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The “green” side of materialism in emerging BRIC and developed markets: The moderating role of global cultural identity[☆]

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ABSTRACT

Drawing on cultural identity theory, global consumer culture theory, and sustainability research, we examine the “green” side of materialism in emerging BRIC markets and developed (U.S. and Australian) markets. We assess the moderating effect of global cultural identity on the relationship between materialism and environmentally friendly tendencies using three different conceptualizations and measures of global cultural identity – the lifestyle and brand dimensions of global consumption orientation and global connectedness. In emerging markets, we observe strong positive effects of materialism on the concern for environmentally friendly products, the willingness to pay extra for environmentally friendly products, perceptions of global companies as environmentally friendly, and the likelihood to engage in environmentally friendly tendencies for the global segment across all three conceptualizations of global cultural identity; in addition, for individuals with a global cultural identity, we observe a significant positive relationship between materialism and these measures of environmentally friendly tendencies. In developed markets, significant effects are observed only for the global segment, but specific effects depend on the conceptualization of a global cultural identity. Therefore, our results indicate that multinational companies focused on combining materialistic appeals with their green positioning in the emerging markets must carefully target consumers with a strong global cultural identity.

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1. Introduction

Global sustainability is widely recognized as encompassing the intrinsically interrelated environmental, social, and economic sustainability (Adams, 2006; Lélé, 1991). The interplay between these three pillars of sustainability means that changes to one have downstream effects on the other two. For example, although economic development plays a key role in alleviating world poverty and in building social development, it can come at a cost to the environment (Mabogunje, 2002). As globalization has developed around the world, some have argued that the global integration of national economies further erodes the capacity of individual countries to balance environmental, economic, and social choices and have suggested that the power of sustainable development shifts toward multinational corporations and the global marketplace (Adams, 2006; Paelke, 2005).

In pursuing their global business goals, multinational corporations focus on economic development and thus fuel the growth of materialism worldwide (Belk, Ger, & Askegaard, 2003; Ritzer, 2007; Sharma, 2011; Steenkamp & de Jong, 2010). Notably, the importance of possessions is becoming more evident in emerging markets, but also continues to be apparent in developed countries (Dholakia & Talukdar, 2004; Ger & Belk, 1996; Speck & Roy, 2008). As it relates to sustainability, materialistic consumption fuels the economy but puts a strain on environmental resources and, at the aggregate level, has been deemed to be ecologically destructive (Brown & Kasser, 2005; Kasser, 2005). At the individual level, research documents that a more materialistic individual is less likely to be environmentally conscious (Brown & Kasser, 2005; Good, 2007). Similarly, research examining the relationship between materialism as a value and various manifestations of environmentalism has reported that materialistic individuals engage in fewer environmentally friendly activities (Kilbourne & Pickett, 2008; Richins & Dawson, 1992) and leave a larger ecological footprint (Brown & Kasser, 2005).

Globalization processes, however, also highlight a truth about consumption: it is impossible to consume without limits in an ecologically limited world. As multinational corporations frequently undertake environmentally responsible brand positioning (Osterhus, 1997), individuals around the world have become attentive to ecologically friendly behaviors, and “green” is becoming the new “cool”

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across the globe (“Be green, be cool, & be nice to the environment,” 2010; “Cool is the new green,” 2010). Despite a lesser developed infrastructure to support environmentally friendly behaviors in many emerging (versus developed) markets, there is evidence of an “environmental” segment of more affluent, technologically savvy, and globally oriented consumers interested in “greener” products (“Are emerging market consumers engaging with the green bandwagon?” 2007). Adams (2006) further argues that sustainability (including economic, social, and environmental sustainability) must be understood as a fundamental cultural idea. Therefore, two consumer values linked to sustainability, materialism and environmental consciousness, and their related behaviors, may not necessarily be opposed to each other at the individual level, and their relationship must be further investigated in a global context.

In this paper, we draw upon cultural identity theory, global consumer culture theory, and sustainability research to discuss the relationship between materialism and “environmentally friendly tendencies,” defined to include not only market-based tendencies (i.e., concern about environmentally friendly products, willingness to pay more for environmentally friendly products, and perceptions about global brands as environmentally friendly) but also the more general likelihood to engage in environmentally friendly behaviors. We contend that an individual’s global cultural identity, that is, the extent to which an individual’s identity focus is more global than local (Berry, 2001; Jensen, 2003; Steenkamp, Batra, & Alden, 2003; Strizhakova, Coulter, & Price, 2011), moderates the relationship between materialism and environmentally friendly tendencies. We focus on global cultural identity because individuals more engaged in a global (relative to local) consumer culture are likely to concurrently be focused not only on economic growth and the value of their possessions but also on the welfare of the global environment. Specifically, we posit that individuals with a stronger global cultural identity will exhibit a stronger positive relationship between materialism and environmentally friendly tendencies. Furthermore, we speculate that this relationship will be stronger in emerging (than developed) markets where both economic and environmental sustainability emerged simultaneously in response to global integration; we expect a weak relationship in developed markets where these two dimensions of sustainability were historically regarded as mutually exclusive (Adams, 2006; Grove, 2002; Hoffmam, 1997). To test these propositions, we conducted our research using an online panel of adult consumers in the emerging BRIC market and the developed markets of the U.S. and Australia.

Our research integrates theoretical perspectives on sustainability, materialism, and global consumer culture and contributes to a broadened understanding of the “green side” of materialism in several important ways. First, our work situates the relationship between materialism and these environmentally friendly tendencies within a global consumer culture; we argue that materialism and environmentally friendly tendencies can coexist, particularly for a segment of consumers with a global cultural identity who are engaged in global discourses related to both status and product ownership as well as ecologically conscious consumption practices. Second, our examination of the “green side” includes not only the consideration of the likelihood to engage in environmentally friendly behaviors but also three market-based environmental tendencies (i.e., the concern for environmentally friendly products when making purchases, the willingness to pay extra for environmentally friendly products, and the perceptions of global companies as environmentally friendly) that have not previously been examined in the context of materialism. Third, we address a recent call to examine consumer behavior in emerging markets that have different socio-historic and cultural developments compared to developed Western markets but are exposed to similar globalization processes and strategies by multinational firms (Burgess & Steenkamp, 2006). We further explore

differences in the sizes and composition of cultural identity segments across emerging and developed markets. In the following sections, we elaborate on the theoretical underpinnings of our research, provide additional information about our sample and survey, report our findings, discuss the managerial implications of our research, and identify opportunities for future work.

2. Conceptual framework

As globalization has evolved, cultural identity has been at the core of consumer culture research (Alden, Steenkamp, & Batra, 2006; Kjeldgaard & Askegaard, 2006; Steenkamp & de Jong, 2010; Strizhakova, Coulter, & Price, 2008, 2012; Varman & Belk, 2009; Zhao & Belk, 2008). A key conclusion of this research is that cultural identity should consider an individual’s global and local identities (Arnett, 2002) because although consumers may react favorably to symbols of a global consumer culture, they do so in relation to local cultural symbols (Akaka & Alden, 2010; Ger & Belk, 1996; Hung, Li, & Belk, 2007; van Ittersum & Wong, 2010).

Researchers have recently begun to examine an individual’s cultural identity, defined as the coexistence of a broad range of beliefs and behaviors embedded to varying degrees in local and global discourses (Strizhakova et al., 2012). Researchers also have offered varying conceptualizations and measurement of this global–local cultural identity, which are based on engagement in global and/or local consumer culture. Some have proposed separate measures of global identity and local identity (Tu, Khare, & Zhang, 2012; Zhang & Khare, 2009). Others suggest that global and local identities can be combined in more intricate ways, such that these identities coexist with a broad range of beliefs, and behaviors are embedded in local and global discourses (Strizhakova et al., 2012). Specifically, Steenkamp and his colleagues (Alden et al., 2006; Steenkamp & de Jong, 2010) and Strizhakova et al. (2012) classify individuals as having a cultural identity that is global, glocal, local (national), or alienated (unengaged). The global group includes individuals who prefer a modern global lifestyle, give attention and value to global brands, and have a stronger affiliation with global consumer culture at the expense of local culture. The glocal group includes individuals who are fluent across global and local cultural spaces and who adeptly combine global and local cultural lifestyles and brands. The local group includes individuals who adhere to local traditions and avoid global brands; they have a more nationalistic and ethnocentric orientation. Finally, the alienated group appears to be disinterested in global and local consumer culture and brands. In general, global and glocal consumer segments are more open to the influences of globalization and global consumer culture, whereas local and alienated segments are less open to such influences.

