

# EFFECT OF ATTITUDE-BEHAVIOR GAP AND ITS REPERCUSSION ON PURCHASING GREEN VEHICLES TO SUPPORT SUSTAINABLE CONSUMPTION: PERSPECTIVES FROM INDIA

**Sunetra Maitra Paul, International School of Business & Media, Kolkata**  
**Pinaki Ranjan Bhattacharyya, Calcutta Business School, Kolkata**

## ABSTRACT

***Purpose** - Consumers and organizations are becoming more concerned about the importance of green vehicles which guide them to a sustainable consumption process and pollution free environment. According to Passet (1979), out of the three spheres, environment, economy and society, the economic sphere represents the development policy and indicates the vitality of social and environmental sphere which is not relevant without the 'natural capital' due to its fragileness and limited presence in the society. An essential component leading to sustainable governance is only possible with respect to integration of natural system with society for long term sustainable development. Moreover, increased consideration of how consumers and organizations become good corporate citizens and caretakers of finite non-renewable resources in this planet is under focus. In spite of all the progress that has been made globally towards addressing issues of sustainability and green marketing initiatives, the problem of unsustainable consumption is increasing by leaps and bounds. The 'attitude – behavior gap' or 'values – action gap' is a position which represent the consumers concern of different environmental issues and their struggle to translate these in consumption decision making process to support sustainable consumption. The authors have made an attempt to demonstrate the importance of green vehicles in the present environmental situation to control environmental, physical and financial resources.*

***Design/methodology/ research** - This study has attempted to identify the triangulation effect of attitude – behavior gap which has affected purchases of green vehicles. The constructs have been developed based on the 51 items using Kashdan and Steger (2006) scale to identify and analyse the greater dispositional social anxiety which tend to suppress emotions. Primary data has been collected from the respondents who are interested to purchase green vehicles as self-declared green consumers through a structured questionnaire and stratified random sampling method was adopted to collect the data in an around Kolkata.*

***Findings** - The result obtained has inferred the awareness of consumers about the efficacy of green vehicles and has validated the triangulation effect of attitude – behavior gap while consuming green vehicles. It has also brought forth the indecisive nature of the consumers in selecting green vehicles necessary to support sustainable consumption process using structured equation modelling method in determining relationships resulting in intention to pursue green consumption values.*

***Originality / value of research** – The systems approach to sustainability introduced by Passet (1979) and further christened by the interdependence theory of three ‘spheres’ or classes of system: the economic, the social and the environmental, has thrown light on the economic proposals related to sustainability. The economic sphere, frequently the major focus of development policies and indicators, depends on the vitality of the social and environmental spheres. The economic sphere is not relevant without the 'natural capital' i.e. environmental assets or resource which is fragile and limited in the present society. An essential component leading to sustainable development is only*

*possible with respect to integration of natural system with society. Moreover, increased consideration on how consumers and organizations can become good corporate citizens and caretakers of finite non-renewable resources in this planet is under focus. In spite of all the progress that has been made globally towards addressing issues of sustainability and green marketing initiatives, the problem of unsustainable consumption is increasing by leaps and bounds. The paper has been structured on the basis of attitude – behaviour gap introduced by Boulstridge and Carrigan (2000) and subsequent research carried out to identify ethical consumption pattern to identify and interrogate the inconsistency in consumer attitude and their consumption pattern, popularly referred to as ‘gap’. This has been categorized into two main perspectives, involving empirical issues on one hand associated with apprehending ‘the gap’, and corresponding cognitive factors which are influencing the gap on the other hand (Carrigan and Attalla, 2001; Carrington et al., 2010; Papaoikonomou et al., 2011; Newholm and Shaw, 2007; Shaw et al., 2006a; Vermeir and Verbeke, 2006; Davies et al., 2012). The authors have tried to identify the triangulation effect of attitude, intention and behavior in respect to gap while purchasing green vehicles and the indecisive nature or reluctance of consumers even after being aware about efficacy of green vehicles for sustainable consumption.*

**Research limitations/Implications** – *There are certain core limitations of the research identified by the authors. The limited number of self-declared consumers for willing to purchase green vehicles is one of the major limitations while conducting the survey. These findings have been validated in a predictive manner to understand the effectiveness of green consumption values and its implication amongst the consumers. Moreover, inadequate awareness about green vehicles among consumers is another limitation in time of research.*

**Practical Implication** – *The results are expected to explain the acceptability of the consumers in obeying green consumerism. The proposed green model and its validity are associated with green consumption values along with a parsimonious validation predicting choice of actual green environmental product. This will assist in incorporating green consumption theory and its effect in creating a sustainable environment. This study includes the significant findings about the gap observed between consumer intention to purchase and actual behavior depicted during purchase. This study provides important guidelines to boost positive attitudes in society towards green marketing and helps companies develop effective strategies to promote their green vehicles.*

#### **Social Implication**

*It has been identified that in case of consumption or use of green vehicles lack of consumer awareness is an important factor. Consumer found to be indecisive in nature regarding purchase decision of green vehicles. Even if consumers are aware about importance of green vehicles and sustainability concept, still this behavior found to be not so popular among Indian consumers.*

**Keywords:** Green consumer, Green consumption, Green vehicles, Sustainability, Attitude – behavior gap.

## **INTRODUCTION**

Over the last decade, consumer consumption of goods and services has increased tremendously across the world, which has led to depletion of natural resources mercilessly impairing the environment (Chen and Chai, 2010; Ivanova et al., 2015). Several severe consequences of environmental damage are increased environmental pollution, global warming and degradation in flora and fauna (Chen and Chai, 2010). Some Earth system experts, who speak of a new geological epoch, believe that human impacts on fundamental planetary processes have become so significant that human activity now rivals geological forces in altering the course of the Earth system. Rightly

they term this epoch as "Anthropocene" (Steffen, 2018; Thogersen, 2022). However, several countries throughout the earth have begun to realize anthropogenic danger and have started working towards reducing the harmful impact of their commercial activities on the environment. The annual UN climate change conferences (recent: COP 26 in Glasgow in November 2021) and the international agreement signed by 196 countries in Paris in 2015 are proof to the same (Thogersen, 2022). This realization and apprehension towards the environment and society has led to the concept of the 'sustainable development' which identifies the requirement to support and endorse sustainability and emphasises those developments to reduce negativity, its impact and effect on the environment and society. Sustainable development encourages eco-innovation which focuses on integrating environmental sustainability practices at every single stage of design of goods and services (Veleva and Ellenbecker, 2001; Sierra-Pérez et al., 2021).

