

A Statistical Approach to Analyze Key Factors Influencing Pharmaceutical Marketing

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ABSTRACT

This study aims to analyze the principal aspects affecting pharmaceutical marketing and assess their effects on market results. The research employed a cross-sectional survey approach, gathering data from 110 participants via a structured online questionnaire disseminated by email and social media channels. The Chi-square test indicated considerable disparities in the impact of different marketing techniques, with a computed Chi-square value of 13.82. The study finds that direct engagement with healthcare professionals and the use of contemporary marketing strategies, such as Digital Marketing, are crucial for the effective promotion of pharmaceutical goods.

Keywords: Advertising, Physician, Patient, sampling, Marketing.

I. INTRODUCTION

The healthcare business relies on pharmaceutical marketing, a complex and heavily regulated sector. It includes a wide variety of endeavors aimed at promoting pharmaceutical goods to customers, pharmacists, and healthcare practitioners. For patients to get the best possible treatment, it is crucial that they take the right drugs. The success or failure of marketing campaigns for pharmaceuticals is heavily dependent on a myriad of factors that impact marketing strategy. Pharmaceutical business marketing techniques are greatly influenced by competition. Companies are forced to differentiate their products through innovative marketing strategies due to the existence of several global and local businesses. After a medicine's patent expires, generic versions of the drug flood the market, increasing competition. Therefore, in order to maintain their market dominance, pharmaceutical companies frequently spend substantially on brand advertising, physician engagement initiatives, and patient education. In addition, firms can influence prescription trends and establish credibility through collaborations with healthcare practitioners and organizations.

The marketing of pharmaceuticals has been radically altered by technological developments. There has been a dramatic increase in the efficacy of digital marketing channels in communicating with healthcare providers and patients through telemedicine, social media, and online health portals.

Pharmaceutical firms may learn about customer tastes, monitor prescription patterns, and create targeted advertising campaigns with the use of big data analytics. By streamlining supply chains, forecasting demand trends, and identifying critical target audiences, solutions driven by artificial intelligence (AI) further enhance decision-making. Furthermore, marketing tactics are incorporating digital tools such as augmented reality (AR) and virtual reality (VR) to improve interaction with healthcare professionals through immersive experiences. Because medical information is readily available online, modern customers are more educated than ever before about their healthcare alternatives. Patients have an active role in the decision-making process by doing their own pharmaceutical research, reading reviews online, and asking for suggestions from friends and family. As a result, marketing initiatives that aim to educate consumers, raise awareness about health issues, and encourage open and honest dialogue have recently come to the fore. Marketers in the pharmaceutical industry today place a premium on digital channels for patient education, comprehensive product information, and treatment recommendation services.

The promotion and prescription of pharmaceutical goods by healthcare providers (HCPs) is crucial to the success of these businesses. The key to successful marketing is establishing solid connections with medical experts such as physicians, pharmacists, and others in the field. Healthcare professionals are engaged through tactics including sponsored research, product demonstrations, medical journal publishing, and scientific conferences. Ensuring that healthcare providers are well-informed on the effectiveness, safety, and proper usage of products is another important responsibility of medical science liaisons (MSLs). One of the most important factors in pharmaceutical marketing is pricing. Many factors, including manufacturing costs, R&D expenditures, regulatory mandates, and consumer demand, contribute to the final price of a medicine. Businesses commonly use competitive pricing, value-based pricing, or penetration pricing to maximize their market share. Healthcare expenses are a big problem in developing nations, thus affordable pricing techniques are crucial. It is imperative that pharmaceutical marketers find a middle ground between maximization of profit and guaranteeing patients' access to life-saving drugs.

To guarantee that pharmaceutical goods are available when needed, efficient distribution networks are crucial. Retail pharmacies, wholesalers, and distributors make up the distribution network. In order to keep product quality, control inventory, and guarantee timely delivery, pharmaceutical businesses must establish strong connections with supply chain players. In addition to disrupting the conventional supply chain paradigm, e-commerce platforms have become important distribution channels, enabling customers to purchase drugs online. Pharmaceutical companies must adhere to ethical marketing methods if they want to keep the public's trust and keep healthcare standards high. Important components of ethical marketing include being forthright in advertising, accurately portraying the advantages and hazards of drugs, and engaging responsibly with healthcare practitioners. The reputation and legal standing of an organization might take a hit when unethical actions like deceptive advertising, excessive giving to doctors, or hiding negative side effects of drugs are engaged in. To ensure that corporate goals are in line with patient welfare, ethical frameworks are included into marketing tactics.

