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## Barriers to green consumption behaviours: The roles of consumers' green perceptions

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The purpose of this study is to explore the concept of consumers' green perceptions (CGPs) which encompasses consumers' current perceptions of green products, green consumers, green consumption practices, and green marketing communications. We hypothesise that CGPs may influence their consumption behaviour and how ready they are to be green. Focus groups were used to explore the concept of CGPs. Stage Two involved two surveys in Australia and New Zealand to test and corroborate the themes that were identified in the exploratory study.

We identified five dimensions underpinning CGPs. These include "product perception", "hard to be green", "green stigma", "perceived sense of responsibility" and "readiness to be green". This paper presents the findings from both studies, provides empirical insights into Australian and New Zealand consumers' green perceptions and demonstrates the explanatory power of CGPs in predicting green consumption behaviour, in particular their likelihood to purchase green household products.

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### 1. Introduction

Consumers are a key driver when it comes to sustainable production because they account for more than 60% of final consumption in the OECD countries (OECD, 2008, 2016). Accordingly, they would have a major impact on green growth<sup>1</sup> if they purchased environmentally-friendly products and modified their behaviour to support environmental goals (OECD, 2016). Recent reports would appear to suggest that consumers' environmental consciousness and positive attitudes towards the environment have been increasing over the years (e.g., CEAP, 2007; Eurobarometer, 2011; Nielsen, 2014). For example, in a global study by Nielsen (2014), 55% of the respondents reported their willingness to pay more for products and services from companies who are committed to having a positive social and environmental impact. However, the adoption rate of environmentally-friendly (EF) products in recent times has been declining (Clifford and Martin, 2011). Despite their growing concerns for the environment, consumers are not purchasing EF offerings as regularly as expected (e.g. Carrigan and Attalla, 2001; Carrington et al., 2010; Chatzidakis et al., 2004; Gleim et al., 2013;

Gupta and Ogden, 2009). For example, in Australia, Nature's Organics, the largest brand to market its homecare products based on their green image, held only a 4% value share in the overall Australian homecare market in 2014 (Euromonitor International, 2014). Whilst researchers have made significant contributions to understanding what drives green consumption behaviour (for a comprehensive review, see Peattie, 2010), it remains puzzling as to why consumers who profess to have pro-environmental attitudes do not purchase EF products regularly, if at all. As Gleim et al. (2013) posits, the lack of consumer acceptance of EF products implies that many barriers to green consumption continue to exist. To increase the uptake of EF products, understanding why these barriers continue to exist is crucial.

A number of researchers have identified barriers to green consumption. For instance, Gleim et al. (2013) reported price and expertise (lack of) as being barriers to the consumption of green products. He et al. (2016) studied Chinese consumers and found that consumer preference, reference group and face perception contributed to non-green consumption behaviour. These findings complement earlier works that looked at perceptions; more specifically, trust and pro-social status, perceived risk performance, price, quality and consumer cynicism were some of the reasons why environmentally conscious consumers chose not to buy greener products (e.g. Borin et al., 2013; Chen and Chang, 2013b; Gupta and Ogden, 2009; Pickett-Baker and Ozaki, 2008; Zabkar and Hosta, 2013). These studies shed valuable insights but they also appear fragmented. This raises the question of whether a more comprehensive concept could help capture the essence that underpins these green barriers more inclusively and perhaps more efficiently. This led us

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<sup>1</sup> According to OECD (2016), green growth means "fostering economic growth and development while ensuring that natural assets continue to provide the resources and environmental services on which our well-being relies". Green growth is "a subset of sustainable development entailing an operational policy agenda that can help achieve concrete, measurable progress at the interface between the economy and the environment".

to “consumers’ green perceptions”. Consumers’ attitudes and behaviours are often shaped by their perceptual interpretations and perceptual judgments of stimuli that they are presented with (Johnstone and Tan, 2015). For example, if consumers perceive green products to be too expensive (price), require too much effort (e.g. expertise/knowledge; time), or are too difficult to obtain (e.g. availability), they would be less likely to perform the purchase behaviour. Likewise, consumers may be hesitant to purchase green products if they hold adverse perceptions towards green messages (e.g. cynicism, trust) and towards consumers who are stereotyped as “greenies” (e.g. self-identity). Thus, the purpose of this study is to explore the concept of consumers’ green perceptions (CGPs) which encompasses consumers’ current perceptions of green products, green consumers, green consumption practices, and green marketing communications. In so doing, it aims to contribute to our understanding of green consumption barriers. We propose that exploring CGPs could be a more integrated way to understand these barriers. We argue that even though consumers may have pro-environmental attitudes, their green perceptions could influence their consumption behaviour and readiness to be green.

Within the context of EF household products, the low adoption rate implies that green consumers are a niche market while the non-green consumers reflect the mainstream population. To increase the EF product uptake, efforts should be made to expand the “non-green” consumer market. Whilst the literature has investigated the “green consumer”, it has tended to overlook consumers who are “not-so-green” (Hooper and Johnstone, 2015). This study includes consumers with varying levels of green purchase behaviours, namely those who have always (green), sometimes (not-so-green) and rarely (non-green) purchased EF household products. Understanding the perceptions of the latter two groups, and juxtaposing the findings against the “green consumers” group, could provide additional insights into what is impeding green consumption behaviour.

The paper begins with a brief literature review. We then discuss the qualitative study that was used to explore CGPs. Next, we discuss the quantitative study that was conducted to test and corroborate the themes identified in the exploratory study before presenting the empirical findings from the Australian (AU) and New Zealand (NZ) surveys. Following that, we present the regression results to demonstrate the explanatory power of CGPs in predicting green consumption behaviour (GCB). We conclude with a discussion on the implications and provide some propositions for future research.

We use the terms “environmentally-friendly” (EF) or “green” products interchangeably throughout the paper. For the purpose of this study, green products are products that “consumers perceive to be environmentally-friendly, whether it is due to the production process, the types of materials or ingredients used to manufacture the product, packaging, marketing communications, and so on” (Johnstone and Tan, 2015, p. 312).

## 2. Literature review

### 2.1. Definition of green consumption behaviour

As Peattie (2010) posits, green consumption is a problematic concept because “green implies the conservation of natural resources while consumption generally involves their destruction” (p. 197). Additionally, green consumption intertwines with other concepts such as ethical, sustainable and responsible consumption, leading to a lack of clarity within the literature (Peattie, 2010). Several definitions were found in the literature; most associated green consumption with environmental protection (e.g., Tanner and Wölfing Kast, 2003), consumer social consciousness and responsibility (e.g., Moisander, 2007), while others related it to consumption reduction (e.g., Huttunen and Autio, 2010). As He et al. (2016) summarise, the concept of green consumption includes “a framework of con-

sumption perception, objects, processes and results” (p. 346). Commonly, consumers’ green consumption behaviour (GCB) includes recycling, protecting waterways, bringing own shopping bags, the purchase and consumption of EF products etc.

