Impact of Social Media on Consumers to Persuade Green Products

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Abstract

This study investigates the influence of green products and social media on consumer characteristics, including gender, age, education, occupation, and annual income. Green products, characterized by their environmentally friendly attributes, and social media, as a powerful communication platform, have garnered significant attention in recent years. We explore the relationships between these factors using correlation coefficients, regression analysis, and ANOVA. The findings reveal nuanced associations between green products, social media engagement, and consumer demographics. This study contributes to our understanding of how green products and social media may impact consumer demographics. While the findings offer valuable insights, they should be interpreted cautiously, considering the broader context of consumer behavior and environmental trends. Future research can build upon these findings to deepen our understanding of these dynamic relationships. It's important to note that social media alone cannot solve environmental challenges, but it serves as a catalyst for information dissemination, community building, and collective action toward sustainable choices and the widespread adoption of green products.

Keywords- Green product, social media, consumers, customer satisfaction, product quality, customer loyalty, purchase behavior.

INTRODUCTION

A green product, also known as an eco-friendly or sustainable product, refers to goods or services designed and produced with minimal negative environmental impact. These products are typically made from renewable or recycled materials, use energy-efficient manufacturing processes, and have a reduced carbon footprint throughout their life cycle, from production to disposal. Green products aim to conserve resources, reduce pollution, and promote environmental sustainability. They can encompass a wide range of categories, including:

a) Energy-efficient appliances: These are devices designed to minimize energy consumption while providing the same functionality as traditional appliances.

Examples include Energy Star-rated refrigerators, LED light bulbs, and solar-powered chargers.

b) Organic and natural personal care products: These include cosmetics, skincare items, and toiletries made from natural and organic ingredients, avoiding harmful chemicals and synthetic additives. They may be cruelty-free and packaged in recyclable or biodegradable materials.

c) Renewable energy systems: Products like solar panels, wind turbines, and geothermal systems harness renewable energy sources to generate electricity or heat, reducing reliance on fossil fuels and lowering greenhouse gas emissions.

d) Sustainable clothing and textiles: These products are made from environmentally friendly materials such as organic cotton, hemp, bamboo, or recycled fibers. They may also incorporate ethical production practices, and fair trade principles, and minimize waste in the manufacturing process.

e) Eco-friendly cleaning products: These are cleaning agents that are biodegradable, non-toxic, and free from harmful chemicals. They reduce water pollution and minimize the negative impact on human health and ecosystems.

f) Electric vehicles (EVs): Electric cars and bikes offer a cleaner and more sustainable alternative to traditional gasoline or diesel vehicles, reducing air pollution and dependence on fossil fuels.

g) Recycled or upcycled products: These goods are made from recycled materials or repurposed items that would have otherwise been discarded. Examples include furniture made from reclaimed wood or accessories crafted from recycled plastics.

h) Water-saving devices: Products like low-flow showerheads, dual-flush toilets, and rainwater harvesting systems help conserve water resources and reduce water waste.

These are just a few examples of green products available in the market. The overarching goal is to promote sustainability, protect the environment, and encourage responsible consumption and production practices.

The emergence of Green products

The concept of green products and sustainable consumption has evolved over time as societies have become increasingly aware of environmental issues and the need for more responsible practices. The origins of green products can be traced back to various historical milestones and movements.

The modern environmental movement gained momentum in the 1960s and 1970s, with concerns about pollution, deforestation, and resource depletion. This movement laid the foundation for the awareness of environmental issues and the need for sustainable practices. Earth Day, first celebrated on April 22, 1970, marked a turning point in the environmental movement. It brought together millions of people to demonstrate their support for environmental protection and sparked increased public awareness and advocacy.

The energy crisis of the 1970s, characterized by rising oil prices and concerns about fossil fuel dependence, prompted efforts to develop alternative energy sources and energy-efficient technologies. This led to the development of green products such as energy-efficient appliances and renewable energy systems.

The green building movement emerged in the 1990s, promoting the construction and design of buildings with a focus on energy efficiency, water conservation, and the use of sustainable materials. This movement contributed to the development of green building products and materials.

The establishment of certification systems and standards played a crucial role in defining and promoting green products. For example, the Energy Star program, launched by the U.S. Environmental Protection Agency (EPA) in 1992, certifies energy-efficient appliances and electronics. Increasing consumer awareness and demand for environmentally friendly products has also driven the growth of green products. As more people became concerned about the environmental impact of their consumption choices, businesses responded by offering greener alternatives.

