Stream 10. Marketing, Communication and Retail

Competitive session

Understanding Consumers' Green Attitude Behaviour gap

Which Theory is Appropriate?

Al Sadat Ahmed

School of Business & Law, Central Queensland University, Australia

Email: alsadat.ahmed@cqumail.com

Dr. Md Parves Sultan

School of Business & Law, Central Queensland University, Australia

Email: p.sultan@cqu.edu.au

Dr. Galina Williams

School of Business and Law,Central Queensland University, Australia

Email: g.williams@cqu.edu.au

School of Business, Accounting and Law

Stream 10. Marketing, Communication and Retail
Competitive session

Understanding Consumers' Green Attitude Behaviour Gap
Which Theory is Appropriate?

ABSTRACT

In the literature, several research perspectives, concepts, and theories have been applied by scholars and academics to understand the discrepancy between consumers' purchase intentions and their actual behaviour towards green products. This paper explores the widely recognized attitude–behaviour gap regarding green products and discusses a series of theoretical approaches, identifying the most useful theory for bridging the gap between purchase intention and actual behaviour. The paper argues that although several theories may offer a better explanation and understanding of the attitude behaviour gap, the theory of planned behaviour is the most appropriate. The paper is important for academic researchers who intend to study the attitude gap in a green setting. The paper also supports policy makers in decision making.

Keywords: green product, attitude behaviour gap, theory of planned behaviour.

INTRODUCTION

Several explanatory theories of consumer behaviour have been put forward to explain green consumer behaviour over the years; these were derived from the social sciences: psychology, sociology, or economics (Yadav & Pathak, 2016; Kalafatis et al., 1999). In light of the theoretical and empirical advances made by behaviour analysts, green behaviourism promises to extend the investigation and explanation of green consumer behaviour characteristics (Onel & Mukherjee, 2015). However, the gap between consumers' positive attitudes towards green products and consumers' inconsistent and conflicting behaviour towards them remains a concern for social marketers and policymakers (Moraes et al., 2012; Johnstone & Tan, 2015). Researchers and academics have acknowledged and discussed the existence of an attitude–behaviour gap in green consumption, but there has been limited conceptual research that accurately quantifies this (Johnstone & Tan, 2015). Theories provide a set of explanatory variables which can be used to predict a particular phenomenon (Samaradiwakara & Gunawardena, 2014). In the course of conceptual understanding findings of past studies, most researchers have concurred on several behavioural theories but an appropriate theory for understanding green attitude behavior gap still a rarity in literature. This paper thus discusses several theoretical approaches to address the widely recognized gap between attitude and behaviour in order to identify which approach is most useful in bridging the gap between purchase intention and behaviour relevant to green products. Using this approach, the study is expected to generate discussion in relation to a fundamental theory that offers a better understanding of how consumers form the intention to act in an ethical way towards green products, utilizing existing green consumer theory where appropriate.

GREEN ATTITUDE–BEHAVIOUR GAP

In the literature, several research perspectives, concepts, theories, and factors have been applied by academics and scholars to understand the fundamental influences on green consumption behaviour. Despite growing concerns about ecological issues, green consumers still represent a minority in society; this is reflected by the relatively slow consumer acceptance of green products (Gleim et. al, 2013). Marketing academics aim to understand consumer choice in green decision making by combining the rigor of various theories. While exploring green buying behaviour, many studies have reported a discrepancy or gap between the favourable attitudes expressed by consumers and their actual purchasing practices (Tanner & Kast, 2003; Vermeir & Verbeke, 2006; Vermeir & Verbeke, 2008; Onel & Mukherjee, 2015). For example, in various surveys, 30% to 50% of consumers indicated that they intended to buy sustainable products; however, the market share of these goods was found to have less than 5% of the total sales (Carrington et al., 2010; Young et al., 2010). Hughner et al., (2007) found that while many consumers showed a positive attitude towards the purchases of organic food products (67%), only a small number of consumers (4%) actually had purchased those products. Similarly, Defra (2006) found that 30% of consumers in UK reported their concern towards the environment, but rarely translated this into a green purchase. Another recent survey of UK consumers indicated that they would be willing to pay more for green cleaning products (Butler, 2013; Johnstone & Tan, 2015). However, the homecare market in the UK continued to be dominated by conventional non-environmentally friendly brands between 2008 and 2013 (Johnstone & Tan, 2015). Young et al. (2010) found that 30% of consumers in UK report that they are very concerned about environmental issues, but are struggling to translate this into purchases. Likewise, in Australia, Hobman and Frederiks (2014) reported that although consumers may have developed a positive concern for environmental problems, this is weakly associated with the act of purchasing and any substantial initiatives to purchase green energy. The study claimed that the majority (72.9%) of customers did not subscribe to green energy, and approximately one in six non-subscribing participants reported negative values, beliefs, and/or attitudes towards green energy. Nature's Organics, another company from Australia, was the first and largest local player to market its homecare products based on a green image. It held only a 3% value share in the overall Australian

homecare market in 2011 (Johnstone & Tan, 2015). The attitude–behaviour gap has also been debated across disciplines researching other aspects of green consumer behaviour such as purchasing green energy (Salmela & Varho, 2006), and household goods (Peattie, 2010). Set against this broad context, it is apparent that despite consumers' positive attitudes about the environment, several studies have revealed an inconsistent behaviour between consumers' green attitudes and behaviour (e.g. Carrington et al., 2010; Peattie, 2010; Johnstone & Tan, 2015; Moser, 2015, Yadav & Pathak, 2016). This phenomenon is called the attitude-behaviour gap, well established in literature (Peattie, 2010; Oates & Mcdonald, 2014). In general, the attitude-behaviour gap means that the attitudes or an intention of consumers to act in a green manner does not necessarily inform their behaviour (Chen & Chai, 2010; Wheale & Hinton, 2007).

