Evaluating the Challenge of China's Crossverging Young 'Enviro-Materialists'

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Abstract

China's industrialisation is reshaping its younger age-generation towards increased materialism and social visibility. This is problematic because materialistic social status consumption can undermine a deeper commitment to sustainability. We evaluate this phenomenon by examining sustainable consumption buying in China, through the theories of crossvergence (valuing modernisation) and stickiness (valuing traditions). Specifically, we examine the moderation effects of Chinese age-generations, in three socio-historical periods, on this sustainability behaviour. Namely, the post-50/60s consolidation, post-70s revolution, and post-80s social reform age-generations. Utilising an online panel survey (n=981), we investigated the direct and indirect effects - via pro-environmental self-identity - of materialism, social consumption motivation, and environmental concern on these generations sustainable buying behaviours. Importantly, we found the positive direct effect of materialism on sustainability buying was significantly higher for the younger post-80s cohort, in contrast to the post-50/60s and post-70s generations. Social consumption was higher among the post-80s and post-70s generations. Environmental concern was insignificant for the post-80s, but a significantly higher influence on the post-70s generation. This suggests a new younger consumer generation is emerging, who in juxtaposition to current notions of consuming sustainably, appear to mix materialism and sustainability together to consume as green materialists. We have named this consumer group 'enviro-materialists'. These enviro-materialists raise important questions about the currently under-researched generational underpinnings of sustainable consumption, and the macro systems within which this takes place. We propose interconnected governmental and corporate marketing interventions. These have potential to increase the sustainability behaviours of China's enviro-materialists, whilst reducing their materialism.

1.   INTRODUCTION

Sustainable consumption is vital in helping to solve the planet's immediate and future interlinked ecological and human crises triggered by manmade accelerated climate change, pollution, waste and depleted resources (Dermody, Koenig-Lewis, Zhao, & Hanmer-Lloyd, 2018; Udall, de Groot, de Jong, & Shankar, 2020). This is because it embraces responsible consumption choices for the ecological and human good of current and future generations. However, the political-economic growth agenda, and the marketing that supports it, challenges the nurturing and strengthening of this behaviour (e.g. UN COP21/25). While balancing economic prosperity and environmental sustainability is testing for all nations, it is particularly demanding for rapid growth economies like China. For example, China's growth has led to major economic, cultural and social change among age-generations born during China's pre- and post-reform Open-Door Policy (December 1978). This includes a growing post-reform materialistic consumer-class with an avaricious appetite for luxury Western brands (Hao, 2014; Podoshen, Li, & Zhang, 2011). Materialism, however, encourages resistance to more committed sustainability behaviours and opportunities for greenwashing in Asian cultures (Dermody, 2020; Dermody, Hanmer-Lloyd, Koenig-Lewis, & Zhao, 2015; Nguyen, Lobo, & Greenland, 2017; Podoshen et al., 2011; Polonsky, Kilbourne, & Vocino, 2014). This behaviour is also triggering major environmental and human health problems in China, with international implications (Liu & Mu, 2016). China needs to address these tensions if it is to become an economic superpower and an ecological civilisation contributing to global environmental/human sustainability (Hansen, Li, & Svarverud, 2018; Yi & Liu, 2015).

This friction is central to our paper as we evaluate the sustainable consumption of China's older and younger age-generations, particularly the juxtaposition between consuming sustainably and materialistically. A small number of studies have found a positive relationship between materialistic values and sustainable consumption behaviours in emerging markets, i.e. China (Dermody et al., 2015), Lithuania (Liobikiene, Liobikas, Brizga, & Juknys, 2020), BRIC nations (Strizhakova & Coulter, 2013). This raises the intriguing question of how and why this occurs in emerging economies. Additionally, it activates concern for ecological and human wellbeing. Furthermore, it highlights the risk of undermining the enactment of sustainability behaviours within marketing scholarship and practice. When congruent, this phenomenon is labelled green materialism. It is considered worthwhile because it enables consumers to consume materialistically by switching to acquisitions with environmental/ethical credentials (Strizhakova & Coulter, 2013). Some academics propose green materialism encourages sustainable consumption (Schuitema & de Groot, 2015; Strizhakova & Coulter, 2013). We

challenge this idea that materialism is an appropriate foundation upon which to facilitate sustainable consumption behaviours. This is an oxymoron because materialism prospers in an economic growth and consumerism agenda. In contrast, sustainable consumption thrives within a paradigm of ethicality and citizenship, where consumer's choice-making extends beyond self-interest to safeguard the life-chances of others and the planet (Dermody et al., 2015).

In evaluating this sustainability-materialism juxtaposition, it is prudent to consider if green materialism is representative of China's younger and older historic generations. This attention on age generational subcultures is important because they represent socio-historical periods that may help explain this behaviour. Therefore, framed within crossvergence and stickiness theories (see "Conceptualisation" – section 2.1), we evaluate the propensity for green materialism among three generational cohorts (national subcultures) representing China's historic and current values priorities. To do so, we examine the relationships between sustainable consumption buying, and materialism, social consumption motivation, environmental concern and pro-environmental self-identity. Thus, we critically examine if the consolidation, revolution and social reform socio-historical periods, into which these three generations were born, influences how materialism is enacted within sustainable buying. We contribute to the sustainable marketing scholarship by examining this potential proclivity within China's generational national subcultures. In sum, if green materialism is occurring, there should be a positive effect between materialism and sustainable consumption, in contrast to a negative effect in western scholarship (e.g. Hurst, Dittmar, Bond, & Kasser, 2013; Kilbourne & Pickett, 2008). This conceptualisation is discussed in section 2. We conclude the paper by utilising our findings to inform interconnected governmental and corporate marketing interventions to mitigate the growth of green materialism in China.

2. CONCEPTUALISING THE STUDY

Research confirms investigating age-generations from different socio-historical periods offers insight into the behavioural choice-making and pro-environmentalism of younger and older consumers (Griskevicius, Tybur, & Van den Bergh, 2010; Hao, 2014; Shen & Saijo, 2008; Xiao, Dunlap, & Hong, 2013). Two cultural theories – crossvergence (Egri & Ralston, 2004; Ralston, 2008) and stickiness (Chaisty & Whitefield, 2015) – are particularly useful in aiding comprehension of this cultural age-generation effect on materialistic and sustainability behaviours. We examine this effect through four pertinent behavioural influences. Firstly, materialism and social-consumption motivation. These values facilitate status consumerism in China (Podoshen et al., 2011; Yang & Stening, 2012). Secondly, environmental concern and

pro-environmental self-identity (PESI) play an important role in positively influencing sustainability behaviours (Bamberg, 2003; Liu & Mu, 2016). Furthermore, PESI has been identified as an important mediator of sustainable consumption (2018; Whitmarsh & O'Neill, 2010). Thus, our moderated-mediated modelling of cultural age-generation effects has significant potential to inform understanding of green materialism and sustainable consumption buying behaviours within China's generational national subcultures, and to evaluate it against western scholarship (see Figure 1).

2.1. Crossvergence and Stickiness theories of the cultural age-generation effect

The theory of crossvergence examines how values change and evolve as a direct result of sociocultural (e.g. Confucianism, face, collectivism-individualism) and business ideological (economics, politics and technology) influences (Ralston, 2008). It is premised on the length of time it takes for these sociocultural and business ideology effects to create and evolve individual-level values (Egri & Ralston, 2004; Ralston, 2008). The impact of business ideology on these values, predominantly market-forces, is much faster than the slow-burn of sociocultural influences (Ralston, 2008). This consideration of timescale is also evident in Chaisty and Whitefield's (2015) stickiness theory. They argue the degree of stickiness to political values determines the pace of attitudinal change, which is particularly apt for cultures transitioning away from the traditions of communism, e.g. China. Chaisty and Whitefield (2015) argue stickiness can be sustained by the negative experiences of China's transition, e.g. the human consequences of the Tiananmen Square protest (1989) and high-corruption in the early days of its market reform (1978). These lived experiences might have delayed the evolution of individual-level values of China's older generations.

