Chapter # 23

UTILIZING THE IPIP6 CONSUMER PERSONALITY SCALE TO ANALYZE GREEN CONSUMER BEHAVIOUR IN AN EMERGING ECONOMY CONTEXT

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ABSTRACT
Daily habits and various antecedents play crucial roles in green consumer behaviour (GCB). Personality traits are significant for environmental engagement since they manifest in habitual green activities and infrequent high-cost decisions. Personality traits could be key in determining GCB. We correlated the relationship of consumer personalities with GCB as daily green habits in an emerging economy context. Our online survey using convenience sampling (N = 478) among South African respondents (≥18 years) was based on the International Personality Item Pool six factors (Mini-IPIP6) scale and daily green habits. The six personality dimensions are honesty-humility (H-H), agreeableness (A), extraversion (E), conscientiousness (C), neuroticism (N) and openness to experience (O). Descriptive statistics, exploratory and confirmatory factor analysis, and correlations were performed. Respondents generally showed personality traits conducive to GCB (m_A = 4.02; m_O = 3.83; m_C = 3.78; m_{H-H} = 3.65). Correlations ($p < .05$) were revealed between "C" and "conservation habits" (r = .261) and "O" and "wasteful habits" (r = -.221). "H-H" correlated with "personal effort habits" (r = .230) and "wasteful habits" (r = -.252). Respondents testing higher on C, H-H, and O may perform more habitual GCB, thus revealing the utility of personality dimensions in understanding consumers' GCB.

Keywords: daily habits, consumer personalities, emerging economies, mini-IPIP6 consumer personality scale, green consumer behaviour.

1. INTRODUCTION

Consumers' daily behaviour is shrouded in careless consumption, especially in Western culture, and although such behaviour is deeply ingrained and often challenging to alter, a curbed approach based on a culture of conservation is sorely needed (Thiermann & Sheate, 2021). Consumers' daily behaviour contributes to the degradation of the environment (Jackson & Smith, 2018). Still, these daily behaviours can also entail green consumer behaviour (GCB), which includes any behaviour and decision-making that acknowledges the environment and impacts the environment with every action. The current study describes GCB as the frequency of everyday green behaviours/habits that consumers exhibit, i.e., preferring to use green products or recycle, reuse or refuse-to-use products, saving water, switching off lights, and using environmentally friendly transportation. GCB adds another level to the complexity of consumer behaviour (Jackson & Smith, 2018), presenting several challenges and often emphasising the disparity between consumers' pro-environmental intentions and their failure to act accordingly, i.e., the

intention-behaviour gap (Zhuo, Ren, & Zhu, 2022). Bridging this gap requires more profound insight into various underlying dimensions, such as consumer personalities and potential links to GCB, particularly among culturally diverse and complex consumer populations such as emerging economies (Zhuo et al., 2022). Emerging economies are characterised by diverse consumer populations in which consumer personalities may manifest differently from those exhibited in more developed economies. Therefore, this study investigates daily habits relating to GCB and consumer personalities embedded in consumers' psychological decision-making realm to identify consumer personalities that might point towards increased GCB in an emerging economy.

2. BACKGROUND OF CONSUMER PERSONALITY − AN INTERNAL INFLUENCE ON CONSUMER BEHAVIOUR

Consumer personality constructs have immense potential to advance the understanding of consumers' behaviour and preferences (Abood, 2019; Kesenheimer & Greitemeyer, 2021). These personality traits reflect much about consumers' inner drives for behavioural patterns that demonstrate their actual or idealised selves (Palomba, 2021). Personality is also determined by the complex interaction between individuals' physical, mental, emotional, spiritual, social, and environmental contexts (Rakib, Chang, & Jones, 2022). Thus, reciprocal determinism is noted where personality influences behaviour and the environment, and vice versa. Therefore, personality traits are often applied to explicate consumers' behavioural patterns (Palomba, 2021), including correlations between certain personality traits and GCB (Soutter, Bates, & Mõttus, 2020). Personality traits are significant for environmental engagement since they manifest in habitual green activities and infrequent high-cost decisions motivated by reflective thinking (Busic-Sontic, Czap, & Fuerst, 2017). Hence, personality traits should be acknowledged as a potential determinant of GCB (Soutter et al., 2020). Given that personality traits distinguish similarities and differences among consumers (Palomba, 2021), assessing personality traits as a precursor of GCB in a diverse, multicultural emerging economy landscape such as South Africa may offer novel insight toward the pursuit of pro-environmental behavioural change and bridging the intention-behaviour gap. Many models are used to study consumers' personalities. We build on the well-known Five-Factor Model [FFM] (Costa & McCrae, 1992; Goldberg, 1990;1993; John & Srivastava, 1999) and HEXACO (Ashton & Lee, 2007; 2009) to apply the dimensions of the Mini-IPIP6 model (Sibley et al., 2011) to study the relation between consumer personalities and daily habits.

