

-RESEARCH ARTICLE-

## THE IMPACT OF PHARMACEUTICAL MARKETING STRATEGIES ON CONSUMER DECISION-MAKING IN THE AESTHETIC MEDICINE INDUSTRY

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### —Abstract—

The aesthetic medicine industry has witnessed remarkable growth in recent years, driven by rapid technological advancements, increasing consumer awareness of

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physical appearance, and the widespread use of digital marketing platforms. Within this dynamic environment, pharmaceutical companies have increasingly adopted diverse marketing strategies to influence consumer attitudes and purchasing decisions related to aesthetic medical products and services. This study aims to examine the impact of pharmaceutical marketing strategies on consumer decision-making in the aesthetic medicine industry by analyzing the relationship between marketing activities and consumer behavior. The study adopted a descriptive-analytical approach and relied on a structured electronic questionnaire distributed to consumers of aesthetic medical products and services. A total of 210 valid responses were collected and analyzed using the Statistical Package for the Social Sciences (SPSS v.26) and AMOS v.26. The findings revealed a statistically significant positive relationship between pharmaceutical marketing strategies and consumer decision-making. The results further demonstrated that digital marketing, promotional activities, social media influence, product credibility, and marketing transparency play a critical role in shaping consumer perceptions and purchase intentions. In addition, the study highlighted that consumers are increasingly influenced by online reviews, influencer recommendations, and visually oriented advertising campaigns when evaluating aesthetic medicine products and services. The study concludes that effective and ethically responsible marketing strategies can enhance consumer trust, improve customer engagement, and strengthen the competitive position of pharmaceutical companies operating in the aesthetic medicine sector. Based on the findings, the study recommends that pharmaceutical companies adopt transparent, evidence-based, and customer-centered marketing practices while enhancing consumer awareness regarding the benefits and risks associated with aesthetic medical products and procedures.

**Keywords:** Aesthetic medicine marketing, pharmaceutical companies, customer behavior, marketing influence, marketing strategies, statistical analysis, purchase decision-making, digital marketing.

## INTRODUCTION

As the global health care industry experiences rapid changes, the promotion of aesthetic medicine has become a very changing part of this industry with the intersection of medical, business and social aspects to form a new model of integrating science and modern marketing (Atiyeh et al., 2020). It has moved beyond the use of therapeutic or corrective procedures that addressed deformities or defects, and now is a growing industry driven by sophisticated marketing practices, where pharmaceutical companies and brands contend for the ability to create a customer's perception and to control their behaviour and purchasing decisions (Srivastava & Wagh, 2020).

The rapid advancement of technology, especially on the internet and social media, has changed dramatically the way clients and aesthetic service providers relate to each other (Dimitrios et al., 2023). Clients are more knowledgeable about their choices and are

often overwhelmed by the variety of advertisements around them (Lehnert et al., 2021). This evolution has led to a move away from traditional forms of communication, toward interactivity by means of the internet and/or social media, and immediate, direct impacts on consumer attitudes (Chang & Chang, 2023).

Aesthetic medicine has presented numerous difficulties to the marketing sector when marketing the aesthetic medicine industry, including the necessity of addressing an ethical dilemma about balancing ethics versus financial goals (Qureshi et al., 2025). The marketing methods used within aesthetic medicine raise many ethical concerns, particularly about the promotional messages that customers receive concerning the integrity and transparency of those marketing materials (Rostamzadeh & Rahimi, 2025). There is a particular concern when those marketing methods target a segment of the population that may be more influenced by social or psychological factors in relation to beauty standards and body image. Therefore, the continued promotion of thousands of products without providing adequate information could cause consumers to make an erroneous decision about purchasing a product due to false claims such as exaggerating the benefits of a product while belittling the possible effects of using that product. To overcome these issues, advertising and marketing may need additional regulations or oversight to protect consumers and maintain a level of fairness between the consumer's right to receive information and the company's right to advertise their products. The marketing of skincare is one of the most critical elements of the aesthetic medicine industry, and it has improved significantly by using a combination of scientific accuracy and appealing to consumers in the marketing. Experience-based products must exhibit multiple dimensions of effectiveness, including their ability to create a positive mental framework for potential users, through various means of marketing activity, i.e., the usage of comprehensive marketing strategies that include digital marketing, utilizing influencers, developing product designs, promoting products in clinics, and capitalizing on online review sites and user generated experiences (Cuomo et al., 2020). This product evolution represents a shift away from a traditional marketing model based solely on recommendations from physicians towards a hybrid model that combines the medical endorsement of a product with social and digital marketing influences (Babatunde, 2024).

In addition, studying consumer behaviour within the realm of aesthetics requires an in-depth examination into the stages of a buyer's journey, from creating an awareness and interest level through the search for information to evaluating options until making decisions and post-purchase behaviour (Furquim et al., 2023). The stages involved are influenced by several different factors; including but not limited to psychological drivers, social influences/pressures, exposure to media and level of trust (with respect to doctor, brand or digital influencer) associated with the source providing information. In addition to the above, due to the emotionally charged nature of issues relating to skin and cosmetic appearance, consumers tend to be more open to responding to marketing communications related to their needs (Teixeira et al., 2023).

As a result, the importance of this study is twofold: first, its intention is to establish a comprehensive analytical framework that allows researchers to examine how aesthetic medicine is marketed by pharmaceutical companies with respect to the effects that those practices have upon customer behaviour; second, it seeks to bridge the "knowledge gap" created by the fragmentation of research conducted in various subject areas (marketing, medicine, psychology) by integrating these disciplines into a singular analytical model. By achieving these objectives, the proposed research will contribute to expanding the current level of scholarship within this newly established field while providing decision-makers with valuable insight into how they can develop more socially and ethically responsible marketing initiatives.

This study contains four main parts; First, the introduction of the study methods including the research problem, purpose/significance, study objectives, and proposed conceptual framework. Second, the theoretical foundation by discussing the study variables and their dimensions. Third, the empirical foundation by testing the correlation and cause and effect hypotheses. Fourth, the conclusions and recommendations pulled from the study.

