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Global identity and preference for environmentally friendly products: The role of personal responsibility

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Abstract

This research tests the idea that a salient global identity positively affects people's willingness to pay for environmentally friendly products. Results from a large-scale multi-nation survey (N = 75,934) as well as two studies (N = 322) conducted in Singapore supported this prediction. We found that participants with a more (versus less) dominant global identity indicated greater support for environmentally friendly products and exhibited increased pro-environmental behavior. We further show that the effect is driven by a stronger feeling of personal responsibility towards the environment among individuals who possess a dominant global identity. Findings from this research suggest that the formation of stronger global identity, a psychological consequence of increasing globalization, can have an important impact on people's pro-environmental behavior.

Keywords: global identity, globalization, environment friendliness, personal responsibility

Global identity and preference for environmentally friendly products: The role of personal responsibility

"I am not an Athenian or a Greek, but a citizen of the world"

- Socrates

Climate change, which is perhaps the most critical threat that humankind is currently facing, needs large scale, coordinated action by both nations and individuals. One of the primary reasons for the deteriorating state of the environment is the over-consumption by, and hence over-production for, the world populace (Woodhouse, 2001), that puts immense strain on the world's natural resources (Satterthwaite, 2009; Vörösmarty, Green, Salisbury, & Lammers, 2000). One factor that has been blamed for this increased consumerism is the rapid globalization that the world has witnessed over the last few decades (O'Brien & Leichenko, 2000).

However, increased globalization has also led to "greater awareness of events, practices, styles, and information that are part of the global culture" (Arnett 2002, p. 777). This led people to see themselves as citizens of the world and identify with a worldwide culture, focusing on commonalities with people around the world (Arnett, 2002). The downstream consequences of the development of such a 'global identity' have been studied extensively in a wide variety of contexts such as regulatory goals (Ng & Batra, 2017), cooperative behavior (Buchan et al., 2011), and perception of marketplace information (Gao, Zhang, & Mittal, 2018; Zhang & Khare, 2009).

Building on this stream of literature, in the present research, we explore whether this increased sense of global identity may also spur greater pro-environmental behavior, specifically in the consumption of environment friendly products. We propose that the increased sense of connectedness with the worldwide culture should lead individuals who

possess a strong global identity to feel more personally responsible for issues that concern the well-being of the world, such as climate change. This stronger sense of personal responsibility towards the world would, in turn, propel them to act in a more pro-environmental manner, such as purchasing environmentally friendly products. Our prediction is consistent with prior research showing that people tend to behave in a manner that will help them to fulfill their perceived responsibility (Schlenker, Britt, Pennington, Murphy, & Doherty, 1994).

Initial evidence for our prediction exists in past research that explored the relationship between another consequence of globalization, individuals' cosmopolitan orientation, and pro-environmental attitude using survey design (Grinstein & Riefler, 2015; Leung, Koh, & Tam 2015). While both cosmopolitan orientation and global identity are positive dispositions towards globalization, as we discuss later in the article, they differ conceptually. Our research contributes to the literature by building on the findings from Grinstein and Riefler (2015) and directly testing the impact of a salient global identity on people's environmental attitudes and behavior. In doing so, we also contribute to the literature by proposing a novel mechanism (i.e., the sense of personal responsibility towards the environment) that drives this effect. More broadly, our research responds to a recent call in this journal for a more thorough investigation of the role that culture and globalization play in shaping people's attitude towards climate change (Kashima 2016).

Globalization and Identity.

Social identity theory (Tajfel & Turner, 1986) posits that people define themselves along two dimensions – personal or social (Howard, 2000; Oyserman, 2009). Personal identity includes attributes which differentiate the individual from others (e.g., being intelligent or attractive). On the other hand, social identity is rooted in the way people define themselves as part of social groups (e.g., being an Asian). Given that social identity is highly

susceptible to situational factors, new identities may develop based on changes in an individual's environment (Howard 2000).

A rich body of research has shown that exposure to globalization and foreign cultures can lead to the formation of a global identity (Alden, Steenkamp, & Batra, 2006; Arnett, 2002; Steenkamp & de Jong, 2010). With increasing globalization, information about other countries and cultures becomes highly accessible (Arnett, 2002), and people can travel out of one's own country with greater ease. Exposure to other cultures and practices gradually leads to a sense and realization that though there may be differences in each other's practices, people around the world are fundamentally the same. We may eat different food but the stresses and challenges we face are universal. Research shows that this results in the formation or strengthening of a global identity, associated with greater identification with global lifestyle, culture, and practices (Arnett, 2002; Chiu, Gries, Torelli, & Cheng, 2011; Leung, Qiu, & Chiu, 2014).

While increasing globalization can lead to the development of a global identity, studies show that it can also strengthen people's local identities, i.e., the extent to which they identify with local traditions, customs, and events (Holton, 2000). Researchers have conceptualized local identity in multiple ways. In its simplest form, local identity is conceptualized as one based on local ways of life, rooted in "local circumstances, local environment, and local traditions" (Arnett 2002, p. 777). For some individuals, the influx of global brands, cultures, and media influences may be seen as a threat to the local culture (Chiu et al., 2011). Fear of a global cultural hegemony may lead to a contamination anxiety, a feeling that global culture may affect the purity of the local culture (Chiu & Kwan, 2016; Pickowicz, 1991). Thus, paradoxically, globalization may result in a strengthening of individuals' local identity as they attempt to hold on to their local culture.

This is not to say that global and local identities are bipolar in nature. Existing literature has theorized that both identities can co-exist in a person at varying degrees (Strizhakova, Coulter, and Price, 2012). Though certain individuals may possess either a strong global or local identity, others may either feel strongly about both identities (the glocals) or be disenchanted with both global and local cultures (the alienated or unengaged). While these are important nuances, in this research, we restrict ourselves to examining the effect of global identity on environment friendliness, as it is a direct consequence of increasing globalization. This is also a form of identity that seems to be increasingly prevalent among the younger generation who grow up in this interconnected world and it is important to understand the implications of this trend (Arnett, 2003; Schlegel, 2001; but see Strizhakova et al., 2012).

