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A Study on Factors Influencing the Customer Preference for Air Conditioner

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A B S T R A C T

This studies paper investigates the complicated factors that affect human being's deciding on air conditioners for their houses, highlighting the multifaceted interaction of factors inclusive of product features, technology, environment, and logo recognition. The have a look at ambitions to improve our information of client behaviour inside the selection of air conditioner brands. Using a comprehensive survey, the studies examines how elements like marketing, word-of-mouth, charge discounts, strength performance, and layout aesthetics have an impact on purchaser decisions. The know-how obtained will help air conditioner manufacturers and marketers in tailoring their techniques to higher match evolving consumer choices, contributing to a extra responsive and powerful marketplace approach.

Keywords: Air Conditioner, marketing, word-of-mouth, charge discounts, strength performance, and layout aesthetics

INTRODUCTION

In latest society, air conditioners (ACs) have become an crucial a part of our everyday lives, imparting remedy from extreme temperatures and enhancing indoor consolation. The widespread use of ACs displays their essential position in modern households worldwide. As purchaser expectations continually evolve, knowledge the difficult factors that shape individuals' decisions while deciding on AC brands for their homes has grown to be increasingly essential. This research paper desires to delve deeply into the complex net of influences that manual people as they consider integrating an air conditioner into their living areas. It recognizes that consumer possibilities emerge from a multifaceted interaction of severa determinants. These embody a wide range of factors, together with product traits, technological advancements, environmental attention, and logo recognition. By accomplishing a scientific analysis of these factors, the study seeks to foster a deeper knowledge of the dynamic forces underlying the choice of specific air conditioner brands for residential settings. This comprehensive take a look at employs a meticulous questionnaire that explores numerous aspects of the selection-making manner. It examines the impact of factors inclusive of advertising, the strength of word-of-mouth guidelines, the appeal of reductions, the importance of electricity efficiency, the enchantment of superior capabilities, logo loyalty, the have an effect on of on-line opinions and logo recognition, economic considerations, environmental recognition, aesthetic choices, and the provision of after-income services. The ultimate goal of those insights is to shed light at the difficult interaction of impacts that shape clients' selections concerning residential aircon. By delving into this complicated amalgamation of factors, the research goals to offer valuable insights to each air conditioner manufacturers and entrepreneurs. These insights can tell techniques that resonate with ever-evolving customer choices, permitting a greater attuned and effective approach to the dynamic air conditioning marketplace.

REVIEW OF LITERATURE:

In many different product groups, shopping decisions are heavily influenced by what consumers want. When people think about buying an air conditioner, many things come into play and affect their decisions. This literature review is a summary of relevant research that shows the most important factors that affect how customers choose air units. Kotler et al. (2009) and Smith & Cooper-Martin (1997) found that brand opinion and recognition have a big effect on customer potential. Established names are often associated with quality and dependability, which may affect how customers choose. In the case of air conditioners, the success of a brand's emblem also can lead clients to select well-known manufacturers due to the fact they seem to paintings nicely and may be depended on. Kim and Chung (2011) say that electricity performance is a key issue while choosing an air conditioner. Because people care about the environment, they look for features that save energy and refrigerants that are good for the environment. Bamberg and Moser (2007) talked about how customers' environmental values affect their choices. They suggested that people who care a lot about the environment might choose air conditioner brands that match their green values. (Chandon et al., 2000; Hsee & Zhang, 2010) say that price awareness and sales affect what people buy. Price deals and discounts can change how much something costs and how choices are chosen. Consumers may also be more likely to buy an air conditioner from a company that offers low prices or appealing sales. Dholakia et al. (2010) say that technological traits and new ideas play a big role in shaping tastes. Customers who are interested in technology are drawn to features like remote control, smart heaters, and ways to save energy. Rogers's Diffusion of Innovations theory from 1962 also shows that customers who are more open to new ideas may also be drawn to air conditioner companies that have the

