New Ecological Paradigm and third culture kids: Multicultural identity configurations, global mindset and values as predictors of environmental worldviews

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*E*cological degradation threatens human survival, increasing the need to understand factors related to pro-environmental attitudes and worldviews. In a globalising world, new paradigms arise as central to social sciences, including the New Ecological Paradigm (NEP) and the multicultural identities of individuals raised between the cultures, third culture kids (TCKs). NEP is an ecocentric perspective that stresses the interdependence between nature and humans, opposite to anthropocentrism. TCKs' exposure to cultural diversity during developmental years might support global issues engagement and ecocentric worldviews. The present study focused on non-Western TCKs ($N = 399$; mean age 21 years), aiming to explore whether multicultural identity configurations (integration, categorisation, compartmentalisation), values dimensions (self-transcendence, openness and conservation) and global mindset predicted ecocentric and anthropocentric worldviews. The results demonstrated that TCKs were ecocentrically inclined. The path model revealed that ecocentrism could be directly positively predicted by integrated multicultural identity, self-transcendence and a global mindset. Anthropocentrism was predicted by multicultural identity categorisation and conservation values. Also, values of self-transcendence and openness buffered the impact of compartmentalisation and categorisation on ecocentrism and anthropocentrism. This study set innovative directions in multiculturism and environmentalism discourse through understanding a multicultural identity's relationships with pro-environmental attitudes.

Keywords: Ecocentrism; Anthropocentrism; Multicultural identity; Third culture kids; Values.

In a globalised world, ecological problems like global warming and depletion of natural resources become dispersed and complex, demanding collaborative work at the international level (Dunlap et al., 2000). The ecological degradation acknowledged by scientists and global leaders is linked to human activity, predominantly to the development of industrialised societies (Jorgenson, 2006). Despite a growing drive towards the New Ecological Paradigm (NEP), which assumes interdependence between nature and human thriving and sets limitations to human activity and growth (Dunlap et al., 2000; Stern et al., 2008), some people are less concerned about environmental degradation, and express detachment from nature. Several authors attribute such a mindset to a common belief in human dominance over nature (Milfont et al., 2013). Consequently, people differ in the ways they place themselves in the ecosystem.

The tendency to separate oneself from nature and exert power over it is linked with lower environmentalism (Milfont et al., 2013). Hence, tackling environmental problems can involve increasing environmental awareness, inclusiveness and integrity with nature (United Nations, 2015). This may be achieved by stimulating psychological factors such as self-transcendent and openness related values and a global mindset. These may buffer dominant social tendencies and support egalitarian inclusivity of non-human interests.

Changing worldviews and attitudes from anthropocentric (oriented on human growth through the exploitation of natural resources) to ecocentric (prioritising the balance between human and environmental needs) poses challenges. Research points to the conflict between human interests and ecological needs, as environmentalism requires effort and sacrifice (Kollmuss & Agyeman, 2002;

Stern, 2000). When choosing between self-benefits and environmental interests, one tends to select the first. Personal commitments to NEP could be justified if one internalises the environmental case, linking it with personal values and identity.

Considerable research in recent decades (e.g., Brieger, 2018; Duff et al., 2022; Ringov & Zollo, 2007) highlighted the role of culture and identity in dealing with environmental attitudes formation. Brieger (2018) emphasised the role of social identity in fostering environmental concern. Specifically, a tendency to protect the environment relates to the inclusiveness of the groups on which identity was based (community, nation, world). World identity, that is, identification with all human beings, was most beneficial to environmental concerns (Brieger, 2018). This prompts exploration into the role of multicultural identities held by individuals with vast cross-cultural experience, such as third culture kids (TCKs) (Pollock et al., 2017). Yampolsky et al. (2016) argued that multicultural identities vary in inclusiveness (integration vs. categorisation and compartmentalisation). Consequently, environmental attitudes may also be developed differently depending on the identity configurations. However, there are significant gaps in the literature on pro-environmental attitudes, with a notable dearth of data from multicultural, non-Western, developing and nondemocratic societies (Tam et al., 2021). The Middle East region, a hub for multicultural communities, is particularly underrepresented and requires exploration. Furthermore, today's multicultural youth will bear the consequences of environmental degradation; their attitudes towards these issues require attention.

This paper explores whether multicultural individuals with mobile lifestyles, so-called TCKs, could endorse ecocentrism via their extended, hybrid but integrated cross-cultural identity, global mindset and values of self-transcendence and openness. Similarly, it assesses whether exclusive configurations of multicultural identities, such as categorisation or compartmentalisation, encourage conservative values and anthropocentric traditional social paradigms. The theoretical background allowing for such claims is reviewed in the following sections. Furthermore, this study is grounded in the specific multicultural context of the United Arab Emirates, where, according to recent statistics, the ratio between expatriates and local Emirati citizens is 9 to 1 (Global Media Insight, 2021). The UAE is a multicultural state that promotes integration and diversity as a state policy, with many young citizens categorised as TCKs. Hence the UAE constitute an interesting hub for TCKs studies.

Pro-environmental attitudes and New Ecological Paradigm

Research on pro-environmental attitudes is complex and multidimensional (Schultz et al., 2004) and requires a multidisciplinary approach (Banwo & Du, 2019). Initiatives aiming at protecting the natural environment depend on many variables, including psychological motivators, that is, values, mindset and culture (Dunlap & Van Liere, 1978; Schultz et al., 2000; Steg & Vlek, 2009). In the context of sustainability, pro-environmental attitudes include "the beliefs, affect and behavioural intentions regarding environmentally related activities" (Schultz et al., 2004, p. 31) and reflect "seeking to minimise the negative impact of one's actions on the natural world" (Kollmuss & Agyeman, 2002, p. 240). Such pro-environmental attitudes illustrate a worldview that governs an individual's approach to human-environment relations. Pro-environmental attitudes also denote an interplay among multiple (sometimes conflicting) values and interests (Kollmuss & Agyeman, 2002; Stern, 2000). They imply a difficult choice between egocentric benefits, collective interest and concern for the ecosphere (Banwo & Du, 2019; Kollmuss & Agyeman, 2002; Steg & Vlek, 2009). Combined psycho-cultural factors are possible antecedents or moderators to pro-environmental attitudes (Schultz et al., 2000; Stern, 2000).

