

Sustainable Consumption Behavior among Educated Generation Z: The Roles of Environmental Awareness and Perceived Financial Literacy

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ABSTRACT: It is generally recognized that sustainable consumption is crucial to sustainable economic and environmental health. However, amongst youth consumers there still is a familiar problem: They know about environmental issues but do not necessarily use this information to buy or use products responsibly. The present study focuses on the potential for environmental awareness and perceived financial literacy to successfully predict the sustainable consumption behaviors of a particular group of university students within the larger set of educated Gen Z. A cross-sectional design was employed in the survey of 300 undergraduate students from Pakistani universities. By observing our results, we realize that both factors have impacts on sustainable behavior, and the impact of environmental awareness is more noticeable ($\beta = 0.563$) than the impact of perceived financial literacy ($\beta = 0.327$). Together, the two predictors explain a large amount of the variance ($R^2 = .551$). This indicates that when it comes to motivation to buy ecologically, knowledge about ecology and sustainability is often the main factor, while perceived financial awareness is not necessarily a determining factor, but rather can facilitate and enable it.

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KEYWORDS: Sustainable Consumption Behavior, Generation Z (University Students), Environmental Awareness, Perceived Financial Literacy, Developing Economy

Introduction

There is a growing understanding among scholars and policymakers that there is a need to change consumption patterns in order to reduce environmental degradation. The concept of sustainable consumption is not only limited to buying green products, but also involves waste reduction, energy consumption, and life cycle thinking (Joshi & Rahman, 2015). Generation Z, born between 1997 and 2012, is a critical demographic with a generation that has been born and bred digital, trained to debate climate change, has been exposed to environmental issues, and is now beginning to purchase goods (Gomes et al., 2023; Dimock, 2019). But an "attitude-behaviour gap" exists among

this group. Yes, Gen Z are concerned with the environment; however, this does not always lead to sustainable purchasing behaviour as they are often constrained by affordability, are in the habit of purchasing certain items, and are sceptical about green claims (Carrington et al., 2010; Joshi & Rahman, 2015). This is because, besides a desire to act in an eco-friendly way, consumers must also be able to do it financially. Raising environmental awareness is a huge part of prior research examined as a predictor of green behavior (Agrawal et al., 2023; Yadav & Pathak, 2017). Financial literacy has also been explored in the area of saving, debt management, and investment choices (Lusardi & Mitchell, 2014; Stolper & Walter, 2017). However, there were only limited studies that considered these two concepts together in a single prediction model, specifically in the context of developing Asian countries with limited resources and environmental difficulties. The aim of this study is to fill this gap by simultaneously testing the impact of (1) environmental awareness (cognitive probing of ecological impacts) and (2) perceived financial literacy (self-assessed money management skills) on students' sustainable consumption behavior at Pakistani universities. We compare the relative predictive strength and the joint explanatory power of these. The results will steer their educators, policymakers, and marketers to the most important competencies needed to promote sustainable consumption by young consumers in developing economies.

Literature Review

Theoretical Framework: Motivation-Ability Model

This study is based on the assumption that having Sustainable behaviour needs 2 key prerequisites: Motivation and Ability. Environmental awareness gives them the thinking motivation of why they need to act sustainably. Perceived financial literacy creates the enabling ability; it allows a consumer to have the skills in budgeting, comparing long-term costs, and affording sustainable alternatives (Rahman et al., 2021). This Motivation-Ability framework provides a parsimonious explanation of sustainable consumption – without the need for complex concept-mediated attitudes, driving sustainable consumption behaviour by means of cognitive or competence beliefs. Analogous models have been successfully used in research on consumer behaviour to address the intention–behaviour gap (Carrington et al., 2010).

Sustainable Consumption Behavior

The behavior of sustainable consumption refers to decisions and behaviors that consumers take to satisfy their needs with negative environmental and social effects as low as possible (Fischer et al., 2017). This is not only about the purchasing of environmentally preferable products, but also sufficiency-oriented activities like reduction of unnecessary use and consumption, waste minimization, conservation of energy and water, re-use of goods, and consideration of durability at the time of purchase.

What is crucial, however, is that sustainable consumption cannot simply be decided on based on one psychological trait. While the youth might show goodwill regarding green preference, they tend to focus on features like price, convenience, product availability and quality (Yadav & Pathak, 2017). Previous research has shown that the impact of environmental concern and environmental knowledge on green purchase intention is mediated via perceived behavioral control and contextual factors (Nguyen et al., 2019). This highlights the need for models that include motivational and capability factors.

Generation Z and Environmental Awareness

Generation Z has seen an ever-expanding societal interest in climate change, plastic pollution, resource scarcity, and corporate responsibility in relation to the environment develop throughout its existence. They experience

sustainability campaigns, ecological education, brand communications, and peer influence as their life is embedded in a wide network of digital technologies (Jaciow & Wolny, 2021). Research suggests that the digitalization of the ecology movement gives rise to new forms of ecological behavior, thereby providing access to ecology knowledge and nudging consumers towards greener choices (Agrawal et al., 2023).

