

GENERATIVITY AND GREEN PURCHASE BEHAVIOR: THE ROLE OF ENVIRONMENTAL CONCERN AND PRO-SOCIAL ATTITUDE

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Abstract

Purpose of the study: This research intends to find out the role of generativity in green purchase behavior. Moreover, the mediating roles of environmental concern and pro-social attitude have also been proposed.

Methodology: This study was conducted on 689 university students given the sensitivity towards the concepts of generativity, environmental concern, pro-social attitude, and green purchase behavior. The model validity was verified by performing the exploratory factor analysis and confirmatory factor analysis. Finally, to test the hypotheses, hierarchical regression was performed.

Main Findings: Results endorsed the positive impact of generativity concern on green purchase behavior. Additionally, the mediating roles of Environmental concern and pro-social attitude were also verified.

Applications of this study: This study will be very useful for companies that are offering green products/services.

Novelty/Originality of this study: This study distinguishes itself from prior studies by adding new predictors to the model of green purchase behavior. Furthermore, this study verifies the role of Environmental concern and Pro-social attitude on the link of GEN-GPB.

Keywords: Sustainability, Generativity, Environmental Concern, Pro-social Attitude, Environmental Behavior.

INTRODUCTION

The consumption of products and services has risen considerably in the world during the past decades, contributing to the loss of natural resources and severe environmental disruption ([Chen & Chai, 2010](#)). As climate change has become a vital subject for individuals, businesses, and cultures, environmental degradation, globalization, exploitation of natural capital, and industrialization are the major concerns and problems confronting any citizen on earth ([Yew, Lim, & Lee, 2019](#)). To overcome this challenge, numerous studies have attempted to examine consumers' attitudes towards green products and services ([Groening, Sarkis, & Zhu, 2018](#); [Shiel, do Paco, & Alves, 2020](#)). Human actions are creating severe environmental issues ([IPCC, 2014](#)) and households are a major contributor to them (Pothitou, Hanna, & Chalvatzis, 2016). In this scenario, consumer green purchase behavior (GPB) is critical ([Steg & Vlek, 2009](#); [Wang, Wong, & Alagas, 2020](#)) and companies should look into what causes consumers to buy green products and services ([Hsu, 2016](#); [Keho, 2016](#)). While people are more conscious than ever before of climate change and environmental concerns ([IPCC, 2014](#)), the share of individuals who are personally committed to the environment remains very limited ([Cleveland, Kalamas, & Laroche, 2012](#)). GPB is important because unplanned purchases of products and services may significantly affect the environment ([Joshi & Rahman, 2015](#)). GPB is an eco-friendly way of buying and using goods and services ([Han, 2020](#)).

Nevertheless, previous studies have shown that consumers are more positive about the environment ([Han, 2020](#); [Witek & Kuźniar, 2021](#)), however, no evidence shows that the demand for green products and services has increased. Despite the favorable attitude of consumers towards the environment, the environmental-friendly product share is still reported 1 to 3% of the whole market ([Bray, Johns, & Kilburn, 2011](#)). It implies that a favorable attitude towards the environment alone may not be enough to encourage GPB. Notwithstanding extensive research, studies often get contradictory findings on consumer's intentions and actions. It is yet unclear, that why consumers with a positive attitude toward environmentally friendly products and services act differently while purchasing the product and services ([Biswas, 2017](#)). Furthermore, environmental attitudes were not specifically studied in the past and the associations between green attitudes, beliefs, and actions are still not clear. It, therefore, goes without saying that previous studies have been inconclusive in getting the answer of; why a positive consumer attitude about the environment does not result in GPB ([Gupta & Ogen, 2009](#)). Such a situation is referred to "attitude-behavior gap" ([Alwitt & Pitts, 1996](#)) that has recently been explained in several ways. For instance, [Ajzen and Fishbein \(1980\)](#) argued that it is because of the measurement issues. When measured at the same abstraction level,

the relationship between attitudes and behavioral structures is greater. Because attitudes like environmental issues are more common than specific contextualized activities, their statistical association could be poor (Fransson & Gärling, 1999).

