Understanding Air Conditioner Consumers: A Study on Purchase Intention in Hyderabad City

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Abstract

This study examines the impact of Price, Quality, Brand Image, and Advertisement Effectiveness on Purchase Intention in Hyderabad's air conditioner market. Using a quantitative approach, data was collected from 318 respondents and analyzed through SPSS and Smart PLS 4. The results indicate that Advertisement Effectiveness has the strongest influence on purchase intention, followed by Quality and Price, while Brand Image has the least impact. The R^2 value (0.243) suggests a moderate explanatory power of these variables. These findings emphasize the importance of strategic advertising, product quality, and competitive pricing in shaping consumer behavior.

Keywords :- Purchase Intention, Price, Quality, Brand Image, Advertisement Effectiveness,Air Conditioner Market, Hyderabad, SPSS, Smart PLS 4, Quantitative Research.

Introduction

The AC industry has grown exponentially all over the world, and this is due to technology advancement, changes in lifestyles of people, and an increase in awareness about energy efficiency. India is one country where this growth is clearly visible in cities like Hyderabad, where ACs have changed from a luxury item to a necessity because of climatic conditions in that region. Hyderabad is subjected to extreme summers where, in many instances, temperature shoots up to more than 40°C. Along with monsoon season, it has tremendous humidity levels. Thus the need for reliable and efficient cooling solutions has become pretty high in residential, commercial, and even industrial sectors.

This research explores the factors that affect consumer purchase intentions in Hyderabad's competitive AC market. The city has diverse consumer groups with different needs, preferences, and financial capabilities, making it an ideal location for understanding the dynamics of AC purchasing behavior. The research focuses on four primary factors: price, quality, brand image, and advertisement effectiveness, to determine their impact on consumer decisions.

Background of the Study

Consumer behavior in the AC market is shaped by economic, psychological, and sociological factors. **Price** impacts affordability and perceived value (Erickson & Johansson, 1985). **Quality** assures durability (Aaker, 1991; Zeithaml, 1988). **Brand image** fosters trust and loyalty (Holbrook et al., 1982). **Advertisement** influences perception and awareness (Bhawaniprasad & Kumari, 1987).

With Hyderabad's growing middle-class population and intense competition among domestic and international AC brands, this study aims to provide empirical insights into consumer purchasing behavior in the city's evolving market.

Research Objectives

1. To analyse the impact of price, quality, brand image, and advertisement effectiveness on AC purchase intentions among Hyderabad consumers.

Review of Literature

Dependent Variables

1. Price

Price is a key factor in consumer purchase decisions, influencing affordability and perceived value. Competitive pricing strategies, such as discounts and cost-effectiveness, play a crucial role in shaping purchase intentions.

2. Quality

Product quality impacts consumer trust and satisfaction. Factors such as durability, reliability, and performance significantly influence purchasing decisions. A strong brand reputation further reinforces quality perception.

3. Brand Image

Brand image reflects consumer perceptions, associations, and trust in a brand. A strong brand identity fosters emotional connections, differentiates a product from competitors, and enhances purchase intention.

4. Advertisement Effectiveness

Advertising influences consumer attitudes and behavior by creating awareness and shaping perceptions. Emotionally appealing and informative campaigns help establish brand impressions and drive purchasing decisions.

Independent Variable

1. Purchase Intention

Purchase intention refers to a consumer's willingness to buy a product or service. It is influenced by factors such as price, quality, brand image, and advertising, which shape consumer trust and align with past experiences.

"Impact of Brand Equity on Customer Satisfaction and Purchase Intention of Air Conditioners in Chennai" by S. Lakshmi. Dr. V. Kavida

Examines how brand awareness, association, perceived quality, loyalty, and trust influence customer satisfaction and purchase intent. The study finds that awareness and quality strongly impact purchase

decisions, while loyalty and trust enhance repurchase behavior, providing valuable insights for marketers in Chennai.