Because materialism and environmentally friendly tendencies are promulgated by multinational firms around the world as reflections of their sustainability mission (encompassing economic, environmental, and social sustainability), we suggest that assessing this relationship in the context of global cultural identity will provide interesting insights. From the perspective of sustainable development (Adams, 2006), individuals who are engaged in the global consumer culture can pursue a more affluent and materialistic lifestyle while also desiring to engage in a “greener” lifestyle, exhibiting more environmentally friendly beliefs and consumption practices. Furthermore, although we expect a personal identity affiliation with the global consumer culture to transcend emerging and developed markets, we expect the relationship to be stronger in emerging than developed markets due to historical differences in the evolution of sustainability in these markets. In pursuing both economic and environmental sustainability, multinational corporations have brought the value of materialistic possessions along with their focus on green products to emerging markets in recent years. Consequently, globally oriented consumers in these emerging markets are more likely to integrate

both materialistic and environmental values that are associated with global brands. Although multinational corporations pursue similar strategies for their global brands in developed markets, it may be more difficult for consumers to integrate economic growth and environmental strategies that have historically clashed at the macro level in these markets. Therefore, we expect global cultural identity to have a stronger effect in emerging markets than in developed markets. Fig. 1 presents our theoretical model, which highlights global cultural identity as an important moderator of the effect of materialistic values on environmentally friendly tendencies. In the following sections, we briefly review research on materialism and environmentally friendly tendencies, paying attention to globalization and cultural identity.

2.1. Materialism and global cultural identity

Materialism has been defined as a “set of centrally held beliefs about the importance of possessions in one’s life” (Richins & Dawson, 1992, p. 308) or as “the importance a consumer attaches to worldly possessions” (Belk, 1985, p. 291). With consumerism as a focus in the developed markets, materialism has been of interest for three decades. As the emerging markets are increasingly engaged in a global consumer culture, they are witnessing materialism on the rise (Appadurai, 1990; Belk et al., 2003; Ritzer, 2007). Indeed, multinational firms encourage consumerism and promulgate materialism as part of their economic sustainability mission in emerging markets (Dholakia & Talukdar, 2004; Sharma, 2011). Across both developed and emerging markets, materialism has primarily been considered in relation to an individual’s general well-being (Rindfleisch, Burroughs, & Wong, 2009); however, other work has examined materialism in the context of consumption beliefs and practices. For example, Rindfleisch et al. (2009) reported that more materialistic individuals have a broader set of self- and communal-brand connections, particularly when they feel insecure and vulnerable. Consumer researchers have also established a positive relationship between materialism and the value-expressive function of foreign products among Chinese consumers (Hung, Gu, & Yim, 2007), between materialism and conspicuous consumption among American consumers (Wang & Wallendorf, 2006), and between materialism and consumer

self-enhancement values among Turkish consumers (Karabati & Cemalcilar, 2010).

Global consumer culture theory suggests that individuals with a more global focus, that is, a global cultural identity, would be more cosmopolitan and more concerned about how they compare with others around the world and thus claims that the consumption of global brands and living a more cosmopolitan global lifestyle is linked with materialistic tendencies (Alden et al., 2006; Belk, 1985; Hannerz, 2000). As globalization progresses, materialistic individuals embrace a more global and less local cultural identity (Dholakia & Talukdar, 2004; Sharma, 2011). Other work has demonstrated that global and glocal segments have stronger materialistic values and more positive attitudes toward global brands (Alden et al., 2006; Riefler, 2012; Steenkamp & de Jong, 2010) as well as greater acculturation to global consumer culture (Cleveland & Laroche, 2007).

2.2. Environmentally friendly tendencies and global cultural identity

Despite an ongoing tradition in sociology and environmental psychology, the investigation of environmental consciousness and environmentally friendly tendencies has traditionally received less attention in marketing (Ellen, Wiener, & Cobb-Walgren, 1991; Pickett, Kangun, & Grove, 1993). However, more recently, there have been calls for a renewed focus on environmental consumption and sustainability (Kotler, 2011; Prothero et al., 2011). Research has focused on profiling general environmental concerns, attitudes, and behaviors (Dembkowski & Hanmer-Lloyd, 1994; Polonsky, 2011), and there is a trend to study consumers’ concern for and consumption of environmentally friendly products (Cornelissen, Dewitte, Warlop, & Yzerbyt, 2007; Cornelissen, Pandelaere, Warlop, & Dewitte, 2008; Goldstein, Cialdini, & Griskevicius, 2008; Welsch & Kühling, 2009).

As globalization has evolved, multinational corporations and global brands have emphasized the importance of environmental sustainability in their business mission and green consumerism through their green positioning and advertising appeals (“Are emerging market consumers engaging with the green bandwagon?,” 2007). As such, they further facilitate consumer concern for environmentally friendly products and develop perceptions of global companies and brands as environmentally conscious. Global consumer culture theory

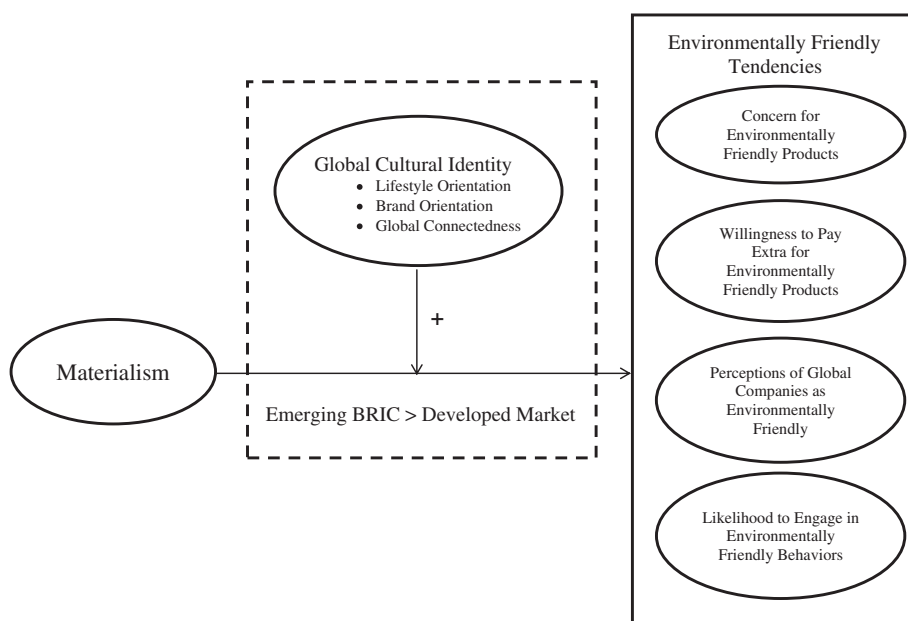


Fig. 1. Conceptual model: the moderating effect of global cultural identity on the relationship between materialism and environmentally friendly tendencies in emerging and developed markets.

suggests that individuals with a more global focus, that is, a global cultural identity, are more concerned about the environment and more likely to engage in environmentally friendly tendencies. Environmental concern, in addition to freedom, liberty, and human rights, is becoming an important pillar of global citizenship and a more pressing global issue and expression of global culture (Leiserowitz, Kates, & Parris, 2006; Osterhus, 1997; Thompson, 2005; Whalley, 2008). Russell and Russell (2010) refer to both global citizenship and environmental consciousness as superordinate consumer values that are reflective of overarching consumer orientations toward belonging to the global world and the natural environment.

2.3. Rethinking the relationship between materialism and environmentally friendly tendencies

As we have noted, in recent years, firms worldwide have been stimulating both materialistic values and environmental consumption as part of their sustainability mission. On the aggregate level, greater consumption of goods is associated with adverse effects on the environment (Brown & Kasser, 2005; Kasser, 2005), and some researchers have argued that more materialistic individuals are less likely to engage in environmentally friendly tendencies (Kasser, 2002; Kilbourne & Pickett, 2008). We have drawn upon global consumer culture theory (Askegaard, 2006; Jensen, 2003; Steenkamp et al., 2003; Strizhakova et al., 2011) and sustainability perspectives (Adams, 2006) to argue that individuals who exhibit a stronger global cultural identity are more likely to hold materialistic values and be more engaged in environmentally friendly tendencies. In addition, we expect that a global cultural identity moderates the effects of materialism on environmentally friendly tendencies and that the effect is positive and stronger (weaker) among consumers with a stronger (weaker) global cultural identity.