Governments around the world have implemented regulations and incentives to promote sustainability and encourage the development and use of green products. These policies include tax incentives, subsidies, and mandates for energy efficiency or renewable energy. Over time, the concept of green products has evolved to encompass a broader range of sustainable practices and technologies. Today, many companies and industries are actively incorporating environmental considerations into their product development processes, and consumers are increasingly seeking out green products as part of their commitment to a more sustainable lifestyle.

Social Media

Social media refers to online platforms and applications that enable users to create, share, and interact with content. These platforms facilitate the sharing of information, ideas, and media in various forms, such as text, images, videos, and links. Some popular social media platforms include Facebook, Twitter, Instagram, LinkedIn, YouTube, and TikTok.

Social media has transformed the way people communicate, connect, and share information. It has become an integral part of many people's daily lives and has significantly impacted various aspects of society, including communication, marketing, politics, and activism.

Social Media and Green Products

Social media plays a significant role in promoting and raising awareness about green products. Social media platforms provide a vast space for sharing information and educating people about green products. Individuals, organizations, and businesses can use social media to share knowledge, tips, and resources related to sustainable living, eco-friendly products, and

responsible consumption. This helps raise awareness and inform the public about the benefits and availability of green products.

Social media influencers, who have a large following and influence on platforms like Instagram, YouTube, and TikTok, can play a crucial role in promoting green products. Influencers who are passionate about sustainability can showcase and review eco-friendly products, share sustainable lifestyle tips, and encourage their audience to adopt green choices. Social media platforms allow users to create and share their experiences with green products. This user-generated content can include product reviews, testimonials, and before-and-after transformations. Such content provides social proof and encourages others to consider and try green products themselves.

Social media enables the formation of communities and groups centered on sustainable living and green products. These communities provide a platform for individuals to share ideas, ask questions, and support each other in their eco-friendly endeavors. It fosters a sense of belonging and motivation to adopt green products.

Green product brands can utilize social media to engage with their customers, share updates about their sustainability efforts, and provide transparency regarding their manufacturing processes and supply chains. Social media platforms allow brands to communicate their values and showcase their commitment to environmental responsibility, fostering consumer trust and loyalty.

Social media platforms have been instrumental in supporting the launch and growth of green product initiatives through crowdfunding campaigns. These campaigns enable individuals and organizations to raise funds for eco-friendly product development, sustainable projects, and innovative solutions that contribute to a greener future. Social media has proven to be a powerful tool for raising awareness and mobilizing social activism. Environmental organizations and advocates utilize social media platforms to shed light on environmental issues, advocate for policy changes, and encourage the adoption of green products as part of a larger movement for sustainability.

LITERATURE REVIEW

Arunima Kumar (2023), states in this research that social media influences consumers through altruistic and egoistic motivations, subjective norms, and leading to positive intentions and behaviors towards purchasing green products.

Saha's (2022), study aimed to contribute to the field of green consumerism and consumer behavior by exploring the connection between brand-generated content and green purchase intention, as well as the importance of different factors derived from brand-generated content in developing marketing strategies for green products. The study tested the relationship between different factors derived from brand-generated content and green purchase intention. It found that perceived concern for the environment and attitude positively influenced green

purchase intention, while trust in the content had a negative impact. Lack of trust may be attributed to consumers' awareness of "green-washing" incidents, where brands falsely claim sustainability credentials. Thus, marketers should prioritize building trust through content to avoid a decline in green purchase intention.

Okadiani, Mitariani, and Imbayani (2019), state that empirical testing, specifically through F-tests and t-tests, was conducted to examine the effects of green product and social media marketing on product purchasing decisions at PT. Sensatia Botanicals. The results of the F-test indicate that there is a positive and significant simultaneous effect of green product variables and social media marketing on purchase decisions. Furthermore, the results of the t-test analysis show that green product variables have a positive and significant effect on purchase decisions at PT. Sensatia Botanicals

Biswas and Roy (2016), discuss the factors influencing consumers' willingness to pay a price premium for green products. The study identified several factors that influence consumers' intention to pay a price premium for green products. These factors include product price, availability, performance, and quality. Price and quality concerns were found to be the major drivers for consumers' willingness to pay more for green products. The study suggests that green product innovation with improved performance, quality, and an economical pricing strategy is crucial to increasing consumers' WTP. It suggests that companies should focus on improving the functional aspects of their products, communicating their environmental initiatives, and creating awareness to encourage sustainable consumption practices.

