JISR management and social sciences & economics
2022, VOL. 20, NO. 2, 1–20, e-ISSN: 1998-4162, p-ISSN: 2616-7476
https://doi.org/10.31384/jisrmsse/2022.20.2.1

One for all doesn't Work: Micromanaging Pro-environmental Behaviour

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ABSTRACT

This study aims to identify the flaws in current theories and present reasons for their failure. Despite all the efforts, the adaptability of products with sustainability elements remains low. This study analyzed some reasons for low adoption and evaluated the planned behaviour, norm activation model, and goal-framing theory. The study reviewed literature that discussed the critics of all three theories mentioned above. Based on the literature assessment, we have provided some guidelines for a way forward in pro-environmental studies related to consumer behaviour. Some suggestions are also provided to increase the adoption of such products, including, using factors of these theories in conjunction. This study also recommends a proposed solution for the consumers' low adoption of environmentally friendly products. It is stressed in the study that the three main theories discussed in the pro-environmental area are not enough to understand or gauge consumer behaviour fully. Hence, there is a need to have a holistic approach for viewing and checking consumer behaviour of sustainable consumption.

Article Type: Review Paper

OPEN ACCESS

Received:
2 June, 2022
Revised:
14 October, 2022
Accepted:
7 November, 2022
Published:
31 December, 2022

Keywords: *norm activation model, sustainability goals, theory of planned behavior, goal framing theory, pro-environmental behaviour*

JEL Classification: *M31, Q01, Q56, D1*

How to cite this article (APA): Riaz, K., Khan, K., & Mehmood, K. (2022). One for all doesn't Work: Micromanaging Pro-environmental Behaviour. *JISR management and social sciences & economics*, *20*(2), 1–20. https://doi.org/10.31384/jisrmsse/2022.20.2.1

INTRODUCTION

The production and consumption of harmful consumer products have led to a wide range of environmental and social problems faced by the world today (Hameed, Hussain, & Khan, 2021). The unsustainable consumption of foods, natural resources, and other products continuously adds to the severity of the problem (Bodur et al., 2015; Hameed & Khan, 2020). We are facing serious environmental issues related to pollution, global warming, scarcity of water, and others (G. Gardner & Stern, 2002). To curtail the problem, governments worldwide support companies to produce and market products with minimal environmental impact (Bodur et al., 2015; Rezvani et al., 2018). However, despite the availability of some environmentally friendly products, consumers' consumption and adoption of these products remain low (Bodur et al., 2015); and thus, the root cause of the problem partly lies in human behaviour, more specifically in the purchase decision (Koger & Winter, 2010). Researchers; therefore, believe that it can be managed by altering the behaviours. To encourage environmentally-friendly actions, many scholars have proposed various factors responsible for influencing behaviour and effective ways to achieve behavioural change (Hameed & Khan, 2020; Rezvani et al., 2018; Waris et al., 2022). However, there seem to be conflicting views on strategy or approach that is effective in altering behaviour (Steg et al., 2014). Moreover, recent research has demonstrated that contrary to the previous belief, there are different types of pro-environmental behavior; therefore, a single approach or strategy to cause all types of pro-environmental behaviour is highly unlikely (Chakraborty et al., 2017; Khan, Hameed, Akram, & Hussainy, 2022; Stern, 2000).

Researchers have used different theories to influence human behaviour and action to enhance sustainable consumption patterns. They are continuously exploring factors that can bring environmentally friendly behavioural changes, especially those associated with conservation and recycling (Kaiser et al., 2006). The most commonly used theories in influencing human behaviour are the theory of planned behaviour (hereafter, TPB) and the theory of reasoned action (hereafter, TRA). Although TPB stems from TRA, the impact of the perceived behavioural control, which is the difference between the two theories, on significantly enhancing intention and target behaviour has been proven through research, thus making it a more popular choice among the scholars (Madden et al., 1992). Another theory used in influencing behaviour is goal framing theory (hereafter, GFT) which states that the goals govern the formation of attitude and, thus lead to behaviour.

For this reason, this theory has gained popularity among the scholars, especially in environmental psychology (Lindenberg, 2006). The researchers in social

psychology have also explored the norm activation model (hereafter, NAM) to trigger pro-environmental behaviours (Lindenberg & Steg, 2007; Steg et al., 2014). NAM is constituted of three main factors: personal norms, consequences awareness, and ascription of responsibility (Wittenberg et al., 2018). For this model to trigger pro-environmental behaviour, it requires a precondition that individuals must be aware that there is a problem with the environment which needs help, understands the consequences of their current behaviour on the environment, and accepts responsibility for it (Gkargkavouzi et al., 2019).

