

Research Article

A study on consumer satisfaction of consumers towards Hitachi air conditioners in Surat

Darshit Hirapara¹, Avadhi Kothiya², Jignesh Vidani³

^{1,2}student, ³professor, L J Institute of Management Studies, L J University, India

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Corresponding Author :

Darshit Hirapara, L J Institute of Management Studies, L J University, India

E-mail Id:

24003400310670@mail.ljku.edu.in

Orcid Id:

<https://orcid.org/0009-0008-3629-2670>

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A B S T R A C T

This study titled “A Study on Consumer Satisfaction of Consumers Towards Hitachi Air Conditioners in Surat” investigates how various product and service attributes influence customer satisfaction, with a specific focus on the role of age group as a demographic factor. Data was collected through a structured questionnaire from 258 respondents and analysed using chi-square tests to determine associations between age and satisfaction variables such as cooling performance, noise level, energy efficiency, design, remote usability, service experience, and value for money. Out of ten hypotheses, six showed statistically significant associations, especially in areas like installation service, complaint response, service staff behaviour, and accessibility of service centres. These results indicate that age influences how consumers perceive service-related aspects more than product-related features, which showed uniform satisfaction across age groups. While most relationships were weak in strength, the significance suggests varied expectations among different age segments. The study supports established consumer satisfaction theories like Expectancy-Disconfirmation and SERVQUAL, highlighting the need for demographic-based service strategies. The insights gained are valuable for Hitachi to enhance customer experience in Surat and improve brand loyalty in a competitive market.

Keywords: Consumer Satisfaction, Hitachi Air Conditioners, Service Experience, Product Features, Customer Perception, Age Group

Introduction

Customer satisfaction is a key performance indicator for business success and brand longevity in the present competitive consumer electronics industry.¹ In the air conditioner (AC) segment, where several global and local players compete with technologically advanced and efficient products, it is vital to know what consumers expect and are satisfied with.² The present research project deals with Hitachi air conditioners, specifically within the context of Surat, a fast-growing urban centre in Gujarat, India.³

India's air-conditioning industry has seen remarkable growth in recent years, driven by urbanisation, rising disposable

incomes, and changing climate conditions.⁴ According to Research and Markets (2023), the Indian residential air conditioner market is projected to grow at a compound annual growth rate (CAGR) of over 12% between 2023 and 2028.⁵ This growth is largely fuelled by greater awareness of energy efficiency and increasing demand for thermal comfort in homes and office spaces.⁶

Hitachi is recognised as one of the leading players in this sector, known for its emphasis on high-quality products, innovation, and eco-friendly cooling solutions⁷ Operating under the brand Hitachi Cooling & Heating and owned by Johnson Controls-Hitachi Air Conditioning, the company is

well-known for its premium range of split, inverter, and window air conditioners.⁸

The organisation places a strong focus on energy-saving technologies and offers reliable after-sales service throughout the country. [9] Given that summer temperatures in Surat often exceed 40°C, there is significant demand for efficient and affordable cooling solutions, making customer satisfaction a key performance benchmark.¹⁰

Customer satisfaction is defined as the customer's feeling about the extent to which a company's services or products live up to or surpass expectations.¹¹ Cooling performance, energy efficiency, durability, price, aesthetics, noise, and after-sales support are some of the factors that have a significant impact on satisfaction when applied to air conditioners.¹² As product parity among brands in the AC market increases, customer experience and service are also becoming significant points of differentiation for brands.¹³

The aim of this research is to determine the satisfaction level of Hitachi air conditioner consumers in Surat through primary research in the form of surveys and interviews.¹⁴ The project aims to analyse how the customers see the brand in terms of quality, price, and service and what they anticipate to improve.¹⁵ Through these satisfaction drivers and pain points, the research study intends to assist the company in streamlining its products and services.¹⁶

Surat, one of India's fastest-growing smart cities, is a key urban market for AC brands due to its growing middle class and extreme climate conditions.¹⁷ The city's evolving residential and commercial infrastructure also supports increasing demand for modern air conditioning systems.¹⁸ Thus, understanding consumer satisfaction in this specific geography will offer valuable, localised insights that can shape Hitachi's marketing and operational strategies.¹⁹

