

Perceived Self-Efficacy and its Role in Fostering Pro-Environmental Attitude and Behaviours

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ABSTRACT

Manuscript type: Research paper

Research aims: This study examines perceived self-efficacy and its role in fostering pro-environmental attitude and behaviours.

Design/Methodology/Approach: This study employs a quantitative approach to explain the relationship among the variables. The data of 500 individuals are collected and then analysed through the partial least squared (PLS) approach.

Research findings: Results show that perceived self-efficacy has a positive influence on attitude; it enables individuals to orchestrate their capabilities in pursuing pro-environmental behaviours.

Theoretical contributions/Originality: This study expands on previous literature by adapting lifestyle-centric pro-environmental behaviour and social cognitive theory to identify the factors that motivate pro-environmental behaviours.

Practitioner/Policy implications: This study provides insights for marketers and other policy makers to better understand how perceived self-efficacy impacts the attitude and pro-environmental behaviours of individuals. The results imply that practitioners need to include attitude change campaigns and intervention programmes that can increase self-efficacy so as to encourage individuals to engage in more challenging environmental behaviours.

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Research limitation: Since this study focusses on the urban population of Malaysia only, the generalisability of the findings may be restricted. Future studies need to incorporate a larger and more diverse samples.

Keywords: Attitude, Intrinsic Motivation, Perceived Self-efficacy, Pro-environmental Behaviours, Social Cognitive Theory

JEL Classification: M310

1. Introduction

The climate changes that are currently occurring around the world is escalating at an alarming rate and this has impacted the ecosystems and threatened human health and safety. In response to these environmental problems, the United Nations (2015) stated that emphasis must be given to sustainable production and consumption practices throughout the world and across all levels of communities, whether public or private. In line with this emphasis, marketers and organisations have begun offering products and services that contain pro-environmental features. Although the production of environmental friendly products and services is encouraging, their take up rate is still low (Department for Business Innovation and Skills, 2013). It appears that the heightened awareness about environmental issues, and the government's initiatives towards nature restoration, and pro-environmental society promotions, have not been influential. The public's attitude towards pro-environmental behaviours is still lukewarm, as reported by the United Nations (2015). It highlighted a low indication of reducing usage or replacing non-environmental friendly products with pro-environmental products and services for sustainable consumption practice.

The findings of existing research (Yazdanpanah & Forouzani, 2015; Klöckner, 2013; Bauer, Heinrich, & Schäfer, 2012; Chen et al., 2011) speculate that the purchase intention towards pro-environmental products is influenced by several factors such as attitude, subjective norms and perceived behaviour control and the availability of facilities (Sheth, Sethia, & Srinivas, 2011; Ramayah, Lee, & Mohamad, 2010; Omran, Mahmood, Abdul Aziz, & Robinson, 2009) and information (Davies, Lee, & Ahonkhai, 2012; Sheth et al., 2011). In addition, current research (Evans, 2011; Sheth et al., 2011) also indicates that there is a spectrum of situational constraints that could affect sustainable behaviours, for instance, cost (Johnstone & Tan, 2015; Bucic, Harris

& Arli, 2012), perceived lower product quality (Johnstone & Tan, 2015; Baker, Davis, & Weaver, 2014; Haws, Winterich, & Naylor, 2014), distrust on environmental claims (Sheth et al., 2011) and limited accessibility (Davies et al., 2012). It was noted by Carrington, Neville and Whitwell (2010) that people's claim of their intention to consume sustainable products exceeds their actual behaviours.

This attitude-behaviour gap (Davies et al., 2012; Papaoikonomou, Valverde & Ryan, 2012; Phipps et al., 2013) demonstrates the incongruence of cognition and action as a hindrance to achieving and sustaining profound pro-environmental behaviours. When individuals face disparity between cognition (attitudes, beliefs or values) and behaviour, they will experience uncomfortable feelings. Premised on the theory of cognition dissonance, individuals always require consistency in beliefs, attitudes and behaviours. Therefore, if an inequilibrium occurs between these elements, individuals would experience discomfort. This discomfort then 'motivates' them to re-resonate between their beliefs and behaviours so as to attain a balance (Kroesen, Handy, & Chorus, 2017; Ratliff, Howell, & Redford, 2017; Johnstone & Tan, 2015; Juvan & Dolnicar, 2014). When there is dissonance between attitude and behaviour, individuals are more likely to adapt their attitude and maintain the original state of relationship (Kroesen et al., 2017). Studies (Poortinga, Whitmarsh, & Suffolk, 2013; Lin & Chang, 2012; Phipps et al., 2013; Wilcox, Vallen, Block, & Fitzsimons, 2009) indicate that there are various symptoms such as licensing effects and rebound effects (Akenji, 2014; Lin & Chang, 2012; Phipps et al., 2013; Miller, Rathouse, Scarles, Holmes, & Tribe, 2010; Mont & Plepys, 2008; Briceno & Stagl, 2006) which signify that pro-environmental behaviours may not be able to withstand in different spatial and temporal dimensions.

Studies (Howe & Krosnick, 2017; Celik & Yesilyurt, 2013; Visser, Bizer, & Krosnick, 2006) also denote that attitude is a significant predictor of behaviour and yet, the state of attitude is context-dependence (Davies et al., 2012; Papaoikonomou et al., 2012; Phipps et al., 2013; Mont & Plepys, 2008). Although attitude is one's inclination to respond to something positively or negatively, Kroesen et al. (2017) argued that attitude is a state of emotion directed towards a target subject and this can steer an individual's behaviour. Therefore, it is critical to understand the fundamental factors and the mechanisms that shape and sustain a desired attitude and the interaction these factors play in strengthening the relationship between attitude and behaviour. Since the defence mechanism for both attitude and behaviour is to be

environmental friendly, it is pertinent to identify the determinants for both attitude and behaviour as they are essential for the development of effective pro-environmental interventions. These determinants can be used by individuals in a sustainable and effective manner to instil pro-environmental behaviours across a wide spectrum of activities. Among all, self-efficacy appears to be a strong determining factor.

Perceived self-efficacy is the core in social cognitive theory. The theory states that an individual's collection of perceptions, assessments and regulations will direct his/her behaviour while responding to a complex web of environmental and social systems (Jin, 2013b; Bandura, 1991). Both the individual's attitude and behaviour are context dependent. They acknowledge external factors as the consideration factor for the underpinning behaviours. This study does not examine the individuals' perception with regards to the different social elements that may influence their pro-environmental behaviour adoption. Instead, this study seeks to investigate the resilience of attitude and behaviour. This study also aims to investigate whether perceived self-efficacy is able to provide a strong platform to sustain attitude and behaviour. In this regard, the current study aims to answer the following research questions:

- i) Does perceived self-efficacy discourage change in both attitude and pro-environmental behaviours?
- ii) Does perceived self-efficacy function as a shield to counter-balance factors such as self-doubt and second thoughts while the individual engages in pro-environmental behaviours?

