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The Influence of AI-Powered Consumer Analytics on Sustainable Product Purchase Decisions Among Generation Z Consumers in Hyderabad: An Empirical Study

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ABSTRACT :

Artificial intelligence (AI) now shapes what young consumers see, compare and buy on digital platforms. This study examines how AI-powered consumer analytics, expressed through personalised recommendations and targeted advertising, relate to the sustainable product purchase decisions of Generation Z consumers in Hyderabad. Primary data were gathered from 17 respondents through a structured 30-item questionnaire on a five-point Likert scale and were supported with secondary evidence drawn from published academic studies and industry surveys. The analysis applied descriptive statistics, Cronbach's alpha, correlation, a one-sample t-test, multiple regression and a Kruskal-Wallis test. Respondents reported high exposure to AI-based personalisation (mean 3.72), a favourable orientation towards sustainability (mean 3.78) and an above-neutral influence of AI analytics on sustainable purchase decisions (mean 3.65; $t(16) = 3.45$, $p = .003$). Sustainability orientation was strongly associated with AI influence ($r = 0.77$, $p < .001$), whereas exposure to AI analytics showed a positive but statistically insignificant association ($r = 0.27$, $p = .288$). The evidence suggests that AI analytics act as an amplifier of existing environmental values rather than a substitute for them. Implications for platforms, brands and educators are discussed, together with the limits imposed by a small, student-dominated sample.

Keywords: AI-powered consumer analytics; personalised recommendations; sustainable purchase decisions; Generation Z; green consumption; Hyderabad

1. Introduction

Digital platforms no longer simply list products; they select, rank and present them. Behind every "recommended for you" shelf, sponsored advertisement or personalised notification sits a layer of consumer analytics in which machine-learning models study browsing histories, search terms, purchases and dwell time in order to predict what a particular shopper is likely to want next. Marketing scholars describe this shift as the entry of artificial intelligence into the core of the marketing function, from research and segmentation to the delivery of individual offers (Davenport et al., 2020; Huang & Rust, 2021). For the consumer, the practical result is a shopping environment that is different for every person who opens the same application.

At the same time, sustainability has moved from the margins of consumer choice towards the centre of public discussion. Buyers are increasingly asked to weigh the environmental footprint of what they purchase, to look at packaging, materials and brand practices, and sometimes to pay a premium for products that claim lower environmental harm. The two developments meet at a single point: the product a young consumer is shown online may be a conventional item or a sustainable one, depending on how the underlying algorithm reads that consumer. Whether such algorithmic exposure actually changes what people decide to buy is an open empirical question, and the answers reported so far are mixed (Wang et al., 2023; Surbakti et al., 2025).

Generation Z, the cohort born from 1997 onward (Dimock, 2019), is the natural group in which to study this question. Its members grew up with smartphones and personalised feeds, they shop online with ease, and they are frequently described as more environmentally conscious than older cohorts. Hyderabad, a large metropolitan and technology-oriented city with a substantial student population, offers a suitable setting in which digital shopping habits and exposure to sustainability messages coexist.

This paper therefore investigates the relationship between AI-powered consumer analytics and the sustainable product purchase decisions of Generation Z consumers in Hyderabad. It combines primary survey evidence with secondary data from academic and industry sources, and it tests three hypotheses on exposure, orientation and influence. The aim is not only to describe what respondents reported but also to clarify how algorithmic personalisation and personal environmental values work together when a young consumer chooses between a conventional and a sustainable product.

2. Review of Literature

2.1 AI-powered consumer analytics in marketing

Huang and Rust (2021) present a strategic framework in which AI supports marketing at three levels: mechanical AI for standardised tasks, thinking AI for analysis and decision support, and feeling AI for interaction with customer emotions. Applied to consumer analytics, this framework explains why recommendation engines have become a routine tool: they convert large volumes of behavioural data into individual-level predictions. Davenport et al. (2020) similarly argue that AI will alter marketing strategy, business models and customer behaviour, and that its effects depend on the degree of intelligence and the way it is embedded in the customer interface. Both contributions treat personalisation not as an optional extra but as a structural feature of digital commerce.

The acceptance side of this process has traditionally been explained through the Technology Acceptance Model, in which perceived usefulness and perceived ease of use shape a user's attitude and intention towards a technology (Davis, 1989). Applied to recommendations, a shopper who finds them useful and easy to act on is more likely to rely on them, which is consistent with the item wording used in the present questionnaire on ease of choice, discovery of matching products and willingness to explore recommended items.

2.2 Sustainable consumption and the young consumer

The Theory of Planned Behavior explains conscious purchase choices through attitude, subjective norms and perceived behavioural control, which together shape intention and, in turn, behaviour (Ajzen, 1991). Studies of green purchasing have repeatedly drawn on this logic. Kumar and Ghodeswar (2015), working in the Indian setting, examined the determinants of green product purchase decisions and pointed to environmental concern together with product-related considerations such as price and quality as important influences. White, Habib and Hardisty (2019) later organised the broader evidence on sustainable behaviour into the SHIFT framework, covering social influence, habit formation, the individual self, feelings and cognition, and tangibility. Two of those drivers, the individual self and tangibility, are precisely the areas in which personalised information can be expected to operate, because it can make an abstract environmental benefit relevant to a particular person.

2.3 AI recommendations and sustainable purchase behaviour

Empirical work that connects AI personalisation with green outcomes has grown quickly but has not produced a single verdict. Surbakti et al. (2025) surveyed 517 university students in Java, Indonesia, and analysed the data with structural equation modelling. Environmental knowledge shaped environmental attitude, and attitude in turn raised green purchasing intention and behaviour. Perception of AI-driven personalisation strengthened intention (path coefficient 0.136) but its direct path to actual behaviour was not significant (0.056, $p = 0.116$), leading the authors to conclude that personalisation can motivate green choices without guaranteeing them.

A more cautious finding comes from Wang et al. (2023), who ran three studies comparing AI and human recommenders. Their results show that recommendations attributed to AI reduced consumers' motivation for impression management in green consumption contexts, which lowered the intention to buy green products; the negative effect weakened when environmental identity was made salient. Together, the two studies indicate that the effect of algorithmic recommendation on sustainable choice depends on the psychological state of the consumer, in particular on how strongly environmental values are already held.

