

Exploring Gen Z's Sustainability Mindset: A Hierarchical SEM Analysis of Behavioral Intentions and the Moderating Role of Social Media Influence

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ABSTRACT

This research explores the psychological and contextual foundations of the sustainability mindset of Generation Z, by studying the effects of the underpinning driver factors on green behavioural outcomes. Based on the TPB and VBN framework, a hierarchical conceptual model was constructed that included both reflective and formative constructs. Environmental Knowledge, Sustainability Values, and Eco-Attitudes were modelled as first-order reflective constructs under Foundational Sustainability Drivers, Green Behavioural Intention mediated, and Conscious Consumption modelled as a second-order formative with 3 reflective dimensions -- Conscious Consumption Behaviour, Environmental Responsibility, and Willingness to Act. Moderating effect of Social Media Influence between Green Behavioural Intention and Conscious Consumption relationship was tested. A structured questionnaire administered to 436 Generation Z respondents and PLS-SEM was done using ADANCO. The developed model accounted for 64.5 percent and 47.0 percent of the variance of the Green Behavioural Intention and Green Behavioural Outcome, respectively. The findings indicated that Foundational Sustainability Drivers significantly affected Green Behavioural Intention that consequently had a strong impact on Green Behavioural Outcome while Social Media Influence negatively and significantly moderated the relationship above. The results affirm the power of the hierarchical SEM methodology and provide useful information for the policymakers, educators, and marketers as they aim to introduce sustainability plans that match the values, behaviours, and digital interaction patterns of Z Generation.

Keywords: Green Behaviour Intention, Sustainable Mindset, Conscious Consumption, Generation Z, Social Media Influence, Hierarchical Model, Formative and Reflective Constructs

INTRODUCTION

Sustainability has become one of the necessary global trends over the last few years due to the acute environmental factors of climate change, resource shortage, pollution, and biodiversity loss (Brenner & Hartl, 2021; Weber & Weber, 2020). The world is heading towards the promotion of sustainable developmental practices by governments, organizations, and civil societies to promote ecological equilibrium and cross-generational justice (Abramovich & Vasiliu, 2022; Fukuda-Parr & Muchhala, 2019). Against this background, consumer behavior is a crucially important factor that contributes to sustainable effects, especially the issues of conscious consumption and an eco-friendly lifestyle (Wani et al., 2025).

Generation Z, who were born in 1997-2012, is one of the demographic groups that have demonstrated success in respecting sustainability (Thomas et al., 2022). As a generation of extremely digital natives, a socially conscious, and value-driven, Gen Z does not only speak up about the issue of the environment, but also is more likely to make responsible choices in their daily life (Rizomyliotis et al., 2024). They are an influential stakeholder in the creation of a greener future because of their presence and responsiveness to sustainability rhetoric across social media (Confetto et al., 2023; Hua et al., 2024; Seyfi et al., 2022).

Although such interest has developed, a more in-depth account on the behavioral antecedents impacting the sustainable-related behavior of Gen Z remains (Confetto et al., 2023; Halibas et al., 2025). Some of the influences that need to be explored are those which could increase or decrease leverage of the behavioural intentions in producing the actual sustainable practises, such as the effect of social media (Khan et al., 2024). This study addresses this gap by using data to test the development of a moderated mediation model. The model abstracts a set of complex psychological determinants (i.e., EK, SV, EA, and GBI) and their interrelationship in shaping the target of the intervention - GBI. This purpose further leads to Conscious Consumption (CC) that was used in the present research paper as an attitude towards environment term. On that basis, the model includes Social Media Influence (SMI) as moderating variable between Green Behavioural Intention (GBI) and Conscious Consumption (CC) to investigate the contribution of the variable in the intention to real sustainable behaviour.

The main objective of the proposed research is to investigate the behavioural and psychological correlates of sustainability in Generation Z. Specifically, the study will try to uncover the moderating effect of antecedents of Environmental knowledge (EK), Sustainability values (SV), and Eco-Attitudes (EA) on the Green Behavioural Intention (GBI). In addition, it also establishes the effect of GBI on Conscious Consumption (CC) as a proxy to the Sustainability Mindset. The present study further examines the moderating effect of SMI between GBI and CC, in terms of the role of digital interactions in shaping the intention-behaviour relationship among Gen Z from a sustainable action's perspective.

RQ1: What is the impact of fundamental sustainability drivers: Environmental Knowledge (EK), Sustainability Values (SV), and Eco-Attitudes (EA) on Green Behavioral Intention (GBI) of Gen Z?

RQ2: How does Green Behavioral Intention (GBI) influence Conscious Consumption (CC) as a proxy of Green Gen Z as a Sustainability Mindset?

RQ3: Does social media Influence (SMI) moderate the relationship between Green Behavioral Intention (GBI) and Conscious Consumption (CC)?

The research offers a review of sustainability and consumer behaviour studies as well as the identification of a hierarchical SEM model, which shows a model with both reflective and formative constructs. This hypothesis is empirically confirmed with R and ADANCO and suggests a complex nature of influence of social media for sustainable behaviour. The study is particularly innovative in modelling Conscious Consumption as a second-order construct and therefore contributing towards enhancing measurement rigour in sustainability research.