Global identity and environment friendliness.

Why might global identity affect pro-environmental attitudes and behavior? We argue that global identity increases individuals' feeling of personal responsibility towards the environment, thus spurring them to think and act in pro-environmental manner. Prior research shows that one way in which identity exerts its influence on individuals' behavior is by making them feel personally responsible towards an issue (Triangle Model of Responsibility [TMR]; Fincham & Jaspers, 1980; Schlenker et al., 1994). Personal responsibility has been conceptualized as "the psychological adhesive" (Christopher & Schlenker, 2005, p. 1502) that ties an individual to an issue and guides their actions pertaining to that issue. When people feel that the outcome of an event or issue have implications on the way they define themselves, their sense of personal responsibility increases (Britt 1999). TMR further suggests that the extent of responsibility people feel depends on (1) the specific event or issue (e.g., an examination); (2) the prescription or rules that govern the issue (e.g., studying for the examination); and most importantly, (3) the relevance of person's identity to the specific

issue (e.g., the identity of being a student). The feeling of personal responsibility is high when people sense an obligation to act on an issue, when they know what actions are needed to effect an issue-relevant change, and when they feel that their actions can make a difference (Schlenker et al., 1994; Wagner III, 1995; Weldon & Mustari, 1988). In the example above, a salient student identity may make people feel more responsible towards the issue of an examination as there is a strong relationship between the identity and the event, and clarity of the specific way in which they can make a difference – studying for the examination.

Prior research has shown that individuals with a strong global identity place great focus on how the world is really one big place and everyone living in this world is connected (Buchan et al., 2011). Following the TMR framework, we argue that this salient global identity would make people feel a sense of personal obligation towards issues that concerns the world or planet as a whole (i.e., the identity-event link in the TMR). Since environmental issues, such as climate change and ecological degradation, are by definition problems that impact all humankind, we predict that a salient global identity would lead individuals to feel personally responsible towards the environment. Thus, we hypothesize:

H1: Individuals with a stronger global identity will feel more personally responsible towards the environment.

Feeling of personal responsibility towards an issue translates into attitudes and behavior when there is a clear, well-defined set of prescriptions, rules, and actions that provide greater task clarity (called the identity-prescription link in TMR). There is widespread awareness among laypeople of the ways in which they can become environmentally friendly, such as recycling paper, reducing energy usage, buying green products, and donating time and money to environmental organizations (Laroche, Bergeron, & Barbaro-Forleo, 2001). This clear sense of prescriptions and actions would allow people

with a salient global identity to translate their feeling of responsibility towards the environment into pro-environmental behavior. Thus, we hypothesize that:

> **H2:** Driven by their sense of personal responsibility, individuals with a stronger global identity will exhibit more environmentally friendly (i) intentions; and (ii) behavior.

In summary, we hypothesize that global identity is related to a greater sense of personal responsibility towards the environment. When people with stronger (versus weaker) global identity encounter ways in which they can translate this feeling of personal responsibility into concrete actions, such as consuming environmentally friendly products or donating to an environmental organization, they are more likely to do so. Figure 1 shows these relationships in the form of a conceptual model.

*** Insert Figure 1 about here***

Indirect evidence.

Prior research has provided indirect support for our intuition that global identity leads to greater environmentally friendly attitudes. Though they were not examining individuals' global identity directly, Grinstein & Riefler (2015) and Leung et al. (2015) found that individuals with a cosmopolitan orientation exhibit greater environmentally friendly attitude. For instance, Grinstein & Riefler (2015) showed that US consumers' cosmopolitan orientation was positively related to their environmental concern and self-reported sustainable behavior (Study 1, Grinstein & Riefler, 2015). However, cosmopolitanism is conceptually distinct from global identity. Bartsch, Riefler, & Diamantopoulos (2016) argued that while global identity refers to a positive disposition towards a global world, cosmopolitan orientation refers to a positive disposition specifically towards other foreign countries and

cultures. In line with this definition, prior research has operationalized cosmopolitan orientation in terms of individuals' consumption orientation, such as preference for foreign products (but see, Leung et al., 2015 for an exception). In addition, acknowledging that cosmopolitan orientation is conceptually different from global identity, both Grinstein & Riefler (2015) and Leung et al. (2015) also included global/local identity strength as a covariate when analyzing the impact of cosmopolitan orientation on their dependent variables. Nonetheless, given that both cosmopolitan orientation and global identity share some common values, such as openness to other cultures, their studies would suggest that global identity may also be positively related to environment friendliness.

Another piece of indirect evidence comes from Strizhakova and Coulter (2013). While examining the relationship between materialism and environment friendliness, Strizhakova and Coulter (2013) also examined the role of global cultural identity (which included global lifestyle orientation, global brand orientation, and the extent to which people felt connected with the world) as a moderating variable. The study found that in emerging countries such as India, the relationship between materialism and pro-environmental consumption was stronger for people who felt connected with the world (Table 5, Strizhakova & Coulter, 2013). Although these researchers were not examining the direct effect of global identity on environment friendliness, the findings provide some evidence that there might be a positive relationship between the two variables.

Thus, prior research has hinted at the possibility of a link between global identity and environment friendliness. However, the studies highlighted above differ from the current research on three fronts. First, the reviewed studies examined the impact of related constructs (such as cosmopolitanism) on environmental friendliness but they did not tap into individuals' global identity directly. In the current research, we tapped into individuals' identity directly by measuring and manipulating the strength of their global identity. Second,

most of the studies reviewed above have provided only correlational evidence to support their propositions. Though there are merits to using correlational data, such data is unable to establish the direction of causality. In the current research, we used a mix of multi-nation survey and laboratory studies to support our hypotheses. In doing so, we were able to provide stronger evidence of causality between global identity and environmental friendliness. Third, existing research did not explore in depth the psychological mechanism that may be driving the proposed effect. In this research, we provided evidence for an underlying psychological mechanism– the feeling of personal responsibility towards the environment- that drives the proposed effect. Thus, the present research built on the findings from existing literature to provide a richer insight into the way global identity may be related to environment friendliness.

