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by Ridayani Ridayani

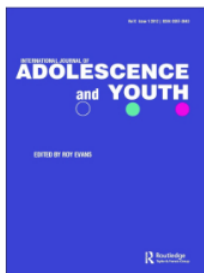
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The effect of environmental citizenship and spiritual norms as mediators on students' environmental behaviour

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15 ABSTRACT

This study aimed to determine the relationship between environmental citizenship and behaviour with spiritual norms serving as mediator among students at ³⁶h Kuala University (USK), Indonesia. A quantitative method employing a cross-sectional approach was used, with a sample of 200 students randomly selected from diverse majors. The results showed the existence of gender differences, with women displaying more consistent environmental behaviour. The inferential statistics indicated an influence of environmental citizenship on ²⁵haviour without and with spiritual norms as mediator variables at ($\beta = 0.606$, $p = 0.00$) and ($\beta = 0.199$, $p = 0.00$), respectively. Therefore, this study underscored the importance of spiritual norms as mediator variable for the relationship between environmental citizenship and students' behaviour.

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Introduction

The impact of religion on the lives of individuals is extensive, influencing their attitudes and behaviour in solving social issues, such as environmental problems. Despite pre-¹⁸us results indicating no correlation between religiosity and environmentally friendly behaviour (Pearson et al., 2018), recent study showed that individuals sharing the same belief may still differ in their approach to addressing various environmental problems (Eom et al., 2021). Therefore, some religions can become a tradition in prioritizing the environmental preservation of a particular community. Several studies demonstrated that religion and its values positively correlate with individuals' behavioural tendencies, including environmental responsibility (Koehrsen, 2021). This is consistent with the Qur'an's teachings on humans as caliphs or successors tasked with preserving the Earth created by Allah SWT (Saniotis, 2012). In this situation, the Qur'an refers to humans as caliphs on earth, with a responsibility to protect and care for the environment:

⁵member when your Lord said to the angels: 'Indeed I want to make caliphs on earth'. They said: 'Why do you want to make (the caliph) on earth someone who will damage it and shed blood, even though we always glorify You by praising You and purifying You?' Allah SWT said: 'Indeed I know what you do not know'. (Q.S. Al-Baqarah: 30)

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In contemporary society, maintaining, and preserving the environment has become a critical responsibility of all citizens. This responsibility is encapsulated in the concept of environmental citizenship, which has gained recognition in various disciplines, including economics, sustainable development, philosophy, science education, and environmental education (Hadjichambis & Paraskeva-Hadjichambi, 2020). The concept has been recognized as a crucial factor in addressing environmental challenges, such as climate change (Ockwell et al., 2009; Wolske & Stern, 2018). Citizen participation is a fundamental aspect of environmental citizenship, and it is essential in overcoming a wide range of problems. Community training, environmental education, and participation in volunteer organizations are some of the ways citizens can become involved in environmental protection (Jain & Pant, 2010). Based on these findings, environmental citizenship is vital for the sustainability of society in the future.

The concept of environmental citizenship addresses the gap in the previous literature that explores how individuals can become responsible environmental citizens. Specifically, the study shed light on rights and obligations concerning the environment and how to become virtuous citizens from a spiritual perspective. Environmental citizenship activities include an understanding of issues, the associated rights and responsibilities of citizens, and proactive measures taken to mitigate problems. Furthermore, these activities seek to promote environmentally-friendly human behaviour to foster sustainable living practices (Clarke & Agyeman, 2011).

Environmental education

Environmental education is a crucial means of promoting awareness of challenges in daily life. As stated by (Stevenson, 1993, 2007), it starts with raising awareness about issues and includes efforts to promote environmental values. The history is rooted in the growing awareness of environmental threats in the 1960s, such as air, water, and soil pollution, as well as the increasing scarcity of land and natural resources (Meyers, 2006). This led to widespread concern among scientists and experts about the need to address environmental problems (Ader, 1995; Lyytimäki, 2013).