LITERATURE REVIEW

Generation Z and Sustainability

Gen Z is a generation of people born in the period between 1997 and 2012 that is technologically competent and socially conscious and has significantly contributed to the sustainability agenda in the world (Djafarova & Foots, 2022; Onjewu et al., 2024). They are also single-mindedly environmental and so very concerned about social and ecological matters in the form of their lifestyle decision or consumption trends (Ribeiro et al., 2023). It is not only that Gen Z is actively involved in being sustainable and trying to embrace sustainable lifestyles, but also that one of their main avenues for gathering information, engaging in activism, and spreading information about sustainable living goes through digital platforms and social media (Halibas et al., 2025). The patterns and trends they are formed online encourage the culture of peer pressure and group dynamics and make them more determined to ethical and sustainable business practises (Confetto et al., 2023; Seyfi et al., 2024). On the consumer side, Gen Z is transparent, honest and responsible socially, higher preference to environmentally responsible

brands and products when deciding in a brand and/or product choice (Chatzopoulou & Kiewiet, 2020; Pillo et al., 2025). The fact that the generation is tuned to sustainable values and can define the trends and norms in the world of business is the reason why these individuals are an extremely important demographic that researchers, policy makers, and businesses that want to advance long-term environmental stewardship should consider (Halibas et al., 2025).

Theoretical Underpinning

The Theory of Planned Behaviour (TPB) (Sun, 2019; Wang et al., 2024; Qiu et al., 2022) is a theory designed to account for the idea that people derive behavioural intentions that translate into behavioural actions. According to TPB, Attitude toward the Behaviour (ATT), Subjective Norms (SN) and Perceived Behavioural Control (PBC) are the three basic elements that influence Behavioural Intention (BI) (Godbersen et al., 2020). This framework is highly relevant to the sustainability research sector, as it helps to explain how people can start to develop positive norms around green behaviour, understand societal norms about sustainability and a sense of agency or self-efficacy by thinking in an environmentally-friendly way (D'Arco et al., 2023; Prayag et al., 2022; Ribeiro et al., 2023). Therefore, TPB can be used as the systematic framework to study the motivational drivers of Generation Z's PED (Prisco et al., 2025).

The psychological understanding of pro-environmental behaviour is improved by the Value-Belief-Norm (VBN) theory, which highlights the importance of personal values and moral responsibilities (Denley et al., 2020; Lima et al., 2023; Raghu & Rodrigues, 2021). It hypothesises that Egoistic, Altruistic, and Biospheric Values (EV, AV, and BV) are principles that influence people's motivation to act for the environment and adopt sustainable lifestyles (Cao et al., 2022; Nguyen & Dekhili, 2024; Park et al., 2022). When internalized, these norms become self-evident motivators for the person to behave in a pro-environmental manner (Jahari et al., 2022; Lima et al., 2023). However, it is clearly established that the VBN framework explains the sustainability-oriented values and eco-centric worldviews of Generation Z adequately when translated into Green Behavioural Intentions (GBI) and Green Behavioural Outcomes (GBO) when assuming a personal relevance in environmental problems (Jahari et al., 2022; Konalingam et al., 2024).

Given the complex and multidimensional nature of the proposed research frame, this research context leads to the suggested further analysis via Structural Equation Modelling (SEM), which is used to represent the proposed theoretical model (Ringle et al., 2018; Zeini et al., 2023). SEM provides a way of analysing complex causal relationships between observed and latent variables, such as mediation and moderation effects (Cheah et al., 2021; Sarstedt et al., 2020). This methodology is of great value when dealing with hierarchical or second-order constructs like Green Behavioural Outcomes (GBO) and Foundational Sustainability Drivers (FSD). Second-order modelling approaches which are immediate to conceptual robustness and integration of sustainability constructs in relation to one another, are expected to enhance both validity and explicativeness (Bhadra et al., 2024; Buzzao & Rizzi, 2020; Chang, 2024; Preuss, M. et al., 2024). Overall, SEM is a very rigorous approach in terms of methodology to test for hypothesised associations and to test for the overall goodness of fit of the model (Russo & Stol, 2021; Sarstedt et al., 2019).

Construct-Specific Review

The awareness that is related to the environmental issues, ecological concepts and effects that humans have on nature is known as environmental awareness (EK) (Farrukh et al., 2022; Raza & Khan, 2022). In relation to doing something positive and environmentally responsible, it is also one of the major drivers, since empowered citizens prove to be more attentive to the necessity of being environmentally sustainable and make deliberate choices with the purpose of increasing their positive contribution to the environment (Boermans et al., 2024; Mansoor et al., 2025). Experience as a discipline that comes from social media contacts and education is one of the drivers of environmental knowledge among Gen Z (Confetto et al., 2023). In this research, EK is a reflective variable that was internally conceptualised as a driving force that contributes to GBI.

Sustainability Values (SV) are very profound values and thoughts of what an individual style as well as what they settle on when it comes down to being sustainable (Aggarwal et al., 2024; Khan et al., 2024). These principles entail the care of the future generational people, ecological balance preservation, and moral obligation to the ecosystem. In Gen Z, SV can be associated with other social values consisting of social equality, open-mindedness, and ecological morals (Ramani et al., 2025). In cases where these values are high, there exists a tendency for people to have a positive attitude and intentions towards the sustainable behaviour (Kim & Hall, 2020; Thelken & Jong, 2020). Relative to this framework, SV is defined as reflective construct which helps in the emergence of Green Behavioural Intention.

Eco-Attitudes (EA) can be described as an affective and appraisal orientation that is exercised by an individual in favour of environmental protection and sustainability patterns (Sultan et al. 2020). These mentalities usually cover individual beliefs, feelings, sense of significance of environment problems (Joshi et al., 2021; Zhang et al.,

2019). EA finds attitude of people towards the actions related to sustainable and the willingness to take part in such deprived practises. Eco-attitudes, in the case of Gen z, rely on their lifestyle, peer pressure as well as exposure to environmental initiatives (Zhang et al., 2025). In the current research however EA is a reflection of the larger concept of Foundational Sustainability Drivers (FSD).