Moisander (2007) has opined that green consumption is related with consumption of environment friendly products by consumers who are conscious about the efficacy, user-friendliness, acquisition, usage and disposition of green vehicles and services. Environmentally responsible purchasing has become a priority as unplanned purchasing of goods can relentlessly destroy the environment. Way back Grunert (1995) assessed, 40% of the environmental damages occur due to irresponsible purchases of Consumer household items. The world since then has changed from production economy to consumption economy and even to post-industrial economy. But, not with much respite. Recent research shows that e-shopping that involves travel by delivery agents produces 15% more CO<sub>2</sub> (Muñoz-Villamizar, 2021). It has been observed that out of the various measures, the capability of consumers (especially from the Third World) in preventing or decreasing environmental damage can be controlled through purchase of green vehicles (Dash, 2020, Shi. et al, 2022, Murugan et al.2022). It has been observed from different studies that a positive relationship exists between the consumers and the environment. (Arvola et al., 2008; Ellen, Webb and Mohr, 2006; Liu et al., 2012; Vermeir and Verbeke, 2006). The consumers have expressed desire to consume green vehicles, in the past, but the data evidence obtained is unable to justify the demand of the consumers in procuring and consuming green vehicles (Bockman, et al., 2009; Schmeltz, 2012; Li et al,2017.). This is despite the intention of the consumers in consuming green vehicles, and the change in the environment leading to consumer concern in purchasing green vehicles to maintain sustainability, maintaining the market share, if possible (Bray et al, 2011). Aguilar-Luzón et al. states that consumers' environmental protection or belief is a potential factor to shape their decision to use pro-environmental green products. The environmental concern to use green products influences the purchase decision of the consumer( Mohr, et al., 2001).

While discovering green purchase behaviour, several studies have conveyed an inconsistency or "GAP" between consumers stated favourable attitudes and genuine buying practices (Tanner and Kast, 2003; Vermeir and Verbeke, 2006; 2008; Goh and Balaji, 2016, Chaudhary and Bisai, 2018). While it has been found that around 67% of the consumers exhibited positive attitude towards purchase decision of organic food products, only 4% of the consumers actually purchased the products (Hughner,2007). This has been corroborated by Chen and Chai (2010); Wheale and Hinton, (2007) where they have pointed that research conducted by the department of forestry and environment in UK has obtained a result showing that only 30% of the consumers were concerned about the environment, but their concern was never converted into purchase decision making process towards green consumption. Thus, according to the authors, a gap exists between the intended purchase and actual purchase, which has been termed as "green-attitude-behaviour gap" (Lee et al,2014). The gap justifies that though there is a latent demand towards green consumerism, however, the stimulus-response mechanism is not completed into a positive action while selecting green vehicles. The veracity to accept the less influence of environment on the purchase decision

making of a consumer while selecting green vehicles may be attributed not only too few factors like product price and availability, but also factors like societal influence, which may create a discrepancy between the consumer attitude and purchase behaviour. As stated by Schwepker and Cornwell (1991); Diamantopoulos et al. (2003), these issues can be addressed through steps taken after proper, though extensive studies on consumer's awareness and concern about the environment-centricity (Follows and Jobber, 2000; Lee, 2009), the reasons pertaining to consumption pattern of consumers, and also the non-consumption behavioral pattern is yet to be understood and the factors determining the green purchase could not be properly identified. It has been found that in most cases, individuals apprehend the gravity of environmental issues, notwithstanding their attitude towards environment necessary for green purchasing (Bamberg, 2003; Kilbourne and Beckmann, 1998; Nordlund and Garvill, 2002). This has once again been echoed by Rokka and Uusitalo (2008) when they claimed that environment conscious consumers also avoid purchasing green vehicles, and even if they decide, the decision is guided by ecological perceptions and different product attributes as well. Moreover, the purchase decision may also be influenced by situational factors which are non-controllable and has negative influence in the environment. This has been questioned by Gupta and Ogden (2009) where they have failed to identify the reasons of a positive consumer not indulging into purchase of green vehicles. This has been exemplified by Carrington et al. (2010); Young et al. (2010) in different surveys, where 30% to 50% of consumers have indicated their intention to buy sustainable products, even if the market share of these goods is often less than 5% of the total sales. This phenomenon has also been confirmed by different international studies (Rita et al., 2018; Zhang et al., 2019), mentioning the impact of green index and the practical and theoretical challenge in narrowing the gap between green sustainable consumption, its impact on attitude behaviour to address the environmental impact caused due to industrial development.

The reasons for this behavioural gap have not yet been sufficiently researched. On the one hand it is possible that the respondents' answer to comply with accepted social norms is not reflected in their individual consumption behavioural pattern either for themselves or in the society (Carrington et al., 2010). Studies on different consumer behaviour has emphasised that in addition to social desirability of respondents amongst a particular group, motivation of consumers in consuming green products has considerably increased (Cottingham and Winkler, 2007; Hughner et al., 2007; Naspetti and Zanolli, 2009; Oughton and Ritson, 2007; Biswas and Roy, 2015; Merfeld and Meisel, 2022). On the other hand, complicated sustainable behaviour is also observed in everyday consumption pattern despite special barriers. However, the reasons for such behaviour and their subsequent response in influencing responsible purchasing of environmental products could not be ascertained (Memery et al., 2005). It has been shown that consumers are becoming increasingly aware of environmental issues as a dimension of sustainable consumption (Rahman et al., 2020). There are relatively very few studies on attitude-behaviour inconsistencies in the context of consumer green purchase behaviour, although empirical studies concerned with various dimensions of green consumption were found (Joshi and Rahman, 2015). Talwar et al., 2020 has affirmed that consumption of organic food though reflects healthy behavioural pattern, it has been found that there is a relationship between healthy eating, self-identity, and purchase decision in case of green consumption (Aitken et al., 2020). The existing attitude-behaviour inconsistency and a lack of extensive research thereof, and the absence of intent in addressing such issues has been a motivating factor in reviewing extensive literature to identify the inconsistency in attitude-behaviour pattern in case of green purchasing behaviour of consumers. The invasive decisions by the marketers to manufacture sustainable products due to environmental damage in the form of pollution and depletion of natural resources have also become a key issue in the identification of factors influencing green purchase behaviour of consumers, and has provided an additional motivation for the present research. However, these drivers and barriers may

help in explaining the various reasons behind the existing attitude-behaviour inconsistency and the factors responsible for such inconsistent behaviour. Many academic researchers have focused on phrases like “green purchasing” (Joshi et al., 2021; Shao and Unal, 2019), “adoption of green product” (Nath et al., 2014; Arun et al., 2021) and “green acquisition” (Wu and Qu, 2021; Abbas and Sagsan, 2019) which probably has tried to explain the underlying reasons for environmental purchasing behaviour of consumers. In this paper, the authors use all these terms interchangeably.