Further, because we expect that global cultural identity is focused on globalization practices related to consumption, we expect this moderating effect to hold in both emerging and developed markets. For many years, economic and environmental sustainability have been perceived as being at odds with one another due to the adverse effect of increased consumption on the environment in developed markets (Grove, 2002; Hoffmann, 1997). Only recently have globalization processes highlighted the interdependence and more complex relationships between economic and environmental sustainability (Adams, 2006). For consumers in developed markets, it may be more difficult to integrate the historical tensions between environmental and economic sustainability and the new interdependent sustainability perspective than for consumers in emerging markets, who have been exposed to the ideas of materialism and environmentalism more recently due to globalization. Therefore, we predict a stronger moderating effect of global cultural identity in emerging markets than in developed markets.

3. Method

3.1. Sample and procedures

The net sample of our study included 1872 adults from the emerging BRIC market (Brazil = 319, Russia = 328, India = 305, China = 295) and the developed market (USA = 302, Australia = 323) who participated in online data collection (approximately 200 participants were removed from the sample due to nonresponse or poor quality responding). Participants had resided for a minimum of seven years in their respective countries, and we targeted an equal number of males and females, as well as equal numbers of participants in each of three age groups: 18–30, 31–45, and 46–60 (we set an upper age limit at 60 because of the lower average lifespan in some markets). Participants had various educational and professional backgrounds (see Table 1 for participant profiles in the emerging BRIC and developed markets and by country),

but more educated segments were overrepresented in comparison to the general population in emerging markets due to online data collection. The overall response rate (completed surveys/invitations to participate) across countries was 42%.

We developed the survey questionnaire in English, and the English version was used for our data collections in the U.S., Australia and India, where English is the primary language of schooling. Native speakers translated the questionnaire into Portuguese, Russian, and Mandarin, and then other native speakers back-translated it into English for our data collections in Brazil, Russia and China, respectively. The survey asked a variety of consumption-related questions, including our measures of materialism, global cultural identity, and questions related to environmentally friendly tendencies. To minimize common method biases (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003), the software program randomized the order of questions and blocks. Further, to ensure participants' attention to the survey, we inserted two quality-control questions at the beginning and at the end of the survey. Participants who failed to mark a specific response to these questions were automatically dropped from the study. To further assess response bias, we included two thematically unrelated questions ("Orange is my favorite color," "I like eating raw vegetables"); correlations between these questions and other questions were non-significant. The marketing research firm eliminated those who provided a uniform response to all questions and also ensured that participants completed the survey only once.

3.2. Measurement

3.2.1. Measurement of latent constructs

Our independent variable, materialism, was measured using six items from the well-established Richins' scale (1987; see items and scale reliabilities in Appendix A, Table 1A). Our dependent variable, environmentally friendly tendencies, consists of three market-based measures, as well as the likelihood to engage in environmentally friendly behaviors; all were measured on seven-point scales. With regard to the former three measures, we drew upon work related to environmental consumption practices (Cornelissen et al., 2008; Kilbourne et al., 2009; Webb, Mohr, & Harris, 2008). We assessed concern for environmentally friendly products when making purchases with three questions: "When purchasing a new product, how concerned are you that the product is made from: 1) environmentally friendly materials, 2) packaged in biodegradable materials, and 3) made from recycled materials?" The response endpoints were "not at all concerned" and "very concerned." Willingness to pay extra for environmentally friendly products was assessed with three questions: "How willing are you to pay an extra 3–5% on top of the price so that the product is made from: 1) environmentally friendly materials, 2) packaged in biodegradable materials, and 3) made from recycled materials?" The response endpoints were "not at all willing" and "very willing." Perceptions of global companies as environmentally friendly was assessed by the question, "Based on what you know about each of the following six companies, please indicate the extent to which you believe the company is or is not environmentally responsible?" The endpoints were "not at all environmentally responsible" and "very responsible." Each of the six target brand companies (automotive: Toyota and Mercedes; electronics: Samsung and Apple; food-beverage: Coca-Cola and McDonald's) has made a statement about its environmental responsibility and sustainability on their respective corporate websites and was identified as one of Interbrand's top 20 global brands in 2010 ("Top 100 Global Brands," 2010). Preliminary EFA and CFA analyses confirmed the presence of one underlying construct related to consumer perceptions of global companies as environmentally responsible, with correlated errors between pairs of companies from the same industry (multi-group CFA: $\chi^2(24) = 85.39$, CFI = .98, TLI = .97, RMSEA < .05). Finally, we assessed the likelihood to engage in environmentally friendly behaviors as

Table 1
Demographic profile of study participants by country within emerging BRIC and developed markets.

	N	Females %	Age M (SD)	Average number of times traveled abroad in the last 5 years	Born in the country %	Middle class %	College-educated %	Residing in city and suburbs %
Emerging BRIC market	1247	47.2	37 (11)	2.0 (4.1)	97.3	56.2	66.4	88.4
Brazil	319	48.6	37 (12)	1.5 (3.4)	99.4	56.4	46.1	83.2
Russia	328	49.4	37 (11)	2.2 (4.0)	91.8	68.0	62.5	89.4
India	305	48.9	38 (12)	1.9 (4.2)	99.3	49.5	75.6	88.2
China	295	41.0	34 (11)	2.2 (5.6)	99.0	49.2	72.3	90.1
Developed market	625	50.5	39 (12)	1.3 (3.4)	88.9	55.0	52.2	65.0
USA	302	50.7	39 (12)	1.4 (4.4)	95.4	54.6	62.2	63.9
Australia	323	51.7	40 (13)	1.3 (2.4)	81.7	61.0	42.1	65.9

related to the following: 1) recycling, 2) conserving use of energy at home, 3) conserving use of water at home, and 4) minimizing household waste/trash to protect the environment. The response endpoints were “not at all likely” and “very likely.”

We used structural equation modeling (AMOS, 17.0) to test the fit of our measurement model composed of five latent constructs (materialism, consumer concern for environmentally friendly products, consumer willingness to pay extra for environmentally friendly products, perceptions of global companies as environmentally friendly, and likelihood to engage in environmentally friendly behaviors). We first tested models individually in each country, and similar to previous research documenting measurement problems with materialism items in cross-cultural settings (Griffin, Babin, & Christensen, 2004; Wong, Rindfleisch, & Burroughs, 2003), we found two items (“It is really true that money can buy happiness” and “People place too much emphasis on material things”) that yielded low loadings (<.50) across all emerging countries. After dropping these two items, the resultant measurement models yielded acceptable fit measurements. Next, we ran a multi-group CFA to establish configural and metric invariance (Steenkamp & Baumgartner, 1998). The fit of the measurement model was acceptable ($\chi^2(942) = 2619.71$, CFI = .93, TLI = .91, RMSEA < .03). All factor loadings were significant, and all correlations were below .70 (Campbell & Fiske, 1959), indicating configural invariance. Full metric invariance was achieved for all measures ($\chi^2(1017) = 2931.61$, CFI = .93, TLI = .91, RMSEA < .03). We further confirmed that our latent measures exhibited convergent and discriminant validity (Fornell & Larcker, 1981) (see Appendix A, Table 2A for average variance extracted, internal consistency, and Pearson correlations of our measures).

3.2.2. Global cultural identity

We assessed global cultural identity using three measures. The first two reflect an individual's global lifestyle and brand consumption orientations and have been identified in previous work (Alden et al., 2006; Riefler, 2012; Steenkamp & de Jong, 2010). With regard to these two measures, participants were asked to choose which of four statements (global, glocal, local, and alienated; see Appendix B) most closely represent their personal orientation. The third measure, global connectedness, which focuses on an individual's overall attachment and belonging to the global world, was developed for this research, based on work related to group and geographic identity (Cameron, 2004; Russell & Russell, 2010). We developed seven seven-point Likert items, tapping into the salience of global world membership and attachment to the global consumer segment (see Appendix B); we then used a median split to categorize participants as having a stronger versus weaker global connectedness.²

To assess the measurement model for each measure, we ran three multi-group SEM analyses for the emerging BRIC market and the

developed market data: two across global, glocal, local, and alienated groups for the lifestyle and brand orientations, and one across the strong and weak global connectedness groups. The fit of all measurement models was acceptable for both the *emerging BRIC market* (lifestyle orientation: $\chi^2(628) = 1228.15$, CFI = .91, TLI = .90, RMSEA < .04; brand orientation: $\chi^2(628) = 766.06$, CFI = .91, TLI = .90, RMSEA < .04; global connectedness: $\chi^2(314) = 554.42$, CFI = .93, TLI = .92, RMSEA < .06) and the *developed market* (lifestyle orientation: $\chi^2(628) = 1062.27$, CFI = .94, TLI = .93, RMSEA < .04; brand orientation: $\chi^2(628) = 1271.55$, CFI = .94, TLI = .93, RMSEA < .04; global connectedness: $\chi^2(314) = 740.04$, CFI = .96, TLI = .95, RMSEA < .05). Full metric invariance was achieved for all measures (*emerging BRIC*: lifestyle orientation $\Delta\chi^2(45) = 91.96$, $p > .01$, brand orientation $\Delta\chi^2(45) = 87.47$, $p > .01$, global connectedness $\Delta\chi^2(15) = 16.83$, $p > .05$; *developed*: lifestyle orientation $\Delta\chi^2(45) = 59.25$, $p > .05$, brand orientation $\Delta\chi^2(45) = 66.65$, $p > .01$, global connectedness $\Delta\chi^2(15) = 23.27$, $p > .01$).