Accordingly, these theories enable generational cohorts to be seen as one form of national subculture representing the values' priorities of a nation's specific historical period (Egri & Ralston, 2004). Evidence suggests China has four specific socio-historical periods. Namely, the Republican era (1911-1949), the Consolidation era (1950-1965), the Great Cultural Revolution (1966-1976) and the Social Reform era (1978-present) (Egri & Ralston, 2004). Pertinent to this paper and its materialism-sustainable consumption focus, China underwent dramatic cultural change from the Great Cultural Revolution to the Social Reform era. This entailed the complete transformation of its business ideology and increased environmental impact. Thus, considered from crossvergence and stickiness perspectives, the values of older Chinese generations, born in the consolidation and revolution periods, may be less susceptible to the influence of materialism. Whilst the business ideological values associated with the

Social Reform era are more likely to influence the younger Chinese generation's propensity for materialism, and potentially green materialism. Hence crossvergence, particularly, unveils the emerging hybridisation of traditional and new values in China (Sun, Garrett, & Kim, 2016).

2.2. Cultural age-generations and materialism

In the West, materialistic values dominantly influence the identities and behaviours of consumerists. It signifies the importance of possessions in achieving major life goals or end state of happiness, e.g. luxury consumption, and in mitigating interpersonal problems and fear of social rejection (Huddersb & Pandelaereb, 2012; Kasser, 2016). Social consumption motivation positively correlates with materialism to achieve social status through the pursuit and acquisition of possessions (Moschis, 1985). This status desire, driven by perceived and actual judgments from their significant peers, typically occurs among young consumers in both developed and emerging markets (Kim & Jang, 2014). This status can encourage the adoption of sustainable consumption behaviours. For example, Dermody et al. (2015) found a positive relationship between this motivation and behaviour in the UK and China. However, the desire for social status may undermine a deeper commitment to sustainability, particularly among increasingly materialistic younger generations. Potentially, the relationship may differ between age-generations from specific socio-historical periods; hence, its inclusion in this study.

The marketing of consumerism that activates status and materialistic values, for example in (luxury) branding campaigns and brand placement in everyday culture (Shrum, Lee, Burroughs, & Rindfleisch, 2011), results in 'bleed-over' and 'seesaw' effects. Whereby normalised concern for pro-environmental, or pro-social problems is denigrated in favour of normalising higher spending and material acquisitions (Kasser, 2016; Rettie, Burchell, & Barnham, 2014). Consequently, from a sustainability perspective in Western nations, materialism is judged negatively because it is deemed highly detrimental to progressing environmental sustainability and human well-being (Dong, Li, Liu, Cai, & Fan, 2018; Hurst et al., 2013; Kasser, 2016; Kilbourne & Pickett, 2008). Indeed, the United Nations recently reported increasing materialism is undermining its sustainable development goal-12 (responsible consumption and production) (United Nations, 2019).

Exploring materialism within China, studies on its consumer classes show materialistic values have primacy, even more so than in the West (Ipsos, 2014). Most notable is their increasing materialistic spending on luxury and premium Western brands (Hao, 2014; Podoshen et al., 2011; Zipser, Chen, & Gong, 2016), particularly among and for younger generations (DeMotta, Kongsompong, & Sen, 2013; Ipsos, 2014, 2017). This suggests shifting

sociocultural and business ideological influences on modern China's younger age-generations. China's rapid industrialisation, triggered by its Reformist Open Door Policy, has resulted in profound economic, cultural and social change that has opened the nation to the 'power' of markets and an increase in materialistic behaviours. This is supported by Yang and Stening (2012), who found the market is a more powerful influence on the materialism of consumers, compared with Chinese cultural values (such as power distance) or political ideology. This occurs even where this high materialism triggers lower subjective wellbeing, and encourages greater inequality among the Chinese urban and rural populations. This concurs with Western evidence (see Kasser, 2016; Kasser et al., 2014).

Industrialised marketisation has therefore reshaped the profile of Chinese consumers as more materialistic and luxury-orientated, educated, urbanised and mobile (McKinsey, 2017a). Indeed, China's consumer-classes are encouraged to participate in 'materialistic capitalism' to feed their desire to acquire lifestyle-enhancing possessions to achieve 'face' (Podoshen et al., 2011). Hence, materialism is viewed positively by them in overcoming the deprivations of their past (Yang & Stening, 2012). Potentially, therefore, they may be more reluctant to reduce their consumption compared with western consumers. Materialism exists in the West because people want to consume, however in China, it exists because people feel they need to consume (Yang & Stening, 2012). Western evidence implies this is problematic because it denigrates intrinsic values (e.g. social-affiliation and community characteristic of China) as being subservient to materialistic consumption values (i.e. the bleed-over and seesaw effect discussed above).

Utilising crossvergence and stickiness may provide further insight into the moderating effects of age on materialistic consumption. In particular, the influence of business (market) ideology on a younger Chinese age-cohort who are more prosperous, sophisticated, and technology-driven might differ compared to older generations (Ipsos, 2014; Podoshen et al., 2011; Zipser et al., 2016). China's younger consumers in their 20's (the one-child policy generation[i]) are considered more materialistic, aspirational, and impulsive trend-conscious self-orientated spenders (McKinsey, 2017b) – with the potential spending power of six purses (2 parents, 4 grandparents). They are the highest spenders on grocery products too. This new generation (especially the under 20's) of marketised consumers possess the strongest materialistic values. Whilst having limited personal spending power, they strongly influence the purchasing behaviour of their parents, and grandparents, to attain their desired possessions and consumption experiences. Consumers in their 30's (post 1980s cohort, spanning older and younger consumer-classes) are major spenders for themselves, their children and their parents. Those consumers in their 40's-50's (post 60s-70s cohort), particularly, are predisposed to

paying premiums for quality products and in the future will increase their spending on food and non-essentials e.g. entertainment (He, 2013). This suggests reducing stickiness among the impending older Chinese generations.

Overall, China's increasing appetite for materialistic social status (reflecting materialism and social consumption motivation) contributes to wide-ranging environmental problems symbolised by the climate emergency and the threat to sustainable development. The positive effect between Chinese consumer's materialism and sustainable consumption, identified by Dermody et al (2015), suggests this proclivity is already encroaching into the territory of pro-environmentalism and sustainability in the form of green materialism. This positive relationship is unchartered territory among China's generational subcultures, which warrants our research attention in this paper. Among Western nations, such emphasis on materialism would be deemed to significantly emasculate sustainability behaviours (Hurst et al., 2013; Kasser, 2016; Kilbourne & Pickett, 2008); hence the contention of green materialism as an oxymoron. We therefore examine if the direct and indirect effects of materialism and social consumption motivation on sustainable consumption are moderated by China's age-generations. In particular, do the crossverging hybridising values of China's social-reform period facilitate materialism and social status among its younger post-80s reform generation, and their propensity for green materialism? Among its older post-50/60s consolidation and post-70s revolution generations, would such an effect also occur? While these generational effects are currently unknown, crossvergence theory supports a negative moderation effect, whereby the positive effect of materialism will be higher for the post-80s reform generation, compared with the consolidation/revolution generations. We therefore hypothesise:

H1: Age negatively moderates the direct effect of (a) materialism and (b) social consumption motivation on sustainable consumption behaviour.