GREEN BEHAVIOURAL ACCEPTANCE THEORIES

Behavioural theory sheds light on the green attitude–behaviour gap, and advances our understanding of attitude and intention formation in a green marketing context. Behavioural theory can be used to explore the frequently observed attitude–behaviour gap, and can deepen understandings of the influence of consumer behaviour on marketing systems for green products. The paper reviews relevant theories on green consumer behaviour from a marketing perspective. It introduces various theories understandings of green consumer behaviour, their theoretical and methodological foundations, and outlines key factors influencing green consumption and the major challenges facing it. The study reviews green behavioural theories from two theoretical perspectives—cognitive behaviour and normative behaviour—that relate to the critical internal and external factors influencing consumer choice with regards to the green attitude–behaviour gap. Ozaki (2011) defined cognitive behavioural theories as those that focus on the process by which consumer beliefs form attitudes towards certain behaviours and then lead to the performance of those behaviours—examples are the theory of self-regulation (TSR), the theory of reasoned action (TRA), and the theory of planned behaviour (TPB). Normative behavioural theories developed by Schwartz (1977) focused on personal norms and moral obligation that are positively related to pro-environmental behaviour to measure the environmental paradigm (NEP). Examples are the norm activation theory (NAT), value belief norm

theory (VBN), the attitude–behaviour context theory (ABC), and the motivation–opportunity–abilities model (MOA).

Theory 1: Theory of self-regulation (Bagozzi, 1992):

Theory of self-regulation or TSR (Bagozzi, 1992) posits that desire, a motivation-based variable which leads to intention. Ajzen (1991) introduced perceived behavioural control (PBC) concerning behaviors are partially under volitional control but Bagozzi (1992) claimed that the main forcible factor in TPB is desire not PBC.TSR argues that intention implies desire, but that desire does not necessarily imply intention (Leone et al., 1999). Empirical support from Bagozzi, & Kimmel (1995) confirmed the digital effects of attitude on intentions through desires.

Insert Figure: 1 about here

Theory 2: Theory of reasoned action (Ajzen and Fishbein, 1980):

The buying process has been widely documented and follows the process of rational choice, whereby the evaluation of alternatives is based on an evaluation of costs against benefits (Faiers et al., 2007; Ajzen, 1988). One of the underlying theory falls under this category is the theory of reasoned action (TRA) posits that an individuals' behaviour is determined by their behavioural intention, which in turn is defined as a function of attitudes toward the behaviour and subjective norm connected to the behaviour (Ajzen 1980; Hong & Swinder, 2012). The theoretical model is mapped in Figure: 2. More specifically, TRA has been utilized to predict the intentions in green marketing areas, such as recycling behaviours (Davies et al. 2002), green energy behaviour (Bang et al., 2000)

Insert Figure: 2 about here

Theory 3: The theory of planned behavior (Ajzen, 1991):

In the area of green adoption behaviour, the relationship between attitudes and behavioural intentions often seems to be missing or weak (Claudy et al., 2013). Recent advances of behavioural intention models offer new perspectives and possible explanations for the attitude- behaviour gap. In this context TPB is found the one of the most robust and widely applied predictor to analyse green

consumer behaviour and serves as the most flexible theoretical framework to better understand consumer intention to adopt green products, more importantly, provide an explanation for the widely acknowledged attitude-behaviour gap (Paul et al, 2015; Moser, 2015; Yadav & Pathak, 2017). Fig. 3 displays the predicting variables of TPB and their relations with each other as well as to behaviour. In empirical research, scholars have validated the contribution of TPB in green consumption behavior, for example green hotels (Han and Yoon, 2015), organic food choice behavior (Ha and Janda, 2012).

Insert Figure: 3 about here

Theory 4: Norm activation theory (Schwartz, 1977):

Norm activation theory (NAT) ascribes the significance role of personal norms, such as strong moral obligation, as the only direct determinants of pro-social behaviours where awareness of consequences and ascription of responsibility create personal norms, which leads too pro-social behaviour (Schwartz, 1977; Ozaki, 2011). Consistent with this theory several studies suggest that moral norms contribute to explaining pro-environmental behaviour such as: pro-environmental buying (Thøgersen, 1999), recycling (Guagnano et al. 1995). Fig: 4 summarize the NAT model as described in this paper.

Insert Figure: 4 about here

Theory 5: Value belief norm theory (Stern, 2000):

Stern's value-belief-norm-theory (2000) is an attempt to link assumptions of the NAT to findings about the relation between general values, environmental beliefs and behaviour (Klöckner, 2013). The VBN theory combines value theory (Schwartz, 1992) and norm-activation theory (Schwartz, 1977) postulating that the relationship between values and actual behavior is affected by more factors than consumption specific attitudes including fundamental values, behavior specific beliefs, and personal moral norms that guide the individual's action (Jansson et al., 2010). Using this notion, the VBN theory has been validated in a wide variety of green consumer (curtailment) behavior contexts, such as household energy use (Poortinga et al., 2004), conservation behavior (Kaiser et al., 2005). The conceptual model of VBN drawn in figure: 5.

Insert Figure: 5 about here

Theory 6: ABC model theories (Stern et al., 1999; Guagnano et al. 1995):

Attitude-Behaviour Context (ABC) models focused on environmentally significant behaviour assume that consumer green behavior is not only determined by attitude, but also by contextual factors. The structural dynamics between the influence of attitudes (i.e. internal factors) and contextual (i.e. external) factors is a key dimension of the ABC model, shown in Figure: 6. In ABC, contextual factors (such as, monetary incentives and costs) affect the strength of the attitude-behavior association which is strongest when they are neutral and is close to zero when contextual forces are strongly positive or negative (Stern, 2000, p. 415).

Insert Figure: 6 about here

Theory 7: The Motivation-Opportunity-Abilities model (Ölander & Thøgersen, 1995):

The Motivation-Opportunity-Abilities (MOA) is an integrative model pointed to the improvements in predictive power achievable by incorporating two factors - ability and opportunity, as indispensable pre-requisites to green consumer behavior. The MOA model is recognisable in Figure 7. The ability construct incorporates both habit and task knowledge, whereas the opportunity construct incorporates facilitating conditions or 'opportunity' to perform the behavior (Joshi & Rahman, 2015). According to this theory, consumers' positive attitude will lead to desired behaviour only if consumers have the ability and the opportunity to carry out the expected behaviour. For example, green energy purchase will not happen without low premium.