4. Results

4.1. Descriptive findings in relation to global cultural identity segments

Table 2 provides profile details of the segments (global, glocal, local, and alienated) for the lifestyle orientation and brand orientation measures of global cultural identity and also for the global connectedness measure, for both the emerging BRIC and developed markets, as well as ANOVA results and post hoc analyses. We note several key findings. First, in relation to segment sizes, we found differences within emerging BRIC and developed markets. With regard to the emerging BRIC market, the glocal segment was largest according to both the lifestyle and brand orientation measures (52.9% and 60.9%, respectively); the other segments were significantly smaller (ranging from 5.9% to 19.2%). In the developed market, the largest segment was dependent on the measure; the local segment (41.4%) was largest for the lifestyle orientation measure, and the glocal (38.4%) and alienated (34.2%) segments were largest for the brand orientation; the global segment was smallest across both measures (5.9% and 4.6%, respectively). In addition, across the emerging BRIC and developed markets, the Chi-squared tests indicate significant variation in segment size with regard to lifestyle orientation ($\chi^2(4) = 163.87$, $p < .001$) and brand orientation ($\chi^2(4) = 251.79$, $p < .001$).

Table 2 also reports on age, education, international travel, and Internet use (see Footnote 3 in Table 2) among the segments identified with the three measures of global cultural identity. The key differentiating factor across the global cultural identity segments was education; in both emerging BRIC and developed markets, a larger percentage of college-educated participants were in the global and glocal (vs. local and alienated) segments in terms of lifestyle orientation and in the stronger (vs. weaker) global connectedness segment. With regard to brand orientation, in the emerging market, we found that the global and glocal segments had the largest percentage (~80%) of college-educated participants, whereas in the developed market, the global segment had the smallest percentage (~55%) of college-educated participants. Furthermore, participants in the global and glocal segments in the emerging BRIC market reported greater Internet use than the other two segments.

² Consistent with our focus on emerging BRIC and developed markets, and also given that some segments (derived from the brand orientation and lifestyle orientation measures) within individual countries had less than 20 study participants, all further analyses are at the market level (i.e. comparing the emerging BRIC market with the developed market).

Table 2
Global cultural identity segment profile for emerging BRIC and developed markets.

	Global	Glocal	Local	Alienated	F-test/ χ^2
Lifestyle orientation					
Emerging BRIC market					
N in segment	142	660	239	206	
% in segment	11.4 ^a	52.9 ^b	19.2 ^c	16.5 ^d	533.61****
Age ¹	35.0 ^a	35.8 ^a	38.0 ^{a b}	38.5 ^b	5.17***
College-educated (%)	71.8 ^a	70.3 ^a	64.5 ^{a b}	52.5 ^b	56.74***
Travel abroad ²	4.17 ^a	3.17 ^a	1.16 ^b	1.43 ^b	2.62*
Internet use ³	4.75 ^a	4.55 ^b	4.24 ^c	4.21 ^c	13.37***
Developed market					
N in segment	37	175	259	154	
% in segment	5.9 ^a	28.0 ^b	41.4 ^c	24.6 ^d	160.86****
Age ¹	45.0 ^a	37.8 ^{a b}	42.0 ^a	34.8 ^b	15.12***
College-educated (%)	63.6 ^a	45.5 ^a	30.7 ^{a b}	25 ^b	9.13*
Travel abroad ²	1.65 ^a	1.80 ^a	.96 ^b	1.07 ^b	2.53**
Internet use ³	3.47	3.44	3.56	3.55	.58
Brand orientation					
Emerging BRIC market					
N in segment	207	759	74	204	
% in segment	16.5 ^a	60.9 ^b	5.9 ^c	16.3 ^a	901.85****
Age ¹	36.3	37	36.6	35.0	1.30
College-educated (%)	84.8 ^a	81.0 ^a	62.2 ^{a b}	61.7 ^b	21.46***
Travel abroad ²	3.61	2.89	.97	1.12	1.35
Internet use ³	4.81 ^a	4.46 ^b	4.22 ^c	4.17 ^c	11.06****
Developed market					
N in segment	29	240	142	214	
% in segment	4.6 ^a	38.4 ^b	22.7 ^c	34.2 ^d	171.17****
Age	34.7 ^a	38.3 ^a	42.9 ^b	38.4 ^a	6.36***
College-educated (%)	55.2 ^a	65 ^b	62.0 ^a	62.6 ^{ab}	6.05***
Travel abroad ²	1.45	1.46	1.07	1.15	.54
Internet use ³	3.97 ^a	3.51 ^b	3.42 ^b	3.54 ^b	2.60*
Global connectedness					
	Strong		Weak		t-test/ χ^2
Emerging BRIC market					
N in segment	624		623		
Age ¹	36.7		36.5		.16
College-educated (%)	79.1		68.4		2.10*
Travel abroad ²	2.07		1.18		1.15
Internet use ³	4.46		4.45		.09
Developed Market					
N in segment	312		313		
Age ¹	39.1		39.3		.24
College-educated (%)	70.1		57.6		4.27*
Travel abroad ²	1.47		1.09		1.36
Internet use ³	3.58		3.48		1.31

Note: * $p < .05$, ** $p < .01$, *** $p < .001$; different letter superscripts indicate significant ($p < .05$) differences across global cultural identity segments on a given variable; same letter superscripts indicate no significant differences ($p > .05$) across segments.

¹ Assessed using a ratio scale.

² Participants reported the number of times traveled abroad in the last five years.

³ Participants reported frequency of Internet use with regard to tweeting, emailing, blogging, shopping, searching goods, searching information, and skyping (1 = never, 2 = less than once a month, 3 = about once a month, 4 = about 2–3 times a month; 5 = about 2–3 times a week; 6 = about 5 times a week; 7 = daily); the average across activities is reported ($\alpha_{\text{emerging}} = .72$, $\alpha_{\text{developed}} = .74$).

There was minimal substantive difference in terms of the average age across the segments and markets, ranging from 34.7 to 45.

4.2. Assessing the direct effect of materialism on environmentally friendly tendencies

We examined the direct effect of materialism on each of the four environmentally friendly tendencies in the emerging BRIC and developed markets. In both markets, we find a significant positive relationship between materialism and perceptions of global companies as environmentally friendly (.17 and .20, respectively, $p < .001$), and non-significant relationships with regard to the following: 1) concern for environmentally friendly products, 2) willingness to pay more for environmentally friendly products, and 3) likelihood to engage in environmentally friendly behaviors.

4.3. Testing the moderating effect of global cultural identity

Our model posited a moderating effect of global cultural identity on the relationship between materialism and environmentally friendly tendencies with a stronger effect in emerging markets than in developed markets (Fig. 1). We tested our hypothesized model in AMOS, using the bootstrapping bias-corrected confidence interval procedure (Preacher & Hayes, 2008; Preacher, Rucker, & Hayes, 2007; Zhao, Lynch, & Chen, 2010). The advantage of the bootstrap method is a lack of normality assumption and stronger accuracy of confidence intervals, which are particularly important in smaller samples (Preacher & Hayes, 2008). We used 2000 iterations and set up 95% confidence intervals. We tested three separate models for emerging and developed markets with moderating effects of global cultural identity as expressed through lifestyle orientation (Table 3), brand orientation (Table 4), and global connectedness (Table 5). The fit of the structural model was acceptable for both the emerging BRIC market and the developed market (see Tables 3–5). To compare the moderating effect of global cultural identity on the relationship between materialism and environmentally friendly tendencies within the emerging BRIC market and within the developed market as well as for each individual segment across emerging and developed markets, we ran a series of Chi-square-difference tests (Kline, 1998; see Tables 6 and 7).

Consistent with our expectations, our findings provide evidence that global cultural identity, assessed using three different conceptualizations, has a significant positive impact on the relationship between materialism and environmentally friendly tendencies.

4.3.1. The emerging BRIC market findings

In the emerging BRIC market, we find significant positive effects of materialism on each of three market-based environmentally friendly tendencies (concern for environmentally friendly products, willingness to pay extra for environmentally friendly products, and perceptions of global companies as environmentally friendly), as well as on the likelihood to engage in environmentally friendly behaviors for the global and glocal segments with both lifestyle orientation and brand orientation as moderators and for those with strong global connectedness (see Tables 3–5). Also consistent with our expectations, we observe no significant effects of materialism on the environmentally friendly tendencies for the local and alienated segments or for those with weak global connectedness.