Using motivation to achieve pro-environmental behaviour is one of the social psychology's most widely researched subjects (Lindenberg, 2006; Lindenberg & Steg, 2007). Many researchers have used the theories mentioned above along with other approaches to influence behaviour (Chakraborty et al., 2017; Gkargkavouzi et al., 2019; Rezvani et al., 2018). Research has shown that if individual willingness towards pro-environmental behaviour increases, external factors become significant in converting pro-environment intention into pro-environment behaviour (Wijekoon & Sabri, 2021). However, until now, a single theory covering all the situations has failed to emerge, primarily due to the different dimensions or types of pro-environmental behaviour (Stern, 2000). Current literature on consumer adoption of green products presents inconsistent findings and is fragmented (Flores & Jansson, 2022). Despite having so much focus by the international players, stakeholders, and governments; the theories, discussed in sustainable consumption and sustainable behavior, are not enough to measure the actual behaviour or to find the right reasons why the basic behaviours are not realized. We believe that a single theory cannot influence all types of pro-environmental behaviour and will not apply in all the situations. Therefore, this review paper focuses on the issues related to different theories of achieving pro-environmental behaviours. Furthermore, this paper explores the reasons for their failure and a way to reduce the impact of human beings on the environment. This paper highlights the flaws in various motivational theories published in the top research journals. It provides an overview of current knowledge about green product adoption and future research avenues.

METHODOLOGY

The aim of this study is to examine consumer motivational theories and to predict consumer behaviour. We have reviewed three theories i.e. the theory of planned behaviour, goal-framing theory, and the norm activation model. The method includes going through the literature review extensively, identifying the shortcomings of each theory and presenting a possible solution. The possible solution is to achieve the consumer's actual purchase behaviour of sustainable

goods. Regarding the theories, the study's sample size is three, and almost one hundred and ten thousand studies have discussed all the three theories, as per Google scholar. At the end of this study, the possible outcome would be suggesting a model to predict actual consumer behaviour.

LITERATURE REVIEW

Many theories and models attempt to influence human behaviour and make them more environmentally friendly; however, for this study, we have analyzed the three most promising theories or models, i.e. TPB, NAM, and GFT. There are diversities in the applications of these theories; however, many researchers have used these theories to understand the motivation or factors behind achieving pro-environmental behaviour (Blamey, 1998; Kaiser et al., 2006; Lindenberg, 2006).

Theory of Planned Behaviour

The TPB has stemmed from the theory of reasoned action (hereafter, TRA) with one distinct difference, the TRA states that behavioural intentions cause the behaviour and are based on human beings' belief that a particular outcome can be achieved by performing a particular action (Ajzen, 1991). The basis of such belief is on a person's attitude and subjective norms towards performing the behavior, where attitude influences the behaviour, and subjective norms regulate it (Ajzen, 1991; Ajzen & Madden, 1986; Madden et al., 1992).

As stated, the TPB presented in Figure 1 has one distinct difference from the TRA: perceived Behavioural Control (hereafter, PBC) (Ajzen, 1991). This perceived control is influenced by the possession of resources and the possibilities of carrying out a given behaviour (Hameed et al., 2019; Waris et al., 2022). The more resources and possibilities an individual have, more important the PBC is. This PBC is treated as an external variable that has both direct effect on behaviour and indirect impact through behaviour intention (Madden et al., 1992).

The theory is also based on two other factors similar to the TRA (Ajzen, 1991). The behaviour of a human being is the direct result of an intention to behave in a particular manner, which is based first on attitude towards behaviour which encompasses the overall evaluation of behaving in a specific manner and the general perception about the cost and benefit of that particular behaviour (Hameed, Hussain, & Khan, 2021; Madden et al., 1992). Secondly, the theory bases intention on subjective norms, which reflects the social pressure the person perceives about behaving in a particular manner, it is the pressure of expectations of the relevant reference group on a person concerning the

