

## MODERATING EFFECTS OF PSYCHOLOGY FACTORS FOR STEWARDSHIP OF SUSTAINABLE BEHAVIOURS: A CONCEPTUAL FRAMEWORK

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### ABSTRACT

*Empirical research and opinion polls make it evident that environmental awareness, consciousness and concerns are highly registered, and pro-environment behaviour adoption is the function of the said factors; moreover marketers are active to adopt pro-environmental marketing strategies and environmental appeals to contribute in addressing these environmental issues. However, various symptoms, such as licensing and rebound effects signifies pro-environmental behaviours are not sustained in different spatial and temporal dimensions, and does not spill over to a wide range of activities, resultant of minute improvements on the environment. Thus, this study aims to expand the knowledge domain by examining the moderating effect of individuals' psychology factors on attitude-sustainable behaviours relationship, and subsequently in sustaining the consistency of attitude-sustainable behaviours relations. The overriding research objective is twofold, (i) to examine the moderating effects of personal characteristics (age, gender and education) as a social stimulus in diffusing sustainable behaviours, and (ii) to identify factors to sustain attitude-sustainable behaviours relationship. Through the understanding of latent factors that drive sustainable behaviours, it will provide insights for various stakeholders in enhancing managerial discretion, or latitude of action, coupled with concomitantly greater organisational variety for more pronounced and sustainable behaviours ecologically, culturally, socially, economically and politically.*

Keywords: Psychological factors; sustainable behaviours; demographic profile; attitude-sustainable behaviour gap.

### Introduction

Humans and the environment co-exist and are greatly entwined with each other. Although individuals are positioned at the end of the value chain as passive receiver of products, the reciprocal effect and the interlocking of human behaviour and the environment are inevitable. In the face of survival, environmental matters fall by the wayside as everyone focuses on direct impact issues. Humans have the responsibility to ensure the healthy state of the environment, either through the preservation or preventive approaches (Milfont & Sibley, 2012), in order to prevent any undesirable encircled circumstances that will jeopardize human quality of life. In terms of environmental issues and climate change, their success is inevitable with behavioural change.

Despite acknowledging the importance of environmental issues, individuals' as-usual behaviours continue regardless of the consequences on the environment. All indicators discourse that environmental issues are not able to impart and sustain a significant share of people's minds, and are always in the position to carry out forceful events to gain the attention of the general public. This alludes to Bucic, Harris, and Arli (2012)'s findings, which stated that the righteousness of environmental consideration is placed after utilization characteristics are fulfilled, adding additional challenges to be dealt with.

Sustainable behaviours are remedied in responding to reduce environmental stress significantly through renewed individual behaviours in all phases, starting from the decision making process, then to the usage and consumption stage, and finally, the disposal stage (Gram-Hanssen, 2012; Evans, 2011). This is further encored by Sheth, Sethia, and Srinivas (2011) that individual consumption behaviour mediates the impact of supply chain on the both wellbeing of environment and consumers.

Personal characteristics are variables commonly applied by marketers in segmenting the pro-environment market, where existing utilisation of personal characteristics for profiling exercise of a certain matter, such as the age, gender and socio-economic profile of green consumers. Instead of encoring with similar exercises, the current study attempts to examine the underlying psychological elements' moderating effects of personal characteristics (age, gender and education) on attitude-sustainable behaviours relationship. This approach attempts to understand the latent motivational factors associated with demographic and socio-economic profiles through investigation of underlying psychological perspectives of person variables, and subsequently its function as a social stimulus in diffusing sustainable behaviours.

## Literature review on state of sustainable behaviours

Addressing climate challenges is of utmost urgency, as it affects the human physiological and security needs, ranging from shelter, food, breathing, and health. Acknowledging the vast effects of climate changes, mere incremental and individualized efforts will not be able to result in the desirable impact on the environment and contain the climate crisis effectively.