Insert Figure: 7 about here

RATIONALE FOR A GREEN BEHAVIOURAL THEORY

This paper has conceptualized the pragmatic and conceptual basis of a series of theories based on cognitive and normative behaviour. Support from literature evidence and identification of advantage, disadvantage of behavioural theory appears to be a straightforward way of detecting the appropriate theory to evaluate the green attitude–behaviour gap. The appropriate theory should consist of constructs that are sufficiently specific so as to generate hypotheses, which should be testable and, in principle at least, able to be rejected (Ogden, 2003). In terms of their pragmatic basis and asking which theories can be considered to be useful for understanding the green attitude–behaviour gap, some key issues such the application and usefulness of the theory, ability to be tested, capacity to generate synthetic truth rather than analytic truth, and creating cognitions (Ogden, 2003; Wenzlaff & Wegner, 2000). According to Singleton, Straits and Straits (1993), Taylor and Tod (1995) and Samaradiwakara & Gunawardena (2014), despite the specific advantages of green behavioural theory, the capability of a theory in predicting and explaining behavior is measured by the extent to which the predictors in the theory could account for a reasonable proportion of the variance in behavioral intention and usage behavior. Considerably better variances explain a broader range of phenomena (Samaradiwakara & Gunawardena, 2014). Therefore, it is essential to compare theories in order to identify the most appropriate one in respect of their ability to predict and explain individual behavior towards green consumption attitude behaviour gap. The following section attempts to address these key issues using literature support and a comparative discussion of the theories including the advantages and disadvantages of behavioural theories.

Literature support:

Several explanatory theories of consumer behaviour have been put forward to explain green consumer behavior over the years derive from the social sciences: psychology, sociology, or economics. The major theories such as value belief theory, norm activation theory, ABC model etc. are highly eclectic, taking into account both personal and environmental variables (e.g. Kalafatis et al., 1999; Salmela & Varho, 2006) but do not explain how consumers can translate their intention into green buying behavior effectively (Kalafatis et al., 1999; Moser, 2015, Paul et al., 2015, Halder et al.,

2015). To account for this process and in order to develop a comprehensive theory of consumer behavior specially to green products, many researchers turned to social psychological theory of planned behavior (Paul et al., 2015, Halder et al., 2015; Moser et al.,2015; Yadav & Pathak, 2015, 2016). For example, in empirical research 39% of studies used the TPB as theoretical framework, 15% the NAT, 15% the VBN in empirical research (Klockner, 2013). Moreover, A meta-analysis of 185 studies found the TPB accounted for 27% of the variance in behavior and 39% of variance in intention (Armitage and Conner, 2001). TPB has been utilized in environmental research, especially in understanding attitude formation and functioning in relation to the adoption of green products (e.g. Fujii, 2006; Ozaki, 2011). TPB improves the purchase intention model's predictability for green products (Moser, 2015; Yadav & Pathak, 2016, 2017). The model optimizes the potential relationship between intention and its determinants by measuring each construct at equivalent levels of specificity (Litvine &N Wüstenhagen, 2011; Paul et al., 2015). Table: 1 provides a list of research articles that have published heterogeneous TPB research across disciplines tend to prove its application and usefulness, capability of testing, generate synthetic truth than analytic truth and creating cognitions.

Insert Table: 1 about here

Comparison of green acceptance theories:

Stern's VBN theory (2000**)** examines green behaviour by considering several elements that are essential to environmentalism such as values and ecological worldview (Stern, 2000; Choi et al., 2015). However, the explanatory power of values might decline in situations where consumers face strong external constraints (e.g. social norms) or have limited personal capabilities—their financial situation, limited access to relevant information, or limited ecological literacy for example (Stern, 2005; Claudy et al., 2013). The statistics reveal that only the TPB appropriately represents the relationships between its concepts, whereas the VBN model does not (Kaiser et al., 2005, 2013). Consequently, many researchers have utilized behavioural intention frameworks such as Fishbein and Ajzen's (1975; 1980) TRA. Traditional models such as the theory of reasoned action have also so far

failed to account for the attitude–behaviour gap, raising critical questions about the usefulness of traditional behavioural intention theories (e.g. Paul et al., 2015; Liobikienė et al., 2016). TRA showed inconsistency to the lack of control over an individual's action (Gupta & Ogden, 2009). TRA addresses purely volitional control and fails to address the ownership of requisite opportunities and resources (Madden et al., 1992). The omission of certain non-volitional factors for determining human behaviours (e.g. resources) questioned the applicability of TRA (Han et al., 2010; Paul et al., 2015). For instance, an individual may view green products positively, but may not be able to purchase them due to a low income and the product's higher premium. Ajzen solved this problem by the extension of TRA into TPB (Ajzen, 1991) by including a variable that would highlight the non-volitional part of behaviour in the TRA structure (Ajzen, 1985; Leone et al., 1999). This variable— *perceived behavioural control* (PBC)—becomes important when considering behaviours that are partially under volitional control, which is defined as the perception of how difficult or easy an action is to perform for a given subject (Paul et al., 2015). According to TPB theory, PBC is hypothesized as directly affecting both intention and behaviour in such a way that the greater the PBC, the more positive the behavioural intention and the more likely the performance of behaviour and vice versa (Ajzen, 1991; Leone et al., 1999). PBC is a good proxy for actual control; this cannot be the case when, for instance, the behaviour is new to the subjects (Ajzen & Madden, 1986; Leone et al., 1999). As mentioned, Ajzen (1991) introduced PBC to consider behaviours that are partially under volitional control. However, Bagozzi (1992) claimed that the main omitted factor in TPB is desire not PBC, where desire is a motivation-based variable that leads to intent. According to the TSR, desire is hypothesized as being a proximal cause of intention (Bagozzi, 1992; Leone et al., 1999). Fishbein & Stasson (1990) argued that desires can be viewed as a proxy of intent, since the variables of attitude and desire are both based on motivational processes as claimed by the TRA and the TPB (Ajzen, 1988). A recent meta-analysis of the TPB has found evidence that intentions and self-predictions were found to be superior predictors of behaviour than desires (Armitage & Conner, 2001). Other behavioural theories such as ABC theory and the MOA model have been used for predicting behavioural intention, but generally do not explicitly address post-intentional actions, such as behaviour, and their application is scarce in the literature and not well established to prove its application and usefulness, capability of