The Green Behavioural Intention (GBI) refers to a construct that refers to the willingness and the desire of the individual in taking responsible behaviour towards the environment (Nguyen-Viet and Nguyen, 2024; Sha et al., 2025). It is a key intervening construct between cognitive and affective influences which includes EK, SV and EA to actual performance behaviours. GBI behaviors state, which leads to action, are said to be a strong indicator of sustainable consumption (Gandhi et al., 2025). GBI is placed as a reflective construct in the model which is influenced by lower-level drivers and is a primary determinant of conscious consumption behavior.

In the present study, Conscious Consumption (CC) is envisioned as a second-order formative-construct, paralleling the concept of the gen-Z Sustainability Mindset (Shin et al., 2025). It consists of three interdependent first-order reflective dimensions that are Conscious Consumption (CC), Environmental Responsibility (ER), and Willingness to Act (WA) (Baños-Gonzalez et al., 2021). The other dimension, CC, evaluates purchasing decision choices and desires towards sustainable products of the mindful decision-making (Gupta & Sheth, 2023). ER entails individual responsibility towards protection of the environment, and WA demonstrates the active desire to engage oneself in sustainability activities. These three aspects of green behavior, in combination constitute the comprehensive realization of green behavior by Gen Z which is modeled as the outcome variable of the structural model.

Social Media Influence (SMI) is a super-important moderator of the correlation between the behavioral intention and the actual behavior (Khan, 2021; Kim et al., 2022; Taillon et al., 2020). Being born in the digital age, Gen Z is highly exposed to sustainability information, sustainability influencers, and related campaigns, as they often use Instagram, YouTube and Tik Tok (Confetto et al., 2023). Such interactions may either enable or divert the motive to action. SMI can be defined as a reflective type of moderator and in this study; it is framed as a variable which creates an impact in the strength and direction of the relationship between GBI and CC as well as sheds light on the effect of digital engagement in changing sustainability behavior patterns (Fatima et al., 2024).

Table 1: Related Research Studies

Author (Year)	Objective	Methodology	Theories Used	Findings
Ling et al., 2023	This research discusses the determinants of Green Consumption Behaviour (GCB) amongst Gen Z universities belonging to China, and in particular, the role that government backing plays.	Purposive sampling of 328 college students; data analyzed using PLS-SEM.	Extended TPB	Major determinants of GCB include SN, PBC, EK, SMI, and GS. Together, these factors amplify the influence of SN and SMI on promoting sustainable consumer behaviour.
Confetto et al., 2023	This study attempts to understand the drivers of sustainability advocacy for Gen Z by employing the S-O-R model, where the promoter is sustainability-related SM content.	The survey was based on 660 people living in Italy and belonging to Gen Z (14-25 years old). A web survey was carried out, and the results were processed using correlation and multiple regression analysis.	S-O-R	Exposure to sustainability-centric content on SM has a significant impact on the establishment of SBP and SC as well as urging advocacy for sustainability actives via the same digital platforms.
Kim et al., 2021	To investigate the psychological construct that commits environmentally sound behavior in college sports	Empirical study guided by the B-A-I hierarchy model; focuses on perceptions of pro-environmental initiatives (PEIs) in a	B-A-I Model: - Belief in benefits of PEIs influences - Attitudes toward PEIs, which affect - Behavioral intentions to act environmentally.	Beliefs regarding PEIs have a positive effect on ATT, which subsequently shapes BI. Thus, ATT functions as a mediator between beliefs and BI.

	consumer using B-A-I model.	college athletic department.		
Sowmya et al., 2023	The study aims to examine how the positive dimensions of Gen Z's Big Five personality traits influence their willingness to engage through metaverse technologies, with PI and HM serving as mediating variables.	There was a mixed-method study which included qualitative work with 24 participants and quantitative survey with 436 participants. The Confirmatory Factor Analysis and SEM were used to analyze data.	Big Five Personality Theory	The strongest predictors any metaverse adoption is Openness. The second strongest predictor is Extraversion and Agreeableness. These effects are added to by Personal Innovation and Hedonic Motivation. Adoption behavior is determined by personality and generational aspect.
Suprawan et al., 2024	The study investigates how B5 traits of Gen Z affect their WI in MT, with PI and HM acting as mediators.	The Thai Gen Z fandom consumer sample was taken via snowball sampling and gathered 338 respondents. A moderated serial mediation model was tested with bootstrap numbers ran in the analysis of data using the PROCESS macro.	Stimulus-Organism-Response (S-O-R)	CB is indirectly influenced through BL and BA, mediated by SMA. Additionally, TT amplifies the effect of BA on CB behaviour.
Mehta et al., 2022	The purpose of this study is to investigate the effectiveness of FO, CC and EC on FFPI and CB and moderating effect of ATT towards SC.	The quantitative study was implemented, in which the data of 571 college students were used, and the study was selected through non-probability sampling (snowball). pls-sem was used in analysis	They used behavioral intention and consumer behavior models and demonstrated that the attitude towards spending money on sustainable clothing is moderate to a connection between intention and behavior.	Factors that enhance FFPI include FO and CC, while EC tends to reduce FFPI. BI is shaped by SC attitude, which serves as a key pathway linking intention to behaviour.
Paramita et al., 2023	The study examines how core consumer motives influence the intention to adopt ECs among Millennials and Gen Z, with PE serving as a mediator and ECA acting as a moderator.	The data was collected among 260 young Indonesian consumers in the mix-method (exploratory and confirmatory) approach. PLS-SEM was used in order to examine mediation and moderating effects.	The study uses the Fundamental Motive Framework as it has Performance Expectancy as the mediator, and the Electric Car (EC) Attributes, which is the short-haul performance, acting as the moderator.	It is clear that SPM, KM, SM, and AM have an appreciable impact on IA towards ECs. The effects of SPM, MAM and AM are mediated by PE, whereas SHP has a positive moderating effect on the relationship between AM and IA.
Mishra et al., 2020	The research aims to describe students' CE, ATT and BI as affected by IEV and how a positive course experience is determined when the instructor is the	Mixed-methodology was used, namely, a literature review and qualitative research, and, after that, a two-stage empirical validation using SEM	All the theoretical frameworks, such as MT, EV, and BE theories were applied under the context of higher education.	The second finding is that IEV have significant impact on ATT and BI of CE students. Affecting values contain primary key AP, EN, EJ, and SQ.