2.4 Secondary evidence from India and from Generation Z

Industry surveys add a descriptive layer to the academic findings. They show that Indian consumers are unusually receptive to AI in shopping, that willingness to pay for sustainability is widespread though modest in size, and that concerns about data security run alongside the enthusiasm for personalisation. Table 1 summarises the secondary data used as benchmarks in this study.

Table 1: Summary of secondary data used in the study

Source (year)	Coverage	Key finding
Deloitte Gen Z and Millennial Survey (2025)	More than 23,400 Gen Z and millennial respondents, multiple regions	65% of Gen Z respondents were willing to pay more for environmentally sustainable products or services; about 25% of respondents had researched a company's environmental impact before buying.
PwC Global Consumer Insights Pulse Survey (2023)	Indian consumers	Four in ten were willing to pay up to 10% more for sustainably or ethically produced goods; 19% were open to paying up to 20% more to companies with a reputation for ethical practices.
EY Future Consumer Index (2024)	1,000 Indian participants within a global poll	62% of Indian consumers had made purchases influenced by AI recommendations (30% globally); 61% found AI product recommendations extremely beneficial; 77% worried about data breaches and 73% about disclosure of private information.
InMobi and Glance festive season report (2025)	Indian consumers	79% actively sought AI-powered shopping recommendations; 83% planned to research extensively on digital platforms before the final purchase.

Source (year)	Coverage	Key finding
Adobe report on AI and shopping (2026)	Indian shoppers	65% trusted AI recommendations, the highest share in Asia-Pacific.

Source: Deloitte (2025) as reported by ESG Today; PwC (2023) as reported by Alchempro; EY (2024) as reported by exchange4media; InMobi and Glance (2025) as reported by Storyboard18; Adobe (2026) as reported by Deccan Herald.

Two patterns stand out. First, intention to pay for sustainability is common but seldom extends to large premiums, which suggests that price remains a practical boundary for green purchasing. Second, the strong reported use of, and trust in, AI recommendations in India is accompanied by widespread worry about personal data. Any platform that wants to use personalisation for sustainable products therefore has to earn trust as well as attention.

3. Research Gap

The literature reviewed above leaves three gaps that this study addresses. First, the evidence that links AI personalisation to green purchasing comes largely from China, Indonesia and Western markets; studies that focus on Generation Z consumers in an Indian metropolitan setting such as Hyderabad are scarce. Second, findings are inconsistent: some studies report that personalisation strengthens green intention, while others show that AI recommenders can weaken it, and the role of the consumer's own environmental orientation in explaining the difference has received limited attention. Third, industry surveys usually report AI-assisted shopping and sustainable preferences as separate topics, so it is rarely visible whether the same individuals who feel influenced by AI are also those who care about sustainability. This study examines that link at the level of the individual respondent.

4. Objectives of the Study

1. To profile Generation Z consumers in Hyderabad in terms of age, gender, status, income and online shopping frequency.
2. To assess the extent of exposure to AI-powered consumer analytics, such as personalised recommendations and advertisements, among the respondents.
3. To measure the respondents' awareness of, and orientation towards, sustainable products.
4. To analyse the influence of AI-powered consumer analytics on sustainable product purchase decisions.
5. To examine the relationship among AI analytics exposure, sustainability orientation and AI influence on sustainable purchase decisions.
6. To compare the primary findings with secondary evidence and to suggest measures for platforms, brands and educators.

5. Hypotheses of the Study

- **H₀₁:** There is no significant relationship between exposure to AI-powered consumer analytics and the influence of AI analytics on sustainable purchase decisions.
- **H₁₁:** There is a significant relationship between exposure to AI-powered consumer analytics and the influence of AI analytics on sustainable purchase decisions.
- **H₀₂:** The mean influence of AI-powered consumer analytics on sustainable purchase decisions is equal to the neutral scale value of 3.
- **H₁₂:** The mean influence of AI-powered consumer analytics on sustainable purchase decisions is different from (above) the neutral scale value of 3.
- **H₀₃:** There is no significant relationship between sustainability orientation and the influence of AI analytics on sustainable purchase decisions.
- **H₁₃:** There is a significant relationship between sustainability orientation and the influence of AI analytics on sustainable purchase decisions.

6. Research Methodology

6.1 Research design

The study follows a descriptive and analytical research design based on a cross-sectional survey. Descriptive statistics profile the respondents and their responses, while inferential tests examine the relationships stated in the hypotheses. A quantitative approach was chosen because the constructs of interest, exposure to AI analytics, sustainability orientation and AI influence, can be measured on ordered rating scales and compared statistically.

6.2 Sample design

The population consists of Generation Z consumers residing in Hyderabad who shop online. A non-probability convenience sampling method was used, and the questionnaire was circulated online between 1 September 2026 and 19 September 2026. A total of 17 usable responses were received and all were retained for analysis. The respondents are mainly young adults aged 18 to 23 years, most of them students. Because the sample is small and drawn through convenience, the findings describe this group of respondents and should not be treated as statistically representative of all Generation Z consumers in Hyderabad.

6.3 Questionnaire preparation

A structured questionnaire of 30 items was prepared by the authors on the basis of the constructs identified in the reviewed literature (personalised recommendation and acceptance from the technology-acceptance stream, and awareness, attitude, willingness to pay and behaviour from the green-purchasing stream). It is arranged in four sections, as shown in Table 2. All statements in Sections B to D were rated on a five-point Likert scale (Likert, 1932) where 1 = Strongly disagree, 2 = Disagree, 3 = Neutral, 4 = Agree and 5 = Strongly agree. The full instrument is reproduced in Annexure I.

Table 2: Structure of the questionnaire

Section	Content	Items	Question numbers
A	Demographic and shopping profile (age, gender, status, monthly personal income, online shopping frequency)	5	1 to 5
B	Exposure to and acceptance of AI-powered consumer analytics	10	6 to 15
C	Awareness of and orientation towards sustainable products	10	16 to 25
D	Influence of AI analytics on sustainable purchase decisions	5	26 to 30

Source: Prepared by the authors.