"The Effect of Store Name, Brand Name and Price Discounts on Consumers' Evaluations and Purchase Initentions" by Dhruv Grewal. R. Krishnan. Julie Baker. Norm Borin

Explores how store and brand names, along with price discounts, shape consumer perceptions. The study highlights that strong brand quality and store image significantly drive purchase intent, with perceived value and internal reference pricing playing crucial roles in consumer decision-making.

"Examining Factors Affecting Consumers' Attitude and Purchase Intention with Special Reference to Electronic Durable Goods" by Rakesh Kumar and S. K. Kaushal

Identifies price, quality, brand, and advertising as key influencers of purchase behavior. It also notes that perceived risk impacts intent, while rural consumer perspectives remain underexplored, suggesting a need for broader research in this area.

"The Impact of Advertising on Consumer Purchase Decision with Reference to Consumer Durable Goods in Oman" by Amandeep, Dr. Seema Varshney, and Syed Aulia.

Analyzes the role of advertising in purchasing durable goods. The study finds that emotionally appealing and informative ads build brand trust and significantly influence buying decisions, emphasizing the need for effective ad strategies.

"Factors Associated with Attitude Towards Purchasing Intention on Inverter Air Conditioners Among Thai Consumers" by Ms. Reika Yasunaga

Examines factors influencing consumer decisions on inverter ACs, including price, cooling capacity, brand, quality, and energy efficiency. The study highlights the importance of consumer awareness, energy labelling, and perceived payback period in shaping purchase intent, recommending enhanced education on energy efficiency.

Research Methodology

This study examines the impact of Price, Quality, Brand Image, and Advertisement Effectiveness on Purchase Intention in the air conditioner market in Hyderabad. A quantitative research approach was adopted using a structured survey to collect data from 318 respondents through both online and offline methods. The sample includes consumers from different age groups, education levels, and income brackets to ensure diverse representation.

Data Collection: Primary data was gathered using a structured questionnaire with close-ended questions based on a 5-point Likert scale (1 = Strongly Disagree, 5 = Strongly Agree). The survey focused on four independent variables—Price, Quality, Brand Image, and Advertisement Effectiveness—and their effect on Purchase Intention as the dependent variable.

Data Analysis: The collected data was analyzed using SPSS software and Smart PLS 4 for comprehensive statistical evaluation. These tools helped assess the relationships between the independent variables and Purchase Intention, ensuring reliable insights into consumer preferences.

Descriptive Statistics: SPSS was used to summarize the demographic characteristics of respondents, including age, gender, and income levels. Measures such as mean, standard deviation, and frequency distribution were applied to identify trends in consumer behavior.

Reliability Testing: Cronbach's Alpha was used to assess the reliability of the survey instrument. A value above 0.7 indicated acceptable internal consistency, ensuring that the items measuring each variable produced consistent results.

Correlation Analysis: Pearson's correlation analysis in SPSS examined the strength and direction of relationships between Price, Quality, Brand Image, Advertisement Effectiveness, and Purchase Intention, identifying the key influencing factors.

Regression Analysis: A multiple regression analysis in SPSS measured the impact of each independent variable on Purchase Intention, determining the most significant predictors.

Structural Equation Modeling (SEM) in Smart PLS 4:
To validate the model, Smart PLS 4 was used for SEM analysis, which included:

- **Path analysis** to examine the effect of each independent variable on **Purchase Intention**.

- **Factor loadings** to assess the strength of survey items in measuring the underlying constructs.

- **Model fit evaluation** to confirm the reliability and validity of the research framework.

By integrating SPSS and Smart PLS 4, this study ensures a robust statistical analysis, providing valuable insights into consumer purchasing behavior in Hyderabad's air conditioner market.

Sampling Technique: A non-probability convenience sampling method was used, targeting Hyderabad consumers with different demographic backgrounds to ensure a comprehensive understanding of market trends.

