

Assessment of Digital Promotions Impacting Hospitals Growth: Predictive Analysis

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ABSTRACT

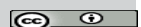
Inevitability is quite ahead for almost all sectors of industries to adopt digital marketing strategies for a good number of benefits in comparison with traditional practices of so called Marketers. Though an assumption is recollected that hospital industry does not need promotions, the competition among corporate and middle range hospitals has been strong and the complete information about all the facilities and services of hospitals are decided to be reached to the targeted audience. Scintillating digital platforms explored with dexterous technical tools are found to be quite quintessential to promote hospital products and services. This research aimed at assessing the digital marketing factors' influence on the sustainability of hospital industry in Srikakulam District at the standpoint of promotion mix strategical choice. The method mix associated with descriptive design, qualitative and Quantitative approach, convenient sampling techniques, cross-sectional survey type and analysis with EFA and multiple regression was carried out. The relationship between the factors and sustainability was established through finding and further interpretation backed up with management implications was explored in this paper

Keywords: Digital Marketing, Hospital Industry, Sustainability, Multiple Regression, Srikakulam District

The healthcare industry in India encompasses a wide range of sectors, including hospitals, medical devices, clinical trials, outsourcing, telemedicine, medical tourism, health insurance, and medical equipment. This industry is experiencing rapid growth, driven by expanding coverage, improved services, and increased investments from both the public and private sectors. It is projected that the healthcare market in India will reach a value of US \$372 billion by 2024, primarily due to rising incomes, greater health awareness,

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the prevalence of lifestyle diseases, and increased access to insurance. The launch of the world's largest funded healthcare scheme, Ayushman Bharat, on September 23, 2018, is a significant development in this context.

There is substantial potential for enhancing healthcare services in India, given that healthcare spending as a percentage of Gross Domestic Product (GDP) is on the rise. The government's expenditure on the health sector has increased from 1.2 percent of GDP in FY14 to 1.4 percent in FY18. Furthermore, the Government of India has plans to further increase public health spending to 2.5 percent of the country's GDP by 2025.

Within the healthcare industry, hospitals constitute a dominant sector that has witnessed remarkable growth in various services facilitated by technology. In addition to physical equipment and technology-driven services, there is a notable emphasis on promoting hospital services to customers through digital operations. Digital marketing strategies, including mobile marketing, content marketing, search engine marketing, and social media marketing, are being leveraged to enhance the efficiency and effectiveness of hospital operations. The cost-effectiveness and reach of digital marketing make it an indispensable tool for the healthcare industry.

In recent years, the integration of big data and digital marketing has been embraced by numerous industries due to its numerous advantages. The proliferation of innovative technology and the diversification of communication channels have made it challenging to target consumers effectively through traditional marketing methods. In the healthcare industry, as in many other sectors, it has become crucial to leverage digital marketing for engaging with consumers effectively.

A significant shift has occurred with a growing number of people turning to the internet for health-related information and solutions. Approximately one out of every 20 Google searches is related to healthcare, reflecting the trend of individuals seeking information and solutions for their health-related issues online. While word-of-mouth marketing has traditionally played a significant role in the healthcare industry, more people are now relying on digital resources to make informed decisions about their healthcare needs.

The use of social media and online communities has gained traction in the healthcare sector. Patients are increasingly comfortable with their healthcare providers seeking advice from online communities to improve their healthcare services. Moreover, healthcare professionals are using social media for professional networking. It has been found that 41 percent of people consider social media when choosing a medical facility, hospital, or doctor. Approximately 60 percent of doctors believe that social media has a positive impact on the quality of care they deliver to their patients.

As digital marketing continues to gain prominence in the healthcare industry, there has been a notable shift away from traditional marketing. According to a study, the biotech, medical, diagnostics, and pharmaceutical device marketing budgets are increasingly being allocated to digital sales materials, mobile apps, and social media. With consumer marketing strategies evolving towards digital advertising, social media, and mobile apps, the healthcare industry is following suit and embracing digital channels for reaching its audience.

Andhra Pradesh, a recently formed state, has shown a commitment to the development of the healthcare industry by embracing digitalization. The establishment of the Andhra Pradesh MedTech Zone Limited (AMTZ) is a significant step in promoting medical device manufacturing in India. This initiative aims to enhance the healthcare infrastructure in the state.

The urbanization process in the northern districts of Andhra Pradesh is still in need of comprehensive technological enhancements across various industries. There is a crucial need for easy, prompt, and accurate dissemination of information from both public and private hospital management to the general public. Hospitals offer a wide range of distinct and specialized services, and these services should be effectively communicated to patients and the public through established channels.