### 2.2. Drivers to GCB

#### 2.2.1. Socio-demographic and motivational drivers

A considerable amount of effort has also gone into defining and profiling green consumer segments (e.g. Chen and Chang, 2013a; Peattie, 2001; Roberts, 1996; Shrum et al., 1995), primarily in psychological terms including consumer personality (e.g. Lu et al., 2015; Shrum et al., 1995) and socio-demographic terms (e.g. Kinnear et al., 1974; Laroche et al., 2001; Robert and James, 1999; van Liere and Dunlap, 1981). However, these approaches have often generated inconsistent and thus inconclusive results. This indicates the limitation of using socio-demographics characteristics when trying to understand GCB (Diamantopoulos et al., 2003; Roberts, 1996). Likewise, the characteristics of the consumer alone do not determine GCB (Rex and Baumann, 2007).

As reported in the literature, motivational drivers influencing GCB include factors such as emotional affinity towards nature (e.g. Chan, 2001; Kals et al., 1999), personal circumstances (e.g. Solér, 1996), values (e.g. Schuitema and de Groot, 2015; Young et al., 2010), ethical beliefs (e.g. McDonald et al., 2012; Newholm and Shaw, 2007) and personal norms (Moser, 2015).

#### 2.2.2. Environmental knowledge and attitude

Environmental knowledge is often assumed to drive GCB (e.g. Bartkus et al., 1999; Schlegelmilch et al., 1996); this is based on the rationalist model which assumes that people will engage in more pro-environmental behaviour if they are educated about environmental issues (Kollmuss and Agyeman, 2002). However, the empirical evidence for this relationship is not clear, suggesting that the relationship between environmental knowledge and behaviour is far more complex (Chan, 1999, 2001). In particular, Hines et al. (1987) found that there was only an average correlation of  $r = 0.299$  between environmental knowledge and behaviour amongst the seventeen studies they analysed. A recent study by Pagiaslis and Kroutalis (2014) revealed that although consumers’ environmental concerns were a very strong antecedent for GCB, high levels of concern for the environment did not necessarily result in an increase in situation or product-specific environmental knowledge. That is, even with heightened environmental concerns, consumers “have not engaged in significant cognitive processing of the effects of specific green products or behaviour” (Pagiaslis and Kroutalis, 2014, p. 344). This finding runs parallel with Kollmuss and Agyeman’s (2002, p. 241) argument that “environmental knowledge per se is not a prerequisite for pro-environmental behaviour”, as most people have insufficient knowledge about environmental issues to act environmentally responsibly.

Numerous studies have attempted to predict GCB using consumers’ attitudes towards the environment because attitudes are widely recognised as a major factor that guides human behaviour (Bredahl, 2001). One recurring theme in the literature is the “attitude-behaviour gap” or the “green gap”. As several studies have found, consumers’ positive attitudes about the environment do not necessarily translate into actual purchase behaviour in practice (e.g. Carrigan and Attalla, 2001; Chatzidakis et al., 2004; Gupta and Ogden, 2009; Pickett-Baker and Ozaki, 2008). Common explanations for the green-gap are inflated self-reported environmental attitudes due to socially desirable bias (Peattie, 2010). Other explanations include the effects of social norms (Rettie et al., 2012, 2014) and the presence of various constraints that impede the adoption of GCB (see Section 2.3).

### 2.3. Barriers to GCB

Studies about barriers to GCB offer additional insights into why consumers who state that they are motivated to perform GCB, in practice do not. As reported, situational factors such as economic constraints and a lack of choice and availability (Gleim et al., 2013; Tanner and Wölfling Kast, 2003) can create barriers to GCB. Likewise, factors such as quality perceptions, a lack of information and cynicism can also affect consumption decisions (Bray et al., 2011). Additionally, consumers' internal obstacles such as one's sense of responsibility, ethical standards, and social pressures could also impede GCB (e.g. Chan et al., 2008; Koller et al., 2011; Welsch and Kühling, 2009).

In summary, factors driving (and impeding) GCB is multifaceted. While there appears to be a long list of factors, they seem fragmented as individual jigsaw puzzle pieces (Peattie, 2010). Therefore, the purpose of this study is to explore the concept of consumers' green perceptions, as an integrated concept, to help explain the barriers to GCB. The influence of perceptions on consumer behaviour has been widely reported in the marketing literature. This includes for example, the consumers' perceptions of quality (Bridges, 1993), risk (Eggert, 2006), price (Lowe and Alpert, 2010; Shiv et al., 2005), sales promotions (Lowe and Barnes, 2012), etc. Within the area of green marketing in particular, perceptions of risk, performance, trust, risk, quality, price, and pro-social status perceptions have also been explored (Borin et al., 2013; Chen and Chang, 2013b; Zabkar and Hosta, 2013) to understand GCBs. However, gaps in our knowledge remain with regards to consumers' green perceptions.

## 3. Methods

This study adopted a two stage approach. Stage One was the qualitative exploration of CGPs, and Stage Two was the quantitative study which tested the findings from Stage One. The procedure and findings of each stage are presented next.

### 3.1. Stage one: focus groups

We used focus groups to explore, identify and understand what consumers' perceptions of green products, green consumers, green messages and green behaviours were and what shaped these perceptions. Seven focus groups were conducted with 51 participants aged between 19 and 70 years (Table 1). Each session lasted 1.5 to 2 hours. Focus groups were used for its ability to explore complex behaviours and motivations due to its explicit use of group interactions, which enabled new insights to arise (Morgan, 1988 cited in Carrigan and Attalla, 2001; Hartman, 2004, p. 402).

We placed advertisements in the local newspaper, and posters were distributed around a New Zealand University for group #7. Participants were screened via a brief telephone interview based on their attitudes towards the environment and their consumption practices. We were particularly interested in consumers who professed they were concerned about the environment but who were not overly "green" in their consumption practices. To minimise self-reporting bias, we made it explicitly clear at the start of the screening process that we were interested in consumers who purchased EF household products as well as those who *did not*.