Existing research findings have characterized individuals partaking pro-environmental related activities are apparent among urbanites (Rezai, Teng, Mohamed, & Shamsudin, 2012) and younger adults aged 35 and below (Teng, Rezai, Mohamed, & Shamsudin, 2012). It is interesting to note that young and educated individuals indicate stronger environmental concerns and pro-active commitment as compared to their less educated or older counterparts (Mäkiniemi & Vainio, 2013; Chen & Peng, 2012; Teng et al., 2012). In addition, pro-environmental concerns are highly associated with higher income groups; without worrying for surviving with basic necessities, higher income earners have higher capability to engage in pro-environmental behaviours (Bucic, Harris, & Arli, 2012; Rezai et al., 2012). Gender wise, (Bucic et al., 2012) females are more engaged with pro-environmental activities (Kalamas et al., 2013; Bucic et al., 2012; Rezai et al., 2012; Subhani, Hasan, Osman, & Rudhani, 2012; Rezai, Mohamed, Shamsudin, & Teng, 2011).

Based on the demographic and socio-economic profile perspectives, financial self-sufficiency, advancement in communication infrastructure and ease of information availability in urban areas have enabled individuals to be exposed to rich information about ecological issues. The availability of a range of pro-environmental products and services possibly prompted individuals to engage with pro-environmental behaviours. The traits of early sustainable behaviour adopters are: motivated beyond basic necessity and material needs, equipped with higher education, and coupled with advanced knowledge, which attribute to the positive disposition towards pro-environmental products and services; these empower them to act confidently (Chen & Peng, 2012).

Pro-environmentally significant actions, such as climate-friendly behaviour, have been the subject of empirical studies since the 1970s, and a broad range of factors have been identified and repeatedly highlighted in most of the studies. Sustainable consumption engagement, or green lifestyle adoption, can be justified with various reasons. Individual consumers' choice of sustainable consumption can be deliberate, to realize their perceived value attached to sustainable consumption behaviour. Salient values associated with sustainable consumption are multifaceted. Paavola (2001) suggested that, under conditions of value pluralism, the more values associated the higher tendency for an individual to engage with pro-environmental activity.

Polling data generally suggests the current environmental concerns and individuals' pro-environment behaviours alone are not sufficient to effectively combat environmental challenges. The United Nations Environment Programme (UNEP) highlights that environmental unfriendly product use shows no sign of decreasing. Based on Municipal waste collection indicators, the 'buy, use and throw-away' behaviour is at upward trend from year to year, between 1995 and 2009 (*UNEP Year Book 2013: Emerging issues in our global environment*, 2013). Similar observations in Malaysians' behaviours towards the environment evidenced that every Malaysian generated 1.52 kg of average municipal waste daily in the year 2002, and this is projected to increase to 1.9 kg per capita per day by the year 2025 (Hoorweg & Bhada-Tata, 2012). Furthermore, the composition of municipal waste generated by Malaysians is 62% organic, which is made up of food and horticultural waste, followed by plastic (12%), paper-based waste (7%), metal (6%) and glass (3%).

There is a negative relationship between advancement in human development and the state of environment. Urbanization, population growth and increasing affluence have a significant impact towards climate changes and environmental challenges, such as the depletion of natural resources, and the deterioration of air and water quality. To put in perspective, the rising quality of life leads to the increasing demand of products and services. The increase of purchasing power will cause 'throw away' behaviours to be intensified, and more resources are required in meeting the increasing demand; the recirculation is endless. The waste generation phenomenon is a vast daisy chain of effects, stretching from the increase of waste management expenditure by a country to more greenhouse gas emission in the process of the waste treatment disposal process. In addition, more resources will be needed to produce products and services.

Axsen, TyreeHageman, and Lentz (2012) corroborated that individual lifestyle is a fluid and dynamic process, where no activities are consistent across time and space, and are subject to different engagement processes. Grolleau, Ibanez, and Mzoughi (2009) argue that consumers' behaviours are not fixed over products and time, where the same consumer will behave altruistically for certain products but egoistically for other product categories. All in all, consumers will develop and respond to different levels of altruism over time at different conditions. This signals individuals' decisions in engaging sustainable behaviours are contingent to temporal and spatial boundaries.

People will be more likely to engage in sustainable behaviours when both temporal and spatial dimensions are compatible with each other (Meijers & Stapel, 2011). Meijers and Stapel (2011) posited that when both time perspectives and person perspectives are befitting, people are more willing and commit to sustainable behaviours. That is, both dimensions interact with and impact perceived behavioural control (PBC). The compatibility of both time and situation perspectives results in a more positive feeling and a higher PBC. This might further elevate positive attitudes towards sustainable behaviours and the likelihood of repetitive sustainable behaviours as a habit.