The present study attempts to identify motives and factors influencing consumer attitude, purchase intention and actual purchase behaviour toward green vehicles. It provides a possible explanation for the observed attitude behaviour gap. An individual’s environmental concern and knowledge, and the product’s functional and green attributes are major drivers whereas high price, affordability, accessibility, availability, and inconvenience in purchasing the products may create major hindrance towards consumer green purchase behaviour.

## REVIEW OF LITERATURE

It has been observed that researchers are concerned about resolving the problem arising out of attitude behaviour gap while making a purchase decision, especially green vehicles. The plausible reason may be because of incongruence in the attitude behaviour gap exhibited by the consumers. Inconsistency observed generally can be looked into to understand the relevance while conducting this research. It has been found that sustainable or responsible consumption implies the satisfaction of personal needs without an adverse impact on the lives in compliance with sustainability principles and consumption potential of the current generation (Baldwin, 2007). The responsible consumer tries to consider economic (in terms of personal welfare), ecological (including animal welfare) and social aspects across the entire consumption chain. A few studies employed other versions of hierarchical values-beliefs-attitude-behaviour models. According to TRA model (theory of reasoned action) (Fishbein and Ajzen, 1980), individual behaviour is determined by two main factors - individual attitude and social norms. Gianneti et al., 2020 has introduced different methods and practices to prevent environmental damages. Though there are different initiatives taken to thwart the environmental damage and improve sustainable development through new technologies, however, it is not always possible to assess the effective cleaner production mechanisms or distinguishing sustainable goals needed for cleaner production solutions (Williams et al., 2017). But results have shown that there exists a weak relationship between the expressed behaviour and the actual purchase behaviour, also referred to as attitude-behaviour gap while consuming green vehicles. (Tanner and Kast, 2003; Vermeir and Verbeke, 2008; Webster, 1975; Wheale and Hinton, 2007). TPB model (theory of planned behavior) (Ajzen, 1988) added one more factor as a determinant of individual behaviour - perceived behavioural control, which is reflected in one’s purchasing actions, as has been identified in many studies as an extension of Theory of Planned Behaviour Model (Arvola et al., 2008; Smith and Paladino, 2010; Tanner and Kast, 2003; Tarkiainen and Sundqvist, 2005). The predictive ability of attitudes remains arguable in context of environmental consumerism; most studies show that environmental concern or attitudinal variables fail to capture green purchase behaviour (Bamberg, 2003; Hines et al., 1987; Schultz et al., 1995; Scott and Willis, 1994; Tanner, 1999). TPB was not considered a suitable model for explaining ethical behaviour in most studies since it did not consider the consumer affective element that was found to influence consumer ethical behaviour (Magnusson et al., 2003; Padel and Foster, 2005). In addition, it did not account for the consumers’ habitual buying behaviour (Padel and Foster, 2005; Thøgersen and Olander, 2003). Also, previous studies have not determined the influence of various situational factors (such as economic constraints) that may confound the relationship between environmental attitudes and behaviour

(Mainieri et al., 1997). TPB approach thus fails to explain consumer decision making during purchase of the product, and whether they would purchase it in future (post-purchase behaviour), although it examines the antecedents of consumer intentions in pre-consumption situations. The attitude-intention-behaviour models also ignore external effects of the environmental and situational factors on consumer purchase behaviour. (Carrington et al., 2010; Foxall, 1993). Various studies have proposed some modifications to TPB in order to overcome its limitations. These modifications may help in explaining the reasons behind observed attitude-behaviour inconsistencies in context of green purchasing. Various theories exist which assert that attitude alone does not affect behaviour; there are other factors that not only influence behaviour, but also the strength of the attitude-behaviour relationship. The Attitude Behaviour Context Model (Guagnano et al., 1995) has reiterated that apart from attitude, other contextual factors are also important to identify and observe. According to the research, the strength of attitude-behavior relationship is strongly determined by such contextual issues which may or may not be favourable. However, even though Ajzen's theory is useful in predicting behaviour it assumes that individuals behave rationally (Kollmuss & Agyeman, 2002). Many theorists have criticized this model, claiming that it does not consider other factors that may affect behavior, suggesting that this could perhaps be one of the underlying causes of the gap (Papaoikonomou et al., 2011; Carrington et al., 2010; Caruana, Carrington and Chatzidakis, 2016). Joshi and Rahman (2015) also agree to this point claiming that the theory of planned behaviour disregards environmental and situational factors during a purchase. Ajzen's framework also suggests that intentions lead to behaviors, which has been shown to be a poor indicator for actual behavior (Govind et al., 2019). Furthermore, most theoretical approaches tend to focus specifically on the relationship between attitudes and behavior rather than the actual behavior itself (Carrington et al., 2010). In response to these issues, theorists have reconceptualized the elements of Ajzen's (1991) theory of planned behavior and constructed a holistic approach that integrates other factors that have been found to impede consumer ethical behavior (Carrington et al., 2010).

Some theorists have recommended marketing strategies that can help mitigate the gap, in relation to the attitude-behavior gap. Davari and Strutton (2014) aimed to find out which of the four green marketing mix elements (price, product, place and promotion) had a greater impact on the four dimensions of consumer-based brand equity (brand association, trust, loyalty and perceived brand quality) (Davari and Strutton, 2014). They did so by conducting a quantitative study using questionnaires that focused on five well-known brands in the food sector. Accordingly, the main findings show that consumers are affected with a firm's green marketing strategies, however promotional activities fail to influence consumers trust as well as perceived quality on a certain brand. Whilst their findings provided insight on which marketing element is best fit to influence ethical consumption, it focuses mainly on the food sector. Yet marketing strategies that can neutralize the gap in sustainable fashion consumption has scarcely been focused on studies. The results have shown that people with weak environmental attitudes tends to behave in an environmentally friendly way under supportive conditions, but show otherwise under restrictive conditions. Olander and Thøgersen (1995) introduced Motivation- Ability- Opportunity (MAO) model for understanding consumer behaviour. MAO model used two constructs - ability and opportunity, as indispensable prerequisites to green consumer behavior; whereas the ability construct incorporates both habit and task knowledge, the opportunity construct incorporates facilitating conditions or 'opportunity' to perform the behaviour. According to this model, consumers' positive attitude will lead to desired behaviour only if they have the ability, availability, accessibility and the opportunity to carry out the expected behavior while consuming green vehicles, which are construed as environmentally superior having low impact on environment (Shamdasami, Chon-Lin and Richmond, 1993). Green vehicles manufacturers use material safer to the environment, which are reducible, recyclable and reusable and

can be reordered for less packaging (Chan and Chai, 2010). An attempt has been made to explain consumer green purchase behaviour describing the underlying values, attitude and behavioural intentions toward environment friendly products (Foxall and Pallister, 2002; Vermeir and Verbeke, 2006; Wheale and Hinton, 2007).