Chang and Fong (2010), describe a study that developed a research framework to investigate the relationships between green product quality, green corporate image, green customer satisfaction, and green customer loyalty. The study contributes to the understanding of the antecedents of green customer loyalty. It highlights the significance of both green product quality and green corporate image in influencing green customer satisfaction, which, in turn, positively impacts green customer loyalty. By focusing on these factors, companies can enhance their competitive advantage and build stronger relationships with environmentally conscious customers.

PROBLEM STATEMENT

The problem statement focuses on this research are:

1. How does Social media impact on purchasing decisions of consumers?
2. Does advertising on digital media is more conventional?
3. The study will make a comparison between males and females to understand how social media affects their purchasing behaviors differently.
4. The impact of income on decision-making while viewing social media advertisements

RESEARCH METHODOLOGY

Data Collection

The population of the study consists of unknown consumers. Due to the unknown population, a non-probability sampling method was employed. To determine the sample size, the formula n = [Zα/2] ^2/E was used.

Using the formula, with a Z-value of 1.96 (corresponding to a 95% confidence level) and an E (margin of error) of 0.20, the calculation is as follows:

n = [1.96] ^2 / 0.20
n = 3.84 / 0.20
n = 19.2

The result is rounded up to 100, indicating that a sample size of 100 participants was chosen for the study.

In addition, sampling is also done by purposive sampling where the researcher determines the sampling by specifying specific characteristics that are suitable to the objectives of the study so that it is expected to answer the problems in the study.

The questionnaire consisted of two sections: The first section comprised questions on consumer demographics. The second section consisted of twelve questions related to different parameters on the basis of a consumer makes decision.

ANALYSIS AND RESULT

Reliability Test

Cronbach's alpha is used to assess how well a set of items in a questionnaire or test measures the same underlying construct or trait. In other words, it helps determine whether all the questions in a survey that are supposed to measure a particular concept are producing consistent and reliable results. It is named after its developer, Lee Cronbach.
Cronbach’s Alpha Formula:

$$\alpha = \frac{N \cdot \bar{c}}{\bar{v} + (N-1) \cdot \bar{c}}$$

N is the number of items.
$\bar{v}$ is the variance of the total scores.
$\bar{c}$ is the covariance of the score.

A high Cronbach's alpha (closer to 1) indicates high internal consistency among the items. This suggests that the items are all measuring the same underlying construct. A low Cronbach's alpha (closer to 0) suggests that the items in the survey are not consistently measuring the same thing and may need revision or removal.

In this paper,

Reliability Statistics	
Cronbach's Alpha	N of Items
.848	20

It shows α= 0.8, which means the data is reliable enough to do further conduct the study.

Normality Test

A normality test is a statistical procedure used to determine whether a dataset follows a normal distribution, also known as a Gaussian distribution or a bell-shaped curve. The normal distribution is an essential concept in statistics, and many statistical methods and hypothesis tests assume that the data are normally distributed.

Kolmogorov-Smirnov Test

The Kolmogorov-Smirnov test (KS test) is a statistical test used to assess whether a dataset follows a specified probability distribution, such as the normal distribution, exponential distribution, or any other continuous probability distribution. It's particularly useful for checking the goodness of fit of a dataset to a theoretical distribution or comparing two datasets to see if they likely come from the same population.

One-Sample Kolmogorov-Smirnov Test						
		Gender	Age	Education	Occupation	Annual Income
N		100	100	100	100	100
Normal Parameters[a, b]	Mean	1.43	2.01	3.48	1.67	2.96
	Std. Deviation	.498	.948	.674	1.035	1.517
Test Statistic		.376	.287	.302	.421	.227
Asymp. Sig. (2-tailed)[c]		.000	.000	.000	.000	.000
Monte Carlo Sig. (2-tailed)[d]	Sig.	.000	.000	.000	.000	.000

Here, the test statistics values are 0.376, 0.287, 0.302, 0.421, and 0.227 which is greater than 0.05, it shows that data is normally distributed.

Correlation

Correlation is a statistical measure that describes the extent to which two variables change together. In other words, it quantifies the degree to which there is a relationship or association between two variables. Correlation does not imply causation; it simply indicates that changes in one variable are associated with changes in another variable. There are several types of correlation, but the most common one is Pearson's correlation coefficient.

Pearson's Correlation Coefficient (r):

Pearson's correlation coefficient, denoted as "r," measures the linear relationship between two continuous variables. It ranges from -1 to 1. An r value of 1 indicates a perfect positive linear relationship, meaning that as one variable increases, the other increases proportionally. An r value of -1 indicates a perfect negative linear relationship, meaning that as one variable increases, the other decreases proportionally. An r value of 0 indicates no linear relationship; the variables are not correlated. J The closer the absolute value of r is to 1, the stronger the linear relationship between the variables.