This study will add to academic knowledge and managerial practice by noting the ways in which product attributes and customer experience influence brand image in the AC sector.²⁰ It will also give actionable advice to Hitachi on how to better engage customers and build long-term loyalty.²¹

Hitachi, Ltd., is a highly diversified Japanese manufacturing company that consists of over 1,000 subsidiaries, of which 335 are overseas corporations. Tokyo has headquarters.²²

Hitachi's story begins in 1910 with its founder, Odaira Namihei, operating an electrical repair shop at a copper mine northeast of Tokyo.²³ While repairing machinery for the mine, Odaira began to experiment with his own designs, and that same year he manufactured the first domestically produced 5-horsepower (3.7-kilowatt) electric motor. Odaira founded his own business in 1912 and coined the name of the company by layering two kanji (Chinese-derived Japanese) characters, hi, which means "sun", and

tachi, which means "rise", and putting them in a circle to create the now-iconic Hitachi logo.²⁴

In its formative years Hitachi focused on the production of heavy electrical machinery and industrial equipment. Aside from motors, generators, pumps, electrical wiring, and transformers, Hitachi also developed Japan's first big direct-current locomotives (1924). Hitachi diversified into metallurgy and communications equipment during the 1930s due to a strategic injection of government capital [25]

After World War II, Hitachi played a pivotal role in the rebuilding of Japan's industrial infrastructure, especially in power generation.²⁶ Hitachi produced mining machinery, constructed trains to haul coal to power plants, and constructed electric-generation equipment. With the post-World War II recovery of the Japanese economy during the late 1950s and early '60s, Hitachi started moving toward consumer products from industrial machinery, e.g., home appliances, air conditioners, and transistor radios. In 1959, Hitachi set its first foothold in the United States with Hitachi America, Ltd.²⁷ Following the acquisition of technology from RCA Corporation, Hitachi produced and mass-marketed all-transistor colour televisions starting in 1969.²⁸

Hitachi built its first transistor computer in 1959.²⁹ Over the course of the following three decades, through a series of Ministry of International Trade and Industry-sponsored projects, Hitachi collaborated with other Japanese firms to design and produce semiconductor chips, microprocessors, computers, and supercomputers (Vidani J. N., 2016).³⁰ Hitachi produced the first in a line of general-purpose mainframe computers in 1974 and in 1982 made public the development of its first supercomputer.³¹ Nonetheless, Hitachi became famous when its top officials were ensnared in an FBI "sting" operation in 1982 in Santa Clara, Calif., U.S., and were arrested for trying to purchase IBM technology secrets. The Hitachi executives all entered guilty pleas and were fined in 1983. IBM resolved its civil suit against Hitachi out of court in the meantime. In addition to winning substantial monetary damages, IBM won the right to inspect Hitachi's new products for five years for any design infringements.³²

In the late 1980s, Hitachi kept emphasising the profitable chip business, entering into a deal with Texas Instruments Incorporated to design and manufacture high-performance microprocessors and computer memory chips (16-megabit DRAM). It also bought National Advanced Systems from National Semiconductor, rechristening it Hitachi Data Systems, and planned to market Hitachi products, including memory chips, disc drives, and other items, in the United States.³³

From the early days, Hitachi made significant investment in research and development.³⁴ Already by 1993 Hitachi had

38 research laboratories and was among the top recipients of U.S. patents issued since 1963.³⁴ Hitachi products became omnipresent in everything from computer-aided control systems for bullet trains and nuclear power plants to fibre-optic data-transmission machines to fax machines and digital cameras for the masses.³⁵

A global economic downturn toward the close of the 20th century hit Japanese technology firms especially hard. In response to multibillion-dollar losses by Hitachi and the Mitsubishi Electric Corporation in 2002, the firms stated that they would merge their non-memory semiconductor operations; the new firm, Renesas Technology Corp., would become larger than Motorola, Inc., the current industry leader in microcontrollers. Also during 2002, Hitachi came to terms with IBM on a new joint hard disc drive (HDD) company, Hitachi Global Storage Technologies, to be based in San Jose, Calif. Hitachi first owned 70 per cent of the business but acquired it outright in 2005, after making formal payments over the intervening three years of around \$2 billion for IBM's HDD patents and related manufacturing plants in San Jose. In 2003 Hitachi started construction of a new HDD plant in Shenzhen, China, and this one began operations in 2006. Ever since, the company has transferred most of its HDD production to China.³⁶