Hypothesis Development

This study tests the influence of Price, Quality, Brand Image, and Advertisement Effectiveness on Purchase Intention of air conditioners in Hyderabad through the following hypotheses:

- H1: Price Significantly Influences Purchase Intention.
- H2: Quality Significantly Influences Purchase Intention.
- H3: Brand Image Significantly Impacts Purchase Intention.
- H4: Advertisement Effectiveness Influences Purchase Intention.

Conceptual Framework
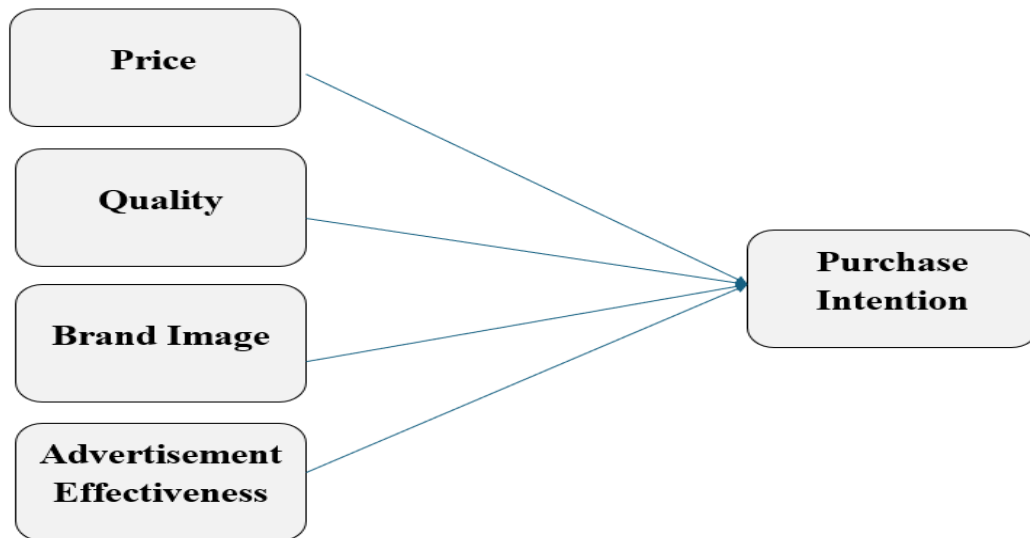
Data Analysis

Demographics

Demographic Variable	Category	Frequency	Percentage (%)
Gender	Male	159	50
	Female	159	50
Age Group	18-24 years	103	32.4
	25-34 years	139	43.7
	35-44 years	46	14.5
	45-54 years	23	7.2
	55 and above	7	2.2
Marital Status	Married	134	42.1
	Unmarried	184	57.9
Education Level	Undergraduate	76	23.9
	Graduate	144	45.3
	Postgraduate	94	29.6
	Ph.D.	4	1.3
Monthly Family Income (INR)	Less than 25,000	76	23.9
	25,001 - 50,000	108	34
	50,001 - 75,000	95	29.9
	75,001 - 100,000	26	8.2
	100,001 and above	13	4.1

The study includes 318 respondents with an equal gender distribution (50% male, 50% female). The largest age group is 25-34 years (43.7%), followed by 18-24 years (32.4%), indicating a younger consumer base. 57.9% are unmarried, aligning with the age distribution.

Education levels are high, with 45.3% graduates and 29.6% postgraduates, suggesting informed purchasing decisions. The majority belong to middle-income households, with 34.0% earning INR 25,001-50,000 and 29.9% in the INR 50,001-75,000 range.

Preferred AC Brand

Preferred AC Brand	Frequency	Percentage (%)
Samsung	70	22
LG	47	14.8
Voltas	26	8.2
Hitachi	19	6
Daikin	18	5.7
Lloyd	18	5.7
Godrej	16	5
Blue Star	16	5

Samsung (22.0%) and LG (14.8%) are the most preferred AC brands, followed by Voltas, Hitachi, Daikin, Lloyd, Godrej, and Blue Star, reflecting strong brand trust in a competitive market. Overall, the study represents young, educated, and middle-income consumers prioritizing affordability and brand reliability.