6.4 Data collection

Primary data were collected through the online questionnaire described above. Secondary data were gathered from peer-reviewed journal articles and from published industry surveys, listed in Table 1 and in the reference list, and were used to build the literature review and to benchmark the primary findings.

6.5 Tools of analysis

Responses were coded and analysed with Python (pandas and SciPy). For each of Sections B, C and D a composite score was computed as the mean of its items: AI analytics exposure (Q6 to Q15), sustainability orientation (Q16 to Q25) and AI influence on sustainable purchase (Q26 to Q30). The tools used were frequency and percentage analysis, mean and standard deviation, Cronbach's alpha for reliability (Cronbach, 1951), Pearson's correlation with Spearman's rank correlation as a robustness check, a one-sample t-test against the neutral value of 3, multiple linear regression, and the Kruskal-Wallis test. Correlation strength is read using the conventional guide of .10 (small), .30 (medium) and .50 (large) (Cohen, 1988). Mean scores are interpreted as very low (1.00 to 1.80), low (1.81 to 2.60), moderate (2.61 to 3.40), high (3.41 to 4.20) and very high (4.21 to 5.00). A significance level of 5% is used throughout.

7. Data Analysis

7.1 Profile of respondents

Table 3: Profile of respondents

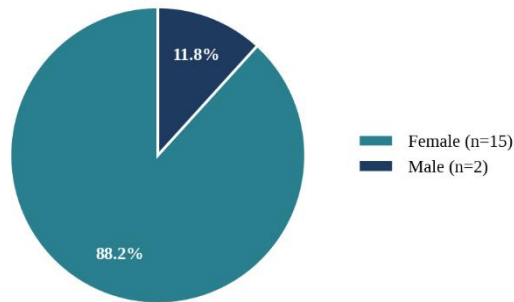
Variable	Category	Respondents	Percentage (%)
Age	18–20 years	15	88.2
	21–23 years	2	11.8
Gender	Female	15	88.2
	Male	2	11.8
Current status	Undergraduate student	16	94.1
	Postgraduate student	1	5.9
Monthly personal income	No personal income	16	94.1
	Rs.10,001–Rs.25,000	1	5.9
Online shopping frequency	Rarely	3	17.6
	Sometimes	7	41.2
	Often	6	35.3
	Very often	1	5.9
Total		17	100.0

Source: Primary data.

The sample is young and mostly female. Of the 17 respondents, 15 (88.2%) fall in the 18 to 20 year age group and 2 (11.8%) in the 21 to 23 year group;

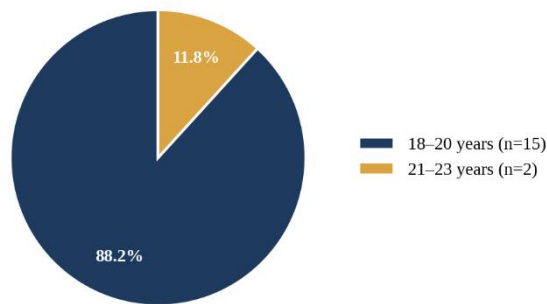
15 (88.2%) are female and 2 (11.8%) are male; and 16 (94.1%) are undergraduate students, with one postgraduate student. Sixteen respondents (94.1%) report no personal income, so their purchases are likely to be financed by family or pocket money. On shopping habits, 41.2% shop online sometimes, 35.3% often, 5.9% very often and 17.6% rarely, meaning that 82.4% of the group shop online at least sometimes.

Figure 1: Gender of respondents



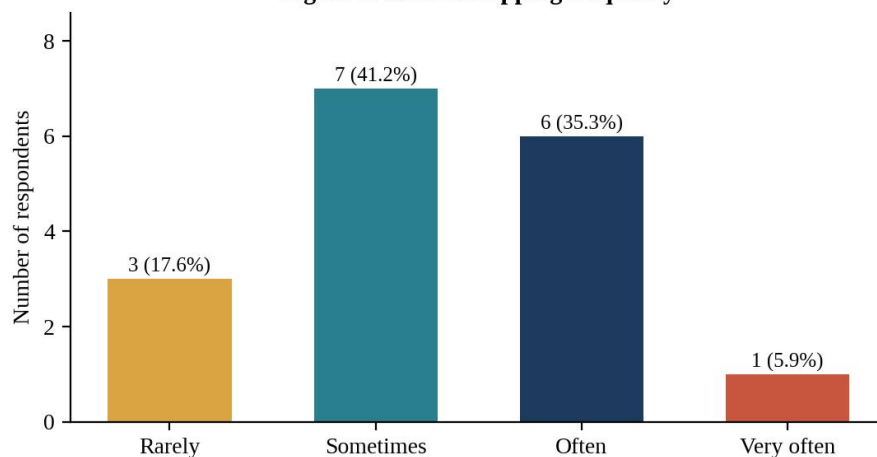
Source: Primary data.

Figure 2: Age group of respondents



Source: Primary data.

Figure 3: Online shopping frequency



Source: Primary data.

Interpretation: The respondents represent the early part of Generation Z, in the college-going years. Their financial dependence is an important context for the later results on willingness to pay, and the very small male subgroup (two respondents) does not allow any reliable comparison by gender.

7.2 Reliability of the scales

Table 4: Reliability statistics

Construct	Questions	Number of items	Cronbach's alpha	Reliability
AI analytics exposure	Q6 to Q15	10	.943	Excellent
Sustainability orientation	Q16 to Q25	10	.855	Good
AI influence on sustainable purchase	Q26 to Q30	5	.906	Excellent
All 25 scale items	Q6 to Q30	25	.940	Excellent

Source: Primary data.

All three constructs exceed the customary threshold of .70 (Nunnally, 1978), with coefficients between .855 and .943. The items within each section therefore move together consistently and can be combined into composite scores. Because alpha is sensitive to sample size, these coefficients are best regarded as indicative of internal consistency in this dataset rather than as a full validation of the instrument.