H2: Age negatively moderates the indirect effect of (a) materialism and (b) social consumption motivation, via PESI, on sustainable consumption behaviour.

2.3.   Cultural age-generations and sustainability

Environmental concern is an important intrinsic element to pro-environmental behaviours. This is because it is premised on environmental self-construal (Arnocky, Stroink, & DeCicco, 2007), the awareness and impact of environmental problems, as well as personal engagement in solving them (Kilbourne & Pickett, 2008; Liu & Mu, 2016; Rahimah, Khalil, Cheng, Tran, & Panwar, 2018). Given the discussion above (section 2.2), it may also directly, or indirectly, underlie green materialism in China. Western evidence confirms that environmental concern

indirectly operates as an accessible heuristic to aid consumers' buying/non-buying choices, particularly among older consumers (Bamberg, 2003). However, its influence on younger/older Chinese age groups is unclear. For example, Liu and Mu (2016) indicate environmental concern is greater among younger Chinese. While Hao (2014) and Shen and Saijo (2008) maintain its influence is stronger in older Chinese. This age influence becomes more pertinent when considered from the perspective of age-generational subcultures, and the socio-historical periods they represent. Thus, the influence of crossverging sociocultural and business ideology values, which potentially encourage the growth of (green) materialism among younger post-80s Chinese consumers, may impede the strength of environmental concern among this post-reform generation. However, stickiness may reinforce the environmental concern of the older post-50s/60s consolidation and post-70s revolution generations.

These hybridising effects are also relevant to the relationship between environmental concern, PESI and sustainable consumption. Dermody et al. (2015) found environmental concern indirectly, via PESI, influences sustainable consumption buying of both UK and Chinese consumers. The importance of the PESI self-concept is due to its dynamic and fluid representation of the sociocultural norms of accepted environmentally-friendly consumption practices (Dermody et al., 2018; Whitmarsh & O'Neill, 2010). From an age-generational perspective, these norms will reflect specific socio-historical periods. For example, among the younger social reform generation and its crossverging sociocultural and business ideology values, this 'self' may connect with how these young consumers use materialism because of their 'need to be seen', thereby gaining face, social recognition, and acceptance. Whilst the 'self' and traditional values of the older consolidation and revolution generations, may represent an environmentally-concerned identity for their collective family/community well-being and social bonding. This may begin to illuminate if and how this identity interplays with materialism, social consumption motivation, and environmental concern to influence sustainable consumption buying among China's age-generations. We therefore examine if age-generation moderates the direct and indirect effects of environmental concern in China. While these generational effects are currently unknown, crossvergence theory supports a positive moderation, whereby the effect of environmental concern will be higher for the older post-70s and post-50s/60s revolution/consolidation generations, compared with the post-80s reform generation. We therefore hypothesise:

H3: Age positively moderates the direct effect of environmental concern on sustainable consumption behaviour.

H4: Age positively moderates the indirect effect of environmental concern, via pro-environmental self-identity, on sustainable consumption behaviour.

Our conceptual model is presented in Figure 1.

Insert Figure 1 here

3. RESEARCH METHODOLOGY

3.1. Sample and procedures

Data was collected via an online survey hosted by a commercial research company (SSI-Dynata), which pre-tested the survey in China before launching. Quota sampling with age and gender quotas was employed (reflecting Chinese population structure), enabling age-generations to be compared (see section 4). Respondent authentication and data quality checks were undertaken. Those with missing data, completing the survey multiple times, too fast or with small variation across responses were eliminated. The final sample consisted of 981 Chinese 18 to 64 year-olds, who fully completed the questionnaire. Table A (Supplementary Document) presents the respondent demographic profile.

3.2. Measures

This study employed previously established scales for the constructs of interest (Table B, Supplementary Document). Materialism utilised the six-items Material Values Scale (Richins & Dawson, 1992). Four items were used to operationalise social consumption motivation (Moschis, 1985). Following Ellen, Wiener and Cobb-Walgren (1991), a four-item scale assessed environmental concern. Pro-environmental self-identity was measured with four items from Whitmarsh and O'Neill (2010). All of these constructs were measured on a five-point Likert scale, anchored at 1=strongly disagree and 5=strongly agree. Sustainable consumption buying behaviour was captured by five items adapted from Whitmarsh and O'Neill (2010) (utilising a five-point scale anchored at 1=never and 5=always). The questionnaire was subject to a back-translation procedure conducted by professional translators to check translation validity (Brislin, 1970). The research team also verified its linguistic and conceptual consistency.

3.3. Data analysis

First, confirmatory factor analysis (CFA) using AMOS was applied to verify the reliability and validity of the scales employed in this study (Gerbing & Hamilton, 1996). Multiple widely

recommended absolute and incremental fit indices were used to assess the models' goodness-of-fit: comparative fit index (CFI) >.9, Tucker-Lewis Index (TLI) >.9 and root mean square error of approximation (RMSEA) <.06 (Hair, Black, Babin, & Anderson, 2010).

Second, moderated mediation analyses using the SPSS macro syntax PROCESS (Hayes, 2013) were conducted to examine the hypothesised moderated direct and indirect effects. This approach uses bootstrapping procedures generating multiple random samples, which is beneficial compared to traditional approaches. This is because the model's predictive validity is tested, thereby strengthening accuracy in confidence intervals (Hayes, 2009). The moderating variable – generational age group – was categorical, whilst the mediator (PESI) and dependent variable (sustainable consumption buying behaviour – sustainable buying hereafter) were continuous.

3.4. Measurement validation

In a first step, we tested the measurement validity and reliability individually for the whole sample. The final measurement models from the CFA showed a good fit (χ^2(135)=434.12, χ^2/df=3.22, p≤.000, CFI=.951, TLI=.939, RMSEA=.048). We dropped four items due to low standardised loadings, or high shared variance (Table B, Supplementary Document). All remaining items had significant standardised loadings above .5. The constructs demonstrated adequate reliability with Cronbach's alpha values and composite reliability (CR) indices above .7. Table 1 shows discriminant validity was confirmed, i.e. the AVEs (average variance extracted) larger than the corresponding inter-construct correlations for all constructs (Fornell & Larcker, 1981).

Insert Table 1 here

Second, a multi-group CFA was applied to test configural and metric invariance between the three age groups (Baumgartner & Steenkamp, 1998). The multi-group measurement model demonstrated a good fit (χ^2(405)=800.9, χ^2/df=1.98, p≤.000, CFI=.936, TLI=.918, RMSEA=.032). Full metric invariance was confirmed as factor loadings were invariant between the three groups, i.e. ΔCFI=–.003 was well below the recommended value of –.01 (Cheung & Rensvold, 2002). Thus, the measures employed in this study demonstrated validity and reliability across the age generations. Additionally, given one single source was used for data collection, we tested for common method bias (CMB), and found no evidence of concerns (see Supplementary Document for our testing procedures).

3.5. Alternative model testing

Whilst the goodness of fit statistics for the proposed research model indicated a good fit ($\chi^2(205)=600.67$, $\chi^2/df=2.93$, $p<.0001$, GFI=.949, CFI=.944, TLI=.924, RMSEA=.044), two competing models were tested to further validate our results (see Supplementary Document for test results). The results confirmed that our proposed conceptual model (Figure 1) was an empirical better fit to the data.

