CONSUMER PREFERENCE TO HOME AUTOMATION SYSTEM

(with a special reference to Coimbatore City)

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ABSTRACT

The study aims to investigate the consumer preferences towards home automation systems in a comparative manner. The study addresses the challenges of understanding the complex and dynamic nature of consumer preferences by utilizing both qualitative and quantitative data analysis techniques. The study also examines the role of demographic factors such as age, income, and education in shaping consumer preferences. The results reveal that consumers prioritize ease of use, energy efficiency, security, and compatibility with other devices in their preferences towards home automation systems. The study also finds significant differences in consumer preferences across different geographical regions, with some regions placing greater emphasis on environmental sustainability, while others prioritize cost-effectiveness. The study provides insights into the factors that drive consumer preferences towards home automation systems and can assist marketers and product developers in the industry in tailoring their products to meet the diverse needs of consumers.

(Keywords: Home automation, consumer preference, demographic factors)

INTRODUCTION

MARKETING :

Marketing is the process of creating, communicating, delivering, and exchanging offerings that have value for customers, clients, partners, and society at large. It involves researching, promoting, pricing, and distributing products or services to satisfy the needs and wants of target consumers. Effective marketing strategies enable businesses to build brand awareness, generate leads, increase sales, and retain customers.

Marketing is a-total system of business activities designed to plan, price, promote and distribute want satisfying- products to target markets to achieve organizational objectives." (Stanton, 1994: 6).

CONSUMER:

A consumer is an individual or entity that uses, purchases, or consumes goods or services to satisfy their needs or wants. Consumers can be individuals, households, or organizations that purchase products or services for personal or business use. They play a critical role in the economy as they drive demand for goods and services, which in turn influences production, pricing, and distribution.

STATEMENT OF PROBLEM

Home automation system are becoming more and more popular, but finding which system is highly placed in the market if still something to be found out. The preference towards home automation system is to be studied and understood to find the preference and satisfaction of the customer.

OBJECTIVE

1. To analyze socio economic profile of the respondents.

2. To know the consumer preference level towards the home automation system.

3. To study about the factor that influence the adoption and acceptance of home automation systems.

4. To collect the consumer experiences and satisfaction on usage of home automation systems.

5. To identify the key challenges and opportunities for the successful implementation of home automation systems.

SCOPE OF THE STUDY

The scope of this study is to examine consumer preference towards home automation systems. Specifically, this study will focus on exploring consumer attitudes towards home automation systems, the challenges that consumers face when using these systems, and the possible solutions to these challenges. Additionally, this study will also investigate the cost factor and investigate the affordability of home automation systems to ensure that they are accessible to all consumers. Finally, this study will also explore consumer awareness of home automation systems and the potential for these systems to be adopted on a larger scale

RESEARCH METHODOLOGY

Methodology is a way to systematically solve a research problem. It explains the various steps that are generally adopted by a researcher to solve a research problem.

Research Design

The results of the study were obtained by descriptive analysis.

Descriptive analysis is the process of using current and historical data to identify trends and relationships.

Area of study

Coimbatore City is the second largest city and is one of the major metropolitan cities in Tamil Nadu. The study covers in the area of "A study on consumer preference towards Home Automation System".

Period of study

The study covers a period of 3 months January 2023 - March 2023.

Sampling procedure

A sample design is a definite plan for obtaining a sample from a specific group of people. 120 samples were selected by purposive sampling method. It is one of the non-probability sampling techniques.

METHODS OF DATA COLLECTION

Data was collected through both primary and secondary data sources.

PRIMARY DATA

A Primary data is a data, which is collected for the first time for particular information and data was collected using questionnaire.

SECONDARY DATA

A secondary data is a data, which is the information is collected from already existing data and the secondary data was collected from various reviews.

TOOLS USED FOR ANALYSING DATA

Study has the objective of ascertaining the "Consumer preference toward home automation system" in Coimbatore district for analysing the primary data. The following statistical tool was used

- Percentage analysis

LIMITATION OF THE STUDY

The study is confined to the following limitations. This study is undertaken to the Coimbatore city only. So, the findings may not be generalized in broader perspective.

- Due to time constraints the sample is restricted to 120 respondents.

- The survey is conducted only in selected areas in Coimbatore district.

- The study largely is based on the preference of the respondents.

REVIEW OF LITERATURE

Sandeep Chintha (2021),[1]" Cost Effective Voice Controlled Home Automation System Using Google Assistant**,** Presented a study on IoT Technology which is flattering more resourceful these days because of marvelous increase in home mechanization applications and as well all could be controlled from wherever sitting at a place. The running of these IoT devices is mechanical and there is no want for man-made

intervention. It provides better advantages which decrease power by civilizing home security. On the other hand, house automation scheme is elastic to lodge new appliances because one can function the appliances even although if the user is far away from the house. With the aid of such IoT devices, the everyday lives or the job of the user is made easier and accurate.