Since the United Nations Declaration on the environment and humans, many experts, groups, and world organizations have emphasized the importance of environmental education, and the concepts must be clearly defined and taught at every level of existing education (Venkataraman, 2008). It develops citizens capable of making informed decisions and taking action in support of sustainable development (Heimlich & Ardoin, 2008). Given the importance of protecting the environment, various have made efforts to incorporate environmental education into their educational systems, workplaces, and communities to foster sensitivity among all citizens (Herman et al., 2013). However, the success of such initiatives varies across countries, due to different levels of implementation. In several studies, the principle of enhancing the scope includes the development of knowledge, skills, attitudes, and behaviour towards the environment.

As an essential study, environmental education is vital in educating and guiding students to have knowledge, skills, attitudes, and behaviour about a good environment. Since the concept has been accepted in pedagogic studies, it needs to adapt to the needs of educational institutions. In Indonesia, several educational institutions have implemented policies on environmental education in school and the wider community (Acciaioli & Afiff, 2018; Nomura, 2009; Nurwidodo et al., 2020; Prabawa-Sear, 2018; Tanu & Parker, 2018). At the tertiary level, education becomes an even more critical need as it allows for a more profound scientific study and a comprehensive analysis of the environment to reinforce knowledge, skills, attitudes, and behaviour (Ikhsan et al., 2019). In various cases, experiences have a positive role in knowledge, skills, attitudes, and behaviour to act and be responsible for the environment. These experiences are crucial in the community (Corral-Verdugo, 1993; Rickinson, 2001), school (Ravindranath, 2007; Tsevreni, 2011; Witkowska & Menckel, 2005), and among students and teachers.

Environmental citizenship

Citizenship Science, with its potential and opportunities for innovation, has emerged as a significant contributor to science, policy, and society. The pressing need for conservation demands a paradigm shift towards a new environment, which can only be achieved by citizen involvement. The global environmental crisis necessitates the active participation of citizens to address various environmental problems. Citizens participation has proven to be instrumental in the development and implementation of green policies, such as green city activities and social transformations (Buijs et al., 2016). Therefore, promoting individuals to become environmentally conscious citizens is a crucial step towards overcoming various environmental problems.

Citizenship, as a scientific concept, studies the relationship between citizens and the state. Furthermore, it evolves to accommodate changing needs in examining the relationship between individuals and the surrounding environment (Hadjichambis & Paraskeva-Hadjichambi, 2020). This concept has been integrated into curriculums in various countries to instil environmental consciousness. In Europe, for example, 42 national education systems have included environmental preservation in the context of citizenship, which is taught at all levels of education (Cheah & Huang, 2019). Environmental citizenship is used as a crucial educational goal, shaping the competence and character of students involved in the participation framework as citizens who care about the environment (Schindel Dimick, 2015). It encompasses the practice of rights and obligations of citizens towards the environment in identifying and solving environmental problems.

In theory, conceptual environmental citizenship has the same relationship or goal as education taught in schools, such as behaviour, attitudes, environmental knowledge, awareness, and literacy. However, it has an additional emphasis on political, social, and economic dimensions that contribute to the environment (Hadjichambis & Paraskeva-Hadjichambi, 2020). Several studies have been carried out, but experts agreed on the main framework of environmental citizenship. For example, environmental citizenship focuses on ecological literacy, understanding socio-ecological issues (Cutter Mackenzie & Smith, 2003; Gebbels et al., 2011), rights and obligations of citizens in political communities (Clarke & Agyeman, 2011; Gilbert & Phillips, 2003), as well as awareness of personal values with respect for the environment and abilities to link these values with knowledge and skills (Houser, 2009).

Environmental behaviour

Human behaviour and habits can contribute to solving various environmental problems, including solutions to climate change, environmental pollution, and loss of biodiversity (Swim et al., 2011; Wynes & Nicholas, 2017). This behaviour positively and negatively impacts the environment, exacerbating the environmental impacts and it is crucial to understand the concept of promoting sustainable living. Environmental behaviour includes actions that benefit nature, eliminating destructive actions, and preservation activities, including saving energy (Lange & Dewitte, 2019).

