Leiner, D. J. (2021). SoSci Survey (Version 3.5.02) [Computer software].
<https://www.soscisurvey.de>
- Levy, B. (1996). Improving memory in old age through implicit self-stereotyping. *Journal of Personality and Social Psychology*, 71(6), 1092–1107.
<https://doi.org/10.1037/0022-3514.71.6.1092>
- Levy, B. (2009). Stereotype Embodiment: A Psychosocial Approach to Aging. *Current Directions in Psychological Science*, 18(6), 332–336.
<https://doi.org/10.1111/j.1467-8721.2009.01662.x>
- Levy, B., & Bavishi, A. (2016). Survival Advantage Mechanism: Inflammation as a Mediator of Positive Self-Perceptions of Aging on Longevity. *The Journals of Gerontology Series B: Psychological Sciences and Social Sciences*, gbw035.
<https://doi.org/10.1093/geronb/gbw035>
- Levy, B. R., Hausdorff, J. M., Hencke, R., & Wei, J. Y. (2000). Reducing Cardiovascular Stress With Positive Self-Stereotypes of Aging. *The Journals*

- of Gerontology Series B: Psychological Sciences and Social Sciences*, 55(4), P205–P213. <https://doi.org/10.1093/geronb/55.4.P205>
- Lippmann, W. (1922). *Public opinion*. Hartcourt, Brace.
- Macrae, C. N., & Bodenhausen, G. V. (2000). Social Cognition: Thinking Categorically about Others. *Annual Review of Psychology*, 51(1), 93–120. <https://doi.org/10.1146/annurev.psych.51.1.93>
- McCright, A. M., & Dunlap, R. E. (2011). Cool dudes: The denial of climate change among conservative white males in the United States. *Global Environmental Change*, 21(4), 1163–1172. <https://doi.org/10.1016/j.gloenvcha.2011.06.003>
- Milfont, T. L., Zubielevitch, E., Milojev, P., & Sibley, C. G. (2021). Ten-year panel data confirm generation gap but climate beliefs increase at similar rates across ages. *Nature Communications*, 12(1), 4038. <https://doi.org/10.1038/s41467-021-24245-y>
- Myers, T. A., Maibach, E., Peters, E., & Leiserowitz, A. (2015). Simple Messages Help Set the Record Straight about Scientific Agreement on Human-Caused Climate Change: The Results of Two Experiments. *PLOS ONE*, 10(3), e0120985. <https://doi.org/10.1371/journal.pone.0120985>
- Nisbet, E. K., & Zelenski, J. M. (2013). The NR-6: A new brief measure of nature relatedness. *Frontiers in Psychology*, 4. <https://doi.org/10.3389/fpsyg.2013.00813>
- North, M. S., & Fiske, S. T. (2012). An inconvenienced youth? Ageism and its potential intergenerational roots. *Psychological Bulletin*, 138(5), 982–997. <https://doi.org/10.1037/a0027843>

- North, M. S., & Fiske, S. T. (2013). A prescriptive intergenerational-tension ageism scale: Succession, identity, and consumption (SIC). *Psychological Assessment*, 25(3), 706–713. <https://doi.org/10.1037/a0032367>
- Oakes, P. J. (1987). The salience of social categories. In J. C. Turner, M. A. Hogg, P. J. Oakes, S. D. Reicher, & M. S. Wetherell (Eds), *Rediscovering the social group* (pp. 117–141). Blackwell.
- Park, B., & Rothbart, M. (1982). Perception of out-group homogeneity and levels of social categorization: Memory for the subordinate attributes of in-group and out-group members. *Journal of Personality and Social Psychology*, 42(6), 1051–1068. <https://doi.org/10.1037/0022-3514.42.6.1051>
- Pillemer, K., Nolte, J., & Tillema Cope, M. (2022). Promoting Climate Change Activism Among Older People. *Generations Journal*, Vol. 46(2), 1–16.
- Puhl, R. M., & Brownell, K. D. (2003). Psychosocial origins of obesity stigma: Toward changing a powerful and pervasive bias. *Obesity Reviews*, 4(4), 213–227. <https://doi.org/10.1046/j.1467-789X.2003.00122.x>
- Puhl, R. M., Schwartz, M. B., & Brownell, K. D. (2005). Impact of Perceived Consensus on Stereotypes About Obese People: A New Approach for Reducing Bias. *Health Psychology*, 24(5), 517–525. <https://doi.org/10.1037/0278-6133.24.5.517>
- Roy, S., & Ayalon, L. (2023). “They Did Not Know What They Were Doing”: Climate Change and Intergenerational Compassion. *The Gerontologist*, gnad063. <https://doi.org/10.1093/geront/gnad063>
- Rubin, M., & Hewstone, M. (1998). Social Identity Theory’s Self-Esteem Hypothesis: A Review and Some Suggestions for Clarification. *Personality and Social*

Psychology Review, 2(1), 40–62.

https://doi.org/10.1207/s15327957pspr0201_3

Schmader, T. (2002). Gender Identification Moderates Stereotype Threat Effects on Women's Math Performance. *Journal of Experimental Social Psychology*, 38(2), 194–201. <https://doi.org/10.1006/jesp.2001.1500>

Schneider, D. J. (2004). *The psychology of stereotyping*. Guilford.

Schoklitsch, A., & Baumann, U. (2011). Measuring generativity in older adults: The development of new scales. *GeroPsych: The Journal of Gerontopsychology and Geriatric Psychiatry*, 24(1), 31–43. <https://doi.org/10.1024/1662-9647/a000030>

Steele, C. M., & Aronson, J. (1995). Stereotype threat and the intellectual test performance of African Americans. *Journal of Personality and Social Psychology*, 69(5), 797–811. <https://doi.org/10.1037/0022-3514.69.5.797>

Stets, J. E., & Burke, P. J. (2000). Identity Theory and Social Identity Theory. *Social Psychology Quarterly*, 63(3), 224. <https://doi.org/10.2307/2695870>

Swift, H. J., Abrams, D., Lamont, R. A., & Drury, L. (2017). The Risks of Ageism Model: How Ageism and Negative Attitudes toward Age Can Be a Barrier to Active Aging. *Social Issues and Policy Review*, 11(1), 195–231. <https://doi.org/10.1111/sipr.12031>

Tajfel, H. (1982). Social psychology of intergroup relations. *Annual Review of Psychology*, 33, 1–39.