#### 3.1.1. Data analysis and key findings

A thematic approach was used to analyse the data, which involved methodically reading, interpreting and classifying data into themes (Braun and Clarke, 2006; Spiggle, 1994). Essentially, three main steps took place, i.e. comprehension, synthesising and theorising (Morse, 1994). Phase one involved reading each transcript individually, and generating some initial codes, and identifying

**Table 1**  
Focus group participants.

Code	Gender	Age	Occupation
Group One			
FG1F1	F	23–30	Homemaker
FG1F2	F	30–34	Engineer
FG1F3	F	40–54	Public policy analyst
FG1F4	F	40–54	Artist
FG1F5	F	40–54	Medical anthropologist
FG1F6	F	40–54	Self-employed
FG1F7	F	40–54	Housewife
FG1M	M	40–49	Trade union organiser
Group Two			
FG2F1	F	40–54	Early childhood relief teacher
FG2F2	F	45–49	Homemaker
FG2F3	F	65+	Retired scientist
FG2F4	F	70+	Retired
FG2F5	F	70+	Retired
FG2M1	M	55–59	House painter
FG2M2	M	55–64	IT
Group Three			
FG3F1	F	23–29	Policy analyst
FG3F2	F	30–39	Accountant
FG3F3	F	55–64	Unemployed – previously vet nurse
FG3F4	F	55–59	Administrator
FG3F5	F	65+	Retired librarian
FG3F6	F	70+	Retired teacher
FG3M	M	40–49	Homemaker (previously engineer)
Group Four			
FG4F1	F	40–49	Receptionist
FG4F2	F	40–54	Office support
FG4F3	F	50–54	Auditor
FG4F4	F	55–59	Nurse
FG4F5	F	55–59	Contract teacher
FG4F6	F	55–59	Homemaker
FG4F7	F	65–69	Retired insurance analyst
Group Five			
FG5F1	F	30–39	Homemaker
FG5F2	F	40–49	Research MAF
FG5F3	F	40–49	Unemployed – previously admin
FG5F4	F	40–49	Tour guide
FG5F5	F	60–64	Receptionist
FG5F6	F	60–64	Administrator
FG5F7	F	65+	Retired administrator
Group Six			
FG6F1	F	23–29	Finance
FG6F2	F	23–29	Policy analyst
FG6F3	F	31–40	Procurement specialist
FG6F4	F	40–49	Policy advisor
FG6F5	F	50–59	Communications advisor
FG6F6	F	60–64	Tutor
FG6F7	F	70+	Retired researcher
FG6M	M	23–29	Postgraduate student
Group Seven			
FG7F1	F	20–23	Undergraduate student
FG7F2	F	20–23	Undergraduate student
FG7F3	F	20–23	Postgraduate student
FG7F4	F	20–23	Undergraduate student
FG7F5	F	20–23	Undergraduate student
FG7M1	M	20–23	Undergraduate student
FG7M2	M	20–23	Postgraduate student

some provisional themes. The second stage involved comparing each focus group, looking for commonalities and differences between the groups, and categorising and re-coding the themes where necessary. Lastly, the theorising step involved relating the analysis to the literature and research question (Braun and Clarke, 2006).

We used a variety of techniques to establish the trustworthiness of the qualitative study. This included "descriptive validity" (Wolcott, 1990) which involved ensuring that the researchers accurately recorded what was seen or heard; "interpretative validity" (Maxwell, 1992), which implemented a continuous part-to-whole, and whole-to-part process (the hermeneutic circle) to ensure that the meanings were not interpreted out of context; and "credibility"

**Table 2**  
Summary of key findings from the exploratory study.

Key findings	Quotes from respondents
It is too hard to be green	
Price	"Alternative products are quite expensive." (F50-54, FG6F5)
Time and Knowledge	"Well if you're struggling to pay the bills you're not going to worry about it [buying green products]." (F40s, FG6F4) "You have to gain knowledge by, perhaps looking on labels and things like that. Put in the work and maybe the time to investigate things." (F50s, FG...)
Perceived Effort	"Depending on how and where you are, it takes a whole lot more effort. Even if you look around for fair trade coffee, and green products..., it takes more effort than just grabbing what you can see on the shelf." (M20s, FG6M)
Perceived Sacrifice	"No, I don't see myself as one [green] I think I'm far too self-indulgent...I'd like to be but I really don't have the moral discipline to be one." (F70+, FG2F5)
Place	"I think urban living is kind of a big barrier [to being green]" (F20s, FG7F3)
Confusing messages	"One of the issues with a lot of this packaging is, it's not always easy to read, and you can't always understand what they're saying." (F55-59, FG3F4) "...with all this stuff [household cleaning products] I really don't understand what the labels mean." (F55-59, FG4F5)
Others are not making green easy for me	"In my flat I flick off the lights and only fill up the kettle about half way and my flatmates they'll be like, what are you doing that for? They're throwing out bottles and things like this and you're just making this sort of effort and you just think, what's the point?!" (M20s, FG7M1)
Sub theme: I am not ready to be green	"I think it's a bit of a battle sometimes, especially if you are living with someone else, or flatting" (F30s, FG3F2) "...if you are going to be environmentally-friendly you have to go the whole way, you can't just like do half environmentally-friendly you kind of have to commit yourself to it. And I don't feel like I can do that as a student, but I feel like when I'm older and got a bit money I will like commit myself to the cause kind of thing." (M20s, FG7M1) "...you can make token gestures but it's not until you can afford to be paying for all the products that's when you can really be environmentally-friendly." (F20s, FG7F3)
Green stigma	
Perceptions of green messages	"I don't trust people who are using the word...everything is organic and green in this and that. It's just a marketing ploy". (F50s, FG1F5) "...It's supposed to be environmentally-friendly. But I don't know...And if I read the label I wouldn't know which things were okay and which weren't." (F41-54, FG4F2)
Perceptions of green consumers	"I wouldn't want people to think I'm like preachy." (F20s, FG7F2) "I don't mind doing the odd thing and helping out the environment...but I don't want to get grouped into that big 'we're hippies and we dance and we clap our hands around XX Street and stuff.'" (M20s, FG7M2) "Green consumers inherently think that they are better than everyone else because of what they do" (M20s, FG7M2). "A little bit of a nutcase sometimes." (F65+, FG2F3) "There is a bit of policing going on with being green, I don't like that." (F50s, FG6F5)
Green reservations	
No evidence	"They haven't actually ever proven that anyone's died from using Brand X [a well-known laundry powder that is not marketed as an environmentally-friendly product]." (F60s, FG5F6) "You don't actually feel the effects if you buy... [products that do not use environmentally-friendly processes], you don't feel the effects on a daily basis." (F41-54, FG1F7)
Cynicism	"I just don't trust something that says rainforest I just don't believe that." (F40s, FG6F4) "I think this is a faux green anyway. That always worries me about, oh they're faking it." (F40s, FG5F3)
Sub theme: Perceptions of green products	"They're not usually well known brands. And a lot of people think that they won't work." (F40s, FG5F1) "I don't trust it very much really...This isn't brightening up the clothes. You've got to put additives. Put some pre-soakers or spray something on the stain so they're not really doing what they say they're doing. I don't think they are." (F41-54, FG1F4) "I think you would have to convince me that it was going to do a good job and put it in better packaging." (F60s, FG5F6)

(Patton, 2002), which involved making certain there was consistency in terms of how the focus groups were conducted. In addition, two coders (who are also the authors) independently coded the data. After comparing their analysis with each other, they only accepted interpretations that they both agreed upon. Whilst we acknowledge that qualitative research can generate multiple interpretations, the process of using two coders ensured that only the most reasonable and logical findings were selected. We highlight the key findings below and provide the most relevant quotes in Table 2 for a parsimonious presentation.