3. CONSUMER PERSONALITY MODELS AND GREEN CONSUMER BEHAVIOUR

3.1. The HEXACO Model

Ashton and Lee (2007; 2009) proposed the HEXACO (honesty-humility [H], emotionality [E], extraversion [X], agreeableness [A], conscientiousness [C] and openness to experience [O]) model, adapted from the FFM. The HEXACO model includes the sixth dimension of personality, namely Honesty-Humility (H-H), which refers to reciprocal altruism (fairness, sincerity, [low] entitlement, and [low] narcissism) and integrity-related behaviour (Sibley et al., 2011). The sixth H-H dimension emerged after some scholars indicated the need to acknowledge more traits to transcend the understanding and predictive nature of personality types and behaviour (Abood, 2019; Ashton & Lee, 2007; 2009).

Soutter et al.'s (2020) meta-analysis confirmed up-to-date personality research linking associations of the FFM personality traits with GCB but also extended the study of the HEXACO personality traits, supporting the addition of other personality traits to explain GCB.

Prior studies consistently linked high H-H to more self-reported GCB and pro-environmental attitudes (Ashton, Lee & de Vries, 2014; Brick & Lewis, 2016). Also, based on the HEXACO model, O and H-H are positively associated with consumers' pro-environmental attitudes (Soutter et al., 2020), willingness to act on their beliefs about climate change (Panno, De Cristofaro, Oliveti, Carrus, & Donati, 2021) and actual behaviour in favour of the environment (Kesenheimer & Greitemeyer, 2021).

The FFM personality and HEXACO personality dimensions differ mainly regarding adding the H-H factors, which are related to A and C in the FFM (Lee, Ashton, Choi, & Zachariassen, 2015). Also, E, C, and O of the HEXAO model are similar to their equivalents in the Big-Five, while A and N (i.e., emotionality in the HEXACO model) slightly differ from their Big-Five counterparts (Ashton et al., 2014; Lee et al., 2015).

3.2. Mini-IPIP6 Model

To unify the dimensions between a five-factor and six-factor model, Sibley et al. (2011) adapted the HEXACO personality scale (Ashton & Lee, 2007; 2009) and built on the adaptation of the Mini-IPIP5 (short form for the five-factor model International Personality Item Pool) (Donnelan, Oswalk, Baird, & Lucas, 2006), to develop the Mini-IPIP6 personality scale. The six dimensions include Openness-to-experience (O), Conscientiousness (C), Extraversion (E), Agreeableness (A), Neuroticism (N) and Honesty-Humility (H-H). The items included in the Mini-IPIP6 scale could reliably predict consumers' personality traits and have been successfully applied in several fields, although it seems comparatively neglected in sustainability research (Panno et al., 2021). Some studies have explored the link between personality and environmental attitudes, beliefs and behaviours (e.g., Busic-Sontic et al., 2017; Farizo, Oglethorpe, & Soliño, 2016; Rothermich, Johnson, & Griffith, 2021; Sibley et al., 2011), but these remain sparse, especially in South Africa.

These six personality dimensions can differentiate between consumer personalities indicating environmental consciousness or other motivational factors such as attitudes, personal norms, perceived behavioural control, and perceived self-efficacy that may result in GCB (Busic-Sontic et al., 2017; Farizo et al., 2016; Milfont & Sibley, 2012). High A, O, C, and E levels generally predict more favourable environmental engagement and several dimensions of GCB (Busic-Sontic et al., 2017). In contrast, results regarding levels of N are more inconsistent (Fatoki, 2020; Hirsh, 2010).