most up-to-date technology. Aesthetics and design affect customer choices by making the user experience better (Norman, 2002). Air conditioners that look nice and have useful features May also appeal to people who care about both how they work and how they look. Chevalier and Mayzlin (2006) and Bone and Jantrania (2011) found that online reviews and word of mouth have a big effect on how customers see a business. Positive online reviews and good advice from friends can sway people to buy a certain brand of air conditioner. (Schiffman & Kanuk, 2010) Socioeconomic and social elements additionally play a function in a customer's picks. The decisions people make approximately what to shop for rely upon their earnings, schooling, life-style, and different factors. When it comes to air units, a purchaser's social class may also affect what they can do. Through their cross-cultural study, Shavitt and Kropp (2016) and Lee et al. (2000) have shown how cultural factors affect client options. These studies show that cultural values and norms affect how people see comfort and technology features. This, in turn, should give air conditioner makers new approaches to enhance their merchandise. Emotional and affective reactions are regularly used to influence the picks of purchasers. Desmet and Hekkert (2007) looked into the role of feelings in product design and found that emotional reactions have a big effect on what customers choose. In the case of air conditioners, customers may be influenced by how they feel about features like easy-to-use settings and soothing airflow. It was shown that consumer reviews and social proof affect what people buy. A study done by Zhu and Zhang (2010) looked at how online customer reviews affect how people act. This means that good reviews and social proof from other customers could make people choose a certain brand of air conditioner. Consumer behaviour and how people make decisions have been studied a lot. Prospect Theory was made by Kahneman and Tversky in 1979. It shows how buyers weigh gains and losses when making decisions. This idea could also be used to help people choose an air conditioner. They could weigh the benefits (like saving money on energy) against the risks (like the price at first). Customers choose places to go based on their lifestyles and how they want to show themselves. Belk (1988) and Solomon (1983) looked at how people use products to show who they are and what they value. When it comes to air conditioners, customers may also choose names that match their living choices and sense of self. The rise of e-commerce has changed the way people shop. Liang and Huang's (1998) research looked into what makes people decide to buy something online. When choosing a logo for air conditioners, the online buying habits of customers and the options for e-commerce sites can also be important. Peer and social influences affect the choices a customer makes. Bearden and Etzel (1982) talked about how social factors like reference groups and social norms affect choices. When picking an air conditioner name, people may get ideas from their friends, family, or social media connections.

RESEARCH GAP:

This studies sheds light on the complex factors that effect homeowners' decisions on which air conditioner manufacturers to buy. However, similarly studies is needed to top off a number of the gaps in the present day records.

While cultural factors are mentioned briefly in the literature review, the impact of cultural and regional differences on air conditioner brand preferences is not thoroughly analyzed. It is important for future research to examine how demographics, climate, and accessibility to competing products and services affect customer preferences in certain markets.

The extended time frame Loyalty to a Brand: While the study acknowledges the importance of brand loyalty and reputation, it does not conduct a full examination of the long-term effects of brand loyalty. We need further research on the elements (including product quality, customer support, and market shifts) that influence consumers' brand loyalty over time and across different air conditioner manufacturers.

Although the paragraph does recognize the necessity of electricity efficiency and environmental values, it does not properly investigate the extent to which customers prefer eco-friendly air conditioning systems. Environmentally friendly features, such as refrigerants with lower global warming potential, may influence customer choice, but further research is needed to determine the extent of this effect.

Psychological & emotional factors play a crucial role in product design. While emotions are included in the literature review as a general topic, their impact on customers' brand preferences for air conditioners is not thoroughly explored. The emotional responses of customers to air conditioners' individual features, aesthetic appeal, and user interactions warrant more study.

While this report does touch on the topic of how internet reviews and word of mouth affect customer purchases, it does not go into detail on how online shopping activity impacts these decisions. The most influential digital platforms or sources for consumers learning about and purchasing air conditioners online should be the focus of future research.

