THWARTING GREEN GROWTH

Perspectives on Barriers to Pro-environmental Behaviors

Edited by

MUHAMMED SAJID, MYRIAM ERTZ, SHOUHENG SUN, & MOHAMMED ZEDAN SALEM

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Preface

The journey toward a more sustainable world is fraught with numerous challenges, particularly in the realm of consumer behavior (Ertz et al., 2022; Sajid, Zakkariya, et al., 2024). Academic and policy-driven discourses have predominantly focused on identifying and nurturing the drivers of pro-environmental behaviors, often neglecting the significant barriers that impede these very actions (Sajid, Esfandiar, et al., 2024). *Thwarting Green Growth: Perspectives on Barriers to Pro-environmental Behaviors* seeks to fill this critical gap by offering a thorough exploration of the obstacles that consumers encounter when attempting to adopt environmentally friendly practices.

In a period marked by heightened global environmental awareness and the urgent need for sustainable action, understanding these barriers becomes paramount (Akram et al., 2023; Yuriev et al., 2018). This book critically examines the psychological, social, economic, and cultural impediments to pro-environmental behaviors, providing a nuanced understanding of why consumers often fail to act in environmentally responsible ways despite their awareness and concern.

Through a collection of chapters from leading experts in the field, this book articulates how these barriers manifest themselves in daily life and how they can be systematically dismantled. These chapters provide empirical research, theoretical insights, and practical applications, making this collection an indispensable resource for academics, marketers, policymakers, and anyone involved in promoting sustainable behaviors.

The objective is clear: to equip readers with a comprehensive understanding of the barriers to pro-environmental behaviors and to offer strategies that can not only overcome these barriers but also foster an environment where sustainable practices are the norm rather than the exception. This book is not just an academic endeavor but a vital step toward achieving real and lasting environmental change. By addressing the overlooked aspects of consumer resistance to green behaviors, this collection contributes significantly to the fields of responsible and sustainable marketing and consumer behavior, offering novel perspectives and innovative solutions at a critical time for our planet.

Based on the selected studies on the research topic, there are various approaches to encouraging pro-environmental behaviors:

Harshika et al. begin by setting a comprehensive foundation through a meticulous analysis of existing literature on pro-environmental behaviors. Utilizing the PRISMA methodology, they categorize and dissect the academic discourse,

highlighting the theoretical frameworks that shape our understanding and pinpointing significant gaps that set the stage for further exploration of barriers.

Following this foundational review, Briguglio and Spiteri explore the political landscape affecting environmental actions. Their study assesses the relationship between political preferences and voluntary pro-environmental behavior in Malta, revealing how political interest, trust, and attitudes toward government intervention significantly influence consumer behaviors in environmental domains.

Building on the discussion of external influences, Ahmad et al. focus on the economic barriers that often deter consumers from adopting sustainable behaviors. Their analysis emphasizes the financial challenges – such as cost discrepancies, limited incentives, and infrastructure constraints – that complicate consumer decisions toward environmentally friendly options.

Adding a psychological dimension, Simione et al. examine the critical role of self-regulation in bridging the environmental attitude–behavior gap. They argue that despite heightened awareness of environmental issues, a significant gap persists between pro-environmental attitudes and actual behaviors, exacerbated by automatic cognitive processes and emotional resistance. Their synthesis suggests that enhancing self-regulation through mindfulness practices could align consumer actions more closely with their environmental intentions.

In a similar vein, Ayyoob and Sajeev address the deceptive practices of greenwashing. Their research highlights how misleading marketing claims and ambiguous eco-labels can erode consumer trust and skepticism, significantly reducing pro-environmental behaviors. They advocate for stricter regulations and more transparent corporate practices to combat this pervasive issue.

Transitioning to the impact of habitual consumer practices on circular economy initiatives, Rotem-Mindali et al. assess consumer preferences for circular economy attributes in the context of purchasing or leasing washing machines in Europe's major markets. They find that low pro-environmental behaviors, limited knowledge, and entrenched usage habits can suppress the choice of more circular products, highlighting the need for informative campaigns that can enhance consumer awareness and shift behaviors.