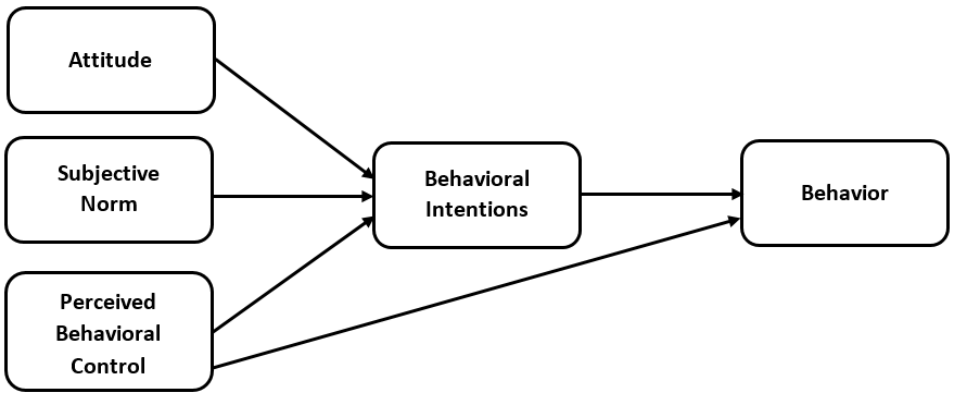

Figure 1: *Theory of Planned Behaviour (Ajzen, 1991).*

behaviour (Butt et al., 2022; Lindenberg & Steg, 2007). Research on green energy consumption has shown that social influences play an important role in individuals' continuous green behaviour and such influences should be encouraged (Hafner et al., 2019). Thus, subjective norms like attitude are an evaluation of cost and benefit; however, this is about social cost and benefit (Lindenberg & Steg, 2007; Soomro et al., 2022).

Issues with Theory of Planned Behaviour

Kaiser et al. (2006) reported that researchers have failed to provide or prove a general version of the TPB that does not falsify the compatibility principle in explaining an entire class of behaviour, specifically those related to pro-environmental behaviour (Kaiser et al., 2006). Not many researchers have been keen on experimentally testing TPB, and few, that did perform experimental tests, ended up with results that did not support the assumption of the TPB (Sniehotta et al., 2014). A systematic review of 24 studies that used TPB in developing or evaluating interventions found that the evidence was insufficient to prove the theory's usefulness (Hardeman et al., 2002). Researchers have also performed a factorial experimental test of TPB's cognitive predictors, showing that these predictors could not modify the target variables (Mccarty, 1981). In cases where they could change cognition, these changes did not result in modifying behaviour (Chatzisarantis & Hagger, 2005).

A literature review has revealed numerous criticisms towards TPB (Sniehotta et al., 2014). One general argument about the developed theory is its incapability towards empirical falsification.

Many believe that hypotheses developed from theory are merely common-sense statements that cannot be falsified (Odgen, 2003). Others argue in relation to the exclusive focus of TPB on rational reasoning, leaving out unconscious influence on behaviour (Sheeran et al., 2013). Moreover, the theory ignores the role of emotions on behaviour, especially those, whose outcomes are difficult to anticipate (Conner et al., 2013). Many researchers have shown empirical evidence that proves the effects of past behaviour on cognition and, ultimately, on future behaviour, a phenomenon which has not been considered by the TPB (Hameed & Khan, 2020; Khan, Hameed, Akram, & Hussainy, 2022; Mceachan et al., 2011).

The TPB has also been criticized for its limited predictive validity, researchers believe that the constructs of TPB do not cover many variations in observed behaviour, more specifically, the problem of 'inclined abstainers' that is a condition where individuals, despite forming the intention to refrain from acting are not covered by the theory (Orbell & Sheeran, 2011). Furthermore, studies found significant evidence that factors like age, social and economic status, health, and others caused consumer behaviours, when TPB constructs were kept constant or controlled (Sniehotta et al., 2013). Some other factors driving behaviour or modification in behaviour found in the studies, include factors like habit, strength (B. Gardner et al., 2011); motivational measures like identity, self-determination, and anticipated regret , along with self-regulatory measures like planning, to be able to cause behaviour regularly and are not covered by the constructs of TPB (Conner & Armitage, 1998). Sniehotta et al. (2014) noted that researchers believe TPB is no longer valid, as it has not been proven accurately through empirical evidence. It has simply become outdated and is no longer considered a theory that is capable of predicting behaviour or behavioural change because of TPB's limitations that it has failed to trigger sustainable consumption behaviours among the consumers that are better for the environment and the ecosystem.