Individuals expressing their interest to engage in behaviours to minimize environmental impact and expect improvement in environmental quality will be granted with either self-centred or other-centred welfare gains (Howell, 2013; Paavola, 2001; Follows & Jobber, 2000). Pro-environmental behaviour with welfare-based motivations only gains short term significance to consumer choice. Scholars claim that individuals are willing to pay for the value of environmental quality change with the expectation of self-centred welfare maximization; on the other hand, other-centred welfare with the assumption individuals will obtain non-monetary and/or psychological gratification from their engagement.

The meta-analysis from the past two decades to investigate environmental attitudes revealed several key indicators on determinants of attitude (Franzen & Vogl, 2013). The analysis highlights that climate changes trigger significant cognitive effects, and individuals will develop affection towards environmental challenges, which leads to the willingness to act and contribute to environmental conservation and restoration efforts. Every individual responds differently to the environment, and this is attributed by individual idiosyncrasies, such as variety-seeking habits, cognitive maturity and needs (Oliver, 1999).

A positive attitude is paramount, and plays an important role in actuating a desired behavioural change (Wang & Chen, 2012), and consuming information and perception (Rucker, Tormala, Petty, & Briñol, 2013). Studies on asset attitude and behaviour are linked inextricably. Attitude is at the helm to drive behavioural change. Although green consumers mostly have a positive disposition on pro-environmental behaviours, this does not universally translate into action. One intriguing approach is to understand factors that influence the strength of attitude-sustainable behaviours relationship. Thus, understanding the moderating factors within attitude-sustainable behaviours relationship will lead to induce the correct stimulation to change and sustain the relationship.

### Research issues and gaps

The attitude-behaviour gap (Davies, Lee, & Ahonkhai, 2012; Papaioikonomou, Valverde, & Ryan, 2012; Phipps et al., 2012) has stymied the effort to achieve and sustain profound sustainable behaviours. The gap attributes to cognitive dissonance. In the cognitive dissonance theory, Festinger theorizes that, when a situation induces disagreement between cognitions (attitudes, or beliefs or values) and behaviour, an individual will experience feelings of discomfort. As such, individuals will be impelled to narrow the differences between cognitions and behaviours. Due to the arousal of feelings of discomfort, individuals will have an inner drive to harmonize between cognitions and behaviours. This is carried out through the alternation of cognitions or behaviours, in order to eliminate discomfort and restore the balance of cognitions and behaviours, and uphold consistency and harmonize cognition (Poortinga, Whitmarsh, & Suffolk, 2013).

Existing research findings have identified salient antecedent elements of sustainable behaviours, and suggested individual and institutional connections interact among each other, increasing their potency, and greatly amplifying people's abilities to consolidate efforts and spread support to outlast sustainable behaviours (Carrington et al., 2012; Phipps et al., 2012). Conversely, there are different pro-environmental behaviour adoption intensities. Personal characteristics are variables commonly applied by marketers in segmenting the pro-environment market. This study approaches the personal characteristics by further analysis of the underlying psychological perspectives of person variables, in order to understand the latent factors and function as social stimulus to sustain the attitude-sustainable behaviours relationship.

On the other hand, existing research uses a one-dimensional approach when dealing with pro-environmental behaviour, and studies are either product or service centric (e.g., the adoption of environmental friendly products, green tourism, etc.), or activity-centric (e.g., recycling). Environmental issues are not a uni-dimensional matter, but rather are a multifaceted matter and possess a vast domino effect. Therefore, sustainable behaviours cannot be approached using a myopic strategy. This study intends to undertake sustainable behaviours in a comprehensive manner. Human behaviours are fluid-like and non-uniform. Sustainable behaviours can occur in different forms of an individual, such as purchasing energy efficiency light bulbs, the reuse of packaging, the opt for public transportation, and etc. (Barr, Shaw, & Coles, 2011). Thus, sustainable behaviours should be a total summation of all pro-environmental activities, whether product-centric and activities based, which comprise all pro-environmental practices in daily activities.