Dunlap and Van Liere (1978) developed the NEP as an answer to the realisation that the activity of humans to increase comfort, longevity and dominance was altering the environment irreversibly and risking human survival. NEP illustrates polarised (ecocentric vs. anthropocentric) worldviews (Dunlap et al., 2000). Ecocentrism predicts pro-environmental engagement (De Groot & Steg, 2008) and assumes that humans have a close, interdependent relationship with nature. In contrast, the human-centred approach is less sensitive to ecological issues (Dunlap & Van Liere, 1978). While only ecocentrism predicted environmentally friendly choices for Dunlap and colleagues (1978, 2000), Thompson and Barton (1994) evidenced that such opposite values underlying ecological concerns can lead to pro-environmental behaviours. The differences were in the motives, as the ecocentric perspective focused on the ecosystem for its own sake. At the same time, the anthropocentric mindset values nature only as a necessary element in human domination and survival, and hence is short-termed and less sustainable (Thompson & Barton, 1994). Furthermore, significant differences between countries have been presented in studies on NEP in both adults and children (Boeve de Pauw & Van Petegem, 2012; Corral-Verdugo & Armendáriz, 2000; Schultz et al., 2000).

Third culture kids identity and environmentalism

Another phenomenon related to the globalised world is an increase in the presence of multicultural individuals, with TCKs being recognised as a specific quasi-cultural group by many scholars (Mosanya & Kwiatkowska, 2021;

Pollock et al., 2017; Stokke, 2013). With the growth in business internationalisation, the TCK category is now primarily comprised of internationally-based employees' children. The term 'third culture kids' denotes individuals who interacted meaningfully with multiple cultural paradigms during their developmental years, usually due to work-related migrations of their parents. Such cross-cultural exposure significantly influences TCKs' sense of identity, relationships with others and worldviews (Pollock et al., 2017). Furthermore, 'third culture' is defined as a shared commonality of those living an internationally mobile lifestyle. It indicates that TCKs may configure a distinctive cultural identity (third culture) that is neither their parents' culture (first culture) nor the host culture (second culture) (Pollock et al., 2017). A similar phenomenon can be found in the theory of third space by Bhabha (1994), which referred to the hybridity of the identities of cross-cultural individuals that are fluid and constantly being made. As TCKs move between cultures before they have had the opportunity to complete the critical task of personal and cultural identity development, they face issues related to identity and sense of belonging (Pollock et al., 2017), which adversely affect well-being (Hoersting & Jenkins, 2011). Yet, there are also multiple advantages to being a TCK. Due to the exposure to diversity, TCKs are suggested to possess a global mindset (Stokke, 2013), global leadership competencies, cultural flexibility, cultural intelligence (Tarique & Weisbord, 2013), cosmopolitanism and expanded worldviews (Pollock et al., 2017). With such a broad, comprehensive, inclusive mindset and skills, TCK individuals, as global citizens, could also exhibit more pro-environmental attitudes.

Multicultural identity and environmentalism

However, multicultural individuals are not all alike. Alongside TCKs' transcultural character, which may direct their interests towards global matters, other factors might impact their environmental engagement. Brieger (2018) highlighted the impact of collective identity and cultural context on pro-environmental attitudes and proposed framing the sustainability and pro-ecological engagement within identity discourse. A similar approach was proposed by Duff et al. (2022) in a recent study on the effect of self-construals on environmentalism. Hence, multicultural identity might drive TCKs' general attitudes, including environmental views.

The complex identity of multicultural individuals is cognitively configured. For example, Amiot et al. (2007) proposed identity shaping stages in the cognitive-developmental model of social identity integration (CDSMII). Building upon this, Yampolsky et al. (2016) illustrated three ways that multicultural individuals configure their complex identities. These are integration (all cultures are accepted in the self), categorisation (one dominant cultural self), or compartmentalisation (context-depended switches between cultural selves). Mosanya and Kwiatkowska (2021) confirmed the existence of such identity configurations for third culture individuals. Similarly, Pollock et al. (2017) acknowledged the presence of such configurations. They referred to categorisation as focused on differences, with compartmentalisation as context-dependent "frame switching." Ultimately, integration implied finding commonalities between diverse cultural paradigms and developing a superordinate, hybrid and inclusive identity similar to Bhabha's (1994) "third space."

Consequently, multicultural identity configurations could also impact the pro-environmental attitudes of TCKs as they have strong associations with psychological processes relevant to environmentalism. Multicultural identity configurations vary predominantly in inclusiveness. Integrated identity is the most inclusive as it encompasses diverse cultural frames and establishes similarities within differences. As egalitarianism is associated with pro-environmental attitudes, an integrated identity could support ecocentrism. In comparison, categorical and compartmentalised identity configurations are hierarchical and exclusive; they may be associated with less egalitarianism. Furthermore, categorisation reflects ethnocentrism with essentialistic tendencies, while compartmentalisation signifies conformity and temporary exclusion (Bastian & Haslam, 2006; Bennett, 2017; Mosanya & Kwiatkowska, 2021). These could possibly extend to anthropocentric tendencies. Such assumptions might be supported by the link between multicultural identity categorisation, social identity categorisation and essentialism (Mosanya & Kwiatkowska, 2021), detrimental to the inclusivity needed for a NEP. The associations between hierarchism and exclusion with dominance, which is further predictive of anthropocentrism, may explain the mechanism behind such a process (Milfont et al., 2013). Subsequently, categorisation and compartmentalisation could result in a distant approach to nature grounded in man's dominance over the environment. In contrast, integration supports inclusiveness while decreasing essentialism and social categorisation (Mosanya & Kwiatkowska, 2021). Thus, integration may relate to a more egalitarian approach towards the environment (ecocentrism). Furthermore, integrated identity is associated with a global mindset and may also support engagement with international matters (including environmentalism) by promoting inclusive worldviews and actions oriented towards cross-cultural collaboration.