The adoption of digital technology has made significant strides in urban, semi-urban, rural, and tribal areas due to the implementation of numerous digital initiatives and schemes. However, there is a need to harness the power of digital tools to explore and promote certain health service attributes with visual excellence, creating more compelling and informative content.

In the healthcare industry, precision in information, timely delivery, reliability, and consistency are of paramount importance to provide superior service. It is imperative to investigate the extent to which digital promotional tools can complement and enhance public engagement.

Remarkably, despite the progress in digital adoption and healthcare communication, there has been no comprehensive study conducted that focuses on the unique context and healthcare needs of the northern coastal districts of Andhra Pradesh. This region presents its own set of challenges and opportunities, making it an area ripe for in-depth exploration and research in the context of digital healthcare promotion.

The study area in Srikakulam district, boasts abundant resources for economic development. While the district has seen the establishment of corporate, private, and public hospitals with advanced digital operations, there remains a gap in effectively reaching the targeted customers with impactful digital promotions. This study intends to explore various digital promotion strategies and their influence on hospital performance. The performance of hospitals, evaluated through indicators such as the number of outpatients, sales turnover, and customer satisfaction, will serve as the dependent variables in the study. This research aims to shed light on the factors that contribute to hospitals' effectiveness in reaching their audiences and delivering quality healthcare services in the digital age.

Objectives of the study

1. To identify different types of digital promotions being used by corporate and private hospitals in Northern coastal districts of Andhra Pradesh.
2. To evaluate the awareness levels of Digital marketing tools amongst the customers of hospitals in Northern coastal districts of Andhra Pradesh.
3. To assess the customer perception on digital promotions of hospitals in Northern coastal districts of Andhra Pradesh.
4. To assess the impact of digital promotion such as Website, Search engine optimization, Mobile application, Pay per click and Social media marketing tools on hospitals' performance.
5. To offer particular recommendations backed up with management implications in order to promote exceptional services to the targeted customers of hospitals in Visakhapatnam.

Review of literature

Digital marketing represents an alternative marketing paradigm rooted in the core principles of marketing. The American Marketing Association (AMA) defines marketing as the organizational function responsible

for creating, communicating, and delivering value to customers, managing customer relations, and ensuring that all interested parties benefit (Kaufman, 2014). Kaufman and Horton (2015) highlight digital marketing as a non-traditional marketing model, indicating a shift in marketing practices.

In essence, digital marketing encompasses marketing activities that leverage information technology and digital tools (Venugopal & Das (2022)). This broad definition underscores the dynamic and evolving nature of marketing in the digital age.

Yulin Hswen (2014) delves into the realm of m-Health, emphasizing its affordability and acknowledging regulatory, research, and clinical trial requirements. This underscores the need for government regulations, international research guidelines, and robust clinical trial evidence to advance this emerging field, especially in serving low-income patients.

M.V. Ramana Murthy (2013) explores the use of mobile devices to enhance primary healthcare services, leading to fewer hospitalizations and a reduction in inappropriate health interventions. Mobile technology is harnessed to provide improved access to primary healthcare, ultimately benefiting patients.

Vuda Sreenivasa Rao (2014) suggests health care support through Android Smartphone applications, which assist users in maintaining their health and fitness by providing exercise guidance based on factors like BMI and BMR. These applications also offer general dietary tips, promoting a healthier lifestyle.

Suraj Singh (2014) introduces the iCare application, designed to run on various Android devices with 3G and WIFI capabilities. It accepts patient symptoms, processes data to identify specific diseases, and provides prescriptions using a medical expert system employing pattern matching techniques.

Boulos, M., in his analysis, predicts that the adoption of smartphones by older people and individuals with chronic diseases will increase over time, particularly as costs decrease and apps become more user-friendly. As awareness of the capabilities of smartphones grows and community knowledge expands to address the complexity of new technology, more individuals will embrace this trend.

Armellini, G. *et al.* (2011) underscore the rapid rise of social media at the expense of traditional media in the battle for consumers' attention. As advertising and online word-of-mouth compete with traditional marketing techniques, companies increasingly view an active presence on social media as a viable alternative to traditional advertising.

The use of social media in healthcare is emphasized by Thackeray, Neiger, Hanson, and McKenzie (2008). Hospital staff recognize its potential for disseminating information in various forms, such as patient education, staff profiles, and announcements of awards. The relatively low cost and wide reach of social media platforms make them valuable tools for healthcare organizations.