## **RESEARCH METHODOLOGY**

### **Research Problem**

Recently, the aesthetic medicine industry has become larger due to rapid technological advances and because individuals are now more interested in their physical appearance. The rapid growth in this area has resulted in the changing of the aesthetic medicine industry into a dynamic and integrated sector that has medical, commercial and marketing dimensions. The growth of the aesthetic medicine industry has led to an increase in the marketing capabilities of pharmaceutical companies with respect to aesthetic medicine products and services (both via traditional and digital channels), in an environment of intense competition and constant change. However, along with this rapid growth, there are a variety of challenges associated with the nature of marketing practices and the degree to which they comply with ethical and professional standards. Increasingly, companies utilize aggressive marketing tactics to create customer perceptions and influence consumer behaviour. The problem is that when you market aesthetic medicine, it isn't just about providing medical or factual information but also how you use psychological, emotional, and social factors to influence someone's decision-making as a customer. This can be seen in the increasing usage of social media companies and influencer marketing where there could potentially be recommendations that may not have evidence-based science even though they seem like good information. Furthermore, having countless sources of information with varying degrees of reliability causes confusion for consumers in telling the difference between legitimate scientific sources compared to sources that are using marketing tactics to generate sales. These factors can create a negative impact on both the quality of the customer's purchase

decisions and their level of satisfaction regarding the results received.

Although this matter is critical, it continues to be a challenge for pharmaceutical companies to employ balanced marketing techniques that allow them to leverage marketing promotions; be ethical in their business practices; build long-term and trusting relationships with patients; and increase market share. There has been an increased level of academic research about the marketing of aesthetic medicine. However, there continues to be a lack of understanding regarding how the marketing of aesthetic medicine affects customer behavior and, specifically, there is very little understanding of how this occurs in local contexts. This provides a need for analytical studies to be conducted to better define the relationship between aesthetic medicine marketing and customer behavior and to provide a better understanding of the dimensions and directions of this relationship.

Consequently, this study seeks to answer some of the most pressing issues related to the main research question: To what degree do pharmaceutical companies affect consumer behaviour through their marketing of aesthetic medicine?

This main question gives rise to several sub-questions, the most important of which are:

1. What is the nature of the correlation between the marketing of aesthetic medicine and customer behavior?
2. What is the nature of the impact of aesthetic medicine marketing on customers' behavior, decisions, and attitudes?

### **Significance of the Study**

Present studies hold a great degree of importance in that they are an integrated (both theory and practice) form of research. Additionally, a study in an area of research as highly complex and multidisciplinary as the research involves studies related to contemporary aesthetics; therefore, this research contributes to theoretical development and practical applications of aesthetic medicine marketing and its implications for customer behaviour, as well as through the ongoing development of science. The importance of the study can be described through two principal classifications.:

### **Academic Significance**

- A. There is a scarcity of studies addressing the variable of aesthetic medicine marketing through pharmaceutical companies and its relationship with customer behavior, particularly in Arab contexts. To the best of the researchers' knowledge, these variables have not been directly linked within a comprehensive analytical framework (Alshurideh et al., 2023; Palić, 2025).
- B. Contributing to the enrichment of Arab and Iraqi academic literature by addressing a contemporary topic that integrates marketing, medical, and behavioral dimensions

within a comprehensive framework, thereby opening broad prospects for future research in this growing field.

- C. Providing a theoretical framework that integrates the concepts of aesthetic medicine marketing and customer behavior, thereby assisting researchers in understanding and interpreting the nature of interactions between the marketing activities implemented by pharmaceutical companies and customer responses with greater depth and precision.

### **Practical Significance**

- A. The practical significance of this study arises from its ability to provide actionable insights that contribute to the development of marketing practices in the aesthetic medicine sector. The study offers a scientific foundation that enables pharmaceutical companies operating in this field to design more effective and responsible marketing strategies that balance promotional objectives with ethical considerations, thereby enhancing customer trust and achieving sustainable competitive advantage.
- B. Enabling healthcare authorities and regulatory bodies to gain a deeper understanding of the impact of marketing practices on customer behavior, which contributes to the development of more effective regulatory frameworks to govern this sector and protect consumers.
- C. Providing practitioners in the fields of healthcare marketing and aesthetic medicine with insights from the study to improve communication strategies with customers, and to enhance their ability to guide purchasing decisions toward more informed and knowledge-based choices.

### **Research Objectives**

In light of the research problem and its theoretical and practical dimensions, the primary objective of the present study is to analyze the role of aesthetic medicine marketing, through pharmaceutical companies, in influencing customer behavior. This is achieved by exploring the nature of the relationships among the studied variables and measuring the direction and magnitude of their effects. Based on this main objective, the study seeks to accomplish the following sub-objectives:

1. To develop an integrated theoretical framework on the concept of aesthetic medicine marketing and its dimensions, as well as customer behavior and its influencing factors, based on a systematic review of relevant literature.
2. To analyze the correlation between pharmaceutical companies' marketing strategies and customer behavior at both the aggregate and disaggregated levels.
3. To measure the impact of aesthetic medicine marketing on shaping customers' decisions and attitudes toward aesthetic products and services through the application of appropriate statistical techniques.

4. To derive a set of scientific conclusions that reflect the results of the analysis and to formulate practical recommendations that contribute to improving the marketing practices of pharmaceutical companies and enhancing customer awareness in the field of aesthetic medicine.

## **Research Hypotheses**

In line with the requirements of the study, a set of main hypotheses has been formulated to reflect the nature of the relationships and effects among the study variables, as follows:

### **First Main Hypothesis**

There is a statistically significant correlation between aesthetic medicine marketing and customer behavior.

### **Second Main Hypothesis**

Aesthetic medicine marketing has a statistically significant effect on customer behavior.

## **Research Methodology**

The methodology of the study consists of the descriptive-analytical method, which is appropriate because the research aims at examining the correlations between aesthetic medicine and customer behaviour. Data were collected from customers using an electronic questionnaire sent out as a survey, with a response rate of 210 valid questionnaires for sufficient data on which to conduct statistical analysis. Advanced statistical techniques were employed to analyse the collected data and test hypotheses regarding the relationship and the effects of the study variables on each other, which would lead to a clearer understanding about the nature of these relationships and how strong they were in order to reach scientific conclusions to support the research aims and thus help resolve the research question.

## **Population and Sample of the Study**

This research will be performed on customers utilizing aesthetic medical products and/or services, representing the target market for companies making these types of products and supplying these types of services. For this study, a total of 210 accurate electronic surveys were collected and determined to be adequate for gathering quantitative data. The electronic surveys were distributed through a number of different digital outlets such as email and/or social networking outlets with survey links, and all of the responses received from those individuals that participated in the survey process were checked against the validity of the response prior to being analyzed. The population from which to draw the conclusion of this research was selected as there has been significant growth of the number of pharmaceuticals companies offering aesthetic

medicines and medical products as well as a significant increase in customers' awareness of the growing need for these products/services.

