

GREEN CONSUMPTION BEHAVIOUR AS A TOOL FOR POVERTY ALLEVIATION: AN INTERDISCIPLINARY SDG APPROACH

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ABSTRACT

This interdisciplinary study investigates the role of Green Consumption Behaviour (GCB) in poverty alleviation through the lens of Sustainable Development Goals (SDGs), addressing the critical need to link sustainable consumption (SDG 12) with socio-economic empowerment (SDG 1). Utilizing a quantitative, descriptive, and analytical design with a sample of 325 respondents via convenience sampling, the research employed Structural Equation Modelling (SEM) in R's lavaan package to test the mediating role of Awareness of Sustainable Development (ASD). The key finding is that the GCB-Perception of Responsible Consumption's Impact on Poverty (PRC) relationship is characterized by full mediation through ASD, while the GCB-Behavioural Intention (BI) relationship shows partial mediation, with GCB being a highly significant predictor of ASD. In conclusion, these results underscore the importance of SDG awareness interventions as the essential mechanism for translating green consumption practices into both supportive intentions and positive poverty-reduction perceptions. It is suggested that policymakers prioritize and strengthen ASD campaigns and actively link green products to tangible socio-economic benefits like fair wages to reinforce the PRC.

Keywords: Green Consumption Behaviour, SDG Awareness, Poverty Alleviation, Mediation, Structural Equation Modelling.

INTRODUCTION

Green consumption behaviour (GCB) has emerged as a critical strategy in addressing environmental sustainability while simultaneously fostering socio-economic development. Defined as the practice of purchasing and using products and services that have minimal negative impact on the environment, GCB promotes responsible consumption and production patterns, aligning directly with the United Nations Sustainable Development Goals (SDGs), particularly SDG 12 and SDG 1 (responsible consumption and poverty alleviation) (Peattie & Crane, 2005; Testa et al., 2020). Recent studies indicate that encouraging sustainable consumer choices not only reduces environmental degradation but also creates market opportunities for

eco-friendly products, which can generate income and employment for marginalized communities (Biswas & Roy, 2015; Lin & Chang, 2012). By linking consumer behaviour with socio-economic outcomes, GCB provides a dual benefit of environmental protection and poverty reduction, making it a critical focus for interdisciplinary research.

Empirical evidence further suggests that green consumption can act as a tool for poverty alleviation by creating demand for sustainable products produced by low-income communities, supporting fair trade, and fostering inclusive economic growth (Rex & Baumann, 2007; Liobikiene & Poskus, 2019). Moreover, consumer awareness, behavioural intention, and social norms have been shown to significantly influence GCB adoption (Yadav & Pathak, 2017). Despite its potential, the integration of GCB into poverty alleviation strategies remains underexplored, especially in developing countries where both environmental and economic challenges are more acute. This research aims to bridge this gap by investigating the role of GCB in reducing poverty through an interdisciplinary SDG-focused approach, highlighting how sustainable consumption can drive socio-economic empowerment while promoting environmental stewardship.

REVIEW OF LITERATURE

- Green Consumption Values and Green Purchasing Behaviour: A Moderated Mediation Model of Gratitude and Green Product Availability — Dou, F., Zhao, J., & Wang, M. (2025), *International Journal of Psychology*, Vol. 60, No. 2, Green consumption values (GCV) positively predict green purchasing behaviour (GPB) among university students. Gratitude acts as a partial mediator. Green product availability moderates these relationships: when green products are less available, gratitude's mediating effect is stronger; when availability is high, the effect weakens. Implications: This suggests that promoting green values among youth can foster sustainable consumption; but structural factors (availability of green products) also matter — policymakers and businesses should improve access to green products while fostering green values through education, awareness campaigns.
- Intention and behaviour towards green consumption among low income households — Al Mamun, A., Mohamad, M. R., Yaacob, M. R. (2018), *Journal of Environmental Management / Sustainability (coastal households study)* (*Sustainability / related journal*), Among 380 low income households in coastal Peninsular Malaysia, eco-literacy and self-efficacy positively influenced attitudes toward green products; attitude and perceived behavioral control had significant positive effects on intention and actual green consumption behaviour. Implications: Green consumption is not only for affluent consumers — even low-

income households can adopt sustainable practices, given environmental awareness and perceived ability. For poverty alleviation and vulnerable communities: education, eco-literacy programs, and empowerment (self-efficacy) are key to encourage adoption of green behaviours.