Another reason might be that the environmental behavior model does not contain all relevant variables. Due to the interaction intricacy of the behavioral dimensions and behavior itself, it is not easy to add all related variables to a common model. For instance, self-interest is supposed to drive the process in most consumer behavior models, but for the environmental-related behaviors (ERBs) this is not the case, since the behavior does not benefit directly from it. This altruistic tendency has demonstrated an impact on environmental concern, intentions, and behavior (Schultz, 2001). Additionally, social structure variable such as race (Farrow, Grolleau, & Ibanez, 2017; Johnson, Bowker, & Cordell, 2004), gender (Sreen, Purbey, & Sadarangani, 2018; Vicente-Molina, Fernández-Sainz, & Izagirre-Olaizola, 2018), demographic (Dietz, Stern, & Guagnano, 1998; Hansmann, Laurenti, Mehdi, & Binder, 2020), and geography (Carrus, Bonaiuto, & Bonnes, 2005; Ifegbesan & Rampedi, 2018) have also been examined as the attributes of environmentally friendly behavior. Furthermore, a series of psychological factors have been supported empirically, indicating their relationship with the environment, green attitudes, and behaviors. For instance, Prakash et al. (2019) studied the impact of altruism on eco-friendly actions, and conclude that willingness to engage in political action in an environmental sense is influenced by altruism and egoism. Besides, the positive impact of perceived consumer effectiveness on eco-friendly consumer behavior has been endorsed by many scholars (see for example Achchuthan & Thirunavukkarasu, 2016; Jaiswal & Kant, 2018; Zhao, Gao, Wu, Wang, & Zhu, 2014). Such findings suggest that customers will respond correctly if they know that their decisions would affect. Several researchers have also examined value orientation and their relation to environmental concerns and environmentally friendly behavior and found that they are positively associated with concerns and behavior (Ahmad, Kim, Anwer, & Zhuang, 2020; Buerke, Straatmann, Lin-Hi, & Müller, 2017; Han, Hwang, & Lee, 2017).

The psychological variables associated with environmentally friendly behavior, as can be seen, are wide in scope, and in the past 30 years, these variables have been studied for some time. Yet those examined do not exhaust the spectrum of alternatives, and several others may also be claimed that they are related. Whether and how individuals view the world relies on a variety of psychological factors which can exist at any moment. Some of these states are temporary and may vary under different conditions while some will last longer. Those with a lasting impact are of keen interest due to its role in the decline or rehabilitation of the environment has long-term effects on themselves as well as future generations. This poses the question of intergenerational justice which is largely neglected in the field of marketing and business-related discipline. Generativity (GEN) is considered as a psychological variable that expresses one's future orientation (Erikson, 1950). It is worth examining to further study its role in GPB in some depth because of its relation to intergenerational justice. Since one of the features that the present generation wants to move forward with is the condition of the environment, GEN role in such an aspect is very crucial to examine. Furthermore, a significant aspect of ensuring an ecological future would be reducing the manufacturing and use of goods that harm the environment while encouraging eco-friendly products/services (Liobikienė & Bernatoniene, 2017). Individuals with high levels of generative concern remain highly involved in cohesiveness, restoration of ecological systems, and the safety of future generations (Aubin & McAdams, 1995; Shiel et al., 2020). In most of the studies, building a greener environment is implicit, but the degree to which consideration for the environment influences customer decisions is not explicitly considered. Provided that GEN increases the value of work on the potential effects of current actions on the future, it is well worth examining its role in consumer GPB.

Another psychological variable that might play an effective role in closing the attitude-behavior gap and motivate pro-environmental behavior may be an environmental concern (EC) (Gifford, 2008; Kulin & Johansson Sevä, 2020). Since GEN implies feelings of responsibility and future generation concern, it might play a significant role in inspiring EC. Moreover, the model of GEN by McAdams and Aubin (1992) proposes that EC may be addressed with generative concern and generative action. Considerations of the Earth's ability to sustain future generations may now lead to an environmentally friendly decision (Moore & Nelson, 2010) and offer a framework to amplify GEN in this field. Plentiful qualitative research is available to support the positive association of GEN and EC (Barnett, Archuleta, & Cantu, 2019; Chan, 2009; Guiney & Oberhauser, 2009; Kulin & Johansson Sevä, 2020). It is evident from these qualitative studies that generative concern is an important motivation for environmental concern. Besides qualitative research, the argument got significant support in quantitative research as well (for example Milfont & Sibley, 2011; Shiel et al., 2020; Urien & Kilbourne, 2011).

Consequently, the concern for the environment refers to an individual's overall environmental interest which is found to be an important indicator of environmentally conscious behavior that ranges from recycling activity (Kropfeld, Nepomuceno, & Dantas, 2018; Ramayah & Rahbar, 2013; Wu, Liao, Wang, & Chen, 2019) to eco-consumerism (Bertrandias & Elgaaid-Gambier, 2014; Chaudhary & Bisai, 2018). For instance, individuals who possess stronger values for EC are more likely to purchase environmentally friendly products (Cerri, Testa, & Rizzi, 2018) than those individuals who are less concerned for the environment. Considerable empirical evidence is available that endorse the argument that individuals with a stronger environmental concern are more inclined towards Eco-consumerism (Cerri et al., 2018; Heo & Muralidharan, 2019; Malik et

al., 2019; Song, Qin, & Yuan, 2019). Thus, it is believed that individual who scores high on generativity may likely possess high EC and may likely engage in GPB.