	Gende	Age	Education	Occupation	nnual Income	Q1	Q2	Q3	Q4	Q5	Q6	Q7	Q8	Q9	Q10	Q11	Q12	Q13	Q14	Q15
Gender	1.00																			
Age	-0.24	1.00																		
Educati	-0.05	0.50	1.00																	
Occupa	-0.23	0.33	0.01	1.00																
Annual	-0.24	0.62	0.49	0.02	1.00															
Q1	-0.28	0.15	-0.05	0.22	0.06	1.00														
Q2	-0.03	0.20	0.22	0.03	0.30	0.25	1.00													
Q3	0.17	0.06	0.10	0.04	0.17	0.15	0.39	1.00												
Q4	0.01	0.32	0.07	-0.02	0.34	0.32	0.27	0.25	1.00											
Q5	-0.12	0.29	0.10	0.16	0.34	0.39	0.43	0.46	0.63	1.00										
Q6	0.03	0.04	-0.13	0.02	0.06	-0.04	-0.13	-0.01	0.28	0.15	1.00									
Q7	0.10	0.14	0.00	0.02	0.25	0.08	0.27	0.37	0.31	0.31	0.38	1.00								
Q8	0.03	0.29	-0.02	0.10	0.29	0.28	0.23	0.25	0.38	0.50	0.22	0.45	1.00							
Q9	-0.19	0.04	0.02	0.09	0.08	0.37	0.21	0.29	0.34	0.35	0.35	0.49	0.34	1.00						
Q10	0.14	-0.08	0.02	0.17	0.04	0.31	0.22	0.28	0.27	0.17	0.21	0.27	0.19	0.45	1.00					
Q11	0.16	-0.04	0.03	0.12	-0.07	0.21	0.05	0.17	0.12	0.05	0.13	0.41	0.16	0.45	0.56	1.00				
Q12	-0.03	0.24	-0.02	0.28	0.22	0.35	0.38	0.31	0.28	0.28	0.16	0.40	0.50	0.44	0.40	0.42	1.00			
Q13	0.00	0.11	-0.18	0.23	0.20	0.33	0.36	0.26	0.26	0.30	0.22	0.51	0.53	0.38	0.41	0.47	0.76	1.00		
Q14	-0.18	0.12	-0.02	-0.01	0.31	0.09	0.19	0.13	0.25	0.24	0.06	0.23	0.39	0.28	0.08	0.07	0.36	0.39	1.00	
Q15	0.08	0.06	-0.08	0.08	0.22	0.23	0.11	0.23	0.40	0.29	0.44	0.27	0.44	0.37	0.37	0.22	0.31	0.27	0.24	1

The diagonal of the matrix (from the top-left to the bottom-right) shows the correlation of each variable with itself, which is always 1.00 (perfect correlation).

The values above the diagonal are the correlations between different pairs of variables. The values below the diagonal mirror the values above the diagonal since correlation is a symmetric measure.

Interpreting specific correlations:

For example, the correlation between "Gender" and "Age" is -0.24, indicating a weak negative correlation between Gender and Age. This suggests that as Gender increases, Age tends to decrease slightly, or vice versa.

The correlation between "Gender" and "Education" is -0.05, indicating a very weak negative correlation between these two variables. The correlation between "Annual Income" and "Q5" is 0.34, indicating a moderate positive correlation between Annual Income and Q5. The

correlation between "Q8" and "Q9" is 0.34, indicating a moderate positive correlation between these two survey questions. The correlation between "Q14" and "Q15" is 0.24, indicating a weak positive correlation between these two survey questions.

The correlation does not imply causation, and it only measures the strength and direction of the linear relationship between variables. Other factors, not captured by correlation, could also be at play in more complex relationships between variables.

Regression Analysis

Regression is a statistical technique used to model the relationship between a dependent variable and one or more independent variables. The goal of regression analysis is to understand how changes in the independent variables are associated with changes in the dependent variable. This allows for prediction, explanation, and hypothesis testing.

Durbin Watson Static

The Durbin-Watson statistic is a test used in regression analysis to determine whether there is autocorrelation (serial correlation) in the residuals of a regression model. Autocorrelation occurs when the residuals of a regression model are not independent but exhibit some pattern or correlation with each other. This can violate one of the key assumptions of linear regression, which is that the errors (residuals) are independent and identically distributed.