Cleveland et al. examine the psychological barriers that prevent individuals from engaging in sustainable actions despite environmental awareness. They introduce the concept of cognitive dissonance, proposing that the justifications consumers use to excuse their inaction – such as moral licensing or economic prioritization – play a critical role in the persistent attitude–behavior gap. Their study provides a new framework for understanding these justifications and suggests ways to address them through targeted interventions.

As the discussion transitions from individual and psychological barriers to broader societal and cultural factors, Lokhili and Elhassouni explore how cultural and religious beliefs influence sustainable practices. Their study on Moroccan food waste behaviors illuminates how deeply ingrained cultural norms and religious teachings, like the concept of Baraka, can promote sustainability through traditional practices, suggesting that these can be powerful levers for reducing environmental impact.

Following the exploration of cultural influences on food waste behaviors in Morocco by Lokhili and Elhassouni, the discussion extends into the domain of active tourism with insights from León-Quismondo. They tackle the environmental dilemmas posed by activities like hiking and skiing, which, while contributing to local economies and personal well-being, also threaten ecological integrity. This chapter discusses balancing these economic incentives with the need for environmental preservation, suggesting strategies such as diversifying tourism offerings, strengthening regulations, and promoting eco-friendly behaviors to mitigate the adverse impacts of active tourism.

Building further on the theme of information asymmetry, Suki and Waris turn their focus to eco-labels and their effectiveness as marketing tools. They assess how eco-labels can serve as potent signals that enhance consumer awareness and facilitate informed decisions toward environmentally friendly products. Their study underscores the necessity for manufacturers and marketers to enhance the visibility and credibility of eco-labels to foster greater consumer responsibility and promote pro-environmental behavior.

In a novel approach to engaging consumers in sustainability, George et al. explore the potential of gamified mobile applications to foster pro-environmental behaviors. Using the stimulus–organism–response theory, they examine how gamification in apps like Cashify and Olio can enhance user engagement through both hedonic (enjoyment and rewards) and utilitarian (practical benefits) values. Their proposed theoretical model demonstrates how integrating gamified elements can significantly boost motivation for sustained eco-friendly actions, providing valuable insights for app developers and policymakers aiming to leverage digital tools for environmental sustainability.

Shifting the focus to the role of public institutions in sustainable development, Liarte-Vejrup et al. discuss the integration of corporate social responsibility into public policy. Their study centered on the Algarrobo City Council in Spain, which examines how public accountability and citizen participation contribute to sustainable development goals. They highlight successful engagement strategies that extend beyond traditional governance methods, emphasizing the importance of transparent and participatory approaches in public administration.

Continuing with the theme of social engagement, Perera et al. discuss how food charities in Melbourne utilize social media to address food waste. Drawing on social capital and social presence theories, their comparative case study investigates the effectiveness of various social media strategies in enhancing community involvement and support for food waste reduction. Their findings offer practical guidance for food charities to optimize their digital outreach, reducing costs and increasing the impact of their campaigns.

The collection culminates with a forward-looking study by Peethambaran et al. on the impact of artificial intelligence (AI) on pro-environmental behavior. Utilizing social cognitive theory and the theory of planned behavior, they explore how AI services can improve environmental awareness and promote social responsibility, with technology literacy serving as a crucial moderating factor. This chapter not only advances theoretical knowledge but also outlines practical

applications for AI in fostering a sustainable future, suggesting ways to design AI tools that effectively encourage environmental stewardship.

Together, these chapters present a robust and multidimensional exploration of the barriers to pro-environmental behavior. They collectively emphasize the need for a diverse array of strategies tailored to address the specific cultural, economic, psychological, and informational challenges that impede sustainable practices. By integrating insights from across different domains and leveraging innovative approaches – from policy reforms and educational programs to technological interventions – this collection not only advances our understanding but also catalyzes action toward overcoming these barriers. Ultimately, *Thwarting Green Growth: Perspectives on Barriers to Pro-environmental Behaviors* serves as a crucial call to action for all stakeholders involved in environmental sustainability, providing the necessary groundwork for fostering a more sustainable global community.