Research Objectives

1. To assess the overall satisfaction level of consumers using Hitachi air conditioners in Surat City.
2. To evaluate consumer perception regarding product quality, cooling efficiency, and energy consumption.
3. To study the after-sales service experience of Hitachi air conditioner users.
4. To identify the impact of pricing and brand image on consumer satisfaction.
5. To analyse whether consumers are likely to recommend or repurchase Hitachi air conditioners

Literature Review

Hitachi introduced 2.8 kW and 3.7 kW cooling-only inverter air conditioners with a sleep support function in Southeast Asia, where room air conditioner demand for residential usage is speeding up because of economic growth. In Southeast Asia, a large proportion of room air conditioners are utilised in the bedroom.³⁷ Hitachi created such products by concentrating on real consumer needs, e.g., an air conditioner sensor to sense human movement in a darkened room to automatically identify when users are sleeping so that the temperature setting can be controlled automatically once users have fallen asleep.³⁸ The air conditioner also boasts a cross-flow fan with undulating blades to minimise the wind noise of the cross-flow fan. [27] While Hitachi has already been developing improved

energy-saving performance (since energy conservation regulations are increasingly being strengthened in other Southeast Asian nations), Hitachi is now sharpening the focus of its development even more, such as an improved indoor unit blowing efficiency, a high-efficiency compressor, and other developments.²⁹

India is among the rapidly growing emerging economies of the world; thus, per capita income is also growing²² India's climate is regarded as hot and tropical; therefore, the purchase of air conditioners is common in our nation³⁹ So the objective is to investigate the consumer behaviour and perception towards the purchase of domestic air conditioners in Pune city.¹⁷ Thus, I am carrying out research to identify what the factors are affecting the buying decision of customers.⁴⁰ The objective of the research is to know regarding the factors affecting the buying behaviour of air conditioner purchases.¹⁹ 230 responses are collected through questionnaires across the city of Pune. Research indicates at the significance level (i.e., $p=0.05$) whether the following factors affect the consumer purchasing behaviour of air conditioners in a household in Pune city: (1) types of air conditioners, (2) price of AC, (3) promotional offers, (4) the most desired brands of AC, (5) ISEER rating, (6) star rating, and (7) energy efficiency.²⁰ The forthcoming research would be conducted on convenience sampling and would be descriptive in nature.³²

Keywords: Consumer Buying Behaviour, ISEER rating, star rating, India is the fastest-growing economy in the world, with a GDP growth rate of more than 7%. It is also experiencing a hot tropical climate where the temperature easily touches up to 45 degrees Celsius in summer. So people cope with these weather conditions with 2 options: air conditioners and air coolers. Round-the-clock increasing temperature with rising purchasing power of all households is promoting growth of the air conditioner market. The pre-liberalisation phase of the Indian economy had prominent Indian players such as Godrej, Videocon, and Voltas, which had the high market share, but post-liberalisation, several foreign players such as LG, Whirlpool, Samsung, IFB, Daikin, Mitsubishi, and Hitachi entered the Indian market and brought a dramatic change to the Indian market. Today the Indian AC market becomes highly competitive with the entry of domestic, international and unorganised market players.

The article attempts to identify the customer satisfaction among air-conditioner users in Chennai city. Two objectives of this study are achieved using proper methodology. Sample size was 200. The convenience sampling technique was used in this research. Reliability of this instrument is 0.82 and 0.88. Analysis was carried out using path analysis. It has been observed that there exists the impact of brand preference and purchase-determining factors of air conditioners on customer satisfaction towards air

conditioners. The study also revealed that there exists an impact of customer satisfaction on brand loyalty towards air conditioners. Therefore, it is determined that distributors and marketers need to design the best pricing strategies, star ratings, warranties and guarantees, product quality, etc.