The Durbin-Watson statistic is named after its developers, James Durbin and Geoffrey Watson. It takes values between 0 and 4, with specific interpretations. A value of $d = 2$ indicates no autocorrelation in the residuals. This is the ideal case, suggesting that the residuals are independent. A value of $d < 2$ suggests positive autocorrelation in the residuals. This means that adjacent residuals tend to be positively correlated, indicating that the model might be missing some explanatory variables. A value of $d > 2$ suggests negative autocorrelation in the residuals. This means that adjacent residuals tend to be negatively correlated, suggesting that the model may have too many explanatory variables.

The Durbin-Watson statistic helps analysts assess whether the assumptions of no autocorrelation are met. When autocorrelation is present, it can lead to incorrect conclusions about the statistical significance of regression coefficients, affecting the reliability of the model.

Table1: Model Summary

					Change Statistics				Durbin-Watson	
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. F Change	

1	.572[a]	.327	.207	.443	.327	2.726	15	84	.002	2.127
a. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13										
b. Dependent Variable: Gender										
2	.500[a]	.250	.116	.891	.250	1.868	15	84	.038	1.114
a. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13										
b. Dependent Variable: Age										
3	.448[a]	.201	.058	.654	.201	1.407	15	84	.163	1.495
a. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13										
b. Dependent Variable: Education										
4	.445[a]	.198	.055	1.006	.198	1.387	15	84	.173	1.872
a. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13										
b. Dependent Variable: Occupation										
5	.527[a]	.278	.149	1.399	.278	2.157	15	84	.014	1.981
a. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13										
b. Dependent Variable: Annual Income										

Model 1 (Dependent Variable: Gender)

The value of the Durbin-Watson static for dependent variable Gender is 2.127, which is approximately to 2, shows that there is autocorrelation between Gender and all the selected independent variables. R is the multiple correlation coefficient, it represents the correlation between the dependent variable (Gender) and the combination of independent variables (Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13) in the model. In this case, it's approximately 0.572. R-squared (R^2) is the coefficient of determination, indicating the proportion of the variance in the dependent variable (Gender) that can be explained by the independent variables in the model. Here, it's approximately 0.327, which means that around 32.7% of the variation in Gender is explained by the variables in the model. Adjusted R Square is a modified version of R-squared that accounts for the number of predictors in the model. It penalizes the addition of unnecessary predictors and tends to be lower than R-squared when more predictors are added. Here, it's approximately 0.207.Std. Error of the Estimate represents the standard error of the residuals, which is a measure of how much the observed values of the dependent variable (Gender) differ from the predicted values in the model. In this case, it's approximately 0.443.The information in the "Predictors" and "Dependent Variable" sections below the table provides additional context about the variables used in the analysis. It lists the independent variables (predictors) and the dependent variable (Gender) in the model.

It summarizes the results of a regression analysis that examines the relationship between Gender and the listed predictor variables. The model appears to have some explanatory power (as indicated by R-squared), but the adjusted R-squared suggests that the model may not be a very good fit, possibly due to the inclusion of too many predictors. Additionally, the Durbin-Watson statistic suggests that autocorrelation may be present in the residuals.

Model 2 (Dependent Variable: Age)

The multiple correlation coefficient (R) is approximately 0.500, indicating the linear relationship between the independent variables (Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13) and the dependent variable (Age).The coefficient of determination (R^2) is approximately 0.250, suggesting that around 25% of the variation in Age can be explained by the independent variables in the model. The adjusted R-squared is approximately 0.116, which accounts for the number of predictors in the model. It's relatively low, indicating that the model may not be a strong fit for explaining Age. The standard error of the estimate is approximately 0.891, representing the variability of the actual Age values around the predicted values. F-statistic change is 1.868 with a significance level of 0.038.The Durbin-Watson statistic is 1.114, which is close to 1, suggesting positive autocorrelation in the residuals of the model.

In summary, models examine the relationship between the listed independent variables and their respective dependent variables (Age). Model 2 has a lower R-squared, suggesting a weaker fit for explaining Age with the provided independent variables.