Drug advertising campaigns are very sensitive to macroeconomic factors. Consumers' ability to buy and get their hands on pharmaceuticals is affected by factors including healthcare spending, insurance policies, and government financing. Pharmaceutical policy is also heavily influenced by healthcare reforms and political stability. For instance, branded pharmaceutical marketing could be impacted by government programs that promote generic drugs. In order to adjust their pricing strategies, promotional efforts, and product positioning based on current and future economic developments, pharmaceutical marketers need to keep themselves updated. Pharmaceutical marketing is severely impacted by investments in research and development. By releasing new treatments with better effectiveness and safety profiles, innovation-focused businesses get a competitive advantage. Marketing potential are enhanced when companies are able to represent their goods as breakthrough cures, thanks to successful research and development outcomes. The legitimacy of the product and its ability to break into new markets are both bolstered by published research, clinical trial outcomes, and the endorsements of experts.

II. REVIEW OF LITERATURE

Rajput, Kalyani et al., (2022) Marketing is essential to any company's success, and entrepreneurs throughout the world have accepted it as the gold standard for advertising products and services. One of the most prominent and globalized sectors is the pharmaceutical business. It touches on a wide range of topics, from over-the-counter products to prescription drugs to medical equipment that can save lives. The production of pharmaceutical products relies on this high-quality curriculum, which is why pharmaceutical education is considered a subspecialty of medical education generally. This demonstrates the significant efforts put in by Pharmaceutical Marketing to bring these products to market. Because medications are considered useful and required things, their marketing differs from that of more general products in that it centers on the absolute need. Conversely, no one ever plans to buy medicine or medical equipment unless their doctor tells them to. Because of this, the pharmaceutical marketing sector has a significant challenge. From a fundamental and intellectual vantage point, this review article will examine pharmaceutical marketing. In addition, the paper plans to analyze the literature on pharmaceutical marketing extensively and present the results. In order to complete this conceptual research, secondary data was crucial. Here you can find the works of every writer and researcher who has made a difference in the realm of pharmaceutical marketing. Research in the Review is organized according to the following topics: Green Marketing Strategy, Pharma Marketing Execution, Consumer Behavior towards Pharma Products, and the Marketing Mix. Since the papers and literature researched were selected according to the author's convenience and choice, it is probable that the study was conducted with limitations and that the results provided are more indicative than exhaustive.

Siddiqui, Tahzebul et al., (2019) In recent years, India's pharmaceutical industry has experienced remarkable expansion. Indian pharmaceutical companies have seen a surge in both market capitalization and accessibility, which is quite encouraging. Modern pharmaceutical corporations are infamously complex. In the past, businesses would employ straightforward marketing techniques to meet customer requests. It might be possible to rapidly build brand awareness for healthcare

products. Building trust, purchases, effects, and brand loyalty might become easier. In branding and marketing, there are four main components: media, message repetition, recall value, and innovation. This research has looked at the branding tactics of pharmaceutical companies in India. Given the variety of branding approaches utilized by various companies, it is hard to draw any strong conclusions about the overall impact. For this study, 500 people were asked for their perspectives. We have looked at four competing hypotheses. The goal of calculating a correlation (r) and multiple correlation (R) coefficients is to test hypotheses. We have also brought attention to additional study findings that might be useful for drug advertising.

Harsha, et al., (2023) A common belief is that marketing is essential to a company's survival since it brings in customers and keeps them coming back. The pharmaceutical industry is a global behemoth, producing everything from everyday home items to vital prescriptions and medical equipment. Pharmaceutical education should be a part of medical school curricula as the pharmaceutical industry now demands specialized expertise. Drug distribution and marketing ensure that people with medical conditions have access to the medications they need. Since most people only look for prescription drugs and medical supplies when they truly need them, pharmaceutical advertising stands out. This is the most significant issue with profiting from drug sales at the moment. The purpose of this Review article is to examine the foundational ideas of pharmaceutical marketing. After that, the study will evaluate ads for pharmaceuticals. Expertise from both academia and the pharmaceutical sector has gone into this study. Promotion of pharmaceutical products, environmentally conscious marketing, customer attitudes about medication, and marketing equilibrium are all included in the research. Depending on the author's preferences and availability, the results may be suggestive rather than final, and the evaluated articles and literature may correctly represent the study's implications.