Global mindset and environmentalism

A global mindset is a novel characteristic that facilitates cross-cultural interactions, a critical advantage in a

globalised world (Levy et al., 2007). The global mindset concept has arisen within the organisational behaviour literature and has been discussed at the individual level (Den Dekker, 2011; Mosanya & Kwiatkowska, 2021; Stokke, 2013). An early description of what would now be referred to as a global mindset was a geocentric orientation (Perlmutter, 1969, as cited in Levy et al., 2007), explained as a universalistic and supra-national attitude.

A global mindset relates further to the passion for diversity (Stokke, 2013), cognitive abilities, a "broader mental scope", egalitarianism and vast cultural knowledge (Den Dekker, 2011, p. 60). A global mindset also encourages the internalisation of more than one cultural worldview (ethnorelativism) and forms an opposite frame of reference to ethnocentrism (Bennett, 2017). Hence, a global mindset as a cognitive ability may favour worldviews independent of any social (categorical) frames and support inclusivity (Levy et al., 2007). While highlighting parallels among all humans (Bennett, 2017; Den Dekker, 2011), a global mindset could also promote inclusive commonalities with non-human beings supporting ecocentrism. Therefore, a global mindset creates favourable conditions for engagement in international affairs and global environmental matters. Additionally, it could support the inclusion of broader membership into self-identification, promoting responsibility for the ecosystem. Multicultural individuals like TCKs could therefore exhibit increased interest in the environment due to the elevated level of the global mindset.

Values and environmentalism

Pro-environmental worldviews depend further on values (Banwo & Du, 2019; Kollmuss & Agyeman, 2002), with NEP-based comprehensive research revealing that pro-environmental attitudes imply an interplay among multiple, at points conflicting principles (Kollmuss & Agyeman, 2002; Stern, 2000). Values can be understood as desirable trans-situational goals varying in importance, which serve as guiding principles in life (Schwartz, 1996). They form a hierarchical structure that assists in situational evaluation. Individuals differ on many particular values, which further help to differentiate them in their decision-making and predict behaviours (Schwartz, 2012; Stern, 2000).

In the value model, Schwartz (1996, 2012) evidenced four higher-order clusters of values organised along two dimensions. The first dimension captures the contrast between the openness values (that operate on self-direction and flexibility) versus conservation values (rooted in tradition, security and conformism). The second dimension depicts the opposition between the self-transcendence values (which incorporate universalism and benevolence) and self-enhancement values (motivated by achievement and hedonism). According

to Schwartz (1996), values affect attitudes through a trade-off or balance among the different dimensions, simultaneously relevant to the action and often opposite (e.g., openness vs. conservation). Considering the relationship between values and environmentalism, values grouped around self-transcendence versus self-enhancement and openness versus conservation are predictive of pro-environmental behaviours (Stern, 2000). They may reflect explained earlier ecocentric versus anthropocentric perspectives. Others have attempted to offer extended views on dimensions of the values systems, with similar findings suggesting that values centred on self-transcendence and openness (egalitarianism, altruism) supported pro-environmentalism. At the same time, conservatism hindered it (De Groot & Steg, 2008). Results on self-enhancement values were less consistent, suggesting it relates to environmentalism only if linked with a personal sense of achievement and power (Thompson & Barton, 1994). Hence, self-enhancement might be less stable in time and less relevant to identity and NEP discourse.

Although values are motors of human actions, cultural factors partially mediate behaviour (Bardi & Schwartz, 2003). Therefore, it is unclear which values drive pro-environmental worldviews (i.e., ecocentrism) for novel cultural identity paradigms (like that of TCKs). For TCKs, integrated identity and an elevated level of global mindset could inform self-transcendent values like universalism and benevolence, as they reflect broadmindedness and inclusion. Integration and a global mindset could stimulate the transcendence of selfish needs for dominance over nature. In contrast, categorical identity might link with an endorsement of tradition due to its rigid and exclusive character (Mosanya & Kwiatkowska, 2021). Lastly, compartmentalisation may reflect conformity values (adjustment to context or status quo). It might be that categorisation and compartmentalisation support anthropocentrism due to the higher importance given to a conservation-centred value system.

Moreover, third culture individuals do not have traditional bonds with any culture (Pollock et al., 2017), and their cultural identity is fluid (Hoersting & Jenkins, 2011). Self-transcendence values encompassing universalism and benevolence could help them connect with the natural environment instead of traditional ethnic categories of countries. In such a case, TCKs could exert ecocentric commitment (e.g., belongingness to nature), replacing the need for conventional communities. According to the third space theory of Homi Bhabha (1994), the "third culture" can be understood as a hybrid virtual space of interactions between different cultural paradigms that are always in the process of becoming and, therefore, less categorical and more inclusive (Jamshidian & Pourgiv, 2019). Such fluid identity could be more responsive to new standards, including a NEP.

Aims and hypotheses

Exploring possible factors predicting pro-environmental attitudes of multicultural individuals characterised as TCKs is timely and relevant considering post-modern fast-changing reality. This study focused on psychological predictors of a NEP, operationalised as ecocentrism vs. anthropocentrism. Firstly, we examined how NEP factors are evident among TCKs (Research Question). Secondly, we aimed to reveal associations among multicultural identity configurations, values dimensions and the global mindset with ecocentrism and anthropocentrism. As integrative models are recommended, we aimed to propose a model of direct and indirect predictive effects of multicultural identity configurations, values dimensions and global mindset on ecocentrism and anthropocentrism. We hypothesised mediating effects of values and global mindset in the effect cultural identity configurations have on ecocentrism and anthropocentrism. We thus used path analysis to test a set of hypotheses that, if correct, confirm the effect of identity configurations on NEP with values and global mindset in the role of mediators (Table 1).

The ecological context of the United Arab Emirates

The fast socio-economic transformation in the United Arab Emirates attracted many emigrants to settle within its borders, leading to prosperity and an unusual, multicultural demographic structure, with South Asians and Middle Eastern emigrants being the most prominent communities (GMI, 2021). The rich blend of cultures has encouraged the country's rapid development. Fast growth has also led to the UAE having one of the largest carbon footprints in the world, and the effects of global warming might have particularly dire consequences for the UAE coastline. Hence, many decisive actions have been taken to prevent ecological degradation within just the last decade. As a result, the country's CO_2 emission is noticeably decreasing (World Bank, 2021). Stern et al. (1993) suggested that public concerns expressed in legislation are promising signs of society's commitment towards NEP. Further, accounting for the young population of the UAE (Statista, 2021), special initiatives are crafted for youths. A recent report by Emirates Nature-WWF (2020) revealed that 94% of young citizens want to prioritise restoring relationships with nature.