It is essential to analyze how customers act, as well as the effect that marketing tactics have on their purchase decisions. Moreover, the high level of competition between companies for attracting and keeping customers illustrates the significance of being able to identify what marketing elements affect consumer behaviour. Understanding these effects allows marketers to develop scientific and practical suggestions to enhance marketing performance and create a more robust interaction between companies and their customers.

### **Data Collection Methods and Sources**

To achieve the research objectives and test its hypotheses, the study relied on a combination of sources and methods for data collection, as outlined below:

1. **Theoretical Framework:** The theoretical aspect of the study was addressed through a comprehensive review and analysis of key concepts related to aesthetic medicine marketing and customer behavior. Particular emphasis was placed on examining relevant previous studies that explored the relationship between marketing strategies and their impact on consumer behavior. The information was systematically analyzed to construct a conceptual framework reflecting the nature of the study variables and their interrelationships.
2. **Empirical Framework:** The study employed an electronic questionnaire as the primary tool for collecting data related to the applied aspect of the research. The questionnaire was carefully designed to accurately measure and diagnose the study variables, with attention given to clarity of wording and ease of understanding for respondents.

There were two main parts to the survey. The first was information about where the customer lived and their demographics. The second had two main sections: one was information about how pharmaceutical companies have marketed their products to customers; and the second was about how customers respond to the products that have been marketed to them.

The study employed a five-point Likert scale where participants rated their level of agreement with each questionnaire item from a response of (5) for strongly agree to (1) for strongly disagree. In order to ensure the reliability of the instrument used to collect data, the Cronbach's alpha coefficient was calculated for every item in the questionnaire. In addition, there were validity tests done on the instrument to ensure accurate measurement of the research variables. The results from both tests are reported in [Table 1](#).

### **Table 1: Reliability Measurement (Cronbach's Alpha) for Study Variables Separately and Overall**

| Variables                              | Code     | Number of Items | Cronbach's Alpha scale | Validity Values |
|--|----------|-----------------|------------------------|-----------------|
| Ethics of Aesthetic Medicine Marketing | q1 – q10 | 10              | 0.796                  | 0.892           |
| Customer Behavior                      | w1 – w10 | 10              | 0.788                  | 0.888           |
| Overall Reliability and Validity       |          | 20              | 0.857                  | 0.927           |

**Source:** Prepared by the researchers based on the outputs of the Statistical Package (SPSS V.25).

The questionnaire used in this study was validated and verified by using Cronbach's Alpha coefficient, which is the statistical method used to determine the internal consistency among the variables in the study's model. Because Cronbach's Alpha is one of the most significant measures of reliability, values for substantively similar items can range from 0 to 1. In the field of social science research, the use of a correlation-correlation basis provides a basis for evaluating internal consistency in a measure. In this regard, values of 0.60 and higher are generally considered acceptable; as the Alpha value approaches 1, the measurement instrument being used becomes increasingly reliable and consistent. The reliability value can also be interpreted as being equal to the square of the reliability value.

Table (1) demonstrates that study variable reliability coefficients are high and statistically sound. The individual variable reliability coefficients fell within the range of (0.788–0.796), while the overall reliability coefficient calculated (0.857). In addition, the individual validity values ranged from (0.888 to 0.892) with an overall validity coefficient of (0.927). Thus, this establishes that both reliability and validity of the questionnaire was excellent and statistically sound, which means that this instrument is highly useful for analyzing data.

## THEORETICAL FRAMEWORK

### Aesthetic Medicine Marketing

#### Ethical Considerations in Marketing Cosmetic Surgery

Marketing for cosmetic surgery is very complicated. To understand this topic, you need to look at four ethical principles: patient autonomy, beneficence, non-maleficence, or doing good and not doing harm to your patients, as well as justice. A lot of times, marketing often misleads patients' ability to have an informed or voluntary decision about what treatments are right for them. Because of these issues, government regulations must outlaw marketing practices that deceive consumers, and require that all marketing materials be honest, transparent, and provide evidence-based support for their claims.

Informed consent is an essential prerequisite for obtaining consent in this case. It is essential that patients have a comprehensive understanding of all aspects of the

procedure, including benefits and possible harm. Unfortunately, there is often an emphasis on only the benefits and not the possible risks in marketing material. As such, regulations should require that there be clear communication that includes both risk and benefit disclosures; full disclosure of alternative treatment options; and accurate documentation of the consultation process between patients and providers. Additionally, the principle of justice requires that all healthcare services be provided fairly. The commercialisation of beauty through cosmetic surgery has the potential to exploit vulnerable people (Craddock et al., 2022). Serious ethical concerns exist with regard to the targeting of people who have experienced low self-worth or body image problems in these marketing efforts (Feijoo Fernández et al., 2024; Shastri et al., 2024).

### Skincare Product Marketing Strategies

The marketing of skincare products within the dermatology sector represents a distinctive blend of pharmaceutical ethics and consumer–brand interaction. Unlike general pharmaceutical products, the significance of skincare products is not limited to clinical efficacy alone; it also extends to visual appeal and emotional persuasion. Consequently, companies are required to achieve a balance between scientific credibility and aesthetic attractiveness to effectively promote their products in this rapidly growing and highly competitive industry (Lies, 2021).

1. Digital Marketing and social media: In recent years, digital marketing has become the most powerful tool for promoting skincare products. Platforms such as Instagram, YouTube, and Facebook enable brands to communicate directly with consumers. This is achieved through the provision of educational content (e.g., skincare routines and benefits of ingredients), collaboration with influencers, and paid advertisements targeting specific consumer segments based on particular skin conditions. Brands also rely on user-generated content, including testimonials and “before-and-after” images, to enhance credibility. In addition, Search Engine Optimization (SEO) techniques and search engine advertising such as Google Ads are widely used to increase digital visibility, enabling consumers to explore products, read reviews, and even conduct skincare assessments (Adiyono et al., 2021).
2. Influencer and Dermatologist Recommendations: Digital influencers, beauty bloggers, and skincare specialists play a crucial role in shaping public opinion. Consumers tend to trust personal recommendations from real individuals, especially when supported by visible and tangible results. Dermatologist endorsements further enhance product credibility. Companies often feature certified dermatologists in advertising campaigns or educational videos on platforms such as YouTube. Micro-influencers those with smaller but highly engaged audiences are particularly effective in promoting specialized or sensitive skincare products (Trepanowski & Grant-Kels, 2023).