### Theoretical underpinnings

Traditionally, personal characteristics function as profiling exercise of certain matters, such as the age, gender and socio-economic profiles of green consumers. However, instead of encoring with similar exercises, the current study attempts to understand the latent motivational factors with different demographic and socio-economic profiles. Instead of correlational investigation, which is to identify the psychological factors to promote pro-environmental products and services adoption, this study intends to use the effectuation approach to understand the precursors for action-based 'unsustainable behavioural discontinuity', and the key 'catalytic' to sustain behavioural change through perspectives of the socio-emotional selectivity theory, gender role theory and role expansion theory.

#### a. Gender role theory

Drawing on the gender role theory, both females and males will behave congruently with their gender role. The beliefs of both females and males will act distinctly in corresponding to their gender-role-behavioural norms. The theory highlights that role-based behavioural norms will drive both females and males to behave differently, as their behaviours will align with feminist and masculine traits respectively.

The gender role theory theorizes that females and males will behave according to their gender-role. Females will prescribe to communal-oriented behaviours, which are indirect and other-connected, interdependent and assume feminine role, as compared to their male counterparts, with direct, independent, and self-centred orientation, and salient characteristics of argentic-oriented behaviour (Dommer & Swaminathan, 2013; Gebauer, Wagner, Sedikides, & Neberich, 2013; Evanschitzky & Wunderlich, 2006).

According to the aforementioned theory, males and females prescribe distinctive argentic and communal behaviours respectively (Gebauer et al., 2013). Conversely, agency-communion will influence the gender response to a phenomenon, where females are expected to act and motivate differently from males in the context of environment issues. Therefore, gender role theory to examine the gendered nature of behaviour in influencing pro-environmental behaviours, which premised on role-based behaviour will steer individuals' sustainable behaviour subscription congruent to their societal gender norms.

#### b. Socio-emotional selectivity theory

The socio-emotional selectivity theory highlights that every individual assumes multiple roles with different and possible contracting goals. The theorists categorize the goals into two broad categories, namely, knowledge-oriented and emotional-oriented goals. Under the knowledge-oriented goal, individuals are motivated to pursue information and knowledge from the social interaction process. On the other hand, emotion motives will drive an individual to engage and contact with others for emotional comfort (Wiernik, Ones, & Dilchert, 2013; Carstensen, Isaacowitz, & Charles, 1999).

The socio-emotional selectivity theory propagates that perception of time is essential in determining and prioritizing social goals and direct human behaviours. Time is operationalized through age, and the amount of time left in life, and not the amount of time after birth. When an individual perceives time is open-ended, and the future is expandable, particularly among young cohorts, this will prioritize knowledge-acquisition goals over regulation of emotions. These goals will drive people's behaviours to explore all possible ways and means, and invest time and effort to expand social networks in order to acquire information and knowledge to achieve their goals (Carstensen et al., 1999).

On the other hand, emotion-related goals will take precedence over knowledge-oriented goals when individuals, particularly older cohorts, perceive that time is limited, and the future is irrelevant and beyond their capacity. When emotion-oriented goals are primed, people incline to pursue present-oriented goals and interact within familiar environments, smaller size social networks, and will not proactively seek new approaches to challenges (Carstensen et al., 1999).

Thus, the Socio-emotional selectivity theory claims that age is not a fixed variable, but rather a platform for active adaptation of behaviours to certain situations and environments, which is dimensionalised by time. Specifically, this theory argues that age has a moderating effect in motivating human behaviours, where age frames environmental conditions for the interaction between emotions and cognitions with goals (Carstensen et al., 1999).

c. **Role expansion theory**

Ajzen and Fishbein (2005) delineated that the interest or personal involvement and direct experiences with the desired behaviour will strengthen the attitude-behaviour relation. The scholars suggest the interest and experience through social roles an individual plays will have a positive halo effect on individuals' sensitivity and attention towards the attitude object.

With social participation and involvement, it is argued that in-depth knowledge will be accumulated during the participation process, which will further strengthen individuals' affection toward a desired behaviour. There are two trains of thought in approaching the effects of social roles on individual behaviours and wellbeing, namely, the role stress theory and the role expansion theory.