Specific socio-cultural factors presented above motivate research as they may constitute significant barriers or buffers to pro-environmental worldviews. According to Bronfenbrenner's (1979) model, a person develops within the interacting circles of influences, starting from their personal characteristics, moving on to community levels (for TCKs, cross-cultural or global exposure), which impact values and mindset, followed by macro-level influences, that is, diversity and ecology-related country policies.

METHODS

Participants

This study included international students ($N = 399$) who considered themselves third culture individuals.

TABLE 1
Tested hypotheses with specific argumentation

General hypothesis (direct effect)	Specific hypothesis with mediator(s) justifications
(H1) Multicultural identity integration positively predicts ecocentrism but negatively anthropocentrism	(H1a) Integration positively predicts a global mindset, which in turn creates a favourable condition for ecocentrism; therefore, a global mindset mediates the effect of integration on ecocentrism
	(H1b) Integration positively predicts self-transcendent values that promote ecocentrism; hence, self-transcendent values mediate the effect of integration on ecocentrism
	(H1c) Integration positively predicts openness values that broaden worldviews; hence openness values mediate the effect of integration on ecocentrism
(H2) Multicultural identity categorisation positively predicts anthropocentrism but negatively ecocentrism	(H2a) Categorisation reflects essentialistic tendencies that are also linked with conservative values; hence conservative values may mediate predictive effects of categorisation on anthropocentrism
	(H2b) Categorisation may limit inclusivity related to universalism and benevolence; negative changes in self-transcendent values may mediate the effect of categorisation on anthropocentrism
	(H2c) Categorisation may limit openness to diversity; therefore, the categorisation effect on openness values may mediate the categorisation effect on anthropocentrism
(H3) Multicultural identity compartmentalisation positively predicts anthropocentrism and negatively ecocentrism	(H3a) Compartmentalisation reflects (temporary) exclusivity and hierarchy that are also linked with conservative values; hence conservative values may mediate predictive effects of categorisation on anthropocentrism
	(H3b) Compartmentalisation reflects conformism and may limit (temporary) inclusivity related to universalism and benevolence; hence, negative changes in self-transcendent values may mediate the compartmentalisation effect on anthropocentrism
	(H3c) Compartmentalisation may limit (context-dependent) openness to diversity; hence the categorisation effect on openness values may mediate the compartmentalisation effect on anthropocentrism

This identification was based on a definition by Pollock et al. (2017): *Please check YES if you have been raised in a culture other than that of your parents (or culture of the country given on your passport) for a significant part of early developmental years 6–18*. The sample consisted of 256 females (74%) and 103 males (26%) with a mean age of 21.2 years (*SD* = 3.54, Mode = 19, Range 18–43). All participants were from non-Western countries and lived in the UAE, with 165 (41%) being Indian passport holders. Reported religions were Muslim 40%, Hindu and Buddhist 22% and Christians 15%, among others. Participants reported having lived in one to seven countries (*M* = 2; *SD* = 3.5; Mode = 2); Most of them spoke, on average, three languages (Mode = 3; Range 1–6), with the most commonly reported English, Hindi, Malayalam, Tamil and Arabic. They were residents in the UAE between 2 and 30 years (*M* = 13.79; *SD* = 6.3; Mode = 18).

Measures

The Revised New Ecological Paradigm Scale (NEP-R) (Dunlap et al., 2000; Dunlap & Van Liere, 1978) measured pro-environmental attitudes and worldviews. It consisted of 15 items (7 items reverse-scored) rated on a scale ranging from 1 (*totally disagree*) to 7 (*totally agree*). Item sample: *Plants and animals have as much right as humans to exist*. The literature presents irregularities regarding the factor structure of the NEP-R scale (Denis & Pereira, 2014; Dunlap, 2008; Vikan et al., 2007), with most commonly reported one, two or five factors. Hence, Dunlap et al. (2000) recommend factor analysis for a particular sample. Accounting for the unstable factor structure of the scale (Denis & Pereira, 2014; Dunlap, 2008; Vikan et al., 2007), we conducted confirmatory factor analysis (CFA) to confirm the five-factor structure of the NEP scale, as was proposed initially by Dunlap and Van Liere (1978). Poor fit indices suggested that our data did not support the five-factors structure. Moreover, we encountered two problematic aspects. Firstly, although all but one regression weights were significant, several of them were low (.04; .20; .31; .36). Secondly, the high values of correlations between some factors (*r* = .82 for Limits to growth & Eco-crisis; *r* = .80 for Anti-anthropocentrism & Nature's balance; *r* = .75 for Anti-anthropocentrism & Eco-crisis) suggested problems of discriminative validity. Also, the one-factor structure provided fit indices below the required values.

Therefore, we performed exploratory factor analysis (EFA; principal component analysis method with Varimax rotation) and discovered a two-factor solution to be the most adequate. The simple CFA model for the two-factor model showed better performance, though not fully acceptable (only RMSEA and SRMR were below a critical value, i.e., .08). To achieve a better fit, we ran CFA with modifications; this included several covariances

between errors and one item which loaded on both factors. Despite significant chi-square (*p* = .000), other indices proved a good model fit: CMIN/*df* = 1.894 (below 3); RMSEA = .047 (below .05); PCLOSE = .632 (above .500); CFI = .947 (above .90); SRMR = .500 (equal to criterion .500), and AIC values descending (Appendix S1). Based on obtained two factors, we created two NEP subscales: the Ecocentric Attitude Scale, which consisted of nine items, *α* = .74, and the Anthropo-centric Attitude Scale, which consisted of six items, *α* = .71. We included the item with cross-loadings to the Anthropocentric Scale because of higher loading on the second (.39) than the first factor (.35) (see Byrne, 2016).