1-Measurement Model

The measurement model is important in the reliability and validity testing of constructs and items applied in the research. The model provides a guarantee of the scales of measurements being reflective of the concepts for which they intend to stand. There are several key tests that test the quality of the model:

- **Individual Item Reliability**
- **Average Variance Extracted (AVE)**
- **Composite Reliability**

These tests collectively ensure the measurement model is reliable as well as valid to establish an accurate analysis of relationship between constructs in the research.

A)Individual Item Reliability (Outer Loadings)

The outer loadings in the model indicate the reliability of each observed variable in measuring its respective construct. Most loadings exceed the 0.7 threshold, confirming strong reliability.
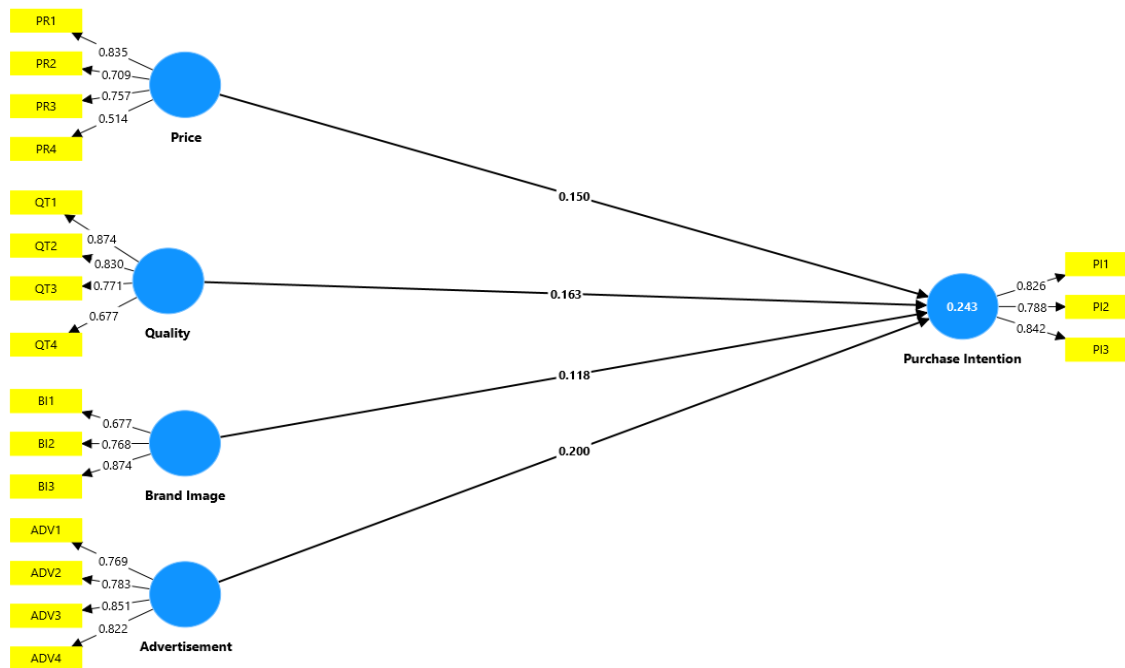
- Price: PR1 (0.835), PR2 (0.709), PR3 (0.757), and PR4 (0.514) contribute to the construct measurement.

- Quality: All indicators (QT1–QT4) show good reliability (above 0.67).

- Brand Image & Advertisement Effectiveness: All indicators exceed 0.67, confirming strong reliability.

- Purchase Intention: PI1 (0.826), PI2 (0.788), and PI3 (0.842) indicate strong measurement validity.

Overall, the model demonstrates reliable measurement across constructs

B) Average Variance Extracted (AVE)

AVE measures construct validity by assessing how much variance a construct explains compared to measurement error. It is calculated from the average of squared loadings of indicators. A threshold of 0.5 ensures that the construct explains at least 50% of the variance, indicating strong convergent validity when met.