The study scope is to examine the consumer satisfaction with air conditioners with special reference to Coimbatore city. The study will assess the consumer satisfaction level based on product features, quality, performance, customer service, price and availability of air conditioners. The study will concentrate on the consumer preferences and perception of the air conditioners in Coimbatore city. The study will ascertain the factors that affect customer satisfaction and areas for improvement. Most 31.1% of the respondents like both advertisements and friends. Most of the respondents voted Carrier as the preferred brand. The Likert scale value is 3.966, which is above 3; hence, the respondents concur that air conditioners are beneficial. VII. SUGGESTIONS The company needs to give emphasis on advertisement in the current position to receive more attention from customers. The manufacturers may take a survey for understanding the customers' needs. Other brands give more promotions so that the customers will opt for other brands too. The air conditioner warranty can be improved to enhance customers' trust. VIII. air conditioners. This research explores the satisfaction of customers towards air conditioners, considering how product characteristics, brand popularity, and individual tastes influence the choice of customers. Most of the interviewees fall in the age group of 26-30.

This research examines AC (air conditioner) customer loyalty in Surabaya city. The combination of Expectation Confirmation Theory on AC consumer satisfaction and the relationship between satisfaction and loyalty with the presence of brand reputation variables. The use of structural equation modelling methods can provide a clear picture of the relationship between variables. Based on the data, it can be observed whether the relationship among satisfaction with loyalty variables has a significant impact on the value of 0.901 and the relationship among satisfaction variables and the brand reputation, which has a significant impact with the value of 0.989. The hope in this study is to be able to discover the variables that can affect the consumer loyalty of the XYZ brand AC so that it can be utilised as a point of reference in the taking of the strategic actions of the company.

Research Gap

The Indian air conditioning market has evolved rapidly over the past two decades due to rising temperatures, increasing disposable income, and greater awareness of indoor comfort. Several studies have been conducted across Indian cities focusing on consumer satisfaction and

purchasing behaviour related to air conditioners. However, most of these studies are either brand-generic, regionally broad, or focused on technical parameters like energy efficiency, price sensitivity, and product choice rather than comprehensive satisfaction metrics. When examining the literature, a clear research gap emerges in understanding brand-specific, demographic-specific, and region-specific consumer satisfaction—particularly in the context of Hitachi air conditioners in Surat, a rapidly urbanising Tier-2 city in India.

Previous research by scholars like Fatimah Furaiji (2020) and others has looked into factors influencing AC purchase decisions, such as price, brand preference, star ratings, and promotional offers. However, these studies largely focus on metro cities or aggregate data from multiple brands, lacking the granularity required to assess how individual brands like Hitachi are performing in specific markets. Additionally, most studies ignore the after-sales service experience, which plays a crucial role in customer satisfaction, especially for high-involvement products like air conditioners.

The current research gap also lies in the absence of demographic segmentation, particularly age-based analysis, which is essential to understand differing expectations across consumer groups. Age influences perceptions of product features such as noise level, user interface, and remote control usability and also significantly impacts service satisfaction factors like installation, complaint resolution, and staff behaviour. Despite this, most existing studies treat the customer base as homogeneous, thus overlooking valuable insights into consumer subgroups.

Furthermore, much of the existing academic work focuses either on purchase intent or brand loyalty, leaving a gap in understanding the entire satisfaction journey—from purchase and installation to service support and daily use. Hitachi, being a significant player in the premium segment of the AC market, deserves focused research attention to assess whether its technological claims, energy efficiency, and service quality are aligned with consumer expectations in real usage scenarios. This is especially important in Surat, where climatic needs, consumer preferences, and infrastructure availability may differ substantially from metro cities like Mumbai or Delhi.

Additionally, there is limited application of modern analytical models like Expectancy-Disconfirmation Theory (EDT), SERVQUAL, or Structural Equation Modelling (SEM) in Indian air conditioner studies. While some international studies have applied these frameworks, their implementation in the Indian context—particularly for individual brands—remains scarce. This creates a theoretical gap as well, where customer satisfaction studies are not being strongly anchored in established consumer behaviour theories.

In conclusion, while the Indian air conditioning market is well-researched in broad terms, there is a clear lack of focused, brand-specific, and demographic-sensitive studies that evaluate comprehensive consumer satisfaction. By studying Hitachi air conditioners in Surat and examining how satisfaction varies by age and service quality dimensions, this research aims to bridge that significant gap, offering both academic and practical insights for businesses and scholars alike.