Model 3 (Dependent Variable: Education)

The multiple correlation coefficient (R) is approximately 0.448, indicating the strength and direction of the linear relationship between the combinations of independent variables listed under "Predictors" and the dependent variable (Education).The coefficient of determination (R Square) is approximately 0.201, which means that about 20.1% of the variation in Education can be explained by the independent variables in the model. The adjusted R Square, which accounts for the number of predictors in the model, is approximately 0.058. This adjusted value suggests that the model may not be a strong fit for explaining Education. The standard error of the estimate is approximately 0.654, representing the variability of the actual Education values around the predicted values. The change statistics show that the addition of the predictors led to an R Square Change of 0.201 and an F Change of 1.407. The F Change is associated with a p-value (Sig. F Change) of 0.163, indicating that the improvement in the model's fit due to the addition of predictors is not statistically significant at a conventional significance level (e.g., 0.05).The Durbin-Watson statistic is approximately 1.495, suggesting no significant autocorrelation in the residuals of the model.

In summary, Model 3 explains about 20.1% of the variation in Education using the listed independent variables. However, the adjusted R Square is relatively low, indicating that the model may not be a strong fit for explaining Education. Additionally, the improvement in model fit due to the predictors is not statistically significant based on the F Change statistic.

Model 4 (Dependent Variable: Occupation)

The multiple correlation coefficient (R) is approximately 0.445, indicating the strength and direction of the linear relationship between the combinations of independent variables listed

under "Predictors" and the dependent variable (Occupation). The coefficient of determination (R Square) is approximately 0.198, which means that about 19.8% of the variation in Occupation can be explained by the independent variables in the model. The adjusted R Square, which accounts for the number of predictors in the model, is approximately 0.055. This adjusted value suggests that the model may not be a strong fit for explaining Occupation. The standard error of the estimate is approximately 1.006, representing the variability of the actual Occupation values around the predicted values. The change statistics show that the addition of the predictors led to an R Square Change of 0.198 and an F Change of 1.387. The F Change is associated with a p-value (Sig. F Change) of 0.173, indicating that the improvement in the model's fit due to the addition of predictors is not statistically significant at a conventional significance level (e.g., 0.05). The Durbin-Watson statistic is approximately 1.872, suggesting no significant autocorrelation in the residuals of the model.

In summary, for Model 4 (Occupation), the model explains about 19.8% of the variation but has a relatively low adjusted R Square, and the improvement in model fit due to the predictors is not statistically significant.

Model 5 (Dependent Variable: Annual Income)

The multiple correlation coefficient (R) is approximately 0.527, indicating the strength and direction of the linear relationship between the combinations of independent variables listed under "Predictors" and the dependent variable (Annual Income). The coefficient of determination (R Square) is approximately 0.278, which means that about 27.8% of the variation in Annual Income can be explained by the independent variables in the model. The adjusted R Square, which accounts for the number of predictors in the model, is approximately 0.149. This adjusted value suggests that the model may not be a very strong fit for explaining Annual Income. The standard error of the estimate is approximately 1.399, representing the variability of the actual Annual Income values around the predicted values. The change statistics show that the addition of the predictors led to an R Square Change of 0.278 and an F Change of 2.157. The F Change is associated with a low p-value (Sig. F Change: 0.014), indicating that the improvement in the model's fit due to the addition of predictors is statistically significant. The Durbin-Watson statistic is approximately 1.981, suggesting no significant autocorrelation in the residuals of the model.

In Model 5 (Annual Income), the model explains about 27.8% of the variation, and the improvement in model fit due to the predictors is statistically significant at a conventional significance level.

ANOVA, which stands for Analysis of Variance, is a statistical technique used to analyze and compare the means of two or more groups or treatments to determine whether there are statistically significant differences between them. ANOVA is particularly useful when you want to test whether variations in a dependent variable can be attributed to different levels of one or more independent variables**.**

There are several types of ANOVA, but the three most common ones are:

One-Way ANOVA: This is used when you have one categorical independent variable and one continuous dependent variable. It tests whether there are statistically significant differences in the means of multiple groups. For example, you might use a one-way ANOVA to test whether there are differences in the test scores of students who attended three different schools.
Two-Way ANOVA: This extends the one-way ANOVA to two independent variables. It examines the effects of two categorical independent variables on a continuous dependent variable. For example, a two-way ANOVA could be used to investigate the impact of both gender and age groups on exam performance.