The integration of Facebook with other social media channels simplifies the management of health-related information and content for both organizations and their audiences Gopalakrishna, V. *et al.* (2021). Social media platforms enable dynamic information sharing across various networks, enhancing the dissemination of health-related products and services offered by healthcare organizations.

Of all the social networking sites on the web, Facebook is the most popular, with millions of users sharing vast amounts of content each month. It offers an accessible, cost-effective platform for both profit and nonprofit sectors to communicate health information, promote products and services, and build brand communities. Health organizations have developed Facebook health applications to help users monitor their exercise and diet goals and coordinate their exercise plans.

Social media is increasingly recognized as an effective tool for health insurance companies to interact with customers, provide health tips and advice, and enhance the industry's image (Terry 2011).

Malaga, R.A. (2007) discusses "Worst Practices in Search Engine Optimization," examining the efforts of businesses to appear on the first page of search engine results pages (SERPs). The study found that 62% of search engine users click only on results from the first page of SERPs, highlighting the importance of SEO efforts.

Venugopal, *et al.* (2020) emphasize the effectiveness of trio advertising on the internet, which increases sales in brick-and-mortar stores more than online. The combination of search ads and display ads in a single campaign delivers the best results in driving purchases.

Digital marketing is increasingly favored over traditional marketing in the healthcare industry, with a significant shift toward digital sales materials, mobile apps, and social media (MM&M study). The adoption of digital channels in healthcare marketing is driven by the advantages they offer.

Various studies explore the world of online marketing, emphasizing its impact on consumer behavior analysis and brand positioning. Businesses are leveraging social applications in departments such as research and development, marketing, sales, customer support, and operations (Murlikrishna, P.N. *et al.* (2020)..

Anderson, S. (2009) outlines the pitfalls to avoid in SEO practices, including choosing titles unrelated to page content, using default or vague titles, employing lengthy titles, and stuffing keywords. Ross, A. M. (2008) emphasizes the importance of appearing on the first page of SERPs, as 62% of users click only on first-page results.

Online marketing encompasses a variety of strategies, including search engine marketing (SEM), search engine optimization (SEO), banner ads, email marketing, and Web 2.0 approaches (John *et al.* 2007). It plays a critical role in consumer behavior analysis, brand positioning, and communication with consumers.

A recent study evaluates the effectiveness of a search marketing campaign and the impact of print advertising on SEM (Olbrich & Schultz, 2014). The study finds that budget and keyword matching have the most significant impact on business yield, followed by click-through rate and bid amount.

Pay-per-click (PPC) advertising charges advertisers for each click on an online advertisement. Keywords with varying competition ratings result in different costs per click. A study examines the best methods for determining the bid price per keyword for a new PPC campaign (Nabout, 2015).

The online advertising landscape includes search, classifieds, and display advertising, each with unique formats and functions (Goldfarb, 2014). Search engine advertising allows advertisers to display alongside organic search results, with costs based on keyword popularity and relevance (Katona & Sarvary, 2010).

Digital marketing encompasses a wide range of strategies, leveraging various online channels and technologies to reach and engage consumers effectively. It has become an integral part of modern marketing, offering cost-effective and interactive solutions to connect with target audiences. This shift in marketing practices is reshaping the way businesses promote their products and interact with consumers, making digital marketing a vital component of any successful marketing strategy.

Methodology

Northern coastal districts of Andhra Pradesh has got the maximum possible potentiality of medical establishment with respect to corporate, private and public hospitals.

Based on the objective of the study, the research design is a combination of qualitative and quantitative approaches with the descriptive research design.

The sample size is determined as 300 and the sampling strategy selected for the study is convenience sampling of non-probability sampling. The questionnaires were distributed to out-patients of different hospitals and hospital staff of different designations. Besides, in-depth interviews with hospital management were also be conducted. The study used a cross-sectional descriptive and field survey that lasts short duration and focuses on gathering quantitative and qualitative data from primary and secondary sources.

The survey was cross-sectional in nature and a self-administered questionnaire is used to collect the data from the respondents.

Both qualitative and quantitative data was collected from both secondary and primary sources using data collection tools such as questionnaires, interviews, focus group discussion, direct observation and document reviewing (documentation, internet and textbooks that published and unpublished).

Besides descriptive statistics, analytical and inferential statistics for the analysis such as Correlation, ANOVA, and Multiple Regression analysis with Structural Equation Modelling will be used and further management implications on certain epidemic issues will be supplemented.