Besides EC, the concern for society with prosocial motives is another important psychological element to investigate. Since Consumer behavior does not occur in a vacuum, it is therefore important to examine how individual concerns for future generations affect the social factors that affect behavior and the association between social and green behavior. In the theory of psychosocial development, Erikson proposes that individual and their social life are concomitant for each other. It further posits that the concept of generativity is not limited to ego-centric motivation, but rather a dynamic attribute of psychological development in which ego-centric and social-centric attributes co-exist and interact. This argument is also endorsed by Marcia (2010) by stating that generativity ranges from self-centered to being society-centered and the attitude towards society is an integral part of generativity. Furthermore, the generative individual is argued to be more politically conscious and expected to support movements that are in favor of social justice and would be more attached to the society and civic agency (Serrat, Villar, Warburton, & Petriwskyj, 2017; Timilsina, Kotani, & Kamijo, 2019). Similarly, Morselli and Passini (2015) endorsed the positive association of generativity and prosocial attitudes. Thus, in the social context, the concept of generativity should be concerned with how individuals engage his/her self in family and friends relationships, their vicinities, social activities, and social institutions. Although nearly any social attitude is over-determined by several forces and factors, we believe that GEN would be the significant force that encourages pro-social attitude such as; “providing social support, volunteerism and civic activities”.

Furthermore, Thielmann, Spadaro, and Balliet (2020), propose that pro-social behavior includes supporting others and acts directed at preserving or enhancing others' well-being. Since, GPB is a complex form of the ethical decision-making process of buying products and services that are deemed environmentally friendly (Chan, 2009), and a form of socially responsible behavior in which green consumers consider the impact of their consumption on the public, bringing about social change within their purchasing power (Moisander, 2007), and restricting unplanned consumptions of products which may affect the environment (Joshi & Rahman, 2015). We believe that individuals that consider the well-being of others and society would tend to be more inclined towards green purchase behavior. Furthermore, prosocial attitudes are about interpersonal relationships, they do represent the attitudes of individuals towards society and others thus could be a significant element in integrating green practices into every model.

Previously, the model of green consumer behavior has been theorized and examined with the help of the “Theory of Reasoned Action” (TRA) and “Theory of Planned Behavior” (TPB) to evaluate individual attitudes and behaviors. The TRA focuses on the behavior intention whereas TPB added Perceived Behavioral Control to predict consumer GPB (Paul, Modi, & Patel, 2016). Despite such theoretical models, developing an ideal and consensual model that predicts consumer GPB is still questionable. As a whole, previous researches suggest that there is a gap between consumers' environmental attitude and actual eco-friendly behavior and recommend that there is a need to examine various factors influencing consumer green purchase behavior (Biswas, 2017; He, Cai, Deng, & Li, 2016).

Hence responding to the call for further research in the domain of GPB, **the present study aims to contribute by examining the role of generativity, environmental concerns, and pro-social attitude in predicting GPB.**

LITERATURE REVIEW

Generativity and Green Purchase Behavior

The idea of GEN was first proposed by Erikson (1950) which comprised the concern for instituting and guiding future generations. GEN, thus defined by Kotre (1984, p. 10) as “a desire to invest one's substance in the form of life and work that will outlive the self”. Kotre expressed generativity, like the desire to live in a way that has effects beyond the life span of the individual. Likewise, Urien and Kilbourne (2011) described generativity as “a resource encouraging people toward the public good, maintaining continuity from one generation to the next” (p.73). More comprehensively, McAdams and Aubin (1992) come up with seven interlinked attributes of generativity: “cultural demand”, “inner desire”, “generative concern”, “belief in the species”, “commitment, generative action”, and “person narration”. The present study focuses on one aspect of the seven attributes presented above; i.e, generative concern. The generative concern is referred to as a general personality predisposition with conscious concerns for the well-being of others. More precisely, generative concern is the degree to which an individual articulates a persistent concern or obsession with a meaningful and enduring effect on the future generation. Individuals with high levels of generative concern remain highly involved in cohesiveness, restoration of ecological systems, and the welfare of future generations (Aubin & McAdams, 1995).

Consequently, the concept of GPB applies to the purchase of products and services that are environment-friendly (Chan, 2009). GPB is a complex form of the ethical decision-making process of buying products and services that are deemed environmentally friendly (Chan, 2009), and a form of socially responsible behavior in which green consumers consider the impact of their consumption on the public, bringing about social change within their purchasing power (Moisander, 2007).

and restricting unplanned consumptions of products which may affect the environment (Joshi & Rahman, 2015). Thus, a significant aspect of ensuring an ecological future would be reducing the manufacturing and use of goods that harm the environment while encouraging eco-friendly products/services (Liobikienė & Bernatoniene, 2017). Since a noteworthy percentage of consumer purchases are responsible for environmental damage (Grunert, 1995) with a harmful impact on future generations, consumers with their GPB can play a significant role in preventing or reducing the harm to the environment. Despite consumers' positive attitude towards the greener environment (Jaiswal & Kant, 2018) and demand for green products (Bockman, Razzouk, & Sirotnik, 2009; Shiel et al., 2020), limited research is conducted that shows the increase in the purchase of the environmentally friendly product. While one thing that the current generation will pass on to the future generation is the state of the environment, the concept of generativity is therefore very important in models of GPB.

