

Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Government and Private College Students

Dr. S.V. Murugesan^{1*}, M. Ananthi²

^{1*}Professor and Head, PG Dept. of Commerce (Corporate Secretaryship) Government Arts College for Women, Ramanathapuram (Deputed from Annamalai University)

²Ph.D. Research Scholar, Department of Commerce Annamalai University

Abstract

In the digital age, understanding the factors influencing brand preferences for technological devices like laptop computers and smartphones is crucial. This study investigates the determinants of brand preference among government and private college students through multiple regression analysis. Considering factors such as product attributes, promotional activities, pricing strategies, consumer engagement, and recommendations, this research aims to uncover the underlying factors driving brand preference. Drawing on a review of literature and empirical data, the study identifies significant predictors and explores their relative importance in shaping brand preference. Utilizing multiple regression analysis, the research reveals strong correlations between predictors and brand preference, with factors like promotional activities, product attributes, and recommendations emerging as influential. The findings underscore the significance of various factors in shaping brand preferences among college students and provide actionable insights for marketers and policymakers in the technology industry.

Keywords: Brand preference; College students; Technological devices; and Influencing factors.

Introduction

In today's digital age, where technological devices like laptop computers and smartphones have become indispensable, comprehending the factors guiding consumers' brand preferences is paramount. College students, notably those in government and private institutions, represent a significant market segment with distinct preferences and behaviors. This study endeavors to probe into the determinants of brand preference for laptop computers and smartphones among government and private college students through multiple regression analysis. The choice between these devices transcends mere utility, often reflecting individual inclinations shaped by intrinsic and extrinsic factors such as product attributes, promotional activities, pricing strategies, consumer engagement, and recommendations. Given the unique socio-economic backgrounds, educational experiences, and technological adeptness of college students, they provide a fertile ground for exploring these influencing factors. Understanding the subtleties of brand preference among this demographic carries implications for marketing strategies, product development, and brand positioning in the fiercely competitive technological market. By identifying key determinants, companies can tailor their marketing endeavors to resonate with the preferences and needs of college students, thereby bolstering brand loyalty and market share. Employing multiple regression analysis and scrutinizing various predictors, including recommendations, product attributes, pricing strategies, and consumer engagement, this study aims to unveil insights into their relative importance in shaping brand preference. Through rigorous statistical examination and interpretation, the study seeks to enrich the literature on consumer behavior and brand preference, offering actionable insights for marketers, policymakers, and technology industry stakeholders. Ultimately, by unraveling the factors underpinning brand preference among government and private college students, this research endeavors to guide strategic decision-making and foster a deeper comprehension of consumer preferences in the ever-evolving technological landscape.

Review of literature

The literature review encompasses a diverse array of studies investigating factors influencing brand preferences across various technological devices and consumer demographics. Riyath and Musthafa (2014)¹ delved into the realm of mobile phone brand preferences among Sri Lankan university students, shedding light on the pivotal role played by price, stylish appearance, quality aspects, promotion, features, third-party recommendations, brand image, celebrity endorsement, and post-purchase services. Mayamurugan (2014)² shifted focus to laptops, underscoring how brand names serve as symbolic representations of quality, utility, and technological prowess, with factors like price, quality, and portability significantly shaping brand preferences. Ali Kemal Çelik et al. (2015)³ explored the socio-economic dimensions of smartphone brand preferences among young consumers in Erzurum, Turkey, while Pandiyaraj and Magesan (2016)⁴ offered practical insights into consumer preferences for cell phones in Srivilliputtur Taluk, proposing

measures to enhance cell phone usage and cater to consumer needs. Sabnam Shrestha (2016)⁵ examined the influence of various factors on smartphone purchasing behavior among young consumers in Kathmandu, Nepal, highlighting the significance of brand name, quality, technology features, and social media. Nushrat Nahida Afroz (2017)⁶ focused on students' brand preferences for smartphones, particularly at Mawlana Bhashani Science and Technology University, emphasizing factors such as brand name, battery backup, durability, camera resolution, and price. Anas Abudaqa (2019)⁷, Hasan Al Mujaini, and Mohd Hilmi (2019)⁸ investigated factors guiding Malaysian students' buying intentions towards Samsung smartphones, revealing strong associations with reliability, price, product features, brand recognition, and purchase intention. Finally, Phuong Viet Le-Hoang (2020)⁹ explored the intricacies of online purchase intention, particularly on Lazada, identifying trust, business competency, reference group, usefulness and convenience, behavior control awareness, and perceived risk as critical influencers. Together, these studies offer a comprehensive understanding of the multifaceted factors shaping brand preferences and consumer behavior in the ever-evolving landscape of technological consumption.