3. **Packaging and Visual Appeal:** Packaging plays a critical role in purchasing decisions. Since most skincare purchases are visually driven, packaging design significantly contributes to attracting customers. Brands invest heavily in clean, premium packaging that conveys trust, safety, and sophistication (Srivastava et al., 2022). Key features include:
  - Clear presentation of active ingredients
  - Dermatologist-backed labels or certifications
  - Usage instructions and indications of skin-type suitability
4. **Targeted Marketing Campaigns and Product Positioning:** Skincare products are often marketed based on specific concerns such as acne, pigmentation, aging, sensitivity, and dryness. Targeted advertising campaigns facilitate consumers' identification of products that match their skin needs. This personalization simplifies the purchasing decision-making process by directly linking products to therapeutic or cosmetic requirements.
5. **Promotional Offers and Limited-Time Deals:** To encourage initial purchases or boost short-term sales, brands offer discounts, bundled deals, referral codes, and flash promotions. These promotional strategies are particularly effective during holidays, cosmetic sales seasons, or product launches.
6. **E-commerce and Product Reviews:** E-commerce platforms have become a fundamental component of modern marketing strategies. Listing products on cosmetic and pharmaceutical e-commerce platforms enables brands to reach a broad online customer base. High-quality product images, detailed descriptions, ingredient transparency, and customer reviews are essential factors influencing online purchasing decisions.
7. **In-Clinic Marketing:** Many pharmaceutical-backed dermatology brands market their products through in-clinic strategies, including promotional displays in dermatology centers and the distribution of free samples in dermatologists' offices. These subtle yet effective strategies enhance consumer trust, as patients are more likely to rely on products recommended or presented within clinical.
8. **Events and Awareness Campaigns:** Brands also engage in cause-related marketing and awareness campaigns. For instance, initiatives such as "Sun Protection Month" or "World Acne Day" help increase brand visibility, educate consumers, build a positive brand image, and enhance public engagement.

## **The Customer Surgical Journey**

Cosmetic surgery originally emerged within a historical context as a specialized medical practice led by experts, with its techniques primarily developed to treat deformities and injuries resulting from wars, particularly during the First and Second World Wars. With the evolution of social and cultural perceptions of beauty, this field has gradually shifted from a purely therapeutic orientation to an aesthetic one, encompassing procedures aimed at enhancing physical appearance and improving body harmony, such as breast augmentation, facelifts, and liposuction. In light of this

transformation, cosmetic surgery has evolved from a conventional medical intervention into a complex, multidimensional process characterized by multiple stages of consumer decision-making. To better understand consumer decisions along this journey, it is essential to identify the sequential stages that shape both pre- and post-consumption behavior—an aspect that remains largely underexplored in the existing literature. Initially, consumers' decisions regarding whether to undergo cosmetic surgery and which type to choose are influenced by a combination of factors, including personal desires, social influences, and cultural pressures. Given the high-risk nature of cosmetic surgery, the pre-consumption stage typically involves extensive research to evaluate the risks and benefits of available procedures, as well as to select the appropriate service provider.

After the initial selection of a provider, cosmetic surgery professionals become key advisors in the decision-making process, assisting consumers in making informed choices. However, the consumer journey extends beyond the surgical procedure itself, continuing into the post-consumption stage. At this stage, individuals may consider long-term maintenance procedures or repeated treatments. They may also choose to share their experiences with others, which can have significant implications both personally (e.g., receiving feedback from others) and socially (e.g., influencing others to pursue cosmetic procedures).

Decisions made at each stage of the cosmetic surgery journey can significantly affect both the patient experience and overall satisfaction during and after treatment. For instance, during the pre-consumption phase, decisions may be influenced by temporary factors such as short-term motivations or limited understanding of procedures, potentially leading to post-consumption regret. During the consumption stage, decisions made in collaboration with professionals may be affected by communication gaps, such as misalignment between patient expectations and physicians' understanding. Finally, decisions related to sharing experiences after treatment may lead to social stigma or validation, depending on how such information is communicated (Gledhill et al., 2023).

Despite the importance of this journey, much of the existing marketing literature focuses primarily on initial consumer interest, often neglecting other influential factors that shape surgical intentions as well as post-treatment decisions (Kvist & Hofmann, 2023). Consumer decisions in cosmetic surgery may also be influenced by personality traits, situational factors such as advertising, and various stakeholders, including other consumers and healthcare providers. Interestingly, although marketing is a key driver in this context, much of the knowledge in this field originates from other disciplines and remains fragmented across the literature (Pearlman et al., 2022). As cosmetic surgery has evolved into a multidimensional field that extends beyond medical considerations to include psychological, social, and communicative aspects, various academic disciplines have examined it from different perspectives (Yan et al., 2026). First, medical research focuses on physical health and surgical risks, as cosmetic

surgery remains rooted in clinical procedures despite its aesthetic orientation. Second, sociology and cultural studies explore cosmetic surgery as a social phenomenon shaped by cultural ideals, societal pressures, and beauty standards. Third, psychology examines the complex relationship between physical appearance and mental well-being, providing insights into individual motivations and psychological outcomes associated with cosmetic procedures. Finally, communication and media studies investigate the role of mass and social media in shaping perceptions of cosmetic surgery and disseminating beauty ideals. However, insights from these diverse perspectives remain scattered across the literature, highlighting the need for a more comprehensive understanding of the key factors influencing consumer decisions in cosmetic surgery (Merino et al., 2024).

Through a multidisciplinary literature review, this study aims to integrate these perspectives and provide guidance for future research to achieve a more holistic understanding of consumer decision-making throughout the cosmetic surgery journey.

## **Consumer Behavior in The Field of Dermatological**

### **Concept of Consumer Behavior in The Field of Dermatology**

Consumer behavior in the field of dermatology differs from other sectors within pharmaceuticals or personal care industries. This is because dermatological products serve a dual purpose: they treat skin conditions while also fulfilling aesthetic desires, such as achieving healthy, radiant, and youthful skin. Consequently, consumer choices in this field are shaped by a unique combination of health needs, beauty trends, emotional motivations, and professional advice (D'Adamo et al., 2026). This can be explained through the following dimensions:

- a. **Physician-Driven vs. Self-Directed Choices:** Historically, skincare products were primarily prescribed by dermatologists or general physicians. Even today, consumers heavily rely on dermatological recommendations for serious conditions such as eczema, psoriasis, and severe acne. However, with increased awareness and easy access to information via the internet and social media, many individuals now make independent decisions regarding over-the-counter skincare products such as facial cleansers, sunscreens, and moisturizers.
- b. **Influence of Online Platforms:** Modern consumers conduct extensive online research before purchasing, including reading reviews, comparing ingredients, following skincare influencers, and examining user experiences. Platforms such as Instagram, YouTube, and beauty blogs have significantly reinforced this trend. A single recommendation from a trusted influencer or dermatologist can dramatically increase product sales within a short period.
- c. **Consumer Perception of Products:** Contemporary skincare consumers demonstrate a high level of ingredient awareness. Terms such as “paraben-free,” “non-comedogenic,” “dermatologist-tested,” and “fragrance-free” are no longer merely

marketing labels but key decision-making factors. Consumers increasingly focus on active ingredients such as salicylic acid, niacinamide, hyaluronic acid, and retinol rather than brand names alone.