The role stress theory suggests that multiple roles often generate negative impacts on an individual's wellbeing, and threatens their health state. The theory elaborates that, when an individual is engaged with multiple roles, his or her time, energy and cognitive capabilities will be divided for different roles. As such, an individual will be overloaded with roles and encounter stress. The emotional strain will be intensified when conflict roles are present, e.g., to strike a balance between role of employee and role of mother for women (Nordenmark, 2004).

In contrast, the role expansion theory's stance for multiple roles is positive; it avers individual engagement in multiple activities and expands his or her roles horizontally will be beneficial to the individual. The theory corroborates that an increased magnitude of roles will generate social resources for individuals, in terms of provision of social support, knowledge expansion, developing sense of belonging, and life satisfaction, among others (Archpru Akaka & Chandler, 2011; Nordenmark, 2004).

The role expansion theory highlights multiple roles that will provide guidance, direction and provide justifications and reasoning to the context in which an individual is situated. The multitude of role will develop a sense of social security for an individual, where he or she will be able to interpret environment surroundings confidently, know who is who, and will also be capable to know how to behave in certain environments fittingly (Archpru Akaka & Chandler, 2011; Nordenmark, 2004). Based on the longitudinal study by Nordenmark (2004), who claims that multitude social roles will increase an individual's wellbeing, with social resources and economic resources gain from a variety of social engagements, such as social support, social network expansion, financial and emotional support in difficult times, and rich personal experiences in a wide spectrum of social contexts.

## **Theoretical framework and research hypotheses**

The findings convincingly demonstrate the distinctive personal characteristics among pro-environmental followers, which is skewed to younger adults, well-educated individuals (Mäkiniemi & Vainio, 2013; Chen & Peng, 2012; Teng et al., 2012), females (Kalamas et al., 2013; Bucic et al., 2012; Rezai et al., 2012; Subhani et al., 2012), and high income earners (Bucic et al., 2012; Rezai et al., 2012).

Beyond the fundamental biological differences, demographic characteristics are regarded as personal variables, which are the underlying psychological elements of personal characteristics, such as cognitive abilities, social behaviours, and personality and communication skills, and are recognized as social-stimuli (Hyde, 2007; Evanschitzky & Wunderlich, 2006). Thus, this study will examine the moderating effects of gender, age and education on the attitude-sustainable behaviour relation, as in the following section.

This study aims to address the knowledge gap in the existing literature by identifying the underlying factors that shape sustainable behaviours through investigating psychological motivation factors in influencing the attitude-sustainable behaviours relation. Integrating with existing findings, three personal characteristics (age and gender) and one situational characteristic (social role) will be examined to determine the respective moderating effect on the attitude-sustainable behaviour relation. Each moderating effect will be discussed in details in the following section.

In a nutshell, the context of the study is to understand the individuals' behavioural shift under the influence of the environmental shift from being non-environmental oriented to becoming pro-environmental oriented. The behaviour shift beliefs to be lifestyle driven rather than utilitarian driven, as such, influencing the income, which eventually signify that the purchasing power will have insignificant influence.

(a) Gender

Gender role theory posits that there is a reason to believe that the sustainable behaviour will be varied by gender-related characteristics. Even though both males and females will support sustainable behaviours, both genders are fundamentally different in manifestation and rationale. Men's self-concept is individualist and independent, which sources from power and to be different from others. On the other hand, connectedness and relationship are priority for females (Dommer & Swaminathan, 2013). These results profound the differences in the cognition process and the way they think.

The difference in agency-communal-orientation behaviours between males and females will function as social-stimulus (Dommer & Swaminathan, 2013; Gebauer et al., 2013; Hyde, 2007; Evanschitzky & Wunderlich, 2006) that steer people's responses to a situation. Females are communal-oriented and behave with expectation of interpersonal rewards (example liking). In contrast, males are self-centred and personal gain will be the motivation to act pro-environmentally. In engaging pro-environmental activities, the return of effort is explicit and indirect, such as sustaining natural endowment for future generations, better living environments among others. Thus, females are expected to react strongly to pro-environmental activities when compared to males.