Three broad themes and two sub themes emerged from the focus group data. The first theme is a perception of "it is too hard to be green". This theme focuses on consumers' perceptions of external factors which they perceive could hinder their readiness to be green, and ultimately lead to inaction. According to the participants, it takes time, effort, and money to be environmentally-friendly. Additionally, consumers need to be knowledgeable because marketing messages are often confusing, they need to live in the right place, live with the right people, and have self-discipline. Therefore, green is not for everyone but only for those who are ready (Sub theme: "Readiness to be Green"). The second theme refers to consumers' unfavourable perceptions of green consumers and green messages ("Green Stigma"). Some of the participants viewed some green

consumers as serious individuals, who like to monitor people's green consumption habits, and foist their beliefs onto others. Subsequently, some GCB may not be adopted because some consumers do not like being "preached to" or controlled, or because they want to protect their self-identity and maintain a positive self-esteem. Moreover, consumers may not respond positively to green messages due to their negative perceptions of the message or its source. The third theme focuses on consumers' "Green Reservations" which reflects their uncertainty or ambivalence towards green consumption practices in terms of GCBs making a difference to the environment. Moreover, being green is not perceived by some consumers as being a pressing matter. This is because they either cannot see the negative effects of using non-EF (this links in with cynicism towards green product claims), or they have not experienced the negative consequences of using non-EF products first-hand. Consumers' perceptions of how well green products perform (Sub theme: "Product Perception") also contribute to their "green reservations". Moreover, some consumers do not perceive a significant difference between products that are promoted as green and those that are not. In view of this, if consumers cannot see how products might harm or benefit the environment, or how their actions might harm the environment, it may be difficult to encourage behavioural change.

**Table 3**  
Survey respondents' profiles.

Respondents	Description	Australia Total =510		New Zealand Total =304	
		N	%	N	%
Gender	Female	276	54.1	159	52.3
	Male	234	45.9	145	47.7
Age	18 to 25 years old	74	14.5	50	16.4
	26 to 49 years old	227	44.5	121	39.8
	50 years old and above	209	41.0	133	43.8
Location	City	282	55.3	166	54.6
	Outside city	228	44.7	138	45.4
Education	Primary and High schools	176	34.5	100	32.9
	Tertiary education	303	59.4	167	54.9
	Other qualifications	31	6.1	37	12.2
Household Composition	Single living alone/with friends or flatmates	127	24.9	76	25.0
	Couple, no children	86	16.9	52	17.1
	Household with children up to school age	147	28.8	80	26.3
	Household where youngest child is older than school age	54	10.6	39	12.8
Household annual income	Older couple, no children at home	96	18.8	57	18.8
	Under \$25,000/Under NZD\$20,000	57	11.2	28	9.2
	\$25,001 (NZD\$20,001) to \$50,000	103	20.2	79	26.0
	\$50,001 to \$100,000	154	30.2	85	28.0
	\$100,001 to \$150,000	58	11.4	43	14.1
	More than \$150,000	38	7.5	13	4.3
	Don't know	20	3.9	15	4.9
Level of environmental-friendliness	Would rather not say	80	15.7	41	13.5
	Always make an effort to purchase environmentally-friendly household products	93	18.2	54	17.8
	Sometimes make an effort to purchase environmentally-friendly household products	274	53.7	190	62.5
	Rarely make an effort to purchase environmentally-friendly household products	143	28.0	60	19.7

### 3.2. Stage two: survey

Stage Two involved two surveys, one in Australia (AU) and one in New Zealand (NZ) to test and corroborate the themes that were identified in Stage One. The survey questions were drawn mainly from the key qualitative findings as well as adapted from existing literature (Bohlen et al., 1993; Chang, 2011). A total of 27 questions were generated. The sources of the scale items are included in Table 4. All questions were reviewed and pre-tested on academic colleagues and some consumers to ensure face validity and content validity. A total of 15 people were involved in this pre-test phase. The questionnaire was then tested on approximately 50 consumers during a soft launch of the data collection via an online consumer panel. This allowed us to test the quota setting, and confirm the usefulness of the survey instrument to capture consumers' responses. The soft launch identified no major issues. The responses from the soft launch were included in the final analyses.

We used household products as the research context for they are ubiquitous to consumers and easy to understand, unlike for example biofuel or green cars. Moreover, we allowed the respondents to choose the product category they were most familiar with, namely soaps, toilet paper rolls, laundry detergents and dishwashing liquids because product knowledge has been found to influence consumers' product evaluations (Blair and Innis, 1996) and perceptions (Laroche et al., 2003). Respondents were then asked to consider the products being promoted as EF to non-EF products within their chosen category. They were asked to rate how much they agreed with each statement using a 5-point Likert scale (5 = Strongly Agree) or 5-point bipolar scale (5 = A Lot; 1 = Very Little).

We used online consumer panels in both countries. 4650 respondents were invited in AU, 746 of which responded (16%) which resulted in 510 useable responses. In NZ, 7498 invitations were sent, 583 of which responded (8%) with 304 useable responses. We monitored the quota for gender, age, and geographical location to ensure sample representativeness. Table 3 summarises the respondents' profiles. We used three purchase behaviour descriptions to capture the respondents' level of environmental-friendliness. We asked the re-

spondent to choose a description they most identified themselves with: "I *always* (or *sometimes*, or *rarely*) make a special effort to buy environmentally-friendly household products". Among the 814 respondents, 147 identified with "always", 464 with "sometimes" and 203 chose "rarely", reflecting varying levels of GCB. We carefully chose the descriptors of "rarely" instead of "never" to minimise possible social desirability biases. Moreover, we guaranteed the respondents' anonymity in the cover page of the survey (Paulhus, 1991). This implementation made respondents less likely to edit their responses to be more socially desirable and consistent with how they think the researchers wants them to respond (Podsakoff et al., 2003). As it was a self-completion questionnaire, interviewer bias was eliminated.

#### 3.2.1. Data analysis and results

Although multiple procedural methods were applied during the survey design process in order to control for the common method variance (CMV) (Podsakoff et al., 2003), we used Harman's single-factor test to examine the extent to which CMV is present in the data. All the variables were entered into an exploratory factor analysis (EFA) in SPSS using un-rotated principle components factor analysis. The result showed that a single factor (one general factor) explains overall 26.73% of the variance. It does not account for the majority of the covariance amongst the measures. Therefore, it is concluded that no substantial amount of CMV is present.