testing in research domain (Luszczynska et al., 2005). Against the backdrop of the discussion above, TPB constructs are found to be more proximal to green behaviour than theories such as the TRA, TSR, NAT, and VBN (Klöckner, 2013; Paul et al., 2015; Yadav & Pathak, 2016, 2017). In the discussions above, we find that TPB provides a useful conceptual framework for dealing with the complexities of human social behaviour. Although this theory relatively successful in predicting a wide variety of behaviours, it has been criticized for neglecting moral considerations, an extension that appears to be particularly promising in morally relevant situations (Kaiser et al., 2005; Klöckner & Blöbaum, 2010; Chen, 2015). However, TPB is open for modification and can be extended and broadened by adding new constructs or altering the path of the existing constructs (Ajzen, 1991; Yadav & Pathak, 2016, 2017). Research indicates that the TPB explains on average 50% of the variance in intention and between 19% and 38% of the variance in behaviour (Sutton, 1998). Compared with other behavioural theories, research on the TPB shows a relatively high degree of regularity regarding measures based on published recommendations and offers better explanations of the attitude–behaviour gap than other theories (Antimova et al., 2012). More importantly, comparative studies found that the TPB is more capable of explaining variance in intention over and above that of traditional intention theories (Westaby, 2005; Westaby; Claudy et al., 2013). By applying the TPB we thus expect to shed light on the green attitude–behaviour gap, and advance our understanding of attitude and intention formation in this important green marketing context.

CONCLUSION, CONTRIBUTION, AND FUTURE RESEARCH DIRECTION

The aim of this paper was to illustrate the widely recognized attitude–behaviour gap in green products and discuss a series of theoretical approaches by pinpointing those most useful for bridging the gap between consumers' green purchase intentions and their actual behaviours. The study draws together several behavioural theories relevant to green product use in order to aid policy making in the broader context and to develop the discussion around integrated theories applicable to green behaviour. In the literature, the study found that most theories have common factors that influence consumer behaviour and do not explore the relationships between internal factors and external constraints in depth.

Consumers' decision to behave in a certain way in relation to green products is informed by a wide range of internal and external factors (Ozaki, 2010; Faiers et al., 2007). The behavioural theories discussed earlier have a different emphasis, and there are overlapping factors that influence green product adaption (Table: 2). Green consumption related decisions and behaviours are most likely driven by a combination of several internal-external factors and motivations. The study finds the TPB to be the most widely used and accepted theory in behavioural research domain; it is also capable of including additional internal–external factors to explain green consumption related decisions and attitude behavioural gap.

Insert Table: 2 about here

In general, the study provides useful lessons for policymakers seeking to encourage pro-environmental behaviour. With regard to theory, particularly in the green marketing literature, the current paper contributes to a conceptual base understanding of the behavioural approach related to the green behaviour–attitude gap and how it is effective by applying the theoretical tenets for green consumption. The paper also offers a theoretical base for both marketers and policymakers from which to advance their understanding of green energy buying behaviour, and promote the consumption of green products and a more widespread adoption of green usage, which are essential for the green market and a sustainable environment.

Although the study found the TPB to be the most useful for bridging the gap between green attitudes and behaviours regarding green products, many studies do not consider it a suitable model for explaining this gap. Researchers have argued that although the three psychological constructs (i.e. attitude, subjective norms, and behavioural control) contained in the TPB model predict the green attitude–behaviour gap to a certain degree, it cannot be effective as other constructs also influence an individual's green buying decisions (Halder et al., 2015; Paul et al., 2015). The findings revealed that there is a perception that 'it is too hard to be green' due to a lack of many external factors, attitudes, and behaviour (Johnstone & Tan, 2015). The TPB is open for modification and it can be extended and broadened by adding new constructs or altering the path of the existing constructs (Ajzen, 1991;

Yadav & Pathak, 2015). There are a plethora of models of green behaviour and new models are continually being developed. Future studies may aim to develop an integrative extended TPB model including new constructs and to holistically analyse those constructs that predict the green attitude–behaviour gap.

Reference list:

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11-39). Springer Berlin Heidelberg.

Ajzen, I. (1988). Attitudes, personality, and behavior. 1988. *Milton Keynes: Open University Press Google Scholar*.

Ajzen, I. (1991). The theory of planned behavior. *Organizational behavior and human decision processes*, *50*(2), 179-211.

Ajzen, I., & Fishbein, M. (1980). Understanding attitudes and predicting social behaviour.

Azen, I., & Madden, T. (1986). Prediction of goal directed behaviour: Attitudes, intentions and perceived behavioural control.

Antimova, R., Nawijn, J., & Peeters, P. (2012). The awareness/attitude-gap in sustainable tourism: A theoretical perspective. *Tourism Review*, *67*(3), 7-16.

Armitage C., Conner M. (2001) Efficacy of the theory of planned behaviour: a meta-analytic review. British Journal of Social Psychology, 40, 471–499.

Bagozzi, R. P. (1992). The self-regulation of attitudes, intentions, and behavior. *Social psychology quarterly*, 178-204.

Butler, S. (2013). Ethical shopping growing in popularity, survey suggests. *The Guardian*.

Bagozzi, R. P., & Kimmel, S. K. (1995). A comparison of leading theories for the prediction of goal-directed behaviours. *British Journal of Social Psychology*, *34*(4), 437-461.

Bang, H. K., Ellinger, A. E., Hadjimarcou, J., & Traichal, P. A. (2000). Consumer concern, knowledge, belief, and attitude toward renewable energy: An application of the reasoned action theory. *Psychology & Marketing*, *17*(6), 449-468.

Chen, T. B., & Chai, L. T. (2010). Attitude towards the environment and green products: Consumers' perspective. *Management science and engineering*, *4*(2), 27- 39.