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Chapter 1

Pro-environmental Behaviours: Types, Theories, and Major Research Gaps

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Abstract

This chapter comprehensively introduces pro-environmental behaviours (PEBs), outlining their various forms and the prevailing academic discourse surrounding them. Utilising the preferred reporting items for systematic reviews and meta-analyses (PRISMA) methodology, this review meticulously analyses existing literature to identify and discuss the different typologies of PEBs that have been recognised in scholarly research. It also delves into the major theoretical frameworks that have shaped the understanding of these behaviours, highlighting significant gaps in the current research landscape. Additionally, this chapter provides a rationale for the book's focus, emphasising the importance of exploring the barriers that hinder the adoption of PEBs. This analysis not only synthesises past findings but also sets the stage for addressing the critical challenges that impede sustainable practices.

Keywords: Pro-environmental behaviour; sustainable behaviour; typology; barriers to pro-environmental behaviour; PRISMA; sustainability

1. Introduction

PEBs encompass a broad range of actions undertaken by individuals and communities aimed at minimising their ecological footprint and promoting sustainable practices (Brick et al., 2024; Hadinejad et al., 2025). According to

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Kollmuss and Agyeman (2002), PEB covers individuals' activities to reduce adverse environmental effects. Some more examples are saving water (by closing the tap while brushing teeth) and shopping (taking cloth bags from home rather than polybags from shops). These behaviours include recycling, conserving water and energy, using public transportation or carpooling to reduce carbon emissions, and purchasing eco-friendly products (Sajid, Zakkariya, & Ertz, 2023).

By engaging in PEBs, individuals not only help reduce immediate environmental harm but also play a crucial role in advancing the societal shift towards achieving sustainable development goals (Esfandiar et al., 2023). These actions contribute to environmental conservation and create positive spillover effects, influencing subsequent behaviours and fostering a culture of sustainability that inspires others and encourages broader societal and policy changes (Nilsson et al., 2016). This ripple effect amplifies the impact of individual efforts, promoting the widespread adoption of sustainable practices and driving systemic transformations towards a more sustainable future. Additionally, these behaviours often result in ancillary advantages such as cost savings and healthier lifestyles, further incentivising individuals and communities to adopt eco-conscious practices (Esfandiar et al., 2024; Sajid & Ertz, 2024).

The research in PEBs is vast, covering a wide spectrum of interdisciplinary studies that examine the underlying motivations and outcomes associated with these actions. Major research areas include psychological factors such as personal values, attitudes, and environmental awareness, which play critical roles in influencing individuals' decisions to engage in behaviours that benefit the environment (Arkorful et al., 2022; Chen, 2020). Another significant area of study focuses on social and cultural influences, exploring how community norms, peer pressure, and cultural heritage impact pro-environmental actions (Ly, 2024; Yang et al., 2024). Economic analyses are also prominent, investigating the effects of economic incentives, pricing policies, and market structures on the adoption of sustainable practices (Sajid, Zakkariya, & Ertz, 2023). Additionally, researchers delve into the impact of environmental policies and educational programmes on promoting sustainable behaviours across different demographics and regions (Alt et al., 2024).

In this introductory chapter, the authors aim to provide a holistic understanding of the current literature on PEBs. This chapter is structured to outline the typologies of PEBs, explore the predominant theoretical frameworks within the domain, and highlight critical research gaps that need further exploration. To inform this overview, the authors have employed the PRISMA methodology for the literature review (Page et al., 2021). Following this introduction, this chapter proceeds with a detailed methodology section, continues with the results and findings based on the papers reviewed, and leads into a discussion that integrates the findings. This chapter concludes with a summary of key insights and directions for future research.

2. Methodology

This study employed a comprehensive literature review methodology to synthesise existing scholarly works on individual PEBs. Searches were conducted on well-established databases such as Scopus, Web of Science, and Proquest. The

focus was on literature that explores the nature and impacts of individual actions towards environmental sustainability.

The search strategy involved specific keywords derived from an initial secondary data analysis, including 'pro-environmental behaviour', 'individual environmental actions', 'personal sustainability practices', 'consumer green behaviours', 'eco-friendly lifestyle choices', and 'personal environmental responsibility'. These keywords were selected through an extensive literature review, and the search was conducted using wildcards in accordance with the Scopus search guide. Inclusion criteria required the studies to examine the behaviours, motivations, and impacts of individual environmental actions published in English within the last 25 years, from 1998 to 2023. The review was restricted to peer-reviewed journal articles, excluding book chapters and conference proceedings.