Portrait Value Questionnaire-Short (PVQ-S) (Schwartz, 2008) was used to measure self-transcendence, openness and conservation values. The questionnaire presented a variety of portraits of the persons for which respondents needed to answer: *How much like you is this person*? Each value was measured with two items rated on a scale from 1 (*Not at all like me*) to 7 (*Very much like me*). As indicated by theory (Schwartz, 2012), the scores for each value group were centred and further conceived higher order value domains. To control for multicollinearity, three clusters of values were included in the analyses for the study. This involved self-transcendence (universalism, benevolence) (*α* = .89), item sample: *She/he thinks that it is important that every person in the world be treated equally. She/he believes everyone should have equal opportunities in life*. It also included openness (stimulation, self-direction) (*α* = .84), item sample: *She/he likes surprises and is always looking for new things to do. She/he thinks it is important to do lots of different things in life*. Lastly, it assessed conservation (security, conformity, tradition) (*α* = .67), item sample: *Tradition is important to her. She tries to follow the customs handed down by her religion or her family*.

To measure the concept of a global mindset, six items from Den Dekker's (2011) *Global Mindset Scale* were scored on a 7-point Likert scale that ranged from 1 (*strongly disagree*) to 7 (*strongly agree*). The total score reflected an endorsement of global connections and cosmopolitanism. An item sample is: *I am a world citizen* (*α* = .67). We used the CFA to assess the unifactorial structure of the Global Mindset Scale. The CFA model provided acceptable fit to the data: χ^2 = 16,872; *df* = 7; *p* = .02, CMIN/*df* = 2.41; RMSEA = .060 [90 %CI = .02, .096]; PCLOSE = .288; CFI = .96.

Multicultural identities were assessed by implementing the *Multicultural Identity Integration Scale (MULTIIS)* by Yampolsky et al. (2016). The introduction to the MULTIIS includes a brief definition of cultural identity and cultural context to ensure that all the participants understood the questions. MULTIIS contains three subscales: categorisation (five items, *α* = .75) with item sample: *I identify exclusively with one culture*,

compartmentalisation (nine items, $\alpha = .80$) with item sample: *Each of my cultural identities is a separate part of who I am*, and integration (eight items, $\alpha = .82$), item sample: *My cultural identities are part of a more global identity*, all scored on 7-point Likert scale 1 (*not at all*) to 7 (*exactly*). We used the CFA to assess the three-factor structure of the MULTIIS. The CFA model provided acceptable fit to the data: $\chi^2 = 398.41$; $df = 196$; CMIN/$df = 2.03$; RMSEA = .051 [90% CI = .044, .060]; CFI = .924.

Procedure

The ethics approval was obtained from the Research Committee of Middlesex University Dubai. Following this, participants were approached through online platforms for third culture individuals and recruited via snowballing sampling technique. Data were collected using Google Forms. Respondents were informed about the study objectives and non-paid voluntary participation, anonymity, confidentiality and withdrawal rights. After providing their consent, they filled out the aforementioned questionnaires.

Statistical analyses

It was a quantitative, questionnaire-based, cross-sectional study. We employed Pearson's correlation coefficient analyses, paired sample t-test, independent sample t-test and Structural Equation Modelling (SEM) as path analysis to test our hypotheses. Statistical evaluations were performed in SPSS v.25 and Amos v.25.

RESULTS

Preliminary analyses

(RQ1) NEP subscales and gender differences

The descriptive statistics for all scales are presented in Table 2. The paired sample t-test indicated significant differences between the means of NEP factors ecocentrism ($M = 5.43$ $SD = .84$) and anthropocentrism ($M = 3.61$, $SD = .91$) ($t = 24.95$; $df = 398$; $p < .001$; [95% CI 1.67, 1.95]). Homogeneity of variance for ecocentrism and anthropocentrism for males and females was assumed with non-significant Levene's tests. There were no significant differences between men ($M = 5.32$, $SD = .85$) and women ($M = 5.43$, $SD = .83$) in the level of ecocentrism ($t = -1.48$; $df = 389$; $p = .14$, 95% CI [$-.33$, .05]) but there were significant differences between men ($M = 3.91$, $SD = 1.1$) and women ($M = 3.50$, $SD = 1.1$) in anthropocentrism ($t = 3.13$; $df = 389$; $p = .002$, 95% CI [.15, .66]) with moderate effect ($d = .4$).

MULTIIS subscales

The most highly scored multicultural identity configuration was integration, while compartmentalisation had the lowest score. Pairwise comparison of the three subscales has shown that the integration mean score ($M = 4.91$, $SD = 1.02$) was significantly higher than the categorisation ($M = 4.19$, $SD = 1.04$), $t(399) = 9.44$, $p = .000$, and significantly higher than compartmentalisation ($M = 3.88$, $SD = 1.09$), $t(399) = 14.58$, $p = .000$. Categorisation mean score was significantly higher than compartmentalisation $t(399) = 5.22$, $p = .000$.

Values

Self-transcendent values were the most highly scored values dimensions, while conservation values were the least. A pairwise comparison of the three dimensions has shown that self-transcendent values mean score ($M = 2.99$, $SD = 1.02$) was significantly higher than the openness ($M = 1.91$, $SD = 1.46$), $t(399) = 21.98$, $p = .000$, and significantly higher than conservation ($M = .77$, $SD = .81$), $t(399) = -30.88$, $p = .000$. Conservation mean score was significantly lower than openness $t(399) = 16.59$, $p = .000$.