- All constructs have AVE values above 0.5, confirming good convergent validity and indicating that the indicators effectively explain the variance of their respective constructs.
- Purchase Intention has the highest AVE (0.670), demonstrating strong variance explanation by its indicators.
- Price has the lowest AVE (0.509), but it still meets the acceptable threshold, suggesting the need for potential refinement in measurement indicators.

Overall, the constructs demonstrate sufficient validity, ensuring reliable measurement and meaningful representation of their latent variables.

Average variance extracted (AVE)
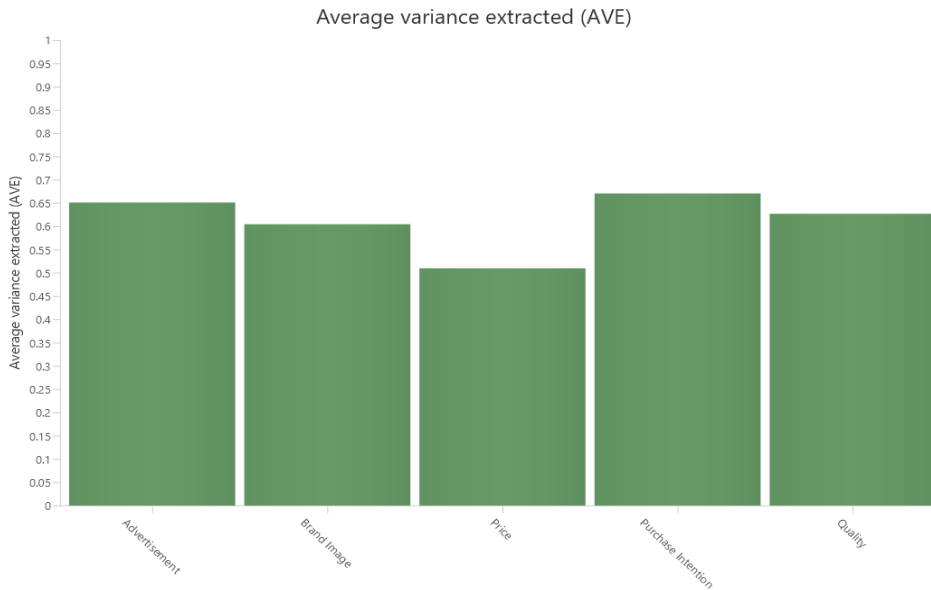
C) Composite Reliability

Composite reliability assesses internal consistency, ensuring that items within a construct measure the same concept. A CR value above 0.7 indicates strong reliability, supporting research validity.

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Advertisement Effectiveness	0.822	0.837	0.882	0.651
Quality	0.800	0.833	0.869	0.627
Purchase Intention	0.760	0.780	0.859	0.670
Price	0.700	0.768	0.802	0.509
Brand Image	0.676	0.729	0.819	0.604

Cronbach's Alpha (≥ 0.7) – Most constructs demonstrate good internal consistency, with values ranging from 0.700 (Price) to 0.822 (Advertisement). Brand Image (0.676) is slightly below the threshold but remains acceptable.

Composite Reliability (rho_c ≥ 0.8) – All constructs exhibit strong reliability, ranging from 0.802 (Price) to 0.882 (Advertisement), confirming consistent measurement across indicators.

Average Variance Extracted (AVE ≥ 0.5) – All constructs exceed the 0.5 threshold, ensuring good convergent validity. Advertisement (0.651) has the

2-Discriminant Validity

Discriminant validity tests are important for ensuring that constructs in a research model measure different concepts. A construct should be more strongly correlated with its items than with the items of other constructs. This shows that each construct is unique. Two widely used methods to assess discriminant validity are:

- **Fornell-Larcker Criterion**
- **HTMT Ratio**

Together, these help verify that the constructs in a model are measuring unique and non-overlapping concepts that ensure valid and meaningful findings from research.