The organisation of this paper is as follows: Section 2 outlines the theoretical dimension for the three main themes of the study namely: attitude, pro-environmental behaviours and perceived self-efficacy. Section 3 explains the methodology. Section 4 discusses the findings. Section 5 explains the implications of the study and Section 6 concludes.

2. Literature Review and Hypotheses Development

2.1 Lifestyle-Centric Pro-environmental Behaviours

The notion of pro-environmental behaviour is multidimensional; it is tagged with conflicting objectives thus there is a lack of consensus on its definition (Mont & Plepys, 2008). Pro-environmental behaviour is

multifaceted and it touches every point of the supply and demand chain. From the supply perspective, pro-environmental behaviour is relevant as it looks at the effective and efficient production processes and practices, while consumers prefer products which are convenient and affordable.

In order to understand the make-up of an individual who is pro-environment, it is essential to understand the process the individual goes through in acquiring the intention to minimise impact on the environment and to go beyond the point of consumption. Existing research (Shaw, McMaster, & Newholm, 2016; Jagers, Martinsson, & Matti, 2014; Moraes, Carrigan, & Szmigin, 2012) focus pro-environmental behaviour on a one-dimensional approach when combating climate change challenges. These studies are either product- or service-centric (for example, the adoption of environmental friendly products) or activity-centric (for example, recycling or green tourism). While environmental issues are multifaceted matters with spiralling effects, human behaviour is fluid and non-uniform. Therefore, pro-environmental behaviours can occur in an individual via different forms such as by purchasing energy efficient light bulbs for use, reusing packagings, switching from private to public transportations and others (Barr, Shaw, & Coles, 2011).

Scholars (Akenji, 2014; Leonidou & Leonidou, 2011; Sheth et al., 2011; Mont & Plepys, 2008) state that lifestyle-centric pro-environmental behaviours promote a better understanding of the role of consumption. It addresses environmental challenges, and it encourages pro-environmental adoption of both green and non-green products or services. Lifestyle-centric pro-environmental behaviours is an easier route for individuals because it increases the individuals realisation in making contributions to the environment. Carrington et al. (2010) stated that the availability of opportunity and situation is one of the factors deterring individuals from enacting their pro-environmental behaviour intentions. Under familiar settings and routines, individuals will experience a shorter learning curve when adopting pro-environmental behaviours, thus individuals can transit into the pro-environmental behaviour effortlessly.

As the individuals' alignment towards renewed pro-environmental behaviour is beyond consumption or utilitarian orientation (Shaw et al., 2016), this study will thus define pro-environmental behaviours with respect to individuals who modify their consumption behaviour by adopting any of the three sustainable modes of reduce, recycle and

reuse (Moraes et al., 2012). This study will not focus on the individuals' particular product or service orientation when dealing with the environmental phenomenon. In the context of this study, to reduce means to minimise household or domestic waste generated in daily activities (Sheth et al., 2011), reuse activities refer to the repeated use of things or materials either in part or whole, with its original function (Kirchherr, Reike, & Hekkert, 2017; Roberts & Bacon, 1997), for example clothings and furniture, and recycle activities refer to the repurposing of things which cannot be reused (Papaioikonomou et al., 2012; Rezaei, Teng, Mohamed, & Shamsudin, 2012), for instance glass bottles recycled into vases. These three modes of pro-environmental behaviour and their benefits are noted in various studies (Akenji, 2014; Leonidou & Leonidou, 2011; Sheth et al., 2011; Mont & Plepys, 2008; Steinhorst, Klöckner, & Matthies, 2015).

2.2 *Attitude*

Attitude is a latent layer of reference point in an individual's cognitive process. It is the affection an individual holds towards a specific product, brand or behaviour (Bhattacharyya & Cummings, 2014; Secchi, 2009). Attitude can also be the state of an emotion, whether negative or positive, acting as a precursor for the pro-environmental behaviour. At the helm of the individual's thought process, attitude drives behavioural change. Considering that attitude can predict behaviour, it is important to understand when and which kind of attitude can predict behavioural change so as to understand how individuals behave in relation to environmental issues (Miller & Peterson, 2004; Clary et al., 1998).

Having a positive attitude towards pro-environmental activities such as ecotourism (Zhang & Lei, 2012) is a precursor of the individual's behavioural intention (Carrington et al., 2010). This can generate an active involvement in pro-environmental behaviours (Cho, Thyroff, Rapert, Park, & Lee, 2012). However, Cornelissen, Pandelaere, Warlop and Dewitte (2008) asserted that attitude towards ecological behaviours can be changed, moulded and influenced. This can be achieved by understanding the component elements and by exploring the positive cues that can increase the participation of environmental behaviours. In this regard, the following hypothesis is developed:

H₁: There is a positive relationship between attitude and pro-environmental behaviours.

2.3 Social Cognitive Theory – Perceived Self-efficacy

Sustainable behaviour is motivated by intrinsic and extrinsic factors which include the individual's characteristics and the conversion incentives of the environment (Caruana, Carrington, & Chatzidakis, 2015; Shaw et al., 2016; Breunig, Murtell, Russell, & Howard, 2014; McDonagh & Prothero, 2014; Moraes et al., 2012; Soyeze, 2012; Videras, Owen, Conover, & Wu, 2012). Intrinsic factors are the internal elements that drive the individuals to perform something while extrinsic factors are related to external motivations.

In a situation where there is disagreement between the individual's cognition and behaviour, the individual would experience uncomfortable feelings. This motivates the individual to re-resonate between his/her beliefs and behaviour so as to attain equilibrium. This is because the individual has an inner drive to harmonise the cognition and the behaviour so as to reduce the discomfort, thereby restoring balance and consistency of cognition and behaviour (Juvan & Dolnicar, 2014; Poortinga et al., 2013).

The social cognitive theory provides a clearer way of understanding how the individual's behaviour functions by giving focus to self-efficacy. According to Bandura (2001), self-efficacy is one of the important concepts in human functionality. It is the core determinant for an individual to regulate and reflect on his/her own behaviour (Bandura, 1991). It is not a genetically endowed personality trait, rather it highlights an individual's goal-oriented capability of coordinating his/her skills and abilities so as to achieve the desired goal in a particular sphere. The individual's self-efficacy beliefs are established across spatial and temporal variations and experiences.