In addition, as shown in Table 6, Chi-squared tests indicate that the effect of materialism with regard to all four environmentally friendly tendencies was significantly stronger for the global segment (vs. the other three segments) using lifestyle orientation as the moderator and for those with stronger (vs. weaker) global connectedness; using brand orientation as the moderator, we observed that the effect of materialism was stronger for the global segment (vs. the other three segments) on two environmentally friendly tendencies (concern for environmentally friendly products and perceptions of global companies as environmentally friendly). In addition, significant differences in the moderating effects of global cultural identity on the relationship between materialism and environmentally friendly tendencies include the following: the glocal (vs. alienated) segment using lifestyle orientation related to the willingness to pay extra for environmentally friendly products; the glocal and local segments (vs. alienated) using brand orientation related to concern for environmentally friendly products and the likelihood to engage in environmentally friendly behaviors.

4.3.2. The developed market findings

In the developed market, the general pattern of results is consistent with our expectations, that is, the relationship between materialism and environmentally friendly tendencies is positive for more versus less globally focused individuals. However, we find some differences depending on the measures of global cultural identity and environmentally friendly tendencies. Specifically, for the global

Table 3
Lifestyle orientation as the moderator of the materialism and environmentally friendly tendencies relationship: SEM results.

	Bootstrap bias-corrected method 95%CI				
	Unstandardized Estimates	SE	Lower	Upper	p-value
<i>Emerging BRIC market</i>					
Global segment (n = 142)					
Materialism on concern for environmentally friendly products	1.03	.20	.73	1.39	.001
Materialism on willingness to pay extra for environmentally friendly products	.73	.20	.42	1.07	.001
Materialism on perceptions of global companies as environmentally friendly	.53	.18	.23	.86	.001
Materialism on likelihood to engage in environmentally friendly behaviors	.81	.18	.53	1.13	.001
Glocal segment (n = 659)					
Materialism on concern for environmentally friendly products	.12	.07	.01	.25	.050
Materialism on willingness to pay extra for environmentally friendly products	.19	.08	.05	.33	.016
Materialism on perceptions of global companies as environmentally friendly	.25	.08	.12	.38	.003
Materialism on likelihood to engage in environmentally friendly behaviors	.14	.07	.02	.25	.050
Local segment (n = 239)					
Materialism on concern for environmentally friendly products	.08	.16	-.19	.33	.660
Materialism on willingness to pay extra for environmentally friendly products	.13	.16	-.14	.39	.470
Materialism on perceptions of global companies as environmentally friendly	.19	.13	-.04	.38	.174
Materialism on likelihood to engage in environmentally friendly behaviors	.12	.11	-.07	.29	.276
Alienated segment (n = 205)					
Materialism on concern for environmentally friendly products	.04	.18	-.18	.31	.859
Materialism on willingness to pay extra for environmentally friendly products	-.16	.16	-.42	.10	.298
Materialism on perceptions of global companies as environmentally friendly	.08	.13	-.13	.30	.554
Materialism on likelihood to engage in environmentally friendly behaviors	.10	.13	-.13	.31	.434
Model fit: χ^2 (628) = 1228.15, CFI = .91, TLI = .90, RMSEA < .04					
<i>Developed market</i>					
Global segment (n = 37)					
Materialism on concern for environmentally friendly products	.84	.21	.36	1.35	.009
Materialism on willingness to pay extra for environmentally friendly products	.09	.54	-.75	.98	.823
Materialism on perceptions of global companies as environmentally friendly	.88	.31	.56	1.25	.001
Materialism on likelihood to engage in environmentally friendly behaviors	.71	.24	.35	1.13	.003
Glocal segment (n = 175)					
Materialism on concern for environmentally friendly products	.01	.19	-.31	.18	.925
Materialism on willingness to pay extra for environmentally friendly products	.01	.22	-.35	.37	.970
Materialism on perceptions of global companies as environmentally friendly	.02	.17	-.12	.18	.748
Materialism on likelihood to engage in environmentally friendly behaviors	-.08	.13	-.29	.14	.570
Local segment (n = 259)					
Materialism on concern for environmentally friendly products	-.01	.13	-.22	.21	.958
Materialism on willingness to pay extra for environmentally friendly products	-.07	.17	-.34	.21	.709
Materialism on perceptions of global companies as environmentally friendly	.11	.08	-.02	.25	.163
Materialism on likelihood to engage in environmentally friendly behaviors	.04	.07	-.08	.16	.601
Alienated segment (n = 154)					
Materialism on concern for environmentally friendly products	-.39	.13	-.73	-.03	.081
Materialism on willingness to pay extra for environmentally friendly products	-.39	.26	-.82	.03	.123
Materialism on perceptions of global companies as environmentally friendly	.12	.13	-.08	.33	.349
Materialism on likelihood to engage in environmentally friendly behaviors	-.08	.17	-.37	.19	.628
Model fit: χ^2 (628) = 1062.27, CFI = .94, TLI = .93, RMSEA < .04					

segment, the effect of materialism on the concern for environmentally friendly products is positive and significant using lifestyle orientation and brand orientation as moderators on the following: willingness to pay extra for environmentally friendly products using brand orientation as the moderator; perceptions of global companies as environmentally friendly using lifestyle orientation and global connectedness as moderators; and likelihood to engage in environmentally friendly behaviors using lifestyle orientation as the moderator (see Tables 3–5). Chi-squared difference tests further show that the above-described effects are significantly stronger for the global segment than other segments (see Table 6). As expected, we found no significant effects of materialism on environmentally friendly tendencies among glocal, local, and alienated segments for either the lifestyle orientation or brand orientation as moderators, or those identified as having a weaker global connectedness.

4.3.3. Comparisons across emerging and developed markets within each segment

We predicted stronger moderating effects in the emerging BRIC market than in the developed market (see Chi-squared difference

tests reported in Table 7). In relation to the concern for environmentally friendly products and the willingness to pay extra for environmentally friendly products, we observed a positive and significantly stronger effect of materialism in the emerging BRIC (vs. developed) market for the glocal segment when brand orientation was the moderator and for those with stronger global connectedness. In relation to the perception of global companies as environmentally friendly, the effect was stronger in the BRIC (vs. developed) market for the global and glocal segments when lifestyle orientation was the moderator. Finally, in relation to the likelihood to engage in environmentally friendly behaviors, the effect of materialism was stronger in the BRIC (vs. developed) market for the glocal segment with lifestyle orientation as the moderator and for those with stronger global connectedness.

Collectively, our results are clear and consistent in the emerging BRIC market and also provide support for the developed market that individuals with a stronger global cultural identity (assessed via lifestyle orientation, brand orientation, and global connectedness) express a stronger positive relationship between materialism and environmentally friendly tendencies. Stronger effects in the

Table 4
Brand orientation as the moderator of the materialism and environmentally friendly tendencies relationship: SEM results.