Tajfel, H., & Turner, J. (1979). An Integrative Theory of Intergroup Conflict. In M. J. Hatch & M. Schultz (Eds), *Organizational Identity* (pp. 56–65). Oxford University PressOxford. <https://doi.org/10.1093/oso/9780199269464.003.0005>

- Tajfel, H., & Turner, J. C. (1986). The social identity theory of intergroup behavior. In S. Worchel & W. G. Austin (Eds), *Psychology of intergroup relations*. Nelson-Hall.
- Weiss, D., & Lang, F. R. (2009). Thinking about my generation: Adaptive effects of a dual age identity in later adulthood. *Psychology and Aging*, 24(3), 729–734. <https://doi.org/10.1037/a0016339>
- Weiss, D., & Lang, F. R. (2012). “They” are old but “I” feel younger: Age-group dissociation as a self-protective strategy in old age. *Psychology and Aging*, 27(1), 153–163. <https://doi.org/10.1037/a0024887>
- Wetherell, G., Thompson, J. L., Cassario, A., Brandt, M., Gnall, S., Rice, S., Solanki, P., Vallabha, S., & Carillo, A. (2025). Do Mismatches Between Individual and Target Group Personality Predict Prejudice? *Collabra: Psychology*, 11(1), 136887. <https://doi.org/10.1525/collabra.136887>
- Wirth, M., De Paula Couto, M. C., Pavlova, M. K., & Rothermund, K. (2023). Manipulating prescriptive views of active aging and altruistic disengagement. *Psychology and Aging*, 38(8), 854–881. <https://doi.org/10.1037/pag0000763>
- Zaval, L., Markowitz, E. M., & Weber, E. U. (2015). How Will I Be Remembered? Conserving the Environment for the Sake of One’s Legacy. *Psychological Science*, 26(2), 231–236. <https://doi.org/10.1177/0956797614561266>

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Use of AI-supported tools

AI-supported tools were used to assist in the preparation of this master's thesis. Individual text passages were translated from German into English using DeepL (deepl.com). In addition, ChatGPT was used for linguistic revision, in particular for proofreading grammar and spelling and improving readability. ChatGPT was used exclusively on the basis of the texts I wrote (prompt: "Please check the following text for grammar, spelling, and comprehensibility without changing the content"). The AI-based tools Elicit (elicit.com), SciSpace (scispace.com), and Connected Papers (connectedpapers.com) were used to support literature research and structure the state of research. These were used exclusively to identify potentially relevant literature and to provide orientation in the existing field of research. The content was developed, the results interpreted, and the literature selected and used independently. I expressly confirm that all content generated or supported by AI has been critically reviewed and checked for technical accuracy. I take full responsibility for the content of this work.

Appendix

Appendix 1 – Manipulation check

*Manipulation Check: Zustimmung * Gruppe (Kontroll, Versuch, pos, neg) Crosstabulation*

			Gruppenbedingung				Total
			Stereotyp positiv	Stereotyp negativ	Kontrolle positiv	Kontrolle negativ	
Manipulation Check 1: Zustimmung	nicht beantwortet	Count	1	0	1	1	3
		% within Gruppe	1,2%	0,0%	1,1%	1,1%	0,8%
	Ja, ich stimme der Aussage zu	Count	29	17	36	13	95
		% within Gruppe	34,1%	18,7%	39,1%	14,3%	26,5%
	Ich weiß es nicht	Count	43	45	44	46	178
		% within Gruppe	50,6%	49,5%	47,8%	50,5%	49,6%
	Nein, ich stimme der Aussage nicht zu	Count	12	29	11	31	83
		% within Gruppe	14,1%	31,9%	12,0%	34,1%	23,1%
Total		Count	85	91	92	91	359
		% within Gruppe	100,0 %	100,0%	100,0%	100,0%	100,0%
Manipulation Check 2: Abbildung realistisch?	nicht beantwortet	Count	0	0	1	1	2
		% within Gruppe	0,0%	0,0%	1,1%	1,1%	0,6%
	Ja, so ist die Zustimmung in der Gesellschaft	Count	28	36	31	37	132
		% within Gruppe	32,9%	39,6%	33,7%	40,7%	36,8%
	Ich weiß es nicht	Count	47	46	51	47	191
		% within Gruppe	55,3%	50,5%	55,4%	51,6%	53,2%
	Nein, die Zustimmung ist anders	Count	10	9	9	6	34
		% within Gruppe	11,8%	9,9%	9,8%	6,6%	9,5%
Total		Count	85	91	92	91	359
		% within Gruppe	100,0 %	100,0%	100,0%	100,0%	100,0%

Appendix 2 – Distribution of own opinion

Experimental group

*Kategorisiert nach Valenz * Gruppe (Kontroll, Versuch, pos, neg) Crosstabulation*

			Gruppe (Kontroll, Versuch, pos, neg)		Total
			Stereotyp positiv	Stereotyp negativ	
Kategorisiert nach Valenz	positive Valenz	Count	57	53	110
		% within Kategorisiert nach Valenz	51,8%	48,2%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	64,0%	55,8%	59,8%
		% of Total	31,0%	28,8%	59,8%
	neutral	Count	14	19	33
		% within Kategorisiert nach Valenz	42,4%	57,6%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	15,7%	20,0%	17,9%
		% of Total	7,6%	10,3%	17,9%
	negative Valenz	Count	18	23	41
		% within Kategorisiert nach Valenz	43,9%	56,1%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	20,2%	24,2%	22,3%
		% of Total	9,8%	12,5%	22,3%
Total	Count		89	95	184
	% within Kategorisiert nach Valenz		48,4%	51,6%	100,0%
	% within Gruppe (Kontroll, Versuch, pos, neg)		100,0%	100,0%	100,0%
	% of Total		48,4%	51,6%	100,0%

Control group

*Kategorisiert nach Valenz * Gruppe (Kontroll, Versuch, pos, neg) Crosstabulation*

			Gruppe (Kontroll, Versuch, pos, neg)		Total
			Kontrolle positiv	Kontrolle negativ	
Kategorisiert nach Valenz	positive Valenz	Count	68	65	133
		% within Kategorisiert nach Valenz	51,1%	48,9%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	73,1%	65,7%	69,3%
		% of Total	35,4%	33,9%	69,3%
	neutral	Count	11	7	18
		% within Kategorisiert nach Valenz	61,1%	38,9%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	11,8%	7,1%	9,4%
		% of Total	5,7%	3,6%	9,4%
	negative Valenz	Count	14	27	41
		% within Kategorisiert nach Valenz	34,1%	65,9%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	15,1%	27,3%	21,4%
		% of Total	7,3%	14,1%	21,4%
Total	Count		93	99	192
	% within Kategorisiert nach Valenz		48,4%	51,6%	100,0%
	% within Gruppe (Kontroll, Versuch, pos, neg)		100,0%	100,0%	100,0%
	% of Total		48,4%	51,6%	100,0%

Appendix 3 - Distribution of the estimation of societal opinion

Experimental group

Schätzung nach Valenz * Gruppe (Kontroll, Versuch, pos, neg) Crosstabulation

			Gruppe (Kontroll, Versuch, pos, neg)		Total
			Stereotyp positiv	Stereotyp negativ	
Schätzung nach Valenz	positive Valenz	Count	38	46	84
		% within Schätzung nach Valenz	45,2%	54,8%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	43,2%	48,4%	45,9%
		% of Total	20,8%	25,1%	45,9%
	neutral	Count	27	25	52
		% within Schätzung nach Valenz	51,9%	48,1%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	30,7%	26,3%	28,4%
		% of Total	14,8%	13,7%	28,4%
	negative Valenz	Count	23	24	47
		% within Schätzung nach Valenz	48,9%	51,1%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	26,1%	25,3%	25,7%
		% of Total	12,6%	13,1%	25,7%
Total			Count	88	95
			% within Schätzung nach Valenz	48,1%	51,9%
			% within Gruppe (Kontroll, Versuch, pos, neg)	100,0%	100,0%
			% of Total	48,1%	51,9%