Hypothesis

H1: There is a significant association between age group and the perception that the cooling performance of my Hitachi air conditioner is excellent.

H2: There is a significant association between age group and the opinion that the air conditioner operates quietly without much noise.

H3: There is a significant association between age group and the belief that Hitachi air conditioners are energy-efficient and save on electricity bills.

H4: There is a significant association between age group and the perception that the design and aesthetics of Hitachi air conditioners are appealing.

H5: There is a significant association between age group and the view that the remote control and features are user-friendly and easy to use.

H6: There is a significant association between age group and the level of satisfaction with the installation service provided by Hitachi.

H7: There is a significant association between age group and the opinion that the company responds promptly to complaints or service requests.

H8: There is a significant association between age group and the belief that service centres are easily accessible in Surat.

H9: There is a significant association between age group and the perception that the behaviour of the service staff is professional and helpful.

H10: There is a significant association between age group and the opinion that Hitachi air conditioners offer good value for money.

Validation Of Questionnaire

I am currently using a Hitachi air conditioner and have been using it for more than one year⁴¹. The cooling performance of the air conditioner is excellent, and it operates quietly without much noise.⁴² Hitachi air conditioners are energy-efficient, helping save on electricity bills, while their design and aesthetics are appealing.^{50,43} The remote control and features are user-friendly and easy to operate.⁴⁴ I am satisfied with the installation service provided, and

the company responds promptly to complaints or service requests. Additionally, service centres are easily accessible in Surat, and the behaviour of the service staff is professional and helpful.^{51,45} Hitachi air conditioners offer good value for money, with pricing justified by the features and performance provided, and attractive offers or financing options are often available during purchase.^{46,47} Hitachi is regarded as a trustworthy and reputable brand in the air conditioner market,⁴⁸ and I would consider buying another Hitachi AC in the future, as well as recommending it to others.⁴⁹

Research Methodology

The present study employed a descriptive research design to examine the perceptions and experiences of consumers regarding Hitachi air conditioners. A non-probability convenient sampling method was used to select respondents, resulting in a total sample size of 259 participants. The data collection was conducted using a primary method through a structured questionnaire consisting of close-ended questions, which was administered online via Google Forms. The survey targeted respondents in Surat, encompassing a diverse sampling unit that included students, private and government employees, businessmen, homemakers, and professionals such as chartered accountants and doctors. The collected data were analysed using tables and processed with the help of SPSS and Excel to derive meaningful insights.

Demographic Summary

The demographic profile of the 258 respondents reveals a fairly balanced gender distribution, with 51.6% male and 48.4% female participants. In terms of age, the majority fall within the 31–40 (34.9%) and 41–50 (40.7%) age groups, indicating that middle-aged consumers form the core segment of air conditioner users in the study. A smaller portion of respondents were aged below 20 (2.7%) and above 51 (5.4%). Regarding occupation, the sample includes a diverse range of individuals, with the largest groups being professionals (27.9%), homemakers (21.7%), and students (14.7%), followed by those in employment (14.3%), business (14.0%), and retirees (7.4%). This mix provides a comprehensive understanding of consumer satisfaction across different social and economic backgrounds.

Cronbach's Alpha

The Cronbach's Alpha value of 0.881 for the 17 items in the scale indicates a very high level of internal consistency, demonstrating that the items reliably measure the same underlying construct. This value falls within the "Excellent" range, which confirms that the scale used in this research is a strong and dependable tool for assessing consumer satisfaction. As a result, the data collected through this instrument can be considered both consistent and valid, supporting its suitability for further statistical analysis in the context of this study on Hitachi air conditioners in Surat.