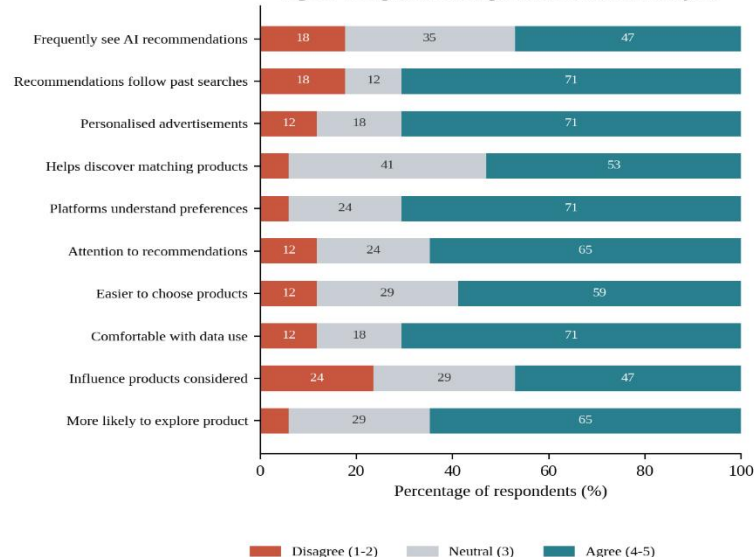
7.3 Exposure to AI-powered consumer analytics

Table 5: Item-wise analysis of AI analytics exposure (Q6 to Q15)

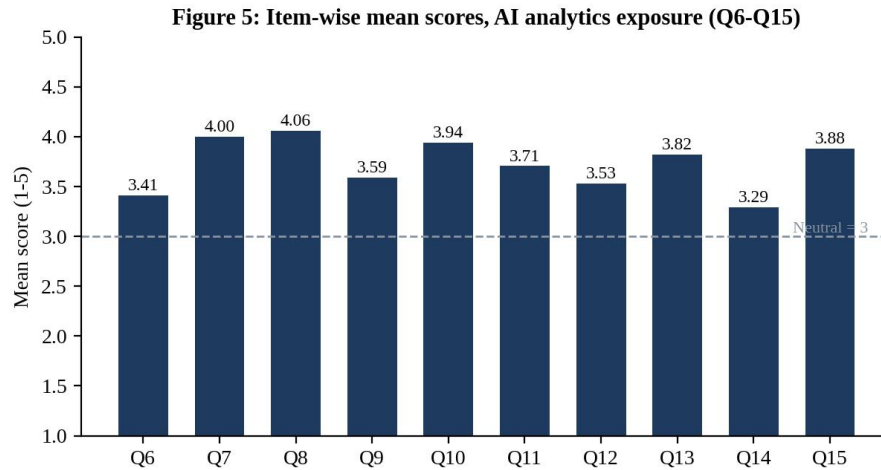
Q	Statement	Mean	SD	Agree (%)	Neutral (%)	Disagree (%)	Level
Q6	I frequently see AI-based product recommendations while shopping online.	3.41	1.12	47.1	35.3	17.6	High
Q7	Online platforms recommend products based on my previous searches or purchases.	4.00	1.32	70.6	11.8	17.6	High
Q8	I receive personalised advertisements based on my interests and online activities.	4.06	1.25	70.6	17.6	11.8	High
Q9	AI-powered recommendations help me discover products that match my needs.	3.59	1.00	52.9	41.2	5.9	High
Q10	Online platforms understand my preferences through my browsing and shopping behaviour.	3.94	1.09	70.6	23.5	5.9	High
Q11	I pay attention to personalised product recommendations when shopping online.	3.71	1.26	64.7	23.5	11.8	High
Q12	AI-powered recommendations make it easier for me to choose products.	3.53	1.18	58.8	29.4	11.8	High
Q13	I am comfortable with platforms using my shopping behaviour to provide personalised recommendations.	3.82	1.13	70.6	17.6	11.8	High
Q14	AI-powered recommendations influence the products I consider buying.	3.29	1.26	47.1	29.4	23.5	Moderate
Q15	I am more likely to explore a product when it is recommended based on my interests.	3.88	1.11	64.7	29.4	5.9	High

Source: Primary data.

Figure 4: Exposure to AI-powered consumer analytics



Source: Primary data.



Source: Primary data.

Across the ten items, 61.8% of all ratings were in agreement, 25.9% neutral and 12.4% in disagreement, and the composite mean is 3.72 (SD = 0.96), a high level. The strongest statements are receiving personalised advertisements (Q8, mean 4.06) and seeing recommendations based on previous searches or purchases (Q7, mean 4.00). The weakest is the statement that recommendations influence the products the respondent considers buying (Q14, mean 3.29).

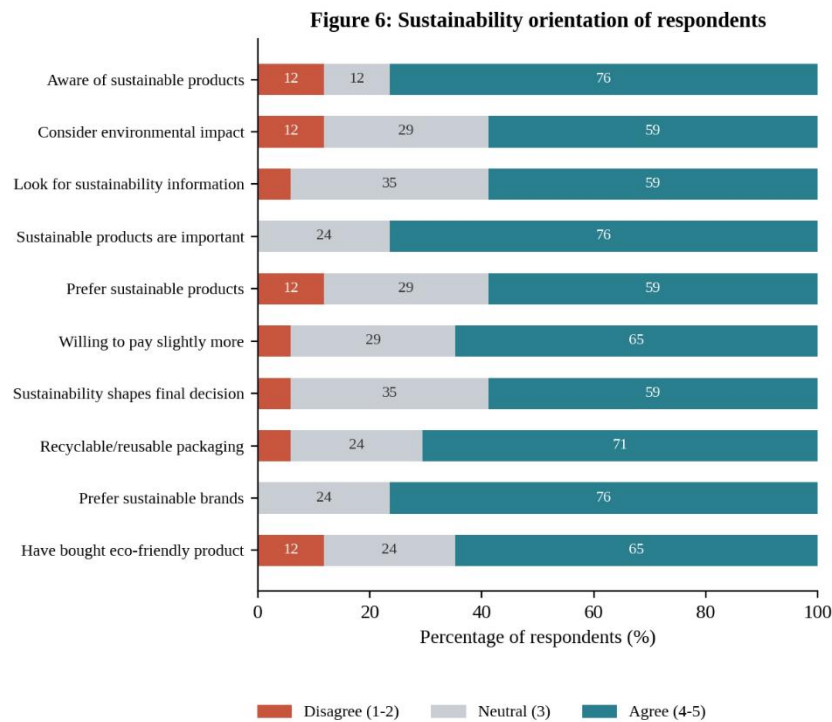
Interpretation: Personalisation is a visible part of these respondents' shopping experience, and most of them believe platforms understand their preferences. However, being aware of personalisation is not the same as being steered by it: the lowest score appears where the statement moves from noticing recommendations to letting them change what is considered. The relatively large standard deviation (about one scale point on several items) shows that experiences differ widely between respondents.

