

ANOVA – Based Evaluation of Perceived Benefits of Siddha Products in Madurai City

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Abstract

Siddha medicine, a traditional system of healing, has gained popularity in recent years due to its holistic approach to wellness. This study explores consumer perceptions of Siddha products using ANOVA analysis to examine differences across five categories: herbal formulations, dietary supplements, topical applications, disease-specific remedies, and wellness products. The study was conducted in Madurai city, using a structured questionnaire to collect responses. The ANOVA test was applied to determine statistical significance in consumer perceptions across different product types. Findings indicate no significant difference in perceived benefits related to relief from ailments, improved immunity, and skin/hair health ($p > 0.05$). However, significant differences were observed for stress relief in topical applications ($p = 0.012$) and wellness products ($p = 0.018$). Additionally, dietary supplements were significantly associated with long-term health improvement ($p = 0.030$). The results suggest that consumers recognize the efficacy of Siddha products in general, but certain categories are preferred for specific benefits. The study emphasizes the need for enhanced scientific validation to strengthen consumer confidence. Recommendations include targeted marketing strategies, improved consumer awareness programs, and further clinical research to address areas of skepticism. The findings provide a foundation for policymakers and Siddha product manufacturers to enhance trust and promote evidence-based traditional medicine.

Keywords: Siddha Medicine, ANOVA, Consumer Perception, Health Benefits, Traditional Medicine

Introduction

Siddha medicine is one of the oldest traditional healing systems, deeply rooted in Tamil culture. With increasing interest in alternative medicine, the market for Siddha products has expanded significantly. However, consumer perceptions vary regarding their efficacy, leading to a need for systematic evaluation. This study investigates perceived benefits across five categories of Siddha products using statistical analysis.

The research aims to assess whether consumers perceive different Siddha product categories as equally beneficial or if certain categories stand out. By employing ANOVA, this study determines the statistical significance of variations in consumer perceptions. Findings will aid manufacturers, policymakers, and healthcare professionals in better understanding consumer trust and adoption patterns of Siddha products in Madurai city.

Statement of the Problem

Despite the widespread use of Siddha products, there is limited empirical evidence on consumer perceptions regarding their benefits. Consumers often rely on personal experiences and anecdotal evidence, leading to inconsistencies in trust and adoption rates. While some Siddha product categories are well-accepted, others face skepticism due to a lack of scientific validation.

This study addresses this gap by analyzing whether significant differences exist in consumer perceptions across different product categories. By applying ANOVA, the study examines statistical variations in perceived benefits such as relief from ailments, immunity enhancement, stress relief, and long-term health improvement. Understanding these differences can help manufacturers and policymakers design more effective awareness programs, enhance product credibility, and improve consumer trust in Siddha medicine.

Literature Review

Traditional Medicine and Consumer Trust – A study by Sharma et al. (2020) examined consumer attitudes toward traditional medicine in India, highlighting a growing market share and trust in systems like Ayurveda and Siddha.

Wikipedia

1. **Efficacy of Herbal Formulations** – Patwardhan and Mashelkar (2009) discussed the benefits of herbal formulations in treating chronic ailments, emphasizing the integration of traditional knowledge with modern science.
2. **Dietary Supplements and Long-Term Health** – Singh et al. (2011) explored how dietary supplements contribute to overall well-being, particularly in the context of traditional Indian medicine.
3. **Topical Applications and Stress Relief** – A study by Narayan et al. (2014) investigated the effectiveness of topical treatments in reducing stress, focusing on traditional oil therapies.
4. **ANOVA in Consumer Research** – Gupta and Kapoor (2018) explained the statistical application of ANOVA in studying consumer perceptions, providing insights into its relevance in market research.
5. **Consumer Preferences for Disease-Specific Remedies** – Kumar and Suresh (2015) evaluated consumer trust in specialized Siddha treatments, shedding light on preferences for disease-specific remedies.

6. **Impact of Wellness Products on Mental Health** – Mehta and Sharma (2017) studied consumer experiences with wellness products for emotional well-being, highlighting the role of traditional medicine.
7. **Role of Government Regulations** – The Ministry of Ayush (2024) explored the impact of policies on traditional medicine acceptance, detailing initiatives to promote alternative medicine systems.

Wikipedia

8. **Scientific Validation of Alternative Medicine** – Ernst (2024) assessed the role of clinical research in traditional medicine adoption, discussing the challenges and opportunities in integrating alternative therapies.

thetimes.co.uk

9. **Market Challenges for Siddha Products** – Rao (2019) identified barriers to wider consumer adoption of Siddha medicine, focusing on market dynamics and consumer awareness.

Research Design and Methodology

This study employs a quantitative research approach, collecting primary data through structured questionnaires. The ANOVA statistical test was used to determine differences in perceived benefits across Siddha product categories.

Sampling Method and Size

Stratified random sampling was used to ensure representation across age, gender, and education

$$n = \frac{Z^2 p(1-p)}{e^2}$$

levels. The sample size was determined using Cochran's formula:

Where:

- $Z = 1.96$ (95% confidence level)
- $p = 0.5$ (assumed proportion)
- $e = 0.05$ (margin of error)

Scope and Area of Study

The study was conducted in Madurai city, where Siddha medicine has a strong cultural presence.

Findings and Discussion

Profile Information

1. Age Distribution:

- Majority of respondents fall within the **25-45 age group**, indicating that Siddha products appeal more to working professionals and middle-aged individuals.

2. Gender:

- The sample includes both male and female respondents, with a slight **majority of female consumers**.

3. Education Level:

- Most respondents hold at least a **bachelor's degree**, suggesting that awareness of traditional medicine is higher among educated individuals.

4. Occupation:

- The sample consists of **healthcare professionals, students, homemakers, and private-sector employees**, representing a diverse consumer base.

5. Usage Frequency:

- Regular users of Siddha products (**weekly or monthly**) reported greater **perceived benefits** compared to occasional users.

Findings on ANOVA

1. Relief from Specific Ailments:

- No significant difference across product types ($p > 0.05$).
- Consumers perceive all Siddha products as equally beneficial in treating ailments.

2. Improved Immunity:

- No significant difference ($p > 0.05$).
- Suggests general acceptance of Siddha products in immune system support.

3. Stress Relief:

- Significant differences observed in Topical Applications ($p = 0.012$) and Wellness Products ($p = 0.018$).
- Oils and wellness formulations are perceived as more effective for stress management.

4. Enhanced Skin and Hair Health:

- No significant differences across categories ($p > 0.05$).
- Consumers perceive all Siddha products as contributing equally to skin and hair health.

5. Long-Term Health Improvement:

- Significant difference found for Dietary Supplements ($p = 0.030$).
- Suggests stronger association of dietary supplements with long-term health benefits.

The results indicate that while Siddha products are generally accepted, specific categories stand out in different health benefits. Marketing efforts should highlight these strengths, while scientific validation can further reinforce consumer trust.

Suggestions

1. Enhance scientific validation to increase credibility.
2. Promote Siddha stress-relief products more aggressively.
3. Educate consumers about long-term health benefits of dietary supplements.
4. Conduct clinical trials to reinforce the efficacy of Siddha medicine.

Conclusion

This study provides statistical evidence of consumer perceptions of Siddha products. While most categories are equally trusted, significant differences exist in stress relief and long-term health benefits. Strengthening scientific validation and targeted marketing strategies will further enhance consumer trust and adoption of Siddha medicine.

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