TABLE 2
Descriptive statistics and correlations of all the variables

Variables (N = 399)	M (SD)	1	2	3	4	5	6	7	8	9
1. Ecocentrism	5.43 (1.42)	—								
2. Anthropocentrism	3.61 (1.14)	−.05	—							
3. Self-transcendence values	2.99 (1.46)	**.22**∗∗	**−.46**∗∗	—						
4. Openness values	1.91 (1.32)	**.20**∗∗	**−.41**∗∗	**.76**∗∗	—					
5. Conservation values	0.77 (0.81)	.01	**.12**∗	**.32**∗∗	**.26**∗∗	—				
6. Multicultural identity integration	4.91 (1.02)	**.23**∗∗	−.07	**.15**∗∗	**.10**∗	.01	—			
7. Multicultural identity categorisation	4.19 (1.04)	.01	**.24**∗∗	**−.24**∗∗	**−.11**∗	**.11**∗	**.17**∗	—		
8. Multicultural identity compartmentalisation	3.88 (1.09)	.07	**.16**∗∗	**−.21**∗∗	**−.20**∗∗	−.03	.05	**.48**∗∗	—	
9. Global mindset	5.37 (.93)	**.28**∗∗	**−.12**∗	**.16**∗∗	**.14**∗∗	.01	**.35**∗∗	−.05	.05	—

Note: Bold values with two asterisks have significance $p = .000$. One asterix $p = .001$. *$p < .005$. **$p < .001$.
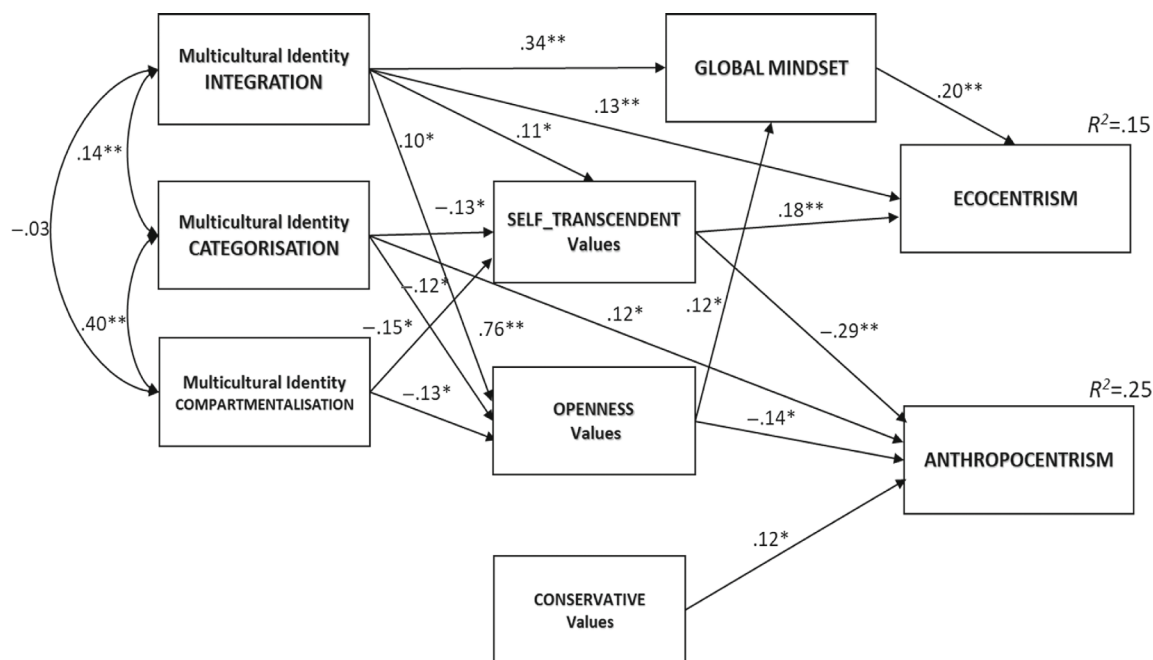
Figure 1. Path model of effects of multicultural identity configurations, values and global mindset on NEP. *$p < .005$. **$p < .001$.

Correlation analyses (H1 a,b)

Table 2 presents pairwise correlations for all variables. Assessment of the first set of hypotheses revealed significant associations between factors of NEP and multicultural identity configurations, values and global mindset. Ecocentrism was positively associated with self-transcendent and openness-related values, integrated multicultural identity and a global mindset. Anthropocentrism was correlated positively with values centred on conservation and categorisation of multicultural identity. It was further negatively associated with self-transcendent and openness values and a global mindset.

Path model (SEM)

The path analysis model presented in Figure 1 tested the sequential direct and indirect effects of variables that appeared to be significantly correlated. The initial model was identified by trimming the non-significant paths from the theoretical model, including multicultural identity configurations, dimensions of values and the global mindset as predictors of ecocentrism and anthropocentrism. The model accounted for 15% of the ecocentrism and 25% of the anthropocentrism variance. As suggested by Hu and Bentler (1999), model fit was determined by the chi-square statistics ($\chi^2 = 28.208$, $df = 16$, $p = .04$), (CMIN/$df = 1.76$), (CFI $= .983$), (RMSEA $= .044$, CI [.014, .070] PCLOSE $= .618$) and (SRMR $= .039$). The fit indices suggested that the model fit the data well. Direct, total and indirect effects are presented in Table 3.

It can be inferred that ecocentrism was directly predicted by multicultural identity integration, self-transcendent values and a global mindset. It was also indirectly predicted on categorisation via its negative effect on self-transcendent values. Anthropocentrism was negatively predicted by self-transcendent and openness values and positively by multicultural identity categorisation and conservation values. Multicultural identity integration (negatively) and compartmentalisation (positively) indirectly affected anthropocentrism via their relationships with self-transcendent and openness values. A post-hoc power analysis was conducted with the implementation of the Soper test. The power of detecting effect was good for ecocentrism (power $= .99$; $N = 399$; $R^2 = .15$; $p = .05$; predictors $= 7$), and for anthropocentrism (power $= 1.0$; $N = 399$; $R^2 = .15$; $p = .05$; predictors $= 7$).