Self-efficacy is the self-evaluation of one's capability and controllability (Gist, 1987). An individual makes a decision based on his/her own reflection of his/her capabilities and abilities. It is the belief which the individual has of him/herself in managing the ability to achieve a desired goal (Ajzen, 2002; Ryan & Deci, 2017). According to Bandura (1991), self-efficacy is the individual's self-system. It helps the individual to monitor and gauge his/her personal standard; it also helps the individual to evaluate different aspects of his/her behaviour and reaction according to post-performance behaviours. Individuals with high self-efficacy believe that they have the capability to act towards the desired goal while individuals with low self-efficacy will not pursue the desired goal because they perceive the task to be beyond their capability.

This phenomenon can occur even in the presence of opportunities within their surroundings (Jin, 2013b; Bandura, 1991).

The belief in self-efficacy is a manifestation of self-confidence within a given environmental setting. It leads an individual to invest his/her efforts into a pattern of thoughts, whether optimistic or pessimistic (Bandura, 1991, 2001). Self-efficacy belief can influence the way people cope with efficacy. It also helps to shield people from mental pressure, subsequently strengthening their attitude towards an object. Individuals with a higher level of perceived self-efficacy are confident of their own effectiveness and competencies. Their actions are based on a clear understanding and awareness about the consequences and implications. Self-efficacy can also cushion attitude change due to negative feelings such as anxiety which arose from uncertainty or barriers encountered while performing certain pro-environmental activities. Undoubtedly, individuals with higher perceived self-efficacy will proactively be sourcing for satisfaction solutions to overcome such barriers. Therefore, perceived self-efficacy can be a resistance to any counter persuasion since it enables the individual to maintain his/her behaviour across times and settings (Bandura, 1991, 2001; Vallacher & Wegner, 1989). In this regard, self-efficacy belief can consequently determine whether people would react positively or negatively in a particular situation.

The social cognitive theory predicts that people who see attitude as important and relevant to self-efficacy not only develop favourable attitudes towards sustainable behaviour, they also have higher levels of attitude stability (Moore & Homer, 2008; Glasman & Albarracín, 2006). The theory states that perceived self-efficacy has an effect in fostering the attitude which maintains the consistency of attitude-sustainable behaviour relationship. The theory also maintains that perceived self-efficacy serves as a dual mechanism on attitude and behaviour. Premised on the confidence in capabilities, it helps the individual to execute a goal. Perceived self-efficacy can function as a navigation tool which orchestrates the individual's resources towards a goal. It also enables the individual to counteract other external factors that challenge the individual's attitude. Based on the above discussions, this study hypothesised that perceived self-efficacy is able to mitigate the effect of environmental deficiencies which impede the individual from pursuing his/her pro-environmental goal persistently. Thus, the current study aims to examine the effect of perceived self-efficacy on both attitude and pro-environmental behaviours. The hypotheses thus formulated are as follows:

H₂: There is a positive relationship between perceived self-efficacy and attitude.

H₃: There is a positive relationship between perceived self-efficacy and pro-environmental behaviours.

The three hypothetical relationships formulated for this study are depicted in Figure 1.

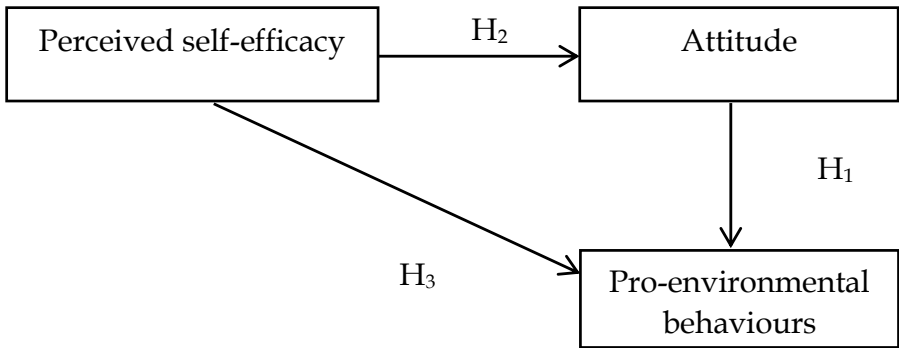


Figure 1: Research Framework

3. Methodology

3.1 Measure of Constructs

The constructs used in this study were adapted from literature to suit the context of this study (Appendix 1). In this regard, human behaviour is considered to be a fluid-like substance and is non-uniform and pro-environmental behaviours is deemed to occur within an individual through different modes such as reduce, re-use and recycle (Barr et al., 2011). Pro-environmental behaviours is operationalised as a wide spectrum of daily activities. For the purpose of this study, twelve items were adapted from scholars (Memery, Megicks, Angell, & Williams, 2012; Rezai et al., 2012; Han, Hsu, & Lee, 2009; Welsch & Kühling, 2009) to measure the pro-environmental behaviours, thirteen items were adapted from Jin (2013a, 2013b) and Schwarzer and Jerusalem (1995) to measure perceived self-efficacy and eight items were adapted from Boschetti, Richert, Walker, Price, and Dutra (2012) to measure attitude.

3.2 Survey Administration and Sample

This study employs the survey method. A questionnaire was developed based on the constructs adapted from literature so as to test the conceptual model and the hypotheses. The questionnaire was then piloted on 20 individual respondents. The feedback (e.g., inconsistency of wording, unclear or ambiguous items) from the pilot study was then used to refine the questions for a larger study.

Stratified random sampling technique was applied based on geographical location so as to avoid cases where members of the population would be significantly over or under represented (Churchill, 1996). This is an important consideration because in Malaysia, the local authorities are responsible for waste management. Consequently, the variations and effects across different geographical areas were considered. The samples were divided into five geographical regions of Malaysia: Northern, Central, Southern, the East Coast of Malaysia and East Malaysia. Thirteen towns were selected from these five geographical regions as shown in Table 1.

The distribution of the questionnaire was conducted based on the mall-intercept technique. For each of the towns selected, we identified a list of shopping malls. A call was made to the respective management of these shopping malls to obtain the number of mall visitors who visited

Table 1: Town and Shopping Malls Selected

Regions	Towns	Shopping Malls
Central	Petaling Jaya Damansara Utama Subang Jaya	One Utama Tropicana City Mall Subang Parade
Northern	Seberang Jaya George Town Air Hitam	Sunway Carnival Mall Gurney Plaza Sunshine Farlim Mall
Southern	Plentong Nusa Damai Johor Bharu	Giant Plentong Mall ECO AEON Tebrau
East Coast	Bentong Kuantan	Bentong Vega Mall Kuantan City Mall
East Malaysia	Kota Kinabalu Kuching	Imago Vivacity Megamall

each day. Based on the share of the shopping malls, we further selected one specific shopping mall. Permission to distribute the questionnaires was granted by the respective mall management prior to commencing the survey.