Overview of studies

We test our hypotheses across three studies. In Study 1, we analyze data from 56 countries included in the sixth wave of the World Values Survey (WVS; World Values Survey Association, 2016) to test the relationship between global identity and the sense of personal responsibility towards the environment. Next, in two laboratory studies conducted in Singapore, we examine the consequences of a stronger global identity on pro-environmental choices. Study 2 examines if the positive relationship between global identity and the sense of personal responsibility towards the environment influence people's intention to purchase environment friendly products. Building on these findings, Study 3 aims to provide causal evidence by experimentally manipulating participants' identity and testing if a salient global identity leads to greater pro-environmental behavior.

Study 1

Hypothesis 1 argued that global identity is positively related to feeling personally responsible towards the environment. To test if this relationship holds true, we examined data

from a large scale, multi-nation survey, the World Values Survey. The WVS is conducted to explore people's values and beliefs on a wide variety of issues using nationally representative samples from a large number of countries. We used the data set from Wave 6 of the WVS which was conducted between 2010 and 2014 (World Values Survey Association, 2016).

Method

Global identity.

One of the attributes of a salient global identity is to view oneself as a citizen of a global, worldwide culture. Therefore, we used item V212 from the survey as a measure of global identity. Respondents indicated how strongly they agreed or disagreed with the statement – *"I see myself as a world citizen."* – on a four-point scale ranging from 1 = Strongly agree to 4 = Strongly disagree. This item was reverse coded in the analyses.

Personal responsibility towards the environment.

Respondents were provided with multiple statements describing different people. They were then asked to indicate, for each description, how close the person in the description resembled the respondent. We used the description of the person in item V78 from the survey as a measure of personal responsibility towards the environment. Respondents read the following description of a person who felt responsible towards the environment - "Looking after the environment is important to this person; to care for nature and save life resources." - and indicated whether they felt that the person was 1 = Very much like me to 6 = Not at all like me. This item was reverse coded in the analyses.

Individual level controls.

A number of individual level variables were included as covariates in the model to control for potential confounds in the analyses.

First, since the WVS data was collected in multiple countries, differences in cultural values across countries might potentially confound the results. One cultural difference that

has been widely researched and is considered "one of the most important in social science research" (Hamamura 2012, p. 3) is the extent to which people view themselves as intertwined with their social environment. While collectivists view themselves as part of social groups, individualists view themselves as independent of social groups (Triandis 1995). As such, we explored ways to control for potential differences in individualism-collectivism in the analysis. While a measure for individualism-collectivism was not directly included in the survey, past research using the WVS data has used proxy measures for collectivism (e.g. Santos, Varnum, & Grossmann, 2017). Consistent with collectivists' focus on in-group, we used two items that measured how important (i) family (item V4); and (ii) friends (item V5) were to the participants (1 = very important, 4 = not very important). We calculated an index of collectivism by first reversing both items and then calculating the average of the two items. Thus, higher scores indicated a greater emphasis on family and friends, associated with higher collectivism (Hamamura, 2012; Triandis, 1995).

Next, from prior research, one would expect individuals' education level, social class, and income to influence their propensity to behave in an environmentally friendly manner (Berger, 1997; Gifford & Nilsson, 2014). With this in mind, respondents' subjective standing in the society in terms of income (V239; 1 = Lowest group to 10 = Highest group), social class (V238; 1 = Upper class to 5 = Lower class) and education level (V248; 1 = no formal education to 9 = University level education) were included as controls in the analyses.

Country level controls.

Given that the survey data included respondents from multiple countries, it is also important to control for country level differences. First, since spending power influences people's willingness to pay for environmentally friendly products, we controlled for country differences in per capita Gross Domestic Product (GDP) at purchasing power parity (PPP) for the year 2014 and recorded in 2015 from the World Bank Database (The World Bank, 2015).

Second, we also expected that a country's environmental policies and social norms may influence participants' environmental consciousness. Citizens from a country that has been very successful in implementing environmentally friendly policies would be predisposed towards environmentally friendly behavior. As such, we included country level Environmental Performance Index for 2014 (EPI; Hsu et al., 2014) in the model.

With these considerations, the dataset used in the analysis only included 1) individuals with valid responses across all individual level variables; and 2) countries for which both GDP at PPP and EPI values could be found in the respective databases. Across 56 countries 75,934 participants satisfied these criteria and were included in the model.

Results

Descriptive statistics and correlations

Table 1 shows the descriptive statistics of and correlations between the two main variables of interest -global identity and feeling of personal responsibility towards the environment- across the eight major regional clusters of the world. As can be seen from the table, there was some variation in the mean level of global identity across regions. More importantly, while the magnitude of the correlation between the two variables varied across regions, they were positive across all regions. However, this analysis did not take into account the nested structure of the data as well as various individual and country level factors that might affect the relationship. We, thus, proceeded to test our hypotheses more formally.

*** Insert Table 1 about here***

Multilevel regression modeling

As the variables used vastly different scales, we standardized all variables including the dependent variable before performing the analyses. The survey data was structured such

that individual level responses were nested within countries. Therefore, we used multilevel regression models to analyze the data. These analyses were conducted using the nlme package in R (Pinheiro, Bates, DebRoy, & Sarkar, 2014). Table 2 provides the results of the models we tested.

Our first model, Model A in Table 2, also called the 'null' model, included the feeling of personal responsibility as the dependent variable and no independent variables. This partitioned the variance in the feeling of personal responsibility into within-country and between-country variance. The intra-class correlation coefficient, the proportion of between-country variance over the total variance in the model, was .093. Thus, 9.3% of the variance in the feeling of personal responsibility was attributable to the countries the respondents belonged to. As suggested by LeBreton & Senter (2008), this indicated a small to medium effect of country, suggesting the need for hierarchical modeling of the data.