Choi, H., Jang, J., & Kandampully, J. (2015). Application of the extended VBN theory to understand consumers' decisions about green hotels. *International Journal of Hospitality Management*, *51*, 87-95.

Claudy, M. C., Peterson, M., & O'Driscoll, A. (2013). Understanding the attitude-behavior gap for renewable energy systems using behavioral reasoning theory. *Journal of Macromarketing*, *33*(4), 273-287.

Carrington, Michal J., Benjamin A. Neville, and Gregory J. Whitwell. "Why ethical consumers don't walk their talk: Towards a framework for understanding the gap between the ethical purchase intentions and actual buying behaviour of ethically minded consumers." *Journal of Business Ethics* 97, no. 1 (2010): 139-158.

Davies, J., Foxall, G. R., & Pallister, J. (2002). Beyond the intention–behaviour mythology: an integrated model of recycling. *Marketing theory*, *2*(1), 29-113.

Defra. 2006. *Sustainable Consumption and Production: Encouraging Sustainable Consumption*. http://www.sustainable-development.gov.uk/what/ priority/consumption-production/consumption.html [1 November 2006].

Faiers A, Cook M, Neame C. 2007. Towards a contemporary approach for understanding consumer behaviour in the context of domestic energy use. *Energy Policy* **35**: 4381–4390.

Fisbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behavior: An introduction to theory and research. *Massachusetts, Addison-Wiley Publishing Company*.

Fishbein, M., & Stasson, M. (1990). The role of desires, self-predictions, and perceived control in the prediction of training session attendance. *Journal of Applied Social Psychology*, *20*(3), 173-198.

Fujii S. 2006. Environmental concern, attitude toward frugality, and ease of behavior as determinants of pro-environmental behavior intentions. *Journal of Environmental Psychology* **26:** 262–268.

Guagnano GA, Stern PC and Dietz T (1995) Influences on attitude-behavior relationships: A natural experiment with curbside recycling. *Environment and Behavior* 27(5): 699–718.

Guagnano, G. A., Stern, P. C., & Dietz, T. (1995). Influences on attitude-behavior relationships a natural experiment with curbside recycling. *Environment and behavior*, *27*(5), 699-718.

Gleim, M. R., Smith, J. S., Andrews, D., & Cronin, J. J. (2013). Against the green: a multi-method examination of the barriers to green consumption. *Journal of Retailing*, *89*(1), 44-61.

Gupta, S, & Ogden, D. T. (2009). To buy or not to buy? A social dilemma perspective on green buying. *Journal of Consumer Marketing*, 26, 376–391.

Halder, P., Pietarinen, J., Havu-Nuutinen, S., Pöllänen, S., & Pelkonen, P. (2015). The Theory of Planned Behavior model and students' intentions to use bioenergy: A cross-cultural perspective. *Renewable Energy*, *89*, 627-635.

Han, H., Hsu, L. T. J., & Sheu, C. (2010). Application of the theory of planned behavior to green hotel choice: Testing the effect of environmental friendly activities. *Tourism management*, *31*(3), 325-334.

Ha, H. Y., & Janda, S. (2012). Predicting consumer intentions to purchase energy-efficient products. *Journal of Consumer Marketing*, *29*(7), 461-469.

Hobman E., and Frederiks E. (2014), Barriers to Green electricity subscription in Australia: Love the environment, love the green electricity but why should I pay more, *Energy Research and Social Science*, 3, 78-81

Han, H., Yoon, H., 2015. Hotel customers' environmentally responsible behavioral intention: impact of key constructs on decision in green consumerism. Int. J. Hosp. Manag. 45, 22–33.

Hughner, R. S., McDonagh, P., Prothero, A., Shultz, C. J., & Stanton, J. (2007). Who are organic food consumers? A compilation and review of why people purchase organic food. *Journal of consumer*

behaviour, *6*(2 3), 94-110

Hong, Y.H., and Swinder, J. (2012). Predicting consumer intentions to purchase energy- efficient products. *Journal of Consumer marketing*, 29(7), 461-469

Jansson, J., Marell, A., & Nordlund, A. (2010). Green consumer behavior: determinants of curtailment and eco-innovation adoption. *Journal of consumer marketing*, *27*(4), 358-370.

Johnstone, M. L., & Tan, L. P. (2015). Exploring the gap between consumers' green rhetoric and purchasing behaviour. *Journal of Business Ethics*, *132*(2), 311-328.

Joshi, Y., & Rahman, Z. (2015). Factors affecting green purchase behaviour and future research directions. *International Strategic Management Review*, *3*(1), 128-143.

Kaiser, F.G., Hubner, G. and Bogner, F.X. (2005), "Contrasting the theory of planned behavior with the value-belief-norm model in explaining conservation behavior", Journal of Applied Social Psychology, Vol. 35 No. 10, pp. 2150-70.

Kalafatis, S. P., Pollard, M., East, R., & Tsogas, M. H. (1999). Green marketing and Ajzen's theory of planned behaviour: a cross-market examination. *Journal of consumer marketing*, *16*(5), 441-460.

Klo¨ ckner, C.A., Blo¨baum, A., 2010. A comprehensive action determination model— towards a broader understanding of conservationist behaviour. Journal of Environmental Psychology 30, 574–586

Klöckner, C. A. (2013). A comprehensive model of the psychology of environmental behaviour—A meta-analysis. *Global Environmental Change*, *23*(5), 1028-1038.

Leone, L., Perugini, M., & Ercolani, A. P. (1999). A comparison of three models of attitude–behavior relationships in the studying behavior domain. *European Journal of Social Psychology*, *29*(23), 161-189.

Litvine, D., & Wüstenhagen, R. (2011). Helping" light green" consumers walk the talk: Results of a behavioural intervention survey in the Swiss electricity market. *Ecological Economics*, *70*(3), 462-474.

Luszczynska, A., Scholz, U., & Schwarzer, R. (2005). The general self-efficacy scale: multicultural validation studies. *The Journal of psychology*, *139*(5), 439-457.