This study employed quota sampling as an approach where we selected 200 shoppers as our participants for each of the shopping mall. Prospective respondents were politely recruited as they exited from the mall. These participants, however, had to fulfil the selection criteria which encompass ethnicity, gender, age distribution, day of week and time of day so as to avoid systematic biases. A total of 2,600 questionnaires were distributed and the survey was conducted from 28 March 2015 to 2 September 2015 including weekdays and weekends. This helped to ensure that a wider range of profiles could be captured. Of the 2,600 questionnaires distributed, only 500 responses were obtained, generating 19 per cent response rate.

Table 2 depicts the respondents' profile. Sixty seven per cent of the respondents were Malays and Bumiputera, 25 per cent were Chinese, and eight per cent were Indians and others. Gender-wise, 52 per cent of the respondents were males and 48 per cent were females. This study include respondents aged 18 years old and above with 43 per cent being in the 18-35 age while 57 per cent were above 35 years old. About 68 per cent of the respondents were married with one out of two (50 per cent) married respondents having 1-2 children. The survey noted that

Table 2: Respondents' Profiles

	Frequency	Percentage
Region		
Central	225	45
Northern	50	10
Southern	85	17
East Coast	40	8
East Malaysia	100	20
Gender		
Male	260	52
Female	240	48
Ethnicity		
Malays and Bumiputera	335	67
Chinese	125	25
Indians and others	40	8

Table 2: (continued)

	Frequency	Percentage
Age		
18 – 25 years old	75	15
26 – 35 years old	140	28
36 – 45 years old	100	20
46 – 55 years old	85	17
56 years old and above	100	20
Marital status		
Married	339	68
Single	161	32
Number of children		
None	50	10
1-2	250	50
3-4	170	34
>5	30	6
Household size		
1-2 persons	46	9
3-4 persons	196	39
5-6 persons	186	37
7 persons or more	72	14
Highest level of education attained		
Primary or less	4	1
Secondary	78	16
Form 6/Pre-University or equivalent	35	7
College/Diploma/Vocational education or equivalent	142	28
Degree	171	34
Master degree and above	65	13
Professional courses/program	5	1
Employment		
Middle management or higher	87	17
Professional staff/supervisor/leader/engineer	123	25
Support staff/non-executive staff/administrative	111	22
Self-employed	81	16
Unemployed, students, retirees and housewives	98	20
Monthly personal gross income		
Less than RM2,000	132	26
RM2,000 – RM3,999	182	37
RM4,000 – RM5,999	96	19
RM6,000 – RM7,999	41	8
RM8,000 and above	50	10

39 per cent of the households comprised three to four members while 37 per cent stated that there were 5-6 persons in their households. From the socio-economic status, majority (76 per cent) of the respondents had attained at least a diploma or higher-level qualifications and 64 per cent of them were employed. Around 37 per cent reported having a monthly personal gross income of RM4,000 and above while 62 per cent claimed that their incomes were below RM4,000. Majority of the respondents were also above the Malaysian individuals' median monthly salaries and wages, specifically RM1,700 per month. This figure is in line with the statistics published by Khazanah Research Institute (2014).

4. Analysis and Findings

4.1 Pro-environmental Behaviours' Profile

The respondents' pro-environmental related activities are shown in Table 3. The figure indicates that reducing consumption activities occur more when compared to the recycling or reusing activities. These results imply that the respondents were conscious when it comes to utility consumption, specifically electricity and water consumption (Welsch & Kühling, 2009).

4.2 Measurement Model

A measurement model comprising all the three constructs, specifically pro-environmental behaviour, perceived self-efficacy and attitude were evaluated for validity and reliability. Traditionally, Cronbach's alpha is used to assess the internal consistency in social science research. However, applying Cronbach's alpha in PLS-SEM tends to generate conservative measurements and several researchers (Bagozzi & Yi, 1988; Hair, Sarstedt, Ringle, & Mena, 2012) have suggested using composite reliability as a replacement. In the context of this study, the internal consistency of the model was thus evaluated based on the composite reliability values. As depicted in Table 4, all the constructs have composite reliability of above 0.708, indicating that all the items are measuring the same phenomenon and they correlated highly with the respective constructs (Hair, Hult, Ringle & Sarstedt, 2014).

The measurement model was then assessed for convergent validity. Two dimensions were examined, namely (a) the outer loadings for each construct, where the outer loading value for all indicators should

Table 3: Activities Involve/Participate (percentage)

	Activities	Often	Occasionally	Never
Reduce	Reduce electricity consumption by turning off lights and using more energy efficiency appliances	89	11	0
	Make an effort to reduce water consumption	89	10	0*
	To buy fruits, vegetables and other groceries that are labelled as organic products	50	49	2
	Consciously choose to reduce consumption	75	24	0*
Recycle	Recycle plastics, glass, papers and other packaging materials	76	22	1
	Make use of recycling facilities	67	32	2
	Use recyclable shopping bags when going for shopping	64	33	3
	Store materials for recycling	74	25	1
	Separate and dispose all recyclable materials	68	30	2
Reuse	Reuse or amend items rather than throw them away	67	32	2
	Buy products in packages that can be refilled	73	26	1
	Look for ways to reuse things	69	29	1

Note: * Indicates less than 1%.

be above 0.7 or higher for further investigation, and (b) the average extracted variance (AVE) where all constructs should reach above the critical value of 0.5 (Chen & Peng, 2012; Parzefall & Kuppelwieser, 2012; Hair, Black, Babib & Anderson, 2009; Reisinger & Mavondo, 2007). In this study, both the outer loadings and the AVE were examined simultaneously. This step was performed so as to determine whether the removal of any item needs to be done so as to increase the AVE value. Any item with an outer loading of below 0.4 was eliminated (Hair et al., 2014). There were two items with outer loadings below 0.4 specifically, ATT3 and ATT4. Removal decision for these indicators was made using