Generation Z should not be viewed as a cohort that represents a “sustainable generation,” however. The research has identified positive attitudes by youth consumers towards environmentally responsible consumption, although there is a gap between attitude and behavior (Kowalska et al., 2021). Research focusing on circular fashion and sustainable food preferences also shows that although awareness is uncertain, it should be noted that perceived benefits, affordability, and contextual effects determine adoption. (Jiménez-Fernández et al., 2023; Rossi et al., 2023) These results indicated that “environmental awareness” is a precondition but not a prerequisite for sustainable consumption, so there is a need to add another explanatory factor, which in this case is financial literacy.

Financial Literacy and Sustainable Consumption

Financial literacy refers to the ability, skills, and self-confidence to apply information to interpret and make decisions about spending, saving, borrowing, budgeting, and planning for the long-term when dealing with financial issues (Lusardi & Mitchell, 2014). Although the majority of studies have mostly been focused on financial outcomes, such as saving and debt management, in theory, sustainable consumption is relevant to financial literacy (Muñoz-Céspedes et al., 2021; Stolper & Walter, 2017).

In applying sustainability criteria, consumers are confronted with intertemporal trade-offs. Environmentally preferable products also could be more expensive up-front, but have lower operating costs, longer life, or more long-term value. Economic education allows consumers to make a more economical analysis of these trade-offs, not just one that is based on immediate price (Lusardi & Mitchell, 2014; Rahman et al., 2021). Insufficient financial management strategies and impatience, along with the lack of information about consumer lending, can lead to overconsumption and to economically and environmentally unsound behaviors that increase consumption and waste; difficult behaviors to change, but financial education can reduce the environmental impact of consumer credit (Muñoz-Céspedes et al., 2021).

But earning money is not enough to ensure sustainable consumption. Consumer satisfaction can lead to low-cost but higher environmental impact products. Even the most astute financial rewiring is of no use if sustainable options are unavailable due to financial constraints. Financial literacy with an environmental consciousness makes it relevant and related to the environment (Muñoz-Céspedes et al., 2021). This indicates environmental factors and financial factors are not competing determinants, but complementary factors (environmental awareness and financial literacy).

Synthesis and Research Gap

Literature review attests that awareness of the environment is a key antecedent of sustainable attitude and behavior. It also reveals that, overall, Generation Z is interested in receiving related information about the environment, but that sustainable actions cannot be found in every situation of consumption. Expectations that environmental concern will translate into behavior often fall short because of product availability, convenience, price, and affordability.

The analysis of environmental awareness and financial literacy at the same time gives a comprehensive understanding of sustainable consumption of Generation Z. Environmental awareness is the expression of ecological motivation, and perceived financial literacy is the expression of economic capacity for decision-making. This research

attempts to fill this gap by examining the individual and joint influence of these variables on sustainable consumption behaviour and to check which one of these influences is most predictive from a developing country perspective.

Research Objectives

Based on the foregoing discussion, we propose the following objectives and hypotheses:

Research Objectives

1. To examine the effect of environmental awareness on sustainable consumption behavior among Generation Z university students.
2. To assess the effect of perceived financial literacy on sustainable consumption behavior among Generation Z university students.
3. To determine the combined explanatory contribution of environmental awareness and perceived financial literacy to sustainable consumption behavior.
4. To compare the relative predictive strength of environmental awareness and perceived financial literacy.

Hypotheses

H1: Environmental awareness has a significant positive effect on sustainable consumption behavior among Generation Z university students.

H2: Perceived financial literacy has a significant positive effect on sustainable consumption behavior among Generation Z university students.

Methodology

Research Design

A quantitative, cross-sectional survey design was used to explore the impact of awareness of the environment and financial literacy perceptions on sustainable consumption behavior. The quantitative approach is suitable as the study aimed to test hypothetically derived null hypotheses and wanted to find statistically measurable relationships between the variables studied. Cross-sectional surveys are most commonly employed in consumer behaviour studies because they allow the gathering of standardized data from a large sample at one period of time.

This study used a positivist research paradigm, which assumed that social phenomena can be measured objectively through the measurement instrument and empirical statistical analysis. But it also matches the Motivation-Ability framework that considers environmental awareness and perceived financial competency as independent factors affecting sustainable consumption behaviour.

Population and Sampling

Generation Z university students of Pakistan (born in 1997 to 2012) were targeted population (Dimock, 2019). University students are a suitable target audience as they are more likely to make their own purchase decisions, have a restricted budget, and are coming across information about sustainability issues from their studies and online.

A convenience sampling method was adopted - students were those who were easily accessible and willing to participate in the study. After discarding invalid questionnaires, a total of 300 questionnaires were considered. This number of questionnaires is adequate for multiple regression analysis and the number recommended by Hair et al. (2019) for behavioural studies using two independent variables.

Important Limitation: Our findings were limited by the use of a university-student sample. The findings thus represent the ingrained behaviour of the educated and urban segment of the population of Gen Z in Pakistan only and cannot be generalized to the overall population of Gen Z unless further investigations are conducted.

Data Collection Procedure

The primary data were obtained from a structured, self-administered questionnaire. Prior to data collection, the participants were briefed on the aims and purpose of the study and given the option of voluntary participation. They were also told that their answers would be de-identified and confidential and that data would only be utilized for academic research purposes. No personal data were collected.

Completed questionnaires were analysed for any incomplete or contradictory answers. The completion rate of questionnaires was high, and only the completed ones were retained for statistical analysis of the data, thus improving the quality and reliability of the data.

Measurement of Variables

The questionnaire was divided into two parts. The gender, academic level, and age of the respondents were gathered in the first section. The second section estimated the value of the three measures of the study constructs: environmental awareness, perceived financial competence, and sustainable consumption behavior.