Norm Activation Model

Many researchers have theorized the NAM to achieve pro-environmental behaviour (Chakraborty et al., 2017; Lindenberg & Steg, 2007; Rezvani et al., 2018). The model uses personal norms to predict behaviour and states that these norms are actively experienced by human beings "as feeling of moral obligation, not as intentions" (Schwartz, 1977). According to the model, these personal norms are determined by the two factors: one is the understanding that performing or not performing a particular behaviour has certain consequences, and the second is the sense of responsibility in performing or not performing a specific behaviour (Hameed & Khan, 2020;

Onwezen et al., 2013). However, some studies show that these factors are interrelated; it is believed that an individual must first be aware of the consequences of performing or not performing a particular behaviour before feeling responsible for it (De Groot & Steg, 2009; Khan, Hameed, Hussainy, & Riaz, 2022). Figure 2 represents the norm activation model. We have opted for a similar stance in our theoretical evaluation of the model.

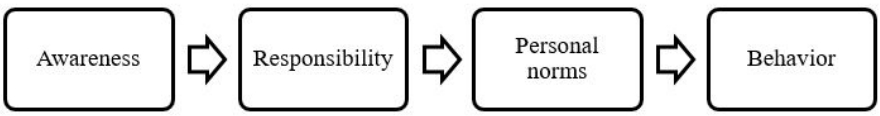

Figure 2: *Norm Activation Model (De Groot & Steg, 2009; Schwartz, 1977)*

Issues with Norm Activation Model

One of the significant issues of NAM is that it only considers experienced emotions; however, the concept of anticipated emotion, the emotion an individual will experience in anticipation of future behaviour and outcomes, is not covered by NAM (Mellers & Mcgraw, 2001). Some researchers believe these anticipated emotions to be more severe than those experienced after behaviour and have been found in several studies to influence behaviour (Onwezen et al., 2013). Scholars believe that expected behaviour influences the decision-making process (Mellers & Mcgraw, 2001) because individuals always endeavor to endure positive emotions and avoid negative emotions (Fridja, 2007). Another issue of NAM is the application of causality of effect several studies have failed to prove the causal relationship between personal norms and anticipated emotions. It is unclear whether anticipated emotions influenced or developed personal norms or whether these emotions were influenced by the personal norms (Onwezen et al., 2013). Another issue of concern, that a few researchers have raised, is the impact of culture on behaviour, and they believe that NAM cannot be generally applied through all the cultural groups to achieve pro-environmental behaviour (Milfont et al., 2010). Hindrance in using NAM to achieve environmentally friendly behaviour is social desirability; if social groups do not support such behaviours, it will be extremely difficult for the individuals

to behave in such a manner despite anticipating positive emotions and having personal norms (Onwezen et al., 2013).

Another problem faced during the NAM testing of the model variables, multicollinearity was found in some of the studies which means the effects of the variable on each other are more interconnected and complicated and not as simple as shown in Figure 2 (Han, 2014). Moreover, in the concept of defence, an individual can simply go into denial in the first two stages of the model, meaning that in the stages of awareness and responsibility, if an individual feels obligated to perform a particular action, then that individual can employ four different types of denials to offset the obligation towards a specific behaviour. These denials are denial of need, denial of practical action, denial of ability, and denial of responsibility and thus are capable of altering behaviour and need to be incorporated in the model (Blamey, 1998; Schwartz & Howard, 1981). Another issue faced in NAM is that individuals are often time-constrained; therefore, allocation is required to evaluate the consequences of performing or not performing a particular behaviour, depending on the severity of the need and the anticipated cost of making a decision (Blamey, 1998).

In the context of achieving pro-environmental behaviour, NAM leaves out another important factor: an individual's attitude towards the behaviour and social norms. Many researchers have shown that these factors need to be incorporated into NAM along with the existing predictors of behaviour (Han, 2014; Khan & Hameed, 2019a; Onwezen et al., 2013). Attitude towards behaviour entails a favourable or unfavourable evaluation or appraisal of the behaviour. On the other hand, social norms are the perceived pressure of society or social group an individual feels towards performing or not performing a particular behaviour (Ajzen & Madden, 1986). These factors are highly influential in many pro-environmental behavioural studies that employ NAM (Mathies et al., 2012).