This research did not look at whether or not Baby Boomers, Millennial, and Z-Generation consumers have differing brand preferences for air conditioners. There has to be more studies done on how distinctive generations' perspectives, values, and cultural norms have an effect on consumer selection-making with regards to deciding on a positive emblem.

The impact of a enterprise's sustainability efforts and company social responsibility (CSR) rules on customers' selections is outdoor the scope of the prevailing research. One line of inquiry is whether or if consumers have a stronger preference for air conditioning firms that align with their values of corporate responsibility and environmental sustainability.

While money is diagnosed as a demographic component, the look at does now not move further into how subjects like recession, inflation, and earnings disparity have an effect on buying choices. In the destiny, researchers have to look at how financial elements have an effect on customers' willingness to pay greater or much less for sure capabilities.

RESEARCH OBJECTIVE:

The purpose of this research is to higher apprehend the complex factors that lead customers to choose precise air conditioner manufacturers. Researching things like product features, production, environmental concerns, and brand identification, it hopes to improve our understanding of customer behaviour in this setting. The study intends to evaluate the impact of a wide variety of variables, such as advertising strategies, word-of-mouth recommendations, price cuts, energy performance, and design aesthetics. The report's ultimate goal is to provide helpful information for AC producers and sellers by illuminating how they may better adapt their operations to meet the needs of their customers. Researchers hope that by testing hypotheses, learning about customers' intentions, factoring in demographic and socioeconomic factors, assessing the veracity of records, and calculating the goodness of fit for regression analysis, they will have a more complete understanding of how consumers make decisions related to air conditioning.

HYPOTHESIS OF THE RESEARCH:

HO is Null Hypothesis = There is no significant relationship between buying preference and independent variables.

H1 is Alternate Hypothesis = There is significant relationship between buying preference and independent variables.

METHODOLOGY:

Air conditioners have become a vital part of contemporary living, presenting comfort and remedy from extreme temperatures. Customer preference on buying air conditioner.

The major aim of the paper is

To understand the underlying elements influencing client choices whilst buying air conditioners.

To check the extent of significance of those determinants within the choice-making process for purchases.

Finally the hypothesis

HO is Null Hypothesis = There is no significant relationship between buying preference and independent variables.

H1 is Alternate Hypothesis = There is significant relationship between buying preference and independent variables.

Subsequently, a questionnaire is built to evaluate the potential for drawing conclusive insights from respondents and determining the opportunity of rejecting the null hypothesis. The questionnaire is designed as follows:

Questionnaire

1. I find air conditioner advertisements informative and helpful in making purchase decisions.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

2. Word of mouth plays a major role in shaping my perceptions of air conditioner brands.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

3. Discounts play a major role in influencing my decision to purchase a specific air conditioner brand

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

4. I prioritize energy efficiency when choosing an air conditioner.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

5. Remote control and smart features in an air conditioner are appealing to me.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

6. I prefer well-known air conditioner brands over lesser-known ones.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

7. Online reviews and brand reputation impact my choice when buying an air conditioner

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

8. The overall cost, including initial price and operating expenses, influences my selection of an air conditioner.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

9. Environmental considerations, such as eco-friendly refrigerants, play a role in my air conditioner selection.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

10. The design and aesthetics of an air conditioner influence my choice.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

11. Availability of maintenance and repair services in my area impacts my decision.

- Strongly disagree

- Disagree

- Neutral

- Agree

- Strongly agree

The given questionnaire turned into dispensed to individuals spanning diverse demographic classes, encompassing distinctions of age, schooling, and gender. In overall, a hundred and fifty responses were gathered, reflecting a various collection of backgrounds. This complete method facilitated the seize of a extensive spectrum of perspectives regarding the acquisition of Air Conditioner.

From the above data there are 12 variables in that one is dependent variable and the remaining 11 is independent variable.

ANALYSIS:

The survey began with an open-ended inquiry aimed at comprehending respondents' destiny intentions regarding air conditioner usage. The cause in the back of this query become to advantage insights into people' upcoming plans in this regard. It's noteworthy that despite the fact that respondents responded negatively ("No"), they had been still encouraged to provide comments on their studies with applicable services. Such feedback served to align with the studies goal, making an allowance for a more comprehensive evaluation.