A)Fornell – Larcker Criterion

The Fornell-Larcker Criterion assesses discriminant validity to ensure constructs are distinct from one another. It requires that the square root of a construct's AVE is higher than its correlations with other constructs, confirming that each construct shares more variance with its own indicators than with others. This method validates the uniqueness of constructs in the model.

	Advertisement Effectiveness	Brand Image	Price	Purchase Intention	Quality
Advertisement Effectiveness	0.807				
Brand Image	0.344	0.777			
Price	0.296	0.642	0.714		
Purchase Intention	0.335	0.397	0.407	0.819	
Quality	0.305	0.696	0.748	0.419	0.792

- Diagonal values represent the square root of AVE, confirming that all constructs have strong internal validity.
- Each construct's diagonal value is higher than its correlations with other constructs, ensuring good discriminant validity.
- Highest correlation: Price and Quality (0.748), indicating a strong relationship.
- Lowest correlation: Advertisement and Price (0.296), suggesting a weaker association.

Overall, the constructs are distinct and reliable for further analysis.

B) HTMT (Heterotrait-Monotrait) Discriminant Criteria

The HTMT ratio assesses discriminant validity in SEM by measuring correlations between constructs. A value below 0.85 confirms distinct constructs, while values above 0.85 indicate possible overlap, suggesting discriminant validity

	Advertisement Effectiveness	Brand Image	Price	Purchase Intention	Quality
Advertisement Effectiveness					
Brand Image	0.491				
Price	0.454	0.974			
Purchase Intention	0.409	0.513	0.476		
Quality	0.387	0.942	0.978	0.510	

- Most HTMT values are below the 0.90 threshold, ensuring discriminant validity.
- Price & Brand Image (0.974), Price & Quality (0.978), and Brand Image & Quality (0.942) exceed the threshold, suggesting potential overlap.
- These constructs may require further examination or refinement.

Overall, most constructs are distinct, but some relationships need closer evaluation.

3-Structural Model

A structural model represents the relationship of the constructs under a research framework. Therefore, it would help decide how well predictor constructs are influencing a dependent construct, and the strength of that influence. Major components which are analyzed within the structural model include:

- **Path coefficients**
- **R² values**
- **Effect sizes.**

A) Path Coefficients

Path coefficients in SEM measure the strength and direction of relationships between independent variables (Advertisement, Brand Image, Price, Quality) and the dependent variable (Purchase Intention). They indicate how strongly each factor influences purchase decisions.

	Path coefficients
Advertisement Effectiveness -> Purchase Intention	0.200
Brand Image -> Purchase Intention	0.118
Price -> Purchase Intention	0.150
Quality -> Purchase Intention	0.163

- Advertisement Effectiveness → Purchase Intention (0.200): Strongest positive impact, showing Advertisement significantly influences Purchase Intention.
- Quality → Purchase Intention (0.163): Moderate positive effect, indicating Quality plays a role in shaping Purchase Intention.
- Price → Purchase Intention (0.150): Slightly weaker than Quality, but still a notable contributor to Purchase Intention.
- Brand Image → Purchase Intention (0.118): Weakest impact, suggesting Brand Image has the least influence on Purchase Intention.

Overall: Advertisement is the most influential factor, followed by Quality and Price, while Brand Image has the least effect on Purchase Intention.

B) Coefficient of Determination (R²)

R² measures the proportion of variance in Purchase Intention explained by Advertisement, Brand Image, Price, and Quality. A higher R² indicates stronger predictive power of the model

	R-square	R-square adjusted
Purchase Intention	0.243	0.234

- (0.243): 24.3% of the variance in Purchase Intention is explained by the predictors, indicating a weak to moderate effect.
- Adjusted R² (0.234): Slightly lower, accounting for predictors, confirming a modest model fit.