The Mini-IPIP6 scale includes self-reported items that load onto the sixth H-H factor strongly associated with GCB, the belief that climate change is real and the willingness to adjust one's lifestyle to accommodate GCB. Thus, the Mini-IPIP6 model includes a direct measure of personality related to environmentally friendly behaviour. The H-H personality dimension is the strongest predictor for GCB; however, higher H-H in consumers is more associated with harm-reducing behaviour than benefit-promoting behaviour (Marcus & Roy, 2019).

Although the inclusion and application of the H-H construct have been neglected in previous research, especially in a South African context, it can reflect characteristics of consumers' inclination to perform GCB. Therefore, we deemed the Mini-IPIP6 model suitable for studying the relationship between consumer personality and GCB in this context.

4. METHODOLOGY

As part of a more extensive descriptive, cross-sectional survey, this paper only reports on the personality construct and its relationship with daily habits. We used convenience sampling to recruit respondents to participate in an online questionnaire distributed on social media platforms (Facebook, Instagram, WhatsApp) in South Africa. The advertisement of the research project and the invitation to take part were posted on these social media platforms. Furthermore, a social media expert assisted in advertising the research project with paid targeted advertisements, thus employing convenience sampling.

Respondents (N = 478) were mainly White (73%), female (84.7%), well-educated (tertiary = 69.2%), and young (<40 years = 53.1%), which limits the generalizability of the findings, but were nonetheless deemed appropriate for the exploratory purposes of this study.

The measures included the Mini-IPIP6 personality scale (Sibley et al., 2011; Sibley & Pirie, 2013) employing a 24-item Likert scale (1: Strongly disagree; 5: Strongly agree) to determine participants' personality dimensions profile. Additionally, we measured daily habits relating to GCB using an adapted version of the Recurring Daily Habits Scale (hereafter referred to as daily habits) (Understanding Society survey, 2018; Brick, Sherman, & Kim, 2017; Whitmarsh & O'Neill, 2010; Van der Werff, Steg, & Keizer, 2013) with an adapted 39-item Likert scale (1: Never; 5: Always) used to describe the frequency of consumers' actual everyday green behaviours/habits. Data analysis included descriptive statistics and Spearman's rank-order correlations using IBM SPSS version 25. We only reported correlation coefficients showing medium and large effect sizes (medium effect size*:* $r = 0.3$; large effect size*:* $r = 0.5$; $p < .05$).

We established construct validity using exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). For EFA, Principal Axis Factoring was applied to extract factors using direct Oblimin rotation with Kaiser normalisation. Convergent validity was determined by calculating the Average Variance Extracted (AVE) and the composite reliability (CR) (Fornell & Larcker, 1981). The CFA models' acceptability was measured against fit indices from three different classes (Hancock & Mueller, 2010): Chi-square statistic divided by the degree of freedom (χ^2/df), the root mean square error of approximation (RMSEA) and the comparative fit index (CFI). Cronbach's alpha showed internal reliability within factors.

5. RESULTS

For EFA, all Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO) values (Table 1) exceeded a value of 0.6—only factors with eigenvalues higher than one were retained (Table 1). To confirm construct validity, the percentage variance explained was larger or acceptably close to 50% in the case of daily habits. Regarding convergent validity, the CR values indicate that all factors exceeded the minimum reliability of 0.70 (Fornell & Larcker, 1981). The AVE for each extracted factor in Table 1 shows that not all constructs have an AVE higher than the recommended level of 0.50, which is considered acceptable convergent validity. Those above 0.70 are considered good (Fornell & Larcker, 1981). The CFA models' goodness of fit showed two of the three fit indices measured within the parameters of a good fit, confirming an acceptable model fit.

Table 1.
Summary of the exploratory and confirmatory factor analysis for the Mini-IPIP6 personality and daily habits scales.

Scale with Factors	**[1]KMO**	**Explained variance (%)**	**[2]α**	**[3]χ^2/df**	**[4]CFI**	**[5]RMSEA [6][CI]**	**[7]AVE**	**[8]CR**
[9]Personality	.713	55.13		**2.790 ***	.830	**.061 [.052-.59] ****		
Honesty Humility (H-H)			.740				.529	.817
Extraversion (E)			.756				.552	.831
Neuroticism (N)			.649				.466	.775
Conscientiousness (C)			.706				.528	.815
Openness to experience (O)			.674				.488	.792
Agreeableness (A)			.619				.434	.754
[10]Daily Habits	.867	48.50		**2.453 ***	.811	**.005****		
Dedicated efforts			.866				.368	.845
Transportation			.744				.542	.824
Conservation			.751				.215	.718
Wasteful			.578				.319	.733
Personal effort			.844				.568	.855
Daily food necessities			.663				.382	.728