The article selection followed the PRISMA methodology. This entailed a rigorous screening process to ensure the relevance and quality of the studies. Initially, articles were identified, and duplicates were removed. Further screenings excluded articles that did not meet the inclusion criteria based on publication timeframe, language, and academic format. A detailed content analysis of each publication was then conducted, focusing on how closely each study related to the specific research questions concerning individual PEBs. This thorough process guaranteed that the studies included in the review robustly supported the conceptual framework proposed, linking individual actions with broader environmental impacts. The reference lists of highly cited recent articles were also reviewed to include significant and relevant research contributions.

3. Study Results

Based on the papers reviewed, below are the main themes that emerged regarding PEBs.

3.1. Types of PEBs

Understanding the types of PEB is crucial, as conducting PEB research without specifying the behaviour lacks validity, as noted by Esfandiar et al. (2019). They argue that many previous studies have treated PEB as a general concept, rather than examining its specific forms while individual actions vary based on factors like time, comfort, and financial resources. For example, a visitor to a national park who disposes of their own litter may not be inclined to pick up litter left by others or contribute financially to the site. Disposing of litter is considered a low-cost PEB, while picking up others' litter is a high-cost PEB (Esfandiar et al., 2019; Goh et al, 2022).

Additionally, individuals may engage in different PEBs depending on whether they are in public or private contexts, with varying levels of personal cost and effort (Esfandiar et al., 2023; Hales & Larkin, 2018). Therefore, recognising specific types of PEB is essential for understanding environmental responsibility more accurately. PEBs can be classified into four main categories: private low cost, private high cost, public low cost, and public high cost. Each type of

behaviour is defined by the setting in which it is performed (private or public) and the level of personal cost (i.e. time, money, and effort) involved (low or high) (Esfandiar et al., 2019, 2022).

Understanding these categories helps in identifying the psychological mechanisms that motivate individuals to engage in such behaviours (see Table 1.1).

3.1.1. Private Low-cost PEBs

Private low-cost PEBs are actions taken in personal settings, often within the confines of one's home, that involve minimal financial expenditure or effort (Esfandiar et al., 2022). Examples of these behaviours include turning off lights when not in use, recycling household waste, and using energy-efficient appliances. These actions are typically driven by habit formation, as they require little conscious effort once they become part of a routine. Additionally, individuals engage in these behaviours because they believe their small actions can collectively contribute to environmental conservation, a concept known as self-efficacy (Hamann & Reese, 2020). The convenience of these behaviours further lowers psychological barriers, making them easier to adopt and maintain over time.

Table 1.1. Expanded Classification of PEBs.

Category	Behavioural Examples	Psychological Mechanisms	Additional Motivators	Barriers to Adoption
Private low cost	Switching to energy-efficient bulbs	Habit formation	Perceived personal benefit	Inertia
	Reducing water usage	Self-efficacy	Environmental awareness	Perceived inconvenience
Private high cost	Installing home solar systems	Value-driven motivation	Long-term savings	High upfront costs
	Purchasing sustainable products	Cost–benefit analysis	Social identity	Lack of information
Public low cost	Carpooling	Social norms	Social approval	Peer influence
	Participating in local green initiatives	Visibility	Community engagement	Accessibility to alternatives
Public high cost	Leading environmental campaigns	Altruism	Legacy building	Financial sacrifice
	Choosing eco-friendly careers	Social responsibility	Collective efficacy/identity	Risk of social isolation

3.1.2. Private High-cost PEBs

Private high-cost PEBs require significant financial investment or lifestyle changes but are still performed in private settings (Esfandiar et al., 2022). Examples include installing solar panels, purchasing an electric vehicle or retrofitting a home for energy efficiency. These behaviours are often motivated by deep-seated values that prioritise environmental sustainability, driving individuals to take on the costs involved. Moreover, individuals might perform a cost–benefit analysis, where they weigh the high upfront costs against potential long-term savings or environmental benefits, justifying the initial expense (Uren et al., 2021). Social identity also plays a crucial role, as individuals may adopt these behaviours to align with a green identity, gaining a sense of pride and social approval from being seen as environmentally responsible.