- **Green Consumption and Sustainable Lifestyle: Evidence from India** — Rosario F. Kennedy, Sahayaselvi Susainathan, Hesil Jerda George & Satyanarayana Parayitam (2024), *Administrative Sciences*, Vol. 14, No. 10, Using TPB, the authors find that green purchase orientation (GPO) and social influence significantly influence green purchase attitudes, which in turn lead to green purchase behaviour (GPB) and ultimately a more sustainable lifestyle. However, green product literacy alone did not significantly influence attitude toward green products. Implications: In a developing country context (India), green behaviour is driven not just by knowledge, but by values, social influences, and orientation. To promote sustainable lifestyles — and indirectly advance SDGs — policymakers and businesses should emphasize social norms, community influence, and orientation toward sustainability rather than relying solely on information dissemination.
- **What Leads Households to Green Consumption Behavior** — Ka, L. S. et al. (2025), *Cleaner & Responsible Consumption* / similar journal, Environmental awareness, subjective norms, attitudes, green promotional activities, and household characteristics significantly shape green consumer intentions, which in turn drive actual green consumption behaviour. Implications: For sustainable development, policies should target increasing environmental awareness, social norms support, and green promotion; community outreach and supportive policies can encourage households (including lower-income ones) to adopt green consumption behaviours — contributing to environmental protection and possibly social welfare through reduced resource burdens.
- **Determinants of green consumption: a systematic literature review using the TCCM approach** — Megha (2024), *Frontiers in Sustainability*, Vol. 5 (2024), This review identifies multiple determinants for green consumption: antecedents (e.g., awareness, values), mediators (e.g., attitudes, intentions), and moderators (e.g., product availability, social context). The review highlights that green consumption is shaped by complex, interacting factors rather than single variables. Implications: For an SDG oriented policy or poverty alleviation plan using green consumption, interventions must be multi-faceted: raising environmental awareness, shaping social norms, improving availability of green products, and addressing contextual constraints (e.g., affordability, access).

- Consumers' environmental ethics, willingness, and green consumerism between lower and higher income groups — (2021), *Resources, Conservation and Recycling*, Vol. 168 (May 2021), Environmental ethics, morality, and green attitude significantly influence willingness to consume green products and actual green consumption. The study finds that green consumption does not strongly differ between lower- and higher-income groups — in other words, income group did not significantly moderate the relationship between willingness and behaviour. Implications: Green consumerism can transcend income divisions; even lower-income consumers can contribute to sustainable consumption given the right ethical orientation and attitudes. This supports the idea of green consumption as inclusive — potentially useful in poverty-alleviation frameworks.
- *Green Consumerism in Young Adults: Attitudes and Awareness in University Students in Johannesburg, South Africa* — Mbokane, L. & Modley, L.-A. (2024), *Sustainability*, Vol. 16, No. 5, Among university students, green consumerism was driven by awareness and attitudes toward green consumption; the study underscores that increasing awareness and positive attitudes is essential to foster green consumer behaviour. Implications: Targeting youth — via educational institutions, awareness campaigns — can build a generation with sustainable consumption habits. In an SDG based poverty alleviation approach, engaging young consumers may be key to long-term sustainable development and social upliftment.
- Research on strategy optimization of sustainable development towards green consumption of ecofriendly materials — Gu, W., The study links green consumption behaviour and eco-friendly product adoption with carbon footprint reduction, user satisfaction, and “common prosperity” (collective well-being). It argues that green consumption — via eco-friendly materials — can contribute to social welfare and sustainable development. Implications: Supports the notion that green consumption is not only about environmental benefits but can also promote social equity and wellbeing. Policies that encourage eco-products — especially affordable ones — may deliver both environmental and social gains, suitable for SDG frameworks combining sustainability and poverty alleviation.

OVERVIEW OF RELIABILITY TEST (Cronbach's Alpha):

A series of questionnaire items measuring the same topic can be tested for consistency using reliability. The most widely used reliability coefficient is Cronbach's Alpha (α). It shows the degree to which a group of elements are connected to one another. A higher number (often ≥ 0.7) indicates good internal consistency. The value of α varies from 0 to 1. The Cronbach's Alpha formula is:

$$R \text{ Cronbach's Alpha is: } \alpha = \frac{K}{K-1} \left(1 - \frac{\sum_{i=1}^K X\sigma_i^2}{\sigma_T^2}\right) \text{----->1}$$

Where,

k = Number of items in the scale,

σ_i^2 = Variance of each individual item,

σ_T^2 = Variance of the total score of all items.

OVERVIEW OF CORRELATION ANALYSIS

The degree and direction of a relationship between two variables can be determined via correlation analysis. It enables researchers to determine whether a rise or fall in one variable is linked to a rise or fall in another. The Pearson correlation coefficient (r), which has a range of -1 to +1, is the most widely used metric. A direct relationship is shown by a positive number, an inverse relationship by a negative value, and no linear relationship is indicated by a zero.

The formula for Pearson correlation is:

$$r = \frac{\sum(X_i - \bar{X})(Y_i - \bar{Y})}{\sqrt{\sum(X_i - \bar{X})^2 \sum(Y_i - \bar{Y})^2}} \text{----->2}$$

Where,

X_i and Y_i are individual observations,

\bar{X} and \bar{Y} are the means of X and Y, respectively.