In our next model, Model B, we entered all individual and country level variables, except global identity, as independent variables. We allowed both intercepts and slopes to randomly vary for collectivism and estimated fixed effects for all other predictors. As can be seen in the table, this model performed better than the intercept only model, Model A, Likelihood Ratio: 233.33, $p < .001$, indicating the need for additional variables in the model. Finally, we added global identity as an independent variable in Model C. We allowed both intercepts and slopes to randomly vary for global identity and collectivism and estimated fixed effects for all other predictors. This model performed better than a model without global identity (i.e., Model B; Likelihood Ratio: 1202.11, $p < .001$), indicating the unique explanatory power of global identity. As shown in Table 2 (Model C), the relationship between global identity and personal responsibility was significant, $B = .11$, $SE = .004$, $t(75{,}873) = 30.62$, $p < .001$, when controlling for all other individual and country level covariates.

*** Insert Table 2 about here***

Discussion

Results from this study provided compelling evidence for H1. Analyses of data from 56 countries showed that global identity was positively related to feeling personally responsible towards the environment. The effect persisted even when controlling for individual level factors such as collectivism, income, social class, and education, as well as country level factors such as GDP at PPP and EPI, and despite possible country level variations. In the next study, we examined if the feeling of responsibility filters down to influence willingness to pay for environmentally friendly products.

Study 2

One way in which the environmental impact of mass consumption can be mitigated is through the adoption of environmentally friendly products. Such products often have an environmentally sustainable production process and/or are more efficient in their usage of natural resources such as power and fuel. However, environmentally friendly products are often priced at a premium compared with regular products, potentially due to the specialized production requirements (Srivastava 2007). The previous study showed that global identity is related to feeling personally responsible towards the environment. In this study, we tested if participants with a stronger global identity are more willing to pay more for an environmentally friendly product, and if their sense of personal responsibility towards the environment will mediate this relationship.

Method

Participants.

Two hundred and twenty-six undergraduate students (M_{age} = 21.68 years, 65% females; 209 Chinese, 2 Indian, 3 Malay, and 12 mixed or other ethnicities) from a large public university in Singapore completed the study in return for a nominal compensation. We

conducted this and the next study in Singapore as it is a developed, multi-racial, and multi-cultural country. That said, prior research also suggests that Singaporeans continue to hold on to their local citizenship and ethnic identity (Chen, Ng, & Rao, 2005). This balance of global and local identity provides a suitable context for us to test our hypotheses as we predicted that there would be sufficient variance in the relative strength of the global and local identity in the population.

Procedure.

We informed participants that they would be participating in a research study that contained short surveys. To measure participants' willingness to pay more for an environmentally friendly product, we told them that we were helping the university collect information to better understand students' preferences for the printing of class materials. Participants were presented with the following information: *"In s*ome courses, students are required to pay for copyrighted materials (e.g., case studies) that will be used in class. *Currently, these materials are printed on regular paper"*. We asked participants to indicate their agreement with the statement I would be willing to pay more for the materials printed on recycled paper on a 7-point Likert scale (1= strongly disagree to 7 = strongly agree). This formed our dependent measure.

We measured participants' global and local identity using the 8-item scale developed by Tu, Khare, & Zhang (2012). The scale consisted of four items measuring global identity (α = .74; e.g., "My heart mostly belongs to the whole world") and four items measuring local identity (α = .81; e.g., "I respect local traditions"). Following Tu et al. (2012), we averaged the four global identity items and used it as the independent measure. We averaged the four local identity items and used it as a covariate in all analyses.

We measured the extent to which participants felt personally responsible towards the environment using the following two items measured on a 7-point Likert scale (r = .71; 1=

strongly disagree to 7 = strongly agree): (1) I think protecting the environment is my responsibility; and (2) I think environmental deterioration is a personally relevant issue for me. The mean of the two items indicated the extent to which participants felt personally responsible towards the environment. The descriptive statistics and correlations among all the variables are shown in Table 3.

*** Insert Table 3 about here***

Results

Willingness to pay for environmentally friendly product.

We first conducted a regression with participants' global identity as the independent variable, their local identity as a covariate, and their willingness to pay more for class materials printed on recycled paper as the dependent variable. Participants' local identity was included as a covariate to isolate the effect of global identity on the dependent variable. Analysis showed that the relationship between global identity and willingness to pay more for class materials printed on recycled paper was significant ($B = .53$, $SE = .11$, $t(223) = 4.70$, $p < .001$). The relationship between local identity and willingness to pay more was not significant ($B = -.09$, $SE = .10$, $t(223) = -.85$, $p = .40$). The R^2 for the full model was .09. Thus, participants' global identity significantly predicted their preference for class material printed on recycled paper while controlling for their local identity.

Personal responsibility.

We next regressed participants' sense of personal responsibility towards the environment on their global identity while adding their local identity as a covariate. Analyses revealed that the relationship between global identity and feeling personally responsible towards the environment was significant ($B = .50$, $SE = .07$, $t(223) = 7.12$, $p < .001$). The relationship between the covariate, local identity, and feeling personally responsible towards the environment was significant as well ($B = .14$, $SE = .06$, $t(223) = 2.08$, $p = .039$). The R^2 for

the full model was .23. Thus, participants' global identity had a unique predictive effect on their feeling of personal responsibility towards the environment while controlling for their local identity.

Mediation analysis.

We conducted a mediation analysis using Model 4 of the PROCESS macro for SPSS (Hayes, 2012). We entered participants' global identity as the independent variable (X), their willingness to pay more for class material printed on recycled paper as the dependent variable (Y), the sense of personal responsibility as the mediator (M), and participants' local identity as a covariate. Bootstrapping analysis with 5000 iterations indicated that the direct effect of participant's global identity on their preference for class materials printed on recycled paper was mediated by their sense of personal responsibility towards the environment, Indirect effect: B = .16, 95% CI = [.046, .30]. Global identity was positively related to a sense of personal responsibility towards the environment, which, in turn, led to a greater preference for class materials printed on recycled paper.