Albarq, Abbas et al., (2021) Pharmaceutical marketing methods are a major factor that influences doctors' prescribing habits. This is obviously an uncharted territory, as very little study has examined the impact of pharmaceutical marketing on prescription patterns in economically disadvantaged regions, such as the Middle East. Specifically, this study aims to analyze the impact of pharmaceutical marketing methods on Jordanian doctors' prescription recommending practices. The study's objectives were met by utilizing the convenience sampling method. From August 1, 2019, until February 28, 2020, it was the time frame of the research. Using a self-administered questionnaire and verbal acceptance from participants followed the acquisition of ethical authorization. The statistical analysis was conducted using SPSS version 20. There was an 80.9% response rate in the survey. After the data was analyzed, a seven-point Likert Scale was used to evaluate the outcome. The findings clearly show that pharmaceutical marketing efforts significantly impact the way doctors prescribe. In order to achieve their goal, markets employ a variety of marketing tactics, which are evaluated in this article. The "public relations" strategy stood out as the most important after reviewing the entire report. The opposite was true for print advertising; they did not attract any attention. The findings of this study were critical in guiding us in the correct direction, and they will soon be integrated with the previous literature. Various marketers may utilize this data to create more effective strategies for persuading doctors in Jordan to raise their ratings, which would be great for management.

Riggs. (2023). As a result of "The Vision," the pharmaceutical industry has undergone remarkable transformation. In the pharmaceutical sector, seven big changes are taking place. In recent years, several trends have emerged in healthcare, including data-driven decision-making, specialty medicine importance, tailored treatment, digital technology utilization, attention on patient eccentricities, cost control, and many more. New study shows that between 2005 and 2010, the total actual spending on pharmaceutical advertising climbed from US \$15.4 billion to US \$35.9 billion. The United States is the only country where this data is available. At the same time, another study estimates that the actual total, including conferences and online advertising, is closer to US\$65.6 billion. Many of the industry's largest marketplaces are already at capacity with salespeople, despite the fact that the industry's promotional strategies are constantly improving.

Nerkar, A.G. (2022) Marketing for pharmaceuticals is essential to the pharmaceutical business. In recent years, there has been a significant growth in the marketing and manufacture of pharmaceutical prescriptions in India through third-party contracts. These pharmaceuticals include generic, branded, ethical, and prohibited generics. Since they do not have the means to manufacture their own pharmaceutical medications, many companies rely on other companies to do it for them. Within this framework, we have analyzed the benefits and drawbacks of several marketing tactics in this editorial.

Kejariwal, Mona et al., (2022) Due to the complexity and breadth of current pharmaceutical business practices and innovations, managers confront a wide variety of difficulties regarding organizational structure and human management. Many different techniques may be used to categorize these challenges. Management and expansion of distribution systems need substantial financial resources. The methods and results of the pharmaceutical sector are investigated extensively in this study. Marketers in the pharmaceutical industry should shift their focus from short-term treatments to the maintenance of their patients' health over the long haul. When trying to sell their products, pharmaceutical companies encounter a number of obstacles. A regulated corporation, like most heavily regulated businesses, will have stringent standards, copious amounts of data, and a tiny but savvy clientele. The practice of making deceptive claims appears to have a significant impact on the high volume of lawsuits filed against the sector. Prior to a new drug's release, industry players have less time to be ready. If the pharmaceutical industry wants more people to buy their drugs, believe in their value beyond the price tag, and be loyal to their brands, it needs to avoid engaging in unethical marketing methods. Doing so would allow them to stay true to industry standards while perhaps raising the perceived value of their products. This study of the battle against the pandemic takes into account both current technological solutions and novel pharmacological commercial strategies. The proliferation of digitally connected health care services makes it easier to maintain social distances and other types of impartiality. Pharmaceutical product advertising is rampant, which serves to both hide budgetary restraints and open the door to more affordable alternatives.

III. RESEARCH METHODOLOGY

Research Design

This study employs a cross-sectional survey approach for its investigation.

Sampling Technique

In this investigation, a stratified random sampling method was employed.

Sample Size

A total of 110 respondents was selected for the study.

Data Collection

The data was collected by means of an online survey that will be sent to the chosen participants via several internet channels, including email and social media.

Data Analysis

Descriptive and inferential statistics was used to examine the gathered data. The data will be described using descriptive statistics like percentages and frequencies. The use of chi-square tests and other inferential statistical methods will be implemented.