Experts defined environmental behaviour as actions aimed at reducing negative environmental impacts (Kollmuss & Agyeman, 2002; Stern, 2000), encompassing a range of activities. These included recycling (Byrne & O'Regan, 2014; Fu et al., 2017; Hansmann et al., 2006; Klöckner & Oppliger, 2011; Zhang et al., 2016), use of energy-efficient transportation (Eriksson et al., 2008), purchase of environmentally friendly products (Ramayah et al., 2010), waste management (Liu et al., 2017; Lobato et al., 2015; Pöldnirk, 2015; Rigamonti et al., 2014; Sasaki et al., 2014), and environmentally friendly energy consumption (Lai et al., 2019; Paço & Lavrador, 2017). In the last section, scholars agreed to describe the concept from the views compiled and then classified, such as basic environmental behaviour activities, and decision-making behaviour (Chen et al., 2017; Lu et al., 2017). Environmental protection activities can be carried out by the community indirectly through public space activities such as citizenship and support for policies that endorse preservation. Furthermore, the protection can also be carried out privately by every member of the public through their efforts,



such as spending time with energy-efficient activities and protecting the environment in daily life. Another classification includes citizenship, financial, persuasion, and ecological management behaviour (Hansmann et al., 2020).

Based on the explanation of the significance of environmental behaviour, which is expected from every citizen in society, there are a variety of behaviours to be possessed. Despite the comprehension of various environmental behaviours, there exist determining factors that are not fully appreciated. Therefore, other experts attempted to provide an overview of these factors by classifying environmental behaviour into values embraced by society, situational, and psychological variables. Situational variables are more concerned with facilities related to the environment, population demographics, community knowledge, and the skills or experience related to motivation, self-confidence, and satisfaction (López-Mosquera et al., 2015). Based on this consideration, environmental behaviour was analysed from the perspective of knowledge, skills, and values.

Spiritual norms

The concern for the environment and climate change among people in various countries has a remarkable impact on sustainability. This arises from several primary factors believed to be habitual among people worldwide. Religious belief is the most significant source of beliefs and moral values that strongly influence environmental preservation or concern for damage (Kalski et al., 2022). Several studies have been carried out as an important component of activities in the broader field of social and environmental studies. In the existing literature, the study is conducted through three approaches, which generally begin with the scriptures of various religions expressing philosophies about the environment. In another approach, ethnographic studies are one of the approaches used in analysing socio-religious and specific cultures related to the environment. The final approach is a socio-political analysis of movements or activities of religious institutions that promote and protect the environment (Mawdsley, 2005). Based on these considerations, this study was conducted to analyse the behaviour from various perspectives starting from religious norms and political perspectives about the environment.

Religiosity or religious norms offer guidance to the community regarding lifestyles that align with the values and attitudes of individuals and society as taught by their respective religions. The values and attitudes held by individuals and communities play a pivotal role in shaping their behaviour towards the preservation of the environment to ensure sustainability (Rice, 2006). Furthermore, individuals who sincerely, enthusiastically, and diligently adhere to religious teachings are likely to exhibit environmentally sustainable behaviour (Kollmuss & Agyeman, 2002). Religiosity plays a significant role in making decisions to purchase environmentally friendly goods. Given the profound impact, the superiority as a variable to be studied in environmental behaviour can be analysed with environmental citizenship. In Muslim communities, religiosity plays a crucial and indispensable role in all aspects of communal life, including environmentally sustainable shopping practices (Alam et al., 2011; Ateeq-Ur-Rehman et al., 2010).

Environmental education in Aceh

Spiritual norms prevalent in Aceh people play a crucial role in shaping students' environmental behaviour through formal education. The Islamic teachings, which are predominant in Aceh, impart valuable environmental values such as ecosystem balance, cleanliness, and natural sustainability (Mangunjaya & Prahawati, 2019; Oktari et al., 2018; Zabidi et al., 2021). These spiritual norms also exert a significant influence on Aceh people's lifestyle, who have a proclivity for respecting nature and maintaining cleanliness. Formal education that incorporate these values in its curriculum can foster students' environmental behaviour, promoting responsibility and sustainability (Fekih Zguir et al., 2021; Kagawa, 2007; Parker, 2017, 2018; Tanu & Parker, 2018). Diverse endeavours have been undertaken by the Aceh government, LMS, and the community, to integrate local wisdom-based environmental and disaster education into the

curriculum, with the goal of cultivating students' environmental consciousness and enhancing knowledge of issues and disasters (Kamil et al., 2020; Kusumasari & Alam, 2012; Yusuf, Yunus, et al., 2022).