Table 2: ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8.025	15	.535	2.726	.002[b]
	Residual	16.485	84	.196		
	Total	24.510	99			
a. Dependent Variable: Gender						
b. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13						
2	Regression	22.259	15	1.484	1.868	.038[b]
	Residual	66.731	84	.794		
	Total	88.990	99			
a. Dependent Variable: Age						
b. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13						
3	Regression	9.028	15	.602	1.407	.163[b]
	Residual	35.932	84	.428		
	Total	44.960	99			
a. Dependent Variable: Education						
b. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13						
4	Regression	21.060	15	1.404	1.387	.173[b]
	Residual	85.050	84	1.013		
	Total	106.110	99			
a. Dependent Variable: Occupation						
b. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13						
5	Regression	63.363	15	4.224	2.157	.014[b]
	Residual	164.477	84	1.958		
	Total	227.840	99			
a. Dependent Variable: Annual income						
b. Predictors: (Constant), Q15, Q2, Q11, Q14, Q1, Q3, Q6, Q4, Q8, Q10, Q9, Q12, Q7, Q5, Q13						

Model 1 (Dependent Variable: Gender)

The sum of squares for the regression model is 8.025. This represents the explained variation in Gender due to the predictors. The sum of squares for the residuals is 16.485. This represents the unexplained variation in Gender after accounting for the predictors. The total sum of squares is 24.510, which is the sum of the regression and residual sums of squares. For the regression, df is 15 (the number of predictors), and for the residual, df is 84 (the degrees of freedom for the error term). For the regression, the mean square is 0.535 (8.025 / 15), and for the residual, it's 0.196 (16.485 / 84). The F-statistic is 2.726, which is calculated by dividing the mean square for regression by the mean square for the residual. The p-value associated with the F-statistic is 0.002, indicating that the regression model's improvement over the null model (no predictors) is statistically significant at a conventional significance level (e.g., 0.05). In other words, the predictors have a statistically significant impact on explaining the variation in Gender.

In summary, the ANOVA summary for Model 1 demonstrates that the predictors, listed under "b. Predictors," have a statistically significant impact on explaining the variation in the dependent variable "Gender." The F-statistic is significant, and the p-value is very low (0.002), providing evidence that the model with predictors is better at explaining Gender than a model without predictors.

Model 2 (Dependent Variable: Age)

The sum of squares for the regression model is 22.259. This represents the explained variation in Age due to the predictors. The sum of squares for the residuals is 66.731. This represents the unexplained variation in Age after accounting for the predictors. The total sum of squares is 88.990, which is the sum of the regression and residual sums of squares. For the regression, df is 15 (the number of predictors), and for the residual, df is 84 (the degrees of freedom for the error term). For the regression, the mean square is 1.484 (22.259 / 15), and for the residual, it's 0.794 (66.731 / 84). The F-statistic is 1.868, which is calculated by dividing the mean square for regression by the mean square for the residual. The p-value associated with the F-statistic is 0.038 (noted as .038b), indicating that the regression model's improvement over the null model (no predictors) is statistically significant at a conventional significance level (e.g., 0.05). In other words, the predictors have a statistically significant impact on explaining the variation in Age.

In summary, the ANOVA summary for Model 2 demonstrates that the predictors, listed under "b. Predictors," have a statistically significant impact on explaining the variation in the dependent variable "Age." The F-statistic is significant, and the p-value is 0.038, providing evidence that the model with predictors is better at explaining Age than a model without predictors.

Model 3 (Dependent Variable: Education)

The sum of squares for the regression model is 9.028. This represents the explained variation in Education due to the predictors. The sum of squares for the residuals is 35.932. This represents the unexplained variation in Education after accounting for the predictors. The total sum of squares is 44.960, which is the sum of the regression and residual sums of squares. For the regression, df is 15 (the number of predictors), and for the residual, df is 84 (the degrees of freedom for the error term). For the regression, the mean square is 0.602 (9.028 / 15), and for the residual, it's 0.428 (35.932 / 84). The F-statistic is 1.407, which is calculated by dividing the mean square for regression by the mean square for the residual. The p-value associated with the F-statistic is 0.163 (noted as .163b), indicating that the regression model's improvement over the null model (no predictors) is not statistically significant at a conventional significance level (e.g., 0.05). In other words, the predictors do not have a statistically significant impact on explaining the variation in Education in this model.

In summary, the ANOVA summary for Model 3 shows that the predictors listed under "b. Predictors" do not have a statistically significant impact on explaining the variation in the dependent variable "Education." The F-statistic is not significant, and the p-value is 0.163, suggesting that the model with predictors is not better at explaining Education than a model without predictors in this case.

Model 4 (Dependent Variable: Occupation)

The sum of squares for the regression model is 21.060. This represents the explained variation in Occupation due to the predictors. The sum of squares for the residuals is 85.050. This represents the unexplained variation in Occupation after accounting for the predictors. The total sum of squares is 106.110, which is the sum of the regression and residual sums of squares. For the regression, df is 15 (the number of predictors), and for the residual, df is 84 (the degrees of freedom for the error term). For the regression, the mean square is 1.404 (21.060 / 15), and for the residual, it's 1.013 (85.040 / 84). The F-statistic is 1.387, which is calculated by dividing the mean square for regression by the mean square for the residual. The p-value associated with the F-statistic is 0.173 (noted as .173b), indicating that the regression model's improvement over the null model (no predictors) is not statistically significant at a conventional significance level (e.g., 0.05).