	brand ambassador and the course is the brand.			
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Research Gap

Although prior research has examined individual predictors of sustainability behavior among Generation Z, there is a lack of integrated models that simultaneously explore hierarchical relationships (e.g., from environmental knowledge and values to behavioral intention) and the moderating effects of contextual factors such as government support or social media influence. Few studies have holistically addressed how foundational factors like environmental knowledge, sustainability values, and eco-attitudes interact within a structured belief–attitude–intention framework. Moreover, limited attention has been given to how these relationships are moderated by external influences, which restricts our understanding of the mechanisms driving green behavioral intention and conscious consumption among Gen Z. This study addresses this gap by developing a comprehensive moderated hierarchical model to better explain Gen Z's sustainable behavior.

Conceptual Framework and Hypotheses

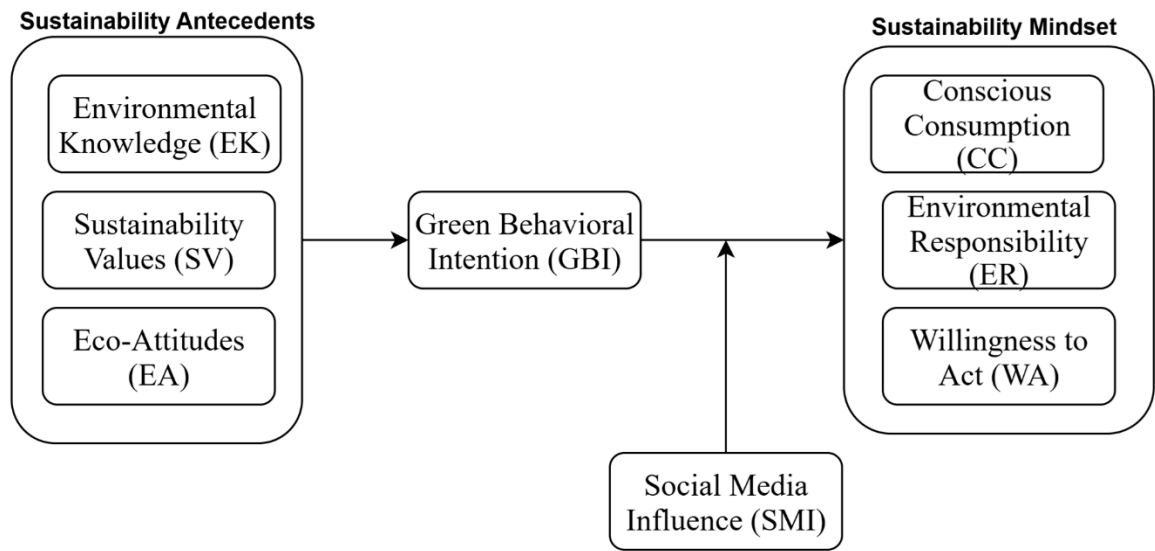


Figure 1: Proposed Conceptual Framework

Hypotheses

- H1:** Sustainability Antecedents Significantly Influence Green Behaviour Intention (GBI).
- H2:** Green Behaviour Intention (GBI) significantly influences Sustainable Mindset.
- H3:** Social Media Influence moderates the relationship between GBI and Sustainable Mindset.
- H4:** Green Behaviour Intention (GBI) Moderate the relationship between Sustainability Antecedents and Sustainability Mindset.

RESEARCH METHODOLOGY

Research Design

With this quantitative, cross-sectional study, investigates the relationships among environmental knowledge, sustainability values, eco-attitudes, green behavioral intention, and green behavioral outcomes among Generation Z. The model is conceptual and contains hierarchical constructs, mediation and moderation, which is experimented through SEM. The model was fit, reliability assessed, and visualizations created using R and ADANCO.

The study adopts a moderated mediation framework, wherein Environmental Knowledge (EK), modeled as a higher-order reflective construct formed by EK, Sustainability Values (SV), and Eco-Attitudes (EA), predicts Green Behavioral Intention (GBI). GBI serves as a mediator influencing Green Behavioral Outcome (GBO), which is conceptualized as a second-order reflective construct composed of Conscious Consumption, Environmental Responsibility, and Willingness to Act. Social Media Influence (SMI) is tested as a moderator in the relationship between GBI and GBO.