7.4 Sustainability orientation

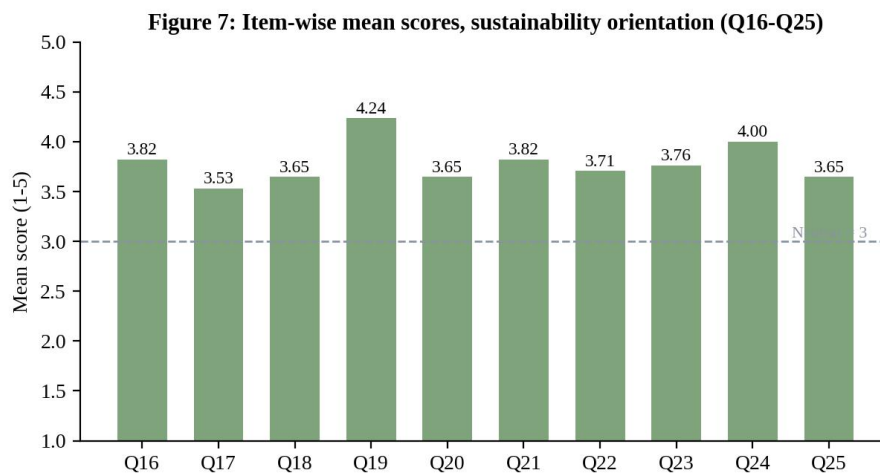
Table 6: Item-wise analysis of sustainability orientation (Q16 to Q25)

Q	Statement	Mean	SD	Agree (%)	Neutral (%)	Disagree (%)	Level
Q16	I am aware of environmentally friendly and sustainably produced products.	3.82	1.07	76.5	11.8	11.8	High
Q17	I consider the environmental impact of a product before purchasing it.	3.53	1.01	58.8	29.4	11.8	High
Q18	I look for information about a product's sustainability before buying it.	3.65	0.79	58.8	35.3	5.9	High
Q19	I believe sustainable products are important for protecting the environment.	4.24	0.83	76.5	23.5	0.0	Very high
Q20	I prefer sustainable products over similar products that are less environmentally friendly.	3.65	0.93	58.8	29.4	11.8	High
Q21	I am willing to pay slightly more for a sustainable product.	3.82	0.88	64.7	29.4	5.9	High
Q22	Sustainability influences my final purchase decision.	3.71	0.85	58.8	35.3	5.9	High
Q23	I consider recyclable or reusable packaging when choosing products.	3.76	0.75	70.6	23.5	5.9	High
Q24	I prefer to purchase products from brands that follow sustainable practices.	4.00	0.71	76.5	23.5	0.0	High
Q25	I have purchased a product because I believed it was environmentally friendly.	3.65	1.06	64.7	23.5	11.8	High

Source: Primary data.



Source: Primary data.



Source: Primary data.

The composite mean for sustainability orientation is 3.78 (SD = 0.59), a high level, with 66.5% of all ratings in agreement. The highest score is for the belief that sustainable products are important for protecting the environment (Q19, mean 4.24, very high), followed by preference for brands that follow sustainable practices (Q24, mean 4.00). The lowest scores relate to considering environmental impact before purchase (Q17, mean 3.53) and to actual past purchase and searching for information (Q18 and Q25, mean 3.65 each).

Interpretation: Belief in the importance of sustainability is stronger than the corresponding actions. This gap between values and behaviour is a well-known feature of green consumption. Willingness to pay slightly more (Q21) has a mean of 3.82, and 64.7% of respondents agree with it, even though 94.1% of the sample has no personal income; the statement therefore expresses an intention rather than an established spending pattern.

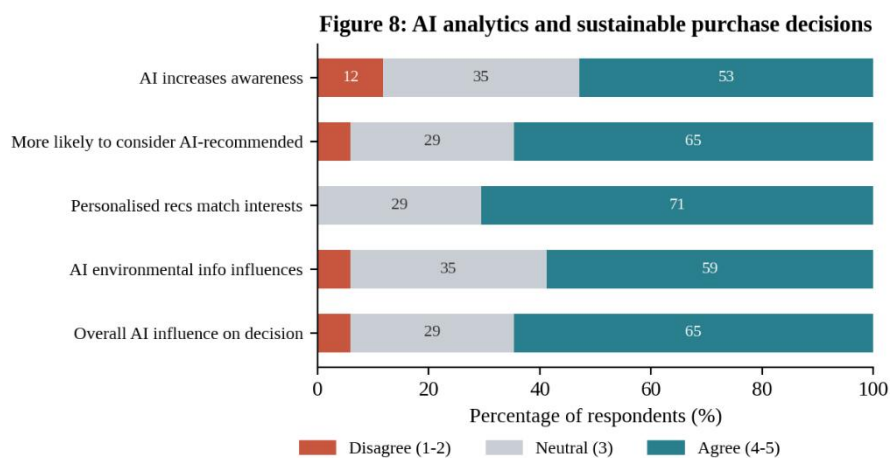
7.5 Influence of AI analytics on sustainable purchase decisions

Table 7: Item-wise analysis of AI influence on sustainable purchase (Q26 to Q30)

Q	Statement	Mean	SD	Agree (%)	Neutral (%)	Disagree (%)	Level
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Q	Statement	Mean	SD	Agree (%)	Neutral (%)	Disagree (%)	Level
Q26	AI-powered recommendations can make me more aware of sustainable products.	3.47	1.01	52.9	35.3	11.8	High
Q27	I am more likely to consider a sustainable product when an AI-powered platform recommends it.	3.59	0.87	64.7	29.4	5.9	High
Q28	Personalised recommendations help me find sustainable products that match my interests.	3.88	0.70	70.6	29.4	0.0	High
Q29	AI-based information about a product's environmental benefits can influence my purchase decision.	3.65	1.00	58.8	35.3	5.9	High
Q30	Overall, AI-powered consumer analytics influence my decision to purchase sustainable products.	3.65	0.93	64.7	29.4	5.9	High

Source: Primary data.