Discussion

Results from this study provided strong evidence for H1 and H2. Controlling for participants' chronic local identity, this study showed that a stronger global identity was related to a greater preference for class materials printed on recycled paper. Furthermore, we showed that this effect was mediated by a sense of personal responsibility towards the environment. Additional analyses including participants' age and gender as covariates also did not result in a material change in the results. Though the studies provided converging evidence that a stronger global identity is linked to greater support for environmentally friendly behavior, both studies have relied on correlational data. Study 3 aimed to address this limitation by experimentally manipulating participants' identities and showing the causal relationship between identity salience and pro-environmental behavioral intention as well as actual

behavior. Random assignment of participants to conditions in an experimental design would reduce any individual level bias in the results and isolate the effect of global identity on environment friendliness.

Study 3

Prior research in the identity literature has shown that though people may possess multiple identities, only one of these identities would be salient and influence their behavior at any one point in time (Brewer, 1991; Hong, Morris, Chiu & Benet-Martinez, 2000). Consistent with research in the literature, we argue that increasing the salience of participants' local identity should momentarily lower the salience of their global identity (Zhang & Khare, 2009). On the other hand, increasing the salience of participants' global identity should momentarily bolster its salience over and above any baseline. While local identity is typically contrasted against global identity in the literature (Chen et. 2016; Tu et al., 2012; Zhang & Khare, 2009), we do not suggest that they are orthogonal concepts. Instead, our aim is to bolster or attenuate the salience of global identity which would allow us to test our hypotheses. We expect that compared to participants in the local identity or the baseline control conditions, those in the global identity condition will exhibit more pro-environmental behavioral intention. Thus, by manipulating the salience of participants' identity, this study aims to provide stronger, causal evidence for the role of global identity in influencing individuals' environment friendliness.

Further, this study also aimed to build on Studies 1 and 2 by providing behavioral evidence for the proposed effect. In this study, we included a behavioral measure - participants' act of donating to an environmental charity. We aimed to test if making individuals' global identity salient not only increases behavioral intentions, as in the previous studies, but also lead people to exhibit pro-environmental behavior.

Method

Participants.

Ninety-six undergraduate students (M_{age} = 22.12 years, 65% female, 2 participants did not report this information; 90 Chinese, 1 Indian, 3 Malay, and 2 other ethnicities) from a large public university in Singapore completed this study in return of a nominal compensation of Singapore dollars (S$) 5.

Procedure.

We randomly assigned participants to one of the three experimental conditions. To manipulate the salience of participants' global and local identities, we adopted the sentence-scrambling task described in Zhang and Khare (2009) and asked participants to unscramble 10 sentences. For example, a sentence in the local (global) identity condition was "I a citizen am local (global)" which un-scrambles to "I am a local (global) citizen". This method followed prior research which shows that exposure to the relevant words (i.e., local or global) increases the relative accessibility of the related concepts in one's mind (Srull & Wyer, 1980). In addition, in a third, control condition we asked participants to unscramble sentences unrelated to global or local identity such as "I like to watch the news" and "I love to drink coffee".

Next, in an ostensibly unrelated task, participants read that the university was planning to introduce a new scheme wherein students can choose to purchase class materials printed on recycled paper instead of regular paper from the university bookstore. We asked participants to indicate the maximum price difference they were willing to pay between class materials printed on regular and those printed on recycled paper in S$. This difference, which indicated the extent participants were willing to pay for environment friendliness, formed our first dependent variable.

We also asked participants to indicate (1) the extent to which they felt their personal wellbeing was linked to the wellbeing of the world; and (2) the events of the world were also

a reflection of them as a person, on a 7-point scale. Each point corresponded with two circles labeled ‘Me’ and ‘World’. The scale ranged from two circles which did not overlap at all (on scale point ‘1’) to the two circles overlapping perfectly (on scale point ‘7’). These served as our manipulation check items.

At the end of the experiment, we informed participants that we were partnering with a well-known environmental organization and were accepting donations on their behalf. We asked participants what amount, if any, of the five dollars they were receiving as compensation for this study, would they be willing to donate to this environmental organization. Participants indicated the donation amount on a scale ranging from S$0 to S$5 with increments of S$0.50 (i.e., 50 cents). At the end of the session, all participants were paid the full S$5 for participation and debriefed. However, do note that while indicating the donation amount, participants were unaware that they were not making an actual donation.

Results

Given that the experimental design had three conditions, we created two dummy variables to analyze our data. Since our aim was the test the effect of global identity priming in relation to the other two conditions, we used the global identity condition as the reference group. The first dummy variable was assigned a value of 1 if a participant’s assigned experimental condition was local identity and 0 otherwise. The second dummy variable was assigned a value of 1 if the participant’s assigned experimental condition was the control condition and 0 otherwise. In the regression analyses that follow, negative coefficients for these dummy variables would indicate that global identity condition had a positive effect on the dependent variable in comparison with the specific experimental condition represented by the dummy variables.

Manipulation check.

We first conducted a linear regression with the mean of the two manipulation check items as the dependent variable and the two dummy variables as the independent variables. Results showed that participants primed with local identity showed significantly lower connection with the world compared with those primed with global identity (B = -1.62, SE = .33, t(93) = -4.96, p < .001). Further, the feeling of connection with the world was lower in the control condition compared with the global identity condition (B = -1.09, SE = .32, t(93) = -3.36, p = .001). Thus, participants in the global identity condition felt greater connection with the world (M = 4.62, SD = 1.45), followed by the control condition (M = 3.53, SD = 1.13) and the local identity condition (M = 3.00, SD = 1.31).

Price premium.

Next, we conducted a similar linear regression as above, but with the premium participants were willing to pay for class materials printed on recycled paper as the dependent variable. Participants in the local identity condition were willing to pay significantly lower premium for class material printed on recycled paper compared with those in the global identity condition (B = -2.81, SE = .56, t(93) = -5.03, p < .001). Further, those in the control condition were also willing to pay significantly lower premium for class material printed on recycled paper compared with those in the global identity condition (B = -1.46, SE = .55, t(93) = -2.63, p = .01). Thus, the price premium participants were willing to pay was highest in the global identity condition (M_{global} = S$3.6, SD = 3.21), followed by the control condition ($M_{control}$ = S$2.14, SD = 1.87), and the local identity condition (M_{local} = S$0.78, SD = 0.94). Further analyses by adding age and gender as covariates in the above model did not materially change the results.