OVERVIEW OF REGRESSION

In R, regression analysis is primarily performed using the `lm()` function (Linear Model) for simple and multiple linear regression, which models the relationship between one or more independent variables (predictors) and a continuous dependent variable (response). The general form of the linear regression equation is typically expressed as

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \dots + \beta_k X_k + \epsilon, \text{----->3}$$

where Y is the dependent variable, X_i are the independent variables, β_0 is the intercept, β_i are the regression coefficients (slopes) representing the change in Y for a one-unit change in X_i , and ϵ is the error term. The model output, accessed via the `summary()` function on the `lm` object,

provides the calculated coefficients β_i , their standard errors, t-values, and p-values, which are essential for interpreting the magnitude and statistical significance of each predictor's effect on the response variable

OVERVIEW OF STRUCTURAL EQUATION MODELING (SEM)

Structural Equation Modeling (SEM) in R is a powerful statistical framework used to test complex theoretical models involving relationships among observed and latent (unobserved) variables, encompassing techniques like path analysis, confirmatory factor analysis (CFA), and mediation/moderation analysis. The lavaan package is the most common tool for SEM in R, allowing users to specify a model using a concise syntax. A general equation that underpins the SEM framework, combining the measurement model and the structural model, can be represented as:

$$\eta = B\eta + \Gamma x + \zeta \text{ -----} > 4$$

Where η is the vector of latent endogenous variables, $B\eta$ is the matrix of regression coefficients relating latent endogenous variables to each other, Γx is the matrix of regression coefficients relating observed exogenous variables (x) to latent endogenous variables, and ζ is the vector of random errors in the structural equation. lavaan estimates the model by minimizing the difference between the observed covariance matrix (Σ) and the model-implied covariance matrix ($\Sigma(\theta)$)

RESEARCH QUESTIONS

Research questions are rephrased versions of the objectives, turned into questions that the research methodology will be designed to answer.

- Is there a significant positive relationship between Green Consumption Behaviour and Consumer Awareness of SDGs?
- Does Consumer Awareness of SDGs significantly influence their Perception of Responsible Consumption's Impact on Poverty?
- Does Green Consumption Behaviour positively influence consumers' Perception of Poverty Alleviation through Sustainable Consumption?
- Does Green Consumption Behaviour significantly affect consumers' Behavioural Intention to Support Poverty-Reducing Green Practices?
- Does the Perception of Responsible Consumption's Role in Poverty Alleviation mediate the relationship between Green Consumption Behaviour and Behavioural Intention?

OBJECTIVE OF THE STUDY

1. To determine the significance and direction of the relationship between Green Consumption Behaviour and Consumer Awareness of SDGs.
2. To examine the influence of Consumer Awareness of SDGs on consumers' Perception of Responsible Consumption's Impact on Poverty.
3. To investigate the influence of Green Consumption Behaviour on consumers' Perception of Poverty Alleviation through Sustainable Consumption.
4. To assess the effect of Green Consumption Behaviour on consumers' Behavioural Intention to Support Poverty-Reducing Green Practices.
5. To analyze the mediating role of the Perception of Responsible Consumption's Role in Poverty Alleviation in the relationship between Green Consumption Behaviour and Behavioural Intention.

HYPOTHESES OF THE STUDY

H1:

There is a significant positive relationship between Green Consumption Behaviour and Consumer Awareness of SDGs.

H2:

Consumer Awareness of SDGs significantly influences their Perception of Responsible Consumption's Impact on Poverty.

H3:

Green Consumption Behaviour positively influences consumers' Perception of Poverty Alleviation through Sustainable Consumption.

H4:

Green Consumption Behaviour significantly affects Behavioural Intention to Support Poverty-Reducing Green Practices.

H5:

Perception of Responsible Consumption's Role in Poverty Alleviation mediates the relationship between Green Consumption Behaviour and Behavioural Intention.

SCOPE OF THE STUDY

This study focuses on understanding how green consumption behaviour can support sustainable development and poverty reduction, mainly within emerging economies like India. It includes consumers across different income groups, education levels, and geographic regions

to analyse how responsible consumption influences socio-economic inclusion, environmental sustainability, and fair economic opportunities.

NEED OF THE STUDY

With rising environmental concerns and widening income inequality, sustainable consumption has become a critical tool for addressing both ecological and socio-economic challenges. This study is needed to understand how consumer behaviour can directly or indirectly reduce poverty by supporting ethical production, fair wages, small producers, and sustainable supply chains aligned with SDG-1 and SDG-12.