Table I. Results Of Hypothesis Testing

Sr. No	Alternate Hypothesis	Result p =	>/< 0.05	Accept/ Reject Null hypothesis	R value	Relationship
H1	There is a significant association between Age Group and the perception that the cooling performance of my Hitachi air conditioner is excellent.	0.012	<	H01 Rejected (Null hypothesis rejected)	0.232	Weak
H2	There is a significant association between Age Group and the opinion that the air conditioner operates quietly without much noise.	0.014	<	H02 Rejected (Null hypothesis rejected)	0.001	Weak
H3	There is a significant association between Age Group and the belief that Hitachi air conditioners are energy-efficient and save on electricity bills.	0.184	>	H03 Accepted (Null Hypothesis Accepted)	0.795	Weak
H4	There is a significant association between Age Group and the perception that the design and aesthetics of Hitachi air conditioners are appealing.	0.061	>	H04 Accepted (Null Hypothesis Accepted)	0.039	Weak
H5	There is a significant association between Age Group and the view that the remote control and features are user-friendly and easy to use.	0.336	>	H05 Accepted (Null Hypothesis Accepted)	0.730	Weak
H6	There is a significant association between Age Group and the level of satisfaction with the installation service provided by Hitachi.	0.001	<	H06 Rejected (Null hypothesis rejected)	0.164	Weak
H7	There is a significant association between Age Group and the opinion that the company responds promptly to complaints or service requests.	0.028	<	H07 Rejected (Null hypothesis rejected)	0.005	Weak
H8	There is a significant association between Age Group and the belief that service centers are easily accessible in Surat.	0.000	<	H08 Rejected (Null hypothesis rejected)	0.953	Strong
H9	There is a significant association between Age Group and the perception that the behavior of the service staff is professional and helpful.	0.011	<	H09 Rejected (Null hypothesis rejected)	0.011	Strong
H10	There is a significant association between Age Group and the opinion that Hitachi air conditioners offer good value for money.	0.063	>	H10 Accepted (Null Hypothesis Accepted)	0.042	Weak

*Source: Author's compilation

Discussion

The current study sought to investigate consumer satisfaction towards Hitachi air conditioners in Surat and specifically whether or not the level of satisfaction differs across different age groups (Biharani & Vidani, 2018). By employing a chi-square test for independence, the analysis tested the hypothesis as to whether or not age is statistically related to different variables of satisfaction, such as product characteristics, experience with service, and value obtained (Vidani, 2018). The results have significant implications for company marketing and operations strategies (Odedra, Rabadiya, & Vidani, 2018).

The hypothesis testing revealed statistically significant associations between age group and six variables, namely, cooling performance (H1), noise levels (H2), installation service (H6), complaint response (H7), service centre accessibility (H8), and service staff behaviour (H9) (Vasveliya & Vidani, 2019). These results suggest that age plays a role in how consumers view important aspects of Hitachi's products and services (Sachaniya, Vora, & Vidani, 2019). For example, significant age-based differences were found in perceptions of cooling efficiency ($p=0.012$) and silent operation ($p=0.014$) (Vidani, 2019). While the statistical strength of these differences was modest, the results highlight that consumer preferences may vary across age groups (Vidani, Jacob, & Patel, 2019).

This implies the use of age-specific communication tactics, particularly when emphasising essential product features in promotions or customer training (Vidani J. N., 2016).

In an interesting twist, responsiveness to complaints ($p = 0.028$) and installation service ($p = 0.001$) also varied significantly across ages (Vidani & Singh, 2017). These results support expectations across generations regarding speed of service, professionalism, and follow-up (Vidani & Pathak, 2016). That is, older consumers might highly prioritise timely and respectful service over younger consumers, who might care more about online or automated service delivery (Pathak & Vidani, 2016).

One of the most significant outcomes came from H8 and H9, where the correlation between age and accessibility of the service centres ($p = 0.000$, $R = 0.953$) as well as staff behaviour ($p = 0.011$, $R = 0.011$) was tested. Although the R value for the staff behaviour was still poor, the extremely high R value in H8 suggests there is a strong correlation between age and perceived service centre accessibility in Surat (Vidani & Plaha, 2017). This is important to Hitachi, as convenience and post-purchase service can directly impact repeat purchase and brand loyalty (Vidani J. N., 2020). It indicates that certain age groups—possibly older people—may have greater difficulty reaching service centres, which can be a significant hindrance to satisfaction and retention

(Vidani J. N., 2018).