Donation to environmental organization.

Finally, we repeated the regression above with the amount participants were willing to donate to the environmental organization as the dependent variable. Participants in the local

identity condition were willing to pay significantly lower to the environmental organization compared with those in the global identity condition (B = -1.14, SE = .35, t(93) = -3.21, p = .002). Further, those in the control condition were also willing to donate significantly lower amount to the environmental organization compared with those in the global identity condition (B = -.69 SE = .35, t(93) = -1.97, p = .05). Participants in the global identity condition were willing to donate the highest amount (M_{global} = S$1.72, SD = 1.84), followed by the control condition ($M_{control}$ = S$1.03, SD = 1.44), and the local identity condition (M_{local} = S$0.58, SD = .68). Further analyses by adding age and gender as covariates in the above model did not materially change the results.

Discussion

Results from this study provided additional support for our proposition that a salient global identity exerts a positive effect on people's environmental behavior. We show that not only does a salient global identity lead to greater self-reported environment friendliness (compared with a baseline control condition), it can also lead to actual environment friendly behavior. Compared to participants in both the local identity and control conditions, those primed with global identity indicated they would be willing to donate a significantly higher amount of money to an environmental organization.

General Discussion

Three studies provided converging evidence for the prediction that a salient global identity leads to a greater willingness to act in an environmentally friendly manner, such as paying a premium for environmentally friendly products. Further, we showed that a sense of personal responsibility towards the environment underlies the positive relationship between global identity and preference for environmentally friendly products. Using data from a large scale, multi-nation survey, Study 1 showed that a stronger global identity predicts a stronger sense of personal responsibility towards the environment. Next, two laboratory studies

conducted in Singapore provided further evidence for our predictions. Study 2 provided evidence that this feeling of personal responsibility leads to greater willingness to purchase environmentally friendly products. Studies 3 provided causal evidence for our predictions by experimentally manipulating the salience of global identity and examining its effect on the willingness to pay a premium for environmentally friendly products. It further showed that such positive behavioral intention translates into actual pro-environmental behavior, such as donating a larger amount to a pro-environmental organization.

Theoretical and practical implications

Our results make multiple contributions both to theory and practice. Firstly, our studies provide important insights into the effect of global identity, a psychological consequence of globalization, on environmental behavior. Though there has been increasing interest in the impact of globalization on people's attitude (Chiu, Mallorie, Keh, & Law, 2009; Fu & Chiu, 2007; Harush, Lisak, & Erez, 2016), limited research exists on how global identity can impact environmental attitudes. Research employing correlational design suggests that cosmopolitan orientation, a positive disposition towards globalization, can affect pro-environmental attitudes and behavior (Grinstein & Riefler, 2015; Leung et al., 2015). We add to this literature by showing that the global identity, a distinct and more direct effect of globalization on identity, has a causal impact on people's environmental behavior. The popular press has frequently alluded to the fact that globalization is one of the culprits in driving greater environmental deterioration. Our research adds to this conversation by showing that greater global identity, a result of exposure to globalization, might increase people's pro-environmental behavior.

We further contribute to the literature on the psychological consequences of globalization by showing that the salience of global identity can make people feel personally responsible towards identity relevant issues, in this case, environmental protection. This feeling

of personal responsibility is translated into concrete action when an opportunity to act in an environmentally friendly manner arises. To the best of our knowledge, this link provides new insights to researchers who are examining the way global and local identities affect attitude towards various socio-cultural issues and opens multiple avenues for future research.

Our findings also contribute to the "green" literature. In the recent decades, much research has been conducted across diverse fields to identify effective initiatives to protect the environment and encourage people to behave in environmentally friendly manner (Lee & Holden, 1999; Hansson, 2003; Thogersen, 2005). While the way social identity affects environmental behavior has been examined in the literature, this stream of research has been limited by the domain specificity of the studies (see Fielding & Hornsey, 2016 for a review). With a few exceptions, majority of the studies have focused on the way group identification in a domain (e.g., identifying with consumers of organic food) predicts behavior in the same domain (e.g., amount spent on organic food; Bartels & Reinders, 2010). Our findings add depth to this body of literature by showing that social identity in a domain not directly related to pro-environmental behavior could also affect environmental behavior.

Lastly, our findings also provide important insights for managers and policymakers. Understanding how the global identity may affect individuals' attitude and behavior towards the environment is important as governments are more likely to support environmentally friendly initiatives if they sense strong support on the ground. We show that encouraging people to view themselves as global citizens can heighten their sense of responsibility towards the environment and induce them to buy environmentally friendly products. Based on our findings, if citizens of a country view themselves more as global citizens, they may be more likely to consume environmentally friendly goods and services. Highlighting the pro-environmental credentials of the product when communicating to such consumers may directly

affect sales of such products. People with a salient global identity may also be more willing to support pro-environmental policies and decisions of their local and national Government.

Limitations and directions for future research

Our findings also open multiple important avenues for future research. First, as the goal of this research was to show how the social identity shaped by a cultural phenomenon – globalization – may affect pro-environmental attitudes and behavior across many nations, we did not examine any cross-cultural differences in our studies. While it may seem that our effect is universal, we do note that our laboratory studies were conducted in Singapore, which is fairly developed in economic terms. Further, prior research has found Singaporean to be bicultural (Chen, Ng & Rao, 2005). To test the generalizability of our findings, we conducted a follow-up study with a sample of US participants on Amazon Mechanical Turk (see online appendix) and found a similar pattern of results. That said, both Singapore and US are developed nations. Future research can build on our findings by examining if the general positive relationship we have found is moderated by specific cross-national differences. For instance, given that both Singapore and US are economically developed nations, it remains unclear if a country's level of economic development would moderate the predicted effect. Since green products may cost more than non-green products, the extent to which individuals' attitude translate into actual behavior would conceivably be influenced by consumers' economic situation. Findings from Strizhakova & Coulter (2013) suggest that the impact of global identity on pro-environmental consumption may differ between emerging and developed markets. Further, although we controlled for individual difference in the individualism-collectivism in the study, our choice of measure was limited by the nature of the data. Future research can more directly examine if other cultural values such as self-construal (Markus & Kitayama, 1991) or masculinity-femininity might moderate the effect of global identity on pro-environmental attitudes and behavior.