Research Gap

The review of literature highlights various studies exploring factors influencing brand preferences for smartphones and laptops among different demographic groups in diverse geographical locations. However, there appears to be a gap in research specifically examining the factors influencing brand preference for laptops and smartphones among government and private college students. While existing studies offer insights into consumer behavior and preferences, there is a need for research focused specifically on this demographic group to understand how factors such as price, quality, features, and brand image influence their brand preferences in the context of laptop computers and smartphones. Additionally, considering the rapid advancements in technology and changing consumer preferences, there is an opportunity for further research to explore emerging trends and their impact on brand preferences among college students.

Objective

To analyze the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Government and Private College Students.

Multiple Regression Analysis

Multiple regression analysis is a pertinent choice for this research paper for several reasons. Firstly, it allows for the examination of the relationship between multiple predictors (such as recommendations, product attributes, pricing strategies, consumer engagement, etc.) and a single dependent variable (brand preference). Given the complexity of consumer behavior and the multitude of factors that can influence brand preference, multiple regression analysis provides a robust statistical framework to assess the relative importance of these predictors and their combined effect on brand preference. Secondly, multiple regression analysis enables the identification of significant predictors while controlling for the effects of other variables in the model. This helps in isolating the unique contribution of each predictor to brand preference, thereby providing insights into which factors are most influential. Additionally, multiple regression analysis allows for the quantification of these relationships, providing researchers and practitioners with valuable information about the magnitude and direction of the effects. Moreover, by utilizing multiple regression analysis, this research paper can explore interactions and nonlinear relationships between predictors and brand preference, offering a nuanced understanding of consumer behavior. Thus, multiple regression analysis serves as a powerful tool to uncover the underlying factors driving brand preference for laptop computers and smartphones among government and private college students, thereby contributing to a deeper understanding of consumer preferences in the technology market.

Table 1. Model Summary for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Government College Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
	Type of Institution = Government (Selected)			
1	.973 ^a	.947	.944	.28809

a. Predictors: (Constant), Recommendations, Product Attributes , Promotional Activities , Brand Switching Patterns , Loyalty Patterns, Pricing Strategies , Consumer Engagement , Decision-Making Process , Purchasing Behavior

Source: Computed Primary Data

The model summary reveals a robust relationship between various predictors and brand preference for technological devices among government college students. With an R value of .973, indicating a high correlation, and an R Square value of .947, suggesting that approximately 94.7% of the variance in brand preference can be explained by the

predictors, the model exhibits strong explanatory power. The adjusted R Square value of .944 further refines this, considering the model's complexity. The standard error of the estimate (.28809) provides insight into the average deviation of predicted brand preferences from actual preferences. While the model shows promise, it's essential to interpret the results cautiously, considering factors like sample size and variable measurement accuracy. Further validation and analysis are warranted to ensure the model's reliability and validity for practical application.

Table 2. Regression ANOVA for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Government College Students

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	203.854	9	22.650	272.911	.000 ^c
	Residual	11.370	137	.083		
	Total	215.224	146			
a. Dependent Variable: Brand Preference of Laptop Computers and Smart Phone						
b. Selecting only cases for which Type of Institution = Government						
c. Predictors: (Constant), Recommendations, Product Attributes , Promotional Activities , Brand Switching Patterns , Loyalty Patterns, Pricing Strategies , Consumer Engagement , Decision-Making Process , Purchasing Behavior						

Source: Computed Primary Data

The ANOVA table underscores the significance of the regression model in predicting brand preferences for laptop computers and smartphones among government college students. It reveals that the predictors collectively explain a substantial portion of the variance in brand preference, as indicated by the sum of squares for the regression model. The F value of 272.911 further confirms the model's overall significance, with a highly significant p-value (< .0001). These findings suggest that the predictors have a meaningful impact on brand preferences, enhancing the model's explanatory power. However, it's crucial to acknowledge potential limitations and assumptions inherent in the regression analysis when interpreting these results.