Bold print with an Asterix (*; **) indicates the fit indices with a good fit (at least two out of three fit indices should be acceptable)
Grey values indicate AVE (≤ .50) and CR values (≥ .70) within the acceptable range (Fornell & Larcker, 1981).
1 Kaiser-Meyer-Olkin Measure of sampling adequacy (KMO)
2 Cronbach alpha (α)
3* Chi square divided by degrees of freedom (χ2/df); fit index; should be < 5 (Mueller, 1996).
4 The comparative fit index (CFI): fit index; should be ≥ .9 (Mueller, 1996)
5**The root mean square error of approximation (RMSEA) should be beneath ≤ .1 to confirm a good fit (Blunch, 2008).
6Confidence Interval (CI)
7Average variance extracted (AVE) computed by $\Sigma\lambda 2/\Sigma\lambda 2 + \Sigma (1 - \lambda 2)$
8Composite reliability (CR): computed by $(\Sigma\lambda)2/(\Sigma\lambda)2 + \Sigma (1 - \lambda 2)$, where λ = factor loadings.
9Likert Scale: 1: Strongly disagree; 2: Disagree; 3: Neutral; 4: Agree; 5: Strongly agree
10Likert Scale: 1: Never; 2: Rarely; 3: Sometimes; 4: Often; 5: Always

5.1. Mini-IPIP6 Personality Scale and the Daily Habits Scale

The items included in the Mini-IPIP6 personality scale yielded six factors (Table 1; Table 2). First, EFA was done, and six factors (containing four items each) emerged that coincide with those identified in the current literature (Sibley et al., 2011; Sibley & Pirie, 2013). CFA was also done for this standardised scale, which confirmed the constructs as valid.

Table 2.
Summary of the exploratory factor analysis of respondents' personality scale (Mini-IPIP6) (N = 478).

Item	**Factor loadings**					
	Honesty-Humility (H-H)	**Extraversion (E)**	**Neuroticism (N)**	**Conscientiousness (C)**	**Openness to experience (O)**	**Agreeableness (A)**
Would like to be seen driving around in a very expensive car. (r)	.776					
Deserve more things in life. (r)	.750					
Would get a lot of pleasure from owning expensive luxury goods. (r)	.712					
Feel entitled to have more of everything. (r)	.666					
Keep in the background (r)		.774				
Talk to a lot of different people at parties.		.747				
I am the life of the party.		.719				
Don't talk a lot. (r)		.703				
Am relaxed most of the time. (r)			.747			
Get upset easily.			.740			
Have frequent mood swings			.696			
Seldom feel blue. (r)			.525			
Often forget to put things back in their proper place. (r)				.797		
Get chores done right away.				.761		
Make a mess of things. (r)				.758		
Like order.				.569		
Do not have a good imagination. (r)					-.750	
Have difficulty understanding abstract ideas. (r)					-.702	
Am not interested in abstract ideas. (r)					-.691	
Have a vivid imagination.					-.648	
Sympathise with others' feelings.						-.667
Am not really interested in others. (r)						-.661
Feel other's emotions						-.656
Am not interested in other people's problems. (r)						-.651
Mean factor score	**3.65**	**2.81**	**2.87**	**3.78**	**3.83**	**4.02**
Standard Deviation	**(.79)**	**(.83)**	**(.71)**	**(.71)**	**(.66)**	**(.56)**

(Likert Scale: 1: Strongly disagree; 2: Disagree; 3: Neutral; 4: Agree; 5: Strongly agree)
Pattern matrix: (r) reverse-scored item

Thus, we retained the names proposed in the literature: *"honesty-humility" (H-H), "extraversion" (E), "neuroticism" (N), "conscientiousness" (C), "openness to experience" (O)* and *"agreeableness" (A)*. Respondents generally exhibited personality traits instrumental to benefiting GCB (m_A = 4.02±0.56; m_O = 3.83±0.66; m_C = 3.78±0.71; m_{H-H} = 3.65±0.79; m_N = 2.87±0.71; m_E = 2.81±0.83).