RESEARCH GAP

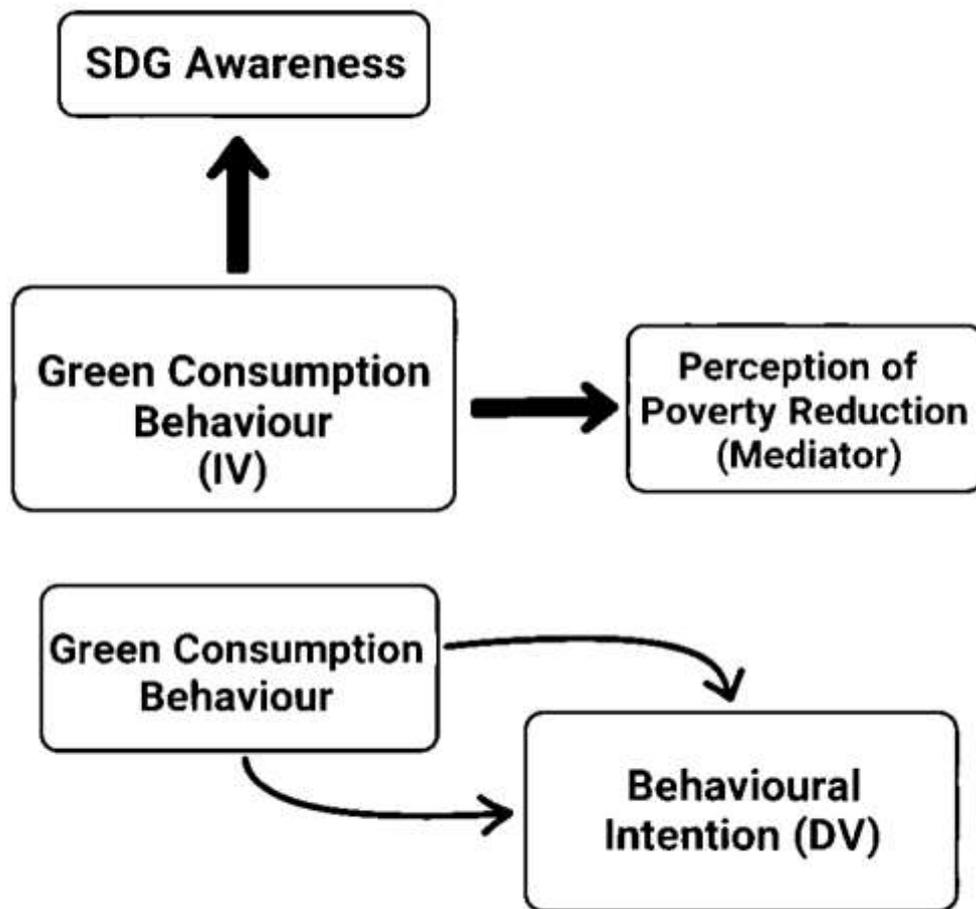
Existing literature predominantly highlights the environmental benefits of green consumption, while only a limited number of studies examine its broader socio-economic dimensions. Research exploring the link between green consumption and poverty reduction remains scarce, particularly in understanding how sustainable purchasing behaviors can contribute to inclusive development. Similarly, the mediating role of consumer perceptions and the influence of SDG awareness on responsible purchasing have not been sufficiently investigated. Empirical evidence from developing countries like India is also limited, creating a significant gap in contextual understanding. Moreover, the role of corporations and government in promoting inclusive and sustainable consumption practices requires deeper examination to fully integrate green consumption into poverty alleviation strategies.

RESEARCH METHODOLOGY

The research employs a quantitative, descriptive, and analytical study design utilizing convenience sampling to recruit a recommended sample size of 325 respondents. Data will be collected via a structured questionnaire using a 5-point Likert scale. The study examines the relationship between the Independent Variable (IV): Green Consumption Behaviour and the Dependent Variable (DV): Behavioural Intention to Support Poverty-Reducing Green Practices, with the effect being explained through the Mediator: Perception of Responsible Consumption's Impact on Poverty. SDG Awareness will be included as a Control Variable, and the relationship will be examined under the influence of the Moderating Variable: Government & Corporate Responsibility. Statistical analysis will include Reliability (Cronbach's Alpha), Descriptive statistics, Correlation, Linear Regression, Mediation Analysis, and Structural Equation Modelling (SEM), specifically using the R lavaan package.

RESEARCH MODEL

CHART 1:



RESEARCH LIMITATIONS

- Data is self-reported; responses may include bias.
- Study is limited to a specific geographical area and may not generalize globally.
- Green consumption behaviour may vary across cultures and economic backgrounds.
- Only quantitative methods are used—no qualitative insights.

The impact on poverty is perceptual and not measured at the macro-level.

ANALYSIS AND INTERPRETATION

```
>library(readxl)
```

```
> Book1 <- read_excel("D:/Research Paper/5/Book1.xlsx")
```

```
> View(Book1)
```

Reliability

```
>install.packages("psych")
```

```
>library(psych)
>alpha_results <- alpha(Book1)
> print(alpha_results)
```

TABLE 1 : RELIABILITY TEST

Statistic		Value						
Raw Alpha		0.81						
Standardized Alpha (std.alpha)		0.82						
Guttman's Lambda 6 (G6(smc))		0.82						
Average Inter-Item Correlation (average r)		0.53						
Signal-to-Noise Ratio (S/N)		4.4						
Asymptotic Standard Error (ase)		0.017						
Mean of items		3.8						
Standard Deviation of items (sd)		0.72						
Median Inter-Item Correlation (median r)		0.52						
Method	Lower Bound	Alpha Estimate		Upper Bound				
Feldt	0.78	0.81		0.84				
Duhachek	0.78	0.81		0.85				
Reliability if an item is dropped								
Item Dropped	Raw Alpha	Std. Alpha	G6(smc)	Average r	S/N	Alpha SE	Var. r	Med. r
GCB	0.77	0.77	0.77	0.53	3.4	0.024	0.070	0.42
ASD	0.69	0.70	0.64	0.43	2.3	0.030	0.030	0.42
PRC	0.88	0.88	0.85	0.71	7.4	0.011	0.012	0.69
BI	0.69	0.69	0.66	0.43	2.3	0.031	0.052	0.33
Item statistics								
Item	n (Count)	raw.r (Raw Corr)	std.r (Std. Corr)	r.cor (Corrected Corr)	r.drop (Corr with Rest)	mean	sd (Std. Dev.)	
GCB	325	0.79	0.80	0.71	0.63	3.7	0.84	
ASD	325	0.89	0.89	0.89	0.78	3.8	0.91	
PRC	325	0.64	0.63	0.41	0.38	3.8	0.95	
BI	325	0.89	0.89	0.89	0.79	3.8	0.91	