Table 3. Regression Coefficients for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Government College Students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.561	.106		-5.299	.000
	Promotional Activities	.115	.052	.114	2.199	.030
	Pricing Strategies	.137	.055	.137	2.498	.014
	Decision-Making Process	.202	.054	.202	3.731	.000
	Purchasing Behavior	-.019	.059	-.019	-.322	.748
	Loyalty Patterns	.091	.046	.089	1.984	.049
	Consumer Engagement	.126	.052	.129	2.394	.018
	Product Attributes	.322	.049	.308	6.587	.000
	Brand Switching Patterns	.098	.049	.087	1.985	.049
	Recommendations	.102	.027	.079	3.829	.000
a. Dependent Variable: Brand Preference of Laptop Computers and Smart Phone						
b. Selecting only cases for which Type of Institution = Government						

Source: Computed Primary Data

The coefficients table outlines the estimated impact of various predictors on brand preference among government college students. The constant term provides a baseline for brand preference, while coefficients for predictors like Promotional Activities and Pricing Strategies suggest positive impacts on brand preference, both statistically significant. The strong positive coefficient for the Decision-Making Process indicates its significant influence on brand preference. Conversely, Purchasing Behavior lacks significance, suggesting its minimal impact. Predictors such as Loyalty Patterns, Consumer Engagement, Product Attributes, Brand Switching Patterns, and Recommendations all positively impact brand preference, supported by statistical significance. This table offers crucial insights into predictor importance, but considering limitations and interpreting alongside other measures ensures the findings' validity and reliability.

Table 4. Model Summary for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Private College Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.966 ^a	.934	.931	.29215
a. Predictors: (Constant), Recommendations, Promotional Activities , Brand Switching Patterns , Product Attributes , Loyalty Patterns, Pricing Strategies , Consumer Engagement , Decision-Making Process , Purchasing Behavior				

Source: Computed Primary Data

The model summary highlights a robust relationship between predictors and brand preference among private college students. With a high R value (.966) and R Square (.934), indicating a strong correlation and substantial explanatory power, it suggests that 93.4% of brand preference variance is explained by predictors. The adjusted R Square (.931) accounts for model complexity, emphasizing a similarly strong fit. However, the standard error of the estimate (.29215) signals potential deviations in predicted brand preferences. While the summary underscores predictive strength, it's essential to address limitations like sample size and variable accuracy for comprehensive interpretation and generalizability.

Table 5. Regression ANOVA for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Private College Students

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	267.756	9	29.751	348.564	.000 ^c
	Residual	19.034	223	.085		
	Total	286.790	232			
a. Dependent Variable: Brand Preference of Laptop Computers and Smart Phone						
b. Selecting only cases for which Type of Institution = Private						
c. Predictors: (Constant), Recommendations, Promotional Activities , Brand Switching Patterns , Product Attributes , Loyalty Patterns, Pricing Strategies , Consumer Engagement , Decision-Making Process , Purchasing Behavior						

Source: Computed Primary Data

The ANOVA table underscores the significance of the regression model in predicting brand preferences among private college students. The regression sum of squares (267.756) indicates the explained variance in brand preference, with each predictor contributing an average of 29.751 units. The residual sum of squares (19.034) represents unexplained variance, while the total sum of squares (286.790) indicates the overall variance in brand preference. The high F value (348.564) and low p-value (< .0001) indicate the model's strong fit, suggesting that predictors collectively impact brand preferences significantly. However, it's crucial to acknowledge potential limitations and assumptions of the analysis for accurate interpretation.

Table 6. Regression Coefficients for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Private College Students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.489	.090		-5.426	.000
	Promotional Activities	.210	.042	.220	5.037	.000
	Pricing Strategies	.058	.040	.061	1.425	.155
	Decision-Making Process	.067	.040	.075	1.666	.097
	Purchasing Behavior	.167	.047	.170	3.519	.001
	Loyalty Patterns	.156	.037	.156	4.222	.000
	Consumer Engagement	.102	.040	.106	2.556	.011
	Product Attributes	.204	.038	.184	5.357	.000
	Brand Switching Patterns	.104	.038	.097	2.719	.007
Recommendations	.107	.020	.096	5.440	.000	
a. Dependent Variable: Brand Preference of Laptop Computers and Smart Phone						
b. Selecting only cases for which Type of Institution = Private						

Source: Computed Primary Data

The coefficients table provides insights into the estimated impact of various predictors on brand preference among private college students. The constant term (-.489) serves as a reference point for baseline brand preference. Promotional activities exhibit a significant positive influence on brand preference, supported by a coefficient of .210 (p < .0001). Conversely, pricing strategies do not significantly impact brand preference (p = .155), nor does the decision-making process (p = .097). However, purchasing behavior, loyalty patterns, consumer engagement, product attributes, brand switching patterns, and recommendations all show significant positive associations with brand preference (p < .05). These findings offer valuable insights into the relative importance of predictors, yet careful consideration of additional statistical measures and analysis limitations is essential for robust interpretations.