Control group

Schätzung nach Valenz * Gruppe (Kontroll, Versuch, pos, neg) Crosstabulation

			Gruppe (Kontroll, Versuch, pos, neg)		Total
			Kontrolle positiv	Kontrolle negativ	
Schätzung nach Valenz	positive Valenz	Count	35	39	74
		% within Schätzung nach Valenz	47,3%	52,7%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	37,2%	39,8%	38,5%
		% of Total	18,2%	20,3%	38,5%
	neutral	Count	34	26	60
		% within Schätzung nach Valenz	56,7%	43,3%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	36,2%	26,5%	31,3%
		% of Total	17,7%	13,5%	31,3%
	negative Valenz	Count	25	33	58
		% within Schätzung nach Valenz	43,1%	56,9%	100,0%
		% within Gruppe (Kontroll, Versuch, pos, neg)	26,6%	33,7%	30,2%
		% of Total	13,0%	17,2%	30,2%
Total			Count	94	98
			% within Schätzung nach Valenz	49,0%	51,0%
			% within Gruppe (Kontroll, Versuch, pos, neg)	100,0%	100,0%
			% of Total	49,0%	51,0%

Appendix 4 – Spearman’s Rho Correlation Matrix for Associations Between Sociodemographic Characteristics and Key Outcome Variables

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1. age	-																	
2. subj. age	,572**	-																
3.onset of age	,122*	-,118*	-															
4. GEN	,027	-,042	-,005	-														
5. GI	-,021	,148**	-,036	,352**	-													
6. NC	-,025	-,058	,038	,336**	,144**	-												
7. PBI	,137**	,137**	-,060	,458**	,424**	,257**	-											
8. MOT	,052	-,066	,095	,511**	,296**	,426**	,340**	-										
9. CCW	,006	,129*	-,017	,327**	,344**	,166**	,414**	,338**	-									
10. EA	-,007	,076	-,081	,345**	,394**	,150**	,570**	,312**	,470**	-								

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
11. donation amount	,019	,032	,083	,129*	,114*	,126*	,155**	,105*	,106*	,213**	-							
12. condition	,052	-,034	,097	-,090	-,019	,015	-,069	-,024	,001	,005	-,024	-						
13. valence	-,022	-,029	,014	-,040	-,036	,057	,007	,045	,059	,012	,015	-,003	-					
14. education	,047	,028	,013	,204**	,151**	-,090	,146**	,028	-,015	,179**	,098	-,038	,040	-				
15. sex	,001	,009	-,165**	-,029	,043	-,087	-,128*	-,071	-,131*	-,041	-,042	-,011	-,011	-,050	-			
16. subj. Health	-,064	-,156**	,104	,064	,022	,075	,079	,172**	-,039	,090	,166**	-,119*	,046	,189**	,001	-		
17. income	-,146**	-,046	-,127*	,077	,135*	-,147**	-,009	,024	-,035	,161**	,247**	-,018	-,115*	,173**	,196**	,188**	-	
18. employ- ment status	,646**	,407**	,133*	-,022	-,068	-,025	,078	-,058	-,014	-,012	-,050	,072	,044	-,063	-,044	-,164**	-,247**	-

* p < 0.5, ** p < .01

Appendix 5 – Assumption Checks

Hypothesis 1

Prior to conducting the ANOVA, its assumptions were examined. The normality of residuals was tested using the Shapiro–Wilk test, and the homogeneity of variances was assessed using Levene’s test. The Shapiro–Wilk test indicated significant deviations from normality across all groups ($p < .001$), suggesting non-normally distributed residuals. However, since the ANOVA is considered robust to moderate violations of the normality assumption when group sizes are approximately equal and sample size is sufficient ($N = 377$), the analysis was deemed appropriate (Blanca et al., 2017). Levene’s test revealed a significant result ($p = .024$), indicating unequal variances among groups. This violation should be taken into account when interpreting the results, as it can affect statistical power and error rates. In addition, robust procedures were performed.

Hypothesis 2

The Levene test revealed no significant variance heterogeneity ($p = .699$), thus fulfilling the assumption of variance homogeneity. Examination of the residuals revealed a significant deviation from normal distribution (Shapiro–Wilk $p < .001$). A visual inspection showed a left skew (skewness = -1.12 , kurtosis = 0.96). Since the group sizes were approximately equally distributed and ANOVA is considered robust against moderate violations of the normal distribution assumption (Field, 2018), the analysis was nevertheless continued.

Hypothesis 3

The Levene test indicated homogeneity of variances ($p = .410$). The Shapiro–Wilk test revealed a significant deviation from normality ($p < .001$), and the distribution was slightly left-skewed (skewness = -0.505 , kurtosis = -0.595). However, as with the previous hypotheses, the analysis was performed as planned due to the robustness of the ANOVA (Field, 2018).

Hypothesis 4

The Levene test revealed no significant differences in variances ($p = .573$), but the Shapiro–Wilk test indicated a significant deviation from normal distribution ($p < .001$), with a negative skewness (-1.185) and a slight underestimation of the marginal distribution (kurtosis = -0.796). Due to the known robustness of ANOVA to such violations of the normal distribution assumption (Field, 2018), the analysis was nevertheless performed.

Appendix 6 – Exploratory data analysis with non-significant results

Moderator: Group Identification

None of the dependent variables showed a significant interaction effect between trial group (condition) and group identification. Thus, the effect on donation amount ($p = .821$), pro-ecological behavioral intention ($p = .693$), environmental attitudes ($p = .252$), and concerns about climate change ($p = .705$) was not significant. However, a main effect of group identification itself was found on pro-ecological behavioral intention ($p < .001$) as well as on environmental attitudes ($p < .001$) and climate change concerns ($p = .001$), indicating that individuals with higher identification report stronger pro-ecological attitudes and intentions regardless of group membership.

Moderator: Own opinion on the statements (Manipulation Check 1)

In addition, it was examined whether personal agreement with the statements, which was assessed prior to the experimental manipulation, influenced the relationship between group membership and the dependent variables. The interaction effects remained insignificant in all models (donation amount: $p = .960$; motivation: $p = .413$; environmental attitudes: $p = .747$; climate change concerns: $p = .082$). However, a significant main effect of personal opinion was found for pro-ecological behavioral intention ($p = .008$), as well as a marginally significant effect for climate change concerns ($p = .050$). This suggests that individuals who agreed more

strongly with the statements reported higher pro-ecological attitudes regardless of the group condition.

Moderator: Estimation of society's opinion (Manipulation Check 2)

The subjective estimation of the opinion held by the majority of society was also examined as a moderator variable. No significant interaction effects were found between group membership and this assessment for the donation amount ($p = .663$), motivation ($p = .686$), environmental attitudes ($p = .555$), or climate change concerns ($p = .122$). Thus, the perception of majority social opinions does not appear to influence the relationship between the experimental condition and pro-ecological outcomes.

Appendix 7 – Open response format for manipulation checks 1 and 2

Manipulations Check 1- Nein, ich denke die Zustimmung in der Gesellschaft ist anders verteilt und zwar aus folgendem Grund:

Der ganze menschengemachte Klimawandel ist eine gesteuerte Hysterie von einigen sehr Intelligenten Leuten entworfen um Geld abzusaugen.