Source: Primary data.

The composite mean is 3.65 (SD = 0.77), a high level, with 62.4% of all ratings in agreement and only 5.9% in disagreement. The strongest statement is that personalised recommendations help respondents find sustainable products matching their interests (Q28, mean 3.88). The lowest is the statement that AI can make respondents more aware of sustainable products (Q26, mean 3.47). The overall statement (Q30) has a mean of 3.65.

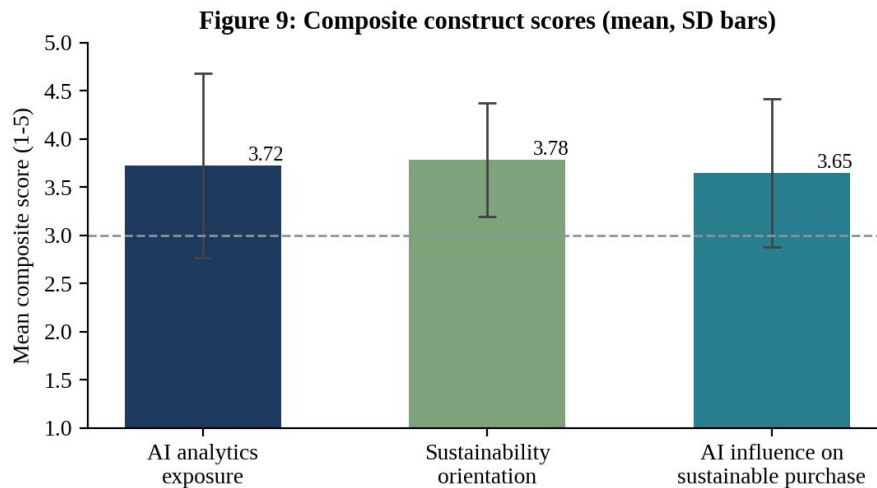
Interpretation: Respondents are more convinced that AI can match sustainable products to their existing interests than that it can create new awareness. That pattern fits the view of personalisation as a tool that helps people find what they already value, and it points to a supporting rather than a leading role for AI in green purchasing.

7.6 Composite scores and hypothesis testing

Table 8: Composite scores and one-sample t-test against the neutral value (3)

Construct	Mean	SD	Level	Test value	t (df = 16)	p-value
AI analytics exposure	3.72	0.96	High	3.00	3.12	.007
Sustainability orientation	3.78	0.59	High	3.00	5.47	< .001
AI influence on sustainable purchase	3.65	0.77	High	3.00	3.45	.003

Source: Primary data.



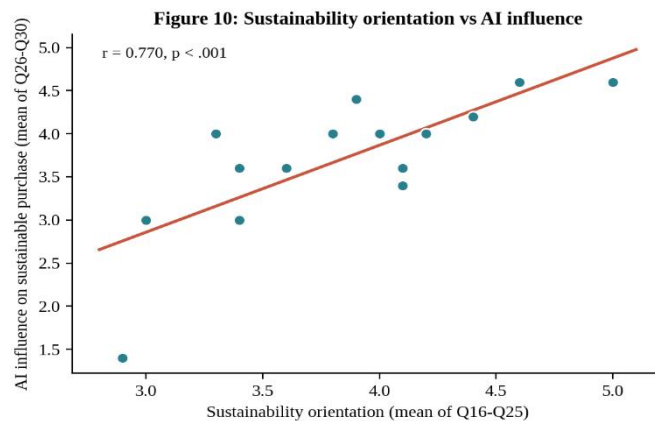
Source: Primary data.

Hypothesis H02/H12. The mean AI influence score of 3.65 lies above the neutral value of 3 ($t(16) = 3.45$, $p = .003$; 95% confidence interval 3.25 to 4.04). The null hypothesis H02 is rejected. Respondents as a group feel that AI-powered analytics influence their sustainable purchase decisions.

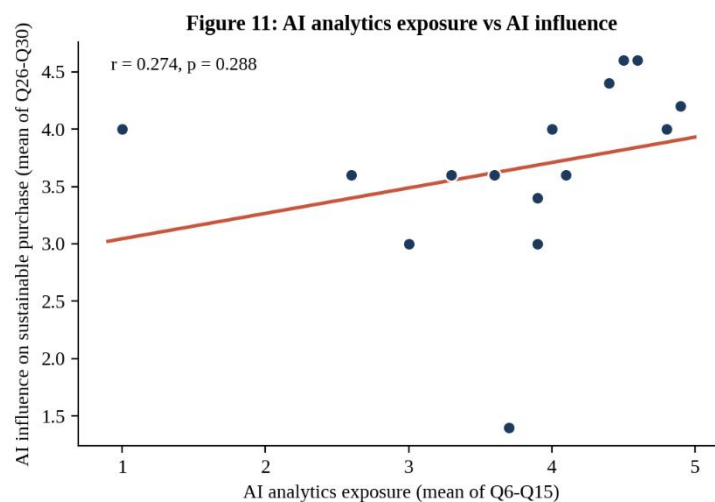
Table 9: Pearson correlation matrix of composite scores (n = 17)

Variable	AI analytics exposure	Sustainability orientation	AI influence on sustainable purchase
AI analytics exposure	1	$r = 0.61$ ($p = .009$)	$r = 0.27$ ($p = .288$)
Sustainability orientation	$r = 0.61$	1	$r = 0.77$ ($p < .001$)
AI influence on sustainable purchase	$r = 0.27$	$r = 0.77$	1

Source: Primary data.