- d. Emotional and Psychological Factors: Skin conditions often have a strong emotional impact, particularly among adolescents and young adults. Issues such as acne or pigmentation can affect self-esteem, leading consumers to experiment with multiple products in search of quick results. This emotional urgency often makes them more vulnerable to marketing promises, trial purchases, and influencer recommendations.
- e. Gender and Age Preferences: Market trends indicate that women, particularly those aged 19–37, represent the largest consumer segment of skincare products, with a strong focus on cosmetic skincare. In contrast, the male skincare market is experiencing noticeable growth, especially in urban areas. Older consumers, meanwhile, tend to focus more on anti-aging products and dermatologist-supervised treatments.

### Strategies for Dermatological Product Sales

The sale of dermatological products extends beyond shelf display or physician persuasion. It requires a deep understanding of healthcare systems and consumer preferences. Given the hybrid nature of these products—medical and cosmetic—companies must adopt a multi-level sales approach targeting different customer segments, from prescribing dermatologists to beauty-conscious consumers.

- a. Prescription-Based Sales Model: Physician prescriptions remain the most traditional and trusted method for selling therapeutic dermatological products, such as antifungal creams, acne treatments, and steroid ointments (Devaraj et al., 2024). Medical representatives play a key role in this system by:
  - Educating physicians about product benefits, ingredients, and uses
  - Providing product samples for clinical trial
  - Sharing clinical data and promotional materials
  - Building long-term professional relationships with healthcare providers
- b. Over-the-Counter (OTC) Product Sales: While prescription-based sales dominate therapeutic segments, OTC dermatological products are experiencing significant growth. These include facial cleansers, sunscreens, moisturizers, and anti-aging creams, which are sold in pharmacies, supermarkets, cosmetic stores, and increasingly through e-commerce platforms (Austin et al., 2021). Key OTC marketing strategies include (Kevrekidis et al., 2021; Wick et al., 2024):
  - Attractive packaging and effective shelf placement
  - Promotional offers and discounts
  - Training pharmacy staff to recommend specific products

- c. **Digital Sales Channels:** With the rise of e-commerce, companies increasingly focus on direct-to-consumer (DTC) sales through official websites and online beauty platforms. This approach enhances accessibility and strengthens brand-consumer engagement.
- d. **Dermatology Conferences and Continuing Medical Education (CME):** Pharmaceutical and cosmetic companies frequently sponsor conferences, webinars, and CME programs to engage physicians and promote products in an academic environment. This strategy enhances credibility and allows companies to present scientifically supported formulations while building relationships with leading dermatologists.
- e. **Distribution and Retail Networks:** An efficient supply chain and distribution network are essential for ensuring product availability. Sales managers coordinate with distributors and pharmacies to optimize market reach, maintain inventory levels, and monitor stock movement. Incentives are often provided to distributors and retailers to encourage high-performance product placement.
- f. **Samples and Trial Packaging:** For new product launches, companies often rely on free samples to attract first-time users. These trial packages are distributed through physicians, pharmacies, beauty salons, or online platforms. A positive user experience significantly increases the likelihood of full-product purchase.
- g. **Customer Relationship Management (CRM) and Feedback Systems:** Some brands implement CRM systems to engage with physicians and consumers, collect feedback, resolve complaints, and improve post-purchase experiences. Loyalty programs, refill reminders, and personalized recommendations further encourage repeat purchases.

## EMPIRICAL SECTION

### Analysis of the Demographic Information of the Study Sample

This section presents the analysis of the demographic characteristics of the study sample, aiming to develop a clear understanding of the general attributes of the respondents, which may play a role in interpreting the study findings. These characteristics include gender, age, educational level, marital status, monthly income, and occupation. [Table \(2\)](#) presents the detailed distribution of these variables, illustrating the demographic structure of the study sample. This contributes to supporting the subsequent statistical analysis and enhances the accuracy and objectivity of result interpretation.

**Table 2: Demographic Characteristics of the Study Sample**

| Variable | Category    | Frequency | Percentage |
|----------|-------------|-----------|------------|
| Gender   | Male        | 114       | 54.29 %    |
|          | Female      | 96        | 45.71%     |
| Age      | 20–30 years | 15        | 7.14%      |

|                          |                         |     |        |
|--------------------------|-------------------------|-----|--------|
|                          | 31–40 years             | 17  | 8.10%  |
|                          | 41–50 years             | 133 | 63.33% |
|                          | 51 years and above      | 45  | 21.43% |
| <b>Educational Level</b> | Bachelor's              | 18  | 8.57%  |
|                          | Postgraduate studies    | 192 | 91.43% |
| <b>Marital Status</b>    | Single                  | 48  | 22.86% |
|                          | Married                 | 146 | 69.52% |
|                          | Other                   | 16  | 7.62%  |
| <b>Occupation</b>        | Government employee     | 180 | 85.71% |
|                          | Private sector employee | 7   | 3.33%  |
|                          | Student                 | 18  | 8.57%  |
|                          | Other                   | 5   | 2.38%  |
| <b>Monthly Income</b>    | Low                     | 8   | 3.81%  |
|                          | Medium                  | 197 | 93.81% |
|                          | High                    | 5   | 2.38%  |

**Source:** Prepared by the researchers based on the outputs of the Statistical Package (SPSS V.25).

The demographic characteristics of the research sample, as presented in [Table \(2\)](#), reflect a set of indicators that may play an important explanatory role in understanding the nature of the relationship between aesthetic medicine marketing and customer behavior, which constitutes the core of the study's hypotheses.

The results in [Table \(2\)](#) indicate that males represent (54.29%) of the sample, a higher proportion compared to females, who account for (45.71%). This suggests that males are more prevalent within the study population, which may reflect a growing interest among men in aesthetic medicine services and products. Such a trend could influence their responses to marketing activities and enhance the interpretation of the hypothesized correlation and impact relationships.