Despite, the importance of GEN in individual GPB, this link has been seldom examined. Previously, GEN has been examined with social involvement (Hart, McAdams, Hirsch, & Bauer, 2001) volunteering (de Espanés, Villar, Urrutia, & Serrat, 2015; Son & Wilson, 2011), social motives (Peterson & Stewart, 1993), and personality (Peterson, Smirles, & Wentworth, 1997). Additionally, the importance of generativity in pro-environmental behavior such as; environmental commitment (Chan, 2009), environmental engagement and attitude, environmental activism (Alisat, Norris, Pratt, Matsuba, & McAdams, 2014), and in generativity concern to conservation volunteers (Guiney & Oberhauser, 2009) have been studied. More recently, it is linked with consumer behavior (e.g., Lacroix & Jolibert, 2015; Shiel et al., 2020; Urien & Kilbourne, 2008; Urien & Kilbourne, 2011). Besides, Urien and Kilbourne (2011) report that individuals with a high score on generativity indulge more in environmentally friendly purchasing behavior when self-enhancement is high. This suggests that people who think their potential contributions are important are more likely to be green buyers. As discussed earlier, individuals with a high degree of generative concern continue to play a meaningful role in the cohesion, reconstruction, and protection of future generations (Aubin & McAdams, 1995). In most research, it is not clear to create a greener atmosphere nor to what extent consumer choices are influenced by concern for the environment. GEN is worth exploring its position in the consumer GPB, given that GEN increases the importance of working on the possible impact of current action on the future. We believe, that individual who possesses high values for GEN would likely be more engaged in GPB. Henceforth, the first hypothesis of the study is formulated;

H₁: Generativity is positively and significantly associated with consumers' green purchasing behavior.

The Intervening Role of Environmental Concern

Nevertheless, the concept of GEN and consumer GPB has been studied extensively in the past (e.g., Shiel et al., 2020; Urien & Kilbourne, 2008; Urien & Kilbourne, 2011). However, the underlying mechanism between the link of GEN and consumer GPB is still not clear. One of the primary objectives of this research is to verify the intervening role of EC between the link of generativity and consumer GPB. EC is expressed as, "the degree to which people are aware of environmental problems and support efforts to solve them and/or indicate a willingness to contribute personally to their solution (Dunlap & Jones, 2002, p. 484)". Though empirical evidence that links generativity with environmental concern is limited, scholars have attributed generativity as an important contributor in EC (e.g., Horwitz, 1996; Urien & Kilbourne, 2011) and generative concern has repeatedly been quoted as a motive in the ethical and moral literature on environmental calamity (Moore & Nelson, 2010). Besides, Pratt, Norris, Alisat, and Bisson (2013) observed the impact of GEN on EC in adolescent and their parents and reported a positive and significant impact of GEN on EC. More recently, Barnett et al. (2019) examined the role of generativity between political conservatism and environmental attitudes. Their findings revealed that the concern for future generations plays a positive and significant role between politically conservative individuals and pro-environmental attitudes. Their findings conclude that individuals who are more politically conservative tend to be more concerned towards future generations and will exhibit more pro-environmental attitudes.

GPB has a significant role in the prevention or reducing the harmful effect on the environment. For example, Chen and Chang (2013) argued that consumers formed a strong inclination towards environmentally sustainable goods in consideration of EC. Similarly, Hartmann and Apaolaza-Ibanez (2012) report that consumer EC has raised their intention to buy green products. More recently, Testa, Iraldo, Vaccari, and Ferrari (2015) report a strong correlation between health promotion and environmental concerns that ultimately promote buying of green products. Furthermore, Polonsky, Vocino, Grimmer, and Miles (2014) conclude that individual with pro-environmental belief has a positive impact on consumer GPB. Literature concerning consumer behavior also acknowledged the positive impact of consumers' environmental concern with consumer's willingness to pay (Bang, Ellinger, Hadjimarcou, & Traichal, 2000), environmentally friendly behavior (Abeliotis, Konari, & Sardanou, 2010), and purchase of ecologically friendly products (Alwitt & Berger, 1993; Kalafatis, Pollard, East, & Tsogas, 1999). Besides, Bang et al. (2000) reported that consumers who are high on EC are willing to pay more to get renewable energy. Likewise, Abeliotis et al. (2010) found that out of 80% of the consumers in their study showed a higher concern for the environment while only 20% were willing to change their buying behavior for such cause. In another study, Kim and Choi (2005) documented a strong and positive impact of EC on consumer GPB.

More importantly, the mediating role of EC has also been acknowledged by [Huang and Liu \(2017\)](#) and [Zhang, Wang, and Lai \(2015\)](#). [Huang and Liu \(2017\)](#) tested the mediating and moderating role of EC and ecotourism experience between the relationship of motivation and revisit intention and confirmed that EC mediates and moderates the said association. Furthermore, [Zhang et al. \(2015\)](#) investigated the mediating role of managers' EC between external factors and organizational energy-saving practices and found that managers' EC has a significant effect on this relationship. Besides the positive role of EC in GPB, there are some contradictory findings concerning the impact of EC on GPB. For example, [Malik et al. \(2019\)](#) examined the mediating effect of EC between green purchase awareness and GPB. They collected data from fast food consumers and revealed that EC has no role in mediating the association of green purchase awareness and GPB.

