

## **BALANCING WORK AND CLEAN: SATISFACTION OF WORKING WOMEN ON ROBO VACUUM CLEANER**

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### **Abstract**

Customer satisfaction plays a key role in determining the success and continued adoption of robotic vacuum cleaners. Factors such as price, quality, ease of use, battery life, and maintenance influence how users perceive and evaluate these devices. Therefore, analyzing satisfaction helps in identifying strengths and areas for improvement, ensuring better product development and enhanced user experience. High satisfaction is seen in terms of price, quality, ease of use, and maintenance, showing that users value affordability, good performance, and convenience. Battery life, cleaning efficiency, noise level and storage space also receive positive responses, indicating moderate to high satisfaction. However, comparatively higher disagreement is observed in user manual, sensor technology, and additional features, suggesting that users may face difficulty in understanding or using these technical aspects. Overall, the results show that users are more satisfied with basic and practical features, while technical features need improvement. Chi-Square result indicates that variables namely area of residence, monthly income, family income, type of family, earning members in the family, source of awareness, period of usage, monthly usage, daily usage and type of flooring are found to be significant with the level of satisfaction on robo vacuum cleaner at five percent level.

**Keywords:** Robo vacuum cleaner- Satisfaction-Working Women-Technology

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### **Introduction**

The growing pace of modern life, especially among working individuals and dual-income households, has increased the demand for smart and time-saving home appliances. One such innovation is the robotic vacuum cleaner, which has transformed the traditional cleaning process through automation and intelligent technology. These devices are designed to clean floors with minimal human intervention, offering features such as scheduled cleaning, automatic navigation, obstacle detection, and self-charging capabilities. Customer satisfaction plays a crucial role in determining the success and widespread adoption of robotic vacuum cleaners. Satisfaction depends on various factors such as cleaning efficiency, battery performance, ease of use, durability, noise level, maintenance requirements, and after-sales service. When these products meet or exceed customer expectations, they not only enhance convenience but also improve the overall quality of life by reducing physical effort and saving time. In recent years, the increasing awareness of smart home technologies and the availability of different models across price ranges have influenced consumer satisfaction levels. However, challenges such as high initial cost, limited battery life for larger spaces, and maintenance issues may affect user experience. Therefore, understanding the level of satisfaction among users of robotic vacuum cleaners is essential for manufacturers and marketers to improve product features and meet consumer expectations effectively.

## Review of Literature

Recent studies have focused on understanding consumer satisfaction on robotic vacuum cleaners.

**Forlizzi and DiSalvo (2014)** explain that satisfaction depends on how well robotic vacuum cleaners integrate into the home ecosystem and daily routines. Poor compatibility with user environments can lead to rejection or dissatisfaction. **Jones & Smith (2018)** examine robotic vacuum cleaners through a technology adoption lens, highlighting that perceived usefulness, ease of use, and trust strongly influence user acceptance. Similarly, **Kapoor & Mishra (2021)** extend this by linking adoption to smart home integration, showing that users are more likely to adopt robotic vacuums when they fit seamlessly into broader home automation ecosystems. **Tor-Kadioğlu (2020)** explored consumer experiences and motivations for using robotic vacuum cleaners. The study revealed that satisfaction is strongly linked to perceived convenience and time-saving benefits, as users value the automation of routine household tasks. **Wang (2020)** reinforces these findings, emphasizing that consumer perception of "smartness" and convenience plays a central role in purchase decisions. **Carames et al. (2021)** analyzed online customer reviews to understand satisfaction patterns in robotic vacuum usage. Their findings indicate that first-time users tend to report higher satisfaction levels, largely due to novelty and perceived convenience, whereas experienced users often develop higher expectations, leading to comparatively lower satisfaction. **Statista (2025)** survey data indicates that a majority of users report moderate to high satisfaction levels with robotic vacuum cleaners and express willingness to repurchase, suggesting general acceptance despite existing limitations.

## Statement of the Problem

The rise of robotic vacuum cleaners offers a promise of convenience for busy households, especially for working women who often juggle multiple responsibilities. While these devices are designed to save time and effort, their practical utility and satisfaction levels among working women remain underexplored. Issues such as compatibility with diverse home layouts, operational efficiency, user-friendliness, and after-sales support significantly impact their adoption and usage. Furthermore, specific challenges like scheduling, noise disruption, navigation limitations in cluttered homes, and the emotional expectations of achieving a truly "clean" space affect satisfaction levels uniquely for this demographic. With the increasing popularity of smart home devices, robot vacuum cleaners have become a convenient and efficient solution for household cleaning. However, consumer satisfaction and priorities when selecting a robot vacuum cleaner vary widely. These challenges raise questions such as: What are the key reasons behind the satisfaction for robotic vacuum cleaners? and What are the factors that significantly influence the level of satisfaction for robotic vacuum cleaners?

## Objectives

To find out the solution for the questions raised above, the following objectives have been framed.

- ❖ To determine the factors influencing the satisfaction of working women on robo vacuum cleaner
- ❖ To ascertain the variables associated with the level of satisfaction on robo vacuum cleaner

## Research Methodology

The study is based on primary data collected using google form from working women who are using robo vacuum cleaner. It contains questions relating to the factors influencing the satisfaction of working women using robo vacuum cleaner. A sample of 200 working women residing in Pollachi Taluk has been selected by adopting convenience sampling method. Simple Percentage and Chi-square test have been used to analyse the data.

## Findings

The finding of the study is divided in to three sections namely, brand preference for robo vacuum cleaner, factors influencing the satisfaction of working women using robo vacuum cleaner and the variables associated with the level of satisfaction on robo vacuum cleaner.