Items of measurement were adapted from instruments that were reported in the literature and validated. All items were rated on a five-point Likert scale (1 = "Strongly Disagree" to 5 = "Strongly Agree").

Construct	Original Source	Items
Environmental Awareness	Roberts & Bacon (1997)	6
Perceived Financial Literacy	OECD/INFE (2018) adapted	5
Sustainable Consumption Behavior	Joshi & Rahman (2019)	7

Environmental Awareness: Six items based on Roberts and Bacon (1997), modified to measure levels of environmental awareness in terms of how well respondents were informed about the environmental impact of consumption, ecological accountability, and knowledge about environmental issues.

Perceived Financial Literacy: Five items adapted from the OECD/INFE (2018) financial literacy framework, measuring self-assessed budgeting, financial management, spending decisions, and financial planning. We acknowledge that our Likert-scale items measure respondents' self-assessed confidence and perceived capability in managing finances, rather than objective factual knowledge. This is a deliberate choice, as perceived financial self-efficacy often has a more direct behavioral influence on everyday purchasing decisions than objective test scores (Fernandes et al., 2014).

Sustainable Consumption Behavior: Seven items based on Joshi and Rahman (2019), measuring environmentally responsible buying, waste avoidance, recycling, conservation of resources, and responsible consumption of products.

Reliability and Validity

Cronbach's alpha coefficients were calculated to assess internal consistency reliability. Content validity was established by adapting questionnaire items from published empirical studies and evaluating their relevance to the conceptual definitions of environmental awareness, perceived financial literacy, and sustainable consumption behavior.

Data Analysis

We analyzed the data using SPSS (Statistical Package for the Social Sciences). The analysis proceeded in sequential phases:

1. **Descriptive statistics:** were calculated to explain the demographic features of respondents and the central tendency and variability of study variables.
2. **Cronbach's alpha reliability analysis:** was conducted to determine the internal consistency of the measurement scales.
3. **Pearson correlation analysis:** examined the direction and strength of the relationships among the study variables.
4. **Prior to regression,** we assessed multicollinearity using the Variance Inflation Factor (VIF). Additionally, to address the risk of Common Method Bias (CMB) inherent in single-source, self-reported data, we conducted Harman's single-factor test (Podsakoff et al., 2003).
5. **Multiple linear regression analysis:** estimated the independent effects of environmental awareness and perceived financial literacy on sustainable consumption behavior, as well as their combined explanatory power. Statistical significance was set at $p < .05$.
6. **Independent samples t-tests and one-way ANOVAs** were performed to explore whether sustainable consumption behavior varied significantly across demographic groups (gender and academic level).

Regression Model

The following multiple linear regression model was used:

$$SCB = \beta_0 + \beta_1(EA) + \beta_2(PFL) + \varepsilon$$

Where:

- ▶ SCB = Sustainable Consumption Behavior
- ▶ EA = Environmental Awareness
- ▶ PFL = Perceived Financial Literacy
- ▶ β_0 = Intercept
- ▶ β_1, β_2 = Regression coefficients
- ▶ ε = Random error term

Ethical Considerations

The research adhered to established ethical standards for social science research. Participation was voluntary, and informed consent was obtained from all respondents before data collection. The study's objectives were clearly communicated, and confidentiality and anonymity were assured. Data were analyzed only in aggregate form, and no personally identifiable information was recorded or disclosed.