Goal Framing Theory

A relatively promising theory in the field of environmental psychology is GFT. The theory's basis lies in different areas of study; its development is strongly influenced by cognitive and social psychology (Khan, Hameed, Hussainy, & Riaz, 2022). Mainly, the theory entails that goals which frame behaviour, knowledge acquisition, attitude formation, evaluation of the situation, and alternative behaviours to be considered. Although many goals influence behaviours, the theory summarized them into three main distinct goals, which are the 'hedonic goal', 'gain goal' and 'normative goal' (Khan & Hameed, 2019a, 2019b; Lindenberg, 2006; Lindenberg & Steg, 2007).

The hedonic goal (to feel better right now) encompasses all the goals likely to improve one's feelings in a particular situation (Hameed & Khan, 2020). Under the hedonic frame, human beings and thus subsequent behaviour will be influenced by achieving or avoiding such goals that increase or decreases their pleasure and affect their mood, respectively. Gaining the goal "to guard and improve one's resources" makes people particularly inclined towards behaving in a manner that either improves or prevents a decrease in one's resources or efficiency of the resources (Khan, Hameed, Hussainy, & Riaz, 2022). The normative goal is to act appropriately. When normative goals are active, other sub-goals are active i.e. showing good behaviour, acting appropriately, cleaning the environment, etc. (Hameed & Khan, 2020; Khan & Hameed, 2019b).

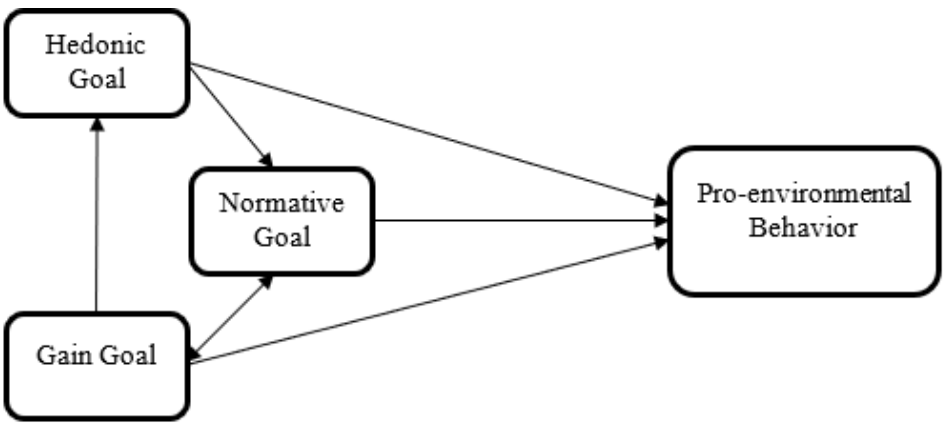

Figure 3: *Goal Framing Theory (Chakraborty et al., 2017; Lindenberg & Steg, 2007; Rezvani et al., 2018).*

Issues with Goal Framing Theory

One of the issues with the goal framing theory is that generally, there is not single considered goal considered; thus, human behaviour is based on multiple goals in most cases. It is also important to note that these various goals may or may not be compatible with each other, thus resulting in conflict. Nonetheless, from these multiple goals, one goal will likely dominate the framing process of behaviour (Lindenberg & Steg, 2007). However, those goals, that have been ignored and placed, in the background still generate some influence. For example, when a person is in a normative goal frame, behaviour is governed by what is appropriate; he will still choose the most advantageous behaviour. Thus, gaining a goal though not in the picture, will still exert some influence. In summary, background goals can increase or decrease the impact of the main

goal frame, leading behaviour (Lindenberg, 2008).

Another issue with the GFT is that the three goal frames do not equally influence the behaviour. Among them, the most influential is the hedonic goal frame, which is related to need satisfaction and, thus is the most basic of the goal frames. The other two-goal structures, gain and normative require additional support from the compatible goals in the background to influence behaviour (Lindenberg, 2008). Furthermore, the normative goal frame is more dependent on external support than the gain goal frame, as it results from an individual's sensitivity towards the social clues. Therefore, normative goal frames will only be able to influence behaviour when the other two-goal frames' influence behaviour is minimal (Milinski & Rockenbach, 2007).