Source: Primary data.



Source: Primary data.

Hypothesis H03/H13. Sustainability orientation and AI influence show a strong positive correlation ($r = 0.77$, $p < .001$), which is well above the .50 benchmark for a large association. The null hypothesis H03 is rejected: respondents with a stronger orientation towards sustainability are the ones who say that AI analytics influence their sustainable purchases.

Hypothesis H01/H11. Exposure to AI analytics and AI influence are positively related, but the Pearson coefficient ($r = 0.27$, $p = .288$) is not significant at the 5% level, so H01 is not rejected on this test. The result is sensitive to one respondent who gave the lowest rating (1) to every exposure item while rating sustainability items highly. A rank-based check gives Spearman's rho = 0.64 ($p = .006$), and Pearson's r rises to 0.53 ($p = .033$) when that single case is set aside ($n = 16$). The conclusion for H01 is therefore reported as not supported under the primary test, with the caution that the association is probably positive and that a larger sample is needed to settle it.

Table 10: Summary of hypothesis testing

Hypothesis	Test	Statistic	Decision
H01/H11: Exposure and AI influence	Pearson correlation	$r = 0.27$, $p = .288$	H01 not rejected (see robustness checks)
H02/H12: AI influence above neutral (3)	One-sample t-test	$t(16) = 3.45$, $p = .003$	H02 rejected
H03/H13: Sustainability orientation and AI influence	Pearson correlation	$r = 0.77$, $p < .001$	H03 rejected

Source: Primary data.

7.7 Multiple regression analysis

Table 11: Regression of AI influence on sustainable purchase ($R^2 = 0.65$, adjusted $R^2 = 0.61$, $F(2, 14) = 13.26$, $p < .001$)

Predictor	B	Std. error	Standardised beta	t	p-value
Constant	-0.18	0.79	-	-0.23	0.825
AI analytics exposure	-0.25	0.16	-0.32	-1.59	0.135
Sustainability orientation	1.26	0.26	0.96	4.85	< .001

Source: Primary data.

Taken together, exposure and sustainability orientation explain 65.5% of the variation in AI influence on sustainable purchase. Only sustainability orientation is a significant predictor ($t = 4.85$, $p < .001$); exposure to AI analytics is not significant once orientation is controlled ($p = 0.135$). The two predictors are themselves correlated ($r = 0.61$), and the sample of 17 is small for a two-predictor model, so the coefficients should be read as descriptive of this dataset and not as stable population estimates.

Interpretation: The regression supports the pattern seen in the correlations: the respondents who say that AI shapes their sustainable purchases are, above all, the respondents who already hold pro-environmental orientations.

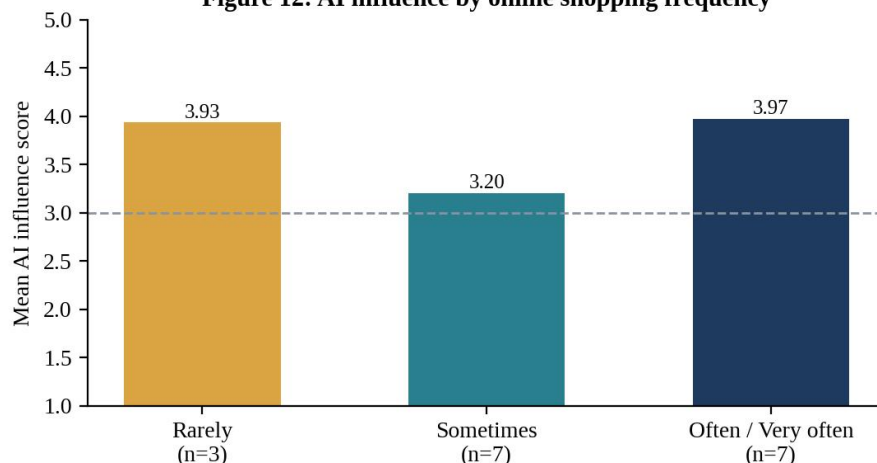
7.8 Influence by online shopping frequency

Table 12: Mean scores by online shopping frequency (Kruskal-Wallis $H = 4.18$, $p = .124$)

Shopping frequency	Respondents	AI exposure (mean)	Sustainability orientation (mean)	AI influence (mean)
Rarely	3	3.50	4.23	3.93
Sometimes	7	3.17	3.36	3.20
Often / Very often	7	4.37	4.01	3.97

Source: Primary data.

Figure 12: AI influence by online shopping frequency

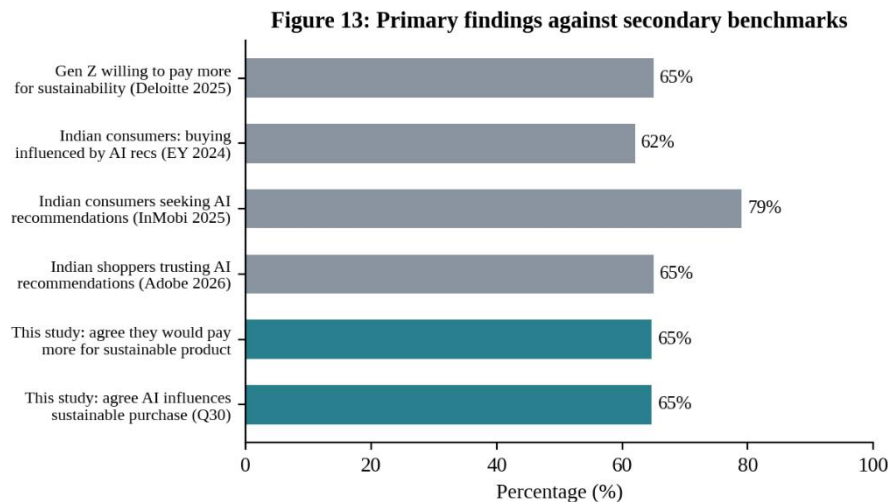


Source: Primary data.