Results

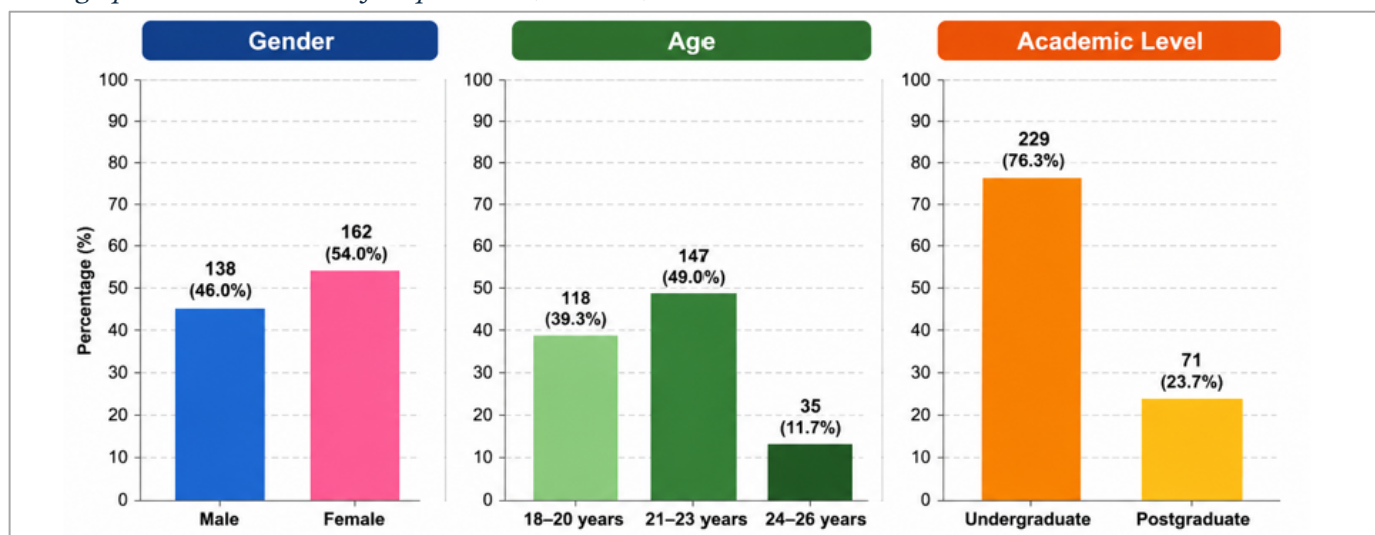
Respondents' Demographic Profile

A total of 300 valid questionnaires were analyzed, with all respondents being Generation Z university students. Table 1 summarizes the demographic characteristics of the participants.

Table 1*Demographic Characteristics of Respondents (N = 300)*

Variable	Category	Frequency	Percentage (%)
Gender	Male	138	46.0
	Female	162	54.0
Age	18–20 years	118	39.3
	21–23 years	147	49.0
	24–26 years	35	11.7
Academic Level	Undergraduate	229	76.3
	Postgraduate	71	23.7

The sample demonstrated a relatively balanced gender distribution, with women representing a slightly higher proportion (54.0%). Nearly half of the respondents were aged 21 to 23 years, a demographic that comprises the majority of university students within Generation Z. Most respondents were undergraduate students.

Figure 1*Demographic Characteristics of Respondents (N = 300)*

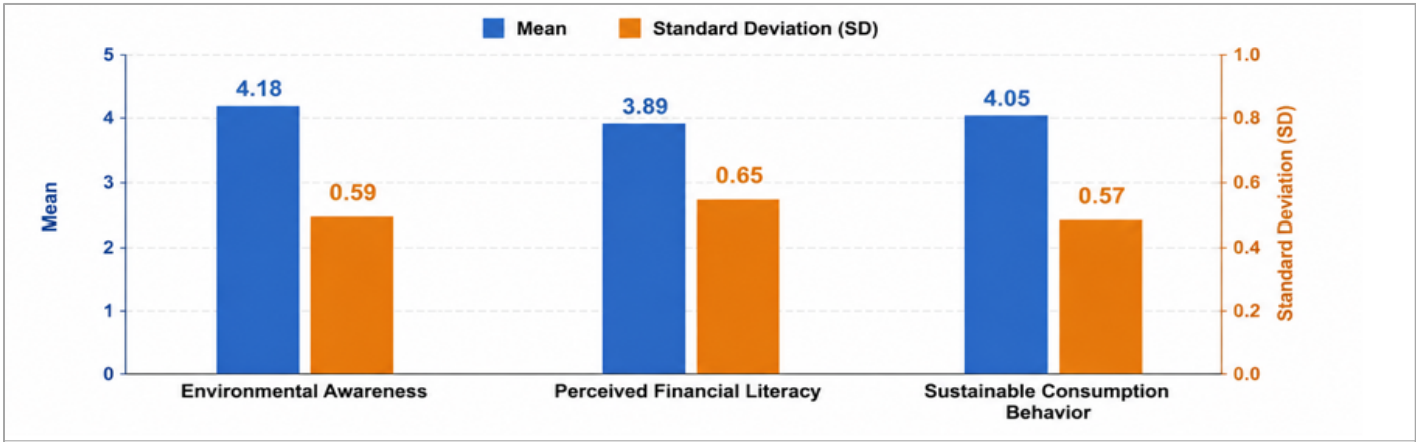
Descriptive Statistics

Table 2*Descriptive Statistics of Study Variables*

Variable	Mean	SD	Interpretation
Environmental Awareness	4.18	0.59	High
Perceived Financial Literacy	3.89	0.65	High
Sustainable Consumption Behavior	4.05	0.57	High

The results indicate that respondents rated environmental awareness as relatively high ($M = 4.18$), suggesting a strong concern for environmental sustainability. Perceived financial literacy was also rated relatively high ($M = 3.89$), demonstrating that respondents generally possessed adequate self-assessed financial skills. The average score for sustainable consumption behavior was high ($M = 4.05$), indicating that Gen Z consumers frequently engaged in environmentally responsible consumption.