Table 4: Convergent Validity

		Outer Loading	Composite Reliability	AVE
Attitude (ATT)			0.876	0.614
ATT1	I am personally committed toward preventing environmental problems.	0.801		
ATT2	I am personally committed toward improving environmental problems.	0.807		
ATT3	Environmental problems are as important as many other problems facing by the world today.	Deleted		
ATT4	I am concerned about environmental problems because of the potential consequences on my wealth.	Deleted		
ATT5	I am concerned about environmental problems because of the potential consequences on my lifestyle.	0.719		
ATT6	I am concerned about environmental problems because of the potential consequences on my health.	0.757		
ATT7	I am concerned about environmental problems because of the potential consequences on my community.	0.832		
ATT8	I am concerned about environmental problems because of the potential consequences on the world.	0.780		
Perceived self-efficacy (PSE)			0.942	0.590
PSE1	I can practice pro-environmental activities very easily.	0.717		
PSE2	I think that my ability to adopt pro-environmental lifestyle is greater than others.	0.735		
PSE3	I am able to understand the ways of sustaining the environment and apply it effectively.	0.770		
PSE4	I can solve difficult problems if I try hard enough.	0.723		
PSE5	If someone opposes me, I can find the means and ways to get what I want.	0.630		
PSE6	It is easy for me to stick to my aims and accomplish my goals.	0.785		
PSE7	I am confident that I could deal efficiently with unexpected events.	0.829		

Table 4: (continued)

		Outer Loading	Composite Reliability	AVE
PSE8	Thanks to my resourcefulness, I know how to handle unforeseen situations.	0.810		
PSE9	I can solve most problems if I invest the necessary effort.	0.806		
PSE10	I can remain calm when facing difficulties because I can rely on my coping abilities.	0.758		
PSE11	When I am confronted with a problem, I can usually find several solutions.	0.815		
PSE12	If I am in trouble, I can usually think of a solution.	0.828		
PSE13:	I can usually handle whatever comes my way.	0.757		
<i>Reduce</i>			0.771	0.597
ReD1	Reduce electricity consumption by turning off lights and using more energy efficiency appliances.	0.754		
ReD2	Make an effort to reduce water consumption.	0.850		
ReD3	Try to buy fruits, vegetables and other groceries that are labelled as organic products.	0.655		
ReD4	Consciously choose to reduce consumption.	0.817		
<i>Recycle</i>			0.900	0.715
ReC1	Recycle plastics, glass, papers and other packaging materials.	0.856		
ReC2	Make use of recycling facilities.	0.840		
ReC3	Use recyclable shopping bag when going for shopping.	0.785		
ReC4	Store materials for recycling.	0.875		
ReC5	Separate and dispose all recyclable materials.	0.868		
<i>Reuse</i>			0.896	0.827
ReU1	Reuse or amend items rather than throw them away.	0.909		
ReU2	Buy products in packages that can be refilled.	0.902		
ReU3	Look for ways to reuse things.	0.917		

Note: ATT 3 and ATT4 were excluded from further analysis, as they have loadings below 0.4.

the AVE as a guideline. When the first item (ATT3) was removed from Attitude (ATT), the ATT's AVE value increased from 0.477 to 0.545; and upon removal of the second item (ATT4), the result of the AVE for ATT rose even further to 0.614. Consequently, these two items were removed from ATT.

In this study, discriminant validity was also performed to ensure that no constructs overlapped, and that each individual construct is unique and distinct from other constructs. Three methods of the PLS-SEM were used to validate the discriminant validity (Hair et al., 2014) namely: (a) cross loading, (b) Fornell-Larcker criterion, and (c) Heterotrait-Monotrait Ratio (HTMT). Cross loading assessment was done to assess whether each item's outer loading on an associated construct is greater than the loadings on the other constructs. Table 5 shows all the items for each construct that meets the cross loading criteria, where all the items loaded highly on their respective construct, as compared to other constructs. All the constructs were also found to satisfy the Fornell-Larcker criterion (Hair et al., 2014), where the diagonal value, which is the squared root of the AVE of a specific construct, was found to be greater than the cross-correlation with other constructs (Table 6).

Discriminant validity was further analysed using the Heterotrait-Monotrait Ratio (HTMT), which compares the correlation of items across constructs to measure different phenomena and the correlation of items within the same construct for the same phenomena (Hair et al., 2014; Henseler, Ringle, & Sarstedt, 2014). The bootstrapping on HTMT inference yielded HTMT values that were significantly lower than 1 (Table 7).

Taken as a whole, all the constructs in the study were found to satisfy the validity and reliability assessments. In this study, the pro-environmental behaviours (PEB) being discussed were composed of three modes: reduce, reuse and recycle. Hence, the remaining analysis of this study will be based on the second order construct so as to assess the significant effect between the independent and the dependent variables in a parsimonious model. The second order construct for PEB was found to be valid and reliable where its composite reliability value is above 0.708 (Hair et al., 2014), and the average variance extracted (AVE) is greater than 0.5 (Chen & Peng, 2012; Parzefall & Kuppelwieser, 2012; Hair et al., 2009; Reisinger & Mavondo, 2007) (Table 8). Therefore, the second order construct for PEB is now ready for the next stage of assessment (Table 9).

Table 5: Discriminant Validity – Cross Loading

	ATT	PSE	Reduce	Recycle	Reuse
ATT1	0.801	0.568	0.456	0.418	0.465
ATT2	0.807	0.585	0.478	0.452	0.464
ATT5	0.719	0.430	0.255	0.238	0.261
ATT6	0.757	0.375	0.224	0.225	0.255
ATT7	0.832	0.520	0.345	0.367	0.404
ATT8	0.780	0.490	0.293	0.315	0.369
PSE1	0.618	0.717	0.427	0.443	0.451
PSE2	0.511	0.735	0.343	0.356	0.371
PSE3	0.636	0.770	0.395	0.409	0.443
PSE4	0.567	0.723	0.228	0.242	0.331
PSE5	0.379	0.630	0.246	0.146	0.245
PSE6	0.426	0.785	0.306	0.276	0.325
PSE7	0.430	0.829	0.272	0.300	0.344
PSE8	0.393	0.810	0.272	0.287	0.316
PSE9	0.476	0.806	0.230	0.241	0.303
PSE10	0.426	0.758	0.257	0.262	0.307
PSE11	0.526	0.815	0.342	0.256	0.322
PSE12	0.496	0.828	0.308	0.252	0.304
PSE13	0.343	0.757	0.223	0.211	0.273
ReD1	0.326	0.307	0.754	0.470	0.417
ReD2	0.372	0.298	0.850	0.531	0.474
ReD3	0.310	0.291	0.655	0.436	0.452
ReD4	0.394	0.336	0.817	0.561	0.497
ReC1	0.376	0.273	0.591	0.856	0.593
ReC2	0.372	0.361	0.605	0.840	0.638
ReC3	0.361	0.311	0.494	0.785	0.580
ReC4	0.387	0.328	0.508	0.875	0.666
ReC5	0.388	0.355	0.546	0.868	0.696
ReU1	0.432	0.350	0.520	0.750	0.909
ReU2	0.429	0.415	0.535	0.630	0.902
ReU3	0.471	0.459	0.571	0.668	0.917