Zu optimistisch, keine Entsprechung in der Realität

Ich glaube, die Leute denken, dass das Radio einheitlicher ist und dass die Vielfalt auf den Streaming-Diensten zu finden ist.

Jeder jammert, dass im Radio ständig die gleiche Musik läuft

Viele Menschen behaupten oft das Gegenteil davon, wie sie dann tatsächlich handeln.

Ich kenne leider viele Leugner des Klimawandels

Das Verantwortungsbewusstsein älterer Menschen wird unterschätzt

In jeder Altersgruppe gibt es die unterschiedlichsten Meinungen und Einstellungen.

Ich sehe, dass viele Menschen anders agieren als ich und infolgedessen eine andere Haltung haben

Parallel zu der Einschätzung mir geht es gut aber der Gesellschaft/dem Land geht es schlecht

Schwierig das Radio (welche Sender ?) mit Medien (Plural - welche Medien gehören dazu?) verglichen wird...

Unterschied intuitiver Empfindung, verstandesmäßiger Einsicht und Willenskraft zur Änderung von Gewohnheiten

weil es genügend unterscheidliche Quellen gibt

Sehe keine Abbildung

Viele Menschen denken nur an sich...

ohne Berücksichtigung der befragten Altersgruppe lässt sich die Aussage nicht einschätzen und wie wird "ältere" Bevölkerung definiert?

Die Fragenkombi "leugnen und nicht genug tun" ist falsch. Ich glaube, die Mehrheit leugnet nicht, tut aber dennoch nicht genug.

Sehe keine Abbildung

Es für alle passende Angebote gibt

Viele Menschen antworten eher negativ, wenn zweifel

Quellenangabe?

Den menschengemachten Klimawandel gibt es nicht. Es ist eine Hysterie, die von oben gesteuert ist.

Umfragen und Statistiken sind nur bedingt für jeden und alles wahr.

Keine Abbildung

Ich erlebe es im persönlichen Umfeld anders

Allgemeine Unzufriedenheit, egal welches Thema

Das Abstimmungsverhalten wird vom bevorzugt benützten Medium beeinflusst

Manipulations Check 2 - Nein, ich stimme der Aussage nicht zu und zwar aus folgendem Grund:

Da ich jeden Tag Radio höre

Alles Lügen

Die zustimmung mag so verteilt sein, es fehlt am Handeln

Die Mehrheit ist nur dumm. Fällt auf Mainstream Propaganda und Agendas herein, da es im Fernsehen ständig wiederholt wird.

Nachdem Klima ein globales Thema ist, betrifft es alle und jeder ist verantwortlich.

weil sie nicht stimmt, es gibt ja viele Sender

Weil es nicht stimmt, dass den älteren der Klimawandel egal ist. Ältere verbrauchen weniger Ressourcen

Wie oben

die Aussage der Mehrheitsbevölkerung basiert auf subjektiven Meinungen

Ich glaube, dass das Radio einheitlicher ist und dass die Vielfalt auf den Streaming-Diensten zu finden ist.

Gibt viele Möglichkeiten Musik zu streamen

Die Menschen sind egoistisch und schlecht informiert

damit meine Angaben konsistent sind

Mit meiner Generation hat der Umweltschutz angefangen. Wir kämpften für den Erhalt von Naturflächen, den Verbot von FCKW, setzten uns für Abfalltrennung

ein, machten Bio gesellschaftsfähig, gründeten die ersten politischen Parteien, die sich für den Umweltschutz einsetzten. Warum ich nicht an Demos etc. teilnehme, ist, daß ich glaube, wir müssen durch unser persönliches Handeln und den Verzicht die Umwelt schützen. Gesetze sind ganz gut und schön. Aber es liegt an uns selbst. Und Straßensperren oder das Beschmutzen von Kulturgüter macht keine Gesetze. Dafür braucht es die breite Unterstützung der Bevölkerung. Und die bekommt man nicht, in dem man die normale Bevölkerung gegen sich gegen sich aufbringt. Wir brauchen Einigkeit, keine Schuldzuweisungen

Jeder jammert, dass im Radio ständig die gleiche Musik läuft + die ältere Generation hat nichts mit digitalen Medien am Hut

da das Medienangebot im Bezug auf Musik sehr groß ist

Ich höre nicht viel Radio aber es spielt immer dieselben lieder

weil man Radiosender selbst einstellen kann

{EM_BEAMING_FACE_WITH_SMILING_EYES}

"Älteren" Menschen ist Nachhaltigkeit eher ein Anliegen

Weil sehr viele ältere Menschen sich aktiv engagieren

Man geht vielleicht nicht auf Demos, weil Demos nichts nützen, aber im Alltagsleben kann man viel für die Umwelt tun: kein Auto haben, Müll trennen, so wenig heizen, wie möglichen, Strom sparen.

Abhängig vom Bildungsgrad

Ich denke, alle Generationen beschäftigt der Klimawandel

Ich denke, dass die wenigsten bewusst einen bevorzugten Sender suchen, sondern die Mainstream-Sender eingestellt haben und sich dann über das Musikangebot beschweren

Es gibt viele verschiedene Musiksender

Es gibt so viele Radiosender, wenn man sucht

man hält unsere generation für klimapolitische fehler verantwortlich. andererseits haben gerade wir viel mehr zeit, um uns zu informieren und weiter zu bilden

Klimaschutz ist enorm wichtig

Ich kann es egal nicht ändern und so schlimm ist es ja gar nicht

ich glaube es gibt verschiedene faktoren, nicht nur das alter, die die aussagen bestimmen

Ich mache mir selbst ein Bild und dementsprechend rechten Tendenzen von Politik und Gesellschaft machen mir massiv Angst

Klimawandel findet statt, und es muss reagiert werden.

Wer sucht, der findet. Wir haben eine tolle Auswahl an Musikangeboten (Swiss Jazz, Swiss Klassik, Klassik Radio, FM4, Regionalsender)

Ideologien sind heutzutage verbreitet in den Köpfen der Gesellschaft

Radio ist vielfältig

Unterschied intuitiver Empfindung, verstandesmäßiger Einsicht und Willenskraft zur Änderung von Gewohnheiten

ich habe genügend Wahlmöglichkeiten

Niemand kennt genau die Auswirkungen der Umwelt, Wetterkapriolen gab es schon vor 100 Jahren - also was?

kenne viele andere Meinungen

Ich glaube ich bin eher eine Ausnahme in meiner Altersgruppe

Mehrheit muß nicht immer Recht haben

Ich weiß, dass es ein vielfältiges musikangebot in den medien gibt

Man ist eher gewillt, auf klimaschädliche Unternehmungen zu verzichten wie Flüge, Autos mit hohem Spritverbrauch, trennt Müll meist besser, geht achtsamer mit Ressourcen um.

Die Mehrheit meiner Generation ist über div. Radiomöglichkeiten (DAB, Internet) nicht informiert

Siehe vorherige Antwort

Zustimmung zu welcher Aussage?

Weil es sehr viele Möglichkeiten gibt

Ich habe keine Aussage vorliegen

Ich glaube, dass die Auffassung nicht stimmt.

Ich bin mir meiner Meinung aicher

Da ich anderer Meinung bin

Internetradio bietet viele Optionen

siehe oben

Viele ältere Menschen wollen konsumieren und keine Abstriche an ihrem Lebensstandard machen.