Liobikienė, G., Mandravickaitė, J., & Bernatonienė, J. (2016). Theory of planned behavior approach to understand the green purchasing behavior in the EU: A cross-cultural study. *Ecological Economics*, *125*, 38-46.

Madden, T. J., Ellen, P. S., & Ajzen, I. (1992). A comparison of the theory of planned behavior and the theory of reasoned action. *Personality and social psychology Bulletin*, *18*(1), 3-9.

Moraes, C., Carrigan, M., & Szmigin, I. (2012). The coherence of inconsistencies: Attitude–behaviour gaps and new consumption communities. *Journal of Marketing Management*, *28*(1-2), 103-128.

Moser, A.K., 2015. Thinking green, buying green? Drivers of pro-environmental purchasing behavior. J. Consum. Mark. 32 (3), 167–175.

Ogden, J. (2003). Some problems with social cognition models: a pragmatic and conceptual analysis. *Health Psychology*, *22*(4), 424.

Ölander, F., J. Thøgersen, 1995. Understanding Consumer Behaivour as Prerequisite for Environemntal Protection. Journal of Consumer Policy 18, 345-385.

Oates, C. J., & McDonald, S. (2014). The researcher role in the attitude-behaviour gap. *Annals of Tourism Research*, *46*, 168-170.

Ozaki, R. (2011). Adopting sustainable Innovation: what makes consumers sign up to Green Electricity? *Business strategy and the Environment*, 20, 1-17

Onel, N., & Mukherjee, A. (2015). Understanding environmentally sensitive consumer behaviour: an integrative research perspective. *World Journal of Entrepreneurship, Management and Sustainable Development*, *11*(1), 2-16.

Paul, J., Modi, A., & Patel, J. (2015). Predicting green product consumption using theory of planned behavior and reasoned action. *Journal of retailing and consumer services*, *29*, 123-134.

Peattie, K. (2010). Green consumption: behavior and norms. *Annual Review of Environment and Resources*, *35*.

Paul,P., and Fygenson,M (2006). Understanding and predicting electronic commerce adoption: An extension of the theory of planned behavior. *MIS Quarterly*, 30(1), 115-143.

Poortinga, W., Steg, L. and Vlek, C. (2004), "Values, environmental concern, and environmental behavior: a study into household energy use", Environment and Behavior, Vol. 36 No. 1, pp. 70-93.

Schwartz, S. H., & Howard, J. A. (1981). A normative decision-making model of altruism. InJ. P. Rushton & RM Sorrentino (Eds.), Altruism and helping behavior (pp. 189-211).

Schwartz, S.H. (1977), "Normative influences on altruism", Advances in Experimental Social Psychology, Vol. 10, pp. 221-79.

Stern, P. C., Dietz, T., Abel, T., Guagnano, G. A., & Kalof, L. (1999). A value-belief-norm theory of support for social movements: The case of environmentalism. *Human ecology review*, 81-97.

Schwartz, S.H. (1992), "Universals in the content and structure of human values: theoretical advances and empirical tests in 20 countries", Advances in Experimental Social Psychology, Vol. 25, pp. 1-65

Stern, P., 2000. Toward a Coherent Theory of Environmentally Significant Behavior. *Journal of Social Issues* 56(3), 407-424

Samaradiwakara, G. D. M. N., & Gunawardena, C. G. (2014). Comparison of existing technology acceptance theories and models to suggest a well improved theory/model. *International Technical Sciences Journal (ITSJ)*, *1*(1), 21-36.

Stern, P., 2000. Toward a coherent theory of environmentally significant behaviour, Journal of Social Issues, 56 (3), 407-424.

Stern, P.C., 2000. Toward a coherent theory of environmentally significant behavior. Journal of Social Issues 56, 407–424.

Stern, Paul C. (2005), ‘‘Individuals’ Environmentally Significant Behaviour,’’ Environmental Law Reporter News and Analysis, 35, (accessed November 1, 2012), [available at: http://www7.nationalacademies. org/dbasse/Environmental Law Review PDF.pdf].

Sutton, S. 1998. Predicting and explaining intentions and behaviour: How well are we doing? *Journal of Applied Social Psychology*, 28**,** 1317-1338.

Salmela, S., & Varho, V. (2006). Consumers in the green electricity market in Finland. *Energy Policy*, *34*(18), 3669-3683.

Singleton Jr, R. A., Straits, B. C., & Straits, M. M. (1993). *Approaches to social research*. Oxford University Press.

ThØgersen, J. (1995). Understanding of consumer behaviour as a prerequisite for environmental protection. *Journal of consumer policy*, *18*(4), 345-385.

Thφgersen, J. (1999). The ethical consumer. Moral norms and packaging choice. *Journal of Consumer Policy*, *22*(4), 439-460.

Tanner, C., & Wölfing Kast, S. (2003). Promoting sustainable consumption: Determinants of green purchases by Swiss consumers. *Psychology & Marketing*, *20*(10), 883-902.

Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information systems research*, *6*(2), 144-176.

Vermeir, I., & Verbeke, W. (2006). Sustainable food consumption: Exploring the consumer “attitude–behavioral intention” gap. *Journal of Agricultural and Environmental Ethics*, *19*(2), 169-194.

Vermeir, I., & Verbeke, W. (2008). Sustainable food consumption among young adults in Belgium: Theory of planned behaviour and the role of confidence and values. *Ecological Economics*, *64*(3), 542-553.

Wenzlaff., R. M., & Wegner, D. M. (2000). Thought suppression. *Annual review of Psychology*, *51*, 59–91.

Westaby, J. D. (2005). Behavioral reasoning theory: Identifying new linkages underlying intentions and behavior. *Organizational Behavior and Human Decision Processes*, *98*(2), 97-120.

Westaby, J. D., Probst, T. M., & Lee, B. C. (2010). Leadership decision-making: A behavioral reasoning theory analysis. *The Leadership Quarterly*, *21*(3), 481-495.

Wheale, P., & Hinton, D. (2007). Ethical consumers in search of markets. *Business Strategy and the Environment*, *16*(4), 302-315.

Yadav, R., & Pathak, G. S. (2015). Intention to purchase organic food among young consumers: Evidences from a developing nation. *Appetite*, *96*, 122-128.