The aforementioned empirical evidence reveals that females are more likely to engage in pro-environmental behaviours than males. Based on these findings and the theoretical reasoning depicted above, a moderating effect of gender on the attitude-sustainable behaviour can be assumed as follows:

*H1. Gender moderates the relationship between attitude and sustainable behaviours.*

(b) Age

The moderating influence of age on attitude-sustainable behaviours is based on the perception of time by different age groups. Interpretation of time will have an impact on an individual's social goal setting, and subsequently, his or her behaviours correspond to the goal. The socio-emotional selectivity theory theorises the perception of time will influence the pursuit of a social goal, which will lead to behavioural adaptation to the temporal dimension. Self-perceived time is a relative position of chronological age with a self-defined time span, either open-ended or constraint. The age-effects will influence environmental related attitudes, and subsequently, sustainable behaviours (Carstensen et al., 1999).

Young cohorts perceive they have a relatively longer 'time span' to experience more climate change environments if the current environmental challenges remain unchanged. This will motivate young cohorts to engage in future-oriented and knowledge-related goals. As such, the young cohorts will broaden and capitalize their social network to gauge ideas, intensify and share knowledge for innovation solutions to cope with environmental change (Wiernik et al., 2013).

Conversely, from the standpoint of older cohorts, time is perceived to be limited. This perception will influence the attitude and behaviours towards environment; emotional motives will be heightened and prioritized as a social goal, and subsequently, their behaviours will be inclined in pursuing emotional satisfaction.

To ensure minimum emotional discomfort due to change of environment, older cohorts will neither attempt to do anything different, nor explore new social interactions, and carry out business as usual. Therefore, if conservation and environmental choices are not their usual norm of activity, significant changes in behaviours which tend to be more environmentally responsive will not be noted unless other external influences are present (Wiernik et al., 2013). Hence, the study hypothesizes the moderating effect of gender on attitude-behaviours relation as follows:

*H2. Age moderates the relationship between attitude and sustainable behaviours.*

c. Situational characteristics.

Evans (2011) and Sheth et al. (2011) expose that individuals are multitaskers, and are occupied with multiple role responsibilities, ranging from citizen, child, parent, employee, community member, husband or wife, and one's own self. Based on the role expansion theory, individuals will gain resources rather than resources expenditure, accumulated by individuals from the multitude roles (Nordenmark, 2004). The role expansion theory argues that multiple roles will engender numerous positive consequences, such as social networking, economy, social support and life satisfaction.

Based on the empirical results and theoretical rationale, the study hypothesizes the moderating effect of social roles on the attitude-sustainable behaviours relation as follows:

*H3. Social roles moderate the relationship between attitude and sustainable behaviours.*

(d) Education

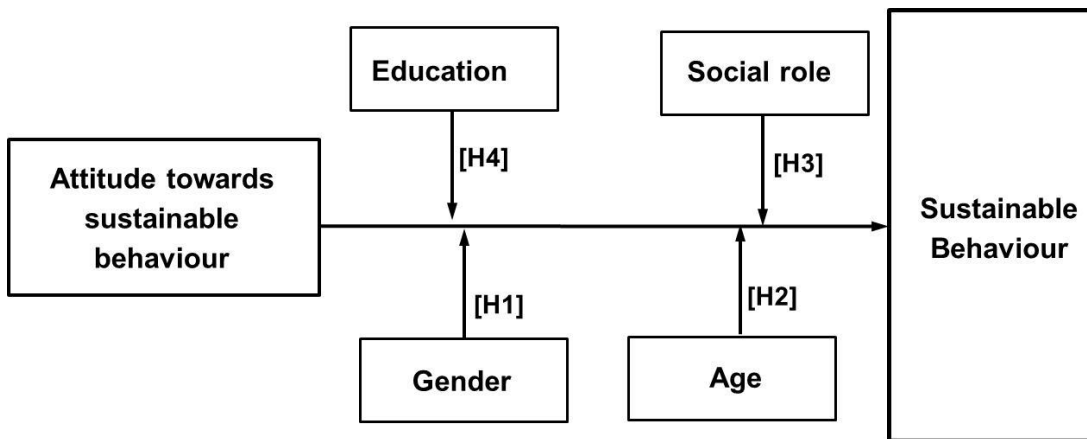
Existing research findings exhibit that individuals that engage in pro-environmental activities are active in enriching their knowledge of climate and environment status. Educational attainment will enhance and fortify one's cognitive skill in adjusting their behaviours for environment or climate change-coping strategies, e.g., to reuse glass bottles for storage, to recycle kitchen waste as household cleaners, and etc. Individuals with a higher level of education attainment will be relatively active and proactive in information search and exploring new solutions to cope with the new lifestyle (Evanschitzky & Wunderlich, 2006).