Correlation Matrix

		Advertisements	Word of mouth	Discounts	Energy efficiency	Smart features	Well-known	Online reviews	Operating expenses	Environmental	Design and aesthetics	Availability of maintenance
Correlation	Advertisements	1.000	.560	.445	.539	.584	.489	.596	.498	.447	.392	.255
	Word of mouth	.560	1.000	.393	.485	.334	.388	.441	.475	.393	.346	.369
	Discounts	.445	.393	1.000	.456	.527	.456	.303	.361	.623	.356	.512
	Energy efficiency	.539	.485	.456	1.000	.591	.519	.390	.476	.295	.403	.244
	Smart features	.584	.334	.527	.591	1.000	.423	.500	.434	.346	.354	.200
	Well-known	.489	.388	.456	.519	.423	1.000	.236	.374	.414	.219	.411
	Online reviews	.596	.441	.303	.390	.500	.236	1.000	.407	.231	.298	.166
	Operating expenses	.498	.475	.361	.476	.434	.374	.407	1.000	.324	.355	.249
	Environmental	.447	.393	.623	.295	.346	.414	.231	.324	1.000	.291	.420
	Design and aesthetics	.392	.346	.356	.403	.354	.219	.298	.355	.291	1.000	.298
	Availability of maintenance	.255	.369	.512	.244	.200	.411	.166	.249	.420	.298	1.000

Factor Analysis

Descriptive Statistics

	Mean	Std. Deviation	Analysis N
Advertisements	4.17	.628	150
Word of mouth	4.11	.636	150
Discounts	4.31	.725	150
Energy efficiency	4.22	.684	150
Smart features	4.16	.676	150
Well-known	4.42	.797	150
Online reviews	4.09	.732	150
Operating expenses	4.22	.633	150
Environmental	4.32	.669	150
Design and aesthetics	4.27	.662	150
Availability of maintenance	4.41	.697	150

This desk displays the correlations the various impartial variables, which is crucial for figuring out ability groupings.

The null hypothesis posits that:

The correlation matrix is identical to an identity matrix.

The opportunity hypothesis states:

The correlation matrix isn't equal to an identification matrix.

It is evident that there are no ideal 0 correlations inside the matrix. Consequently, we can reject the null speculation, demonstrating that the matrix deviates from an identification matrix. This indicates that the dataset is treasured and informative.

KMO and Bartlett's Test

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.871
Bartlett's Test of Sphericity	Approx. Chi-Square	670.878
	df	55
	Sig.	<.001

The test were carried out to decide if it is reasonable to organization variables into elements. A KMO (Kaiser-Meyer-Olkin) fee of zero. Nine or higher is taken into consideration remarkable, but anything above zero.5 is acceptable. In this example, the KMO cost is 0.583, which falls inside the suited range. Additionally, the significance level is observed to be less than zero.05, indicating that the model is statistically vast.

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	5.033	45.751	45.751	5.033	45.751	45.751	3.644	33.128	33.128
2	1.240	11.275	57.027	1.240	11.275	57.027	2.629	23.899	57.027
3	.811	7.374	64.401						
4	.743	6.751	71.152						
5	.722	6.565	77.717						
6	.583	5.297	83.014						
7	.525	4.773	87.787						
8	.465	4.225	92.012						
9	.320	2.908	94.920						
10	.288	2.618	97.538						
11	.271	2.462	100.000						

Extraction Method: Principal Component Analysis.

Communalities

	Initial	Extraction
Advertisements	1.000	.701
Word of mouth	1.000	.496
Discounts	1.000	.691
Energy efficiency	1.000	.592
Smart features	1.000	.595
Well-known	1.000	.492
Online reviews	1.000	.606
Operating expenses	1.000	.497
Environmental	1.000	.622
Design and aesthetics	1.000	.323
Availability of maintenance	1.000	.658

Extraction Method: Principal Component Analysis.