Internal Consistency, Both the Raw Alpha (0.81) and Standardized Alpha (0.82) are above the commonly accepted threshold of 0.70 (and also 0.80), indicating good internal consistency for the scale/set of items. Item Correlation, The Average Inter-Item Correlation of 0.53 suggests that the items are reasonably well-correlated with each other, which is desirable for a reliable scale. This output shows the 95. Confidence Interval (CI) for the scale's reliability (often Cronbach's Alpha, which is 0.81 in this case). The interval estimates the range within which the true population reliability likely falls. The Feldt and Duhachek methods are two different approaches used in statistical software (like the psych package in R) to calculate these confidence bounds for coefficient alpha. Since the lower bound for both methods (0.78) is well above the acceptable minimum of 0.70, the scale's reliability is confidently considered good. This type of output is commonly generated when assessing whether any single item is significantly detrimental to a scale's overall reliability. Each row shows the reliability of the remaining scale items if the item listed in the first column is removed. If the Standardized Alpha (std.alpha) increases significantly when an item is dropped, it suggests that item was poorly correlated with the rest of the scale and may need to be revised or removed. Dropping PRC causes the Standardized Alpha to jump from the likely overall value of 0.82 (from previous context) to 0.88, indicating that the PRC item is pulling the scale's reliability down. Dropping ASD or BI causes the Standardized Alpha to drop to 0.70 and 0.69 respectively, suggesting these items are crucial components of the existing scale and should be retained. n (Count): The sample size for each item is 325. r.drop (Correlation with the rest of the scale), this is the most crucial statistic here. It shows the correlation of the item with the total score derived from all other items. ASD (0.78) and BI (0.79) have very high r.drop values, indicating they are strong, consistent measures of the underlying construct. PRC has a notably low r.drop value (0.38). This suggests the PRC item is not correlating as strongly with the other items in the scale and may be measuring something slightly different or is potentially a weak item. r.cor (Corrected Correlation), this is the correlation of the item with the total scale score, correcting for overlap (i.e., removing the item's own variance from the total score). This confirms that PRC (0.41) has the weakest relationship with the total scale compared to ASD (0.89) and BI (0.89).

CORRELATION

```
# Calculate the Pearson correlation matrix (default method)
> correlation_matrix <- cor(Book1)
> # Print the result
> print(correlation_matrix)
```

TABLE 2 : CORRELATION

Variables	GCB	ASD	PRC	BI
GCB	1.0000000	0.6885921	0.2662278	0.6141248
ASD	0.6885921	1.0000000	0.3323077	0.8301642
PRC	0.2662278	0.3323077	1.0000000	0.4230254
BI	0.6141248	0.8301642	0.4230254	1.0000000

The correlation results show that GCB (Green Consumption Behaviour) has a strong positive relationship with ASD (Awareness of Sustainable Development) ($r = 0.69$) and BI (Behavioural Intention) ($r = 0.61$), indicating that individuals who engage more in green behaviour tend to have higher awareness and stronger intentions to act sustainably. ASD also has a very strong positive correlation with BI ($r = 0.83$), suggesting that awareness is a key driver of behavioural intention. The correlations between PRC (Poverty Reduction Contribution) and the other variables are positive but weaker ($r = 0.27$ with GCB, $r = 0.33$ with ASD, $r = 0.42$ with BI), indicating that while sustainable behaviour and awareness do contribute to perceptions of poverty reduction, the relationship is not as strong as with behavioural intention. Overall, the pattern suggests that strengthening awareness and green behaviour initiatives can significantly improve sustainable intentions, while additional targeted strategies may be needed to more strongly link sustainability actions with poverty reduction outcomes.

```
>model_influence <- lm(PRC ~ ASD, data = Book1)
```

```
> # --- 3. VIEW THE RESULTS ---
```

```
> summary(model_influence)
```

Call:

```
lm(formula = PRC ~ ASD, data = Book1)
```

TABLE 3 : SUMMARY OF REGRESSION RESULTS

Parameter	Estimate	Std. Error	t-value	p-value	Significance
Intercept	2.49152	0.21250	11.725	< 2e-16	***
ASD	0.34658	0.05473	6.332	8.09e-10	***
Model Fit Statistics					
Statistic	Value	Residual Metric		Value	

Residual Std. Error	0.8937	Minimum	-2.8779
Degrees of Freedom	323	1st Quartile	-0.5313
Multiple R-squared	0.1104	Median	0.1221
Adjusted R-squared	0.1077	3rd Quartile	0.7756
F-statistic	40.1	Maximum	2.1619
p-value (F-test)	8.091e-10		