DISCUSSION

New ecological paradigm and TCKs

The present research drew from the notion that culture and identity predict the development of pro-environmental attitudes (Brieger, 2018; Duff et al., 2022; Schultz et al., 2000). Consequently, we aimed to assess the predictive effect of multicultural identity configurations on ecocentrism and anthropocentrism, mediating roles of value dimensions and global mindset for non-Western TCKs with multiple outcomes. Firstly, the results demonstrated the general tendency among TCKs to hold ecocentric worldviews. As a result of early cross-cultural

TABLE 3

Bootstrap SEM analysis of direct, indirect and total effects of multicultural identity configurations, values and global mindset on ecocentrism and anthropocentrism

Predictors (mediators)	Direct effect, β (p-value)	Indirect effect, β (p-value)	Total effect, β (p-value)	Outcome variable	SMC
Multicultural identity integration	.13 (.015)	.09 (.007)	.22 (.012)	Ecocentrism	.15
Multicultural identity categorisation	—	−.03 (.030)	−.02 (.012)		
Multicultural identity compartmentalisation	—	−.03 (.010)	−.02 (.010)		
Self-transcendence values	.18 (.012)	—	.10 (.013)		
Openness to experience values	—	.02 (.003)	.02 (.003)		
Global mindset	.20 (.006)	—	.18 (.006)		
Multicultural identity integration	—	−.06 (.046)	−.06 (.046)	Anthropocentrism	.25
Multicultural identity categorisation	.12 (.035)	.06 (.009)	.18 (.012)		
Multicultural identity compartmentalisation	—	.07 (.015)	.07 (.009)		
Self-transcendence values	−.37 (.004)	—	−.37 (.000)		
Openness to experience values	−.14 (.039)	—	−.14 (.012)		
Conservative values	.12 (.021)	—	.17 (.021)		
Multicultural identity integration	.11 (.022)	—	.11 (.003)	Self-transcendence values	.06
Multicultural identity categorisation	−.13 (.008)	—	−.13 (.008)		
Multicultural identity compartmentalisation	−.15 (.018)	—	−.15 (.021)		
Multicultural identity integration	.11 (.005)	—	.11 (.000)	Openness to experience values	.05
Multicultural identity categorisation	−.13 (.001)	—	−.13 (.001)		
Multicultural identity compartmentalisation	−.14 (.018)	—	−.14 (.009)		
Multicultural identity integration	.35 (.020)	.01 (.009)	.36 (.000)	Global mindset	.14
Multicultural identity categorisation	—	−.01 (.007)	.01 (.021)		
Multicultural identity compartmentalisation	—	−.02 (.012)	.02 (.004)		
Openness to experience values	.12 (.011)	—	.12 (.005)		

Note: Standardised estimates reported; *p*-values obtained through the bias-corrected and accelerated bootstrap interval; SMC = squared multiple correlations.

exposure, TCKs develop global leadership skills (Tarique & Weisbord, 2013). They might feel more responsible for global environmental issues and be more concerned with them. We also suggest that exposure to various cultural paradigms in developmental years could create a sense of connectedness with the whole planet and more ecocentric worldviews. Bronfenbrenner's (1979) model suggests that worldviews depend on community impact, in addition to personal experiences, which for TCKs consist of early, multiple migrations and transient lifestyles. Hence, for TCKs residing in the UAE, the general economic welfare, diversity-promoting and pro-ecological country policies may have created a supportive environment for the development of ecocentrism.

Sociodemographic characteristics and NEP

There were no gender differences among our non-Western TCK participants in their level of ecocentrism, but males expressed significantly greater anthropocentrism. Thus, both genders seemed to equally acknowledge the possibility and even the existence of an eco-crisis. Still, men did not connect this with human activity because they were less likely to believe that the earth has limited resources exerting a more anthropocentric worldview. It might be more difficult for men to reject the thesis about the uniqueness and dominance of humans. Milfont et al.'s (2013)

proposition that the tendency to dominate, which predicts nature disconnection and anthropocentrism, may explain why men scored higher on anthropocentrism. Numerous studies have found that, compared to women, men express higher levels of social dominance orientation (Schmitt & Wirth, 2009). Finally, accounting for the growing ecofeminism movement (Resurrección, 2017), men in collectivist, non-Western societies might be more attached to traditional, dominant, anthropocentric paradigms.

Multicultural identity and values

According to Bardi and Schwartz (2003), values play an adaptive function; hence values clusters significantly associated with multicultural identity configurations might be central to dealing with multiculturalism for third culture individuals. Identity integration was significantly intertwined with self-transcendence and openness related values. For integrated TCKs, the principles of universalism, benevolence and self-direction seem central motivators. TCKs' 'nomadic lifestyle' necessitates incorporating many, often contradictory cultural paradigms (Pollock et al., 2017). This requires high levels of flexibility, inclusivity, diversity acceptance, openness and universalism - a core of self-transcendence. Such attributes can further serve as a bridge to integration. Therefore, openness on one side and universal acceptance on the

other could help integrate diffused and rootless identity of TCKs (Hoersting & Jenkins, 2011; Pollock et al., 2017). Additionally, values of universalism and benevolence stimulate acceptance towards outgroups and contribute to positive social relations (Schwartz, 2012). Our findings extended such thesis and suggest that self-transcendence values could also be an outcome of an integrating process of the internal cultural diversity of TCKs.

Conversely, TCK individuals may build their identity based on rejection (permanent or momentary) of some of their cultural selves. This denial may lead to identity formation in categorical or compartmentalised ways (Mosanya & Kwiatkowska, 2021; Yampolsky et al., 2016). Our results evidenced such a process by revealing negative relationships between categorisation and compartmentalisation and values grouped around openness and self-transcendence. We infer that TCKs who configure their multicultural identity on categorisation or compartmentalisation display less openness or universalistic values. Furthermore, correlational analysis confirmed the positive association between multicultural identity categorisation and conservation-focused values. Yet, such a connection was weak and dropped out of importance within the model. Such an outcome may suggest that for multicultural individuals with mobile lifestyles, tradition, conformism and security-related values are not central to their functioning or environmental attitudes. Instead, our model highlighted openness and self-transcendence focused values as core principles of TCKs.

Multicultural identity configurations, values and NEP (model interpretation)

Our predictions that integrated multicultural identity was associated with ecocentrism and that categorical multicultural identity was supportive of anthropocentrism were confirmed. Compartmentalisation had a more intermediary role. Identity and culture constitute essential components moderating pro-environmental attitudes (Brieger, 2018), yet only the integrated configuration of multicultural identity supports ecocentrism for TCKs. Promoting multicultural identity integration among TCKs could simultaneously encourage their adaptation of the New Environmental Paradigm. The multicultural identity of TCKs based on relationships with many cultures and acceptance of diverse paradigms could create an inclusive, egalitarian base to develop all-encompassing principles, values and mindset supportive of ecocentrism. Furthermore, integration carrying egalitarian characteristics (no culture is superior) could counteract dominance orientation while embracing environmentalism (Milfont et al., 2013). Contrastingly, the categorical identity may result in a neglect of the environmental needs. Our path model further explained the mechanisms responsible

for such an effect, particularly the mediational role of self-transcendent values and a global mindset.