The collection of data occurred through a formal online questionnaire of Gen Z members, who were 18- to 27-year-olds, and purposive sampling was used. The measures of all constructs relied on the use of validated items used in previous literature study using a 5-point Likert scale. Normalization and reliability checks were done using R to perform the initial preprocessing procedures followed by the evaluation of the measurement model using ADANCO to determine indicator reliability, composite reliability, and discriminant validity according to the Fornell-Larcker and HTMT standards. Checking path coefficients, model fit (SRMR) and higher-order construct check were also made easy with the software. Path coefficients were significant as calculated by bootstrapping and R^2 and adjusted R^2 were used in assessing the explanatory capacity of the endogenous constructs. The moderation effect (GBI x SMI) was examined with the help of Adancos product indicator analysis. This multi-tool analytical framework ensured such a comprehensive and robust evaluation of both measuring and structural models.

Sample and Data Collection

Generation Z - that is, young people who were born between 1997 and 2012 provide the sample population for this study. For this research, respondents aged between 18 and 27 years were selected, as they represent a digitally native and environmentally conscious cohort. The study focused on individuals residing in urban and semi-urban regions in India, where access to the internet, higher education, and sustainability-related awareness is relatively higher.

To make sure that the participants were well-exposed to the issues relating to sustainability and digital media platforms, a purposive sampling technique was adopted. The questionnaire was sent to the various university networks, social media accounts, and student boards to get a large and heterogeneous set of answers. It recorded a total of 441 valid responses, and there was no data screening or any cleaning of data because the responses were found to be complete and consistent.

The informational data was gathered through a standardised survey accessible through offline. A series of questions were formulated in the questionnaire that contained demographic data and the major constructs of the study, Environmental Knowledge, Sustainability Values, Eco-Attitudes, Green Behavioral Intention, Social Media Influence and Behavioral Outcomes consisting of Conscious Consumption, Environmental Responsibility, and Willingness to Act. All the questions were assessed on a 5-point Likert scale.

Data collection was anonymous and followed the principle of confidentiality and the individual who participated was informed that her participation was voluntary. It had to pilot survey a small sample of Gen Z respondents to check clarity and face validity to administer the same to its full scale. The last dataset was exported to R and ADANCO, where it was passed through reliability measures, measurement model evaluation and structural model estimation.

Measurement of Constructs

The constructs, which were used in this study, were measured with the adoption of well-established multi-item scales of past studies. The reflective indicators were used to evaluate each construct and the items comprising those constructs were rated in a 5-point Likert scale. The measurable model contains key psychological and behavioral components which include knowledge about the environment, values, attitudes, behavioral intention and finished behavioral results. Also, the model used Social Media Influence as a moderator but also modeled Green Behavioral Outcome as a second-order construct having three reflective dimensions. A table below provides some description of the measures regarding sources, items, type of measurement, and scaling format of each construct.

Table 2: Measurement Table with Construct Types and References

Construct	Type	Measurement Scale	Citation/Source
Environmental Knowledge (EK)	Reflective (1st-order)	5-point Likert	Zsóka et al., (2012)
Sustainability Values (SV)			Rezaei-Moghaddam et al., (2020)
Eco-Attitudes (EA)			Dunlap et al., (2000)
Green Behavioral Intention (GBI)			Ajzen, (1991); Paul et al., (2015)
Social Media Influence (SMI)			Lee & Ma, (2011)
Conscious Consumption (CC)			Joshi & Rahman, (2015)

Environmental Responsibility (ER)			Kaiser et al., (1999)
Willingness to Act (WA)			Bamberg & Möser, (2006)
Green Behavioral Outcome (GBO)	Formative (2nd-order)	Constructed from CC, ER, WA	Constructed from (Joshi & Rahman, 2015); Kaiser et al., (1999); Bamberg & Möser, (2006)
Foundational Sustainability Drivers (FSD)	Formative (2nd-order)	Constructed from EK, SV, EA	Constructed from Zsóka et al., (2012); Dunlap et al., (2000)

Data Analysis and Results

Sample Statistics

The study had a relatively high 441 valid responses obtained via an organized online survey that took place among members of the Generation Z. The percentage of female respondents was 157 (35.6) and the rest were male (64.4) in number of 284. The sampling technique followed was purposive; a sample size was chosen to comprise young men of approximately 18-27 years of age, who were students or graduates earnestly active within digital realms. With this gender distribution, this presents a slightly male-dominant sample that gives varied views across the age group of Gen Z. The sample size of the data was considered adequate to perform SEM since it was more than the recommended minimum size in models where multiple hierarchical concepts are used.

Measurement Model Evaluation

Common Method Bias (CMB) and Standardized Root Mean Square Residual (SRMR)

Harman's one-factor test was applied to test for CMB by conducting Principal Component Analysis (PCA) on all observed variables. The first factor of unrotated variance explained less than 50%, which suggests that CMB was not a major concern for this study (Podsakoff et al., 2023).

Furthermore, the SRMR value of the saturated model was found to be 0.0471, indicating that the suggested model fits the data strongly enough, as it is well below the acceptable value of 0.08. As quoted by Hu and Bentler (1999), if the SRMR value of the model is below 0.08, it indicates a good model fit and the closer the SRMR value is to 0.05, the better the model's fit between the hypothesised model and the empirical data.