Personality trait A measures the quality of a person's relationships. Measuring high on *"A"* includes altruism, being reasonable, modesty and caring about others more than oneself, an underlying motivation for GCB (Busic-Sontic et al., 2017; Ojedokun, 2018).

O measures proactiveness, appreciation of new experiences, consideration of the unknown (McCrae, 1991; Sun, Kaufman, & Smillie, 2018), creativity, adventurousness, focus on tackling challenges, broad interests, and an inclination towards imagination and insight. Additionally, the O dimension represents flexible and non-concrete thinking (Brick & Lewis, 2016; Nekljudova, 2019).

C measures a person's preference for structured, persistent, and motivated behaviour to achieve specific goals within controlled conditions. High measures of C imply thinking about how one's behaviour affects others, promptly finishing essential tasks and the likelihood of being sensible and calm (Milfont & Sibley, 2012; Sun et al., 2018).

H-H relates to underlying materialism, narcissism, and exploiting others for personal benefit towards the lower end of the scale and reciprocal altruism or fairness towards the higher end (Sibley et al., 2011). Essentially, H-H measures mutual unselfishness, the true notion of one's abilities, self-promoting behaviours and likeliness to an accurate self-concept (Sibley et al., 2011). A high H-H may also show emotional maturity, tend to be honest, fair, and sincere, and have a better understanding of self-identity (Roberts, Walton, & Viechtbauer, 2006).

The two dimensions that had lower values were N and E. They have insightful underlying characteristics that should be noted. N measures how individuals manage change in their immediate environment and the stability of their emotions. It also implies emotional sensitivity, especially towards individuals' environmental or situational factors (Sosnowska, De Fruyt, & Hofmans, 2019). Respondents in the current study seemed neutral on this construct**.** Thus, on average, respondents were not remarkably emotionally stable or unstable. The higher measure agreeing to "*C"* may explain the neutrality towards *"N"* because respondents high in *"C"* should be calmer, more sensible and goal-orientated. Thus, they should be less neurotic or emotionally influenced by their surroundings or situational factors (Dammeyer, 2020).

Finally, E relates to participation in social endeavours (Sibley et al., 2011). This trait measures the number and strength of an individual's social interactions, the need to be motivated, and the ability to be happy. Respondents were leaning towards neutrality. Thus, we conclude that they were averagely motivated, had fewer social interactions, and were neutral towards their pursuit of happiness.

The adapted daily habits scale resulted in six reliable factors*: "dedicated effort", "transportation habits", "conservation habits", "wasteful habits", " personal effort", and "daily food necessities"* (Appendix).

5.2. Relationship of Personality with Daily Habits

Most correlations were of medium effect size (i.e., presenting tendencies), with some large, showing practical significance. Three constructs of the personality scale, namely *"C", "H-H", and "O",* correlated with GCB (Table 3).

Table 3.
Spearman's rank-order correlations between personality constructs and daily habits.

	Dedicated effort habits	Transpor-tation habits	Conserva-tion habits	Wasteful habits	Personal effort habits	Food habits
Extraversion	.046	.035	-.013	.037	.002	.023
Neuroticism	-.133	-.017	-.176	.095	-.109	.042
Agreeableness	.131	.019	.110	-.079	.080	-.003
Conscientiousness	.177	.018	**.261**	-.126	.091	-.085
Openness to experience	.141	-.050	.161	**-.221**	.142	-.112
Honesty-Humility	.030	-.193	.141	**-.252**	**.230**	-.112

Notes: bold print represents medium to high effect size correlations between personality and daily habits
Small effect size: r = .1; medium effect size: r = .3; large effect size: r = .5; P < .05

"*C"* correlated with *"conservation habits"* (r = .261), which aligns with *"C"*'s self-discipline facet, a positive predictor of GCB because this behaviour typically needs to be repeated daily (Markowitz, Goldberg, Ashton, & Lee, 2012), exercising conservation activities daily. *"Conservation habits"* are also often called curtailment behaviour and include daily (frequent and habit-forming) behaviour that reduces resource and energy use, which mainly include transportation, water and energy conservation, rarely involve additional costs but often result in some form of discomfort when performing the behaviour at an individual level (De Nardo, Brooks, Klinsky, & Wilson, 2017; Jansson, Marell, & Nordlund, 2010). In our study, all statements about transportation are grouped in one factor and not as part of conservation, hence the distinction between *"transportation habits"* and *"conservation habits".* Some of the *"conservation habits"* included in this study are switching off lights when one leaves a room, turning off the heater/air-conditioner when leaving a room, putting on more clothes when cold rather than switching on a heater, printing on both sides of the paper and conserving water. Thus, they are easy to do but require some level of discomfort.