Yadav, R., & Pathak, G. S. (2016). Young consumers' intention towards buying green products in a developing nation: Extending the theory of planned behavior. *Journal of Cleaner Production*, *135*, 732-739.

Yadav, R., & Pathak, G. S. (2017). Determinants of Consumers' Green Purchase Behavior in a Developing Nation: Applying and Extending the Theory of Planned Behavior. *Ecological Economics*, *134*, 114-122.

Young, W., Hwang, K., McDonald, S., & Oates, C. J. (2010). Sustainable consumption: green consumer behaviour when purchasing products. *Sustainable development*, *18*(1), 20-31.

TABLE AND FIGURES:

Table 1: Major research in different disciplines used TPB framework

Discipline	Journal	Refereed Articles
Psychology	British Journal of Social Psychology	Ajzen et al. (2009)
	Journal of Applied Social Science	Giles and Cairns (1995); Hagger and Chatzisarantis (2005)
	Journal of Applied Social Psychology	Perugini and Bagozzi (2001)
	British Journal of Addiction	Arvola et al. (2008)
	MIS Quarterly	Godin et al. (1992); Pavlou and Fygenson (2006)
Consumer Behaviour	Leisure Science	Ajzen and Driver (1991)
	Clothing and Textile Research Journal	Kim and Karpova (2010)
	Journal of Consumer Marketing	Fin and Kang (2011)
	Social Science and Medicine	Conner et al. (2001)
	Journal of Retailing	Shim et al. (2001)
	Transportation Research Part F	Cestac et al. (2014); Waddell and Wiener (2014)
Logistics	Transportation Research Part F	Castanier et al. (2013)
	Environment and Behaviour	Cheung et al. (1999)
E-Commerce	Journal of Applied Social Psychology	Beale and Manstead (1991); Yousafzai et al. (2010)
Management	Forest Policy and Economics	Karppinen (2005)
	Academy of Management Journal	Cordano and Frieze (2000)
	Journal of Economic Psychology	East (1993)
	Journal of Environmental Management	Beedell and Rehman (1999)
Marketing	Journal of International Consumer Marketing	Ferdous (2010)
	Journal of Consumer Marketing	Kalafatis et al. (1999)
	Journal of Marketing	king et al. (2008)

Table 2: Critical internal and external factors from behavioral theories

Theory of self- regulation: In TSR three factors determine the behavioural intention: attitudes towards the behaviour, subjective norms, and desire.
Theory of reasoned action: In TRA two factors determine the behavioural intention: attitudes towards the behavior and subjective norms.
Theory of planned behavior: In TPB three factors determine the behavioural intention: attitudes towards the behaviour, subjective norms, and perceived control
Norm activation theory: In NAT theory awareness, aspiration, norm and behavioural control lead to the relevant behaviour
Value belief norm theory: The VBN theory combines perspective of personal value (biospheric, altruistic and egoistic), belief (awareness of consequences)and norm (pro environmental personal norm) that lead to relevant behavior.
Attitude, Behaviour, Context theory: IN ABC theory consumer behaviour affected by internal (attitude) and external factors (education, money, time)
The Motivation-Opportunity-Ability Model: Ability and opportunity are indispensable pre-requisites to consumer behavior

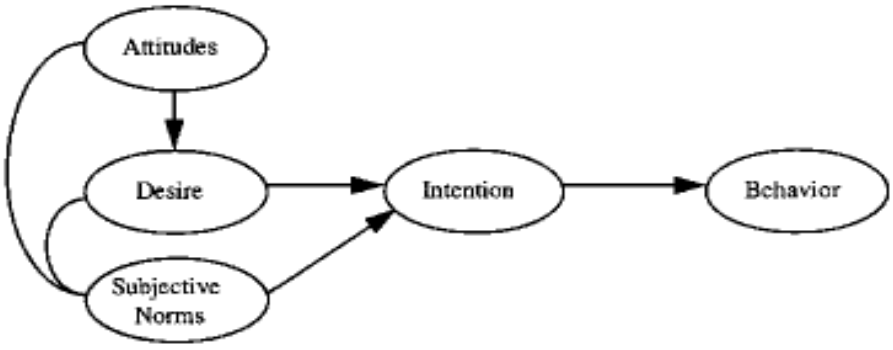

Figure 1: Theory of Self-Regulation (Bagozzi, 1992)

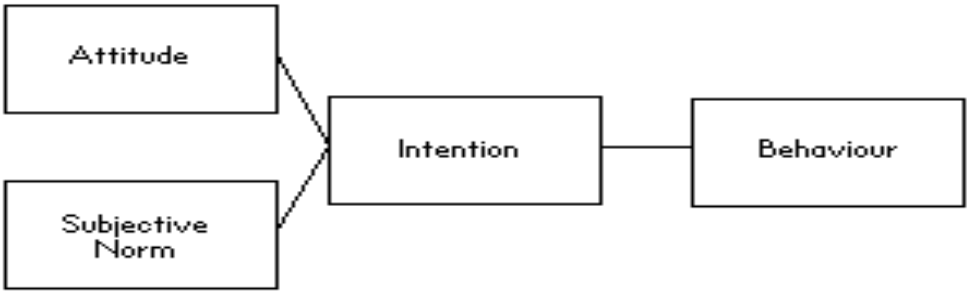

Figure 2: The theory of reasoned action (Fishbein & Ajzen, 1980)