EC as a mediator has not been explored extensively, there are only a few studies that have examined the mediating effect of EC (see e.g. [Huang & Liu, 2017](#); [Malik et al., 2019](#); [Zhang et al., 2015](#)) with contradictory results. This shows that the role of EC in GPB is still questionable and needs to be explored further ([Malik et al., 2019](#)). Responding to the call, the present study will examine the mediating effect of EC between the link of GEN and GPB. Because we believe that those individuals who are more generative will likely be more participative in environmental issues and will demonstrate and support ECs. Since the EC is the evaluation of one's behavior, or attitude towards fact, or others behavior with the concerns for environment ([Weigel, 1983](#)) it can be proposed that individuals with greater environmental concerns will likely enhance their intentions to buy green product or services. Thus, the second hypothesis of the study is formulated;

H2: Environmental concern positively and significantly mediates the association between generativity and consumer green purchase behavior.

Mediating Role of Pro-social Attitude

The principle of GEN has found new applications in recent years, especially in empirical studies in the fields of personality psychology, sociology, and the life course (e.g. [Aubin, McAdams, & Kim, 2004](#); [Kotre, 1984](#); [McAdams & Aubin, 1992](#)). Erikson in his theory of psychosocial development presents a key virtue that is the relation between psychological growth and social contexts of the individual to understand their psychological growth. Therefore, based on the theoretical framework of Erikson, the concept of generativity is not limited to self-centered, but the combination of self and societal centered. Furthermore, [Peterson and Stewart \(1996\)](#) and [Water and McAdams \(1989\)](#) concluded that a generative individual is more politically conscious and expected to support movements that are in favor of social justice. More recently, the study of "Midlife Development in the United States" (MIDUS) reported that GEN is the most reliable indicator of several attributes of social responsibility, for example, voluntary work and contributing time and money for the social concern. Additionally, [Cole and Stewart \(1996\)](#) reported that individuals high on generativity tend to be more attached to society. In another study, [Morselli and Passini \(2015\)](#) found a significant impact of generativity on prosocial attitudes. Moreover, [Hart et al. \(2001\)](#) examine the link of generativity with social involvement and found that generativity positively influences social involvement and generative parents were emphasizing prosocial values. Thus, in the social context, the concept of generativity should be concerned with how individuals engage his/her self in family and friends relationships, their vicinities, social activities, and social institutions. Although nearly any social attitude is over-determined by a number of forces and factors, we expect that generative concern would be the significant force that encourages pro-social attitude such as; providing social support, volunteerism and civic activities.

Nevertheless, a prosocial attitude is referred to as an individual's persistent dispositional tendency to feel and think about the well-being and rights of others, and to be empathetic ([Weinstein & Ryan, 2010](#)). While prosocial attitudes are about interpersonal relationships, they do represent the attitudes of individuals towards society and others, this could be a significant element in integrating green practices into every model. In this regard, [Zabkar and Hosta \(2013\)](#) empirically confirmed that eco-friendly consumption increases with the increase of social status. More precisely, the authors say that the prosocial status of green consumer behavior reduces the gap between the predisposition to act in an eco-friendly way and truly behaving in an effective eco-friendly way. Besides, [Welte and Anastasio \(2010\)](#) argue that social context can limit, endorse, or even disrupt individual goal-seeking behavior by imposing certain rules and values to convince individuals to behave in a certain way. Authors further suggest that social contexts and beliefs on how people view such behavior are essential indicators of eco-friendly behavior such as green consumption. Further, [Steele et al. \(2008\)](#) argue that individuals with stronger prosocial behavior, often appear to possess a pro-social personality marked by the ability to practice altruistic behaviors (eco-friendly). Furthermore, [do Paco, Shiel, and Alves \(2019\)](#) found a positive effect of prosocial attitude on green consumption values which further leads to consumer buying behavior. Thus, based on the aforementioned empirical discussion, we believe that individuals high on generativity are likely to have a stronger prosocial attitude that leads to individual green consumption behavior. Hence, the third hypothesis of the study is formulated.

H3: Prosocial attitude significantly mediates the association between generativity and green purchase behavior.