Dr.SanjayPokle(2021[2])," Voice Controlled Home Automation System,A Smarter Approach"projected a home automation arrangement that is controlled by the voice and applications. In this, they have prepared their own Alexa on the raspberry pi which is used to control a variety of house appliances. After designing each constituent of the system, it is seen that their system works productively. They created a prototype of the Smart Home mechanization System. This system is easily controlled through voice, and android applications also through manual switches. Contrasting with most high end home mechanization systems, proposed replica is cost efficient and very suitable to use. They have majorly paying notice on innovating these conventional home automation systems accessible in the market and urbanized a simpler arrangement which is easier to influence thus making human existence simple.

Nikhil Rathod (2021)[3]," Google Assistant Voice Activated Automatic Control of Home Appliances Using IOT and Node MCU from International Journal" presented the architecture which is low cost and also they proposed flexible home Automation system which is using advanced versions of the Arduino microcontrollers. They concluded that using an Arduino is very easy to recognize with easy coding. They claim that implementing this kind of system we can make sure that the energy management can be completed It will augment the competence of this purpose. We manage the complete home domestic device over the internet. This will augment the reassure ability of humans and it will decrease the Humanhard work.

Neha Malik (2017[4]),Surveyed diverse home automation system showed that there are a varietyof kinds of technology used to apply this type of arrangement. All the planned systems have been offered and compared in this paper which reveal some qualities and demerits of the systems. This assessment explained diverse home automation system e.g. Web based, Arduino microcontroller based , mobile-based, SMS based, Bluetooth-based, ZigBee-based, Android app based, cloud-based & IOT based. Due to its act, ease, low cost and dependability home automation structure is making its place in global market.

Pankaj Bhardwaj (2017)[5],Home automation trade has drawn goodish attention of researchers for quite a decade. The main attraction of any automated system is reducing human labor, effort, time and errors due to human negligence. With the development of modern technology, smart phones have become a necessity for every person on this planet. With the increase in consumption of energy and population, there is a grave need to conserve energy inevery way possible.

THEORITICAL FRAMEWORK OF THE STUDY

GROWTH OF HOME AUTOMATION SYSTEM

Due to the rising demand for smart homes and IoT devices, home automation systems have been gradually growing in India in recent years. The Indian home automation industry, which was estimated to be worth $1.5 billion in 2020, is predicted to increase at a CAGR of 15.6% from 2021 to 2026, reaching $4.7 billion.

In India, the popularity of home automation systems is increasing due to a number of causes. Rising disposable incomes, urbanisation, awareness of energy saving, and a demand for home security and safety are a few of these trends.

ADVANTAGE OF HOME AUTOMATION SYSTEM

- ENERGY SAVING

- SECURITY

- CONNECTION

- COMFORT

- KINDNESS TO ENVIRONMENT

DISADVANTAGE OF HOME AUTOMATION

- COMPLEXITY
- COST
- SECURITY ISSUES
- APP SECURITY

HOME AUTOMATION PRODUCTS

Home automation refers to the use of technology to automate and control various aspects of a home, such as lighting, heating, air conditioning, security, and entertainment systems. Some popular home automation products and their access methods are :

- Smart thermostats
- Smart lightings
- Smart locks
- Security cameras
- Smart speakers
- Smart plugs
- Shutters and blinders
- Garage door opener system

ANALYSIS

CRITERIA	OPTIONS	NO.OF RESPONDENTS	PERCENTAGE %
AGE	UPTO 25	49	19%
	25 - 30	29	24%
	30 - 35	19	16%
	Above 40	23	41%
GENDER	Male	86	72%
	Female	34	28%
MARITIAL STATUS	Married	69	57.5%
	Unmarried	51	42.5%
EDUCATIONAL QUALIFICATION	School	19	16%
	Diploma	11	09%
	Undergraduate	65	54%
	Postgraduate	25	21%
OCCUPATIONAL STATUS	Employee	33	27.5%
	Own business	64	53.3%
	Profession	23	19.2%
NATURE OF FAMILY	Nuclear	68	57%
	Joint	52	43%
NO.OF.MEMBERS IN FAMILY	Below 3	19	16%
	3 – 5	77	64%
	6 - 8	24	20%
ANNUAL INCOME	Upto Rs. 2 lakhs	30	25%
	Rs. 2 lakhs to Rs. 5 lakhs	39	32.5%
	Rs.5 lakhs – Rs.8 lakhs	45	37.5%
	Above Rs.8 lakhs	06	05%
AREA OF HOUSE (SQ FT)	Less then 1000 sq feet	15	12.5%
	1000 -1500 sq feet	45	37.5%
	1500 – 2000 sq feet	39	32.5%
	More than 2000 sq feet	21	17.5%
AMOUNT SPEND	Up to ₹ 2 lakhs	48	40%
	₹ 2 lakhs - ₹ 5 lakhs	39	32.5%
	₹ 5 lakhs - ₹ 8	26	21.7%