Ich erlebe das anders.

Siehe Frage und Antwort zur Aussage

Was soll eine Mehrheitsbevölkerung sein?

Weil die Medien eine gute Musikauswahl bieten. Es ist an jedem selbst, sie zu nutzen.

Umfragen zeigen eine Momentaufnahme

Keine Quellenangabe, somit keine Glaubwürdigkeit. Statistik könnte gefälscht/unseriös sein.

Keine Abbildung

Erfahrungen mit meinen Alterskollegen

Höre oe1 und fm4, das Angebot dort finde ich vielfältig

Die Personen, die so antworten, haben sich vermutlich nie die Mühe gemacht, sich einen passenden Sender zu suchen. Das Angebot reicht von Klassik über modernen Pop über Indi über Schunkelvolksmusik bis zu religiösen Inhalten. Alle Sprachen. Da wird wohl für jeden was dabei sein.

Jeder kann für sich entscheiden, was er hören will und welche Quelle er nutzt.

Weil ich meine Medien selbstbestimmt wähle

Siehe oben

Appendix 8 – Questionnaire

Teilnehmer*inneninformation und Einwilligungserklärung zur Teilnahme an der Studie:

„Soziale Wahrnehmung und individuelle Einstellungen“

Sehr geehrte*r Teilnehmer*in,

wir laden Sie ein, an der oben genannten Studie teilzunehmen.

Ihre Teilnahme an dieser Studie erfolgt freiwillig. Sie können jederzeit, ohne Angabe von Gründen, Ihre Bereitschaft zur Teilnahme zurückziehen. Die Ablehnung der Teilnahme oder ein vorzeitiges Ausscheiden aus dieser Studie hat keine nachteiligen Folgen für Sie.

Diese Art von Studien ist notwendig, um verlässliche neue wissenschaftliche Forschungsergebnisse zu gewinnen. Unverzichtbare Voraussetzung für die Durchführung von Studien ist jedoch, dass Sie Ihr Einverständnis zur Teilnahme an dieser Studie schriftlich erklären. Bitte lesen Sie den folgenden Text sorgfältig durch und zögern Sie nicht, Fragen zu stellen. Bei Fragen können Sie sich gerne an mich unter der E-Mail-Adresse studien.altern.psychologie@univie.ac.at wenden.

Bitte unterschreiben Sie die Einwilligungserklärung nur

- wenn Sie Art und Ablauf der Studie vollständig verstanden haben,
- wenn Sie bereit sind, der Teilnahme zuzustimmen und
- wenn Sie sich über Ihre Rechte als Teilnehmer*in an dieser Studie im Klaren sind.

1. Was ist der Zweck der Studie?

Der Zweck der Studie ist es, die Bedeutung gesellschaftlicher Themen aus der Perspektive unterschiedlicher Gruppen zu untersuchen.

2. Wie läuft die Studie ab?

Die Teilnahme an dieser anonymen Online-Studie erfolgt von zu Hause aus vorzugsweise am Computer, am Smartphone oder am Tablet, wobei eine Internetverbindung notwendig ist. Der Zeitaufwand beträgt insgesamt ca. 15 Minuten. Zunächst beantworten Sie einige allgemeine Fragen zu Ihrer Person. Anschließend wird Ihnen ein gesellschaftliches Thema präsentiert, zu dem Sie Ihre

Zustimmung oder Ablehnung angeben und die Zustimmung oder Ablehnung anderer Personen einschätzen, gefolgt von Fragen zu Ihren allgemeinen Einstellungen und Verhalten. Am Schluss bekommen Sie detaillierte Informationen über das Projekt.

3. Worin liegt der Nutzen einer Teilnahme an der Studie?

Mit der Teilnahme an dieser Studie tragen Sie zum Erkenntnisgewinn darüber bei, wie verschiedene Gruppen die Bedeutung gesellschaftlicher Themen wahrnehmen.

4. Gibt es Risiken bei der Durchführung der Studie und ist mit Beschwerden oder anderen Begleiterscheinungen zu rechnen?

Die Teilnahme an der Studie ist mit keinen bekannten Risiken verbunden und es ist mit keinerlei Beschwerden oder anderen Begleiterscheinungen zu rechnen.

5. Hat die Teilnahme an der Studie sonstige Auswirkungen auf die Lebensführung und welche Verpflichtungen ergeben sich daraus?

Die Teilnahme an der Studie ist mit keinen Auswirkungen auf die Lebensführung verbunden. Es ergeben sich für Sie durch die Teilnahme an der Studie keine weiteren Verpflichtungen.

6. Was ist zu tun beim Auftreten von Beschwerdesymptomen, unerwünschten Begleiterscheinungen und/oder Verletzungen?

Durch die Teilnahme an der Studie sind keine Beschwerdesymptome, unerwünschte Begleiterscheinungen oder Verletzungen zu erwarten. Informationen zu Kontaktpersonen sind Punkt 10 zu entnehmen.

7. Wann wird die Studie vorzeitig beendet?

Sie können Ihre Teilnahme an der Studie jederzeit, auch ohne Angabe von Gründen widerrufen und abbrechen. Der Abbruch ist für Sie mit keinen Nachteilen verbunden. Auch seitens der Studienleitung kann Ihre Teilnahme an der Studie vorzeitig abgebrochen werden, wenn Sie den Erfordernissen der Studie (z.B. Alter) nicht entsprechen.

8. In welcher Weise werden die im Rahmen dieser Studie gesammelten Daten verwendet?

Bei dieser Studie bleibt Ihre Anonymität gewahrt, da keine personenbezogenen Daten wie Namen oder Ähnliches erhoben werden, welche direkte Rückschlüsse auf Ihre Identität ermöglichen würden. Falls Sie trotzdem eine Löschung Ihrer Daten beantragen möchten, schicken Sie bitte bis spätestens 07.03.2025 das Datum und die Uhrzeit Ihrer Teilnahme per E-Mail an studien.altern.psychologie@univie.ac.at

mit der Bitte um Löschung der zu diesem Zeitpunkt erhobenen Daten. Die Weitergabe der anonymisierten Daten erfolgt ausschließlich zu statistischen Zwecken, und die Daten werden nach 10 Jahren gelöscht. Am Ende der Studie erhalten Sie die Möglichkeit, an einer Lotterie (Punkt 9) teilzunehmen. Hierfür benötigen wir zur Kontaktaufnahme die Angabe Ihrer E-Mail Adresse. Diese wird separat von den Daten gespeichert, kann nicht in Zusammenhang mit Ihren anonymisierten Daten in Verbindung gebracht werden, wird nicht an Dritte weitergegeben und wird nach der Lotterie gelöscht. Nur das an der Studie mitwirkende Personal hat Zugang zu den Daten, welche auf einem durch eine Firewall geschützten Server der Universität Wien liegen.

9. Entstehen für die Teilnehmer*innen Kosten? Gibt es einen Kostenersatz oder eine Vergütung?

Die Teilnahme an der Studie ist für Sie mit keinen Kosten verbunden, und es gibt keine Vergütung. Jedoch können Sie freiwillig im Rahmen der Studie an einer Lotterie teilnehmen. Unter allen Teilnehmenden wird zufällig eine Person ausgewählt, die 50€ gewinnen kann.