Based on several studies, it is widely acknowledged that environmental education and disaster education are crucial to be taught and disseminated to Aceh people, particularly among the youth. This is due to the historical experience of a catastrophic earthquake in 2004, and the geographical conditions that accentuate the importance of imparting knowledge on disaster mitigation and environmental management in schools with the aim of enhancing the students' attitudes, behaviour, and knowledge on these critical matters (Kusumastuti et al., 2021; Oktari et al., 2020; Sakurai et al., 2018; Yusuf & Fajri, 2022; Yusuf, Razali, et al., 2022). To support environmental management and increase disaster knowledge, Syiah Kuala University (USK) has implemented several programs and policies. USK collaborates with the State Electricity Company (PLN) to create a comfortable campus environment through a tree-planting program (Puspa et al., 2020). In addition, the university has introduced a mandatory course on Disaster and Environmental Knowledge (PKL) (Atmaja et al., 2021; Yusuf & Fajri, 2022), as well as established a Waste Bank as an environmental care program (Putriyanti, 2021). The Tsunami and Disaster Mitigation Research Center under the Syiah Kuala University Disaster Mitigation Unit (Bisri & Sakurai, 2017; Oktari et al., 2015), has been established as an effort to reduce the risk of disasters.

Teaching and instilling spiritual values, promoting citizenship, and cultivating good behaviour can aid in the growth and development of students' personalities towards environmental conservation in society. Furthermore, personal development based on spiritual values creates strong behaviour in preserving the environment. According to Mujan et al., behaviour is essential and determines the quality of the environment produced in the vicinity (Mujan et al., 2019). The challenges faced (Argôlo-Filho & Loguercio, 2014) can reduce environmental problems by educating and implementing good behaviour (Akintunde, 2017). Therefore, environmental citizenship and spiritual norms can be instrumental in developing good environmental behaviour. In addressing the study problems identified, the objectives have been formulated based on the hypothesis, as follows:

- Hypothesis (H1): There are differences in students' environmental behaviour based on gender
- Hypothesis (H2): There is an effect of environmental citizenship on students' environmental behaviour with spiritual norms as mediator

Study methodology

This study employed a quantitative method by implementing a cross-sectional approach to obtain data from a sample participants during the odd semester of the 2021/2022 academic year at UKS. The approach involved an in-depth analysis of an entity within a particular group to uncover issues and problems related to students' environmental behaviour (Huang et al., 2020). Furthermore, the sample consisted of 200 students randomly selected from various majors, as shown in Table 1. Data collection was conducted through questionnaires distributed through Google Forms to measure aspects related to environmental behaviour, citizenship, and spiritual norms. The questionnaires were disseminated to students attending lectures in the odd semester of 2021/2022 through a WhatsApp group.

The instruments used included environmental citizenship adapted from Hadjichambis (Hadjichambis & Paraskeva-Hadjichambi, 2020), environmental behaviour developed by Meyer (Meyer, 2016), and spiritual norms instrument from Yusoff (Mohd Yusoff et al., 2022). Questionnaires were used to measure environmental citizenship, environmental behaviour, and spiritual norms, comprising 15, 16, and 11 items with reliability values of .88, .87, and .89, respectively. The data collected were further processed using the Statistics for Social Sciences (SPSS) version 23 application. Regression analysis was performed to determine the mediating relationship, and the first stage analysed the differences in students' environmental behaviour based on gender. Subsequently, it was performed on the dependent and the independent variables with spiritual norms as mediator.

**Table 1.** Research sample demographics.

Research Demographic Sample	Total	Percentage
Gender		
Male	72	36
Female	128	64
Age (years)		
18	64	32
19	98	49
20	38	19
Faculty Group		
Social science	116	56
Science	84	44
Total	200	100

Table 2. Differences in environmental behaviour based on gender.

Dependent Variable	Gender	N	Mean	t	Sig.
Environmental Behaviour	Male	84	3.04	2.56	.00
	Female	116	3.16		
	Total	200			

Study findings

This study began by analysing the differences in students' environmental behaviour based on gender and then proceeds with regression analysis of the dependent on the independent variable with spiritual norms as mediator.

Differences in environmental behaviour based on gender

Proof of the differences in students' environmental behaviour based on gender is described in Table 2, using the SPSS program.

Table 2 shows that the environmental behaviour of female students is higher than males ($t = 2.56$; $p = 0.00 < 0.05$). Therefore, the hypothesis, which states a significant difference in students' environmental behaviour based on gender, is accepted.