4. RESULTS: EXAMINING MODERATED MEDIATION EFFECTS OF AGE

Before examining the moderated effects of age, we ran a simple mediation analysis for the whole sample (PROCESS, Model 4). Gender, education, income and dependent children at home were included as control variables. The model explained 32% of the variation in sustainable buying. The results displayed in Table 2 demonstrate a positive direct effect of materialism ($c_1'=.156$, $p\leq.0001$), social consumption motivation ($c_2'=.157$, $p\leq.0001$) and environmental concern ($c_3'=.045$, $p\leq.029$) on sustainable buying. In addition, the indirect effects of each antecedent (i.e. materialism $a_1b=.062$, social consumption motivation $a_2b=.071$, environmental concern $a_1b=.058$), via PESI, on sustainable buying were also significant. Indirect effects are significant if no zero is included in the 95% confidence interval (Hayes, 2013).

Insert Table 2 here

In a second step, we conducted a one-way ANOVA to examine whether any differences existed between the three age-generations, i.e. post-80s reform, post-70s revolution, and post-50s/60s consolidation. Significant disparities were identified (Table 3). Materialism and social consumption motivation were significantly lower among the older post-50s/60s generation, whilst their environmental concern was significantly higher. However, PESI was significantly lower among the younger post-80s generation, in contrast to the post-70s, and post-50s/60s age-generations. The post-70s generation also possessed the highest materialism of the generations, and the highest sustainable buying, particularly juxtaposed against the post-50s/60s generation.

Insert Table 3 here

We tested hypotheses 1 to 4 with a series of moderated mediation models following the PROCESS syntax (Model 59); where the strength of the relationship between materialism, social consumption motivation and environmental concern on sustainable buying, directly and indirectly through PESI, was conditional on the value of the moderator, i.e. socio-historical age-generations.

Comparing the generations, Table 4 shows that the direct effect of materialism on sustainable buying was positive and significant only for the younger post-80s generation ($c_1'_{post-80s}$=.224, p≤.000). We found a negative significant interaction effect between age and materialism on sustainable buying between the younger post-80s generation and older post-70s generation ($c_1'_{x\,Age\_post-80s\,vs\,post-70s}$=-.123, t=-1.76, p<.039 (one-tailed), 90% LLCI: -.237, ULCI: -.008). Additionally, we found this negative significant interaction effect between the post-80s and post-50s/60s generation ($c_1'_{x\,Age\_post-80s\,vs\,post-50s/60s}$=-.133, t=-1.94, p<.026 (one-tailed), 90% LLCI: -.246, ULCI: -.020). No significant interaction effect occurred between the older post-70s and post-50s/60s generations. Thus, higher levels of materialism directly led to higher levels of sustainable buying for the younger post-80s generation only. Specifically, materialism levels of 3.6 and higher led to significantly higher levels of sustainable buying among this age-generation. Figure 2a illustrates this moderation effect. We found no differences in the direct effects of materialism on sustainable buying between the two older generations. The results thus support H1a.

The indirect effects of materialism on sustainable buying, via PESI, based on 5,000 bootstrap samples were positive and significant at $p<.05$, as no zero was included in the 95% confidence interval (CI), for all age-generations ($a_1b_{post-80s}$=.065; $a_1b_{post-70s}$=.092, $a_1b_{post-50s/60s}$=.051). We found no significant differences in the indirect effects of materialism, via PESI, on sustainable buying between the three age generations (i.e. all three indices of moderated mediation included a zero in the 90% bias-corrected bootstrap confidence intervals). Thus, H2a is unsupported.

Insert Table 4 here

The direct effect of social consumption motivation on sustainable buying was positive and significant for both the younger post-80s ($c_2'_{post-80s}$=.174, p≤.000) and the post-70s age-generation ($c_2'_{post-70s}$=.208, p≤.001). However, the effect for the older age-generation was not significant ($c_2'_{post-50s/60s}$=.069[ns]). We found a negative significant interaction effect between age and social consumption motivation on sustainable buying between the post-70's and post-

50s/60s generation ($c_2'_{x\ Age\_post\text{-}70s\ vs\ post\text{-}50s/60s}$ =-.139, t= -1.77, p<.038 (one-tailed), 90% LLCI: -.269, ULCI: -.010). Thus, the positive direct effect of social consumption motivation on sustainable buying was significantly higher for the post-70s generation, in contrast to the older post-50s/60s generation. No differences in the direct effect of social consumption motivation on sustainable buying occurred between the post-80s and post-70s age-generations (interaction effects insignificant). Whilst the negative interaction effect between age and social consumption motivation on sustainable buying between the post-80's and post-50s/60s generation was only marginally significant at the 90% level ($c_2'_{x\ age\_post\text{-}80s\ vs\ post\text{-}50s/60s}$ =-.105, t= -1.53, p<.063 [one-tailed]). The moderation effects have been illustrated in Figure 2b, showing that higher social consumption levels above 3.8 will lead to higher levels of sustainable buying for the post-70s generation, in contrast to the older post-50s/60s age-generation. Thus, the results only partially support H1b.

We found similar results for the indirect effects of social consumption motivation, via PESI, on sustainable buying. The indirect effect was positive and significant for the post-80s ($a_2b_{post\text{-}80s}$=.074) and post-70s age-generations ($a_2b_{post\text{-}70s}$=.118), but not the older post-50s/60s age-generation ($a_2b_{post\text{-}50s/60s}$=.040^{ns}). Further analysis demonstrated that the indirect effect is significantly larger for the post-70s, in contrast to the post-50s/60s age-generation (Index of moderated mediation: -.078, 90% bias-corrected bootstrapped LLCI: -.136, ULCI: -.018). We found no other moderation effects, meaning that the indirect influence of social consumption motivation was similar for the post-80s and post-70s age-generations. Therefore, H2b is also partially supported.

*** Insert Figure 2 here ***

With regard to the direct effects of environmental concern on sustainable buying, Table 4 shows a significant positive effect for the post-70s ($c_3'_{post\text{-}70s}$=.111, p≤.002) while the effect for the other two age generations were not significant ($c_3'_{post\text{-}80s}$=-.009^{ns} and $c_3'_{post\text{-}50s/60s}$=.077^{ns}). We found a positive significant interaction effect between age and environmental concern on sustainable buying between the post-80s and post-70s generation ($c_3'_{x\ Age\_post\text{-}80s\ vs\ post\text{-}70s}$=.120, t=2.61, p<.005 (one-tailed), 90% LLCI: .044, ULCI: .195). However, there was no significant interaction effect between the post-70s and post-50s/60s generation. Figure 3 displays this interaction effect. It clearly shows that environmental concern levels of 4.0 and above lead to higher sustainable buying for the post-70s, but not the younger post-80s age-generation. These results partially support H3.

Table 4 also showed significant indirect positive effects of environmental concern on sustainable buying, via PESI, for all three age-generations $(a_3b_{post\text{-}80s}=.045, a_3b_{post\text{-}70s}=.054, a_3b_{post\text{-}80s}=.075)$. Whilst the effects were slightly higher for the older age-generations, we did not find any significant moderation effects (i.e. Index of moderated mediation were insignificant for all age-generational comparisons). Thus, H4 is unsupported because there are no differences between the age-generations.

Insert Figure 3 here

5. DISCUSSION

Our results suggest that the relationships between materialism, social consumption motivation, environmental concern and sustainable buying vary by age-generation. These differences imply the influence of crossvergence (valuing modernisation) and stickiness (valuing traditions) theories on these generations' behaviours.

Firstly, the major finding of this study is that materialism has a significantly higher direct influence on the sustainable buying of the younger post-80s social reform generation. This is in contrast to the post-50s/60s consolidation and post-70s revolution generations. Secondly, social consumption motivation is unimportant to the post-50s/60s generation and their sustainable buying. This contrasts with the post-70s and post-80s age-generations, where such motivation is important to their buying. In addition, the indirect effect of social consumption motivation, via PESI, was also significantly higher for the post-70s revolution generation, in contrast to the post-50s/60s consolidation generation. Thirdly, the direct effect of environmental concern on sustainable buying was significantly higher for the post-70s revolution generation. This diverges from the post-80s reform generation where this influence was non-significant. Fourthly, the positive indirect effects, via PESI, did not vary significantly by age generation for materialism and environmental concern.