Green purchasing refers to the willingness of consumers to purchase environmentally friendly products and avoiding products that harm the environment (Chan, 2001; Chang, 2011; Chen & Wu, 2015; Chen & Chang, 2013; Chen, Tien, Lee, & Tsai, 2016; Wu & Lin, 2016). Green purchasing is most often measured as green purchase intention and behaviour. The promotion of green vehicles is embraced by corporates as a tool in enhancing their brand image in an informative manner to create a market for their green goods and as a measure to accommodate the stakeholder pressure, (Chang, 2011; Chen & Wu, 2015; Chen & Chang, 2013; Chen, Tien, Lee, & Tsai, 2016; Wu & Lin, 2016; Chen, 2008). The understanding of ecological implications and the social obligation in developing a green image for a company depends up on certain public obligation when they are confronted with competitions from other marketers (Marchi, Maria, & Micelli, 2013). This is noted and has an impact on the consumers who are concerned about the ecological issues while considering their purchase decision making process of green vehicles (Iles, 2008). Many firms are now implementing a green marketing campaign to win competition (Al-Majali and Tarabieh, 2020; Chen & Chai, 2010; Chen, Hung, Wang, Huang, & Liao, 2017; Tarabieh, 2018). Enterprises look forward to finding new solutions in the ecological period to promote their products. Green marketing has been a vital way of targeting sustainable customers (Chang, 2011; Chen & Chang, 2013a), and it should be utilized by more businesses in differentiating their green vehicles. This has been observed as many of the companies have started promoting green consumerism using the terms like 'green' or 'eco' in their promotion; alongside also coining the words – 'environmentally friendly', 'sustainable' and 'eco-friendly'. Perhaps these ecological statements are important in the present context but their efficacy remains a question while analyzing the decision making of the consumers. It might be because the consumer claims should be true, reliable and accurate (Chen, Lin, & Chang, 2013).

The model 'green wash' side effect developed by Delmas and Burbano (2011) has shown that sustainability practices envisaged by corporates in dishonest marketing tactics may have raised questions on the efficacy of these green vehicles or services. This has also been corroborated by Kangun et al (1991) in the form of three different classifications: (1) false claims; (2) suppressing vital information necessary for evaluating the genuineness; and (3) Adopting to use unclear terms which may be perceived as either lying or bogging (Parguel, Benoit-Moreau, & Russell, 2015). Chang, (2011); Lyon & Montgomery, (2015); Pancer and McShane, (2013) has also advocated for avoiding attention to this notion of green wash effect while marketing green vehicles. While previous study has mentioned the problems of purchase purposes broadly, there is no survey to explain purchasing intentions from the point of view of greenwash creating confusion about perceived risks and trust in view of environmental concerns. Phipps et al. (2013) has introduced reciprocal deterministic theory to understand and evaluate the sustainability factors which is important for a consumer. This model emphasized the importance of past behavior and considered it as an indicator of future sustainable behaviour. The model suggests that personal factors such as attitude, along with past sustainable behaviors and socio-cultural environments, affect future sustainable behavioral pattern. It is thus clear from the above discussion that consumer behavior is not only affected by attitude, but also by various other personal and situational factors. Hence there remains a question whether the attitude-behavior relationship will be strengthened or weakened.

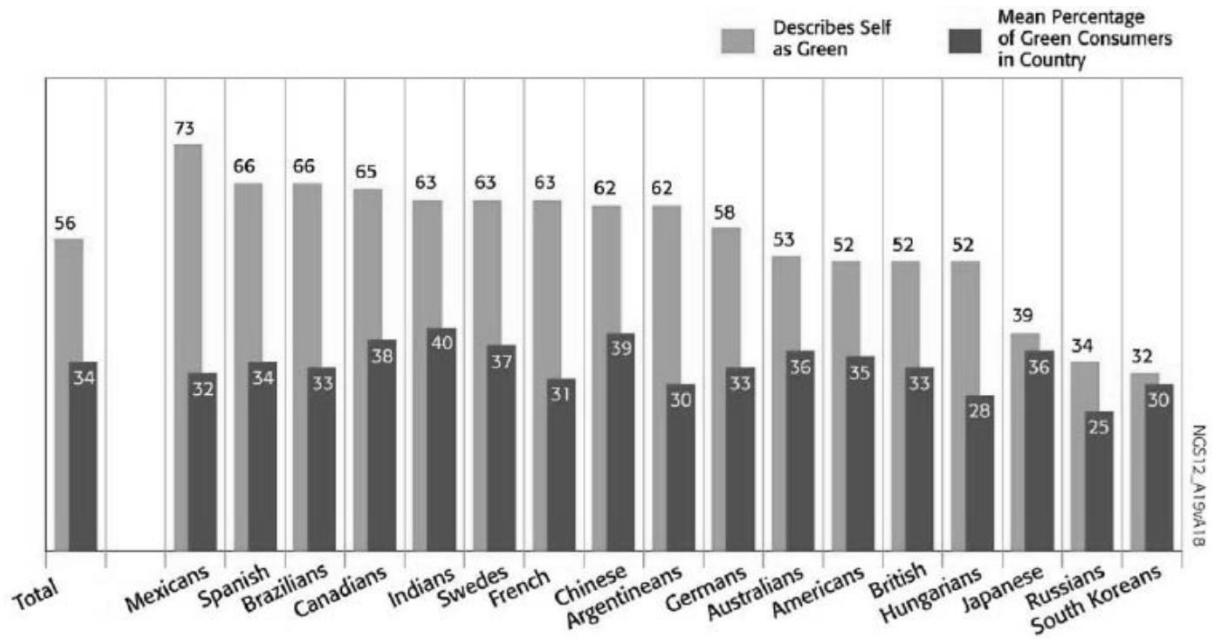
## **Determinants and Motivations of Decision-Model of Sustainable Consumption**

The observed sustainable consumption contradicts the basic key assumptions of traditional economics. It suggests a rationally acting consumer who attempts to maximise his own expected profit. The new behavioural economics, which deals explicitly with the human behaviour in the economic decision-making processes, detects in many studies the systematic behavioural deviations due to 'cognitive bias' or ethical values. The stimuli of herd instinct, over-optimism, illusion of control, short-term oriented behaviour, addictive behaviour as well as fairness and ethical (sustainable) behaviour (Kahneman and Tversky, 2003) may result in a response, overt or covert while considering sustainable consumption with diverse and interdependent qualities influencing purchase behavior. As opined by Balderjahn (2013), Carrington et al., (2010); Vermeier and Verbeke, (2006), a general decision-making model of sustainable consumption derived from different studies (figure – 1). It implies that beliefs lead to attitudes, which in turn derive intentions. Intentions determine the actual buying behaviour. According to them, many different individual, social and situational factors also influence the decision-making process.