Conceptual Framework

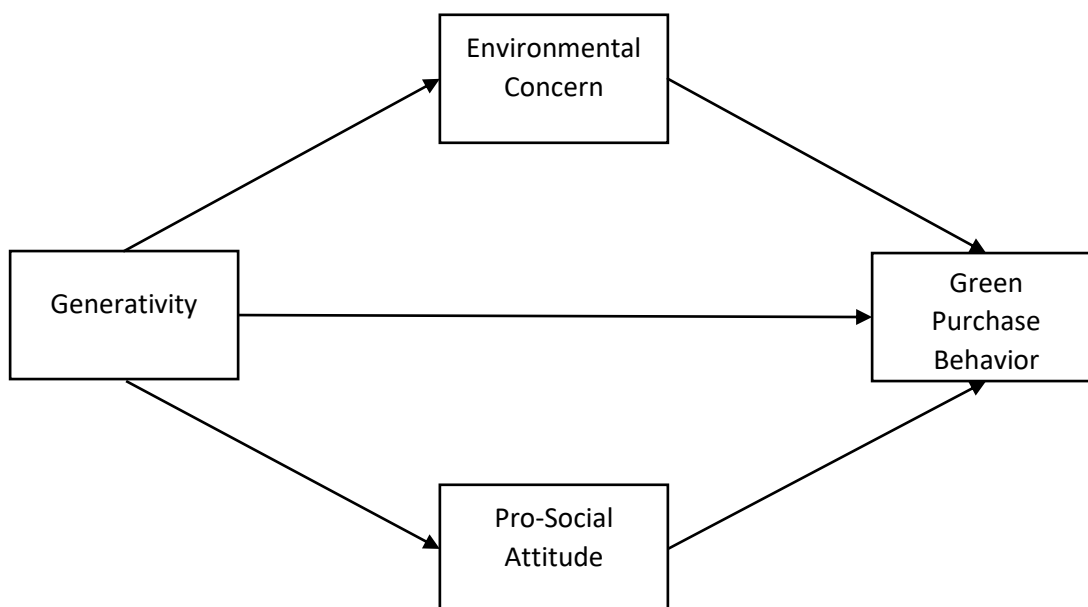


Figure 1: Conceptual Framework

METHODS

This study was conducted on students from a university in the North West, Pakistan. For this study, young students of a university were chosen because according to the literature review of study variables, young adults are more sensitive to the concepts of generativity, environmental concern, pro-social attitude, and green purchase behavior. Convenience sampling was used. Two research assistants were hired and they collected data from students of various departments. One research assistant approached students from social sciences major and the other research assistant was asked to collect data from all remaining departments. The purpose of the study was shared with students and those who showed consent were given surveys. In total, 1100 surveys were distributed. The final sample was 689 students. Among the sample 476 (68%) were male and 222 (32%) were female. Furthermore, 304 (44%) were undergraduate while 385 (56%) were postgraduate students. The mean age of the sample was 23.10 years with a standard deviation of 2.68 years. The students in the final sample were from various departments such as business education, arts, law, psychology, botany, microbiology, physics, chemistry, computer sciences, and agricultural sciences.

Measures

Generativity

The generative Concern scale was adopted from [McAdams and Aubin \(1992\)](#) consisting of 16-items including “I feel as though my contribution will exist after I die” and “I think that I will be remembered for a long time after I die”. The Cronbach alpha reported for the study is 0.818.

Pro-social attitude

The pro-social attitude scale developed by [Osgood and Muraven \(2015\)](#) was used to assess pro-social attitude. The instrument comprises of 6-items including “the well-being of others is important”. This scale is used because it might address the difference between intention and green behavior ([Zabkar & Hosta, 2013](#)). The reliability reported is 0.805.

Environmental concern

It was measured with the help of a 15-item scale proposed by ([Dunlap, Van Liere, Mertig, & Jones, 2000](#)). The sample items include; “plants and animals have as much right as humans to exist” and “if things continue on their present course, we will soon experience a major ecological catastrophe”. The Cronbach alpha reported for the study is 0.748.

Green purchasing behavior

A 10-items scale was adapted to measure GPB developed by ([Paço, Alves, Shiel, & Filho, 2013](#)). The sample items include; “I try to buy energy-efficient products and appliances” and “I have switched product/brands for an ecological reason”. The Cronbach alpha reported for the study is 0.87.

The respondents assessed these scales on a seven-point, Likert scale “ranging from 1 = strongly disagree to 7 = ‘strongly agree’”.

RESULTS

The model validity was verified by performing the exploratory factor analysis (EFA) and confirmatory factor analysis (CFA). EFA evaluated the factor structure of study variables (generativity, environmental concern, pro-social attitude, and green purchase behavior) and results show that all the items significantly load on their respective factor and the factor loadings were above 0.5 and no cross-loading difference was greater than 0.4. To assess the discriminate and convergent validity of the variables, CFA was utilized. The results are presented in Table 1.

Table 1: Model Validity

Model	χ^2	df	χ^2/df	GFI	CFI	NFI	RMSEA
1	2678.42	281	9.53	0.520	0.617	0.597	0.156
2	1641.37	304	5.40	0.684	0.781	0.752	0.112
3	1352.43	302	4.48	0.749	0.823	0.793	0.099
4	465.98	233	2.00	0.923	0.938	0.909	0.053
One factor solution	All study variables						
Two-factor solution	Factor 1: <i>Generativity & Environmental Concern</i> Factor 2: <i>Pro-social Attitude & Green Purchase Behavior</i>						
Three-factor solution	Factor 1: <i>Generativity</i> Factor 2: <i>Environmental Concern</i> Factor 3: <i>Pro-social Attitude & Green Purchase Behavior</i>						
Four-factor solution	Factor 1: <i>Generativity</i> Factor 2: <i>Environmental Concern</i> Factor 3: <i>Pro-social Attitude</i> Factor 4: <i>Green Purchase Behavior</i>						