We first analysed the two datasets separately because social and cultural differences may exist between AU and NZ. Separate EFAs were undertaken which also allowed us to validate the findings. Assumptions for EFA were examined and appropriateness of EFA was confirmed as presented in Table 4. EFA was conducted with all 27 items to identify their underlying structure. We used Principal components analysis (PCA). AU data showed that five factors had eigenvalues well above one (Kaiser, 1960), explaining 57.34% of the variance. However, the NZ data showed that seven factors had eigenvalues of over one. After examining five, six and seven factor solutions, the five factor solution, which explained 50.79% of the variance, was accepted following the guidelines suggested by Cattell

**Table 4**  
Results of exploratory factor analysis.

Construct	Item	Cronbach's $\alpha$	Factor Loading
P_Perception	Perform better <sup>b</sup>	0.74 (0.77)	0.77 (0.71)
	Better for environment <sup>b</sup>		0.73 (0.72)
	Less harmful packaging <sup>c</sup>		0.60 (0.69)
	More trustworthy <sup>b</sup>		0.80 (0.81)
Hard	Requires very little effort <sup>c</sup>	0.71 (0.76)	0.83 (0.86)
	Requires very little time <sup>c</sup>		0.80 (0.83)
	Requires very little sacrifice <sup>c</sup>		0.66 (0.61)
Stigma	Green consumers tend to be "hippies" <sup>c</sup>	0.68 (0.73)	0.65 (0.60)
	Green consumers think they are better than others <sup>c</sup>		0.80 (0.82)
	Green consumers make others feel guilty <sup>c</sup>		0.83 (0.83)
Responsible	Environmental issues need immediate attention <sup>a</sup>	0.75 (0.81)	0.63 (0.63)
	I cannot help to slow down environmental deterioration (R) <sup>a</sup>		0.73 (0.74)
	I do not need to do anything because the environment is not a major concern (R) <sup>c</sup>		0.75 (0.77)
	I do not feel responsible (R) <sup>c</sup>		0.80 (0.77)
Readiness	Insufficient knowledge about environmental issues (R) <sup>c</sup>	0.78 (0.85)	0.76 (0.74)
	Insufficient time (R) <sup>c</sup>		0.78 (0.75)
	Too many other responsibilities (R) <sup>c</sup>		0.76 (0.70)
	Insufficient income (R) <sup>c</sup>		0.67 (0.73)
Total Variance Explained		61.23% (66.20%)	
Items Removed			
P_Perception	Attractive package design <sup>c</sup>		
	Cheaper <sup>b</sup>		
Hard	Requires very little money <sup>c</sup>		
	Requires very little knowledge about environment <sup>c</sup>		
Stigma	Green consumers have more time <sup>c</sup>		
	Green consumers have more knowledge about environment <sup>c</sup>		
	Green consumers have more money <sup>c</sup>		
Responsible	Environmental issues are personal <sup>c</sup>		
Readiness	Purchasing green products is a priority <sup>c</sup>		

Note: Values without parentheses are from NZ sample; values within parentheses are from AU sample. (R): Reversed-coded item.

AU: KMO = 0.91,  $\chi^2(351) = 5809.32$ ,  $p < 0.01$ ; NZ: KMO = 0.81,  $\chi^2(351) = 251547$ ,  $p < 0.01$ .

<sup>a</sup> Item adapted from Bohlen et al. (1993).

<sup>b</sup> Item adapted from Chang (2011).

<sup>c</sup> Item developed from focus group study results.

(1966). There was little difference between the varimax and oblimin solutions for both datasets. The varimax rotation for the final solution is reported in Table 4.

The five factors were labelled "product perception" (P\_Perception), "hard to be green" (Hard), "green stigma" (Stigma), "sense of responsibility" (Responsible), and "readiness to be green" (Readiness). Nine items were systematically eliminated because of the minimum criteria of cross-loading and/or low factor loading (<.60). A PCA analysis of the remaining 18 items was conducted on AU and NZ data, with the five factors explaining 66.20% and 61.23% of variance respectively, which were considered satisfactory in social sciences (Cattell, 1966). There are consistent factor loadings of over 0.60 for all constructs in both datasets. The final factors displayed good internal consistency with Cronbach's alpha greater than 0.7, except a moderate alpha of 0.68 for Stigma (3 items) based on the NZ data (Hair et al., 2010). Each factor contains at least three items. Overall, EFA analysis across both datasets indicated that five distinct factors were underlying Consumers' Green Perceptions (CGPs) and these factors were internally consistent.

### 3.2.2. Empirical insights from Australia and New Zealand

The discussion is organised according to the five dimensions of CGPs. Our initial analyses of t-tests showed that CGPs were not significantly different between the two countries. We therefore proceeded with a combined dataset of  $N = 814$  (AU/NZ) (Table 5). Additionally, the ANOVA results show that CGPs did not differ across the household product categories that we had allowed the respondents to select. This justified the pooling of data from all product categories. We report our key findings as follows.

**3.2.2.1. Product perceptions: How do consumers perceive products being promoted as EF?** On average, the respondents do not perceive EF household products more positively than non-EF brands (mean = 3.18, SD = 0.62). In fact, 34.4% of them disagree that EF products perform better. In addition, only 27.3% perceive EF products to be trustworthy. This is despite the fact that 60% perceive EF products to be better for the environment, and 49.9% agree that the packaging materials for EF products are less harmful to the environment. This evidence shows that there is currently an *unfavourable performance perception* of EF household products. Additionally, respondents appeared to be sceptical or had reservations towards the trustworthiness of these products.

**3.2.2.2. Hard: How hard is it to be environmentally-friendly?** One of the strongest themes to emerge from the qualitative study is the perception that *it is too hard to be green*, which can ultimately lead to inaction. We asked the respondents to rate how much effort, time and personal sacrifice were required (from *very little to a lot*) to purchase EF household products. Overall, the respondents did not find it overly hard to be environmentally-friendly (mean = 2.85, SD = 1.05).

**3.2.2.3. Stigma: Is there a stigma attached to being environmentally-friendly?** As reported in the focus groups, unfavourable perceptions of green messages and green consumers may shape how some consumers view green consumption behaviour. The "Stigma" factor focuses on respondents' perceptions towards "green" consumers who purchase products that are promoted as environmentally-friendly. In particular, we wish to find out if there is a stigma attached to being green.