	Bootstrap bias-corrected method 95% CI				Upper <i>p</i> -value
	Unstandardized estimates	SE	Lower	Upper	
<i>Emerging BRIC market</i>					
Global segment (n = 205)					
Materialism on concern for environmentally friendly products	.58	.13	.37	.81	.001
Materialism on willingness to pay extra for environmentally friendly products	.18	.12	.01	.37	.046
Materialism on perceptions of global companies as environmentally friendly	.58	.15	.34	.84	.001
Materialism on likelihood to engage in environmentally friendly behaviors	.34	.11	.18	.53	.002
Glocal segment (n = 758)					
Materialism on concern for environmentally friendly products	.19	.08	.05	.33	.022
Materialism on willingness to pay extra for environmentally friendly products	.19	.09	.05	.36	.027
Materialism on perceptions of global companies as environmentally friendly	.17	.08	.04	.31	.039
Materialism on likelihood to engage in environmentally friendly behaviors	.17	.07	.06	.28	.018
Local segment (n = 73)					
Materialism on concern for environmentally friendly products	.33	.21	.00	.62	.090
Materialism on willingness to pay extra for environmentally friendly products	.23	.27	-.07	.95	.070
Materialism on perceptions of global companies as environmentally friendly	.03	.10	-.24	.12	.560
Materialism on likelihood to engage in environmentally friendly behaviors	.26	.17	-.02	.72	.076
Alienated segment (n = 203)					
Materialism on concern for environmentally friendly products	-.31	.22	-.67	.02	.120
Materialism on willingness to pay extra for environmentally friendly products	-.12	.23	-.51	.21	.557
Materialism on perceptions of global companies as environmentally friendly	.02	.17	-.22	.31	.877
Materialism on likelihood to engage in environmentally friendly behaviors	.01	.18	-.29	.30	.909
Model fit: χ^2 (628) = 766.06, CFI = .91, TLI = .90, RMSEA < .04					
<i>Developed market</i>					
Global segment (n = 29)					
Materialism on concern for environmentally friendly products	.80	.89	.09	3.32	.008
Materialism on willingness to pay extra for environmentally friendly products	.81	1.47	.18	2.76	.051
Materialism on perceptions of global companies as environmentally friendly	.03	.30	-.17	.45	.643
Materialism on likelihood to engage in environmentally friendly behaviors	.15	.61	-.29	1.50	.304
Glocal segment (n = 240)					
Materialism on concern for environmentally friendly products	-.21	.15	-.45	.05	.189
Materialism on willingness to pay extra for environmentally friendly products	-.20	.20	-.57	.08	.263
Materialism on perceptions of global companies as environmentally friendly	.15	.10	.00	.33	.096
Materialism on likelihood to engage in environmentally friendly behaviors	.00	.11	-.18	.19	.986
Local segment (n = 142)					
Materialism on concern for environmentally friendly products	.14	.19	-.15	.45	.400
Materialism on willingness to pay extra for environmentally friendly products	.04	.21	-.34	.34	.879
Materialism on perceptions of global companies as environmentally friendly	.05	.09	-.10	.21	.587
Materialism on likelihood to engage in environmentally friendly behaviors	.13	.14	-.12	.33	.358
Alienated segment (n = 214)					
Materialism on concern for environmentally friendly products	.13	.20	-.21	.44	.519
Materialism on willingness to pay extra for environmentally friendly products	-.13	.25	-.56	.22	.551
Materialism on perceptions of global companies as environmentally friendly	.30	.12	-.13	.52	.239
Materialism on likelihood to engage in environmentally friendly behaviors	.00	.10	-.14	.16	.971
Model fit: χ^2 (628) = 1271.55, CFI = .94, TLI = .93, RMSEA < .04					

emerging market than in the developed market are observed for the glocal segment and for those with stronger global connectedness.

5. Discussion: global cultural identity and the “green side” of materialism

In the era of global sustainability, multinational corporations have focused their business strategies on both economic and environmental sustainability. Although economic development inevitably depletes natural resources, the two pillars of sustainability coexist in more complex ways at the individual level. On the one hand, multinational corporations promulgating economic growth have also been disseminating materialistic values through their glamour and status appeals, particularly in emerging markets. On the other hand, environmental sustainability has become a pressing concern in the current global marketplace, and multinational corporations have been demonstrating their environmentally friendly tendencies through their green positioning across the globe. Not surprisingly, recent research in the international consumer domain documents increasing materialism as well as “green” consumption in both developed and emerging markets (Dholakia & Talukdar, 2004; Hartmann, Ibáñez, & Sainz, 2005; Speck & Roy, 2008). Our work contributes to a nuanced understanding of the

relationship between materialism and environmental tendencies at the individual level by examining the moderating effect of global cultural identity on this relationship in the global context, specifically contrasting the effects in the emerging BRIC market with those in the developed markets of the U.S. and Australia.

As individuals around the world have increasingly been exposed to the global media and global discourse, Arnett (2002), Hermans and Dimaggio (2007), and others have discussed cultural identity formation and the interplay between globalization and localization in identity construction. In this study, we have built upon prior work on global consumer culture (Akaka & Alden, 2010; Alden, Steenkamp, & Batra, 1999; Alden et al., 2006; Ger & Belk, 1996; Steenkamp & de Jong, 2010) to propose that global cultural identity is an important moderator of the effects of materialism on environmentally friendly tendencies. In our work, we use three measures of global cultural identity – lifestyle and brand dimensions of global cultural orientation and global connectedness – and show a similar pattern of results across our three measures of global cultural identity. In contrast to some past research documenting an inverse relationship between materialistic and environmental values and practices (Brown & Kasser, 2005; Kilbourne & Pickett, 2008; Richins & Dawson, 1992), our work supports the sustainability perspective and documents a positive relationship between

Table 5

Global connectedness as the moderator of the materialism and environmentally friendly tendencies relationship: SEM results.

	Bootstrap bias-corrected method 95% CI				
	Unstandardized Estimates	SE	Lower	Upper	p-value
<i>Emerging market</i>					
Strong global connectedness (n = 608)					
Materialism on concern for environmentally friendly products	.39	.11	.22	.56	.001
Materialism on willingness to pay extra for environmentally friendly products	.35	.13	.17	.60	.002
Materialism on perceptions of global companies as environmentally friendly	.37	.10	.19	.53	.003
Materialism on likelihood to engage in environmentally friendly behaviors	.20	.07	.08	.32	.001
Weak global connectedness (n = 593)					
Materialism on concern for environmentally friendly products	.08	.07	-.05	.21	.346
Materialism on willingness to pay extra for environmentally friendly products	.06	.08	-.06	.19	.423
Materialism on perceptions of global companies as environmentally friendly	.22	.08	-.08	.35	.329
Materialism on likelihood to engage in environmentally friendly behaviors	.24	.07	-.11	.36	.437
Model fit: χ^2 (628) = 554.42, CFI = .93, TLI = .92, RMSEA < .06					
<i>Developed market</i>					
Strong global connectedness (n = 302)					
Materialism on concern for environmentally friendly products	.01	.12	-.22	.20	.979
Materialism on willingness to pay extra for environmentally friendly products	-.11	.15	-.40	.12	.407
Materialism on perceptions of global companies as environmentally friendly	.21	.08	.09	.34	.010
Materialism on likelihood to engage in environmentally friendly behaviors	-.06	.10	-.21	.09	.555
Weak global connectedness (n = 302)					
Materialism on concern for environmentally friendly products	-.04	.15	-.28	.19	.766
Materialism on willingness to pay extra for environmentally friendly products	.04	.18	-.24	.33	.782
Materialism on perceptions of global companies as environmentally friendly	.15	.09	.01	.30	.076
Materialism on likelihood to engage in environmentally friendly behaviors	.05	.09	-.08	.18	.540
Model fit: χ^2 (314) = 740.04, CFI = .96, TLI = .95, RMSEA < .05					

materialism and perceptions of global brands as environmentally friendly and non-significant relationships between materialism and three other environmentally friendly tendencies (i.e., concern for environmentally friendly products, consumer willingness to pay extra for environmentally friendly products, and likelihood to engage in environmentally friendly behaviors).

Consistent with our expectations, we find the “green side” of materialism in individuals with a strong global cultural identity in both the emerging BRIC and developed markets, but the effects are stronger in emerging markets. In emerging markets, individuals with a global cultural identity are engaged by possessions and also show

concern for environmentally friendly products. This global segment has perceptions of global companies as being more environmentally friendly, is willing to pay extra for environmentally friendly products, and is more likely to engage in environmentally friendly behaviors, such as recycling and the conservation of natural resources. These effects are strong and consistent across all three measures of global cultural identity. Additionally, in the emerging BRIC market (but not the developed market), we find the “green side” of materialism among individuals with a strong global cultural identity. We speculate that individuals in the emerging market global segment may have a heightened attention to globalization relative to those in the

Table 6

Global cultural identity segment comparisons for environmentally friendly tendencies in emerging BRIC market and developed market.

χ^2 – difference test for environmentally friendly tendencies								
Global cultural identity segment comparisons	Concern for environmentally friendly products		Willingness to pay extra for environmentally friendly products		Perceptions of global companies as environmentally friendly		Likelihood to engage in environmentally friendly behaviors	
	Lifestyle	Brand	Lifestyle	Brand	Lifestyle	Brand	Lifestyle	Brand
<i>Emerging BRIC market</i>								
Global vs. glocal ^a	20.65***	6.58**	6.49*	.01	3.57*	8.02**	17.54***	2.15
Global vs. local	15.68***	7.02**	5.63*	2.58	3.56*	13.16***	13.66***	.46
Global vs. alienated	16.11***	14.42***	12.47***	1.86	4.94*	7.56**	13.53***	5.21*
Glocal vs. local	.82	.62	.11	2.60	.21	1.88	.01	3.19
Glocal vs. alienated	.21	5.91*	3.98*	2.17	1.21	.80	.06	4.91*
Local vs. alienated	.04	6.60*	1.72	1.63	.31	.01	.01	4.36*
<i>Developed market</i>								
Global vs. glocal	5.03*	6.01*	.01	5.42*	16.20***	.80	9.84**	.44
Global vs. local	5.97*	3.92*	.05	3.94*	14.24***	.04	8.09**	.01
Global vs. alienated	10.85***	4.56*	.59	4.81*	12.58***	2.51	9.78**	.43
Glocal vs. local	.01	2.37	.07	.77	.51	.55	.58	.62
Glocal vs. alienated	2.38	2.29	1.52	.05	.42	1.01	.01	.01
Local vs. alienated	2.62	.01	1.24	.34	.00	2.88	.61	.01
Global connectedness (strong vs. weak) ^a								
Emerging BRIC market	5.90**		4.60**		5.50**		4.41**	
Developed market	.07		.40		3.29*		.85	

^a The reported $\Delta\chi^2$ tests in each row indicate whether there is a significant difference between the two identified segments on each of the environmentally friendly tendencies.