Table 7. Model Summary for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among the College Students

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.967 ^a	.935	.934	.29962

a. Predictors: (Constant), Recommendations, Brand Switching Patterns , Promotional Activities , Product Attributes , Loyalty Patterns, Pricing Strategies , Consumer Engagement , Decision-Making Process , Purchasing Behavior

Source: Computed Primary Data

The model summary provides a comprehensive overview of a regression analysis aimed at understanding the relationship between various predictors and brand preference for technological devices. With an R value of .967 and an R Square value of .935, indicating a high correlation and explaining approximately 93.5% of the variance in brand preference, respectively, the model demonstrates a robust relationship between predictors and the dependent variable. The adjusted R Square value of .934 accounts for model complexity, further affirming its goodness of fit. However, careful interpretation is crucial, considering potential limitations such as sample size and measurement accuracy, to ensure the reliability and generalizability of the findings. Additional validation may be necessary to bolster confidence in the model's outcomes.

Table 8. Regression ANOVA for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among the College Students

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	478.985	9	53.221	592.859	.000 ^b
	Residual	33.215	370	.090		
	Total	512.200	379			

a. Dependent Variable: Brand Preference of Laptop Computers and Smart Phone

b. Predictors: (Constant), Recommendations, Brand Switching Patterns , Promotional Activities , Product Attributes , Loyalty Patterns, Pricing Strategies , Consumer Engagement , Decision-Making Process , Purchasing Behavior

Source: Computed Primary Data

The ANOVA table offers crucial insights into the overall significance of a regression model predicting brand preferences for laptop computers and smartphones. With a sum of squares for the regression model at 478.985 and a highly significant F value of 592.859 ($p < .0001$), the model demonstrates a robust fit for the data, indicating that the predictors collectively play a meaningful role in explaining brand preferences. However, while the ANOVA results affirm the model's statistical significance and suitability for the data, it's imperative to remain mindful of potential limitations and assumptions inherent in regression analyses for a comprehensive interpretation of the findings.

Table 9. Regression Coefficients for the Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among the College Students

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-.584	.069		-8.460	.000
	Promotional Activities	.181	.033	.184	5.414	.000
	Pricing Strategies	.089	.033	.091	2.657	.008
	Decision-Making Process	.107	.033	.114	3.233	.001
	Purchasing Behavior	.102	.037	.102	2.727	.007
	Loyalty Patterns	.143	.029	.140	4.870	.000
	Consumer Engagement	.100	.032	.103	3.090	.002
	Product Attributes	.248	.030	.228	8.129	.000
	Brand Switching Patterns	.109	.031	.099	3.532	.000
	Recommendations	.118	.016	.100	7.471	.000

a. Dependent Variable: Brand Preference of Laptop Computers and Smart Phone

Source: Computed Primary Data

The coefficients table elucidates the estimated impact of various predictors on brand preference for laptop computers and smartphones. Notably, the constant term (-.584) sets the baseline for brand preference when all predictors are zero. Key predictors such as promotional activities, pricing strategies, decision-making processes, purchasing behavior, loyalty patterns, consumer engagement, product attributes, brand switching patterns, and recommendations all exhibit positive coefficients, indicating their significant influence on brand preference ($p < .05$). Moreover, standardized coefficients (Beta) provide insights into the relative importance of each predictor, with predictors like product attributes,

loyalty patterns, and promotional activities demonstrating relatively higher Beta values, suggesting their stronger impact on brand preference. While the coefficients table offers valuable insights, cautious interpretation alongside other statistical measures and consideration of potential analysis limitations are essential for ensuring robust and valid findings.

Discussions

The model summaries, ANOVA tables, and coefficients tables collectively provide a comprehensive understanding of the regression analyses conducted to explore the factors influencing brand preferences for technological devices among government and private college students. Starting with the model summaries, both models exhibit high R and R Square values, indicating strong correlations between the predictors and brand preference. For government college students, the R and R Square values are .973 and .947, respectively, while for private college students, they are .966 and .934, respectively. These values suggest that approximately 94-95% of the variance in brand preference can be explained by the predictors in each model. The adjusted R Square values further refine these measures, accounting for the number of predictors and potential overfitting. In both cases, the adjusted R Square values remain close to the R Square values, indicating robust model fits.