Contrarily, four variables—energy efficiency (H3), design aesthetics (H4), user-friendliness of features (H5), and value for money (H10)—were not significantly related to age group, since their p -values were greater than 0.05 (Vidani & Dholakia, 2020). This indicates that these product features are perceived equally by all age segments (Rathod, Meghrajani, & Vidani, 2022). For Hitachi, this is a welcome indicator that product design and energy-saving attributes attract uniformly to a broad population base (Vidani, Meghrajani, & Siddarth, 2023). It also points out that brand communication on attributes such as energy efficiency and remote usability can be abstract instead of age-segmented (Vidani & Das, 2021).

Overall, though the vast majority of the relationships obtained were statistically weak, the large p -values reveal significant age-based perceptual distinctions, particularly in service-related areas (Vidani J. N., 2022). The high correlation noted in service centre accessibility serves to further underscore the need for enhancing customer support infrastructure in Surat (Saxena & Vidani, 2023). These are the insights which can inform Hitachi in making its marketing, installation, and servicing strategies more attuned to the differentiated demands of different consumer age groups, leading finally to increased satisfaction and loyalty towards the brand in a competitive marketplace (Vidani, Das, Meghrajani, & Singh, 2023).

Theoretical Implications

The findings of this study contribute meaningfully to the existing body of literature on consumer satisfaction and behaviour in the context of durable goods, particularly within the air conditioner industry. By focusing on Hitachi air conditioners in the Surat region, the research provides brand-specific, location-specific insights, which are often under-represented in current academic discourse. The results particularly support the theoretical framework of consumer satisfaction models, such as the Expectancy-Disconfirmation Theory (EDT) and SERVQUAL model, and demonstrate how demographic variables—especially age—moderate consumer evaluations of both product and service attributes.

The study reinforces the Expectancy-Disconfirmation Theory, which states that satisfaction is a function of the difference between expected and actual product/service performance. The significant associations between age group and variables like cooling performance, noise level, service response, and staff behaviour imply that consumer expectations and perceived experiences vary with age, influencing overall satisfaction. For example, older customers may have higher expectations of personal attention in service, while younger users may prioritise

technology and ease of use. This indicates that expectations are not homogeneous across consumers, and marketers need to account for these differences in satisfaction modelling.

Additionally, the study also aligns with the SERVQUAL framework, which emphasises five dimensions of service quality: tangibility, reliability, responsiveness, assurance, and empathy. The significant relationship found between age and variables like installation service, responsiveness to complaints, and service staff behaviour directly supports the SERVQUAL dimensions of reliability and responsiveness. The study provides evidence that these dimensions play a crucial role in shaping consumer satisfaction and that their impact varies across age segments. The strong relationship between age and service centre accessibility also suggests that physical proximity and convenience (tangibility) remain important for certain customer groups, emphasising the need to integrate physical and digital service infrastructures.

From a segmentation theory perspective, the results validate that demographics such as age are key predictors of satisfaction levels, thereby supporting age-based market segmentation as a valid strategic tool. The findings demonstrate that even when product features are perceived similarly (as in the case of energy efficiency or user-friendliness), service-related attributes may still drive differential satisfaction outcomes.

Furthermore, the study extends theoretical discussions by highlighting that product-related factors and service-related factors may have different levels of perceptual uniformity across age groups. While product attributes such as energy efficiency and design are perceived relatively consistently, service interactions evoke more varied responses. This opens avenues for future research on how consumer involvement, service encounters, and brand experience mediate or moderate satisfaction in high-involvement purchases like air conditioners.

In summary, this research contributes to theory by reaffirming and extending models of consumer satisfaction, service quality, and demographic segmentation, emphasising the importance of age as a moderating variable. It bridges the gap between generic satisfaction studies and brand-specific, demographic-centric research, thus enriching theoretical understanding and offering new directions for future inquiry in consumer behaviour and service marketing.

Practical Implications

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Recommendations For Future Research/Future Scope Of The Study

While this study provides valuable insights into consumer satisfaction towards Hitachi air conditioners in Surat, there remain several avenues for further exploration and improvement that future researchers can consider. The following recommendations outline the future scope of this research:

1. **Expand the Geographical Scope:** This study was limited to the city of Surat, which, although significant, represents only one regional market in India. Future studies can be conducted in multiple cities across different states—including metro cities and rural areas—to allow for comparative analysis and to better understand regional differences in consumer satisfaction.
2. **Include Other Demographic Variables:** The present study focused primarily on age groups as a demographic variable. Future research can include other key variables such as income level, education, marital status, and family size to explore their influence on satisfaction and purchase behaviour. This would provide a more comprehensive understanding of consumer segmentation.
3. **Brand Comparison Studies:** This research is brand-specific to Hitachi. Future studies may include comparative analysis between Hitachi and other major brands such as LG, Voltas, Daikin, or Samsung. A comparative study would help identify Hitachi's relative strengths and weaknesses in the market.
4. **Qualitative Research Approaches:** While this study used a quantitative survey-based approach, future studies can adopt qualitative methods such as in-depth interviews, focus groups, or ethnographic research to gain deeper insights into emotional, psychological, and experiential aspects of consumer satisfaction.
5. **Longitudinal Studies:** Satisfaction and loyalty can change over time based on product performance, service experience, or external factors like brand reputation and pricing. A longitudinal study can help track how consumer satisfaction evolves over months

or years, especially with seasonal product usage like air conditioners.

6. **Technological Features and Smart AC Usage:** With the increasing popularity of smart appliances and IoT-enabled air conditioners, future research could focus on consumer attitudes toward smart features, mobile control, app-based servicing, and energy monitoring systems, particularly among tech-savvy consumers.
7. **Post-Purchase Behaviour and Loyalty:** Future studies should also explore how post-purchase experiences, such as after-sales service, warranty claims, and maintenance support, influence long-term brand loyalty and word-of-mouth referrals, which are critical for sustainable brand success.
8. **Inclusion of Psychological and Cultural Factors:** Consumer satisfaction is not just influenced by product and service attributes but also by psychological factors like trust, brand perception, and social influence. Future research may incorporate psychographic and cultural variables to better understand the emotional drivers behind satisfaction.
9. **Use of Advanced Analytical Tools:** Future researchers can apply advanced statistical tools like Structural Equation Modelling (SEM), Regression Analysis, or Conjoint Analysis to examine complex relationships between multiple variables affecting satisfaction and purchase decisions.
10. **Satisfaction Across Product Categories:** Since Hitachi offers a wide range of appliances, future studies could explore consumer satisfaction across multiple product categories (e.g., refrigerators, washing machines) to assess whether satisfaction levels remain consistent across their product portfolio.

By addressing these future research directions, scholars and marketers can deepen their understanding of consumer expectations, satisfaction drivers, and loyalty patterns in the Indian air conditioning market, contributing both to academic literature and practical business strategies.

Conclusion

The present study, titled "A Study on Consumer Satisfaction of Consumers Towards Hitachi Air Conditioners in Surat", aimed to explore the relationship between consumer satisfaction and age group, focusing on various product- and service-related attributes. Based on the findings from hypothesis testing, it is evident that age group plays a significant role in influencing consumer perceptions, particularly in areas related to cooling performance, noise level, service quality, and accessibility of support infrastructure.

Out of the ten hypotheses tested, six showed statistically significant associations with age group, especially in

aspects such as installation service, responsiveness to complaints, and the professional behaviour of service staff. These findings underscore the importance of age-based expectations in shaping satisfaction levels. In contrast, product-related attributes like energy efficiency, user-friendliness, and design did not exhibit significant variation across age groups, indicating uniformity in consumer perceptions of product features.

The study revealed that while most associations were weak in strength (R-value), they were still statistically relevant, suggesting that even subtle differences in age-related expectations can influence satisfaction outcomes. Notably, the strongest relationship was observed in the accessibility of service centres, which highlights a critical operational area for Hitachi to address in the Surat region.

From a theoretical standpoint, the research supports models like Expectancy-Disconfirmation Theory (EDT) and SERVQUAL, demonstrating how demographic variables such as age can impact service quality perceptions and overall satisfaction. Practically, the study suggests that Hitachi should consider customising its communication and service strategies based on age segments, ensuring that both younger and older consumers feel valued and supported.

In conclusion, this study provides valuable insights into brand-specific consumer satisfaction in a Tier-2 city like Surat and emphasises the need for personalised service experiences in addition to reliable product performance. For Hitachi and similar brands, understanding these nuanced consumer expectations is essential for improving satisfaction, fostering loyalty, and sustaining competitive advantage in the increasingly dynamic air conditioner market.

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