Personality *"O"* negatively correlated with *"wasteful habits"* (r = -.221), showing those higher in *"O"* less engaged in wasteful activities, confirming the findings of Thiermann and Sheate (2021). In previous studies, individuals testing higher on O were associated with more reasoning, flexibility, ecology, environmental concern and GCB (Pavalache-Ilie & Cazan, 2018). Additionally, Rothermich et al. (2021) confirmed that those higher on the O dimension more often believed in the reality of climate change and that it would harm them personally, which might explain the negative correlation in our study between *"O"* and *"wasteful habits".* Some of these *"wasteful habits"* were littering, buying bottled water instead of using water in a recyclable bottle, using an appliance when not fully loaded or unnecessarily and letting the tap run when brushing teeth.

In the current study, *"H-H"* correlated positively with *"personal effort habits"* (r = .23) and negatively with *"wasteful habits"* (r = -.252). *"Personal effort habits"* encompassed active educational and personal effort in GCB and included underlying dimensions such as knowledge about recycling (reuse, reduce, recycle) and the effort to educate oneself about these aspects and then apply this knowledge by acting pro-environmentally. However, these actions often depend on situational factors critical in emerging economies. For example, individuals' environmental support systems can assist with some of these actions and make them easier to perform (Cantú, Aguiñaga, & Scheel, 2021), such as recycling and separating glass and plastic. However, recycling stations are not readily available everywhere in an emerging economy country, inhibiting these actions

(Cantú et al., 2021; Patwa et al., 2021). Accordingly, *"H-H"* may increase "*personal effort habits*" and reduce *"wasteful habits",* which makes *"H-H"* a probable indicator of possible GCB, echoing previous findings (Pavalache-Ilie & Cazan, 2018). Moreover, the H-H dimension measures mutual unselfishness, an individual's honest idea of the abilities and likeliness to have an accurate self-concept (Kähli, 2021), how a person endorses (or not) personal interests above those of others and the interest in wealth and external signs of status. These findings explain why *"H-H"* was associated with increased individual efforts to green behaviour as well as efforts to reduce wastage in the present study.

"N", "E", and *"A"* showed no practical significant correlations with daily habits. Most studies by other scholars also omit that *"E"* influences GCB, attitudes or environmental concerns (Markowitz et al., 2012; Milfont & Sibley, 2012), except for a South African study showing significant associations of A and E with green purchasing behaviour (Fatoki, 2020). In contrast to our research on daily green habits, former studies reported associations of N with environmental concern (Hirsh, 2010) and GCB (Kvasova, 2015). Yu and Yu (2017) confirm that findings may differ regarding personality dimensions when looking at environmental intentions and attitudes compared to actual behaviour, such as daily green habits.

Based on the literature, our respondents generally showed personality traits conducive to GCB, and this study highlights explicitly three consumer personality dimensions that are associated with GCB in an emerging economy context: *"C", "H-H", and "O".* These findings can be interpreted that those respondents who test higher on these three personality dimensions may act more environmentally friendly and perform more pro-environmental daily habits.

6. CONCLUSION AND UNIQUE CONTRIBUTION

The timely application of the Mini-IPIP6 model revealed consumer personalities (C; O; H-H) that offer a better understanding of consumers' GCB, grouped as daily habits in our study. Although we cannot generalize the findings to the broader South African population, this research offers a valuable baseline for understanding the relationship between consumer personalities and daily habits in an emerging economy context. Ultimately, specific consumer personality dimensions rendered associations with certain groups of daily habits (*"conservation habits"; "wasteful habits"; personal effort habits").* These results align with similar findings in developed countries, although the N and E dimensions did not render associations with GCB in our study. However, we confirmed that *"H-H"* is a probable indicator of possible GCB, as this dimension was associated with increased efforts to adopt green behaviour and reduce wastage. Thus, the practical applications of these findings highlight that the H-H personality dimension can help accomplish GCB when individuals acknowledge their destructive habits of conspicuous consumption. However, identifying interventive solutions should include multiple influencing factors due to the intricacy of GCB.