It is observed that attitudes towards sustainable consumption deviate from the actual consumption behavior, is referred to as attitude-behaviour-gap or attitude-intention-behaviour gap (Follows and Jobber, 2000; Carrigan and Attala, 2001; Gupta and Ogden, 2006; Auger and Devinny, 2007; Carrington et al., 2010; Balderjahn and Peyer, 2012, 2012a). The authors have opined that this may arise from three distinct factors: (i) Individual factors like socio-economic characteristics, needs or wants etc, (ii) social factors like social norms, culture etc, (iii) situational factors like purchase situations, incentives etc. This has been focused in different other explanations on special effects of sustainable consumption where environmentally compatible consumption has been shown as the influencing factors for such decision-making model of sustainable consumption (Schwartz,1977; Ajzen ,1991). The authors suggested parameters as attitude, personal action control and personal moral norm which was further explained by Ajzen (1991) as behavioural attitude, subjective norm and perceived behavioural control. Analysis between purchase intention and consumption has been effectively explained considering situational context (Carrington et al, 2010). Balderjahn and Peyer (2012) focused on the social, fair consumption awareness based on the adequacy-importance models developed by Foscht and Swoboda (2011). However, Schen (2018) has demonstrated that consumer attitude towards green consumption is affected by their purchase intention, ultimately purchase behaviour which was coined by Ajzen (1991). It has also been opined that the attitude of a consumer is influenced by his belief and importance with respect to a particular product. While belief is assumed to be the production undertaken on the condition of fair labour, importance is associated to the personal values of the production system, which when added results in the consumer awareness of a fair consumption pattern.

Consumers' attention to the environment and green vehicles will affect their purchase decisions (Pinto de Moura et al., 2012). However marketers are expected to understand and introspect the consumer preferences guiding their decision making process while promoting their green vehicles (Cherrier et al., 2011; Sreen et al. 2018). This has been corroborated in the previous studies to identify the factors which affect consumers green purchase intention (Gil and Jacob, 2018; Sun and Wang, 2019; Hashim et al., 2020; Wang et al., 2020). However, other studies have shown conflicting results it is seen that the mean percentage of green consumers in a country is much less than the declared self-green individuals. It means that most of the consumers who declare themselves as green are much more in percentage than the total number of reported green consumers in a particular country. This proves that there exists an attitude behavior gap with respect to individuals and total self-declared green consumers (Terlau and Hirsch,2015).





**FIGURE 1**  
**ATTITUDE-BEHAVIOUR-GAP (CONSUMERS WITH GREEN ATTITUDE VERSUS AVERAGE ACTUAL GREEN CONSUMER BEHAVIOUR IN % (GREENINDEX, 2012))**

It is also imperative that satisfaction level of a consumer is solely guided by two important parameters – a) core factors which are the primary attributes of a consumer in making a purchase decision and b) augmented factors which affirms that decision (Maitra & Bhattacharyya, 2015). Though it is not predictive factor for every purchase, it has been observed in case of green vehicles or products which are relatively sensitive; the purchasing pattern is more dependent on the subjective norms and motivation to purchase driven by word of mouth, including electronic word of mouth communication and belief of the consumer. The present study aimed at finding the relationship of concern for use better quality product (CBQP), concern for health (CH), concern for status (CS), frequency to buy (FB) and level of satisfaction (LS) with intention to buy green vehicles (IG). Furthermore, the extent of predictability of dependent variable (IG) on independent and predictor variables has been analyzed to explore the factors responsible for intention to purchase green vehicles. Moreover, researchers tried to find out that how intention to buy green vehicles is converted to green consumption.

### Research Rationale

This paper has attempted to examine and explain the gap between purchase attitudes and actual buying behaviour of green consumers. The researchers have also tried to explore the repercussion of the consumers while making a purchase decision of green vehicles in promoting environmental sustainability (Passet, 1979) and further enunciated by O'Connor (2006), Purvis et al (2019). Accordingly, the objective of the study has been developed to understand consumer intention arising out of concern for use better quality product (CBQP), concern for health (CH), concern for status (CS), frequency of buying (FB) and level of satisfaction (LS).

### Objectives of the Study

1. Whether attitude has any effect on the behavioural intentions to purchase green vehicles
2. Factors responsible for attitude towards green vehicles for a sustainable consumption pattern
3. Whether the buying motives are directly influenced by attitude towards consumption of green vehicles
4. Whether willingness of consumers has any effect on the behavioural intention of purchasing green vehicles
5. Whether level of satisfaction has any impact on the willingness of consumers on purchase of green vehicles
6. Whether preference of green vehicles is related to sustainable consumption
7. To identify whether the triangulation effect of attitude – behavior gap has any impact on purchase decision of green vehicles.

The hypothesis has been developed based on the model proposed by Azjen (1991) where it has been found that the behavioural attitude, subjective norms and perceived behavioural control independently influences the intention of the consumers which when enforced by other external factors result in a particular behavioural pattern. It is expected that this model may be a fit in our analysis and validation.

*H<sub>1</sub>: concern for using better quality products has no effect on purchase intention of green vehicles*

*H<sub>2</sub>: concern for health has no effect on intention to purchase green vehicles*

*H<sub>3</sub>: concern for status is not related to purchase intention of green vehicles*

*H<sub>4</sub>: frequency to buy is not related to purchase intention of green vehicles*

*H<sub>5</sub>: level of satisfaction is not related to purchase intention of green vehicles*

*H<sub>6</sub>: intention to buy green vehicles is not related to sustainable green consumption behaviour*

*H<sub>7</sub>: factors influencing consumers in purchasing green vehicles has no effect on the behavioural intention*

## **METHODOLOGY**

The area of study was restricted to Kolkata (India) only. The data for the study was collected after conducting a focused group discussion among a group of 30 respondents who were identified as green consumers. The constructs have been developed based on the State Social Anxiety and State Emotion-Regulation Questionnaires by Kashdan and Steger (2006) scale to identify and analyses the greater dispositional social anxiety which tend to suppress emotions. Researchers also used White Bear Suppression Inventory (WBSI) by Daniel M. Wegner & Sophia Zanakos (1994) which has been considered to understand the thought process an individual who is interested in green product but unable to procure or avail it. The participants were asked to complete the questionnaire within a fixed time period. The acceptable reliability of the questionnaire was found to be within the limit as defined in the scale. The data obtained from this focus group discussion was used to prepare a structured questionnaire, which was circulated amongst 575 respondents, using stratified random sampling method, based on age, gender, educational qualification, marital status, occupation in the age group of twenty (20) and above. It was understood that consumers above twenty will be deciders in purchase decision making process. Participation was voluntary and no remuneration was offered. A total of 548 completed the questionnaires were obtained and deemed sufficiently complete to be useable.