Empirical evidence in the low pro-environmental behaviours adoption shows the inaccessibility of information for individuals' decision making processes. It is argued that individuals with higher education enables them to obtain information in order to validate any environmental claims of a service or product offering in effective and efficient approaches (Davies et al., 2012; Memery et al., 2012).

Based on the aforementioned empirical findings and theoretical reasoning, the moderating effect of education in attitude-sustainable behaviours relations can be assumed:

*H4. Education moderates the relationship between attitude and sustainable behaviours.*

Figure 1. Theoretical framework of moderating effects of psychological factors on attitude-sustainable behaviours relationship



The proposed conceptual framework in the study aims to examine the underlying psychological factors are malleable such that attitude-behavioural can be strengthened. The framework highlights the presence of moderating factors which will have an impact on the direction and the relationship strength between an independent and dependent variable. Stability and synchronizing of attitude and behaviours are the keys for sustainable behaviours across spatial and temporal dimensions. Therefore, this study will test the possible moderating effect in the relationship between attitude and sustainable behaviours.

### Implications

Conversely, there is a different intensity of pro-environmental behaviours adoption. Personal characteristics are variables commonly applied by marketers in segmenting the pro-environment market. This study approaches personal characteristics by further analysis of underlying psychological perspectives of person variables, in order to understand the latent factors and function as social stimulus.

Environmental issues are not a uni-dimensional matter; rather, they are multifaceted and have a vast domino effect. Urbanization and population growth will increase the demand for products and services to meet human needs. The accretions of products and services will lead to a higher demand for resources, which have a definite quantity. On the basis of the domino effect, sustainable behaviours cannot be approached in a myopic manner. This study intends to undertake sustainable behaviours in a comprehensive manner. Human behaviours are fluid and non-uniform. Sustainable behaviours can happen in different forms of an individual, such as purchasing energy-efficient light bulbs, reusing packaging, opting for public transportation, etc. (Barr et al., 2011). Thus, sustainable behaviours should be a total summation of all pro-environmental activities, product-centric and activities-based.

Traditionally, personal characteristics function as profiling exercises of a certain matter, such as age, gender, socio-economic profile of green consumers. However, instead of endorsing similar exercises, the current study will attempt to examine the moderating effects of personal characteristics (age, gender, and education) on its underlying psychological elements on the attitude-sustainable behaviours relationship. This approach attempts to understand the latent motivational factors with different demographic and socio-economic profiles.

Marketers' current approach to explore business opportunities from the new market phenomenon is to position environmental-friendly products or services as product lines or service extensions, and lengthen current offerings with pro-environmental properties. From a marketing perspective, to harvest the total benefits from the extension strategy with continuous product lines or services from the core product or service is subject to the congruence effect of integration strategy of environmental superiority. The environmental experiential and functional attributes can be leveraged as affective drivers for a brand-consumer relationship quality, either to bridge or bond with their targeted markets.

### Conclusion

Acknowledging the considerable challenges in adopting sustainable behaviours, the sustainable ecosystem stakeholders must understand the underlying factors that influence and motivate sustainable behaviours before further embarking into any governing initiatives and activities with the intention to encourage and foster sustainable consumption. Typically, pro-environmental products and services consumption is reckoned to be the panacea and effective pathway to harmonize human activities with nature. However, the results from pro-environmental products and service adoption are lukewarm, in addition to the presence of non-conducive situational factors.

The purpose of this study is to propound a different approach in understanding sustainable consumption behaviour at the meso level: the interlocking forces between individuals with their social environment. The research surmises that Sustainable Behaviours could be able to endeavour the persistent challenge – 'Attitude-Behaviour gap', while simultaneously galvanizing and cogitating sustainable consumption behaviour regardless of space and time. Discussion of these results will attempt to shed light on the state of green marketing, further understanding of what drives sustainable behaviours and provide implications for public policy makers and marketers. As such, it is important for marketers and public policy makers to develop more effective and efficient sustainable schemes/initiatives and programs.