### (i) Brand Preference for Robo Vacuum Cleaner – Friedman Ranking

Sony, Agaro, Xiaomi, Eureka Forbes, Philips, Dreame, Voimi, Narwal, ILIFE and Evovacs are some of the brands preferred by the Working Women. Friedman Ranking has been used to find the most preferred brand.

**Table:1**  
**Brand Preference for Robo Vacuum Cleaner - Friedman Rank Test**

Brand	Mean Score	Rank
Sony	9.03	X
Agaro	8.06	IX
Xiaomi	7.66	VIII
Eureka Forbes	4.72	IV
Philips	5.92	VI
Dreame	5.24	V
ILIFE	6.36	VII
Viomi	3.95	III
Narwal	3.31	II
Evovacs	2.79	I

It is observed from the above analysis that among the various robo vacuum cleaner, the working women ranked Evovacs is ranked first followed by Narwal, Voimi, Eureka Forbes, Dreame, Philips, ILIFE, Xiaomi, Agaro and Sony.

### (ii) Factors Influencing the Satisfaction of Working Women on Robo Vacuum Cleaner

The table below shows the classification of working women based on their level of satisfaction on the various factors of robo vacuum cleaner.

**Table: 2**  
**Factors Influencing the Satisfaction of Working Women on Robo Vacuum Cleaner**

Factors	Strongly Agree	Agree	Disagree
Price	95 (47.5%)	92 (46%)	13 (6.5%)
Battery Life	34 (17%)	143 (71.5%)	23 (11.5%)

User Manual	54 (27%)	98 (49%)	48 (24%)
Noise Level	42 (21%)	126 (63%)	32 (16%)
Quality	85 (42.5%)	100 (50%)	15 (7.5%)
Cleaning Efficiency	47 (23.5)	132 (66)	21 (10.5)
Sensor Technology	58 (29%)	97 (48.5%)	45 (22.5%)
Easy To Use	63 (31.5%)	121 (60.5%)	16 (8%)
Maintenance	75 (37.5%)	101 (50.5%)	24 (12%)
Storage Space	53 (26.5%)	123 (61.5%)	24 (12%)
Features	49 (24.5%)	106 (53%)	45 (22.5%)

The table above indicates that working women are generally satisfied with robotic vacuum cleaners, as most of them have chosen “agree” and “strongly agree” for all factors. High satisfaction is seen in terms of price, quality, ease of use, and maintenance, showing that users value affordability, good performance, and convenience. Battery life, cleaning efficiency, noise level and storage space also receive positive responses, indicating moderate to high satisfaction. However, comparatively higher disagreement is observed in user manual, sensor technology, and additional features, suggesting that users may face difficulty in understanding or using these technical aspects. Overall, the results show that users are more satisfied with basic and practical features, while technical features need improvement.

### (iii) Variables Associated with the Level of satisfaction on Robo Vacuum Cleaner

Chi-square test has used to find out the association between the selected variables namely age, area of residence, marital status, educational qualification, occupation, monthly income, family income, type of family, earning members in the family, source of awareness, period of usage, monthly usage, daily usage, type of flooring and the level of satisfaction on robo vacuum cleaner. Level of significance is five percent.

**Table: 3**  
**Variables Associated with the Level of Preference on Robo Vacuum Cleaner**

Variables	Calculated Chi-Square Value	Df	Table Value @ 5% Level
Age	3.208	6	12.592

of residence, monthly income, family income, type of family, earning members in the family,

Area of residence	11.801*	4	9.488
Marital Status	3.464	2	5.991
Educational Qualification	2.194	6	12.592
Occupation	6.464	8	15.507
Monthly Income	24.291*	6	12.592
Family Income	20.733*	6	12.592
Type of Family	12.187 *	2	5.991
Earning Members in the Family	10.119*	4	9.488
Sources of Awareness	24.126 *	6	12.592
Period of Usage	25.793*	4	9.488
Monthly Usage	13.604 *	6	12.592
Daily Usage	27.938 *	6	12.592
Type of Flooring	42.410*	10	18.307

source of awareness, period of usage, monthly usage, daily usage and type of flooring are found to be significant with the level of satisfaction on robo vacuum cleaner at five percent level.

### Suggestions

- ❖ Improve battery life so that larger areas can be cleaned in a single charge
- ❖ Enhance cleaning efficiency to handle dust, hair, and corners more effectively.
- ❖ Reduce noise level to ensure quiet operation, especially in homes
- ❖ Strengthen sensor technology for better navigation and obstacle detection
- ❖ Ensure easy maintenance, such as washable filters and simple dustbin cleaning.
- ❖ Offer better after-sales service and quick customer support
- ❖ Keep prices reasonable to match the features and quality offered

### Conclusion

The study concludes that customers show a high level of satisfaction toward robotic vacuum cleaners, as most respondents expressed agreement with key factors. Features such as price, quality, ease of use, maintenance, and cleaning efficiency play a major role in influencing satisfaction. Users appreciate the convenience, time-saving nature, and reduced physical effort offered by these devices in managing daily household cleaning. In addition, factors like battery life, noise level, and storage space also contribute positively to satisfaction, indicating that users prefer efficient, quiet, and compact devices suitable for modern homes. The growing awareness and acceptance of smart home technologies further support the increased use of robotic vacuum cleaners. However, certain aspects such as user manual clarity, sensor technology, and advanced features need improvement, as some users find them complex or less user-friendly. This highlights the need for better design, clear instructions, and simplified technology. Moreover, effective after-sales service, regular product updates, and reliable brand support can significantly enhance customer trust and long-term satisfaction. Manufacturers should also focus on balancing affordability with advanced features to attract a wider range of consumers. Overall, robotic vacuum cleaners are well accepted and preferred by users. With continuous improvements in

performance, usability, and customer support, satisfaction levels and adoption are expected to grow further in the future.

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