IV. DATA ANALYSIS AND INTERPRETATION

Table 1: Gender of the Respondents

Gender	Frequency	Percentage
Male	65	59.09
Female	45	40.91
Total	110	100

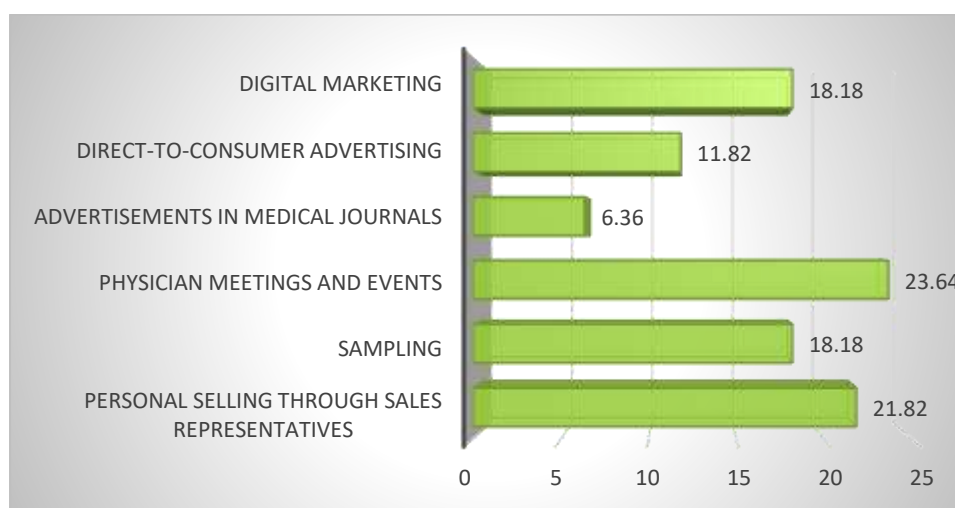


Figure 1: Gender of The Respondents

The data reported in Table 1 reveals that out of 110 respondents, 65 (or 59.09%) were male, which is the majority. Meanwhile, 45 responders, or 40.91 percent, were female.

Table 2: Factors that Influence Pharmaceutical Marketing

Particulars	Frequency	%
Personal selling through sales representatives	24	21.82
Sampling	20	18.18
Physician meetings and events	26	23.64
Advertisements in medical journals	7	6.36
Direct-to-consumer advertising	13	11.82
Digital Marketing	20	18.18
Total	110	100

**Figure 2: Factors that Influence Pharmaceutical Marketing**

Based on the data in Table 2, it is clear that marketing results are greatly affected by direct contact with healthcare professionals, since the most important element was Physician meetings and events, which was mentioned by 23.64% of respondents. Marketing pharmaceuticals also relies heavily on sampling (18.18%) and personal selling (21.82%) through sales personnel. Another area that is seeing significant growth is digital marketing (18.18%), which is a direct result of the increasing significance of digital platforms. Nevertheless, advertisements in medical journals had the lowest level of influence (6.36%), indicating that more contemporary marketing strategies are outperforming their more conventional counterparts.

Table 3: Chi-square Test for Variables That Influence Pharmaceutical Marketing

Influencer	Frequency	Observed (O)	Expected (E)	(O-E) ² / E
Personal Selling	24	24	18	1.75
Sampling	20	20	18	0.15
Physician Meetings and Events	26	26	18	3.21
Advertisements in Medical Journals	7	7	18	7.01
Direct-to-Consumer Advertising	13	13	18	1.55
Digital Marketing	20	20	18	0.15
Total	110			13.82

The results of the Chi-square test for the factors affecting pharmaceutical marketing are displayed in Table 3. It was assumed that each factor would have an equal distribution, hence the anticipated frequency (E) was set at 18. With a Chi-square value of 7.01, the most extreme outlier was found in Medical Journal Ads, suggesting a far less impact than anticipated. The Chi-square score for Physician Meetings and Events was also 3.21, indicating a larger effect. On the other hand, Chi-square values of 0.15 for sampling and digital marketing suggest that their effect was close to predictions, suggesting small deviations. With a computed Chi-square value of 13.82, we may infer that different marketing approaches have significantly different impacts.

V. CONCLUSION

The results indicated that physician meetings and events were the most impactful component, highlighting the importance of direct interaction with healthcare professionals in facilitating product adoption and market expansion. Moreover, personal selling via sales reps and sampling were seen as exceptionally effective techniques, underscoring the significance of individualized communication and product experience in shaping prescription behavior. The survey demonstrated an increasing dependence on digital marketing platforms, highlighting the transition to contemporary, technology-driven marketing strategies. Advertisements in medical publications demonstrated the minimal impact, indicating a reduction in the efficacy of conventional marketing strategies. The Chi-square test findings indicated considerable disparities in the impact of different marketing methods, underscoring the necessity for pharmaceutical businesses to use new and customer-oriented marketing approaches. It is determined that augmenting engagement with healthcare professionals, intensifying personal selling initiatives, and utilizing digital marketing platforms will substantially enhance pharmaceutical product exposure and market acceptability. Adopting a balanced strategy that combines conventional and contemporary marketing techniques can facilitate sustained growth and competitive advantage for pharmaceutical firms in the sector.

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