The effect of spiritual norms as mediator variable towards the relationship between environmental citizenship and environmental behaviour

In the second stage, regression analysis was conducted to examine the effect of mediator on the relationship between environmental citizenship and students' behaviour. After conducting an analysis using the SPSS program, it has been determined that environmental citizenship significantly impacts environmental behaviour. The results, as illustrated in Figure 1, indicated that mediator variables had a significant influence on environmental behaviour, with and without citizenship as a predictor ($\beta = 0.589$, $p = 0.02$) and ($\beta = 0.185$, $p = 0.00$), respectively.

The analysis results also showed a decrease in the β value, where spiritual norms are the relationship between environmental citizenship and students' behaviour due to direct influence. Therefore, the hypothesis is accepted, as shown in Table 3.

Discussion

Several studies have been conducted in relation to environmental behaviour, and the results showed that women exhibit higher levels of environmental behaviour than men (Hansmann

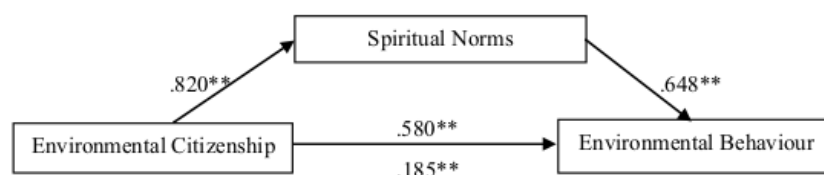


Figure 1. Mediation model framework spiritual norms.

Table 3. The relationship between environmental citizenship and student environmental behaviour with spiritual norms variables as mediator.

Independent Variabel	Dependent Variabel	β	t	P
Environmental Citizenship	Environmental Behaviour	.580**	2.18	.02
Environmental Citizenship	Spiritual Norms	.820**	13.81	.00
Spiritual Norms	Environmental Behaviour	.648**	3.42	.00
Environmental Citizenship Spiritual Norms	Environmental Behaviour	.185**	.25	.00

et al., 2020; Vicente-Molina et al., 2018; Wang & Mangmeechai, 2021). Other studies also mentioned that their sensitivity to the environment is higher than men (Miao & Cagle, 2020; Treat et al., 2016; Varela-Candamio et al., 2018). Furthermore, gender may impact individuals' environmental literacy and behaviour (Hunter et al., 2004; Tuncer et al., 2009). Asteria illustrated that women are more proactive in protecting and empowering the environment (Asteria, 2019; Asteria et al., 2016).

The presence of spiritual norms as mediator variable acts to strengthen the relationship between environmental citizenship and students' behaviour at UKS. Based on the findings, it can be inferred that citizenship exerts a substantial impact on the conduct of students, as determined by their spiritual norms. This is reinforced by several relevant results, where the value orientation of spiritual norms affects the attitudes and behaviour of the community (Eom et al., 2021; Ihemezie et al., 2021; Yusuf, Yunus, et al., 2022). According to Taylor, several experts argued since the 1990s that religious teachings promote environmentally friendly habits, leading to the green religion hypothesis (Taylor, 2016, 2020).

This study indicated that the incorporation of spiritual norms into formal education within school can have a considerable impact on enhancing students' environmental conduct. This is because spiritual norms provide a foundation for ethical decision-making and foster a sense of responsibility towards the natural environment. The potential for increased environmental awareness among students, as well as motivation to act in protecting the environment, can be created by integrating Islamic values and teachings into the formal education system in Aceh (Begum et al., 2021; Karim, 2022; Yusuf, Fajri, et al., 2020). Implementation of an Islamic-based environmental education program has proven to have a positive impact on students' attitudes and behaviour towards the environment, providing a moral framework for management. A sense of responsibility for the environment can effectively be instilled among students and pave the way for a more sustainable future by emphasizing the importance of environmental preservation and management in Islamic spiritual teachings.