Our findings are in line with previous studies focusing on emerging markets, which also found a positive influence of materialism on sustainable buying behaviours (Liobikiene et al., 2020; Strizhakova & Coulter, 2013). Moreover, our results build on Podoshen et al. (2011) and Liobikiene et al. (2020), who propose that materialistic values and social influence are more important to younger than older age-generations. Our results further implies that sustainable buying behaviours interconnect with an increasing appetite for materialistic personal social status amongst the post-80s generation in China. This implies transforming business ideology values are giving precedence to materialism over environmental concern.

This limited concern for the natural environment, in favour of materialism and social status visibility, intimates a new Chinese consumer group, which we have labelled "enviro-materialists". This contrasts with the post-70s age-generation, who are influenced by environmental concern and social consumption motivation. Their concern for the natural environment suggests a closer allegiance to stickiness to a pre-modern China, and a limited or non-influence from crossverging modernist values.

Crossvergence theory (Egri & Ralston, 2004; Ralston, 2008) helps explain the rise of China's enviro-materialists. Specifically, the accelerating impact of business ideological market forces at work in China are encouraging its younger post-80s reform generation to consume materialistically. This is ripe territory for green materialism in China. Whereby this generation attempts to navigate their way through these crossverging hybridising values that give primacy to materialistic consumption of status-giving Western 'green' brands. Indeed, perceived environmental legitimacy, and the associated status of these brands, constitute a critical part of this generation's heritage. These brands enable its young enviro-materialists to achieve personal success, such as gaining face, as well as enhancing their own well-being and that of their family/social group. Support for this appraisal is evident in a small number of studies, including Griskevicius et al. (2010), Hurst et al. (2013), Strizhakova and Coulter (2013). Furthermore, lavish spending by parents in their thirties on their only-child, is likely to have contributed to China's most Westernised materialistic generation (Ipsos, 2014; Richins & Chaplin, 2015; Sharma, 2011). As well as reflecting past (one-child policy), this also illustrates current political thinking in China's slowing, yet still very strong economy (pre-Covid-19). Essentially, the Chinese Government encourages consumer spending (e.g. by cutting taxes and increasing bank lending). China's post-80s reform generation could interpret these governmental actions as their 'national duty' to help keep their economy strong. This illustrates the quickening sway of its business ideological market forces. Accordingly, enviro-materialism is an inherent part of China's younger consumer-culture that prioritises materialism, yet recognises the secondary importance of sustainable consumption choices. Consequently, enviro-materialism is a sustainability-veneer overlaying enviro-materialists' desire to be affluent spenders pursuing trends and aspirations entailing Western (luxury) brands. It is a government signal to the post-80s reform generation that they can continue to consume materialistically by buying ecologically, or ethically-responsibly.

There is a cautionary tale here, however. These enviro-materialists are less equipped to navigate this modern Chinese consumer-society, particularly the increasing presence of marketing from global corporations operating within this space. As Sheth (2011) attests, young

consumers from emerging markets like China are often very naive in understanding how markets and marketing 'operate'. They are typically less familiar and confident in questioning authoritative global corporations, unlike more cynical and agenic Western consumers. Potentially, China's enviro-materialists reflect a greater vulnerability to the machination of a materialism-globalisation agenda. They may be more inclined to perceive multinationals and markets as making trustworthy claims. Conceivably, they could be more 'open' to marketing messages 'pushing' them towards materialism by buying Western brands and pseudo pro-environmental brands. As such, an ideal environment exists for corporate greenwashing in China, to tempt its post-80s reform generation and their status desire for possessions. Consumer agency helps emasculate such practices in developed economies. Interestingly, however, cynicism is increasing in China, suggesting corporations are becoming less trusted (Sun et al., 2016). In line with crossvergence theory, perhaps China's sociocultural influences are catching-up with its hybridising business-ideology.

From a sustainability perspective, this post-80s group of young enviro-materialists is highly problematic, because their behavioural worldview is short-term and highly risky. Their current naivety risks global and Chinese strategies, and policies aiming to safeguard current and future generations and the planet. This includes potentially destabilising governmental climate-action and pollution policies, threatening authentic pro-environmental innovation, and encouraging locked-in carbon systems that prejudice metamorphosis to a post-carbon world (Beck, 2016; Urry, 2016). At the same time, however, enviro-materialists behaviour does not function independently of the macro systems advanced by political and business leaders. Rather, it reflects their operationalisation, encouraged by China's political leadership and leaders of global corporations. Hence, while the behaviour of this young enviro-materialist consumer group is questionable, it is also symptomatic of a more fundamental challenge within all nations in bringing together sustainability and economic growth. Given these significant challenges, we now consider potential interventions to redress enviro-materialism.

6. INTERVENTIONS TO REDRESS CHINA'S ENVIRO-MATERIALIST GENERATION

We propose ideas for interconnected governmental and corporate marketing interventions to begin to address the complexity of China's enviro-materialists. These interventions, presented in Table 5, have potential to encourage their authentic sustainability consumption behaviours and reduce their materialism.

Education is central to these interventions. It can facilitate understanding, reflexivity and self-appraisal of enviro-materialists within the young post-80s reform generation. Further, it can prevent corporations from taking advantage of the marketised consumerism within this group. Utilising education to challenge existing marketing practices and behavioural norms is vital. This is because the materialistic desires of enviro-materialists provides a rich territory for green-washing and green materialism to thrive. By suggesting compliance with China's environmental regulations, corporations might drive and profit from the materialistic consumption of their pseudo pro-environmental brands. Hence, while Griskevicius et al. (2010) and Strizhakova and Coulter (2013) suggest green materialism is worthwhile, it is liable to corporate manipulation. Politically-endorsed initiatives from Chinese collaborative, stakeholder groups that have a competitive, political and societal remit can help prevent this (e.g. Chinese-based environmental NGOs and communities). For instance, they can contribute to sustainability marketing education, and encourage enviro-materialists to experience these active stakeholder networks. Further, they can support innovative SMEs in China with genuine pro-environmental offerings. These SMEs will struggle to survive amidst an unequal competitive environment caused by green-washing, and the 'false-education' of green materialism among enviro-materialists in the post-80s reform generation.

Thus, these sustainability-marketing interventions need to be authentic, credible and closely monitored through government policy. Critically, they must visibly support national/global sustainability policies and China's ecological civilisation framework. This is particularly important given China's hardening attitudes towards stronger environmental protection and its national ambition to become a harmonious ecological civilisation. Alongside this, China's leaders will need to act on potential conflicts from their economic growth strategies that encourage unsustainable consumerism. Together with other nations, this will become pertinent to the (post) Covid-19 challenges that lie ahead.

7. LIMITATIONS AND FURTHER RESEARCH

This study was constrained by a cross-sectional single-survey approach using self-reported behaviours. To help mitigate these limitations, we used multi-item scales and extensively reviewed pertinent Chinese evidence and scholarship to design and interpret our findings (e.g.

see Kormos & Gifford, 2014; Liu & Mu, 2016). Future research should track actual behaviours of age-generations over time.

Our proposed interventions will require further research to measure their effectiveness and improve their capacity to redress enviro-materialism within the post-80s reform generation. A mixed methods approach would be valuable here. In addition, experimental designs could help test the causal links in the research framework and examine the effectiveness of the proposed interventions. This will help determine how invasive greenwashing and enviro-materialism are among this generation.