10. Möglichkeit zur Diskussion weiterer Fragen

Bitte wenden Sie sich an die Projektleiterin, falls Sie weitere Fragen im Zusammenhang mit der Studie haben. Fragen, die Ihre Rechte als Teilnehmer*in an der Studie betreffen, werden Ihnen selbstverständlich beantwortet:

- Hiermit bestätige ich, dass ich die Teilnehmer*inneninformation gelesen und verstanden habe und einverstanden bin, an der Studie teilzunehmen.
- Ich lehne die Teilnahme an der Studie ab (dies führt zur Beendigung der Studie).

(Geschlecht)

Welches Geschlecht haben Sie?

- ☐ weiblich
- ☐ männlich
- ☐ divers

(Alter)

Wie alt sind Sie?

Ich bin _____ Jahre

(Beruflicher Bildungsabschluss)

Welchen beruflichen Bildungsabschluss haben Sie?

Bitte wählen Sie den höchsten Bildungsabschluss, den Sie bisher erreicht haben.

- ☐ Kein beruflicher Ausbildungsabschluss
- ☐ Beruflich-betriebliche Anlernzeit mit Abschlusszeugnis, aber keine Lehre
- ☐ Teilfacharbeiterabschluss
- ☐ Abgeschlossene kaufmännische Lehre
- ☐ Berufliches Praktikum, Volontariat
- ☐ Berufsfachschulabschluss
- ☐ Fachschulabschluss
- ☐ Meister-, Techniker- oder gleichwertiger Fachschulabschluss
- ☐ Fachhochschulabschluss
- ☐ Hochschulabschluss
- ☐ Anderer Abschluss, und zwar: _____

(Erwerbstätigkeit)

Sind Sie momentan erwerbstätig?

- ☐ Ja, ich bin erwerbstätig.
- ☐ Nein, ich bin arbeitslos.
- ☐ Nein, ich bin Rentner*in.
- ☐ Nein, ich bin Hausfrau oder Hausmann.
- ☐ Ich bin nichts von alledem.

(Einkommen)

Wie hoch ist ungefähr Ihr monatliches Haushalts-Nettoeinkommen?

Gemeint ist der Betrag, der sich aus allen Einkünften (z.B. auch Pensionszahlungen) des gesamten Haushalts zusammensetzt und nach Abzug der Steuern und Sozialversicherungen übrigbleibt.

- ☐ Ich habe kein eigenes Einkommen
- ☐ weniger als 250 €
- ☐ 250 € bis unter 500 €
- ☐ 500 € bis unter 1000 €

- 1000 € bis unter 1500 €
- 1500 € bis unter 2000 €
- 2000 € bis unter 2500 €
- 2500 € bis unter 3000 €
- 3000 € bis unter 3500 €
- 3500 € bis unter 4000 €
- 4500 € bis unter 5000 €
- 5000 € bis unter 6000 €
- 6000 € bis unter 7000 €
- 7000 € bis unter 8000 €
- 8000 € bis unter 9000 €
- 9000 € oder mehr
- Ich will darauf nicht antworten

(Manipulation 1)

Jeder Mensch hat bestimmte Vorstellungen, inwiefern ältere Menschen zum Thema Klimawandel stehen. Im Folgenden werden jeweils zwei Aussagen gegenübergestellt. Hierzu möchten wir Ihre Meinung wissen.

Wenn Sie eher der linken Aussage zustimmen, kreuzen Sie bitte ein Kästchen auf der linken Seite an, und zwar umso weiter links, je stärker Sie dieser Aussage zustimmen. Wenn Sie eher der rechten Aussage zustimmen, kreuzen Sie bitte ein Kästchen auf der rechten Seite an.

Ältere Menschen leugnen
den Klimawandel und tun
nicht genug, um diesen
zu stoppen.

○ ○ ○ ○ ○ ○ ○ ○

Klimawandel ist ein
wichtiges Anliegen
für ältere Menschen
und sie geben ihr
Bestes, um unsere
Erde zu retten.

Kontrollbedingung

Im Radio wird
immer wieder die gleiche
Musikrichtung gespielt.

○ ○ ○ ○ ○ ○ ○ ○

In den Medien
findet sich für jeden
Musikgeschmack ein
passendes Angebot.

(Manipulation 2)

Und welche Meinung zu den beiden gezeigten Aussagen haben andere Menschen in unserer Gesellschaft? Schätzen Sie bitte ein!

Bitte nutzen Sie den unten abgebildeten Schieberegler, um die prozentuelle Verteilung in der Gesellschaft anzugeben. Wenn Sie denken, die gesellschaftliche Zustimmung ist höher für die linke Aussage, dann schieben Sie den Regler nach links (so weit nach links, wie Sie glauben, dass die Meinungen in diese Richtung gehen). Denken Sie die Zustimmung ist höher für die rechte Aussage, dann schieben Sie den Regler so weit wie nötig nach rechts.

Ältere Menschen leugnen den Klimawandel und tun nicht genug, um diesen zu stoppen.

50%

Klimawandel ist ein wichtiges Anliegen für ältere Menschen und sie geben ihr Bestes, um unsere Erde zu retten.

Kontrollbedingung

Ältere Menschen leugnen den Klimawandel und tun nicht genug, um diesen zu stoppen.

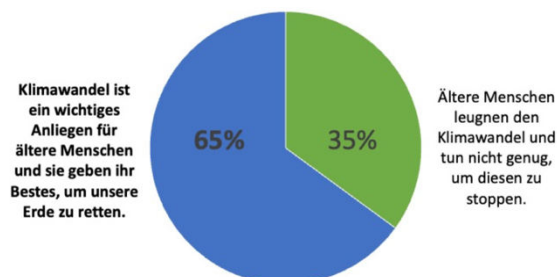
50%

Klimawandel ist ein wichtiges Anliegen für ältere Menschen und sie geben ihr Bestes, um unsere Erde zu retten.

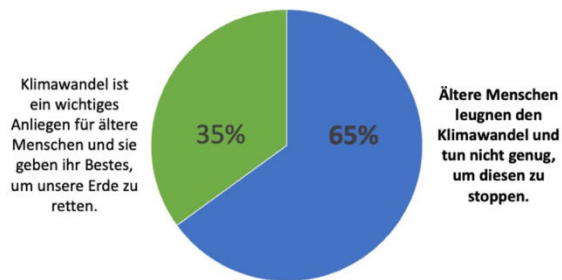
(Manipulation 3 – SCF)

Eine aktuelle Umfrage hat ergeben, dass die Zustimmung zu den Aussagen in der Gesellschaft folgendermaßen verteilt ist:

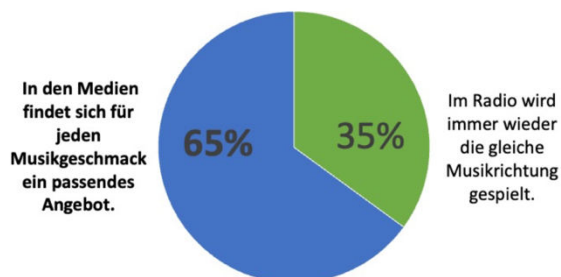
Experimentalbedingung – positive Klimastereotype



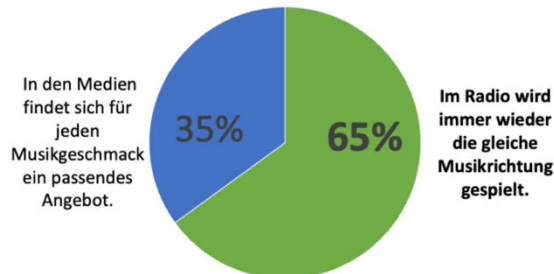
Experimentalbedingung – negative Klimastereotype



Kontrollbedingung 1 (positive Valenz)



Kontrollbedingung 2 (negative Valenz)



(Comprehension Check)

Laut einer aktuellen Umfrage stimmt die Mehrheit der Bevölkerung welcher Aussage zu?