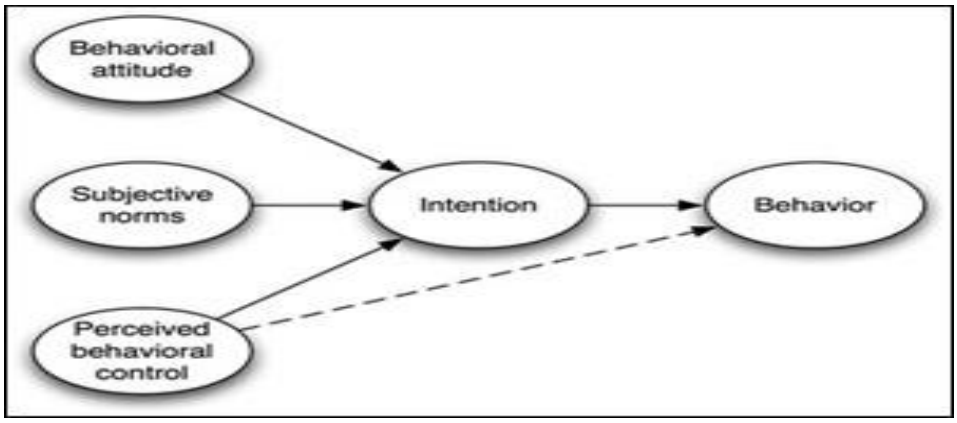

Figure 3: The theory planned behaviour (Ajzen, 1991)

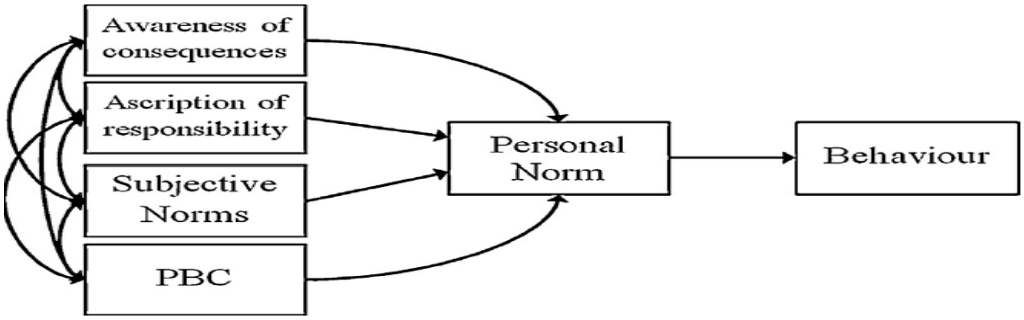

Fig 4: The norm-activation-theory (Schwartz & Howard, 1981).

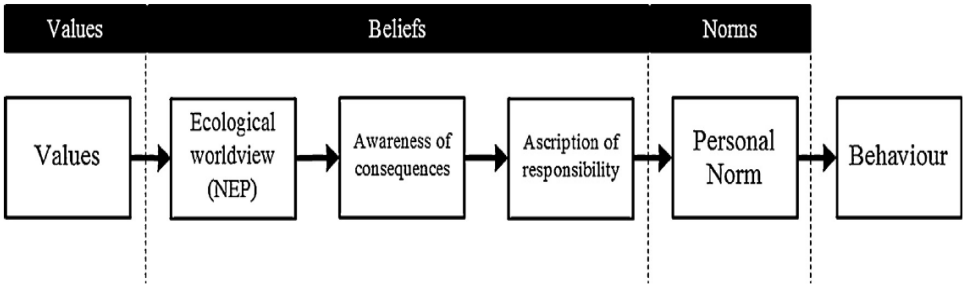

Fig 5: The value-belief-norm-theory. (adapted from Stern, 2000, p. 412).

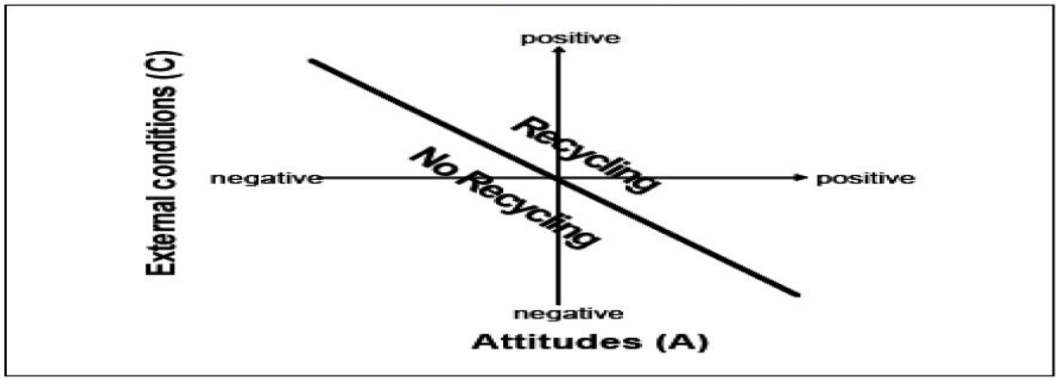

Fig 6: Attitude, Behaviour, Context theory (Guagnano et al., 1995).

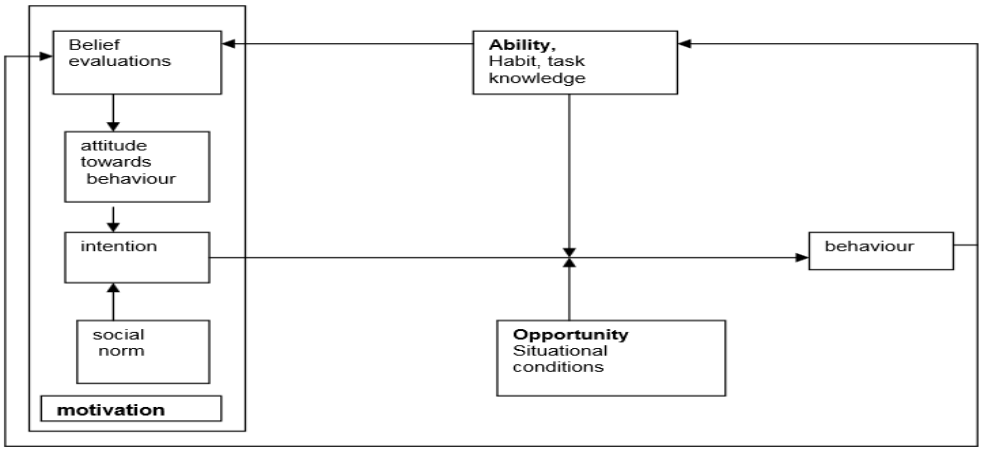

Figure 7: The Motivation-Opportunity-Ability Model (Ölander & Thøgersen (1995)