3.1.3. Public Low-cost PEBs

Public low-cost PEBs are those performed in public settings and involve little financial or effort-related investment (Esfandiar et al., 2019, 2022). Actions like using public transportation instead of driving, participating in community clean-up events, and voting for environmental policies fall into this category. These behaviours are heavily influenced by social norms, as people are more likely to engage in them when they observe others doing the same or when such actions are socially expected (Niu et al., 2023). The visibility of these behaviours also motivates individuals, who may seek to maintain a positive social image or gain approval from their community. Additionally, a sense of moral obligation can drive people to act in environmentally friendly ways when their actions have a direct impact on their surroundings.

3.1.4. Public High-cost PEBs

Public high-cost PEBs occur in public settings and involve substantial financial or personal sacrifice (Esfandiar et al., 2022). Examples include donating large sums to environmental causes, advocating for or leading environmental movements, and choosing a career in environmental conservation over more lucrative options. These actions are often driven by altruism, where individuals prioritise the greater good over personal gain (del Saz Salazar & Pérez y Pérez, 2021).

These actions are often driven by altruism, where individuals prioritise the greater good over personal gain (Esfandiar et al., 2021). A strong sense of social responsibility, along with collective efficacy, can also motivate these behaviours, as individuals feel both a personal duty and a collective identity with environmental movements to protect the environment and contribute to society (Wallis & Loy, 2021). When group members recognise environmental problems as shared challenges and aim to protect and enhance collective status and interests, group efficacy becomes a crucial predictor of their collective action, making participation a compelling choice even when the costs are high (Wallis & Loy, 2021). A prominent example is the Fridays for Future movement, also known as the Greta Thunberg Effect, where young people, strongly influenced by pro-environmental

activism, engage in collective climate action as a type of public high-cost PEB, requiring significant time, energy, and commitment (Fritz et al., 2023). For individuals who strongly identify as environmentalists, participating in these actions reflects their core identity, making it a compelling choice despite the high personal costs involved.

3.2. Major Theories Used in the Domain

Research into PEBs utilises various psychological and sociological theories to understand and influence the ecological actions of individuals and communities. Here are some of the major theories:

3.2.1. Theory of Planned Behaviour (TPB)

The TPB is highly influential in understanding how attitudes, subjective norms, and perceived behavioural control shape intentions towards behaviour (Ajzen, 2002). TPB is particularly applicable to PEBs as it considers not only the individual's beliefs about the importance and impact of these behaviours but also the social pressures and perceived ease or difficulty of performing them. This makes TPB a robust framework for predicting behaviours like recycling, conserving water, or using public transport, which is influenced by both personal attitudes and external factors (Pathak et al., 2022; Sajid, Zakkariya, & Ertz, 2023).

3.2.2. Value–Belief–Norm (VBN) Theory

The VBN theory posits that deeper value orientations drive people's environmental behaviours through beliefs about environmental conditions and resulting personal norms (Kaiser et al., 2005). VBN theory links specific values (such as altruistic or biospheric) to perceptions of environmental problems (beliefs), which activate personal norms compelling individuals to act environmentally. This pathway explains why individuals who value nature highly are more likely to engage in conservation efforts, making it useful for targeting interventions that resonate with intrinsic values (Lee et al., 2023).

3.2.3. Norm Activation Model (NAM)

The NAM centres on the role of personal norms in motivating PEB (Schwartz, 1977). It suggests that actions are triggered by the awareness of consequences and the ascription of responsibility, leading to a personal normative response. NAM is particularly effective in explaining behaviours that require a sense of moral obligation, such as reducing waste or engaging in activism, and is often used to design educational campaigns that aim to increase awareness of environmental issues and personal responsibility (Sajid, Zakkariya, Surira, et al., 2023).

3.2.4. Social Cognitive Theory (SCT)

SCT applies to PEB by emphasising the importance of observational learning, imitation, and modelling (Bandura, 2023). SCT suggests that seeing others perform PEBs can inspire individuals to emulate these actions, especially if they observe

positive outcomes as a result. The theory underscores the impact of social influencers and educational contexts in fostering PEB, making it valuable for developing community-based interventions and media campaigns (Goh et al., 2020).

3.2.5. Self-determination Theory (SDT)

SDT explores the different types of motivation – autonomous and controlled (Deci & Ryan, 2012). In the context of PEB, SDT is used to understand how intrinsic motivation (driven by personal interest or pleasure in the task itself) and extrinsic motivation (driven by external rewards or pressures) influence actions. This theory is crucial for designing policies and interventions that aim to internalise pro-environmental values, thus fostering more sustainable behaviour changes that are self-motivated rather than coerced (Barszcz et al., 2023).