Regarding the age distribution, the findings show that the age group (41–50 years) constitutes the largest proportion of the sample at (63.33%), followed by those aged (51 years and above) at (21.43%), then the (31–40 years) age group at (8.10%), and finally the (20–30 years) age group at (7.14%). This indicates that the sample is predominantly concentrated in middle-aged groups, particularly the (41–50 years) age category. This distribution reflects a higher level of cognitive maturity and purchasing power, which may make this group more responsive to well-designed marketing strategies and more inclined to make decisions based on a combination of functional and aesthetic considerations. This, in turn, supports the hypothesis of a significant effect of aesthetic medicine marketing on customer behavior.

In terms of educational level, the results show that the vast majority of respondents hold postgraduate qualifications (91.43%), while (8.57%) hold a bachelor's degree. This reflects a high academic level within the sample. The predominance of postgraduate education suggests that respondents possess higher analytical and cognitive abilities, which may be reflected in how they engage with marketing messages, whether through

critical evaluation or informed response. This, in turn, may help explain the strength or weakness of the relationships between the study variables.

Regarding marital status, married individuals constitute the largest proportion of the sample at (69.52%), followed by single individuals at (22.86%), and others at (7.62%). The predominance of married respondents may indicate a relatively stable social and economic status, which can influence consumption patterns and interest in personal appearance, and consequently affect responsiveness to marketing activities.

With respect to monthly income, the vast majority of respondents fall within the medium-income category at (93.81%), followed by the low-income category at (3.81%), and finally the high-income category at (2.38%). As for occupational status, government employees represent the largest proportion of the sample at (85.71%), followed by students at (8.57%), private-sector employees at (3.33%), and finally self-employed individuals at (2.38%).

Accordingly, these demographic characteristics do not merely represent descriptive data; rather, they constitute an important interpretive framework that contributes to a deeper and more precise understanding of the statistical results and the testing of the study's hypotheses.

### **Description and Diagnosis of the Level of Research Variables**

In light of the research sample's responses, a set of descriptive statistical measures was employed, primarily the arithmetic mean and standard deviation, in order to accurately describe the level of the study variables and diagnose their directions.

Given that the research adopted a five-point Likert scale for the questionnaire responses, the measurement range for each variable was determined between (1 - 5). This range was further divided into three levels (low, medium, and high), based on the theoretical mean of (3). [Table \(3\)](#) illustrates these level thresholds, which facilitate the interpretation of statistical results and systematically identify the direction of respondents' answers.

**Table 3: Weighted Means of the Research Sample Responses**

| Level of Evaluation | Weighted Mean Range         |
|---------------------|-----------------------------|
| Low                 | From 1 up to 2.33           |
| Medium              | From 2.34 to less than 3.67 |
| High                | From 3.67 up to 5           |

The responses of the study sample indicate the level of the variables addressed in the questionnaire, based on the statistical analysis of the answers related to each variable, as follows:

The variable of aesthetic medicine marketing was measured through a set of items ranging from (1–10), which represent the different dimensions of the variable under investigation. The respondents' answers were analyzed in order to diagnose the level of this variable and determine its overall direction within the study population.

Table (4) presents the results of the descriptive and diagnostic statistical analysis of the aesthetic medicine marketing variable, by illustrating the values of the arithmetic means, standard deviations, and the level of evaluation for each of its items.

**Table 4: Descriptive Statistical Indicators of the Aesthetic Medicine Marketing Variable**

| Axis  | Mean  | Std. Deviation | Coefficient of Variation | Relative Importance | t-value (Sig.) |
|-------|-------|----------------|--------------------------|---------------------|----------------|
| X1    | 2.933 | 0.709          | 24.17%                   | 58.67%              | 0.000          |
| X2    | 3.810 | 0.784          | 20.57%                   | 76.19%              | 0.000          |
| X3    | 3.395 | 0.825          | 24.29%                   | 67.90%              | 0.000          |
| X4    | 3.133 | 1.124          | 35.89%                   | 62.67%              | 0.000          |
| X5    | 3.333 | 0.955          | 28.65%                   | 66.67%              | 0.000          |
| X6    | 3.200 | 0.874          | 27.31%                   | 64.00%              | 0.000          |
| X7    | 3.990 | 0.579          | 14.50%                   | 79.81%              | 0.000          |
| X8    | 3.033 | 0.809          | 26.67%                   | 60.67%              | 0.000          |
| X9    | 3.676 | 0.663          | 18.05%                   | 73.52%              | 0.000          |
| X10   | 3.762 | 0.842          | 22.38%                   | 75.24%              | 0.000          |
| Total | 3.427 | 0.492          | 14.37%                   | 68.53%              | 0.000          |

**Source:** Prepared by the researchers based on the outputs of the Statistical Package (SPSS V.25).

The results presented in Table (4) indicate that the cosmetic medicine marketing variable was measured through a set of (10) items. The findings showed that the overall weighted mean of the variable reached (3.427), which is higher than the hypothetical mean of (3), with a standard deviation of (0.492) and an importance percentage of (%68.53). This reflects a relative level of agreement among the study sample regarding the importance of this variable within the research framework.

At the item level, it was found that Item (7), which states: “Advertising for cosmetic treatments does not target groups with high psychological susceptibility to influence,” achieved the highest contribution to this variable, with a mean of (3.99) and a standard deviation of (0.579), indicating a relatively high level of agreement among respondents. In contrast, Item (1), which states: “Pharmaceutical companies are committed to honesty in marketing cosmetic medicine products,” ranked last in terms of contribution, with a mean of (2.93) and a standard deviation of (0.709), reflecting a relative variation in respondents' perceptions toward this statement.

It was also noted that the measurement of this variable was based on the analysis of items (1–10), each of which is associated with customer behavior. The responses of the study sample were analyzed in order to identify their attitudes and assess the level of the variable, as illustrated in the [table \(5\)](#) below.