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

Table 7
Comparison of environmentally friendly tendencies for global cultural identity segments for the emerging BRIC market versus the developed market.

χ^2 – difference test for environmentally friendly tendencies between emerging BRIC and developed markets ^a				
Global cultural identity segment	Concern for environmentally friendly products	Willingness to pay extra for environmentally friendly products	Perceptions of global companies as environmentally friendly	Likelihood to engage in environmentally friendly behaviors
Lifestyle orientation				
Global	.02	.67	7.05**	.19
Glocal	.60	1.15	6.60**	4.57**
Local	.10	.59	.24	.41
Alienated	2.53	.66	.02	.55
Brand orientation				
Global	.35	2.87	1.43	.54
Glocal	5.95*	3.73*	.05	1.90
Local	.64	3.29	.03	2.90
Alienated	2.99	.00	2.16	.01
Global connectedness				
Strong	6.06**	4.87*	2.83	6.54**
Weak	.25	1.21	.01	2.24

^a Significant effects were stronger in emerging BRIC than developed market.

* $p < .05$.

** $p < .01$.

developed market and thus (similar to the global segment) negotiate the acquisition of goods and material possessions while simultaneously engaging in environmentally friendly tendencies.

In the developed market, we find support for the positive effect of materialism on all environmentally friendly tendencies for the global segment; however, the significance of this effect on each of the four dependent variables varies across the different conceptualizations of global cultural identity. Perhaps it is more difficult for global consumers in the developed market to negotiate economic and environmental sustainability, having a longer history of being focused on the macro-level adverse effects of consumption on the environment. In addition, we note that the global segments in the developed market are much smaller than those in the emerging market and that larger samples may yield a more consistent pattern of results. As expected in both the emerging BRIC and developed markets, we do not find the “green side” of materialism for the local and alienated segments or for those with weak global connectedness.

6. Managerial implications

In pursuing their economic and environmental sustainability goals, multinational firms face significant challenges in managing their brands and corporate communications around the world. Despite the economic advantages of pursuing a global citizenship strategy, our results indicate that multinational corporations must carefully contemplate their messages in local markets, attending to country-level designations (e.g., emerging vs. developed) and individual-level variables that are important in the context of global cultural identity (Menon & Menon, 1997; Osterhus, 1997; Thompson, 2005). More specifically, our findings document that the importance of possessions and environmentalism resonate with those consumers who identify with the global consumer culture and are less tied to local influences, particularly in emerging markets. These consumers easily integrate economic and environmental sustainability appeals, and multinational firms would do well to communicate messages about status, consumption, and environmental themes to this segment. However, in developed markets, the global segment represented the smallest percentage of respondents (4.6% to 6%), but this is perhaps not surprising, given the relatively young history of global culture and a strong local consumption history in developed markets.

The glocal segment in the emerging BRIC market (accounting for a majority [53% to 61%] of study participants) exhibited a pattern similar to that of the global segment but with weaker effects. Because of

its size, the glocal segment is an important target for multinational firms, but attention must be given to the fact this segment is attuned to values of both global and local cultures. To better target this segment, multinational companies would benefit from a more comprehensive assessment of global and local values and the extent to which global versus local culture influences consumption. The global and glocal segments in the emerging markets have attained a college education, enjoy travel, and engage with the Internet. Based on our findings, multinational firms would benefit from promoting an image of being environmentally friendly, engaging these segments in ecologically conscious consumption practices, and considering differing pricing models because of their willingness to pay extra for environmentally friendly products.

Our results indicate non-significant relationships between materialism and environmentally friendly tendencies for the local and alienated segments and for those with weak global connectedness in both the developed and emerging BRIC markets. These segments comprise a critical mass of study participants in the developed market and emerging BRIC market. Consequently, multinational firms must carefully contemplate the promotion of their economic and environmental sustainability to these audiences, as they appear to resist globalization influences.

7. Future research directions

Our work draws attention to several avenues of future research. First, our research supports sustainability research (Adams, 2006) that predicts the coexistence of economic and environmental sustainability. Although materialism and environmentally friendly tendencies appear to be incompatible at the macro level, individuals who are globally oriented and more open to messages by multinational corporations exhibit both materialistic and environmentally friendly tendencies. For example, an investigation of whether globally oriented materialistic consumers truly care about the environment or are simply responding to a fashionable “green” trend is of interest. Furthermore, our results indicate that the global and glocal segments in the emerging market are young and upwardly mobile with access to global media (through the Internet) and global culture (by traveling abroad). Additional investigations related to this cohort, constructs related to materialism, such as conspicuous consumption, and the importance of status and fashion trends in identity creation would be of interest. On a related note, understanding more about how firms can manage the delicate balance between materialistic values and consumption

within the context of economic sustainability and environmentalism is a worthy undertaking.

Second, we conceptualized global cultural identity as the extent to which an individual's identity focus is more global than local, and we assessed our model using three measures – lifestyle and brand dimensions of consumption orientation and global connectedness. As we noted, global cultural identity has been conceptualized and measured in a variety of ways, and there continue to be discussions regarding the best approach to measuring global cultural identity (Alden et al., 1999, 2006; Steenkamp et al., 2003; Strizhakova et al., 2012; Zhang & Khare, 2009). Because we observed some differences in moderating effects across our different measures of global cultural identity in the developed market, future research may explore the boundary conditions of our model using alternative measures of global cultural identity.

Third, there is a well-documented gap between environmentalism as a value and what people say versus what they actually do in terms of their environmental actions and behaviors (Alwitt & Pitts, 1996). Our work considered market-based environmental tendencies related to concerns about and the willingness to pay for environmentally friendly goods and perceptions of global companies promoting environmentally responsible agendas, as well as the likelihood to engage in environmentally friendly behaviors such as recycling and resource conservation. To more carefully assess socially desirable responses, an interesting extension of our research would be to track the development of ecologically friendly infrastructure in an emerging market and use longitudinal surveys and diaries to concurrently track an individual's global cultural identity as well as environmentally friendly attitudes and behaviors. Additionally, the use of experiments to understand how individuals with differing cultural identities react to global versus local environmental concerns and their willingness to pay for products that are associated with environmental causes would provide additional information useful to firms producing environmentally friendly products and organizations promoting ecologically conscious behavior.

Finally, we used online panels to collect our data, which lead to more educated segments being overrepresented in comparison to the general population in the emerging markets. Furthermore, we requested quota sampling on age and gender to match the samples on these variables. Future research using a representative sample from emerging and developed markets would enable firms to better understand the size of the global, glocal, local, and alienated segments in markets of interest. This information would certainly be valuable to firms contemplating targeting specific audiences with regard to the promotion of consumerism and environmental agendas.

8. Conclusion

Sustainability is receiving increased attention around the globe, and as multinational corporations pursue global citizenship positioning strategies, understanding the role of global cultural identity around the world, particularly within emerging markets, is critical. Our research calls into question the perspective that materialism and environmentally friendly tendencies are incompatible and supports current sustainability research by documenting the role of global cultural identity as a moderator of the relationship at the individual level. We found that individuals with a strong global cultural identity in both developed and emerging markets and those with a strong glocal cultural identity in emerging markets concurrently displayed materialism and environmentally friendly tendencies. As global and local firms engage in developing the emerging marketplace, understanding the evolving nature of cultural identity, global consumer culture, and three dimensions of sustainability will be of growing interest.

Appendix A

Table 1A

Metrically-invariant measurement model: factor loadings, reliabilities, and model fit.