- Klimawandel ist ein wichtiges Anliegen für ältere Menschen und sie geben ihr Bestes, um unsere Erde zu retten.
- Ältere Menschen leugnen den Klimawandel und tun nicht genug, um diesen zu stoppen.

Kontrollbedingung

- In den Medien findet sich für jeden Musikgeschmack ein passendes Angebot.
- Im Radio wird immer wieder die gleiche Musikrichtung gespielt.

(Lottery – Environmental Behavior Engagement)

Sie erhalten nun die Möglichkeit 50€ zu gewinnen.

Sie können einen Teil oder den gesamten Betrag an eine Umweltschutz-Organisation Ihrer Wahl spenden. Mögliche Organisationen finden Sie nachfolgend in einer Liste, Sie können aber auch eine eigene, nicht gelistete Organisation angeben.

Geben Sie bitte unten an, wie viel Sie spenden und wie viel Sie selbst behalten möchten. Selbstverständlich können Sie auch den gesamten Betrag behalten.

Unter allen Studienteilnehmer*innen wird zufällig eine Person ausgewählt, deren Betrag wie angegeben überwiesen wird. Ihre Angabe hat keinen Einfluss auf die Gewinnwahrscheinlichkeit.

Geben Sie nun an, wie viel Sie von Ihrem möglichen Gewinn spenden bzw. selbst erhalten möchten.

Spendenbetrag

Ich möchte folgenden Betrag spenden: _____ €

Ich möchte folgenden Betrag selbst behalten: _____ €

Summe 50 €

Hier finden Sie die Liste an Organisationen.

Klicken Sie die jeweilige Organisation an, an welche Sie spenden möchten. Wenn Sie den gesamten Betrag behalten möchten, wählen Sie bitte den letzten Punkt „Ich möchte nicht spenden“. Weiter unten können Sie sich auch eine kurze Information zu den jeweiligen Organisationen durchlesen.

Ich möchte an folgende Organisation spenden:

- ☐ Alpenverein
- ☐ ARCHE NOAH
- ☐ BirdLife Österreich
- ☐ Fridays For Future Österreich
- ☐ GLOBAL 2000

- GREENPEACE Österreich
- Jane Goodall Institute Austria
- Jugend-Umwelt-Plattform JUMP
- Nationalparks Austria – Ranger
- Naturfreunde Österreich
- Naturparke Österreich
- Naturschutzbund Österreich
- World Wide Fund for Nature (WWF)
- WWOOF Österreich – Netzwerk für freiwillige Helfer auf biologischen Höfen
- Sonstige: _____
- Ich möchte nicht spenden.

Die Beschreibungen der Organisationen dienen nur als Hilfestellung. Sie sind nicht verpflichtet, diese durchzulesen.

(Proenvironmental Behavior Intention - PBI)

Wie oft wollen Sie die folgenden Verhaltensweisen in den nächsten drei Monaten ausführen?

5 Minuten oder kürzer duschen

Öffentliche Verkehrsmittel oder Fahrgemeinschaften nutzen, anstatt das Auto zu benutzen

Nachts den Stecker von Geräten und Ladegeräten (z.B. Fernseher, Handy, Computer) ziehen

Ökologische Produkte statt normaler Produkte (z.B. Spülmittel) kaufen, auch wenn sie mehr kosten

An Kundgebungen, öffentlichen Veranstaltungen oder Versammlungen teilnehmen, um meine Unterstützung für die Lösung von Umweltproblemen zum Ausdruck zu bringen

Briefe schreiben, E-Mails schreiben, anrufen oder anderweitig Kontakt mit gewählten Vertreter*innen aufnehmen, um sie zu drängen, Maßnahmen in Umweltfragen zu ergreifen (z.B. Verlust von Lebensräumen, Luftverschmutzung)

Nie	Sehr selten	Selten	Hin und wieder	Häufig	Immer
○	○	○	○	○	○

(Willingness to Act - WTA)

Wie sehr stimmen Sie folgender Aussage zu?

Ich bin bereit, höhere Steuern zu zahlen, um den Klimawandel zu bekämpfen.

Trifft
gar
nicht zu

☐

☐

☐

☐

☐

☐

☐

Trifft
voll und
ganz zu

(Environmental Attitude and Beliefs - EA)

Als Nächstes werden wir Ihnen einige Fragen zu Ihrer Einstellung zu Umweltthemen stellen. Es gibt keine richtigen oder falschen Antworten - wir wollen nur hören, was Sie denken.

- ☐ Die sogenannte "globale Erwärmungskrise", mit der die Menschheit konfrontiert ist, wird stark übertrieben.
- ☐ Die vom Menschen verursachte globale Erwärmung findet statt.
- ☐ Ich halte es für wichtig, die Umwelt für künftige Generationen zu erhalten.
- ☐ Ich bin für nationale Politiken und Vorschriften, die die Verbrennung fossiler Brennstoffe verringern, auch wenn dadurch die heutigen Energie- und Stromkosten steigen.
- ☐ Ich fühle mich dafür verantwortlich, meinen persönlichen Beitrag zum Klimawandel zu reduzieren.

Trifft
gar
nicht zu

☐

☐

☐

☐

☐

☐

☐

Trifft
voll und
ganz zu

(Climate Change Worries – CCW)

Wie sehr stimmen Sie folgenden Aussagen zu?

- Ich fühle mich ängstlich, wenn ich an die Auswirkungen des Klimawandels auf mein Leben denke.
- Ich mache mir Sorgen über die Auswirkungen des Klimawandels auf jüngere Mitglieder (unter 18) meiner Familie.
- Ich mache mir Sorgen über die Auswirkungen des Klimawandels auf ältere Mitglieder (über 60) meiner Familie.

Trifft
gar
nicht zu

Trifft
voll und
ganz zu

○ ○ ○ ○ ○ ○ ○

(Social and Ecological Generativity – GEN)

Wie sehr treffen die folgenden Aussagen auf Sie zu?

- Ich engagiere mich politisch und gesellschaftlich für die Umwelt.
- Ich bewirke positive Veränderungen in der Gesellschaft oder in der Umgebung.
- Ich vermittele anderen Menschen soziale, politische oder kulturelle Werte.

Trifft
gar
nicht zu

Trifft
voll und
ganz zu

○ ○ ○ ○ ○ ○ ○

(Motivation – MOT)

Schätzen Sie ein!

Wie wichtig ist es Ihnen ...

... etwas Gutes für die Gesellschaft zu tun?

... sich um die Natur und die Umwelt zu kümmern?

... Ihre Erfahrungen an jüngere Menschen weiterzugeben?