For TCKs, values grouped around self-transcendence and openness were predicted on integrated multicultural identity. Considering TCKs' sense of homelessness, integration with nature could exert ecocentric commitment replacing the need for conventional communities and constitute an alternative to fluid identity (Hoersting & Jenkins, 2011). For novel phenomena of the third culture, reflecting third space in the theory of Bhabha (1994), loosened traditional bonds and increased flexibility may serve as a bridge towards ecocentrism through integration with the environment. The mediational role of benevolence might be seen in the development of kindness and openness to the non-human world. Additionally, self-transcendence was also an important buffer to anthropocentrism. These findings align with existing literature as values included in self-transcendence, namely universalism and benevolence, reflect unity with nature, understanding, tolerance and protection of the global welfare, contributing to positive social relations and care for others (Schwartz, 2012). Conversely, in the model, the multicultural identity configurations of categorisation and compartmentalisation supported anthropocentrism; categorisation directly and both also via a detrimental effect on openness values. These configurations have also had negative associations with self-transcendent values impeding their supportive effect on ecocentrism. One may infer that non-integrated TCKs may be less motivated by openness and self-transcendence, resulting in more anthropocentric worldviews.

The model further indicated a global mindset's prominent role in shaping ecocentric worldviews. The concept of a global mindset overlaps the ideas of cross-cultural competency, universalism and flexibility of TCKs (Den Dekker, 2011; Stokke, 2013). Thus, it could be interpreted as the value of common humanity beneath any social frame. Our findings further extend global mindset value to a common ecology. As the global mindset emphasises similarities between humans (Bennett, 2017; Den Dekker, 2011), it could also highlight the commonalities shared with nature and animals and soften categorical barriers and rigid distinctions between humans and nature. For such a mindset to evolve, values of self-transcendence are required. Principles centred on universalism, benevolence and openness may help one cross a self-focused or tradition-focused mindset. Consequently, our study extends previous assumptions that the global mindset predicts ethnorelativism (Bennett, 2017). It may help individuals bypass social categories and essentialism (Mosanya & Kwiatkowska, 2021) to facilitate environmentalism.

Lastly, the positive relationship of principles clustering around conservation (tradition and conformity) with anthropocentrism aligns with Schwartz (2012), who emphasised that tradition is rooted in mindsets of rigidity and subordination and may lead to the endorsement

of the traditional social paradigm (anthropocentrism). Conservatism, centred on human needs within narrow cultural frames, seems the opposite of the global mindset and the NEP (Dunlap et al., 2000; Schultz et al., 2005). The ties between conservatism and conventionalism might explain such an outcome. In ecological discourse, conventionalism reflects the traditional paradigm centred on human growth. Furthermore, Schwartz (2012) suggested that values centred on conservation relate to disturbances in intergroup relations. Most environmental problems in the twenty-first century need transgroup collaboration and international level care, and traditionalistic principles may undermine such efforts. Conversely, a global mindset that advocates diversity and novelty (Den Dekker, 2011; Stokke, 2013) protects from such an effect as it correlates positively with enthusiasm for outgroup encounters (Bennett, 2017). Conservation did not seem to be mainly linked with the identity of multicultural TCKs, especially within the model, in which other values played a more substantial role. Because TCKs are not tied to strict social categories, conservation is a less vital drive of their worldviews.

Summing up the model, we may infer the answer to the question of what factors may support multicultural individuals' pro-environmental care. TCK individuals who exert a more ecocentric worldview are characterised by integrated multicultural identity, self-transcendence, openness-oriented values and a global mindset. We point to the egalitarian character of these psychological notions and suggest that they may assist multicultural TCKs in avoiding the dominant tendencies known to impair environmentalism (Milfont et al., 2013). Therefore, our study presents the aforementioned factors as possible buffers to the anthropocentric domination in the non-human world.

Limitations and future directions

While interpreting the findings, some limitations need to be considered. The cross-sectional nature of this research, the mediational model's dependence on initial hypotheses, potential for socially desirable participant responses, sample specificity and the unequal gender distribution potentially decrease the study's findings' generalizability. Also, the model explained 15% variance in ecocentrism and 25% variance in anthropocentrism; it is likely that additional psychological factors could expand our model. Further research should address this using longitudinal designs. Additionally, this study focused on a specific sample of multicultural third culture individuals living in the UAE. Hence, the inferences (mainly related to identity based on a single cultural frame and anthropocentrism) may not generalise to the population. In the case of monocultural individuals, some evidence exists on forms of strong national identity (e.g., national narcissism) opposing environmental concerns (Cislak et al., 2020), but more studies are needed. Besides, the demographic and social characteristics of the UAE residents might have affected the study's outcome, and replication with diverse samples is recommended. Yet, it is worth highlighting that the current sample consisted of under-researched non-Western participants, which allowed for extending psychological knowledge outside the Westernised frame of reference.

CONCLUSION

In the twenty-first century, it has become clear that human survival and flourishing depend on international collaboration at the global level to ensure environmental sustainability. Drawing on established theories, our research has linked pro-environmental worldviews with multicultural identity and its integration. We set innovative directions in multiculturism and environmentalism discourse by examining the role of a global mindset and values of self-transcendence and openness. In the dawn of the changing world, ecology constitutes a central notion. Today's young, multicultural people are some of the future leaders with essential roles to play in sustainability. Consequently, it is crucial to deepen knowledge on how to stimulate their ecocentric worldviews, enabling them to lead positive change. The present study highlighted how identity integration, global mindset and self-transcendent values could assist in developing the NEP.

ETHICAL COMPLIANCE STATEMENT

This research was approved by the Research Committee of Middlesex University Dubai in accordance w the international ethical standards, Helsinki Declaration 1964 and its amendments. Informed consent was obtained from all individual adult participants included in the study.

DATA AVAILABILITY STATEMENT

The data supporting this study's findings are available on request from the corresponding author.

SUPPORTING INFORMATION

Additional supporting information may be found online in the Supporting Information section at the end of the article.

Appendix S1. NEP scale factor models fit indices.

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