Second, in this research, we have focused on the effect of global identity on pro-environmental behavior. Future research can examine the consequences that other social identities related to globalization, such as local, glocal, and alienated identities, have on environmental attitudes. For instance, since individuals with glocal identity possess a strong global and local identity, it is a-priori unclear how they will navigate the potential tension between these two identities.

Third, while we show that global identity leads to an increased feeling of personal responsibility towards the environment, we did not examine what brings about this sense of personal responsibility. Does it result from a sense of personal agency (Bandura 2000) such as a belief in one's ability to bring about a positive change? Or is it a simpler explanation that people, in general, feel a sense of personal responsibility towards the environment and global identity makes this sense of responsibility salient? Future research can investigate these potential explanations in depth to increase our understanding of the psychological mechanism through which global identity operates in the environmental domain.

Finally, we acknowledge that although across all studies we find a positive effect of global identity on environment friendliness, the effect sizes in some of the studies are small. However, as has been argued in multiple subfields of psychology, sometimes it might be worthwhile to study even small effect sizes in psychological studies as they might lead to consequential differences in the real world (Ellis, 2010; Greenwald, Banaji, & Nosek, 2015; Prentice & Miller, 1992). The effect of global identity on consequential real-world behavior needs to be examined further in a field study. Further, it would also be interesting to explore situations which may strengthen or weaken the effect of global identity on environment friendliness

Conclusion

In this research, we show that global identity, a consequence of being exposed to globalization, can positively increase pro-environmental attitudes and behavior. We hope that our findings will encourage more research on the way globalization can affect people's perception of climate change, and ways in which the harmful effects of humans on the environment can be mitigated.

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Tables

Table 1

Region-wise descriptive statistics and correlations in Study 1

	Global Identity Mean (SD)	Personal Responsibility Mean (SD)	Correlation
AFR	3.10 (.93)	4.48 (1.28)	.11***
ASIA	3.16 (.80)	4.34 (1.35)	.15***
ME	2.92 (.97)	4.73 (1.27)	.13***
AUS	3.10 (.71)	4.38 (1.23)	.21***
EEUR	2.68 (.95)	4.51 (1.16)	.084***
WEUR	2.89 (.83)	4.30 (1.25)	.19***
NA	2.82 (.83)	4.05 (1.28)	.28***
SA	3.19 (.75)	4.80 (1.19)	.12***

* $p < .05$;** $p < .01$;*** $p < .001$

Regions: Africa (AFR): Algeria, Egypt, Ghana, Morocco, Nigeria, Rwanda, South Africa, Tunisia, Zimbabwe; ASIA: China, India, Japan, Kazakhstan, Kyrgyzstan, Malaysia, Pakistan, Philippines, Singapore, South Korea, Thailand, Uzbekistan; Australia (AUS): Australia; Eastern Europe (EEUR): Belarus, Estonia, Georgia, Poland, Romania, Russia, Slovenia, Ukraine; Middle East (ME): Armenia, Azerbaijan, Bahrain, Iraq, Jordan, Kuwait, Lebanon, Libya, Qatar, Turkey, Yemen**;** North America (NA): United States; South America (SA): Argentina, Brazil, Chile, Colombia, Ecuador, Mexico, Peru, Trinidad, Uruguay; Western Europe (WEUR): Cyprus, Germany, Netherlands, Spain, Sweden

Table 2

Hierarchical linear regression predicting feeling responsible towards the environment

	Model A	Model B	Model C
Constant	.02 (.04)	.02 (.04)	.03 (.04)
Individual level predictors:			
Social class	-	-.04*** (.004)	-.04*** (.004)
Income level	-	-.04*** (.004)	-.04*** (.004)
Education level	-	.03*** (.004)	.03*** (.004)
Collectivism		.07***(.008)	.07***(.003)
Country level predictors:			
GDP per capita at PPP	-	.07 (.05)	.05 (.05)
Country level EPI	-	-.14* (.05)	-.11* (.05)
Global Identity	-	-	.11*** (.004)
R^2 (conditional)[1]	.093	.11	.11
ICC[2]	.093	.088	.025
Likelihood Ratio[3]		828.54***	796.91***

* p < .05;**p < .01;*** p < .001; Figures in parentheses () indicate standard errors

[1] Proportion of variance explained by both the fixed and random factors included in the model

[2] Signifies the percentage of the variance in people's feeling of responsibility towards the environment that is attributable to the country to which they belong and unexplained by the independent variables in the model

[3] Each model is tested in comparison with the previous model that is reported in the table.

Table 3

Descriptive statistics and correlations for variables included in Study 2.

	Mean	SD	1	2	3
1. Global identity	4.76	.84	-		
2. Local identity	5.25	.90	.23**	-	
3. Feeling of personal responsibility	3.04	1.44	.46***	.22**	-
4. Willingness to pay more	5.19	.97	.30***	. 015	.29***

* p < .05;**p < .01;*** p < .001

Figures

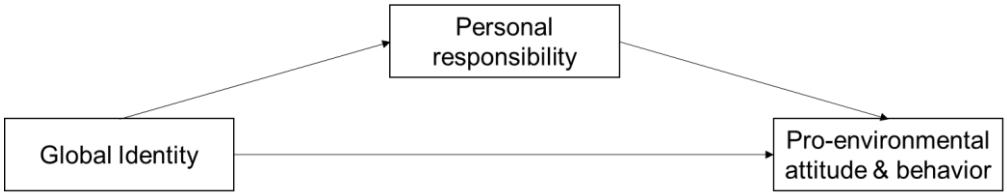

Figure 1. Conceptual model of the underlying mechanism by which global identity leads to pro-environmental attitudes and behavior

Supplementary Material

Study A1

While the laboratory studies included in the manuscript tested our predictions in Singapore, we conducted an additional study to conceptually replicate and test the generalizability of our findings. We primed either global or local identity among participants from the US and tested if a global identity prime led to a more positive attitude and higher willingness to pay for an environmentally friendly product.