... jüngeren Menschen soziale Werte (z.B. Hilfsbereitschaft) zu vermitteln?

... ein Vorbild für jüngere Menschen zu sein?

Gar
nicht
wichtig

Sehr
wichtig

☐ ☐ ☐ ☐ ☐ ☐ ☐

(Nature Connectedness – NC)

Bitte beantworten Sie auch diese Fragen zu Ihrer Beziehung zur Natur.

- ☐ Mein idealer Urlaubsort wäre ein abgelegener Ort in der Wildnis.
- ☐ Ich denke immer daran, wie mein Handeln die Umwelt beeinflusst.
- ☐ Meine Verbindung zur Natur und zur natürlichen Umwelt ist Teil meiner Spiritualität.
- ☐ Ich bemerke die Tier- und Pflanzenwelt, wo auch immer ich bin.
- ☐ Meine Beziehung zur Natur ist ein wichtiger Bestandteil meiner Identität.
- ☐ Ich fühle mich mit allen Lebewesen und der Erde sehr verbunden.

Trifft
gar
nicht zu

Trifft
voll und
ganz zu

☐ ☐ ☐ ☐ ☐ ☐ ☐

(Group Identification and Environmental-Age-Stereotypes – GI)

Geben Sie bitte an, inwieweit Sie den folgenden Aussagen zustimmen.

- ☐ Ich identifiziere mich mit Menschen mit meinem Alter.
- ☐ Ich fühle starke Bindungen zu Menschen in meinem Alter.
- ☐ Ich bin anders als Menschen in meinem Alter.
- ☐ Ich habe ein Zugehörigkeitsgefühl zu Menschen in meinem Alter.

- Als ältere Person sehe ich mich in der Verantwortung, etwas gegen den Klimawandel zu unternehmen.
- Andere Menschen sehen ältere Generationen in der Verantwortung, etwas gegen den Klimawandel zu unternehmen,
- Meiner Meinung nach liegt es in der Verantwortung älterer Menschen, etwas gegen den Klimawandel zu unternehmen.

Trifft gar nicht zu	Trifft nicht zu	Trifft eher nicht zu	Weder noch	Trifft eher zu	Trifft zu	Trifft voll und ganz zu
○	○	○	○	○	○	○

(Subjective Age (1) – subjAge_group)

Ab welchem Alter würden Sie eine Person als “alt” bezeichnen?

Ab _____ Jahren.

(Subjective Age (2) – subjAge_self)

Menschen können sich jünger oder älter fühlen als sie sind. Wie ist dies bei Ihnen die meiste Zeit?

Ich fühle mich als wäre ich _____ Jahre alt.

(Subjective Health – health)

Wie bewerten Sie Ihren derzeitigen Gesundheitszustand?

Sehr schlecht	Schlecht	Eher schlecht	Neutral	Eher gut	Gut	Sehr gut
------------------	----------	------------------	---------	----------	-----	----------

○ ○ ○ ○ ○ ○ ○

(Manipulation Check)

Wir haben Ihnen in einer Abbildung die Ergebnisse einer Umfrage zur Zustimmung zu einer Aussage in der Gesellschaft präsentiert.

Halten Sie die Ergebnisse für realistisch?

- Ja, ich denke so ist die Zustimmung in der Gesellschaft verteilt.
- Ich weiß es nicht.
- Nein, ich denke die Zustimmung in der Gesellschaft ist anders verteilt und zwar aus folgendem Grund: _____

Stimmen Sie der Aussage der Mehrheitsbevölkerung zu?

- Ja, ich stimme der Aussage der Mehrheitsbevölkerung zu.
- Ich weiß es nicht.
- Nein, ich stimme der Aussage nicht zu und zwar aus folgendem Grund:

(Teilnahme Lotterie)

Wie bereits erwähnt, wird unter den Studienteilnehmer*innen ein Betrag von 50€ ausgelost. Da wir Ihre Daten anonymisiert speichern und demnach keine Zuordnung Ihrer Angaben zu Ihrer Person erfolgen kann, benötigen wir nun Ihre e-Mail-Adresse, um Sie im Falle des Gewinns erreichen zu können.

Die Angabe Ihrer e-Mail-Adresse erfolgt freiwillig. Diese wird separat von den Daten gespeichert, kann nicht in Zusammenhang mit Ihren anonymisierten Daten in Verbindung gebracht werden, wird nicht an Dritte weitergegeben und wird nach der Lotterie gelöscht. Nur das an der Studie mitwirkende Personal hat Zugang zu den Daten, welche auf einem durch eine Firewall geschützten Server der Universität Wien liegen.

Möchten Sie an der Lotterie teilnehmen?

- Ja, ich möchte teilnehmen.
- Nein, ich möchte nicht teilnehmen.

Sie haben die Studie erfolgreich abgeschlossen.

(Debriefing)

Nun möchten wir noch einige Informationen mit Ihnen teilen.

Im Zuge der Studie, an welcher Sie teilgenommen haben, haben wir Ihnen die Ergebnisse einer Umfrage gezeigt.

Wichtig: Im Zuge der Studie haben wir Ihnen die Ergebnisse einer hypothetischen Umfrage präsentiert. Diese Ergebnisse stammten nicht aus einer realen Erhebung, sondern wurden speziell für die Zwecke dieser Studie erstellt. Sie wurden nach dem Zufallsprinzip einer bestimmten Gruppe zugewiesen, die unterschiedliche Prozentsätze und Ergebnisse einer fiktiven Bevölkerungsumfrage zu sehen bekam.

Einige Teilnehmende wurden dabei einer experimentellen Bedingung zugewiesen, in der ihnen fiktive Informationen aus einer Umfrage über die Rolle älterer Menschen im Kontext des Klimawandels präsentiert wurden. Andere Teilnehmende hingegen wurden einer Umfrage zugeordnet, die sich auf das Thema Musik im Radio konzentrierte. Die Zuordnung erfolgte rein zufällig, um mögliche Unterschiede in den Reaktionen auf das klima- und umweltbezogene Thema zu untersuchen.

Wir möchten betonen, dass es bei dieser Studie nicht darum geht, eine bestimmte Generation für den Klimawandel verantwortlich zu machen. Der Klimawandel ist eine komplexe Herausforderung, die sich über Jahrzehnte entwickelt hat und uns alle betrifft. Es ist wichtig zu erkennen, dass keine einzelne Gruppe allein dafür verantwortlich ist.

Wir sind vielmehr der Meinung, dass die Bewältigung des Klimawandels gemeinsame Anstrengungen, Zusammenarbeit und Verständnis aller Generationen erfordert. Ältere Generationen verfügen über wertvolle Erfahrungen, Weisheit und Einfluss, die eine entscheidende Rolle bei der Anregung und Leitung nachhaltiger Maßnahmen für die Zukunft spielen können.

Wir ermutigen jeden, unabhängig vom Alter, auf seine Weise dazu beizutragen - sei es durch kleine Änderungen der täglichen Gewohnheiten, durch den Austausch von Wissen oder durch die Unterstützung von Maßnahmen, die einen gesünderen Planeten fördern. Gemeinsam können wir eine bessere, nachhaltigere Zukunft für alle schaffen.

Wir danken herzlich für Ihre Antworten.