Figure 2
Descriptive Statistics of Study Variables



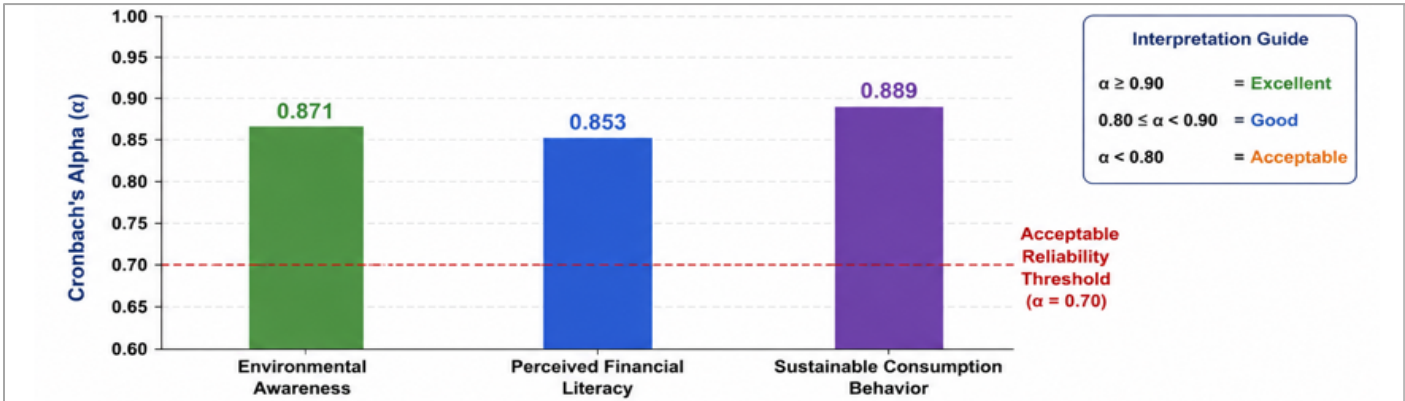
Reliability Analysis

Table 3
Reliability Statistics

Construct	Items	Cronbach's Alpha	Interpretation
Environmental Awareness	6	0.871	Excellent
Perceived Financial Literacy	5	0.853	Good
Sustainable Consumption Behavior	7	0.889	Excellent

The Cronbach's alpha coefficients ranged from 0.853 to 0.889, exceeding the recommended minimum threshold of 0.70 (Hair et al., 2019). These results indicate good internal consistency across all measurement scales.

Figure 3
Reliability Statistics



Correlation Analysis

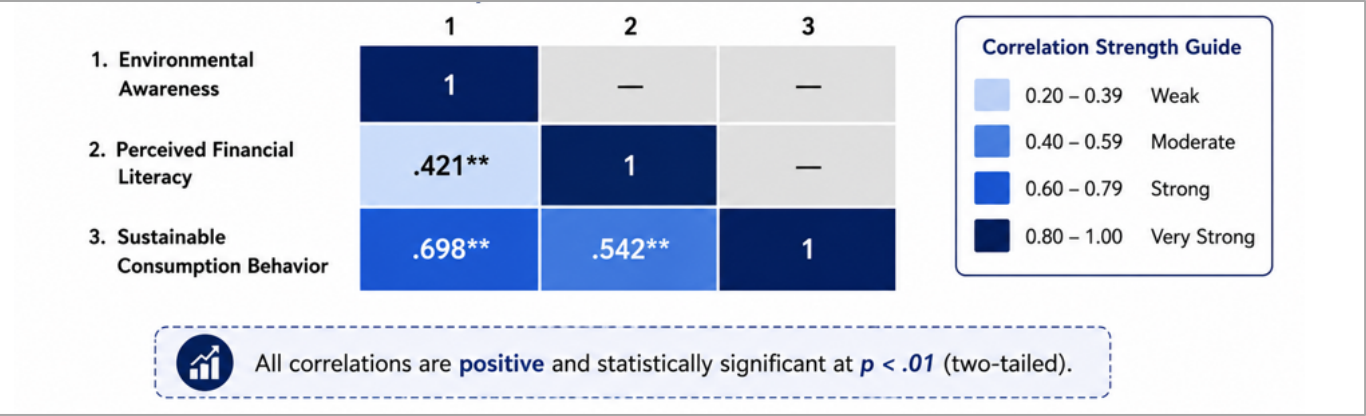
Table 4
Pearson Correlation Matrix

Variable	1	2	3
1. Environmental Awareness	1		
2. Perceived Financial Literacy	.421**	1	
3. Sustainable Consumption Behavior	.698**	.542**	1

Note: **p* < .01

Correlation analysis indicated statistically significant positive relationships among all study variables. Environmental awareness showed a strong positive association with sustainable consumption behavior ($r = .698, p < .001$), while perceived financial literacy demonstrated a moderate positive relationship ($r = .542, p < .001$). The correlation between the two independent variables ($r = .421$) was below the commonly accepted multicollinearity threshold.

Figure 4
Correlation Analysis



Assessment of Common Method Bias and Multicollinearity

Harman's single-factor test extracted a single factor accounting for only 34.8% of the total variance, well below the 50% threshold, indicating that Common Method Bias is unlikely to distort our findings (Podsakoff et al., 2003). Additionally, Variance Inflation Factor (VIF) values were 1.21 and 1.21 for environmental awareness and perceived financial literacy, respectively, well under the conservative threshold of 5.0, confirming that multicollinearity is not a concern in our regression model. We note that Harman's single-factor test is a relatively weak diagnostic and cannot rule out common method bias on its own; because all three constructs were collected via the same self-administered instrument at the same point in time, some shared-method variance cannot be excluded. Stronger statistical controls (e.g., a marker-variable test) were not available in this dataset and are recommended for future replications.