Table 6: Discriminant Validity – Fornell-Lacker Criterion

	ATT	PSE	Recycle	Reduce	Reuse
ATT	0.783				
PSE	0.645	0.768			
Recycle	0.446	0.385	0.845		
Reduce	0.456	0.399	0.650	0.773	
Reuse	0.488	0.448	0.752	0.596	0.910

Table 7: Discriminant Validity – Heterotrait-Monotrait ratio (HTMT)

	ATT	PSE	Recycle	Reduce	Reuse
ATT					
PSE	0.671				
Recycle	0.482	0.401			
Reduce	0.529	0.454	0.779		
Reuse	0.531	0.474	0.835	0.720	

Table 8: Result Summary for Validity and Reliability Tests for Pro-Environmental Construct

	Composite Reliability	AVE	Discriminant Analysis
Reduce	0.771	0.597	YES
Recycle	0.900	0.715	YES
Reuse	0.896	0.827	YES

Note: Indicator reliability = Outer loading with the power of 2.

Table 9: Weights of First-Order Constructs on the Designated Second-Order Construct

Second Order construct	First Order construct	Weights	t-values	p-values
Pro-environmental behaviours (PEB)	Recycle	0.936	146.458	0.000*
	Reduce	0.820	45.688	0.000*
	Reuse	0.882	65.408	0.000*

Note: *Significant value at 0.001.

All the constructs hypothesised in the present study were examined. There was no evidence to indicate collinearity between the constructs (Table 10). This outcome is further supported by the VIF values for all the constructs which is less than 5 (Hair et al., 2014).

Table 10: Collinearity Assessment: Inner Variance Inflation Factor (VIF) Values

	ATT	PEB
ATT		1.880
PSE	1.467	2.157

4.3 Structural Model Analysis

The structural model relationships were examined for their significance and also to test the hypotheses. Through bootstrapping with an iteration of 2,500, the examination of the hypotheses was based on a significance level of five per cent, (5%), on the one-tail test with a t-value of above 1.645. As shown in Table 11, the relationship between attitude (ATT) and pro-environmental behaviours (PEB) was found to be positive ($\beta=0.290$; $t=5.702$; $p<0.05$) while perceived self-efficacy (PSE) was found to have a positive relationship with attitude (ATT) ($\beta=0.478$; $t=10.607$; $p<0.05$).

Table 11: Path Coefficients

Hypotheses	Path	Path Coefficients	t-values	p-values	Results
1	Attitude (ATT) → pro-environmental behaviours (PEB)	0.290	5.702	0.000*	accepted
2	Perceived self-efficacy (PSE) → attitude (ATT)	0.478	10.607	0.000*	accepted
3	Perceived self-efficacy (PSE) → pro-environmental behaviours (PEB)	0.060	1.098	0.136	rejected

Note: *Significance level, $p<0.05$, t-value at one-tail = 1.645.

Therefore, H_1 and H_2 were supported. In contrast, the relationship between perceived self-efficacy and pro-environmental behaviours was found to be not significant ($\beta=0.060$; $t=1.098$; $p>0.05$). Therefore, H_3 was rejected. Table 11 shows the results of the hypothetical relationships.

As H_3 was rejected, this study performed an additional subgroup analysis to further determine whether the result will remain similar with respondents who have higher pro-environmental behaviours. The derived mean score for pro-environmental behaviours was dichotomised into two different levels which include a high level with a score above the mean score and a low level where the score is below the derived mean score for pro-environmental behaviours. Group 1 featured respondents with high engagement in pro-environmental behaviours and Group 2 featured respondents with low engagement in pro-environmental behaviours.

The result drawn from Group 1 showed a positive relationship between perceived self-efficacy and pro-environmental behaviour. In contrast, there was no significant relationship between perceived self-efficacy and pro-environmental behaviour among Group 2 respondents with low levels of pro-environmental behaviour ($\beta=-0.011$; $t=0.123$, $p>0.05$) (Tables 12 and 13).

Table 12: Path Coefficients among High Level of Pro-Environmental Behaviours

	Path Coefficients	t-values	p-values
Perceived self-efficacy (PSE) → pro-environmental behaviours (PEB)	0.138	1.871	0.031*

Note: * Significance level, $p<0.05$, t-value at one-tail = 1.645.

Table 13: Path Coefficients among Low Level of Pro-Environmental Behaviours

	Path Coefficients	t-values	p-values
Perceived self-efficacy (PSE) → pro-environmental behaviours (PEB)	-0.011	0.123	0.451

Note: Significance level, $p<0.05$, t-value at one-tail = 1.645.

5. Discussion

This study has examined the effect of perceived self-efficacy on attitude and pro-environment behaviours of 500 respondents. In line with H₁, attitude has a positive relationship with pro-environmental behaviours in daily activities. Perceived self-efficacy also has a positive effect on attitude. However, the positive relationship between perceived self-efficacy and pro-environmental behaviours was only reported by individuals with high levels of pro-environmental behaviours.

5.1 *Attitude and Pro-environmental Behaviours*

Attitude can act as a reference frame for individuals to persist in reaching their desired behaviours (Akenji, 2014) since attitude has a significant relationship with pro-environmental behaviours, as supported by existing findings (White & Simpson, 2013; Cho et al., 2013; Zhang & Lei, 2012; Carrington et al., 2010; Ramayah et al., 2010; Welsch & Kühling, 2009; Cornelissen et al., 2008; Follows & Jobber, 2000).

The individual's attitude towards pro-environmental behaviour is a high determinant of the individual's desire to improve his/her living conditions and in adapting to environmental issues. This is crucial for a country because environmental consequences create serious impacts on a community. Besides being influential as a predisposition that can cause potential consequences on the world, the individual's attitude towards a certain behaviour such as health and lifestyles can also create consequences leading to environmental problems. This observation is also supported by previous findings (Akenji, 2014; Bucic et al., 2012; Sheth et al., 2011) which showed that individual goals and standards are the key motivating factors for individuals to adopt sustainable behaviours such as showing higher relevancy and closeness to environmental issues, showing greater favourable attitude towards pro-environmental behaviours, and having lesser psychological distance with the environment (Cornelissen et al., 2008).