Respondents who shop online often or very often report the highest AI influence (mean 3.97), and those who shop only sometimes report the lowest (mean 3.20). The differences are not statistically significant (Kruskal-Wallis $p = .124$), and the pattern is not linear, since the rarely shopping group ($n = 3$) also scores high. With groups of only three to seven respondents, frequency of shopping cannot be shown to shape AI influence in this dataset.

8. Interpretations

The primary results can be read alongside the secondary evidence in Table 1. Figure 13 places selected findings from this study next to comparable survey figures.



Source: Primary data; Deloitte (2025), EY (2024), InMobi and Glance (2025) and Adobe (2026) as reported in the media sources listed in the references.

AI is present and accepted. 61.8% of ratings on the exposure items were positive, in line with industry reports of high AI use and trust among Indian shoppers (EY, 2024; InMobi & Glance, 2025). The respondents' comfort with platforms using their shopping behaviour (Q13, mean 3.82) is notable given that the same secondary sources report widespread concern about data security; the two findings need not conflict, because comfort in general terms does not remove concern about specific breaches.

Sustainability is valued more than it is practised. The very high score for the importance of sustainable products (Q19, mean 4.24) contrasts with lower scores for looking for information and for having bought an eco-friendly product. Deloitte (2025) similarly found that a clear majority of Gen Z respondents would pay more for sustainability, while only about a quarter had researched a company's environmental impact before buying. In both datasets the value is broadly shared, and the follow-through is thinner.

AI amplifies rather than creates orientation. The strong link between sustainability orientation and AI influence, together with the insignificant role of exposure in the regression, matches the pattern in the academic literature. Surbakti et al. (2025) found that AI personalisation raised green intention only modestly and had no significant direct effect on behaviour, with environmental knowledge and attitude carrying most of the explanatory weight. Wang et al. (2023) showed that AI recommenders can reduce green intention unless environmental identity is activated. In this sample, AI influence is reported mainly by those who already care about sustainability, which is consistent with both studies.

Exposure alone is not enough. The positive but insignificant association between exposure and AI influence suggests that seeing many recommendations does not by itself lead a young consumer to consider sustainable products. What appears to matter is whether the recommendation is relevant to the individual's values, a point that also emerges from the SHIFT framework, in which the individual self and tangibility are named as behaviour drivers (White et al., 2019).

9. Findings of the Study

1. The respondents are mainly young (88.2% aged 18 to 20 years), predominantly female (88.2%), overwhelmingly undergraduate students (94.1%) and largely without personal income (94.1%); 82.4% shop online at least sometimes.
2. Exposure to AI-powered consumer analytics is high (composite mean 3.72). Personalised advertisements and recommendations based on past searches or purchases are the most commonly noticed features.
3. Sustainability orientation is high (composite mean 3.78). Belief in the importance of sustainable products is the strongest item (mean 4.24), while considering environmental impact before purchase and searching for sustainability information score lower.
4. AI influence on sustainable purchase decisions is above the neutral value (mean 3.65; $t(16) = 3.45$, $p = .003$), and 62.4% of ratings on these items are positive.
5. Sustainability orientation has a strong, significant correlation with AI influence ($r = 0.77$, $p < .001$) and is the only significant predictor in the regression ($R^2 = 0.65$).
6. Exposure to AI analytics is positively but not significantly correlated with AI influence under the Pearson test ($r = 0.27$, $p = .288$); the association is stronger under a rank-based test ($\rho = 0.64$), and the result depends on one atypical response.
7. Online shopping frequency does not produce a significant difference in AI influence ($p = .124$).
8. The primary results are directionally consistent with secondary evidence: high AI use and trust among Indian consumers, broad support for

sustainability, and a gap between intention and action.

10. Suggestions

1. **Platforms and marketplaces:** Tie sustainable recommendations to the user's stated interests and show a short, verifiable reason why a product is greener, such as a certification or recyclable packaging. Since AI influence is reported mainly by consumers who already value sustainability, relevance and credibility are more effective than volume.
2. **Data transparency:** Explain in simple terms how browsing data is used and provide visible privacy controls. Secondary evidence shows that Indian consumers accept AI recommendations while worrying about data breaches and disclosure (EY, 2024), so trust is a condition for success.
3. **Brands and retailers:** Because most respondents have little or no personal income, offer affordable entry sizes, refill packs or student pricing for sustainable lines; willingness to pay slightly more was expressed by a majority, but budgets remain tight.
4. **Educators and institutions:** Strengthen environmental awareness in the curriculum and on campus, since orientation towards sustainability is the strongest correlate of AI influence. Digital literacy sessions on how recommendation systems work can help students judge algorithmic suggestions critically.
5. **Policy makers and industry bodies:** Encourage standard, easily understood eco-labels so that algorithms can rank products on comparable environmental information, and discourage unsupported green claims.
6. **Consumers:** Treat recommendations as a starting point and check product information independently before buying, particularly where a green claim is made.
7. **Future research:** Repeat the study with a larger and more balanced sample across colleges and areas of Hyderabad, add behavioural data such as actual purchase records, and test moderators such as trust, price sensitivity and data privacy concern.

11. Conclusion

This study examined how AI-powered consumer analytics relate to the sustainable purchase decisions of Generation Z consumers in Hyderabad. Respondents reported high exposure to AI-based personalisation, a favourable orientation towards sustainability, and a significantly above-neutral influence of AI analytics on their sustainable purchase decisions. The strongest result is that this influence is closely tied to the individual's own sustainability orientation, while mere exposure to personalised content was not a significant predictor. In practical terms, AI analytics appear to be effective when they reinforce what a young consumer already cares about, and they are unlikely to create environmental commitment on their own.

The study has limits that readers should keep in mind. The sample of 17 respondents was drawn through convenience sampling, is dominated by young female undergraduate students, and contains only two male respondents, so the results cannot be generalised to all Generation Z consumers in Hyderabad. The data are self-reported perceptions, not observed purchases, and some coefficients, particularly in the regression, are unstable at this sample size. The findings should therefore be treated as a well-grounded indication of direction that merits testing on a larger sample with behavioural measures. Within these limits, the study contributes an India-specific, city-level view to a literature that has so far relied mainly on evidence from other countries.

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