Table 3: Discriminant Validity: Fornell-Larcker Criterion

Construct	GBO	GBI	FSD
GBO			
GBI	0.4607	0.8139	
FSD	0.6688	0.6454	
Interaction (GBI * SMI)	0.0019	0.0062	0.0013

The Fornell-Larcker discriminant validity criterion was met which means that the 2022 square root of the average variance extracted (AVE) of each construct must be higher than the correlation coefficients between the assessed construct and other constructs (Fornell & Larcker, 1981). This has been stipulated thus, indicating that discriminant validity has been achieved. In particular, within the framework of the given study, the AVE of the Green Behavioral Intention (GBI) was 0.8139 which is higher than each of its correlations with Green Behavioral Outcome (GBO = 0.4607) and the Formative Second-order Dimension (FSD = 0.6454). In a similar manner, both FSD and GBO demonstrate acceptable discriminant validation thresholds as their inter-correlations do not surpass those based on AVE. Also the interaction term (GBI x SMI) has very low correlation with all the constructs (0.0013-0.0062), this as well indicates the uniqueness of constructs and eliminates the multicollinearity issue. These findings validate the fact that discriminant validity of constructs in the model is reasonable.

Table 4: Components Loadings

Indicator	GBO	GBI	FSD
GBI1		0.9061	
GBI2		0.9204	
GBI3		0.9441	
GBI4		0.8344	

Conscious_Consumption	0.9346		
Environmental_Responsibility	0.8541		
Willingness_to_Act	0.7374		
Environmental_Knowledge			0.8939
Sustainability_Values			0.8859
Eco-Attitudes			0.628

The indicator loadings reveal strong support for construct reliability and validity within the model. Green Behavioral Intention (GBI) has a good internal consistency with the four constructs having a good loading that varies between 0.8344 and 0.9441. The three second-order constructs of Green Behavioral Outcome (GBO) that included Conscious Consumption (0.9346), Environmental Responsibility (0.8541), and Willingness to Act (0.7374) contain strong loadings, which confirms the validity of the second-order construct. Environmental Knowledge (0.8939), Sustainability Values (0.8859) and Eco-Attitudes (0.628) recorded the loads greater than 0.70 in the Formative Second-order Dimension (FSD) and therefore considered in the model and the former two quantitative in the First-order Dimension (FSD). These findings confirm that the indicators are well capable of measuring their corresponding constructs, and the power of the measurement model should be considered positive.

Table 5: Structural Model

Construct	Coefficient of determination (R^2)	Adjusted R^2
GBO	0.4702	0.4678
GBI	0.6454	0.6445

The explanatory power of the structural model was determined using the coefficient of determination (R^2) and the adjusted R^2 values, which refer to the percentage of variation accounted for by the endogenous constructs from their predictors. For Green Behavioural Intention (GBI) the R^2 value was 0.6454 and the adjusted R^2 value was 0.6445. This suggests that the set of antecedent variables i.e., Environmental Knowledge (EK), Sustainability Values (SV) and Eco-Attitudes (EA) collectively explain about 64.5% variance of GBI. It shows a marked degree of explanatory power because when R^2 is more than 0.60, it is regarded as strong in behavioral studies (Hair et al., 2019). Equally, the R^2 and adjusted R^2 of Green Behavioral outcome (GBO) are 0.4702 and 0.4678, respectively, meaning that nearly 47 per cent of the variance in GBO is explained by GBI and moderating effects of the social media. This is an indication of a moderate predictive power because the value between 0.33 and 0.60 of R^2 can be classified as moderate. Overall, the model reveals reasonably good and significant explanatory power on both endogenous variables.

Table 6: Total Effects Inference

Effect	Original coefficient	Standard bootstrap results			
		Mean value	Standard error	t-value	p-value (2-sided)
GBI -> GBO	0.6864	0.6848	0.0299	22.9507	0
FSD -> GBO	0.5514	0.552	0.0374	14.7446	0
FSD -> GBI	0.8033	0.8055	0.027	29.7974	0
Interaction (GBI * SMI) -> GBO	-0.0975	-0.0943	0.049	-1.9873	0.0472

The overall effects and bootstrap show the power and significance of the relationship expounded in the model. Green Behavioral Intention (GBI) to Green Behavioral Outcome (GBO) path has been also strong and significant (coefficient = 0.6864, $t = 22.95$, $p = 0.000$) and it proves that intention has a stronger impact on the sustainable behavior. There is also a high direct relationship between the Formative Second-order Dimension (FSD) and GBO (coefficient = 0.5514, $t = 14.74$, $p = 0.000$) and much stronger than on GBI (coefficient = 0.8033, $t = 29.80$, $p = 0.000$) indicating the significance of values, knowledge and attitudes.

Remarkably, the interaction term (GBI x SMI) > GBO indicates a smaller yet significant negative moderating effect (coefficient = -0.0975, $t = -1.99$, $p = 0.0472$), which means that Social Media Influence slightly reduces the relationship amid intention and behavior. In general, all the paths are significant ($p < 0.05$), which proves the tested

hypotheses and highlights the significant relationships between the elements of sustainability behavior of Gen Z and psychological factors and social media.