	Unstandardized factor loadings					
	Emerging BRIC market			Developed market		
	Brazil	Russia	India	China	US	Australia
<i>Materialism^a</i>						
It is important to me to have really nice things.	1.00	1.00	1.00	1.00	1.00	1.00
I would like to be rich enough to buy anything I want.	1.07	1.07	1.07	1.07	1.07	1.07
It sometimes bothers me quite a bit that I cannot buy all the things I want.	1.06	1.06	1.06	1.06	1.06	1.06
I'd be happier if I could afford to buy more things.	1.15	1.15	1.15	1.15	1.15	1.15
Reliability	.70	.71	.70	.75	.80	.75
<i>Environmentally friendly tendencies</i>						
Concern for environmentally friendly products						
When purchasing a new product, how concerned are you that the product is:						
Made from environmentally friendly materials.	1.00	1.00	1.00	1.00	1.00	1.00
Packaged in biodegradable materials.	1.05	1.05	1.05	1.05	1.05	1.05
Made from recycled materials.	.94	.94	.94	.94	.94	.94
Reliability	.90	.70	.79	.92	.96	.95
Willingness to pay extra for environmentally friendly products						
Suppose you are buying a product that typically costs \$. ^b How willing are you to pay extra 3–5% on top of the price so that the products is:						
Made from environmentally friendly materials.	1.00	1.00	1.00	1.00	1.00	1.00
Packaged in biodegradable materials.	1.07	1.07	1.07	1.07	1.07	1.07
Made from recycled materials.	1.06	1.06	1.06	1.06	1.06	1.06
Reliability	.92	.73	.86	.91	.97	.97
Perceptions of global companies as environmentally friendly						
Based on what you know about each of the following companies, please indicate the extent to which you believe the company is or is not environmentally responsible?						
Mercedes Benz	1.00	1.00	1.00	1.00	1.00	1.00
Toyota	.96	.96	.96	.96	.96	.96
Coca-Cola	1.13	1.13	1.13	1.13	1.13	1.13
McDonald's	1.14	1.14	1.14	1.14	1.14	1.14
Samsung	1.19	1.19	1.19	1.19	1.19	1.19
Apple, Inc.	1.14	1.14	1.14	1.14	1.14	1.14
Reliability	.88	.84	.83	.88	.86	.89
Likelihood to engage in environmentally friendly behaviors						
In general, how likely are you to:						
Recycle	1.00	1.00	1.00	1.00	1.00	1.00
Conserve your use of energy at home	1.14	1.14	1.14	1.14	1.14	1.14
Conserve your use of water at home	1.21	1.21	1.21	1.21	1.21	1.21
Minimize household waste/trash to protect the environment.	1.17	1.17	1.17	1.17	1.17	1.17
Reliability	.85	.83	.79	.86	.88	.87
χ^2 (df)	2619.71 (942)					
CFI/TLI	.93/.91					
RMSEA	<.03					

Means are not presented for individual countries because scalar invariance was not achieved.

^a Six items from the Richins' (1987) materialism scale were included in the survey; the four items reported here were used in the final analyses. Two other items ("It is really true that money can buy happiness" and "People place too much emphasis on material things") were dropped because of cross-cultural measurement problems.

^b Prices were modified across countries to reflect local prices in local currency for an average price for a 1 liter bottle of Coke. Euromonitor Global Market Information Database was used to derive the average price for each country.

Table 2A

Materialism and environmentally friendly tendencies: assessment of convergent and discriminant validity: composite reliability, average variance extracted, and Pearson r correlations (squared Pearson r correlations).

	<i>r</i> (<i>r</i> ²)					
	CR	AVE	2	3	4	5
<i>Emerging BRIC market</i>						
Brazil						
1. Materialism	.76	.45	.19 (.04)	.14 (.02)	.18 (.03)	.27 (.07)
2. Concern for environmentally friendly products	.91	.77		.51 (.26)	.43 (.18)	.49 (.24)
3. Willingness to pay extra for environmentally friendly products	.91	.77			.31 (.10)	.35 (.12)
4. Perceptions of global companies as environmentally friendly	.87	.54				.24 (.08)
5. Likelihood to engage in environmentally friendly behaviors	.88	.66				
Russia						
1. Materialism	.72	.40	.13 (.02)	.17 (.03)	.13 (.02)	.11 (.01)
2. Concern for environmentally friendly products	.72	.47		.55 (.30)	.23 (.05)	.52 (.27)
3. Willingness to pay extra for environmentally friendly products	.76	.52			.29 (.08)	.39 (.15)
4. Perceptions of global companies as environmentally friendly	.83	.46				.20 (.04)
5. Likelihood to engage in environmentally friendly behaviors	.86	.61				
India						
1. Materialism	.76	.45	.24 (.08)	.12 (.01)	.17 (.03)	.26 (.07)
2. Concern for environmentally friendly products	.87	.67		.58 (.34)	.26 (.07)	.41 (.17)
3. Willingness to pay extra for environmentally friendly products	.88	.71			.20 (.04)	.29 (.08)
4. Perceptions of global companies as environmentally friendly	.84	.51				.09 (.01)
5. Likelihood to engage in environmentally friendly behaviors	.81	.52				
China						
1. Materialism	.76	.45	.20 (.04)	.14 (.02)	.44 (.19)	.32 (.10)
2. Concern for environmentally friendly products	.80	.57		.65 (.42)	.43 (.18)	.52 (.27)
3. Willingness to pay extra for environmentally friendly products	.82	.59			.46 (.21)	.43 (.18)
4. Perceptions of global companies as environmentally friendly	.83	.46				.36 (.13)
5. Likelihood to engage in environmentally friendly behaviors	.83	.55				
<i>Developed market</i>						
U.S.						
1. Materialism	.80	.50	.03 (.00)	.04 (.00)	.20 (.04)	.00 (.00)
2. Concern for environmentally friendly products	.96	.88		.66 (.43)	.26 (.07)	.62 (.38)
3. Willingness to pay extra for environmentally friendly products	.97	.92			.18 (.03)	.47 (.22)
4. Perceptions of global companies as environmentally friendly	.87	.54				.27 (.07)
5. Likelihood to engage in environmentally friendly behaviors	.88	.67				
Australia						
1. Materialism	.77	.46	.00 (.00)	-.09 (.01)	.09 (.01)	.11 (.01)
2. Concern for environmentally friendly products	.95	.87		.58 (.34)	-.05 (.00)	.53 (.28)
3. Willingness to pay extra for environmentally friendly products	.97	.95			.00 (.00)	.40 (.20)
4. Perceptions of global companies as environmentally friendly	.88	.56				.14 (.02)
5. Likelihood to engage in environmentally friendly behaviors	.88	.66				

Appendix B. Assessment of global cultural identity

1. Measure of the lifestyle orientation of global cultural identity (Alden et al., 2006). Participants were asked to choose one of the four statements that best represents their personal orientation. The statements were as follows: 1) global: "It is important for me to have a lifestyle that I think is similar to the lifestyle of consumers in many countries around the world rather than one that is more unique to or traditional in (my country)," 2) glocal: "I try to blend a lifestyle that is considered unique to or traditional in (my country) with one that I think is similar to the lifestyle of consumers in many countries around the world," 3) local: "It is more important for me to have a lifestyle that is unique to or traditional in (my country) rather than one that I think is similar to the lifestyle of consumers in many countries around the world," and 4) alienated: "To be honest, I do not find the typical lifestyle in (my country) or the lifestyles of consumers in other countries very interesting."
2. Measure of the brand orientation of global cultural identity (Steenkamp & de Jong, 2010). Participants were asked to choose one of four statements that best represents their personal orientation. The statements were as follows: 1) global: "I prefer to buy brands that I think are bought by consumers in many countries around the world rather than local brands that are sold in only (my country)," 2) glocal: "I prefer to buy both local brands that are sold only in (my country) and brands that I think are bought by consumers in many countries around the world," 3) local: "I prefer to buy local brands that are sold only in (my country) rather than brands that I think are bought

by consumers in many countries around the world," and 4) alienated: "I couldn't care less about the countries associated with any brand; brand names mean nothing to me."

3. Measure of global connectedness. Global connectedness which taps into the salience of global group membership and consumer attachment to the global group was measured by developing items from previous research on group and geographic identity (Cameron, 2004; Russell & Russell, 2010). Participants were asked to express their agreement with the following statements on a seven-point scale

Global Connectedness	Unstandardized factor loadings	
	Emerging	Developed
I have a strong attachment to the global world.	Marker	Marker
I feel connected to the global world.	.99	1.11
I think of myself as a global citizen.	1.12	1.25
It is important to me to feel a part of the global world.	1.13	1.24
Thinking about my identity, I view myself as a global citizen.	1.10	1.26
Feeling like a citizen of the world is important to me.	1.18	1.29
I would describe myself as a global citizen.	1.18	1.29
Cronbach's alpha	.94	.96
χ^2/df	170.43/40	
CFI/TLI	.96/.96	
RMSEA	<.06	

where 1 = strongly disagree and 7 = strongly agree with a given statement.

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