There is further potential to utilise crossvergence and stickiness theories to extend explanation of the materialistic-sustainability behaviours of age-generations. For example, research could examine relationships between traditional cultural values and globalisation values on socio-historical generations in China and other emerging economies. There is merit in researching China's potential for stakeholder collaborative action to activate and drive change. Finally, it would be valuable to critically explore how (sustainability) marketing 'works' across China's age-generations. Furthermore, how it 'should work' within the realms of corporate citizenship and environmental sustainability. This includes: (i) the responsibilities of marketing to the inexperienced and vulnerable younger Chinese post-80s reform generation; (ii) what constitutes effective reduced materialism/increased sustainability marketing messages and messengers targeting this generation; (iii) how marketing education curriculum innovation should be utilised, and how effectively it can mitigate enviro-materialism.

Notes:

[i] Known as post 90's cohort, whose parents are likely the only child in their family too.

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Table 1. Construct Reliability, Square Root of AVEs, Inter-Construct Correlations

Constructs	α	CR	MAT	SCM	EC	PESI	SCBB
MAT	.776	.791	**.660**				
SCM	.788	.809	.610	**.718**			
EC	.829	.829	-.182	-.167	**.786**		
PESI	.731	.734	.429	.386	.195	**.762**	
SCBB	.779	.791	.458	.428	.075	.648	**.660**

Note: Values in the diagonal represent square root of AVEs, MAT=Materialism, SCM=social consumption motivation, EC=environmental concern, PESI=pro-environmental self-identity, SCBB=sustainable consumption buying behaviour.

Table 2. Model Coefficients (Mediation Model)

Pooled Sample (n=981, 18-64yr olds)

Direct effects		$M_{(PESI)}$ Coeff.	t	p		$Y_{(SCBB)}$ Coeff.	t	p	**Indirect Effects** *(ab path)* Coefficient (95% bias corrected LLCI, ULCI)	
$X_{1(Mat)}$	a_1	.167	4.96	.000	c'_1	.156	4.84	.000	$X_{1(Mat)} \rightarrow M_{(PESI)} \rightarrow Y_{(SCBB)}$	a_1b .062 (.032, .093)
$X_{2(SCM)}$	a_2	.193	5.92	.000	c'_2	.157	5.02	.000	$X_{2(SCM)} \rightarrow M_{(PESI)} \rightarrow Y_{(SCBB)}$	a_2b .071 (.042, .104)
$X_{3(EC)}$	a_3	.157	7.49	.000	c'_3	.045	2.18	.029	$X_{3(EC)} \rightarrow M_{(PESI)} \rightarrow Y_{(SCBB)}$	a_3b .058 (.040, .077)
$C_{1(Gender)}$	c_1	-.011	.039	.785	c'_1	.049	1.31	.189		
$C_{1(Educ)}$	c_2	.065	2.49	.013	c'_2	.028	1.12	.265		
$C_{2(Income)}$	c_3	.029	2.12	.034	c'_3	.007	.53	.596		
$C_{3(Children)}$	c_4	.130	2.72	.007	c'_4	.089	1.97	.050		
$M_{(PESI)}$					b	.369	12.15	.000		
Constant	i	1.603	9.18	.000	i_1	0.490	2.84	.005		

R^2=.204 R^2=.323

$F_{(7,973)} = 35.57, p < .000$ $F_{(8, 972)} = 58.03, p < .000$

Note: 'c' = direct effects; 'ab' = indirect effects. Mat=Materialism; SCM=Social consumption motivation; EC=Environmental concern; PESI=Pro-environmental self-identity; SCBB=Sustainable consumption buying behaviour. LLCI = Lower Limit Confidence Interval, ULCI – Upper Limit Confidence Interval

Table 3: Descriptive Statistics and ANOVAs Results

Constructs	Pooled Sample	Post-80s	Post-70s	Post-50s/60s	ANOVA *(3 age generations)*	Group Comparisons
Materialism (MAT)	3.57 (.71)	3.65 (.69)	3.71 (.70)	3.31 (.68)	$F_{(2,978)}=28.66$***	Post-80s>Post-50s/60s* Post-70s>Post-50s/60s*
Social Consumption Motivation (SCM)	3.67 (.70)	3.74 (.71)	3.78 (.68)	3.44 (.65)	$F_{(2,978)}=21.54$***	Post-80s>Post-50s/60s* Post-70s>Post-50s/60s*
Environmental Concern (EC)	3.65 (.95)	3.56 (.98)	3.63 (1.00)	3.82 (.81)	$F_{(2,978)}=6.28$**	Post-80s<Post-50s/60s* Post-70s<Post-50s/60s*
Pro-Environmental Self-Identity (PESI)	3.97 (.68)	3.90 (.73)	4.04 (.65)	4.02 (.63)	$F_{(2,978)}=4.70$**	Post-80s< Post-70s* Post-80s< Post-50s/60s*
Sustainable Consumption Buying Behaviour (SCBB)	3.49 (.70)	3.49 (.72)	3.57 (.75)	3.40 (.60)	$F_{(2,978)}=3.66$*	Post-70s> Post-50s/60s*

*Note: ***p<.001, **p<.01, *p<.05; Descriptive statistics: Mean (Standard Deviation), Group comparisons based on post-hoc tests (Tukey HSD – MAT; SCM; Dunnett C – EC, PESI, SCB) – only significant differences included in table.*

Table 4. Conditional direct and indirect effects on sustainable consumption buying behaviour at values of age as moderator

Direct effects				Indirect Effects *(ab path)*			
					Bias corrected bootstrap 95%		
	Coeff.	*t*	*p*		Coeff.	LLCI	ULCI
Materialism							
$c'_{1post-80s}$	.224	4.91	.000	$a_1b_{post-80s}$	.065	.030	.106
$c'_{1post-70s}$	.102	1.78	.075	$a_1b_{post-70s}$	.092	.033	.155
$c'_{1post-50s/60s}$	.091	1.65	.100	$a_1b_{post-50s/60s}$	.051	.006	.100
Social Consumption Motivation							
$c'_{2post-80s}$	.174	4.03	.000	$a_2b_{post-80s}$	.074	.039	.115
$c'_{2post-70s}$	.208	3.50	.001	$a_2b_{post-70s}$	.118	.063	.182
$c'_{2post-50s/60s}$	.069	1.22	.222	$a_2b_{post-50s/60s}$	.040	-.004	.093
Environmental Concern							
$c'_{3post-80s}$	-.009	-.32	.779	$a_3b_{post-80s}$	.045	.022	.073
$c'_{3post-70s}$	.111	3.06	.002	$a_3b_{post-70s}$	.054	.023	.093
$c'_{3post-50s/60s}$	.077	1.77	.078	$a_3b_{post-50s/60s}$	.075	.038	.118