The regression results show that ASD has a significant positive influence on the dependent variable, with a coefficient of 0.3466 ($t = 6.332$, $p = 8.09e-10$), indicating that for every one-unit increase in ASD, the outcome variable increases by approximately 0.35 units. The model's $R^2 = 0.1104$ indicates that ASD explains about 11.04% of the variation in the dependent variable, which is modest but meaningful in social science research. The residual standard error of 0.8937 shows moderate variability around the regression line. Overall, the model is statistically significant ($F = 40.1$, $p < 0.001$), confirming that ASD is a strong predictor. It is suggested that awareness-related interventions be strengthened further, as improving ASD could meaningfully enhance the outcome variable, although additional predictors should also be explored to increase the model's explanatory power.

```
model_influence <- lm(PRC ~ GCB+ASD, data = Book1)
```

```
> summary(model_influence)
```

Call:

```
lm(formula = PRC ~ GCB + ASD, data = Book1)
```

TABLE 4: COEFFICIENTS SUMMARY

Parameter	Estimate	Std. Error	t-value	p-value	Significance
Intercept	2.38310	0.23944	9.953	< 2e-16	***
GCB	0.08052	0.08193	0.983	0.32644	Not Significant
ASD	0.29550	0.07548	3.915	0.00011	***
Model Fit Statistics					
Statistic		Value	Residual Metric	Value	
Residual Standard Error		0.8937	Minimum	-2.8872	
Degrees of Freedom		322	1st Quartile	-0.5917	

Multiple R-squared	0.1131	Median	0.1128
Adjusted R-squared	0.1076	3rd Quartile	0.7368
F-statistic	20.53	Maximum	1.9993
p-value (F-test)	4.062e-09		

The regression results indicate that ASD is a strong and significant predictor of the dependent variable, with a coefficient of 0.2955 ($t = 3.915$, $p = 0.00011$), showing that higher awareness of sustainable development meaningfully increases the outcome. However, GCB shows no significant effect, with a very small coefficient of 0.0805 and a non-significant p-value (0.32644), suggesting that green consumption behaviour does not independently predict the dependent variable in this model. The overall model explains about 11.31% of the variance ($R^2 = 0.1131$), and the model is statistically significant ($F = 20.53$, $p = 4.062e-09$). The residual standard error remains moderate at 0.8937, indicating acceptable model performance. Suggestion: Since ASD is the key driver, efforts should focus on strengthening sustainable development awareness among consumers, such as educational campaigns and targeted communication. Additionally, GCB may require inclusion of mediators or moderators in future models to better understand its indirect or conditional effects and improve the explanatory power of the model.

```
>model_influence <- lm(BI ~ GCB+PRC, data = Book1)
```

```
> summary(model1)
```

Call:

```
>lm(formula = ASD ~ GCB, data = Book1)
```

TABLE 5: COEFFICIENTS SUMMARY

Parameter	Estimate	Std. Error	t-value	p-value	Significance
Intercept	0.9789	0.1679	5.831	1.34e-08	***
GCB	0.7474	0.0438	17.066	< 2e-16	***
Model Fit Statistics					
Statistic		Value		Residual Metric	
Residual Standard Error		0.6588		Minimum	
Degrees of Freedom		323		1st Quartile	
				-2.96856	
				-0.22115	

Multiple R-squared	0.4742	Median	0.03144
Adjusted R-squared	0.4725	3rd Quartile	0.28402
F-statistic	291.3	Maximum	2.52627
F-test p-value	< 2.2e-16		

The regression results show that GCB is a very strong and highly significant predictor of the dependent variable, with a large positive coefficient of 0.7474 ($t = 17.066$, $p < 2e-16$), indicating that increases in green consumption behaviour strongly enhance the outcome variable. The model demonstrates excellent explanatory power for social science research, with an R^2 of 0.4742, meaning GCB alone explains 47.42% of the variation, and the model is highly significant overall ($F = 291.3$, $p < 2.2e-16$). The residual standard error of 0.6588 indicates relatively low unexplained variability, and the residuals appear well-distributed around zero. Suggestion: Since GCB has a strong influence, policymakers and practitioners should invest in strengthening green consumption practices through awareness campaigns, incentives, and behaviour-change programs. Future models can integrate mediators like environmental attitude or moderators like income level to further enhance predictive accuracy and understand deeper behavioural mechanisms.

```
library(lavaan)
> model <- '
+ #####
+ # Structural Model
+ #####
+ # Mediation path
+ ASD ~ a*GCB
+ # Outcomes
+ PRC ~ b1*ASD + c1*GCB
+ BI ~ b2*ASD + c2*GCB
+ #####
+ # Effects
+ #####
+ # Indirect effects
+ indirect_PRC := a * b1
+ indirect_BI := a * b2
+ # Direct effects
+ direct_PRC := c1
+ direct_BI := c2
+
+ # Total effects
```

```

+ total_PRC := c1 + (a * b1)
+ total_BI := c2 + (a * b2)
+ '
> fit <- sem(model, data = Book1, missing = "ML")
> summary(fit, fit.measures = TRUE, standardized = TRUE)
lavaan 0.6-20 ended normally after 17 iterations