5.2 *Perceived Self-efficacy and Attitude*

The social cognitive theory states that perceived self-efficacy has a significant impact on attitude. Likewise, the result of this study shows that perceived self-efficacy has a significant positive effect on attitude, thereby supporting the theory and is consistent with existing literature

(Jiang, 2015; Jin, 2013b; Moore & Homer, 2008). It appears that perceived self-efficacy can steer an individual's attitude towards self-confidence in efficiently dealing with unexpected events; it also encourages self-initiated solutions besides assisting the individuals in formulating alternate solutions for handling unforeseen situations.

Individuals have acknowledged that perceived self-efficacy enable their actions to be goal-oriented; it also helps them to understand and apply effective ways of sustaining the environment, including coping, handling and adopting capabilities that correspond to the environmental activities and lifestyles (Wilcox et al., 2009). Perceived self-efficacy can make individuals believe in their own efforts; it further enhances the individuals' confidence to practise pro-environmental activities with ease and so become capable of finding the resources, means and ways to react to any counteractions. This can subsequently lead to the development of a positive and confident attitude (Zunick, Teeny, & Fazio, 2017).

The positive influence of perceived self-efficacy on attitude further suggests that perceived self-efficacy serves as a psychological mechanism which maintains and increases the individual's evaluation of his/her internal quality. Perceived self-efficacy plays a significant role in reinforcing attitude formation. This is supported by the social cognitive theory which states that an individual's belief in his/her ability to perform will have some effect on the selection process which regulates one's behaviours, one's coping capabilities, one's level of motivation, and one's goal accomplishment. It not only affects human functioning directly, but also indirectly, through its impact on other important determinants such as the selection process, motivation, affection or attitude (Bandura, 1993, 2001). Therefore, perceived self-efficacy occupies a focal and pervasive pivotal role in causal structures.

5.3 Perceived Self-efficacy and Pro-environmental Behaviour

The outcome drawn from this study does not support the hypothesised direct influence of perceived self-efficacy on pro-environmental behaviours. Nonetheless, further analysis of the effect of perceived self-efficacy on different levels of pro-environmental behaviour revealed that the relationship between perceived self-efficacy and pro-environmental behaviours is significant, particularly among those whose pro-environmental behaviour engagement is high. Results indicate that the

higher the perceived self-efficacy is, the higher one's self-confidence in contributing to the environment through one's behaviour. This drives a higher level of pro-environmental engagement. The findings of this study suggest that high pro-environmental behaviour adoption is attributed to individuals who are confident that they can manoeuvre the challenges associated with pro-environmental behaviours.

In summary, this study has expanded knowledge on the stability of attitude and behaviour. This study also suggests that perceived self-efficacy has a direct influence on attitude. The positive relationship between perceived self-efficacy and attitude implies that perceived self-efficacy can strengthen one's attitude towards sustainable behaviour. With the presence of perceived self-efficacy, individuals will be more determined and more conscious of the consequences and effects of their own actions. They are also able to ascribe to the rationale of 'why' they acted in a certain way. As such, individuals will be consistent in their behaviour over time. Such individuals will choose an action that is aligned to their own capacity as supported by their own experiences (Steinhorst et al., 2015; Vallacher & Wegner, 1989).

Perceived self-efficacy is a cognitive evaluation process. It functions in self-evaluation and is subsequently transmitted to attitude formation (Jiang, 2015). The efficacy belief posits significant motivating effects, where the belief influences an individual to adapt or make necessary changes corresponding to the situation; either through own behaviour or by influencing surrounding characteristics. The current results contribute to current literature not only by expanding the understanding of the contributing factor in building the strength of attitude and behaviour but also by providing evidence which depicts that perceived self-efficacy can be a resistance to counter persuasions (Cheatham & Tormala, 2015).

5.4 Implications

The empirical evidence of this study points towards the congeniality of lifestyle-centric pro-environmental behaviours in daily routines within the personal setting. Driven by their attitude towards pro-environmental behaviours, individuals will strive to balance their environmental concerns with their capabilities and capacities (perceived self-efficacy).

Majority of the respondents in this study reported that they frequently and consciously reduce utility and other consumptions when compared to recycle and reuse activities. This may be explained by the fact that behaviour occurs in a personal setting and when

coupled with a high level of perceived self-efficacy, the behaviour will contribute to lower adoption barriers. It is easier for the individuals to adopt consumption reduction as there is no need to seek external assistance unlike the other two activities of reuse and recycle which are subjected to external factors. For example, recycling facilities and the nature of reusing packagings rely on the support provided by external organisations. Therefore, policy makers need to strategise so as to target different levels of pro-environmental behaviour adopters. Doing so can facilitate self-help among the general public thereby, sustaining their pro-environmental behaviours.

Acknowledging that the adoption level of pro-environmental behaviour is different between individuals, this study has highlighted that perceived self-efficacy exerts different modus orientations to diffuse the behaviour. Since perceived self-efficacy can lead to high pro-environmental behaviour engagement, it is essential for marketers and the government to provide an environment that is conducive and does not limit behaviours.

The findings of this study can be used as a guideline by marketers to develop their persuasion tools which can engage and educate environmental information seekers and subsequently, institutionalise pro-environmental attitudes into the daily activities of the society (Breunig, Murtell, Russell, & Howard, 2014; Hullett & Boster, 2001). Even though this study could not yield sufficient evidence to support that perceived self-efficacy has a direct influence on pro-environmental behaviours adoption, there is a probability that perceived self-efficacy exerts divergent effect on different levels of pro-environmental behaviours. There was an evident positive relationship between perceived self-efficacy and behaviour among high level adopters. This implies that when individuals engage in pro-environment behaviour in their daily activities, the experiences are similar to the actual competencies required in their daily behaviour.

Since self-efficacy has emerged as a factor that can promote attitude and encourage a behaviour that can resist persuasion attempts, it is possible for a marketer to increase its intervention efforts by targeting specific control beliefs which can enhance controllability. Marketers could emphasise that it is possible that 'you' expose yourself and family members to disadvantages when 'you' disengage from pro-environmental behaviours. Campaigns should emphasise that pro-environmental behaviours can happen in daily activities without requiring extra efforts such as reduce, reuse and recycle.