**Table 5: Descriptive Statistical Results and Diagnosis of the Customer Behavior Variable**

| Axis           | Mean  | Standard Deviation | Coefficient of Variation | Relative Importance | Statistical Significance (t) |
|----------------|-------|--------------------|--------------------------|---------------------|------------------------------|
| X1             | 3.724 | 0.875              | 23.49%                   | 74.48%              | 0.000                        |
| X2             | 3.595 | 0.903              | 25.13%                   | 71.90%              | 0.000                        |
| X3             | 3.752 | 0.936              | 24.95%                   | 75.05%              | 0.000                        |
| X4             | 4.157 | 0.705              | 16.95%                   | 83.14%              | 0.000                        |
| X5             | 3.848 | 0.804              | 20.90%                   | 76.95%              | 0.000                        |
| X6             | 4.052 | 0.665              | 16.41%                   | 81.05%              | 0.000                        |
| X7             | 4.095 | 0.745              | 18.20%                   | 81.90%              | 0.000                        |
| X8             | 3.881 | 0.664              | 17.10%                   | 77.62%              | 0.000                        |
| X9             | 4.057 | 0.856              | 21.11%                   | 81.14%              | 0.000                        |
| X10            | 4.124 | 0.637              | 15.44%                   | 82.48%              | 0.000                        |
| Total Variable | 3.929 | 0.461              | 11.73%                   | 78.57%              | 0.000                        |

**Source:** Prepared by the researchers based on the outputs of the Statistical Package (SPSS V.25).

The results presented in [Table \(5\)](#) indicate that the customer behavior variable was measured through (10) items. The findings show that the weighted mean for this variable reached (3.029), which is higher than the hypothetical mean of (3.00), with a standard deviation of (0.461) and an importance percentage of (78.57%). This reflects a relatively moderate level of agreement among the study sample regarding the importance of this variable within the analytical framework.

At the item level, it was found that Item (4), which stated: “I am keen to understand the risks before deciding to undergo a cosmetic procedure,” achieved the highest contribution to explaining this variable, with a mean score of (4.157) and a standard deviation of (0.705). This indicates a high degree of agreement among respondents regarding this behavior. In contrast, Item (2), which stated: “I can distinguish between promotional information and real medical information,” ranked lowest in terms of contribution, with a mean score of (3.595) and a standard deviation of (0.903). This suggests a relatively higher variation in respondents’ answers regarding this item.

Overall, these results reflect a moderate to high level of awareness of the customer behavior variable, with observable variation in responses across items, which is consistent with the nature of the studied construct.

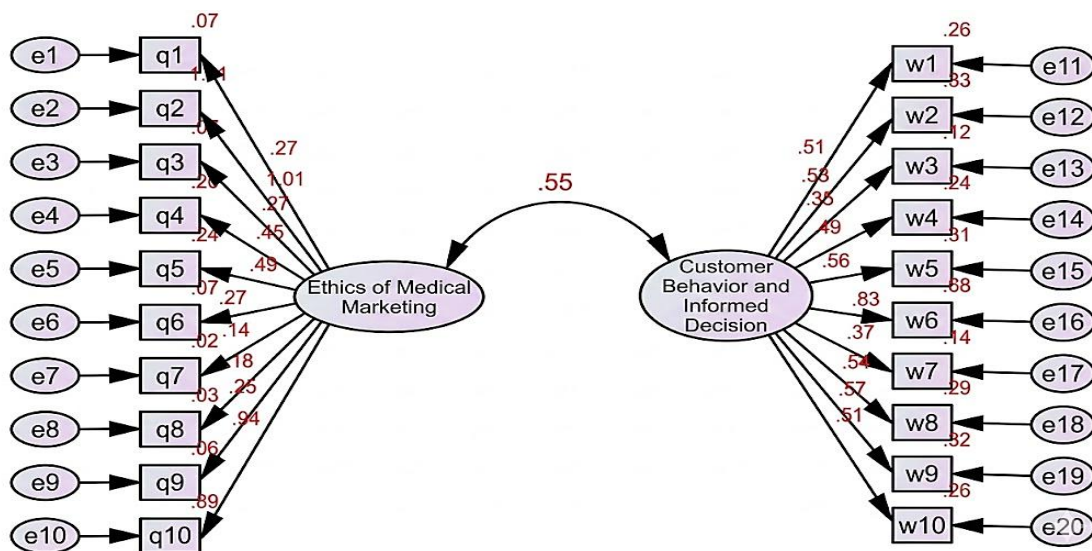
## Hypothesis Testing

The researchers adopted the Structural Equation Modeling (SEM) approach to test the study hypotheses. This method is considered one of the advanced statistical techniques due to its ability to analyze relationships among multiple independent and dependent variables simultaneously. In addition, it is capable of handling latent variables, which makes it a more precise and appropriate analytical tool for the nature of the current study.

### Testing the Correlation Hypotheses between the Study Variables

This section examines the nature of the correlation between the study variables, namely cosmetic medicine marketing and customer behavior at the overall level. This is conducted by testing the main hypothesis, which states: “There is a statistically significant positive correlation between cosmetic medicine marketing and customer behavior.”

To achieve this, we constructed a structural model illustrating the correlation relationships between the two main variables of the study (cosmetic medicine marketing and customer behavior). This model helps in explaining the nature of the relationship and measuring its strength, as shown in [Figure \(1\)](#).



**Figure 1:** Structural model of the correlation relationship between the study variables using AMOS software (V.31)

The results presented in [Table \(6\)](#) indicate a positive correlation between Cosmetic Medicine Marketing and Customer Behavior, with a correlation coefficient of (0.558), which is statistically significant at a significance level below (0.01; 0.05). This reflects a strong relationship between the two variables. The positive value of the correlation

coefficient indicates a direct relationship between the variables, meaning that as the level of Cosmetic Medicine Marketing increases, the level of Customer Behavior also increases in the same direction. This suggests a mutual influence that supports the positive association between the two variables, thereby strengthening the acceptance of the first main hypothesis in its positive form.

**Table 6: Estimated Relationship Results**

| Variable                    | Customer Behavior             | Statistical Significance |
|-----------------------------|-------------------------------|--------------------------|
| Cosmetic Medicine Marketing | Pearson Correlation = 0.550** | 0.000                    |

**Source:** Prepared by the researchers based on the results of the analysis. (\*\*) Significant at the 0.01 level; (\*) Significant at the 0.05 level.