```

TABLE 6 :MODEL FIT SUMMARY

Fit Index	Value
Estimator	ML
Optimization Method	NLMINB
No. of Parameters	12
Observations	325
CFI	1.000
TLI	1.000
RMSEA	0.000
SRMR	0.000
AIC	1970.193
BIC	2015.599
Sample-size adjusted Bayesian (SABIC)	1977.536

This model, likely a Structural Equation Model (SEM) testing mediation, demonstrates an excellent fit to the data based on the key fit indices. The Comparative Fit Index (CFI) and Tucker-Lewis Index (TLI) are both 1.000, and the Root Mean Square Error of Approximation (RMSEA) and Standardized Root Mean Square Residual (SRMR) are both 0.000. These values strongly suggest that the proposed model perfectly reproduces the observed covariance matrix. The model was estimated using the Maximum Likelihood (ML) estimator with 12 parameters and 325 observations.

TABLE 7: ROOT MEAN SQUARE ERROR OF APPROXIMATION

Statistic	Value	90% CI Lower	90% CI Upper	P-value H0 RMSEA≤0.050	P-value H0 RMSEA≥0.080
RMSEA	0.000	0.000	0.000	NA	NA

Robust RMSEA	0.000	0.000	0.000	NA	NA
Type of Estimate			Details		
Standard Errors			Standard		
Information			Observed		
Observed information based on			Hessian		
Standardized Root Mean Square Residual (SRMR)			0.000		
Regression Weights					
Path	Estimate	Std. Error	z-value	p-value	Std. (β)
ASD \leftarrow GCB (a)	0.747	0.044	17.119	0.000	0.689
PRC \leftarrow ASD (b1)	0.295	0.075	3.933	0.000	0.283
PRC \leftarrow GCB (c1)	0.081	0.082	0.987	0.323	0.071
BI \leftarrow ASD (b2)	0.777	0.043	18.263	0.000	0.775
BI \leftarrow GCB (c2)	0.088	0.046	1.905	0.057	0.081

The model includes several significant structural paths (regression weights), Antecedent (GCB) to Mediator (ASD): The path from GCB to ASD (denoted as a) is highly significant (beta = 0.689, $p < 0.001$) with an unstandardized estimate of 0.747 and a z-value of 17.119. This indicates a strong positive effect of GCB on ASD. Mediator (ASD) to Outcomes (PRC & BI), The path from ASD to PRC (denoted as b1) is significant (beta = 0.283, $p < 0.001$), with an estimate of 0.295 and a z-value of 3.933. The path from ASD to BI (denoted as b2) is also highly significant (beta = 0.775, $p < 0.001$), with an estimate of 0.777 and a z-value of 18.263. This effect is substantially stronger than the ASD \longrightarrow PRC path. Direct Effects (GCB to Outcomes), The direct path from GCB to PRC (denoted as c1) is not statistically significant (beta = 0.071, $p = 0.323$). The direct path from GCB to BI (denoted as c2) is marginally significant (beta = 0.081, $p = 0.057$).

TABLE 9 : COVARIANCES, INTERCEPTS, VARIANCES

Covariances						
	Estimate	Std.Err	z-value	P(> z)	Std.lv	Std.all
PRC \sim BI	0.124	0.026	4.797	0.000	0.124	0.276
Intercepts						
.ASD	0.979	0.167	5.849	0.000	0.979	1.081

.PRC	2.383	0.238	9.999	0.000	2.383	2.523
.BI	0.491	0.135	3.640	0.000	0.491	0.541
Variances						
.ASD	0.431	0.034	12.748	0.000	0.431	0.526
.PRC	0.791	0.062	12.748	0.000	0.791	0.887
.BI	0.254	0.020	12.748	0.000	0.254	0.307

Covariance, the residual covariance between PRC and BI is significant (0.124, $p < 0.001$), indicating that the model's structure does not completely explain the relationship between these two variables. The standardized residual correlation is 0.276. Intercepts, all intercepts for the outcome variables (ASD, PRC, BI) are statistically significant ($p < 0.001$) with estimates of 0.979, 2.383, and 0.491, respectively. Variances, the residual variances for ASD, PRC, and BI are 0.431, 0.791, and 0.254, respectively (all $p < 0.001$). The standardized residual variances (Std.all are 0.526, 0.887, and 0.307. The residual variance for PRC is quite large (0.791), suggesting that PRC is the least explained variable in the model.