The above table represents that the accuracy of the variables. Which the 11 variable s reduced to 2. Which has 57.027. It is good to have only two variable. It says that it is fair to lose the other variables.

Component Matrix[a]

	Component	
	1	2
Advertisements	.797	-.255
Energy efficiency	.739	-.213
Discounts	.733	.392
Smart features	.728	-.255
Word of mouth	.702	-.059
Operating expenses	.671	-.217
Well-known	.668	.216
Environmental	.639	.462
Online reviews	.619	-.472
Design and aesthetics	.567	-.046
Availability of maintenance	.532	.612

Extraction Method: Principal Component Analysis.

a. 2 components extracted.

For the data set we can say that the variables have to be grouped into either of the two factors. For advertisement the factor lies in 1. For the discount it lies in 2,respectively.

Component Transformation Matrix

Component	1	2
1	.796	.605
2	-.605	.796

Extraction Method: Principal
Component Analysis.
Rotation Method: Varimax with
Kaiser Normalization.

Regression

R squared represents variance of dependent variable explained by independent variables. This model depicts 49.3% of variability in dependent variable explained by independent variable.

Adjusted R square demonstrates goodness of fit of the model which is represented by a value of 0.486 which is moderately fit.

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.005	2	18.002	71.353	<.001^b
	Residual	37.088	147	.252		
	Total	73.093	149			

a. Dependent Variable: Buyingprefer

b. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

Anova table tests whether model is a good fit for the data.

Mean square = sum of squares/ degrees of freedom

F-ratio - Mean Square of model: Mean square of error. Tests whether model is statistically significant or not.

P value is less than 0.05 hence null hypothesis is rejected and alternative hypothesis is accepted.

Null Hypothesis HO: There is no significant relationship between buying preference and independent variables

Alternative Hypothesis H1: There is significant relationship between buying preference and independent variables

Model Summary^b

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Durbin-Watson
1	.702^a	.493	.486	.502	1.481

a. Predictors: (Constant), REGR factor score 2 for analysis 1, REGR factor score 1 for analysis 1

b. Dependent Variable: Buyingprefer

RESULTS:

While checking the variables through factor analysis. We get to know that

	Component	
	1	2
Advertisements	.789	.279
Online reviews	.778	-.001
Smart features	.734	.237
Energy efficiency	.718	.278
Operating expenses	.665	.233
Word of mouth	.594	.378
Design and aesthetics	.479	.306

In above seven variables have lies between the Factor 1.

Availability of maintenance	.053	.809
Discounts	.347	.755
Environmental	.229	.755
Well-known	.401	.576

In the above four variables lies between the Factor 2.

In regression analysis R square .0493. Which is good fit.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Tolerance	VIF
1	(Constant)	4.707	.041		114.762	<.001		
	REGR factor score 1 for analysis 1	.353	.041	.504	8.583	<.001	1.000	1.000
	REGR factor score 2 for analysis 1	.342	.041	.488	8.309	<.001	1.000	1.000

a. Dependent Variable: Buyingprefer

Form the above table we get the equation that

$$Y = 4.707 + .353\ (\text{REGR factor score 1 for analysis 1}) + .342\ (\text{REGR factor score 2 for analysis 1})$$

CONCLUSION:

Air conditioners are a popular purchase for many consumers. About a hundred and fifty respondents stuffed out a questionnaire, and the use of that records, we ran a component evaluation that decreased the original set of 11 elements to just two. For the dataset for which the p fee is less than 0.05, we use the result to do a regression analysis. In different words, the opportunity hypothesis that there may be a correlation between the respondents' shopping habits and the independent variables turned into popular, whereas the null speculation that there is no such correlation turned into rejected. The modern purchaser's decision to buy an air conditioner is affected in part by means of a range of of factors, including classified ads, word of mouth, and so forth. Customers do have some say in the AC they purchase, as evidenced by the data set.

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