Environmental and disaster education should be provided to minimize casualties and damage caused by disasters such as earthquakes and tsunamis (Pascapurnama et al., 2018; Srinivas & Nakagawa, 2008). This study showed that the application of spiritual norms can improve students' environmental behaviour and build a more sustainable future (Altmeyer, 2021; Lu et al., 2020; Robina-Ramírez et al., 2020). Furthermore, the cultivation of public awareness has been demonstrated to minimize the impact of disasters and increase skills, knowledge, and attitudes in dealing with disasters and protecting the environment (Khatibi et al., 2021; Wiwik Astuti et al., 2021; Yusuf, Yunus, et al., 2022).



Several studies showed that reverence for the divine entity responsible for the creation of nature and all its constituents is a potent emotional state possible of augmenting pro-environmental conduct (Yang et al., 2018; Zhao et al., 2018). Religious people strongly support spiritual norms, which always have implications for extensive environmental behavioural engagement. The realm of religion is a multifaceted system in which practices and belief traditions mutually reinforce and safeguard the environment, thereby ensuring its preservation (Eom et al., 2021; Koburtay & Syed, 2021; Zeng et al., 2020). In addition, environmental citizenship also contributes to students' behaviour, as seen in Yusuf's study on behaviour at Adiwiyata schools (Yusuf, Yunus, et al., 2022). Environmental behaviour is also determined by the level of knowledge, involvement, and awareness possessed by the community (Yusuf & Fajri, 2022).

Environmental management programs and policies implemented by USK and the Aceh government result in a positive impact on the physical and spiritual aspects of the people. The program includes waste management (Yusuf & Fajri, 2022), reforestation (Achmad et al., 2015), renewable energy development (Mahidin et al., 2020), and water management (Rahman et al., 2019; Yusuf, Saputra, et al., 2020). According to empirical evidence, the policies and programs in question have been successful in enhancing people's environmental awareness and influencing their behaviour. These include increasing disaster adaptation capacity, integrating environmental education into the school curriculum, and establishing special institutions for disaster management (Nurdin et al., 2017; Torani et al., 2019; Yusuf & Fajri, 2022). In addition, spiritual values such as caring for nature, a sense of responsibility for the environment, and togetherness in protecting the environment are also reflected in these programs and policies (Afsar et al., 2016; Chwialkowska et al., 2020; Hanson-Rasmussen & Lauver, 2018) to form spiritual aspects in respecting and protecting the environment.

Environmental citizenship has become a concept widely studied in assessing the relationship with practices perceived by the community. The concept is present in various disciplines, including civic education, environmental education, continuing education, and science education. Several studies have been conducted, showing that environmental citizenship contributes to education, behaviour, and public awareness instruments (Hadjichambis & Paraskeva-Hadjichambi, 2020; Khan et al., 2019; Monte & Reis, 2021; Sarid & Goldman, 2021). It has been discovered that the community's possession of knowledge pertaining to the environment is vital. However, it is equally essential to acknowledge that their attitudes and beliefs towards spiritual norms also play a crucial role in safeguarding and conserving the environment. According to Biel & Nilsson, religious people have different approaches and deal with environmental problems (Biel & Nilsson, 2005). In Islam, human beings are addressed in the Qur'an as the successor caliphs entrusted with the responsibility of preserving and maintaining the environment on Earth, which has been created by Allah SWT (Sattis, 2012). On the contrary, according to religious teachings, guilt serves as a crucial emotional motivator for environmental behaviour (Rees et al., 2015; Tam, 2019). The success of environmental conservation behaviour is primarily determined by internalizing literacy through Islamic values in the learning process of academic units (Asiyah & Azis Prasetyo, 2017; Farida et al., 2017). The Islamic values underlying environmental conservation activities are grounded in the principles of knowledge acquisition, sincerity, and exemplary conduct towards the environment.

Conclusions

This study provided an analysis of students' behaviour through spiritual norms and environmental citizenship. Previous studies showed that religious students possess immense potential, including a propensity for environmental conservation. Therefore, the incorporation of these variables into education is crucial for cultivating environmentally responsible character. Based on the results, spiritual norms, and environmental citizenship affect students' behaviour. The process of forming spiritual values and environmental citizenship must be carried out by creating good citizens to protect and preserve the environment. This study was conducted within a limited scope of formal educational institutions, with a finite number of participants and programs. Therefore, further study

is necessary to examine a more comprehensive sample, including religious institutions in Aceh and the cultural dynamics of the community in promoting sustainable behaviour.

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Disclosure statement

No potential conflict of interest was reported by the author(s).

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