From Table 1, it can be observed that the four-factor solution is the best fit for the data ($\chi^2/df=2.00$, GFI = 0.923, CFI = 0.938, NFI = 0.909, RMSE = 0.053). The alternate models do not provide a better fit than the four-factor model. The correlation and corrected correlations of the study variables are shown in Table 2. A difference was found between the observed and true correlation of the study variables, however, the observed correlations always underestimate the true correlation (Salgado, Blanco, & Moscoso, 2019). This very issue is addressed in Table 2. A formula was used to correct the observed correlation for attenuation to assess the measuring error in X and Y (see e.g., Schmidt, 2015). Because this formulation involves the reliability coefficients of the study variables, these have been derived from the calculated internal consistency of generativity, environmental concern, pro-social attitude, and green purchase behavior.

Table 2: Correlation Corrected Correlations

	AGE	GEN	PROG	Generativity	EC	PSB	GPB
GEN	-0.088						
PROG	0.181**	0.105*					
Generativity	0	-0.067	-0.053	(0.818)			
EC	0.075	-0.128**	-0.009	0.290**	(0.748)		
PSA	0.066	-0.066	0.005	0.352**	0.256**	(0.805)	
GPB	0.089	-0.012	0.038	0.352**	0.226**	0.298**	(0.87)
Corrected correlations for GPB				0.436	0.270	0.353	
* 0.05, ** 0.01 significance level (Cronbach Alpha)							

Table 2 shows that GPB has a positive and significant correlation with generativity ($R=0.352$, $p<0.01$), EC ($R=0.226$, $p<0.01$), and PSA ($R=0.298$, $p<0.01$). Furthermore, corrected correlations between GPB with generativity (0.436, $\Delta R=0.084$), EC (0.270, $\Delta R=0.044$) and PSA (0.436, $\Delta R=0.055$) are also reported. These statistics endorsed the H1 because both real and observed statistics have positive relationships between GEN and GPB.

To test the mediation-based hypothesis, hierarchal regression was performed (see Table no. 3 for results). Moreover, the “squared population cross-validity coefficient” (R^2_{cv}) was also performed for every model to manage the biasness linked

with multiple-regression analysis, because they capitalize on chance and lead to change in R^2 size when applied from one sample to another (Salgado et al., 2019). R^2_{cv} is an effective estimate of effect size relative to other estimates resulted from regression analysis. To estimate the (R^2_{cv}) we used Browne (1975) because the Monte Carlo analyses show greater efficacy relative to other formulae.

The results are as follows:

Table 3: Hierarchical Regression Analyses

	Dependent Variable		
	EC	PSA	GPB
Independent Variables	B	B	β
Age	0.029	0.026	0.029
Gender	-0.222*	-0.084	0.070
Program	0.005	0.016	0.035
Generativity	0.284**	0.35**	0.264**
EC			0.104*
PSB			0.176**
R^2	0.100**	0.13**	0.176**
F	3.201	15.253	14.491
R	0.317	0.360	0.419
R^2_{cv}	0.094	0.124	0.167

In the first step, EC was regressed with generativity and control variables. Generativity had a positive impact on EC ($\beta=0.284$, $p<0.01$, $R^2_{cv}=0.094$). Similarly, in step 2 generativity and control variables were regressed with PSA. Generativity had a positive effect on PSA ($\beta=0.35$, $p<0.01$, $R^2_{cv}=0.124$). Lastly, generativity ($\beta=0.264$, $p<0.01$), mediators PSA ($\beta=0.176$, $p<0.01$), and EC ($\beta=0.104$, $p<0.05$) along with control variables are regressed with the dependent variable GPB. The R^2_{cv} calculated for this step was equal to 0.167. Grounded on the findings presented in Table no. 3, the mediating effects of EC and PSA were calculated, and the decision on hypotheses 2 and 3 was taken. The combined indirect effects of both the mediators are significant ($\beta=0.091$, LLCI= 0.0499, ULCI=0.1461). Hypothesis 2 is tested by assessing the individual indirect effect of EC. The results show that the indirect effect of EC is positive and significant with $\beta=0.0294$ (LLCI= 0.0025, ULCI=0.0648) proving ample proof for the approval of H2 that is an Environmental concern positively and significantly mediates the association between generativity and consumer green purchase behavior. Similarly, hypothesis 3 was also assessed by the results of indirect effects of PSA reported in Table 4. It is observed that the indirect effect of PSA is positive ($\beta=0.0616$) and significant (LLCI= 0.0275, ULCI=0.1059) thus proving H3 that prosocial attitude significantly mediates the association between generativity and green purchase behavior.