Moving to the ANOVA tables, the regression models show highly significant F values ($< .0001$), indicating that the predictors collectively have a significant impact on predicting brand preferences for both government and private college students. The regression sum of squares indicates the amount of variance in brand preference explained by the predictors, while the residual sum of squares represents unexplained variance.

The coefficients tables offer insights into the individual predictors' impacts on brand preference. For both government and private college students, most predictors show positive coefficients and are statistically significant ($p < .05$), suggesting they influence brand preference. Notably, factors like promotional activities, product attributes, loyalty patterns, and recommendations consistently emerge as influential predictors across both models. Additionally, the standardized coefficients (Beta) highlight the relative importance of each predictor. For instance, product attributes tend to have higher Beta values, indicating a stronger influence on brand preference compared to other predictors. Overall, these analyses provide robust evidence that various factors, including promotional activities, product attributes, and recommendations, significantly influence brand preferences for technological devices among college students. However, it's crucial to interpret these findings cautiously, considering potential limitations such as sample size and variable measurement accuracy, to ensure the validity and generalizability of the results. Further validation and refinement of the models may be necessary to enhance their reliability for practical applications.

Conclusion

The research paper titled "Influencing Factors of Brand Preference for Laptop Computers and Smartphones Among Government and Private College Students" culminates with a comprehensive understanding of the predictors impacting brand preference among these student groups. Analyzing model summaries, ANOVA tables, and coefficients tables reveals crucial insights into the relationships between predictors and brand preference. Both government and private college student models exhibit high R and R Square values, indicating strong correlations and substantial explanatory power. Adjusted R Square values refine these measures, considering model complexity. ANOVA results confirm the models' overall significance, with highly significant F values indicating predictors' collective impact on brand preferences. Coefficients tables further elucidate predictors' individual impacts, highlighting factors like promotional activities, product attributes, and recommendations as influential across both groups. Standardized coefficients underscore relative predictor importance, with factors like product attributes demonstrating stronger influences. These findings underscore the significance of various factors in shaping brand preferences for technological devices among college students.

Reference:

-
- 1 Riyath, M. I. M., & Musthafa, S. L. (2014) Factors Affecting Mobile Phone Brand Preference: Empirical Study on Sri Lankan University Students. Sri Lanka Institute of Advanced Technological Education, Sammanthurai, Sri Lanka.1-18
 - 2 Mayamurugan R. (2014) A Brand Preference of Laptop Computer in Kalayarkoil Town. Shanlax International Journal of Economics. 2(4), 52-60.
 - 3 Ali Kemal Çelik, et al (2015). A study on factors influencing young consumers' smartphone brand preference in Erzurum, Turkey. European journal of Business and Economics.10(2),24-31.
 - 4 Pandiyaraj and Magesan (2016). A Study on Consumer Brand Preference towards Cell Phones in Srivilliputtur Taluk. College Sadhan A - Journal for Bloomers of Research. 9(1)1527-1537

- 5 Sabnam Shrestha (2016). Influencing Factors on Consumer Buying Behaviour of Smart Phones - A research on the buying behaviour of young consumers in Kathmandu, Nepal, Bachelor's thesis of International Business. Turku University of Applied Science. P-p 47-49.
- 6 Nushrat Nahida Afroz (2017). Students' Brand Preferences towards Smartphone, IOSR Journal of Business and Management (IOSR-JBM).19 (2),37-44
- 7 Anas Abudaq et al (2019). The Influencing Factors Impacting the Buying Intention of Malaysian Students towards Samsung Smartphones. International Journal of Recent Technology and Engineering (IJRTE). 8(4), 2486-2491.
- 8 Anas Abudaqa, Hasan Al Mujaini, and Mohd Hilmi (2019). The Influencing Factors that Impact the Buying Intention of Malaysian Students towards Samsung Smartphones. International Journal of Recent Technology and Engineering (IJRTE) 8(4), Pp. 2486 – 2491.
- 9 Phuong Viet Le-Hoang (2020). Factors Affecting Online Purchase Intention: The Case of E-Commerce on Lazada. Independent Journal of Management & Production (IJM & P). 11(3),1018-1033.