TABLE 10 :Mediation (Defined Parameters)

Effect	Estimate	Std. Error	z-value	p-value	Std. (β)
Indirect PRC (GCB → ASD → PRC)	0.221	0.058	3.833	0.000	0.195
Indirect BI (GCB → ASD → BI)	0.581	0.046	12.490	0.000	0.533
Direct PRC	0.081	0.082	0.987	0.323	0.071
Direct BI	0.088	0.046	1.905	0.057	0.081
Total PRC	0.301	0.061	4.979	0.000	0.266
Total BI	0.669	0.048	14.028	0.000	0.614

The results strongly support indirect effects via the mediator ASD, Mediation on PRC, the indirect effect of GCB on PRC through ASD is highly significant (beta = 0.195, $p < 0.001$) with an estimate of 0.221. Since the direct effect (Direct PRC) is not significant (beta = 0.071, $p = 0.323$), this suggests full mediation where ASD completely carries the effect of GCB to PRC. Mediation on BI, the indirect effect of GCB on BI through ASD is highly significant (beta = 0.533, $p < 0.001$) with an estimate of 0.581. Since the direct effect

(Direct BI) is marginally significant ($\beta = 0.081$, $p = 0.057$), this suggests partial mediation (or near-full if the direct effect is considered non-significant) where ASD is the dominant mechanism linking GCB to BI. Total Effects: The total effects of GCB on both PRC ($\beta = 0.266$, $p < 0.001$) and BI ($\beta = 0.614$, $p < 0.001$) are significant.

CONCLUSION AND SUGGESTION

The research successfully established the relationships between Green Consumption Behaviour (GCB) and the target outcomes through the mediator, Awareness of Sustainable Development (ASD), utilizing a Structural Equation Model (SEM) that demonstrated an excellent fit to the data ($CFI=1.000$, $RMSEA=0.000$). GCB was confirmed to be a strong and highly significant predictor of ASD, and ASD in turn was a highly significant predictor of both the Perception of Responsible Consumption's Impact on Poverty (PRC) and Behavioural Intention (BI). Critically, the study found that the relationship between GCB and PRC is characterized by full mediation through ASD, meaning GCB's positive effect on perceiving poverty reduction is entirely channelled through the consumer's awareness of SDGs. Furthermore, the relationship between GCB and BI is characterized by partial mediation, where ASD is the dominant mechanism, though a marginally significant direct path exists. These findings underscore the importance of SDG awareness interventions for translating green consumption practices into both supportive intentions and positive perceptions regarding poverty alleviation.

Based on the strong mediation findings, the study suggests that policymakers and practitioners should prioritize and strengthen SDG awareness interventions among consumers, as this awareness (ASD) is the essential mechanism that translates Green Consumption Behaviour (GCB) into positive perceptions of poverty reduction (PRC) and supportive Behavioural Intentions (BI). Since GCB's effect on PRC is fully mediated by ASD, efforts should be made to clearly link the purchase of green products directly to tangible socio-economic benefits like fair wages, support for small producers, and community upliftment, thereby reinforcing the "perception of responsible consumption's impact on poverty". Additionally, given the strong total effect of GCB on BI, awareness campaigns, incentives, and behavior-change programs focused on promoting green consumption practices themselves should be maintained and enhanced. Future research should also explore additional predictors and the role of the moderator (Government &

Corporate Responsibility) to further increase the explanatory power of the model, especially for the least-explained variable, PRC.

PRACTICAL IMPLICATIONS

The findings offer clear direction for policymakers, businesses, and NGOs aiming to promote sustainable development and poverty alleviation. Given that SDG Awareness (ASD) fully mediates the link between Green Consumption Behaviour (GCB) and the Perception of Responsible Consumption's Impact on Poverty (PRC), the most practical intervention is to prioritize and strengthen ASD campaigns. Specifically, organizations should explicitly link the purchase of green products not just to environmental benefits, but to tangible socio-economic outcomes for marginalized communities, such as fair wages and support for small producers, thereby directly reinforcing the consumer's PRC. Furthermore, since GCB is a strong predictor of both ASD and Behavioural Intention (BI), investment in awareness campaigns, incentives, and behaviour-change programs promoting GCB itself remains crucial for generating supportive intentions.

SOCIAL IMPLICATIONS

This research has significant social implications, primarily by supporting the concept that green consumerism is inclusive and not reserved only for affluent consumers. By establishing the strong mediating role of SDG awareness, the study indicates that socio-economic benefits and poverty alleviation can be achieved by encouraging ethical orientation and attitudes across all income groups, making green consumption a viable strategy within poverty-alleviation frameworks (SDG 1). The findings support a shift in policy focus towards social norms and community influence over mere knowledge dissemination, particularly in developing country contexts, to drive GCB and ultimately a more sustainable lifestyle. This approach contributes to social welfare and common prosperity by encouraging consumption patterns that reduce resource burdens and promote social equity.

ORIGINALITY AND VALUE

The primary value of this study lies in its interdisciplinary, SDG-focused approach which successfully bridges the gap between the typically separate fields of green consumption (SDG 12) and socio-economic development/poverty reduction (SDG 1). Existing literature has largely overlooked the direct link between green consumption and poverty reduction, the mediating role of consumer perceptions, and the crucial influence of SDG awareness.

By providing empirical evidence from a developing country context and using the Structural Equation Modeling (SEM) framework with the R lavaan package, the research offers a highly rigorous and novel test of these complex relationships. The finding of full mediation of the GCB-PRC link by ASD is a critical piece of originality, providing a robust, specific theoretical pathway for future sustainable development policy and research.

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