Table 4: Indirect Effects of Generativity on Green Purchase Behavior

	Effect	Boot SE	LLCI	ULCI
TOTAL	0.091	0.0242	0.0499	0.1461
EC	0.0294	0.0152	0.0025	0.0648
PSA	0.0616	0.0199	0.0275	0.1059

DISCUSSION

The present research contributes to the understanding of the antecedents of green purchase behavior. Green purchase behavior has become a core priority for both researchers and manufacturers of environmentally friendly goods and services. Although some factors (individual and organizational) have been found to affect green purchasing intentions and behaviors of people, examining generativity as an antecedent has been seldom researched. The findings of this study begin to make a connection between the present and the future in terms of environmental problems. This study adds new psychological factors to the model of environmentally friendly purchase behavior. This research offers several theoretical contributions. The present study contributes to the theory by providing additional insight into the factors that affect GPB, particularly the role of EC and prosocial attitude. Moreover, this study contributes by adding literature to the concept of generativity which has unexpectedly got limited attention in the literature of consumer behavior. This study expresses the concept of

generativity in a novel way in the field of consumer green purchase behaviors. Theoretically, this research added to the literature of psychological attributes such as generativity and green purchase behaviors. This study contributed by bringing insight into understanding the impact of psychological influence on the adoption of green purchase behaviors. Even though the generative aspect of pro-environmental behavior has recently gained greater attention, much of the research tends to rely exclusively on individual predispositions. This article offers an insight into green behavior by focusing on how generative concern, environmental concern, and pro-social attitude derive environmentally friendly consumption. Empirical research that addresses the underlying mechanism that links generative concern with green purchase behaviors is very limited. The main contribution of our study is the examination of the process through which generative concern influences green purchase behavior.

Despite various studies in the past that worked on the factors affecting GPB, the gap between intention and actual purchase behavior is still not clear. Unlike previous researches, the present study examines the role of generative concern in the context of GPB. GPB is not a straightforward behavior and studies have identified that this complex phenomenon involves integrating various variables. The extent to which generativity could describe the variance in green consumption and green purchase behaviors is dependent on various intervening mechanisms. Among various factors that could intervene in the link between generativity and green purchasing, this study chooses EC and pro-social attitude as the mediating variables. The role of EC and prosocial attitude between the link of generativity and green purchase behaviors is novel and has not been examined previously. Empirical findings of this study revealed a positive and significant impact of generative concern on individual GPB. The empirical results of our study confirmed that those respondents who believe that their role for the future generation is valuable recorded greater intention to indulge in green purchase behaviors such as “buying organic, use energy-efficient, or recycled products”. The findings are consistent with previous studies (e.g., [Shiel et al., 2020](#); [Urien & Kilbourne, 2011](#)).

Moreover, our study also examines the mediating role of EC between the link of generativity and GPB. Results revealed that EC positively and significantly mediates the said association. The finding of this hypothesis is consistent with ([Huang & Liu, 2017](#); [Zhang et al., 2015](#)). However, the result contradicts the findings of ([Malik et al., 2019](#)). This study confirmed the positive and significant role of EC as a mediator between the link of GEN and EC. Those respondents who think that their contributions are important for future generations, demonstrate higher EC and engage in environmental behavior such as GPB.

Likewise, the mediating effect of pro-social attitude was examined between the link of generativity and green purchase behaviors. It is concluded that respondents who were high on generative concern reported a stronger prosocial attitude and express more involvement in green purchase behaviors. The result is consistent with previous researches that examined the role of prosocial attitude in green purchase behaviors (e.g., [Busch & Hofer, 2011](#); [do Paco et al., 2019](#); [Shiel et al., 2020](#)).

PRACTICAL IMPLICATIONS

This study has some practical implications to offer. If an organization wants to manufacture green products/services, one of the most effective ways to market the products/services is to appeal to the audience that companies are doing to save future generations. For example, by constantly giving a message of valuing the future of your children and grandchildren in terms of a pollution-free planet and better living conditions, companies do attract consumers to buy their green products and services. Concern among people about the environment is also a factor that companies need to consider. Issues like global warming, adverse weather, climate change, unexpected calamities, floods, air pollution, increase in diseases, and water scarcity are some of the most important concerns for individuals. By focusing on these issues in advertising and marketing, the environmental concern of individuals can be increased.

LIMITATIONS AND FUTURE RESEARCH

There are some limitations of the current study. One of the main limitations of this study is that data were collected based on convenience sampling from a group of young adults. This may lead to the issue of generalizability and validity of results. For such an issue, we reported corrected correlations and squared population cross-validity coefficient R^2_{cv} which shows what kind of results we could expect if similar relationships are studied in other samples. However, future studies must expand their sample and report results from a more diverse sample. Second, data were cross-sectional and future researchers may use experimental designs to observe the purchasing behaviors of individuals. Third, only two mediators were considered in this study. Green purchase behaviors are often complex and there could be a lot of other factors as well that could explain this process. For example, corporate social responsibility, green vision, green brand image, moral attentiveness, and price might be some of the factors that could result in interesting findings.

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AUTHORS CONTRIBUTION

All authors of this research paper have directly participated in the planning and execution of this study. Dr. Sajjad Ahmad Afridi and Dr. Maqsood Haider wrote the research paper and design the organization of this paper. Dr. Asad Shahjehan, Dr. Wajid Khan, and Miss Sajida Gul did the methodological part of this paper including; statistical analysis, interpretations, and technical parts.

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