C) Effect size (f²)

Effect size (f²) measures how much each predictor (Advertisement, Brand Image, Price, Quality) contributes to the R² value of Purchase Intention. It indicates the strength of each predictor's effect on the dependent variable.

	f-square
Advertisement Effectiveness -> Purchase Intention	0.046
Brand Image -> Purchase Intention	0.009
Price -> Purchase Intention	0.012
Quality -> Purchase Intention	0.13

- Advertisement Effectiveness → Purchase Intention (0.046): Small effect, indicating a modest influence.
- Brand Image → Purchase Intention (0.009): Negligible effect, suggesting minimal impact.
- Price → Purchase Intention (0.012): Weak effect, showing limited influence.

- Quality → Purchase Intention (0.013): Slightly higher but still a weak effect.

Advertisement Effectiveness has the strongest impact, while Brand Image, Price, and Quality contribute minimally.

4-Bootstrapping

Bootstrapping resamples data to assess the stability and significance of relationships in SEM. Using t-statistics and p-values, it tests hypotheses, estimates confidence intervals, and determines the significance of path coefficients.

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values
Advertisement Effectiveness -> Purchase Intention	0.200	0.205	0.062	3.230	0.001
Brand Image -> Purchase Intention	0.118	0.119	0.080	1.475	0.140
Price -> Purchase Intention	0.150	0.161	0.108	1.390	0.165

Quality -> Purchase Intention	0.163	0.158	0.102	1.593	0.1

- Advertisement Effectiveness → Purchase Intention (p = 0.001, t = 3.230): Strong and significant impact on Purchase Intention.
- Brand Image → Purchase Intention (p = 0.140, t = 1.475), Price → Purchase Intention (p = 0.165, t = 1.390), Quality → Purchase Intention (p = 0.111, t = 1.593): Not significant impacts on Purchase Intention.

Conclusion: Advertisement significantly influences Purchase Intention, while Brand Image, Price, and Quality do not show a statistically significant effect.

Discussion of Findings

The findings of this study provide insights into the key factors influencing purchase intention of air conditioners in Hyderabad. Among the independent variables, Advertisement Effectiveness had the strongest impact, confirming that well-crafted marketing campaigns significantly influence consumer decisions. Quality and Price also played notable roles, indicating that consumers prioritize durability, reliability, and affordability when making purchasing decisions. Brand Image, however, had the weakest effect, suggesting that while brand reputation matters, other factors such as price and quality are more critical in this market.

The R² value (0.243) suggests that these four factors moderately explain 24.3% of the variance in purchase intention. This implies that while price, quality, brand image, and advertisement play a role, other external factors may also influence consumer behavior. The bootstrapping results further confirmed that Advertisement was the only statistically significant predictor of purchase intention, while Brand Image, Price, and Quality did not show significant effects.

Implications of the Study

The results of this study have practical implications for marketers, manufacturers, and retailers in the air conditioner industry. Given that advertisement significantly impacts purchase intention, companies should invest in strategic advertising campaigns that emphasize product benefits, reliability, and energy efficiency. Quality and price also play important roles, suggesting that brands should focus on delivering cost-effective, durable products to attract customers in Hyderabad's price-sensitive market.

Since brand image had the weakest impact, companies should focus more on tangible product attributes rather than relying solely on branding. This suggests that customer trust is built more through product performance and affordability than reputation alone. Additionally, policymakers and industry leaders could use these insights to design better consumer engagement strategies and promotional activities tailored to the preferences of Indian consumers.

Conclusion

This study analyzed the effect of Price, Quality, Brand Image, and Advertisement Effectiveness on Purchase Intention in Hyderabad's air conditioner market. The results showed that Advertisement is the most influential factor, while Quality and Price also play significant roles. Brand Image had the least impact, suggesting that consumers prioritize practical product benefits over brand reputation.

The findings highlight the importance of effective marketing strategies, competitive pricing, and high-quality products in influencing consumer purchase behavior. Businesses can leverage these insights to refine their advertising and pricing strategies, ensuring they align with consumer expectations. Future research could explore additional factors such as after-sales service, energy efficiency awareness, and environmental concerns, which may further shape consumer decisions in the air conditioning market.

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