This study intends to understand the facilitator in promoting a stronger attitude-sustainable behaviours relationship, which marketers can utilize in their marketing strategies to derive best practices for business resonance with the consumers, and do different

in delighting their consumers. It also intends to examine the underlying psychological factors and provide insights to understand how the demographic and social economic factors will stabilize attitude-sustainable behaviour consistency (Fazio, Chen, McDonel, & Sherman, 1982)(Fazio, Chen, McDonel, & Sherman, 1982)(Fazio, Chen, McDonel, & Sherman, 1982). Examining the psychological elements of personal characteristics, it is possible to suggest a catalogue of variables with effects on the attitude-sustainable behaviour relation. As such, marketers will approach this from the perspective of motivating factors underneath the demographic and socio-economic profiles.

Awareness level and consciousness towards environmental issues are high yet submerge in consumer mind. There is a great lag between the mind set and actual behaviours pertaining to environmental challenges. It requires overhaul of policy in dealing the waste issues. Current approach is spending enormous tax payers' money to expand and modernize solid waste management system from traditional landfill method to sanitary landfills and incineration as well as mechanical-biological treatment facilities. On top of other support services required such as sorting out the waste, waste collection management and others, which the solution will be always lag behind the waste generation and population growth. Therefore, it is more effective and efficient to tackle the issue at the root cause – change the human mentality to adopt optimum behaviours, i.e. reduce, reuse and recycle in order to distress the nature.

By examining the contagion effects of social actors, government can collaborate with the institutional forces to develop policy and mechanism in combating climate challenges. From the perceived role assumed by the institution forces, policy makers can identify key attributes as missed opportunities and further strengthen in their exploitation strategy. Policy makers can leverage the result as guideline to which institution forces can be considered as appropriate, and effect forces and focus their efforts to help promote wider change, resets the compass with new tools and new ways of thinking to be embedded into normal, everyday activities and contribute to the answer rather than the problem.

### Limitation

Human survival is inextricably linked to sustainable of the earth. Continuation in climate changes has bring rapid changes to Earth, and unfolding across the world and already impacting human's life support systems, livelihoods and lifestyles. With increase of sea level, drought, extreme weather like hurricanes and storms, forest fires, heat stress, water shortage and flooding at different locations at the same time space, have ripple effect animal and human death, and crop damage. Addressing climate challenges is an utmost urgent as it affects the human physiological and security needs, ranging from shelter, food, breathing, and health. Acknowledge the vest effects of climate changes, mere incremental and individualized efforts will not able to result favourable impact to environment and contain the climate crisis effectively.

Axsen et al. (2012) corroborate that individual lifestyle is a fluid and dynamic process, no activities are consistent across time and space, and are subject to different engagement process. Grolleau et al. (2009) argue that consumers behaviours are not fixed over products and time, where the same consumer will behave altruistically for certain products but egoistically for other product categories, all in all consumers will develop and response to different level of altruism over time at different conditions. Individuals' decisions in engaging sustainable behaviours are contingent to temporal and spatial boundaries. People will be more likely to engage in sustainable behaviours when both temporal and spatial dimensions are compatible with each other (Meijers & Stapel, 2011).

The authors propose that ecosystem support system is the linchpin to sustain the sustainable behaviours. Government and businesses are perceived to have bigger muscle in pooling richer resources and expertise for the journey of sustainable future (Kalamas et al., 2013; Miller, Rathouse, Scarles, Holmes, & Tribe, 2010; Welsch & Kühling, 2009). Concerted effort in combating climate crisis is the way forward strategy with the emerging of social media technologies and people are moving towards networked society. To date, there are numerous initiatives driven by various government and corporate entities to intensify the sustainable behaviours. However, significant behaviours conversion is still lagging. These prompt all stakeholders should revisit existing approaches and renew the initiatives with effective collaborative strategies to leapfrog multipolar and multidimensional sustainable behaviours. External factors are required for sustaining behaviour change, and minimizing attitude-behaviour gap. However, if the external factors are adapting compulsory approach for attitude formation will only result in short term impact, and individuals will abandon the desire behaviours when outside the enforcement area and in the long run. Thus, compulsory approach will impede the sustainability of behaviour changes. External factors, such as government, institutions, and society should play a role as facilitator and moderator to support behavioural changes (Mustafa & Yusoff, 2011).

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