The findings reveal that 43% of the respondents hold the perception that "green consumers think they are *better* than other

**Table 5**  
Consumers' green perceptions in Australia and New Zealand (N = 814).

Construct / Statements	Disagree (N) %	Neutral (N) %	Agree (N) %	Mean (SD)
P_Perception				3.18 (0.62)
Environmentally-friendly household products:				
perform better	280 (34.4%)	434 (53.3%)	100 (12.3%)	2.72 (0.81)
are better for the environment	61 (7.5%)	265 (32.6%)	488 (60%)	3.61 (0.03)
use packaging materials which are less harmful to the environment	134 (16.5%)	274 (33.7%)	406 (49.9%)	3.37 (0.03)
are more trustworthy	201 (24.7%)	391 (48%)	222 (27.3%)	3.03 (0.03)
	Little	Average	Much	Mean (SD)
Hard				2.88 (0.85)
Purchasing EF household products requires:				
very little ~ a lot of effort	273 (33.54%)	330 (40.54%)	211 (25.92%)	2.84 (1.05)
requires very little ~ a lot of time	244 (29.98%)	334 (41.03%)	236 (28.99%)	2.95 (1.03)
involves very little sacrifice (e.g. giving up things I like) ~ a lot of sacrifice	260 (31.94%)	360 (44.23%)	194 (23.83%)	2.85 (1.05)
	Disagree	Neutral	Agree	Mean (SD)
Stigma				2.94 (0.78)
Green consumers tend to be "hippies"	410 (50.37%)	271 (33.29%)	133 (16.34%)	2.54 (0.97)
Green consumers think they are better than others because they make an effort to be environmentally-friendly	187 (22.97%)	275 (33.78%)	352 (43.24%)	3.22 (1.0)
Green consumers make others feel guilty for not being as environmentally-friendly as them	242 (29.73%)	290 (35.63%)	282 (34.64%)	3.05 (0.99)
Responsible				3.47 (0.73)
Environmental issues need immediate attention	131 (16.09%)	339 (41.64%)	344 (42.26%)	3.30 (0.91)
I cannot help to slow down environmental deterioration (R)	157 (19.29%)	215 (26.41%)	442 (54.30%)	3.43 (1.0)
I do not need to do anything because the environment is not a major concern in (country) (R)	52 (6.4%)	203 (24.94%)	559 (68.67%)	3.82 (0.87)
I do not feel responsible (R)	176 (21.62%)	255 (31.33%)	383 (47.05%)	3.31 (0.96)
Readiness				3.17 (0.79)
I have insufficient knowledge about environmental issues (R)	224 (27.52%)	279 (34.28%)	311 (38.21%)	3.15 (0.97)
I have insufficient time for environmental issues (R)	151 (18.55%)	296 (36.36%)	367 (45.09%)	3.31 (0.91)
I have too many other responsibilities (R)	178 (21.87%)	270 (33.17%)	366 (44.96%)	3.27 (0.98)
I have insufficient income (R)	285 (35.01%)	272 (33.42%)	257 (31.57%)	2.95 (1.02)

(R): Reversed-coded item.

consumers because they make an effort to be environmentally-friendly". In addition, 34% think that green consumers make other people *feel guilty* for not being as green as them. These perceptions are shared in both countries. We also tested the stereotype "Green consumers tend to be hippies", an idea that arose from the focus groups in Stage One. We did not find strong supporting evidence within the datasets (N = 814, mean = 2.54, SD = 0.97). However, the findings offer some evidence that green consumers were not always perceived in a favourable light, which could shape how some consumers view green consumption practices.

**3.2.2.4. Responsible: environmental responsibility and immediacy?** The "Responsible" factor examines whether consumers think environmental issues require immediate attention, if they can help to slow down environmental deterioration, and if they feel responsible for environmental deterioration. Overall, the respondents feel quite strongly towards the environment (N = 814, mean = 3.46, SD = 0.73) with 42.26% feeling that environmental issues require immediate attention. Most interestingly, 47% of them felt responsible and more than half viewed environmental issue as being a major concern in their country. Moreover, 54% believe they can help to slow down environmental deterioration. Female respondents appeared to have stronger feelings towards the environment. They consistently recorded higher scores in the overall "Responsible" factor and across all items. Green marketers are continually faced with the task of convincing consumers to sacrifice favoured behaviours for the greater good of the community, or a common goal. If consumers believe they are responsible for the environment, behavioural change is more likely to occur.

**3.2.2.5. Readiness: How ready are consumers to be environmentally-friendly?** Focus groups revealed that some participants were not convinced that they could "*be really*

*environmentally-friendly*". Consequently, they believed being green was something they could only commit to once they were "*truly ready*". That is, when they had sufficient ability or resources such as knowledge, time and income. Accordingly, this construct measures respondents' *perceived readiness* to be environmentally-friendly.

The respondents were asked to reflect upon their situation pertaining to their knowledge, time, other responsibilities and their earnings within the context of "Will they purchase environmentally-friendly household products over the next six weeks". The findings show that overall, the respondents are only marginally ready to purchase EF household products (N = 814, mean = 3.17, SD = 0.79). We then examined this measure across various demographic factors (Table 6). Firstly, consumers' readiness to be green varies significantly across household compositions, with households consisting of "older couples with no children" being the most ready. Households with children up to school age were least likely to be green mainly due to the perceptions that they did not have sufficient time and they have too many other responsibilities. Secondly, the perceived readiness rises as the age increases with respondents in their 50 years+ being the most ready to purchase environmentally-friendly household products. Additionally, we found that CGPs differ significantly across different levels of GCBs (Table 7). We will discuss this finding in Section 4.0.

### 3.2.3. Explanatory power of CGPs

We first used a logistic regression model to test how CGPs affect green consumption behaviour. Building on the Exploratory Factor Analysis results, we computed a regression factor score as the predicting variable (DiStefano et al., 2009). The dependent variable was whether or not a respondent had purchased any EF household products in the last 6 months (EFHP YES/NO). The Hosmer and Lemeshow Test ( $\chi^2 = 8.24$ , df = 8,  $p > 0.10$ ) and the Omnibus Test of model coefficient ( $\chi^2 = 171.48$ , df = 8,  $p < 0.05$ ) indicate that the

**Table 6**  
"Readiness" by household compositions and age.

Samples (Household Composition)	N	Time Mean (SD)	Responsibilities Mean (SD)	Readiness Mean (SD)
Single living alone/friends/flatmates	203	3.36 (.91)	3.32 (1.01)	3.20 (0.80)
Couple, no children	138	3.27 (.92)	3.25 (1.0)	3.17 (0.80)
Household with children up to school age	227	3.19 (.97)	3.11 (1.03)	3.08 (0.83)
Household where youngest child is older than school age	93	3.31 (.88)	3.19 (.96)	3.09 (0.79)
Older couple, no children at home	153	3.46 (.80)	3.50 (.79)	3.30 (0.66)
ANOVA (F)		2.30 (p < 0.10)	3.96 (p < 0.05)	2.09 (p < 0.10)

  

Statements	Samples (Age)	N	Mean (SD)	F (p)
Readiness	18–25 years	124	2.95 (.84)	8.41 (p < 0.005)
	26–49 years	348	3.14 (.78)	
	50 years and over	342	3.28 (.78)	