Demographic Differences in Sustainable Consumption

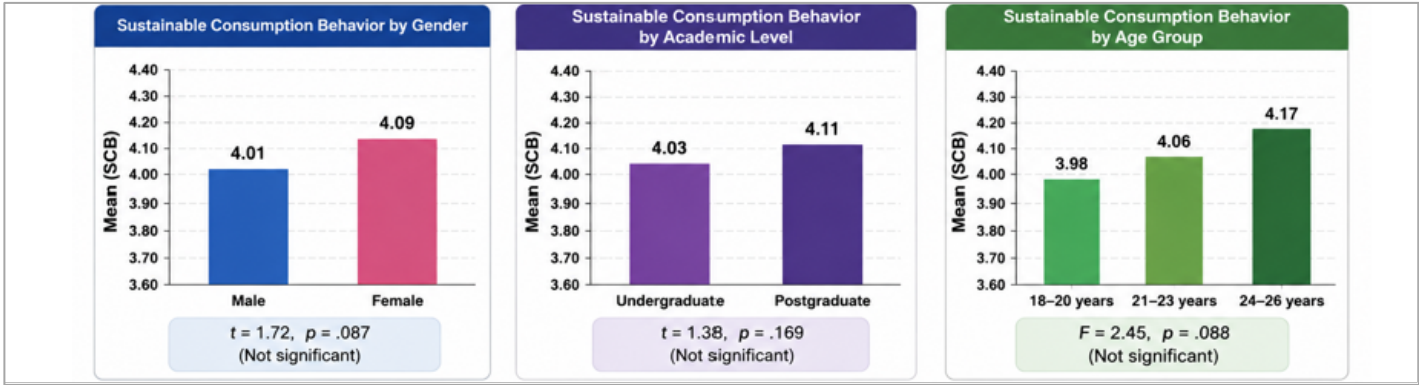
Table 5

Demographic Differences in Sustainable Consumption Behavior

Variable	Category	Mean (SCB)	t/F	Sig.	Interpretation
Gender	Male	4.01	t = 1.72	.087	Not significant
	Female	4.09			
Academic Level	Undergraduate	4.03	t = 1.38	.169	Not significant
	Postgraduate	4.11			
Age Group	18–20 years	3.98	F = 2.45	.088	Not significant
	21–23 years	4.06			
	24–26 years	4.17			

Independent samples t-tests and one-way ANOVAs revealed no statistically significant differences in sustainable consumption behavior across gender, academic level, or age groups. While female students and postgraduate students reported slightly higher mean scores, these differences were not statistically significant ($p > .05$ for all comparisons). This suggests that the observed relationships between the independent variables and sustainable consumption are robust across demographic subgroups.

Figure 5
Demographic Differences in Sustainable Consumption Behavior



Multiple Regression Analysis

Table 6

Model Summary

R	R ²	Adjusted R ²	Std. Error
.742	.551	.548	.384

The regression model accounted for 55.1% of the variance in sustainable consumption behavior ($R^2 = .551$), demonstrating considerable explanatory power. The unexplained variance likely results from additional psychological, social, or contextual factors not examined in this study.

Table 7

ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
Regression	53.412	2	26.706	181.44	<.001
Residual	43.729	297	0.147		
Total	97.141	299			

The ANOVA results demonstrate that the overall regression model is statistically significant ($F = 181.44$, $p < .001$), suggesting that environmental awareness and perceived financial literacy together predict sustainable consumption behavior among Generation Z consumers.

Figure 6

ANOVA

Source	Sum of Squares	df	Mean Square	F	Sig.
 Regression	53.412	2	26.706	181.44	< .001
 Residual	43.729	297	0.147		
 Total	97.141	299			

Table 8
Regression Coefficients

Predictor	B	SE	β	t	Sig.	VIF
Constant	0.842	0.213	---	3.95	<.001	
Environmental Awareness	0.531	0.046	.563	11.54	<.001	1.21
Perceived Financial Literacy	0.274	0.041	.327	6.69	<.001	1.21

Environmental awareness exerted the strongest positive influence on sustainable consumption behavior ($\beta = .563$, $p < .001$). Greater self-reported environmental awareness was associated with higher self-reported sustainable purchasing and consumption practices. Perceived financial literacy also showed a significant positive association ($\beta = .327$, $p < .001$), consistent with financially self-efficacious consumers reporting more responsible and sustainable consumption decisions. As with all cross-sectional survey data, these associations describe co-occurring patterns rather than established causal effects. These results support both proposed hypotheses.

Figure 7
Regression Coefficients

Predictor	B	SE	β	t	Sig.	VIF
 Constant	0.842	0.213	---	3.95	<.001	—
 Environmental Awareness	0.531	0.046	.563	11.54	<.001	1.21
 Perceived Financial Literacy	0.274	0.041	.327	6.69	<.001	1.21

Hypotheses Testing

Table 9
Summary of Hypotheses Testing

Hypothesis	Statement	Result
H1	Environmental awareness positively influences sustainable consumption behavior.	Supported
H2	Perceived financial literacy positively influences sustainable consumption behavior.	Supported

The empirical findings strongly support both hypotheses. Environmental awareness was identified as the most influential predictor of sustainable consumption behavior. Additionally, perceived financial literacy made an independent and significant contribution to the explanation of sustainable consumer decision-making among Generation Z respondents.

Discussion

This study aimed to find out the impact of environmental awareness and perceived financial literacy on sustainable consumption behavior of educated Generation Z consumers in Pakistan. The results show that both variables are highly significant in influence of Sustainable consumption, thereby supporting the hypothesis. It was found that for this group, the environmental awareness variable has greater predictive capacity, suggesting that environmental

knowledge and concern have a stronger impact on the sustainable consumption decisions of this group. The model has been able to explain a significant amount of variance (55.1%).

Why is Environmental Awareness the Dominant Predictor?