### **Data Collection**

The data collected from the 548 respondents was analysed using SPSS 20 to understand to validate the hypotheses chosen for this study.

## RESULTS AND ANALYSIS

### Reliability of Data

To measure internal consistency (“reliability”) for this study using Likert scale, Cronbach Alpha has to be calculated. The value was 0.715, which indicates a high level of internal consistency for our scale with this specific sample. According to Kline (1999), the value of Cronbach Alpha value more than .7 can be realistically accepted.

To analyse the hypotheses as mentioned above, the relationship between the variables mentioned in figure 2 has to be validated to understand the relationship between exogenous and endogenous variables. The following hypotheses will justify the relationship which has been further explore using SPSS Amos.

*H<sub>1</sub>: Concern for using better quality products has no effect on purchase intention of green vehicles.*

Chi square test has been performed to determine whether there exists any relationship between the variables and to quantify the differences between the observed and estimated covariance matrices (Hair, Black et al, 2009) for a particular degree of freedom and to understand the statistical implication affected by the sample size which may be required for goodness-of-fit. Accordingly, chi square has been performed using the variable like better quality of product in respect to purchase intention of green vehicles. the result showed that  $\chi^2$  (tab) at df 9 = 16.91 at  $\alpha = .05 > \chi^2$  (cal) at df 9 = 46.763. Hence H<sub>0</sub> rejected Tables 1-5.

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	47.763 <sup>a</sup>	9	.000
Likelihood Ratio	50.175	9	.000
Linear-by-Linear Association	15.542	1	.000
N of Valid Cases	548		

a. 7 cells (43.8%) have expected count less than 5. The minimum expected count is .30.

Though it has been found that concern for using better quality product has effect on purchase intention of green vehicles, however the strength of association as per Cramer’s V value = 0.282, indicated though concern for using better quality product has effect on purchase intention of green vehicles but it has not been accepted across by the sample respondents.

		Value	Approx. Sig.
Nominal by Nominal	Phi	.489	.000
	Cramer’s V	.282	.000

N of Valid Cases	548	
a. Not assuming the null hypothesis.		
b. Using the asymptotic standard error assuming the null hypothesis.		

$H_2$ : concern for health has no effect on intention to purchase green vehicles.

Chi square has been performed using the variable like concern for health in respect of intention to purchase green vehicles. The result showed that  $\chi^2$  (tab) at  $df_{16} = 26.3$  at  $\alpha = .05 > \chi^2$  (cal) at  $df_{16} = 110.5$ . Hence  $H_0$  rejected.

<b>Table 3</b>			
<b>CHI-SQUARE TESTS</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	110.512 <sup>a</sup>	16	.000
Likelihood Ratio	134.292	16	.000
Linear-by-Linear Association	55.759	1	.000
N of Valid Cases	548		
9 cells (36.0%) have expected count less than 5. The minimum expected count is .39			

Table 3 - chi square test to identify whether concern for health has any effect on intention to purchase green vehicles though it has been found that concern for health has effect on intention to purchase green vehicles, however the strength of association as per Cramer's V value = 0.372, indicated though concern for health has some effect on intention to purchase green vehicles but it has not been accepted across by the sample respondents.

<b>Table 4</b>			
<b>SYMMETRIC MEASURES</b>			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.743	.000
	Cramer's V	.372	.000
N of Valid Cases		548	
a. Not assuming the null hypothesis.			
b. Using the asymptotic standard error assuming the null hypothesis.			

$H_3$ : concern for status is not related to purchase intention of green vehicles

Chi square has been performed using the variable like concern for status and purchase intention of green vehicles. The result showed that  $\chi^2$  (tab) at  $df_{12} = 21.03$  at  $\alpha = .05 > \chi^2$  (cal) at  $df_{12} = 135.198$ . Hence  $H_0$  rejected

<b>Table 5</b>			
<b>CHI SQUARE TEST TO UNDERSTAND WHETHER CONCERN FOR STATUS IS RELATED TO PURCHASE INTENTION OF GREEN VEHICLES</b>			
<b>Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	135.198 <sup>a</sup>	12	.000
Likelihood Ratio	128.549	12	.000

Linear-by-Linear Association	26.559	1	.000
N of Valid Cases	548		
a. 10 cells (50.0%) have expected count less than 5. The minimum expected count is .30.			

Though it has been found that concern for status is related to purchase intention of green vehicles, however the strength of association as per Cramer's V value = 0.475, indicated though the concern for status is related to purchase intention of green vehicles but it has not been accepted across by the sample respondents.

Symmetric Measures		Value	Approx. Sig.
Nominal by Nominal	Phi	.822	.000
	Cramer's V	.475	.000
N of Valid Cases		548	
a. Not assuming the null hypothesis.			
b. Using the asymptotic standard error assuming the null hypothesis.			

*H<sub>4</sub>: frequency to buy is not related to purchase intention of green vehicles*

Chi square has been performed using the variable like frequency to buy and purchase intention of green vehicles. The result showed that  $\chi^2$  (tab) at df 16 = 26.296 at  $\alpha = .05 > \chi^2$  (cal) at df 16 = 202.219. Hence H<sub>0</sub> rejected.

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	202.219 <sup>a</sup>	16	.000
Likelihood Ratio	195.296	16	.000
Linear-by-Linear Association	7.027	1	.008
N of Valid Cases	548		
a. 2 cells (8.0%) have expected count less than 5. The minimum expected count is 3.81.			

Though it has been found that frequency to buy is related to purchase intention of green vehicles, however the strength of association as per Cramer's V value = 0.304, indicated though the frequency to buy is related to purchase intention of green vehicles but it has not been accepted across by the sample respondents.

Symmetric Measures	
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		Value	Approx. Sig.
Nominal by Nominal	Phi	.607	.000
	Cramer's V	.304	.000
N of Valid Cases		548	
a. Not assuming the null hypothesis.			
b. Using the asymptotic standard error assuming the null hypothesis.			

$H_5$ : level of satisfaction is not related to purchase intention of green vehicles.