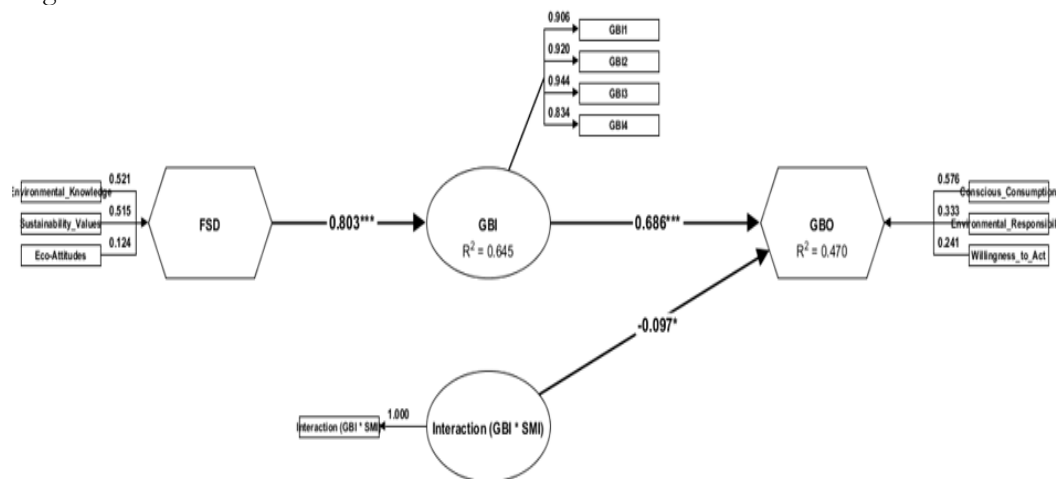


Figure 2: Structural Model with Hypothesis Results for Gen Z's Sustainability Behavior

DISCUSSION

The results from this study are powerful empirical evidence to support this hypothesised model that examines the sustainability behaviour of Generation Z specifically, showing the great role that psychological and contextual factors have in determining green behavioural outcomes. The findings support the fact that Foundational Sustainability Drivers (FSD) including Environmental Knowledge (EK), Sustainability Values (SV) and Eco-Attitudes (EA) push Green Behavioural Intention (GBI) considerably. It is consistent with above literature that reiterates the predictive power of TPB and VBN models in pro-environmental scenario where individual awareness and values have a central role in the behavioural change (Ajzen, 1991; Bamberg & Mser, 2006). The environmental messages introduced to Gen Z both in schools and on digital platforms explicitly seem to contribute to the growing desire to take sustainable steps, which, among others sustains the theoretical idea that cognitive and moral aspects go together to support the targeted decision towards developing eco-conscious behaviour (Zsoka et al., 2012; Nguyen & Dekhili, 2024).

The study also unveils that GBI bears strong and significant influence on second order of Conscious Consumption (CC), which is signified by the Conscious Consumption behaviour and Environmental Responsibility and Willingness to Act. This finding confirms the hypothesis of the role of intention as an important mediator in this process of transition between psychological orientation and the performance of a practical, sustainable behaviour an established association in the sustainability research field (Gandhi et al., 2025; Banos-Gonzalez et al., 2021). It also highlights the concept of Gen Z consumers not simply arriving at the point of expressing environmental motivated attitude we highlighted back at the very beginning => Gen Z consumers are not simply passively showing the environment, and expression of environmental concern, instead, they take actions in the directions of matching their consumption patterns with their environmental values This observation works to support the arguments that modern consumers, especially young ones are ethically minded and personally responsible (Aggarwal et al., 2024).

One of the important contributions of this research to the state of knowledge is the fact that when one considers GBI and CC to be associated with each other, the aspect of GBI being positively moderated by Social Media Influence (SMI) presents a very influential negative effect. As opposed to the common belief that social media bring positive impacts on sustainability behaviour over time, the research evidence propose that when used excessively, or spread, or given the wrong information, then it might erode the effectiveness and resolve to strive into appropriate action. This result is resonant with the recent literature, warning of the consumerist or performative character of the sustainability activism executed through social media (Confetto et al., 2023). Even though digital platforms seem to be indispensable to the awareness creation process that activates the value creation process, their digital intervention causes a diversion or saturation of the user and this would lead to behaviour inconsistencies in the follow up (Fatima et al. 2024; Hua et al. 2024). This subtlety suggests the need for more specific, realistic and engaged materials on the subject of sustainability messaging on social media.

IMPLICATIONS

Theoretical Implications

The theoretical contributions of this study are of great importance, including the body of knowledge on sustainability, and the feasibility of drawing valuable insights in the topic of pro-environmental behaviour of the generation Z. The first major contribution has to do with the confirmation of the hierarchical structure of the model using SEM. Green Behavioural Outcome (GBO) was conceptualised as a second-order formative scale, which included three reflective first-order subscales, namely Conscious Consumption, Environmental Responsibility and Willingness to Act. In addition, Foundational Sustainability Drivers (FSD) was created as a second-order construct comprised of three first-order reflective constructs including Environmental Knowledge (EK), Sustainability Values (SV) and Eco-Attitudes (EA). The present model provides a complex understanding of the effects of second-order constructs, which are formed from combined psychological components, on behaviour. The use of Partial Least Squares SEM (PLS-SEM) was appropriate when complex hierarchical structures were found, making this tool being increasingly used to study Sustainability (Hair et al., 2021; Buzzao & Rizzi, 2020).

Secondly the research provides empirical evidence of the pre-eminence of the intention as a mediator in support of TPB (Ajzen 1991). In its results, it is proved that EK, SV and EA have established a significant influence over Green Behavioural Intention (GBI), which in turn affects the sustainable behavioural outcomes in positive ways. This finding is consistent with other studies that explain the presence of intention as a mental process that mediates the path from attitude to behaviour that involves a certain degree of sustainability (Bamberg & Moser, 2006; Gandhi et al., 2025). Further, the data is used to confirm the idea that Gen Z, being a values-oriented generation is also susceptible to self-motivated drives through establishing systems of knowledge and beliefs (Nguyen & Dekhili, 2024; Aggarwal et al., 2024).