Such a strong impact of environmental awareness may be attributed to the intense environmental socialization of Generation Z in Pakistan. This generation has been brought up watching floods, air pollution, climate-induced displacement, among other ecological dangers, on a scale that is most affecting to themselves in South Asian countries. Social media and digital platforms play further roles that help to spread this awareness, as stated by Agrawal et al. (2023) as a "moral imperative" towards sustainability. The study reinforces the results of previous studies, which have shown how increasing awareness of the environment has a positive impact on purchasing behaviour concerning green products among young consumers (Borah et al., 2024; Yadav & Pathak, 2017). Furthermore, it is concordant with the overall relationship between growing environmental knowledge and environmentally appropriate actions, which typically go hand-in-hand, at least amongst the cohorts who are very skilled in digital media, although, as with the current study, most of this data is correlational and not causal.

But the supremacy of the 'environmental awareness' should be understood with care. Since the recognition ratings were obtained using self-reflective measures, social desirability bias might have been present, inflating the relationship. Along with other factors, respondents may over-report on sustainable behaviours if they consider themselves environmentally aware. Although Harman recommends that we are not too concerned about this issue according to his one-factor test, we realise that there may be a relationship between awareness and behaviour partly because of the consistency of self-perception and not actual behavioural changes.

Why is Perceived Financial Literacy's Effect Weaker but Significant?

The less prominent but still significant impact of perceived financial literacy seems to be both conceptually and practically valid. Students have general budgeting skills, but sustainable products tend to have an important 'green premium' (Gomes et al., 2023). Even if the level of self-confidence and financial literacy of many of the respondents was high, absolute affordability probably provides a bigger hurdle than perceived financial literacy because self-confidence and competence do not necessarily imply the ability to make purchases or earnings.

Financial literacy here seems to serve as an enabler rather than a main motive: points at which sustainable and conventional products can be compared to consider long-term cost savings (e.g., energy efficiency, durability) and ask for this kind of information. But it can not build purchasing power where there isn't. This supports the argument that financial education must be coupled with affordable sustainable market options to be fully effective (Muñoz-Céspedes et al., 2021; Rahman et al., 2021).

Also, the way we have measured financial literacy (subjective rather than actual) might have decreased the predictive power of the construct. As mentioned by Fernandes et al. 2014, a self-assessed financial ability is quite often accompanied by a lack of knowledge, especially amongst the younger consumers. The link between sustainable consumption and overestimation of financial capabilities by students can be weakened. In the future, a study can be done to compare the use of a perceived versus objective financial literacy measure to see which is better at predicting sustainable behaviour.

Interpretation within the Motivation-Ability Framework

The results are consistent with the Motivation-Ability Framework. Environmental awareness gives the cognitive motivation, the "why" of sustainable consumption. Perceived financial literacy is the enabler; it is the 'how'. Interestingly, the comparisons of the size of the coefficients indicate that, for this specific context, motivation is more important than ability. This could be a result of the lack of upfront costs associated with students' most sustainable actions, which include actions such as reducing waste, conserving energy, and recycling, which may be more motivation-based actions than financially based. Financial literacy plays an enabling role when the financial implications of the sustainable choice are more substantial, as in the case of the energy-efficient appliance or sustainable fashion.

Contribution to Developing Country Literature

An important limitation of our study is that it offers empirical evidence from a developing country context, in which there is little research that combines environmental awareness and financial literacy as combined factors predicting sustainable consumption. Unlike the Developed Economies, the consumers in several developing economies have financial limitations and are highly price-sensitive with limited access to sustainable products. The perception of financial capabilities has been found to have a significant positive effect on sustainable buying decisions in this study because being economically capable is essential for making sustainable buying decisions in this context (Muñoz-Céspedes et al., 2021; Rahman et al., 2021). At the same time, the significant role of environmental awareness emphasizes the continuous need for environmental education for sustainable consumption despite the economic factor.

Comparison with Previous Research

Our study builds on that of Agrawal et al. (2023), which revealed that there is a positive relationship between environmental awareness and environmental consciousness and green behaviour of Generation Z. They also align with the findings obtained by Borah et al. (2024), where the authors found there was a positive correlation between knowledge of green consumers and their green purchasing attitude. Our study makes a contribution demonstrating, however, that these impacts remain even after controlling for financial capability and that the two constructs are complementary and not competing.

The financial literacy effect in our study is somewhat less than the one in developed economies, in which financial literacy is sometimes more heavily related to sustainable consumption (Muñoz-Céspedes et al., 2021). This gap is probably due to the relatively lesser financial capabilities of all Pakistani university students owing to less financial knowledge as well as financial capability of the students.

Implications

Theoretical Implications

The novelty of this research is the incorporation of environmental awareness and perceived financial literacy in a single explanatory model addressing sustainable consumption. However, while some previous studies focused on the psychological or the economic determinant alone, we found that both psychological and economic determinants together affect the sustainable consumption behavior of Generation Z. Applying the Motivation-Ability framework, our results provide an alternative to more complicated studies in which multiple attitude mediators are needed. This is especially useful for researchers in settings where long survey instruments are not feasible and/or those who have limited resources.

Moreover, our study contributes to the literature on sustainable consumption by offering an empirical study on the connection between environmental awareness and financial literacy in a context of developing countries, an area where research has been comparatively limited. The results indicate that the importance of these predictors might be different across economic contexts: In less wealthy contexts, in which ability (financial capacity) is structurally limited, the role of motivation (awareness) would be more important.