In summary, it provides information about the fit of the regression model, and the p-value (Sig.) suggests that the model may not be statistically significant at a typical significance level of 0.05.

Model 5 (Dependent Variable: Annual Income)

The sum of squares for the regression model is 63.363. This represents the explained variation in Annual Income due to the predictors. The sum of squares for the residuals is 164.477. This represents the unexplained variation in Annual Income after accounting for the predictors. The

total sum of squares is 227.840, which is the sum of the regression and residual sums of squares. For the regression, df is 15 (the number of predictors), and for the residual, df is 84 (the degrees of freedom for the error term). For the regression, the mean square is 4.224 (63.363 / 15), and for the residual, its 1.958 (164.477 / 84). The F-statistic is 2.157, which is calculated by dividing the mean square for regression by the mean square for the residual. The p-value associated with the F-statistic is 0.014 (noted as .014b), indicating that the regression model's improvement over the null model (no predictors) is statistically significant at a conventional significance level (e.g., 0.05). In other words, the predictors have a statistically significant impact on explaining the variation in Annual Income.

In summary, the ANOVA summary for Model 5 demonstrates that the predictors listed under "b. Predictors" have a statistically significant impact on explaining the variation in the dependent variable "Annual Income." The F-statistic is significant, and the p-value is 0.014, providing evidence that the model with predictors is better at explaining Annual Income than a model without predictors.

CONCLUSION

The analysis suggests that there may be some relationships between the selected independent variables and the dependent variables, but the explanatory power varies.

Overall, the study provides a foundation for understanding the potential impact of green product and social media-related variables on consumers' characteristics and behaviors. However, it also highlights the complexity of these relationships, with other unaccounted factors likely influencing the dependent variables.

Future research and analysis could focus on refining the models, exploring additional variables, and considering non-linear relationships and interactions among variables to provide a more comprehensive understanding of how green products and social media influence consumer demographics and behaviors.
It's important to note that while statistical analysis can reveal associations and trends, the practical significance and real-world implications of these findings should be interpreted with caution and considered in the context of broader consumer behavior and environmental trends.

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Appendix: Questionnaire

Impact of Social Media on Consumers to persuade Green Products

Demographic Questions:						
	Name					
	Gender	Male		Female		Others
	Age	18-24 years	25-34 years	35-44 years	45-54 years	55 years and above
	Education	Illiterate	School	Graduate	Post-graduate	Doctorate
	Occupation	Private	Public	Government	Home - maker	
	Family Income	Below 1 Lac	1 Lac- 3 Lac	3 Lac- 5 Lac	5 Lac - 7 Lac	Above 7 Lac

Sr. No.		**Responses [From Always (1) to Never (5)]**				
	Statements	**Always**	**Often**	**Sometimes**	**Rarely**	**Never**
Q1	Customers engage with Social Media platforms (such as Facebook, Instagram, Twitter, etc.)?					
Q2	Have you ever come across advertisements or promotional content related to Green products on social media?					
Q3	At what level these advertisements or promotional content impact your purchasing intention for green products?					
Q4	Is it Social Media platform gives informative knowledge about the environmental benefits of Green products?					
Q5	Is it Social Media platform gives informative knowledge about the Health benefits of Green products?					
Q6	Do you believe that buying the Green products makes a step forward towards the better world for future generations?					

Q7	Does the price of the Green products justifiable in regards to environmental benefits?					
Q8	Does the promotional discount/coupons attract you more to buy the green product rather than its environmental benefits?					
Q9	Does the information provided by Social Media helps you an easier way to know the feedback or review about the Green products?					
Q10	After seeing the favorable advertisement about Green product, will you share or repost it on your Social Media account?					
Q11	Are you willing to pay a higher price for green products compared to non-green alternatives?					
Q12	Have you ever made a purchase of a green product directly through a social media platform (e.g., clicking on an ad and making a purchase)?					
Q13	Do you spend lot of time /efforts on Social Media platform to buy a Green Product?					
Q14	Do you concern about the Brand, Certification of Green Product while buying it on Social Media?					
Q15	Would you recommend green products to others based on your social media experiences?					