3.2.6. Conservation of Resources (COR) Theory

COR theory examines how individuals strive to retain, protect, and build resources and how the threat of losing these resources can influence behaviour (Hobfoll & Shirom, 2000). In environmental contexts, COR can explain why people engage in behaviours that prevent resource loss, such as energy conservation or water-saving practices. This theory highlights the importance of framing PEBs in terms of resource conservation, which can be a powerful motivator for both individuals and organisations (Lin et al., 2022).

3.2.7. Behavioural Reasoning Theory (BRT)

BRT focuses on the reasons people have for taking action as well as the reasons they have for not engaging in an action (Westaby, 2005). BRT distinguishes between two types of reasoning: the reason for (motivators) and reason against (inhibitors) performing behaviours. In the environmental domain, BRT helps to explain why individuals decide to engage in, or refrain from, PEBs by examining both the positive reasons, such as ecological concern or social influence and the barriers, such as perceived inconvenience or lack of efficacy. For example, an individual might choose to recycle (reason for) because they believe that it helps reduce landfill waste but might avoid using public transportation (reason against) due to perceived unreliability or inconvenience (Dhir et al., 2021). By identifying and understanding these reasons, interventions can be better designed to strengthen motivators and reduce inhibitors, thereby enhancing the likelihood of engaging in sustainable behaviours (Sajid et al., 2024). BRT is particularly useful for developing targeted environmental campaigns addressing specific barriers and leveraging motivators within different populations (Sajid, Midhun, et al., 2023).

4. Discussion

4.1. Research Gaps and Future Research Direction

4.1.1. Methodological Gap

Most existing studies exploring the behavioural aspects of PEBs predominantly utilise cross-sectional designs (Brick et al., 2024; Sajid, Midhun, et al., 2023).

While these designs offer valuable insights, they come with notable limitations, particularly when compared to experimental designs. Cross-sectional studies typically capture data at a single point in time, which limits the ability to observe changes over time or to establish the directionality of relationships. As a result, these studies often struggle to establish clear causality, leaving the possibility that observed associations may be due to unmeasured confounding variables or reverse causation.

Moreover, cross-sectional studies are susceptible to temporal biases, such as recall bias or the influence of specific, short-term events that may not reflect long-term patterns of behaviour. This can lead to conclusions that may not be fully generalisable or that fail to account for the dynamic nature of PEBs, which can evolve in response to various influences over time. In contrast, experimental designs, particularly longitudinal experiments, allow researchers to manipulate variables and observe the resulting changes in behaviour over time. This approach provides a more rigorous framework for isolating causal relationships and controlling for external variables that might confound the results. By systematically varying conditions and measuring outcomes, experimental designs can offer deeper insights into the mechanisms underlying PEBs.

Therefore, to enhance the robustness and validity of findings in this field, future research should prioritise adopting experimental designs. This shift would strengthen the ability to draw causal inferences and contribute to a more nuanced understanding of how and why individuals engage in PEBs, ultimately leading to more effective interventions and policy recommendations.

4.1.2. Actual Behaviour

Many studies in the field of PEB research focus primarily on measuring behavioural intentions rather than actual behaviours. While the measurement of intentions provides valuable insights into individuals' willingness or readiness to engage in pro-environmental actions, this approach has inherent limitations. One of the key challenges is that intentions do not always translate into real-world actions. This gap between intention and behaviour is often called the 'intention-behavior gap' (Sajid, Zakkariya, & Ertz, 2023).

Several factors contribute to this gap, including external barriers such as lack of access to resources, social norms, and contextual constraints that can hinder the translation of intentions into actual behaviour. For example, an individual might express a strong intention to reduce their carbon footprint by using public transportation, but if the public transit system is unreliable or inaccessible, they may continue to rely on private vehicles despite their intentions. Similarly, internal factors such as habit, cognitive biases, or a lack of motivation can also disrupt the conversion of intentions into actions.

Additionally, the focus on behavioural intentions often overlooks the complexity and variability of actual behaviours. Pro-environmental actions are influenced by myriad factors that can vary across different contexts and over time. By concentrating on intentions alone, researchers may miss essential nuances