Method

Participants.

We recruited 200 participants from the US (M_{age} = 34.17 years, 49% females; 140 European Americans, 15 African Americans, 11 Latin Americans, 18 Asian Americans, 9 multi-racials, 7 unspecified) using Amazon Mechanical Turk (US).

Procedure.

We randomly assigned participants to either a global or local identity prime condition. As in Study 3 of the article, to manipulate the salience of participants' global and local identities, we adopted the sentence-scrambling task described in Zhang and Khare (2009). For example, a sentence in the local (global) identity condition was "I a citizen am local (global)" which un-scrambles to "I am a local (global) citizen".

Next, in an ostensibly unrelated task, participants were shown reviews of two brands of refrigerators (brand L and G) in a tabular format with five attributes (viz., freezer capacity, depth, finish or color, water dispenser, overall capacity). Both brands were identical on the first four attributes with the key differentiator being the last attribute, Environmental Impact Quotient (EIQ), which indicated how environmentally friendly a product was. Higher environment friendliness was indicated by a greater number of green colored 'ticks'. Brand L

was presented as a more environmentally friendly product with 4 ticks whereas brand G was presented with only 1 tick.

We asked participants to indicate how much they would be willing to pay (between $0 to $1000) for each refrigerator. Next, they indicated their attitude (positivity, intention to buy, and preference; α=.96) towards the refrigerators on a 7-point scale (1=Brand L, 7=Brand G). These items were averaged to form an attitude index. Note that this was a comparative measure with a lower value indicating a more positive attitude towards brand L, the more environmentally brand. Thus, we reverse coded the scale such that higher values indicated a more positive attitude towards brand L.

Lastly, before presenting participants with items measuring demographic information, we asked participants to respond to two manipulation check items. Following Arnett's (2002) conceptualization of people with stronger global identity feeling a greater sense of connection with the world, we measured participants' sense of self-world connect. We asked participants to indicate on a scale ranging from 0 to 100 (1) the extent to which they felt their personal wellbeing was linked to the wellbeing of the world and (2) the events of the world were also a reflection of them as a person. Above the scale, we presented participants with two circles labeled 'Me' and 'World'. Towards the lower point of the scale, the circles did not overlap at all. At the midpoint of the scale, there was partial overlap between the two circles. At the end of the scale, there was complete overlap between the circles. The average of the two items served as our manipulation check.

Results

Manipulation check.

A one-way ANOVA indicated that the effect of primed identity on feeling of self-world connect was marginally significant. Participants primed with global identity were more likely to feel connected with the world as compared with participants primed with local

identity (M_{global} = 47.57, SD = 22.32, M_{local} = 41.70, SD = 21.16, F(1,198) = 3.65, p = .058, η_p^2 = .018). One reason for this small effect size of the prime on the manipulation check might be because we measured the manipulation check items after measuring the dependent variable. It is possible that at that point, the effect of the prime might have weakened.

Price premium for the environmentally friendly product.

Since the two products that were presented were identical except for the environmental quotient, we would logically expect all participants to exhibit a higher willingness to pay for the more environmentally friendly product and a one way repeated-measures ANOVA on the price participants were willing to pay for the two refrigerators supported this intuition. Analysis indicated a significant main effect of the environment friendliness of the brands. Specifically, participants indicated a higher willingness to pay for Brand L (M = $627.33, SD = 214.81) compared with Brand G (M = $511.70, SD = 209.85, F (1, 199) = 109.13, p < .001, η_p^2 = .35). However, our aim was to test if the willingness to pay a premium for the environmentally friendly Brand L was higher among participants primed with global, compared with local, identity. Thus, a mixed ANOVA with primed identity as the between subject factor, the refrigerator brand as the within subject factor, and the amount participants were willing to pay as the dependent variable was run. Results revealed a significant interaction effect between identity and brand (F (1, 198) = 4.52, p = .035, η_p^2 = .022).

To probe the interaction effect further and to examine if the premium participants were willing to pay for the environmentally friendly brand differed based on primed identity, we subtracted the price participants were willing to pay for Brand G from the price they were willing to pay for Brand L. A one-way ANOVA found that the premium participants were willing to pay for the environmental friendly brand L was significantly different in the global identity (M = $138.73, SD = 176.47) and the local identity conditions (M = $92.07, SD =

129.89, F(1,198) = 4.52, p =.035, η_p^2 = .02). Given that this analysis used the difference between participants' willingness to pay for the two brands, it might be possible that certain statistical assumptions underlying a one-way ANOVA may not hold. Although ANOVA is robust to such statistical violations for reasonably large sample size such as the one used in this study, we conducted further analysis to test if participants in the global identity condition significantly differed in their willingness to pay a premium compared with those in the local identity condition. To this end, we conducted a bootstrapping analysis using the two.boot function in R with 1000 resamples on the difference between the means of premium in the local and global identity conditions. This analysis showed that the 95% confidence interval of the difference between the means of the premium participants were willing to pay in the local vs the global identity condition did not include zero (95% CI = [-90.44, -5.90]), indicating that there was indeed a difference in the mean between the two groups. These results led us to conclude that participants were willing to pay a higher premium for the more environmentally friendly brand in the global identity condition.

Attitude.

We next conducted a one-way ANOVA which revealed a significant effect of primed identity on attitude towards the environmentally friendly product (F(1,198) = 6.26, p = .01, η_p^2 = .03). As predicted, participants in the global identity condition displayed significantly more favorable attitude towards brand L (M_{global} = 6.02, SD = 1.10), the more environmentally friendly product, relative to those in the local identity condition (M_{local} = 5.59, SD = 1.34).

Discussion

Results from this study conceptually replicates our findings reported in the main article. Participants who were primed with global (versus local) identity exhibited more positive attitude as well as greater willingness to pay a premium for the environmentally

friendly variant of the product. In addition to Study 1 in the main article, this study shows that the positive effect of global identity on environment friendliness might occur both in an Eastern and a Western culture. However, refer to the General Discussion section of the main article for additional discussion on this point.