Self-Control occurs when an individual tries to alter his or her thoughts, feelings, or behaviour (Muraven & Baumeister, 2000). So, if the behaviour was formed through any goal frames, self-control can be activated, and the behaviour will be altered. It involves overcoming or ignoring competing urges, desires, or behaviours (Barkley, 1997). It is also important to understand that not all the behaviours initiate self-control. Instead, self-control is the distinction between the automatic and controlled processes of reaching a behaviour (Shiffrin & Schneider, 1977). Therefore, if consumers, due to the automatic process of behaviour, are involved in consuming products that are harmful to the ecosystem, need to impose self-control before motivations can be altered. However, it costs to exert self-control in terms of resources like money, time, effort, and others, all of which are limited (Bargh et al., 1996).

Another phenomenon that troubles GFT is the ability of human beings to self-regulate, irrespective of the goal frame that was cognitively strong or was likely to cause behaviour humans' will to intervene and alter behaviour. People's ability or inability to regulate the goal frames strongly influences their function or behaviour (Vohs & Baumeister, 2011). Self-regulation, in a simple form, refers to the action needed to be performed by the individuals to either reduce discrepancies between perceived and standard behaviour or, in the case of standard negative behaviours, attempts to increase the discrepancy (Carver & Scheier, 2001). For example, people, who engage in smoking or eat more than they should, show their inability to self-regulate hedonic goal frames. This inability poses a long-term negative impact on behaviour (Muraven & Baumeister, 2000). Instead of self-regulating, human beings can also ignore the goal frame altogether, which means their goal frames will not influence their behavior, instead their actions will be led by others or peers' goal frames. In a social group or under the influence of the others, human beings can formulate a mood that will subsequently influence their actions (Lindenberg, 2008; Neumann & Strack, 2000). Exposure to stress may alter behaviour, and the goal framing

theory does not consider its impact. Coping with stress requires individual to override existing thoughts, block dominating sensations, control or stop emotions, and shift attention and denial (Muraven & Baumeister, 2000).

DISCUSSION AND IMPLICATIONS

Environmental sustainability faces challenges like global warming, air pollution, water shortage, noise, and others (Hameed, Khan, et al., 2021; Khan & Hameed, 2019b; Peterson et al., 2021; Tunn et al., 2019). Scholars believe that the root cause of these problems lies in human behavior, and thus can be managed by altering such behaviour to reduce its impact on the environment (Hameed & Khan, 2020; Rezvani et al., 2018; Vlek & Steg, 2007).

Several theories have attempted to predict and alter individuals' motivation to engage in pro-environmental behaviour; some of the prominent studies have been discussed above; however, when these models are tested, they present some issues that make generalization of these models quite difficult. Perhaps one of the reasons for these studies' inability to generalize is that they do not consider the cooperative nature of human beings, especially concerning environmental behaviour (Blamey, 1998). Providing economic benefits is considered important by many researchers in the adoption of green/environmentally friendly products (Song et al., 2021); however, there have been instances where the same has not been found effective (Sandra & Alessandro, 2021). Whether an individual opts to protect the environment is considered a dilemma. Researchers have also shown that sometimes conflict occurs in social norms that weaken the intention of sustainable green consumption (Ge et al., 2020). Conflict exists because an individual has to choose acting per self-interest. After all, it leads to the higher outcomes or collective interest, which will require individuals to sacrifice short-term gains and focus on the collective well-being, if everyone cooperates (Nordlund & Garvill, 2003). Therefore, on which interest human should focus self or social, there is no objective or rational solution (Vugt et al., 1996).

A nationwide green gap survey in the US showed that only 84% of the consumers were concerned about the environment. However, only 39% of that 84% reported purchasing environmentally friendly products. Approximately 25% said, they never considered changing their buying behaviour or habits despite being concerned for the environment (Insight, 2008). Another international survey that McKinsey and company conducted had included 7,751 consumers from the eight major countries (Canada, the US, UK, Brazil, China, France, Germany, and India) showed similar results. Their findings revealed that the 87% of the consumers were concerned about the environment, and

only 33% were willing to buy environmental-friendly products (Bonini & Oppenheim, 2008). As mentioned before, numerous strategies were employed to motivate consumers to purchase environmentally-friendly products. These efforts included increasing awareness and knowledge, feedback or persuasive messages like fear appeal, social influence techniques, calls to action, etc., and even providing monetary or other extrinsic incentives; however, they did not produce the desired results (Bodur et al., 2015). Another reason for the failure of these strategies is that they require a substantial amount of time and effort to convince people to change their behaviour and; therefore, considered costly and unrealistic by the companies to implement (Stern & Gardner, 1981).