Chi square has been performed using the variable like level of satisfaction and purchase intention of green vehicles. The result showed that  $\chi^2$  (tab) at df 12 = 21.03 at  $\alpha = .05 > \chi^2$  (cal) at df 12 = 188.201. Hence  $H_0$  rejected.

<b>Table 9</b>			
<b>CHI SQUARE TEST TO UNDERSTAND WHETHER LEVEL OF SATISFACTION IS RELATED TO PURCHASE INTENTION OF GREEN VEHICLES</b>			
<b>Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	188.201 <sup>a</sup>	12	.000
Likelihood Ratio	191.935	12	.000
Linear-by-Linear Association	17.457	1	.000
N of Valid Cases		548	

Though it has been found that level of satisfaction is related to purchase intention of green vehicles, however the strength of association as per Cramer's V value = 0.338, indicated though the level of satisfaction is related to purchase intention of green vehicles but it has not been accepted across by the sample respondents.

<b>Table 10</b>			
<b>CRAMER'S V TEST TO UNDERSTAND STRENGTH OF ASSOCIATION BETWEEN LEVEL OF SATISFACTION AND PURCHASE INTENTION OF GREEN VEHICLES</b>			
<b>Symmetric Measures</b>			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.586	.000
	Cramer's V	.338	.000
N of Valid Cases		548	
a. Not assuming the null hypothesis.			
b. Using the asymptotic standard error assuming the null hypothesis.			

$H_6$ : intention to buy green vehicles is not related to sustainable green consumption behaviour  
Chi square has been performed using the variable like intention to buy green vehicles and sustainable green consumption behaviour. The result showed that  $\chi^2$  (tab) at df 12 = 21.03 at  $\alpha = .05 > \chi^2$  (cal) at df 12 = 255.123. Hence  $H_0$  rejected.

<b>Table 11</b>			
<b>CHI SQUARE TEST TO UNDERSTAND WHETHER INTENTION TO BUY GREEN VEHICLE IS RELATED TO SUSTAINABLE GREEN CONSUMPTION BEHAVIOUR</b>			
<b>Chi-Square Tests</b>			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	255.123 <sup>a</sup>	12	.000
Likelihood Ratio	257.905	12	.000

Linear-by-Linear Association	53.616	1	.000
N of Valid Cases	548		
a. 1 cells (5.0%) have expected count less than 5. The minimum expected count is 1.43.			

Though it has been found that intention to buy green vehicle is related to sustainable green consumption behaviour, however the strength of association as per Cramer's V value = 0.394, indicated though the intention to buy green vehicle is related to sustainable green consumption behaviour but it has not been accepted across by the sample respondents Tables 6-12.

<b>Table 12</b>			
<b>CRAMER'S V TEST TO UNDERSTAND WHETHER INTENTION TO BUY GREEN VEHICLE IS RELATED TO SUSTAINABLE GREEN CONSUMPTION BEHAVIOUR</b>			
<b>Symmetric Measures</b>			
		Value	Approx. Sig.
Nominal by Nominal	Phi	.682	.000
	Cramer's V	.394	.000
N of Valid Cases		548	
a. Not assuming the null hypothesis.			

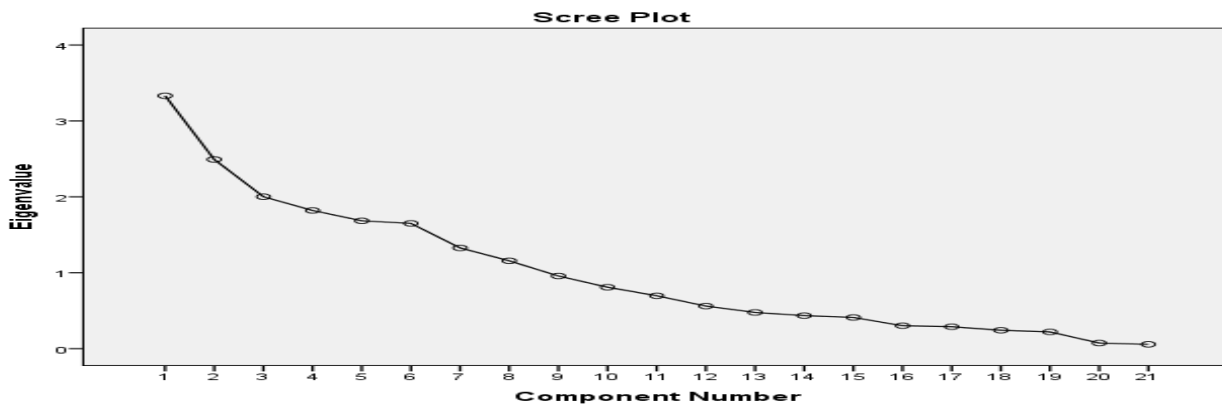
*H<sub>7</sub>: factors influencing consumers in purchasing green vehicles has no effect on the behavioural intention*

The Kaiser-Meyer-Olkin (KMO) Test has been done for Factor Analysis. The test score measures sampling adequacy for each variable in the model and for the complete model. The statistic is a measure of the proportion of variance among variables that might be common variance. This value is 0.607 which is more than .49 and acceptable.

According to Cohen et al. (2007), KMO value 0.6 is acceptable. KMO approaching 1 and Bartlett's test is significant at less than 0.05 indicates that the data is appropriate for factor analysis (Pallant, 2005).

<b>Table 13</b>		
<b>KMO AND BARTLETT'S TEST FOR SAMPLING ADEQUACY TEST FOR FACTOR ANALYSIS</b>		
<b>KMO and Bartlett's Test</b>		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.607
Bartlett's Test of Sphericity	Approx. Chi-Square	1839.073
	df	210
	Sig.	.000

The factors influencing consumer to purchase green vehicles were analyzed by factor Analysis via SPSS. The purpose was to construct the factors which influence consumers to buy green vehicles. During the factor analysis, the scree-plot graphic shows that it is optimum to choose eight factors that which are having 1 or more than one Eigen value.



**FIGURE 2**  
**SCREE PLOT TO IDENTIFY FACTORS INFLUENCING PURCHASE OF GREEN VEHICLES**

Since it has been found that some of the factors are responsible for consumer decision making regarding purchase of green vehicles, factor analysis has been performed to identify those factors which are responsible for purchase decision making process. The sample was heterogeneous in terms of gender, occupation and educational qualification which represented an apt base and adequate number of different section of people. The result obtained after factor analysis showed that five factors are important. Factor1 (F1) is representing concern for status as a motive to use green vehicles. Factor 2 (F2) is representing concern for health as a motive to use green vehicles, factor 3 (F3) is concern for use better quality product as a motive to use green vehicles, factor 4 (F4) is frequency to buy green vehicles, and factor 5 (F5) is representing level of satisfaction regarding green vehicles Tables 13-14.