Practical Implications

The results have practical implications for educational institutions, policy-makers and industry.

For Universities: Our findings indicate that environmental education can continue to play an important role in university programs and curricula since awareness was found to be the best predictor of pro-ecological behaviour. Information alone will not do, however. It is suggested that environmental education is extended with practical financial education training specifically for the cost-benefit analysis of sustainable products, namely, lifecycle cost comparison between sustainable and traditional products, energy saving, durability, etc.

For Policymakers: Awareness Campaigns should precede or come hand in hand with financial education campaigns because the primary importance of environmental knowledge is initial. However, as shown in our sample of students, the barriers of the market, namely availability and pricing of green goods, need to be addressed along with this. Changes to tax policies or incentives, procurement practices, or subsidies could support the success of both awareness and financial literacy interventions by making sustainable choices more accessible and affordable.

As for Marketers: Based on our findings, we recommend that communication about the environmental impact should be the main marketing approach for sustainable products for Generation Z. But marketers are also expected to tell people clearly about the expected savings over the years so as to captivate the attention of people who are conscious of money. This two-in-one (environmental benefit and added value) can stimulate both motivation and ability.

Application, Limitations and Future Research Directions

This study presents some limitations that need consideration and incorporation into future research.

- ▶ **First**, the cross-sectional research design does not allow making inferences about cause and effect. Our regression findings show that there are strong relationships between variables, but we do not conclude that environmental awareness or perceived financial knowledge lead to sustainable consumption behavior. Future studies may want to use longitudinal designs, investigating changes over time in sustainable consumption and providing better causal relationships.
- ▶ **Second**, the convenience sampling and the sample of university students limit our findings. The findings here can only be applied to urban and educated young adults and would not be suitable for extrapolating to all of Generation Z; future research would be interested in examining other demographic segments such as working adults, rural consumers, adults not attending university, and varying age groups. Furthermore, a comparative study across countries and cultures would add additional explanations to how a context influences sustainable consumption behaviour.
- ▶ **Third**, the use of self-reported responses to questionnaires may induce social desirability error, although Harman's test indicates that this was not a significant problem here. For future studies, it would be interesting to include an objective measurement of sustainable behavior such as actual purchases, waste audits, or consumption tracking and compare it to the self-reported information gathered.

- ▶ **Fourth**, the regression model only had 2 explanatory variables. This study did not consider factors that impact sustainable consumption behavior, such as psychological, social, and cultural factors, as well as contextual factors. In future studies, the factors of environmental values, green trust, subjective norms, the influence of social media, the extent of green marketing exposure, and perceived consumer effectiveness may be included as variables to formulate comprehensive explanation models for future studies.
- ▶ **Fifth**, is that the financial literacy in this study was not measured objectively. The decision to focus on perceived financial literacy satisfied the requirement of a variable that reflects confidence in one's financial decision-making, but future research should incorporate both measures to identify which one is more indicative of sustainable consumption, and whether and how perceived and objective financial literacy interact in ways significant for sustainable consumption.
- ▶ **Sixth**, we did not differentiate between the various forms of sustainable consumption practices (such as by purchasing green products, by reducing consumption, by recycling, etc.). Future research may explore the possibility of higher prediction power by environmental awareness and financial literacy for different types of behavioral dimensions.
- ▶ **Seventh**, the literature review suggests that the factors of environmental awareness and perceived financial literacy are complementary to each other, and not latent competitors, and multicollinearity was not investigated in the context of this study's regression model. We did not formally test an interaction between environmental awareness and perceived financial literacy, nor did we estimate models that controlled for both predictors and the three other measured variables (gender, age, and academic level). Both analyses would more directly address the complementarity assertion and are recommended as next steps when the dataset is ready to be reanalyzed. Correspondingly, the full wording of the items of the adapted scales can be provided on request from the authors in order to enable replication.

Conclusion

This study explored the impact of environmental awareness and perceived financial literacy on sustainable consumption behavior of the Gen-Z students of a Pakistani university. Our findings reveal that both variables show a significant effect on sustainable consumption. Environmental awareness was identified as the most significant factor, suggesting a positive relationship between knowledge of the environment and sustainable purchasing behavior, while perceived financial literacy underscores the impact on rational purchasing decision-making by considering both financial and environmental factors. These findings can be viewed through the lens of the Motivation-Ability framework: Financial literacy can be described in terms of capacity and awareness as the motivator.

The study findings provide empirical evidence pertaining to a developing country context and can be used to add to the sustainable consumption literature, using the complementary competence perspective on environmental and financial competencies as a means to determine sustainable behaviour. The results show that there is a need for a multi-dimensional approach towards creating awareness of sustainable consumption among Generation Z, looking after both environmental and financial capability.

As for practice, our findings seem to suggest that universities should focus on environmental education and, more specifically, train students in reduced consumption regarding financial aspects of this. Policymakers should encourage both market-side interventions that make sustainable options affordable and awareness campaigns that increase the accessibility of sustainable options. Highlights of environmental benefits should be included in the marketing message, as well as providing an economic message over the long term.

Generally speaking, environmental knowledge and financial competence can be a stimulus for less environmentally harmful consumption styles and contribute to the further sustainable development targets, at least among the educated young consumers in developing economies. The results should be interpreted cautiously, however, because of the restricted student sample, and should be replicated with different subsets of students and in other eating situations.

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