### Hypothesis Testing of the Effect Relationship

This section aims to test the second main hypothesis related to the effect relationship between the study variables, which states:

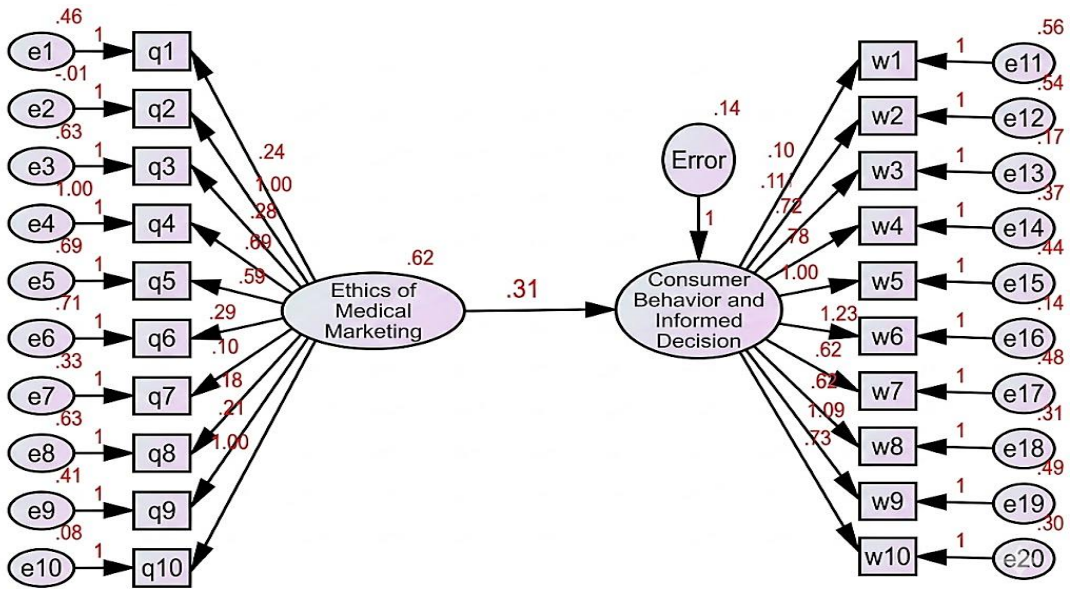
“There is a statistically significant effect of Cosmetic Medicine Marketing on Customer Behavior.”

To achieve this, a structural model was developed to illustrate the nature of the effect of the independent variable (Cosmetic Medicine Marketing) on the dependent variable (Customer Behavior). [Figure \(2\)](#) presents the results of testing the effect relationship between the study variables, which helps to accurately determine the level and strength of this effect.

Accordingly, the second main hypothesis was tested in its statistical form, which states: “There is a statistically significant effect of Cosmetic Medicine Marketing on Customer Behavior.”

The results presented in [Table \(7\)](#) indicate a statistically significant effect supporting the second main hypothesis. The estimated regression coefficient (Estimate) reached (0.309), which is statistically significant when compared to the significance level of (0.05). This confirms the significance of the proposed relationship between cosmetic medicine marketing (independent variable) and customer behavior (dependent variable).

Furthermore, the coefficient of determination ( $R^2$ ) shows that cosmetic medicine marketing explains (29.9%) of the variations observed in the study sample. These findings confirm the existence of a statistically significant effect between the two variables, thereby supporting the second main hypothesis in its positive form and affirming the role of cosmetic medicine marketing in influencing customer behavior.



**Figure 2:** Structural model of the effect relationship between the study variables using AMOS software (V.31)

**Table 7: Results of effect estimation**

| Dependent Variable (Customer Behavior)             | R <sup>2</sup> | Estimate | S.E.  | C.R.  | P-value |
|--|----------------|----------|-------|-------|---------|
| Independent Variable (Cosmetic Medicine Marketing) | 0.299          | 0.309    | 0.053 | 5.792 | ***     |

**Source:** Prepared by the researchers based on the results of the analysis. (\*\*) Significant at the 0.01 level; (\*) Significant at the 0.05 level.

## CONCLUSIONS

In light of the analytical results obtained by the study, a set of scientific conclusions can be drawn as follows:

1. The results indicate that the level of adoption of cosmetic medicine marketing by pharmaceutical companies is moderate, tending toward high. This reflects a clear awareness among customers of the marketing practices associated with this sector.
2. The findings revealed a relative variation in the opinions of the sample members regarding the items of cosmetic medicine marketing. However, the low overall coefficient of variation indicates an acceptable degree of homogeneity in responses, which enhances the reliability of the results.
3. The study showed that some marketing practices still require improvement in terms of credibility and transparency, particularly regarding the extent to which companies adhere to the accuracy of information provided in promotional activities.
4. The results indicated that customer behavior was at a high level, reflecting increased

awareness among customers and their interest in obtaining sufficient information before making decisions related to cosmetic procedures.

5. The responses of the sample demonstrated that customers tend to evaluate the risks associated with cosmetic services, which reflects a relatively rational purchasing decision-making behavior.
6. The results confirmed a statistically significant positive correlation between cosmetic medicine marketing and customer behavior, indicating that improving marketing activities directly contributes to shaping customer behavior.
7. The findings of the effect analysis showed that cosmetic medicine marketing has a significant impact on customer behavior, confirming the pivotal role of marketing activities in guiding customer decisions.
8. The study revealed an awareness gap among some customers in distinguishing between marketing information and specialized medical information, which may negatively affect the quality of decisions made.
9. The results showed that the impact of marketing is not limited to cognitive aspects only, but also extends to the psychological and emotional dimensions of customers. This increases customers' susceptibility to promotional messages and influences their purchasing orientations.

## RECOMMENDATIONS

Based on the findings of the study, a set of applied and strategic recommendations can be presented as follows:

1. Pharmaceutical companies should be committed to applying principles of honesty and transparency in marketing cosmetic medicine products by providing balanced information that reflects both benefits and potential risks. This would help enhance customer trust and reduce misleading practices.
2. Ethical marketing strategies should be adopted, taking into account the sensitivity of the cosmetic medicine field, while avoiding messages that exploit customers' psychological dimensions, exaggerate expected outcomes, or promote unrealistic promises not supported by scientific evidence.
3. Marketing activities should be directed toward enhancing customers' health awareness by providing evidence-based educational content that supports rational decision-making grounded in knowledge rather than advertising influence alone.
4. The role of regulatory and supervisory authorities should be strengthened in monitoring cosmetic advertisements through clear regulations that govern the content of marketing messages, ensuring their compliance with medical and professional standards.
5. Integration between pharmaceutical companies and specialized medical personnel should be encouraged when designing and implementing marketing campaigns, in order to ensure the accuracy and scientific reliability of the information provided.
6. Awareness programs should be developed to raise the level of customer

understanding, particularly regarding the distinction between reliable medical information and promotional content, thereby reducing the likelihood of uncritical response to advertisements.

1. The positive impact of marketing activities should be leveraged to build long-term customer relationships based on trust and credibility, rather than focusing on short-term gains.
2. Researchers are encouraged to conduct future studies addressing deeper dimensions of customer behavior, such as psychological and social motivations, in order to develop more comprehensive and accurate explanatory models for understanding customer behavior in the field of cosmetic medicine.

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