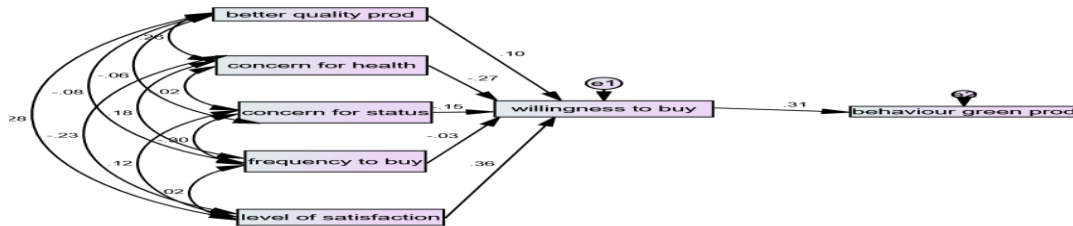
<b>Rotated Component Matrix<sup>a</sup></b>	1	2	3	4	5
concern for health as a motive to use green vehicles		.741			
concern for status as a motive to use green vehicles	.801				
concern for use better quality product as a motive to use green vehicles			.765		
frequency to buy green vehicles				.802	
level of satisfaction regarding green vehicles					.893

To understand and validate the goodness of fit of the factors, SEM analysis was performed to find out the set of dependent relationships with the construct of the hypothesized modeling confirmatory factor analysis. The AMOS output has shown that the relationship leading to willingness to buy is intertwined with five dependent constructs namely – concern for use better quality products, concern for health, concern for status, frequency to buy and level of satisfaction, which are related to each other as well as to the dependent constructs.

Path in the model shown in figure – 3 represent the research questions about the willingness to buy which is determined by the estimated coefficients by the five interrelated variables which are 0.08, - 0.18, -0.14, -0.03 and 0.36 respectively. It can be therefore asserted that the level of satisfaction has



the biggest impact in willingness to buy green vehicles followed by concern for using better quality products, and concern for health has the least impact. Hence the predicted outcome variable in case of confirmatory factor analysis shows that concern for better quality products and level of satisfaction are the guiding factors for willingness to buy.



**FIGURE 3**  
**ESTIMATED STRUCTURED EQUATION MODEL FOR WILLINGNESS TO BUY GREEN VEHICLES**

According to the structural equation model tested chi square value using SEM obtained is 535.93 is greater since the number of observed variable is also on the higher side (Hair, Black et al, 2009).

Accordingly, chi square goodness of fit does not solely indicate the fitness of SEM model. However, the chi square value for the model explains the relevance of this analysis where GFI value is 0.849 which justifies that goodness of fit. RMSEA value 0.441 is not considered to be acceptable. Moreover, CFI value 0.447 is less than the tabulated value of 0.9 which also disproves the fitness of the model.

Thus, it can be inferred that the fit of the model is not acceptable ( $\chi^2 = 535.93$ ;  $DF = 5$  ( $p = 0.000$ );  $GFI = 0.849$ ;  $SRMR = 0.036$ ;  $NFI = 0.454$ ;  $TLI = -1.322$ ;  $CFI = 0.447$ ).

From the analysis it can be inferred that the proportion of variance in the dependent variable is weakly connected to the set of independent variables which explains that though the consumers are aware about the independent factors in terms of willingness to buy green vehicles, however, they are unable to exhibit consumption decision making process while selecting green vehicles. this may have an impact on the environment as the practicing managers are more interested in developing a platform for consumption of green vehicles.

According to research findings, concern for health and level of satisfaction has been found to have positive impact on willingness to buy green vehicles. It has also been found that attitude toward green vehicles is related to behavioural intention though the strength of association is very weak. Consumer preference of green vehicles is positively related to sustainable consumption but the strength of association is very weak. The relevance of green branding and the attitude of consumers towards consumption of green brands leading to sustainability as has been opined by Passet (1979), one of the pillars of his famous 'three sphere' theory can be related to consumer attitude towards consumption of green vehicles which is positively related to the higher degree of purchase intention and actual purchase of the green brands. However, having positive feelings about the brand may not

directly lead to actual purchase, as it was found that purchase intention is actually mediating the relationship.

The finding of this research has managerial implication for the practitioners to facilitate the understanding about consumer behavior towards green vehicles. It is important that a company needs to communicate brand information to their customer for enough knowledge about the brands which would lead to the factors like brand attitude and trust and at the same time will reduce green washing effect. Green brand needs to be genuine about its information because if at any time customers find that some of the information was not accurate, then the trust in the brand will be lost.

## Scope

For future research, the study should widen the sample size to include additional demographics in order to evaluate and contrast the results of the green consumption. In addition, other industries might be considered as the practice of green marketing, particularly environmentally friendly concern, has been widen in many disciplines. Hickel et al. (2022) showed that there exists a difference in the economic situation for resources and labour due to differentiation in prices in the international trade circuit, which may commonly be referred to as unequal exchange theory. It has been found that this has significantly affected the labour and natural resources resulting in difference in the productive potential arising out of human needs against exchange value. The same has been corroborated illustrating that the informal structure defining the broader economy gets perpetuated because of renewable energy sectors which may lead to green consumption and subsequently may manifest itself in the production of e- vehicles (Chen and Li, 2021). It has been found that millennial intend in to consume green products if priced less in contrast to the accepted philosophy that eco friendly products are more preferred for millennial generation (Lu et al. 2013). However, Wang et al. (2018), Shukla (2019) has discussed environmental responsibility as a predictor norm for millennial intention to purchase green products. Naveed et al. (2020) has affirmed that environmental concern has a positive impact on the mind of young consumers intending to purchase green products, which probably is moderated by environmental awareness.

## CONCLUSION

A consumer while making a purchase decision considers several aspects where the attitude-behaviour gap plays an important role. This study has been conducted keeping in mind the attitude-behaviour gap from the stand point of a consumer while purchasing a green vehicle. The study has shown that though consumers are interested to purchase green vehicles however there are several factors which play a pivotal role in restraining the decision. It has been argued by researchers that instead of focusing on the factors which determines the attitude-behaviour gap while purchasing green vehicles more focus should be to resolve the problem and facilitate in purchase decision making process. However, on extensive survey of literature from the perspective of consumers, it has been observed that this phenomenon has been probably overlooked. Hence the authors have tried to delve into the issues and demonstrate the importance of green vehicles in the current environmental condition of the Global South.

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