The findings of this paper expand on literature by providing an understanding of the motivational factors underpinning pro-environmental behaviours which is beyond product or service usage. Responding to the suggestion of scholars (Akenji, 2014; Leonidou & Leonidou, 2011; Sheth et al., 2011; Mont & Plepys, 2008), this study shows that lifestyle-centric pro-environmental behaviour promotes a better understanding of the role of consumption when addressing environmental challenges. It also shows how pro-environmental behaviour adoption can be motivated across green and non-green products or services.

According to Carrington et al. (2010), situational factors act as important stimulus for individuals to participate in pro-environmental activities. The lifestyle-oriented pro-environmental behaviour examined in this study has set a good platform which is consistent with the dimensions characterised by Carrington et al. (2010), specifically (i) that the behaviour is in close proximity with the individuals' daily activities, requiring a minimal learning curve (physical surrounding and antecedent states), (ii) that individuals are highly involved in and have embedded pro-environmental behaviours within their daily roles (social surrounding and task definition), (iii) that since behaviour is part of a daily routine, there is no time lapse and the behaviour is repeated frequently (temporal perspective), and (iv) that there is lower perceived risk and uncertainty with regards to the outcome of a behaviour that is related to stronger attitude and behaviour engagement.

From the regulatory and marketers' perspectives, this study puts forward the opinion that lifestyle-centric pro-environmental behaviour provides a psychological 'lubricant', where the behaviour-situation fits and is non-intrusive to the individual's existing daily routine. The lifestyle approach possibly fosters pro-environmental behaviour participation, and so it is a plausible mechanism that can facilitate the narrowing of any psychological distance. This is achieved through the practical information gained from the daily routines (Caruana et al., 2015; van Dam & Fischer, 2015; Carrington, Neville, & Whitwell, 2012; Leonidou & Leonidou, 2011; Miller et al., 2010; Powell & Colyvas, 2008) hence, it minimises the information asymmetry issue. Furthermore, lifestyle centric pro-environment engagements are *personalised*, i.e. the individuals are able to relate to, and appreciate the pro-environmental activities. In that regard, they can re-calibrate the pro-environmental activities that will fit well into their values and beliefs.

6. Conclusion and Recommendation for Future Study

It is evident that the self-efficacy mechanism has a significant influence on attitude. The mechanism enables individuals to orchestrate their capabilities in managing their daily activities and in coping with the dynamic environmental sustainability issues (Ajzen, 2002; Bandura, 1993; Vallacher & Wegner, 1989). Perceived self-efficacy will reaffirm the self-determinant aspects of the individuals who are in search of solutions and the execution of strategies in dealing with prospective conditions.

Perceived self-efficacy enables individuals to preserve their pro-environmental behaviours, particularly among individuals who are highly engaged in pro-environmental behaviours (Bandura, 1982). This implies that when individuals encounter a counterintuitive environment that can possibly impede their pro-environmental behaviours, their perceived self-efficacy will be activated and these individuals will be prompted to find an alternative solution within their own capabilities and capacities to accomplish their desired behaviours.

This study has demonstrated that perceived self-efficacy makes attitude 'healthier' and resistant because it provides individuals with the supporting information and arguments needed to perform an action. Perceived self-efficacy is evidently, a potent predictor to attitude; it fortifies attitude towards pro-environmental behaviours. The finding of this study suggests that future research should examine the antecedents of perceived self-efficacy so as to enable a deeper understanding of the factors that contribute to an individual's active coping strategy.

This study is limited by the absence of a rural community which has different environmental settings, both in the public and private sphere, when compared to the urban setting. In addition, the self-reported statements of this study were based on the respondents' ability to recall past experiences of pro-environmental behaviours and not based on recent behaviours. Therefore, the retrospection of behavioural incidences could have been over-reported or under-reported unintentionally.

This study also suggests the possible presence of an intervening variable in the relationship between perceived self-efficacy and pro-environmental behaviours. The cues of the effect of self-efficacy on different levels of pro-environmental behaviours have given rise to possible self-monitoring efforts which play an important role in managing the attitude-behaviour relationship. Therefore, future research should consider investigating the contributing factors that amplify the

state of perceived self-efficacy among lower pro-environmental behaviour adopters by integrating self-regulatory theory insights to enrich the body of knowledge.

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Appendix 1: Measurement Items

Constructs and Items	Source
<p><i>Attitude</i></p> <ol style="list-style-type: none"> 1. I am personally committed toward preventing environmental problems. 2. I am personally committed toward improving environmental problems. 3. Environmental problems are not as important as many other problems facing by the world today. 4. I am concerned about environmental problems because of the potential consequences on my wealth. 5. I am concerned about environmental problems because of the potential consequences on my lifestyle. 6. I am concerned about environmental problems because of the potential consequences on my health. 7. I am concerned about environmental problems because of the potential consequences on my community. 8. I am concerned about environmental problems because of the potential consequences on the world. 	<p>Boschetti et al. (2012)</p>
<p><i>Perceived Self-efficacy</i></p> <ol style="list-style-type: none"> 1. I can practice pro-environmental activities very easily. 2. I think that my ability to adopt pro-environmental lifestyle is greater than others. 3. I am able to understand the ways of sustaining the environment and apply it effectively. 4. I can solve difficult problems if I try hard enough. 5. If someone opposes me, I can find the means and ways to get what I want. 6. It is easy for me to stick to my aims and accomplish my goals. 7. I am confident that I could deal efficiently with unexpected events. 8. Thanks to my resourcefulness, I know how to handle unforeseen situations. 9. I can solve most problems if I invest the necessary effort. 10. I can remain calm when facing difficulties because I can rely on my coping abilities. 11. When I am confronted with a problem, I can usually find several solutions. 12. If I am in trouble, I can usually think of a solution. 13. I can usually handle whatever comes my way. 	<p>Jin (2013a, 2013b)</p> <p>Schwarzer & Jerusalem (1995)</p>

Appendix 1: (continued)

Constructs and Items	Source
<p><i>Pro-environmental Behaviour</i></p> <ol style="list-style-type: none"> 1. Reduce electricity consumption by turning off lights and using more energy efficiency appliances. 2. Make an effort to reduce water consumption. 3. Try to buy fruits, vegetables and other groceries that are labelled as organic products. 4. Consciously choose to reduce consumption. 5. Recycle plastics, glass, papers and other packaging materials. 6. Make use of recycling facilities. 7. Use recyclable shopping bag when going for shopping. 8. Store materials for recycling. 9. Separate and dispose all recyclable materials. 10. Reuse or amend items rather than throw them away. 11. Buy products in packages that can be refilled. 12. Look for ways to reuse things. 	<p>Memery et al. (2012); Rezai et al. (2012); Han et al., 2009; Welsch & Kühling (2009).</p>