**Table 7**  
Do consumers' green perceptions differ across levels of green consumption behaviour.

Consumer Green Perceptions	Overall (N = 814)		I always <sup>a</sup> (N = 147)		I sometimes <sup>b</sup> (N = 464)		I rarely <sup>c</sup> (N = 203)		ANOVA F Statistics
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	
Product Perception	3.18	0.62	3.64	0.60	3.20	0.51	2.82	0.63	90.02*
Hard	2.88	0.85	2.51	0.96	2.86	0.71	3.21	0.78	31.53*
Stigma	2.94	0.78	2.56	0.77	2.93	0.74	3.21	0.78	31.38*
Responsible	3.47	0.73	3.98	0.68	3.52	0.61	2.95	0.72	110.08*
Readiness	3.17	0.79	3.81	0.76	3.15	0.67	2.74	0.75	98.41*

\* p < 0.001.  
<sup>a</sup> I always make a special effort to buy household products that are environmentally-friendly.  
<sup>b</sup> I sometimes make a special effort to buy household products that are environmentally-friendly.  
<sup>c</sup> I rarely make a special effort to buy household products that are environmentally-friendly.

logistic regression model adequately fits the data. The Nagelkerke R<sup>2</sup> (0.26) shows that this model explains a reasonable proportion of the variation. The logistic regression results show that CCPs is a statistically significant discriminating factor for "EFHP YES/NO" (Table 8). In particular, CCPs has a *negative* effect on consumers' purchase behaviour of EF-household products, at least within this dataset. In addition, the classification matrix (Table 9) shows that even though the YES/NO of EF purchase was not perfectly predicted, the overall correct prediction rate of 69% indicates the strong discriminating power of the CGPs.

Following that, we ran correlations and OLS regression to test the explanatory power of CGPs in predicting the respondents' EF household product purchase frequency (EFHP-PFQ) (Table 10). CGPs (Regression Factor Score) and EFHP-PFQ is correlated at Pearson

**Table 8**  
Results of logistic regression.

Discriminating Variable	B	S.E.	Wald's $\chi^2$	Sig. (p)	Exp(B) Odds ratio
Regression factor score of CGPs	-1.18	0.11	119.17	0.000	0.31
Constant	-0.74	0.09	75.69	0.000	0.48

**Table 9**  
Classification matrix.

Actual Group (Have you purchased environmentally-friendly household products in the last 6 months?)	Predicted Group (Percentage Correct)		Actual Total
	Yes	No	
Yes	448 (85.8%)	74	522
No	178	114 (39%)	292
Overall percentage correctly classified: (448 + 114)/814 = 69.04%			

Note: The cut-value is 0.500.

r = 0.49, p < 0.01. The regression results indicated that the model accounted for 23.6% of the variability in purchase frequency, Adjusted-R<sup>2</sup> = 0.23, F(1, 812) = 251.96, and p < 0.001. As depicted in Table 11, CGPs is a significant predictor for EFHP-PFQ. We re-ran the analysis with a subset of data (N = 522) that excluded those who had never purchased any EF household products. The results indicated similar patterns, confirming the explanatory power of CGPs.

**4. Discussion and implications**

In this research we went beyond profiling green consumers to examine multiple dimensions of consumers' green perceptions and its impact on the consumers' purchase of EF products. We first discuss

**Table 10**  
How often have you purchased household products have been promoted as environmentally-friendly in the last 6 months?

	N	%
Never	292	35.9
Once in the last 6 months	71	8.7
Once every 2–3 months	177	21.7
Once a month	149	18.3
Every fortnight	82	10.1
Every week	43	5.3

**Table 11**  
Results of OLS regression.

Predicting Variable	Unstandardised Coefficients		Standardised Coefficients	t	Sig.
	B	Std. Error			
	Regression factor score of CGPs	0.77	0.05		
Constant	1.74	0.05		35.76	0.000

the role of CGPs in influencing the EF products purchase behaviour, then the five dimensions of CGPs, followed by further elaboration on CGPs across three levels of green consumption behaviour.

#### 4.1. The role of consumers' green perceptions

The purpose of this research was to explore the role of CGPs in green consumption behaviour. We included consumers with varying levels of CGBs. We were particularly interested in investigating consumers who do not always engage in GCB because they reflect the mainstream population. Overall, the findings from our research suggest that CGPs is a multifaceted concept. In addition, within this dataset, CGPs were found to be a significant predictor for consumers' purchase behaviour of EF household products. More importantly, CGPs have a *negative* effect on the likelihood that a consumer would purchase EF-household products. This finding indicates that the consumers' unfavourable or less favourable perceptions of green products, consumers and/or green messages can hinder the adoption of green consumption behaviour. For instance, if green products are perceived by consumers to be too expensive, too time-consuming (in terms of attaining knowledge or locating the products), or too difficult to obtain (e.g. due to their living arrangements), this will influence whether consumers believe they can perform the behaviour. Alternatively, if an individual holds unfavourable perceptions of people who typically consume green products, and/or they are sceptical about green marketing communications, this may also influence their GCBs regardless of whether they are concerned for the environment. Equally, if a person believes their actions alone will not make a difference to the environment unless everyone is committed to it, they may not participate in GCB, e.g. they may avoid purchasing green products even if they believe they can perform the behaviour. Similarly, if a person believes that only minority groups practice GCB, the adoption of green consumption practices may be slow due to the perception that some minority groups' behaviours do not reflect the norm. Consequently, the challenge for marketers is to change CPGs but this cannot be done by marketers alone. As [Gordon et al. \(2011\)](#) suggest, green marketing i.e. the adoption and implementation of sustainable marketing principles require the support of social marketing initiatives to encourage behavioural change, and a shift in the current dominant political and economic systems. Whilst the third element is more difficult to change in the short-to-medium-term, we certainly think greater government involvement is needed to help change CGPs. Governments need to support industries and firms that are adopting sustainable practices, rewarding those that do, and/or penalising those that do not; as well as encouraging consumers to adopt greener behaviours. Some governments around the world are already doing this. For example, in the Netherlands, a green loyalty point system was introduced by local government. Points were provided for sustainable consumer behaviour which could later be redeemed for sustainable products and services ([OECD, 2008](#), p. 19). Whilst many initiatives exist in Australia and New Zealand, e.g. introducing mandatory energy efficient labels, more could be done by the local and central government to encourage green practices. For example, the successful "slip slop slap" social marketing campaign that was created in Australia to create awareness about skin cancer was adopted by New Zealand and other countries due to its effectiveness ([OECD, 2008](#)). Similar social marketing initiatives could be implemented to promote greater uptake of green practices. In particular, the Australian and New Zealand governments could be more proactive about the environment, and create campaigns that aim to change consumers' and businesses' perceptions about green consumption practices.