One of the main theoretical contributions of the research is that moderation analysis is incorporated in the research, i.e., the influence of the Social Media Influence (SMI) in forming a causal relationship between intention and behaviour. Although sustainable behaviour through digital platforms has been moaned to be influenced by the digital media, the study introduces the negative impact of moderation, a fact that implies that over-flooding or dissonance of sustainability messages can further reduce the incommensuration of intentions into action. This says a lot about the critical dimension of digital behavioural theories given that it shows why online contents can be very complex and even counter-productive (Confetto et al., 2023; Fatima et al., 2024). It is also another sign of despair that obsessed in the sustainability literature are on the subject of performative activism and superficial internalisation of green values on social media (Hua et al., 2024).

Moreover, this research has added to a new emerging logic of scholarship that relates the concept of sustainability to the values of intergenerational equity and the capacity to make decisions (Abramovich & Vasiliu, 2022). In addition, Willingness to Act (as part of GBO), and the results of Banos-Gonzalez et al. (2021) on perceived responsibility, which always showed powerful feedback effects of behaviours related to the environment. With this, in addition to reasserting the established theoretical perspectives such as TPB and VBN, this research further enriches them with digital and hierarchical dimensions.

Practical Implications

This study has important implications for policymakers, educators, marketers, and sustainability advocates interested in encouraging Gen Z to make the same behaviour. The study provides critical significance of Foundational Sustainability Drivers (FSD): Environmental Knowledge (EK), Sustainability Values (SV), and Eco-Attitudes (EA) that defines Green Behavioural Intention (GBI) that predicts Conscious Consumption (CC) majorly. The reflections confirm the need for early intervention in terms of environmental education and raising awareness, which should not focus on information issues only, but the concepts of Gen Z should be approached on the level of values and attitudes (Zsoka et al., 2012; Bamberg Moeser, 2006). For teachers, it means integrating the concepts of sustainability in all areas of study and advancing real-life learning processes that can foster a sense of responsibility and ethical responsibility towards the environment (Banos-Gonzalez et al., 2021).

The implication of these results to policy makers is that policies aiming to attain sustainability have to address not only infrastructural or regulatory solutions, but also invite value internalisation and creation of appropriate conditions for generating sustainable behaviours. For example, movements and government policies based on intergenerational justice and ethical responsibility such as those promoted by Abramovich and Vasiliu (2022) will be closer to the moral compass and intergenerational sense of Gen Z cohort. For example, the subsidy of environmental products or incentives for civic sustainability activities can help to enhance the behavioural intention and participation.

Marketing-wise, the study reaffirms that more work needs to be done by companies besides slapping a green label on their products and producing their CSR testimonials. The key is that brands aiming to reach Gen Z should

ensure that their messages connect with the psychology of this generation: genuinity, business ethics and purpose-driven identity (Aggarwal et al., 2024). This GBI is supported by the TBP by Ajzen (1991), which suggests that in the campaign, the marketer must pay attention to attitudinal and normative reinforcement, such as testimonial, peer-pressure, and transparency on the impact on the environment. The strategies will contribute to anchoring the intention-to-action pathway of green consumption.

However, the finding of the study on the negative moderating effect of Social Media Influence (SMI) between GBI and CC complicates the thought process of digital labour in a certain degree. As with the notion that the social media is always good comes with the data that there is a chance of Gen Z feeling content fatigue/misinformation or pressure to perform through social media, which is linked with a lower interaction of conversion of intention to actual performance (Confetto et al., 2023; Fatima et al., 2024). It has direct impact on digital marketers and social influencers. Thus, in addition to viral campaigns, the content should be a legitimate source of information, a source of information that people can relate to, and must have a purpose to make it worth a high level of engagement and commitment rather than a shallow level of interaction (Hua et al., 2024).

Also, in relation to the sustainability-related operations of governmental and non-governmental organisations, the multi-platform approaches of the organisations must include interactive storeys, peer-to-peer and community-based activities that empower the behavioural intentions of Gen Z. These tools can open up a much more direct response between intent and sustainable practise when combined with the other two elements of institutional trust and inclusive participation.

CONCLUSION

Summary of Key Findings

This study finds out that sustainable effect of Gen Z can be significantly accomplished with the fundamental psychological background referred to as Environmental Knowledge, Sustainability Values, and Eco-Attitudes, which form the Green Behavioral Intention. Such intention is an important mediator towards the occurrence of Conscious Consumption, which is the second-order construct constituted by environmental responsibility and the readiness to act. The research further demonstrates that even though the platforms have been of much use in creating awareness, there is a negative moderating role of Social Media Influence on the correlation between the intention and action. This leads to the conclusion that in itself exposure to sustainability material is not sufficient to ensure sustainability in promoting pro-environmental behavior with time. The results support the use of the hierarchical modeling strategy and highlight the necessity of the internal and contextual factors in the development of the true sustainability mindset in Gen Z.

Limitations

There are some limitations of this study. Social desirability or common method bias can be observed when self-reports are used. The sample has limited generalizability because it only deals with people of Generation Z in certain areas. Also, other aspects such as financial limitations, peer pressure, and institutional credibility have not been put into consideration. The study cannot define causality as it is a cross-sectional study. Subsequent researchers are asked to examine the idea of utilizing a longitudinal or experimental research design to have a better understanding of how sustainable behavior evolves and is consistent across time.

Directions for Future Research

Large-scale research is recommended to assume a longitudinal design to monitor changes in the sustainability-related attitudes, intention, and behaviors of Generation Z individuals in response to the evolving environmental, technological, and social environment. There is also a need for cross-cultural comparison with exploration of the effect of cultural norms and socio-political conditions on green behavior. To increase generalizability, spreading among more populations would be slightly effective, and involving such variables as control of perceived behavior, trusting institutions, or environmental stress might increase the model depth and explanatory power.

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