Note: 'c' = direct effects; 'ab' = indirect effects. LLCI = Lower Limit Confidence Interval, ULCI – Upper Limit Confidence Interval.
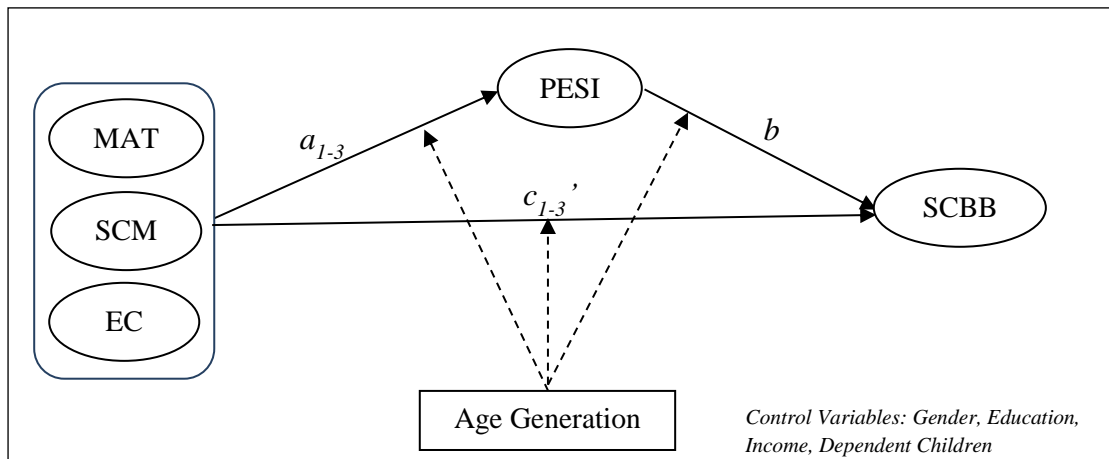
Table 5: Interconnected Governmental and Corporate Marketing Interventions for China's Young Enviro-Materialists

ENCOURAGING SUSTAINABILITY BEHAVIOURS	REDUCING MATERIALISTIC BEHAVIOURS

Normalising Sustainable Consumption
 	
 Advance sustainable consumption norms into traditional and modern values to normalise the range of sustainability behaviours (e.g. buying, curtailment, anti-consumption).
 	
 To facilitate enviro-materialists' acceptance of these norms to underpin their sustainable consumption behaviour:
 	
   Develop their understanding of the connection between personal buying behaviours and environmental impact.
 	
   Increase their exposure to stronger sustainable consumption and eco-civilisation messages.
 	
   Reduce emphasis on materialistic buying norms in longer-term.
 	
 (Connects with Education).
	Address Corporate Greenwashing
	
	 Reduce use of corporate greenwashing tactics that encourage green materialism. Use punitive legislative fines/taxes in short to medium term.
	
	 (Connects with Education, Corporate Citizenship; Penalties and Grants).

Human Sustainability Indices
 	
 Activate enviro-materialists' feelings of security and intrinsic self-worth by embracing happiness, wellbeing and human development indices.
 	
 Support this by enabling enviro-materialists to:
 	
   Experiment within their social groups to create and discuss alternative identity constructions that are more pro-environmental and less materialistic.
 	
   Experience authentic sustainable consumption and its positive consequences for sustainability and a harmonious eco-civilization.
 	
   Understand the contrast to materialism norms and buying for happiness/wellbeing.
 	
 (Connects with Normalisation [norms]; Authenticity [authentic pro-environmental brands]; Education).
	Non-Materialism Indices
	
	 Reduce emphasis on materialism in urbanised Chinese society, including less use/visibility of materialistic marketing messages in private and public sphere.
	
	 Increase Government-led emphasis on harmonious ecological civilization utilising happiness, wellbeing and human development indices, not only economic ones.
	
	 (Connects with Education; Stakeholder Collaborations).

Growing Authenticity	Corporate Citizenship
Encourage enviro-materialists to buy authentic pro-environmental brands to replace pseudo versions.	*Adopt authentic corporate citizen principles in marketing to these consumers and not profit from their marketplace vulnerability.*
Support this with increased exposure to stronger sustainability/sustainable-consumption messages and additionally the activities of Chinese environmental NGOs.	*(Connects with Authenticity; Stakeholder Collaboration).*
(Connects with Education; Indices).	
Sustainability Marketing Education	**Marketing Education**
Develop analytical sustainability marketing education within schools, universities/ colleges and families, supported by environmental NGOs, to explore and challenge:	*Develop analytical marketing education within schools, universities/colleges and families on:*
The merits of sustainability for the future health and sustainable harmonious prosperity of the Chinese nation (eco-civilization), and globally.	*The role of marketing in generating environmental problems and its potential to help address them.*
Perspectives on what sustainable consumption is/is not.	*The dangers of materialism, enviro-materialism and greenwashing.*
Discourses on environmental and human connected problems, future predictions, and the basis for environmental concern.	*Alternative critical thinking to empower consumers on the merits of alternate sustainability perspectives and behaviours.*
Viewpoints on marketing's potential to facilitate pro-environmental innovation.	*(Connects with Normalisation; Sustainability Marketing Education).*
Opinions on what constitutes (in)authentic pro-environmental brands (with examples).	
Perceptions of contemporary identities, authentic-self, and constructions of PESI.	
Perceived benefits/risks of consumer-based stakeholder collaboration to progress sustainability behaviour in China (including exploring the history of Chinese environmental activism and NGOs).	
(Connects with Marketing Education, Authenticity; Indices; Normalisation).	
Stakeholder Collaborations	**Penalties and Grants**
Support/develop Chinese and globally focused stakeholder collaborations (i.e. environmental NGOs) with a competitive, political, societal and philosophical (e.g. grand harmony) remit.	*Introduce an enviro-materialism and greenwashing taxation levy [short to medium-term].*
Use this collaboration for shared thinking and responsibility to:	*Mitigate this with:*
	Grants to reinvest in authentic pro-environmental innovation and alternative macro structures/processes, supported by education.

Address enviro-materialism, macro structures and processes.	*Annual competition (with grants for winners) for new ideas for future thinking.*
Explore progression to an eco-civilization (beyond a political agenda).	*(Connects with Education; Corporate Citizenship; Stakeholders).*
Advance a post-carbon innovation strategy as part of sustainable economics.	
Proactively involve younger generations to experience becoming active stakeholders.	
Support an annual international 'future thinking' competition for new ideas – the leaders/champions of tomorrow? This could include an annual conference/symposium and funded placements and bursaries for prize-winners to develop their ideas into practice.	
(Connects with Corporate Citizenship; Education).	

Figure 1. Conceptual model for moderated mediation analyses

Note: Dotted lines denote moderation effects. MAT=materialism, SCM=social consumption motivation, EC=environmental concern, PESI=pro-environmental self-identity and SCBB=sustainable consumption buying behaviour. 'c' denotes the direct effects whilst 'ab' denotes the indirect effects.