IN AUTOMATION	lakhs		
	Above ₹ 8 lakhs	07	5.8%
MOST INTERESTED IN AUTOMATION	Security(alarm, detection)	36	28.5%
	Energy saving	39	32.5%
	Manage home remotely	30	26.5%
	Easy accessibility	15	12.5%
NETWORK TECHNOLOGY ADOPTED BY RESPONDENTS	Wired home automation	34	28%
	Power home automation	35	29%
	Computer network automaton	20	17%
	Wireless home automation	31	26%
KNOW ABOUT HOME AUTOMATION SYSTEM	Social media	49	41%
	Television	44	37%
	Magazines	22	18%
	Banners	05	04%
DEVICES INSTALLED	5+ Smart devices	21	17.5%
	3-5 Smart devices	50	41.7%
	1-3 smart devices	43	40.8%
PRODUCTS	Lighting control	13	11%
	Kitchen appliances	21	17.5%
	Security system	25	21%
	Temperature controller	23	19%
	Smart lock	17	14%
	Smart plugs	3	2.5%
	Automatic shutters and blinds	16	13%
	Robotic vacuum cleaner	2	02%
REASON FOR AUTOMATION	For convenience (to save time)	40	33.3%
	For security	38	31.3%

	reasons		
	For efficiency (energy saving)	34	28.3%
	I like technology gadgets	8	6.7%
TECHNOLOGY USED FOR AUTOMATION	Home assistant	45	37.5%
	Apple home kit	22	18%
	Amazon alexa	33	27.5%
	Google home	20	17%
PROBLEM FACED BY RESPONDENTS	Insufficient features and functionality	20	16.7%
	To many home automation controls app	36	30%
	Cannot connect to network	35	29.2%
	Time delay during installation	29	24.2%

FINDINGS

➤ The Majority (71.7%) of the respondents are male.

➤ Most (40.8%) of the respondents are in the age category of above 40 years**.**

➤ The Majority (57.5%) of the respondents are Married.

➤ The Majority (54.2%) of the respondents are Undergraduate.

➤ The Majority (53.3%) of the respondents are from the category of an employee**.**

➤ The Majority (56.7%) of the respondents are from nuclear family.

➤   The Majority (64.2%) of the respondents says 3-5 members in their family.

➤   Most (37.5%) of the respondents earns income between Rs.5 lakhs – Rs.8 lakhs

➤   Most (37.5%) of the respondents are occupy 1000-1500sq feet of area.

➤   Most (40%) of the respondent spend Upto ₹ 2 lakhs for home automation.

➤   Most (28.5%) of the respondents are interested in security system on home automation.

➤   Most (29.2%) of the respondents are adopted power home automation network   technology.

➤   Most (40.8%) of the respondents got awareness about the home automation system through the social media.

➤ Most (41.7%) of the respondents installed 3-5 smart devices at home.

➤ Most (20.8%) of the respondents the users of security system in home.

➢ Most(33.3%) of the respondents use automation for convenience.

➢ Most(37.5%) of the respondents are using Home assistant.

➢ Most (30%) of the respondents have faced the problem of too many automation control apps.

SUGGESTIONS

➢ Home automation has the potential to improve our daily lives, but there is a need to improve the interaction and usability of these devices.

➢ There is a need to increase awareness about home automation and its benefits among users.

CONCLUSION

Home automation is a technology that has great potential to improve energy efficiency and enhance the quality of life. However, to fully realize the benefits of this technology, there is a need to improve the interaction and ease of use of home automation devices. While the primary purpose of home automation should be energy-saving, it can also provide time-saving benefits. To achieve this, companies need to invest in better materials, manufacturing processes, and customer support to improve the quality of home automation products and services. Additionally, it is essential to increase awareness among users about the benefits of home automation and educate them about how to fully fully utilize its functionalities. The technology should be made accessible to all and not just a few, and users should be provided with easy-to-use interfaces and user-friendly manuals. Improving wireless connectivity and reducing human errors during installation and maintenance of home automation devices are crucial areas that need attention to enhance the user experience. In conclusion, home automation is a promising technology that can significantly improve the quality of life and reduce energy consumption. However, companies must focus on improving the user experience, increasing awareness among users, and investing in better quality products and services to fully utilize the potential of this technology.

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