The explanatory or influencing power of the theories to alter behaviour is also low. A study on environmental behaviour with a sample of 1478 respondents showed that TPB theory could only explain about 38% of the variances in behaviour, offering very low predictability of the model (Gkargkavouzi et al., 2019). Another study was conducted in the Netherlands had a sample of 110 valid respondents, comprising 52 men and 58 women. The study attempted to prove the effectiveness of NAM in making the individuals firstly feel responsible for environmental problems and then choose eco-friendlier products. Regression analysis revealed a positive relationship between feeling accountable and altering behaviour; however, it also showed a meagre predictive value of the model (De Groot & Steg, 2009). The survey was conducted amongst the university students in India. A total of 332 effective responses were collected from first year and final year students, with 50.60% and 49.40% representation in the sample. SEM was used to determine the effectiveness of GFT, whereas ANOVA was used to identify any differences in the behavioural influences among the two levels of students. Whereas the other two goals, gain and normative, showed significant influence, hedonic goal analysis proved insignificant in influencing behaviour. Moreover, gain goals only accounted for 63% of the variance, whereas hedonic and attain goals coupled together accounted for 44% of the variances in behaviour. Furthermore, ANOVA revealed a $p<0.05$, indicating a significant difference between the two levels of students concerning the impact of GFT on their behaviour (Chakraborty et al., 2017).

LIMITATIONS

There have been numerous studies that discussed the limitations of different psychological theories that attempt to predict behaviour. This research has not tested these psychological theories; therefore, future studies need to implement these psychological studies into different case settings and determine new constructs to improve their predictability further. More specifically, constructs need to be added to these psychological behavioural theories for their

implementation and use in environmental sustainability and betterment. Previous research has shown that people, who are genuinely concerned for the environment, are sometimes reluctant to act pro-environmentally because of certain situational factors like time pressure, personal resources facilities and availability of products and infrastructure (Steg et al., 2014). Another essential aspect that this research has not covered is companies' policies towards green purchases. Research has shown that green brand image and loyalty influence consumers' sustainable consumption intention (Chen et al., 2020). These factors, that specifically interfere and are a barrier to acting pro-environmentally, were not covered in this research.

RECOMMENDATIONS

It is an important and emerging field that attempts to link psychological and environmental sciences. It is currently looking for the variables that can effectively integrate both of these domains to achieve environmental sustainability in the long run (Pradhan et al., 2015). Environmental problems are constantly increasing, and communities are being forced to relocate to avoid the exposure of climate changes, pollution, and other factors. These forced relocations are causing severe emotional, physical, and financial hardship; therefore, not only are we facing an ecological crisis, but it is also now shaping into a social crisis as well (Agyeman et al., 2009)

Since results from the available strategies to generally modify behaviour and make it more eco-friendly are not very promising, we believe that until we can develop a general model or strategy, we need to focus on changing specific behaviour, especially those that significantly affect environmental sustainability and quality. For example, changing consumers' purchase decisions has far more environmental benefits than recycling or reusing (G. Gardner & Stern, 2002). We now possess means and methods to determine our impact on the environment. Environmental scientists can highlight which behaviour should be targeted first to have the most favourable environmental impact (Vlek & Steg, 2007) Researchers have shown that besides environmental consideration, many other factors influence behaviour, such as status, comfort, effort, opportunities, and others. Individuals are relatively inconsistent in their behaviour; one can show environmental concerns in waste recycling while burdening or damaging the environment in another area like transportation (Gatersleben et al., 2002).

Once the area has been decided, it is proposed that a proper assessment be carried out to determine which group of individuals should be targeted first to achieve the maximum favourable environmental impact (Steg et al., 2014). Furthermore, empirical studies can be carried out to determine coherent

patterns of environmental behaviour to identify common antecedents. By this way different types of behaviour or groups of individuals can join together to achieve generalized pro-environmental attitude and behaviour (Steg & Vlek, 2009). For any intervention to work in order to modify behaviour, it needs to be systematically planned, implemented, and evaluated; therefore, behaviours need to be motivated over-time, self-reports of behaviours have been found by many types of research to be an inadequate measure of behaviour and people may not always behave in the manner in which the report they would behave (Vining & Ebreo, 1992).

CONFLICT OF INTEREST STATEMENT

The authors declare no conflict of interests.

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