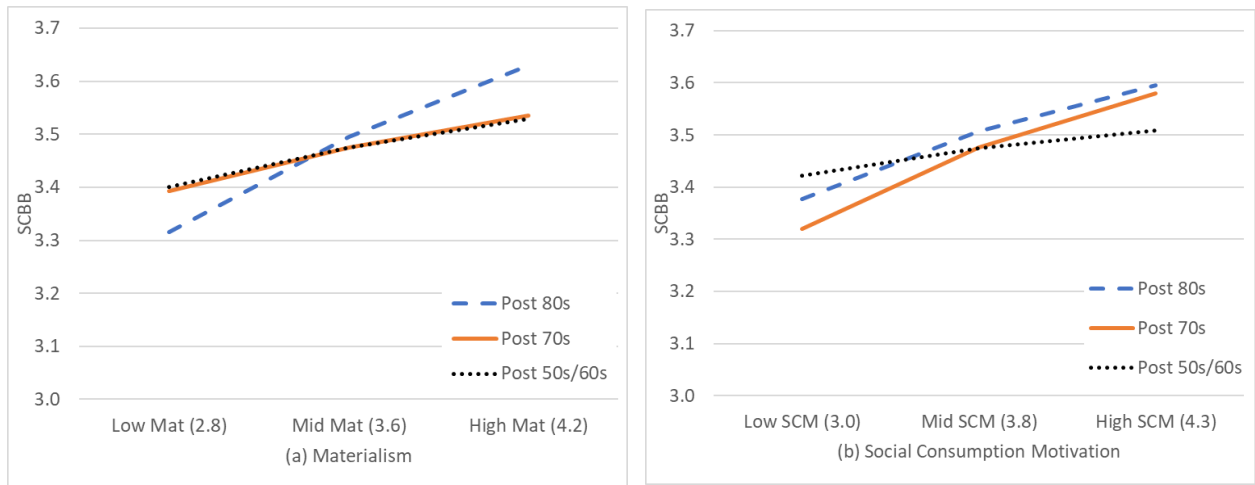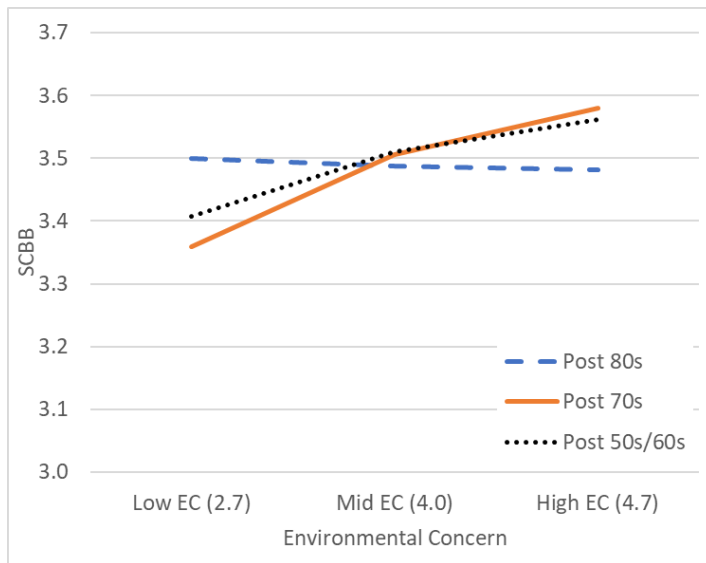**Figure 2: Conditional direct effect of (a) materialism and (b) social consumption motivation on SCBB**

Figure 3: Conditional direct effect of environmental concern on SCBB

Supplementary Document

Evaluating the Challenge of China's Crossverging Young Enviro-Materialists

Table A. Demographic profiles for pooled sample and by age cohorts

Variable		% Pooled sample (n=981)	% Post 80's Cohort (n=432)	% Post 70's cohort (n=264)	% Post 50/60's cohort (n=285)
Gender	Female	48.9	53.0	45.8	45.6
Age	18-24	15.4	35.0	-	-
	25-34	28.6	65.0	-	-
	35-44	26.9	-	100.0	-
	45-54	18.9	-	-	64.9
	55-64	10.2	-	-	35.1
Occupation	Full/part-time employment	82.5	77.8	97.7	75.4
	Full-time student	7.4	16.7	.4	-
	Homemaker	1.0	1.2	1.1	.7
	Unemployed	1.6	2.3	.4	1.8
	Retired	6.2	-	-	21.4
	Other	1.2	2.1	.4	.7
Income	Up to 2,499 RMB	14.6	22.9	1.9	13.7
	2,500-4,999 RMB	22.1	15.7	17.0	36.5
	5,000-7,999 RMB	19.0	13.4	20.1	26.3
	8,000-9,999 RMB	13.4	12.0	17.0	11.9
	10,000-14,999 RMB	15.1	17.4	21.2	6.0
	15,000-19,999 RMB	9.6	10.9	14.8	2.8
	20,000 RMB and above	6.3	7.6	8.0	2.8
Highest qualification	Middle/High School	10.7	8.6	4.6	19.7
	College Diploma	19.2	12.7	17.8	30.2
	University (UG & PG)	70.1	78.8	77.5	50.2
Dependent children at home	Yes	69.2	64.1	94.3	53.7
Environment	Urban	81.7	72.2	90.5	87.7
	Rural	10.1	17.6	3.0	5.3
	Equal mix of both	8.3	10.2	6.4	7.0

Table B: Scales used (English version)

Construct and Scale Items
Materialism (MAT)
I admire people who own expensive homes, cars and clothes.
My life would be better if I owned certain things I do not have.
I like a lot of luxury in my life.
The things I own say a lot about how well I am doing in life.
I would be happier if I could afford to buy more things.
Buying things gives me a lot of pleasure. [1]
Social Consumption Motivation (SCM)
Before purchasing a product, it is important to know what others think of different brands or products.
Before purchasing a product, it is important to know what kinds of people buy certain brands or products.
Before purchasing a product, it is important to know what others think of people who buy certain brands or products.
Before purchasing a product, it is important to know what brands or products to buy to make good impressions on others.
Environmental Concern (EC)
Environmental problems are not affecting my life personally.®
Environmental problems are exaggerated, because in the long run things balance out.®
I can think of many things I'd rather do than work toward improving the environment.®
I have too many obligations to take an active part in an environmental organisation.® [1]
Pro-environmental Self-Identity (PESI)
I think of myself as an environmentally-friendly consumer.
I think of myself as someone who is very concerned with environmental issues.
I would be embarrassed to be seen as having an environmentally-friendly lifestyle.® [1]
I would not want my family or friends to think of me as someone who is concerned about environmental issues.® [1]
Sustainable Consumption Buying Behavior (SCBB)
Buy environmentally-friendly products.
Buy food which is organic.
Buy food which is locally grown or in season.
Buy products using reduced packaging.
Buy fair-trade groceries

Note: [1]Items dropped due to low loadings. ® Reversely coded items.

Procedure Adopted to Evaluate Common Method Bias

Given one single source was used for data collection (an online survey), concerns regarding common method bias (CMB) may arise. Various recommended procedural techniques were applied, including randomising the order of scale items, variation of scale formats, proximal separation of focal measures, and variation of scale end points (Podsakoff, MacKenzie, Lee, & Podsakoff, 2003). Harman's one-factor test demonstrated that a single dimension only accounted for 27.58%. In addition, the correlation matrix revealed the absence of highly correlated variables and therefore there was no evidence of common method bias (Bagozzi, Yi, & Phillips, 1991). As only high common method variance levels potentially inflate relationships (Fuller, Simmering, Atinc, Atinc, & Babin, 2016), no evidence of CMB was found. Composites for each construct based on averages across the items were calculated for further analysis.

Alternative Model Testing

Whilst the goodness of fit statistics for the proposed research model for the whole sample of 981 respondents (controlled by age, gender, education, income and children living at home) indicated a good fit (χ^2(205)=600.67, χ^2/df=2.93, $p<$.0001, GFI=.949, CFI=.944, TLI=.924, RMSEA=.044), two competing models were tested in an effort to further validate our results. Chi-squared difference tests and Akaike's Information Criterion (AIC) (Akaike, 1987) were employed, with smaller AIC values determining the best-fitting model (Hu & Bentler, 1995). In the first competing model, the paths from the latent constructs to the mediator were set to zero. The results for the alternative model showed an acceptable but poorer fit to the data (χ^2(208)=756.04, χ^2/df=2.93, $p<$.0001, GFI=.939, CFI=.922, TLI=.897, RMSEA=.052, and a significant difference when compared to the research model ($\Delta\chi^2$=155.37, Δdf=3, $p<$.0001). The AIC value was 940.041, hence larger than the AIC value of 790.668 of the hypothesized research model. A second rival model with only indirect effects for all antecedents showed an acceptable model fit (χ^2(208)=626.20, χ^2/df=3.01, $p<$.0001, GFI=.948, CFI=.941, TLI=.924, RMSEA=.045; $\Delta\chi^2$=25.53, Δdf=3, $p<$.0001) but a slightly higher AIC with 810.20. Hence, the proposed conceptual model appears to empirically better fit the data.