Future studies should consider studying consumer personality with other personal constructs such as pro-environmental self-identity, environmental consciousness, and perceived self-efficacy, which can broaden the understanding of consumers' GCB in an emerging economy context and acknowledge behavioural patterns among a more representative group of consumers. Furthermore, recent studies indicated that consumer personalities render better structural pathway results on GCB when a mediating factor is applied (i.e., environmental attitude or self-identity) (Kesenheimer & Greitemeyer, 2021; Liao et al., 2022). When these personal determinants are linked with daily habits

(behavioural determinants) and situational factors (external determinants), a new understanding of GCB may emerge, adding to consumer behaviour knowledge and, specifically, knowledge of consumers in emerging economies.

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APPENDIX

Summary of the six-factor exploratory factor analysis of scale 15, respondents' Recurring daily habits scale (REBS) (N = 441)

Item	Factor loadings					
	Dedicated effort	Transportation	Conservation	Wasteful	Personal effort	Daily food necessities
How often do you eat organic food?	.839					
How often do you buy food which is organic?	.826					
How often do you buy food which is locally grown or in season?	.690					
How often do you eat local food (produced within 150km)?	.586					
How often do you buy environmentally friendly products?	.579					
How often do you use environmentally friendly cleaning products?	.571					
How often do you buy Fairtrade groceries?	.494					
When you buy clothing, how often is it from environmentally friendly brands?	.488					
How often do you eat from a home vegetable garden (during the growing season)?	.478					
How often do you buy products that have reduced packaging?	.315					
How often do you walk, bicycle or carpool instead of driving a vehicle by yourself?		.826				
How often do you walk or cycle for short journeys less than 2 or 3 km?		.785				
How often do you use public transport (e.g., bus, train) rather than travel by car?		.672				
How often do you car-share with others who need to make a similar journey?		.645				
How often do you turn off the lights when no one is in the room?			.721			
How often do you turn off the heater/air-conditioner when you leave your room?			.656			
How often do you print on both sides of the paper (double-sided) when you print?			.445			
How often do you turn your personal electronics off or in low power mode when not in use?			.440			
How often do you put on more clothes when you feel cold, rather than switching on the heater?			.439			
How often do you act to conserve water when showering, cleaning clothes, dishes, watering plants, or other			.394			
How often do you wash clothes in the washing machine with cold water or at 30°C?			.357			
When you buy light bulbs, how often do you buy energy-efficient compact fluorescent			.349			

Item	Factor loadings					
	Dedicated effort	**Transportation**	**Conservation**	**Wasteful**	**Personal effort**	**Daily food necessities**
(CFL) or LED bulbs?						
How often do you lower the element temperature for your geyser to between 50-55°C?			.347			
How often do you take shorter showers (one to two minutes; less than five minutes) instead of longer ones			.315			
How often do you use the washing machine when not fully loaded?				.645		
How often do you throw litter on the street?				.631		
How often do you use the dishwasher when not fully loaded?				.629		
How often do you use the tumble drier to dry clothes instead of using sunlight to dry the clothes?				.541		
How often do you keep the tap running while you brush your teeth?				.490		
How often do you buy bottled water instead of taking water with you in a reusable bottle?				.415		
How often do you separate paper from your waste?					.933	
How often do you separate all your waste (chemical, plastics, paper, glass, organic)?					.911	
How often do you take glass bottles to the recycling bin?					.901	
How often do you compost your household food garbage?					.626	
When you visit the grocery store, how often do you use reusable bags?					.435	
How often do you discuss environmental topics, either in person or with online posts (Facebook, Twitter, etc.)					.416	
How often do you buy products in glass bottles instead of plastic bottles?					.379	
How often do you eat dairy products such as milk, cheese, eggs or yoghurt?						-.783
How often do you eat meat?						-.730
Mean factor score **Standard Deviation**	**3.19** **± .67**	**2.60** **± 1.04**	**4.18** **± .56**	**1.76** **± .56**	**3.10** **± .99**	**3.95** **± .85**

(Likert Scale: 1: Never; 2: Rarely; 3: Sometimes; 4: Often; 5: Always)
The highlighted columns indicate the daily habits that correlated with consumer personalities