#### 4.2. Product perceptions

Empirical insights from Australia and New Zealand revealed that there is currently an unfavourable performance perception of EF

household products. Moreover, consumers appeared to be questioning the trustworthiness of these products. These unfavourable perceptions may affect consumers' attitudes and intentions to purchase EF household products because perceived performance is a key determinant of green product choice ([Borin et al., 2013](#)). Likewise, the perception of trust was found to be a significant predictor for green consumption behaviour ([Chen and Chang, 2013a](#)). As such, marketers need to focus on improving performance perceptions and reducing consumers' cynicism. This could go hand in hand with the implementation of government regulation or green accreditation schemes to provide consumers with some reassurances that environmentally-friendly product claims are valid. At the same time, green products still need to meet the consumers' core needs, e.g., the performance of the product. If a green product wants to successfully compete against non-EF products, it needs to perform well on the attribute that is driving the mainstream consumer.

#### 4.3. Green stigma

Green consumers were not always perceived favourably and it is important to acknowledge this unfavourable perception because individuals purposely strive to maintain a positive social identity ([Tajfel and Turner, 1986](#)). For example, in order to avoid a negative self-concept, individuals will distance themselves from people or products that might threaten their self-esteem and self-identity ([Banister and Hogg, 2004](#)). This aspect was also found in studies of British consumers ([Rettie et al., 2014](#)) and American consumers ([Barnhart and Mish, 2016](#)), who viewed such behaviours as "not normal", and unrealistic. Thus, a green stereotype may create additional barriers to participating in green consumption practices, and in some situations it may even generate resistance towards some green consumption behaviours and green messages. So, marketers and policy makers need to work on normalising certain green behaviours to make green *normal*, i.e. mainstream or "*what most people generally do*". This is because consumers are more likely to adopt behaviours and products that they think are *normal* ([Rettie et al., 2014](#)). This, of course, takes time. However, one only needs to reflect on recycling behaviours in Australia and New Zealand; this activity would now be considered a norm due to government initiatives.

#### 4.4. Readiness and too hard to be green

The survey findings confirm the evidence from the exploratory study that some consumers do not perceive being environmentally-friendly as an urgent issue that requires immediate attention but instead, something they can only commit to once they are truly ready. That is, when they have time to be green and when they have fulfilled their other responsibilities such as raising a family. As such, unsurprisingly, households consisting of "older couples with no children" were most ready to be green. In fact, the "perceived readiness" rises as age increases with respondents in their 50 years+ being most ready to purchase environmentally-friendly household products. These findings could also be read in conjunction with the factor of "Hard" as being green requires a lot of time and effort.

These findings provide valuable insights into how ready various market segments are to be green. Arguably, consumers with the highest readiness to be green would be the "low hanging fruits" for green marketers and/or policy-makers. However, if the objective is to promote greater green adoption, then, marketers/policy-makers should focus on improving the green readiness of the majority. Perhaps, concerted efforts are required to make "being green" appear easy, attainable and most importantly, making green *normal*, i.e. mainstream (as discussed above). In addition, marketing communications should focus on personal benefits, e.g. emotional gratification (such as focusing on personal well-being or family welfare) as consumers with a lower level of environmental affect responded better to green

appeals that focused on personal benefits rather than pure environmental appeals (Grimmer and Woolley, 2014).

#### 4.5. CGPs across different levels of GCB

Respondents who “always make a special effort to purchase environmentally-friendly products...” hold the *highest positive* product perceptions. Their *perceived sense of responsibility* towards the environment is the strongest and their *readiness* to be environmentally-friendly is the highest. Most interestingly, they do not perceive being green to be hard nor is there a stigma attached to being green. In contrast, respondents whom “rarely” buy EF products perceive being green to be *the hardest*, there is a *stigma* associated with it and they hold the *poorest product perceptions*. They are also the *least ready* to be environmentally-friendly. Most importantly, these respondents *feel the least responsibility* towards the environment (Table 7).

Product evaluations can differ depending on whether it is based on direct experiences (e.g. uses the product) or indirect experiences (e.g. reads product reviews, media reports, listens to hearsay) (e.g., Hamilton and Thompson, 2007). We could infer that the perceptions of those respondents whom “always make a special effort...” were shaped by their direct experiences with green household products. Overtime, these positive direct experiences may build confidence and trust in other green products and thus reinforce their favourable perceptions of EF products and practices. In contrast, for consumers who have never purchased a green product, purchasing a new type of product could pose a risk for them. The positive perceptions amongst respondents who always purchase EF products suggest that to change consumers’ green perceptions, one may need to provide opportunities for more direct experiences, such as product trials. As Hamilton and Thompson’s (2007) study found, providing more product information before purchase did not lead to more concrete mental representations of the product; instead, providing opportunities for more experiential contact with the product did. If consumers could experience the product, this may help the spread of green product adoption. Likewise, reinforcing good behaviour may encourage consumers to try or continue practising green consumption behaviours. The same argument could apply to the perception “it is too hard to be green”. Respondents who “rarely make a special effort” found it the hardest to be environmentally-friendly. This could in part be due to little or no direct experience with green consumption behaviours.

## 5. Conclusions, limitations and future research

The importance of this study lies in understanding the barriers to green consumption behaviour and how CGPs may influence consumer behaviour. Using focus groups with consumers who practised different levels of green behaviours, we identified three major themes and two sub themes with regards to consumers’ green perceptions. Based on these findings, we proposed that CGPs is a multifaceted concept. Consumers’ perceptions of green behaviours, green products, green communications and green consumers are not mutually exclusive; they can overlap and influence consumers green behaviours to varying degrees. For example, if consumers have unfavourable attitudes towards green messages, this may influence how they perceive green products; if consumers have unfavourable perceptions of some green consumers, this may influence how they perceive certain green behaviours, and so on. Following a large scale survey in Australia and New Zealand, we developed and validated the 5-construct scale for CGPs including “Product Perception”, “Hard”, “Stigma”, “Responsible” and “Readiness”. The regression results demonstrate the explanatory power of CGPs in predicting consumers’ likelihood to purchase environmentally-friendly household products and their purchase frequency.

Further empirical work is needed to test our CGPs within established theoretical frameworks, such as the Theory of Planned Behaviour. By understanding CGPs, marketers and policy-makers will be able to identify how best to address consumers’ unfavourable green perceptions and how best to effectively communicate messages that are meaningful to consumers, in particular the “not-so-green” consumers. Similar to other studies (e.g., Gleim et al., 2013; He et al., 2016), this study used self-report surveys. We therefore cannot be absolutely certain about the true green behaviour of the respondents. If possible, future studies could use actual purchase data to identify consumers’ varying levels of green behaviour. Admittedly, the topic of green consumption is susceptible to social desirability issues. Although this study tries to address this issue by assuring the respondents’ anonymity on the cover page of the survey, the use of projective techniques may have minimised social desirability bias, e.g. “Imagine you are going grocery shopping, do you...?” In addition, the current study used EF household products as the context, which can typically be classified as a low-involvement product purchase. It would therefore be desirable to explore other product groups in order to identify consumers’ perceptions of products that may require greater involvement during the decision-making process.

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