ANALYSIS AND INTERPRETATION

Multiple Regression Analysis

Multiple Regression Analysis is a statistical method used to examine the relationships between a dependent variable and multiple independent variables. It extends simple linear regression, which considers one independent variable, to handle several predictors simultaneously. Here's the overview of multiple regression analysis for the study.

Table 1: Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.662 ^a	.439	.399	1.08881

a. Predictors: (Constant), Reducing Promotion Costs, Enhancing Hospital Performance, Government Health Schemes, Addressing Technological Challenges, Categorical Influence of Different Channels, Seeking Government Funding.

As depicted in Table 1, the R Square value stands at 0.439. This signifies that the various levels of items collectively contribute to 43.9 percent of the increase in the promotion rate of hospitals in Srikakulam district. The remaining 56.1 percent remains influenced by undisclosed variables.

Table 2: ANOVA^b

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	262.187	20	13.109	11.058	.000 ^a
	Residual	335.497	283	1.186		
	Total	597.684	303			

a. Predictors: (Constant), Reducing Promotion Costs, Enhancing Hospital Performance, Government Health Schemes, Addressing Technological Challenges, Categorical Influence of Different Channels, Seeking Government Funding.

b. Dependent Variable: Hospital Promotion

The table 3 explains the correlation between the independent variables (Reducing Promotion Costs, Enhancing Hospital Performance, Government Health Schemes, Addressing Technological Challenges, Categorical Influence of Different Channels, and Seeking Government Funding) and the increment in the promotion rate. The analysis reveals a statistically significant relationship, as indicated by the F value of 11.508 and a highly significant p-value of 0.00, significant at both the 0.05 and 0.00 levels. Furthermore, it can be inferred that for every unit increase in any of the listed items, there is a corresponding increase of 335.497 in the promotion rate.

Table 3: Coefficients^a

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	3.117	.469		6.648	.000
Reducing Promotion Costs	-.355	.162	-.126	-2.193	.029
Enhancing Hospital Performance	.595	.060	.565	9.988	.000
Government Health Schemes	-.144	.169	-.050	-.850	.396
Addressing Technological Challenges	-.632	.169	-.225	-3.745	.000
Categorical Influence of Different Channels	-.199	.083	-.141	-2.384	.018
Seeking Government Funding	.404	.189	.142	2.142	.033

a. Dependent Variable: Hospital Promotion.

The provided analysis outlines the coefficients of a regression model, where the dependent variable is “Hospital Promotion,” and various independent variables are considered. Here’s a detailed interpretation of the coefficients:

- ❑ Reducing Promotion Costs: This variable represents the effect of reducing promotion costs on hospital promotion. A negative coefficient (-0.355) suggests that as the costs decrease, hospital promotion tends to decrease as well. The negative beta and a significant p-value (0.029) confirm the statistical significance of this relationship.
- ❑ Enhancing Hospital Performance: This variable reflects the impact of enhancing hospital

performance on hospital promotion. The positive coefficient (0.595) implies that improving hospital performance leads to an increase in hospital promotion. The high beta and a highly significant p-value (0.000) indicate the strong positive relationship.

- ❑ **Government Health Schemes:** This variable examines the influence of government health schemes on hospital promotion. The coefficient is negative (-0.144), suggesting that the presence of such schemes may have a slight negative impact on hospital promotion. However, the high p-value (0.396) indicates that this relationship is not statistically significant.
- ❑ **Addressing Technological Challenges:** This variable assesses the effect of addressing technological challenges on hospital promotion. The negative coefficient (-0.632) implies that addressing these challenges tends to reduce hospital promotion. The strong negative relationship is confirmed by the beta and a highly significant p-value (0.000).
- ❑ **Categorical Influence of Different Channels:** This variable examines how categorical influence through different channels affects hospital promotion. The negative coefficient (-0.199) suggests that such influence may slightly decrease hospital promotion. The negative beta and a significant p-value (0.018) indicate the statistical significance of this relationship.
- ❑ **Seeking Government Funding:** This variable represents the impact of seeking government funding on hospital promotion. The positive coefficient (0.404) implies that hospitals that actively seek government funding may experience increased promotion. The positive beta and a significant p-value (0.033) confirm the statistical significance of this relationship.

This analysis provides insights into the relationships between various independent variables and hospital promotion. It shows that enhancing hospital performance and seeking government funding have positive and significant impacts on promotion, while addressing technological challenges has a negative impact. Other variables, such as reducing promotion costs and categorical influence of different channels, also have statistically significant effects on hospital promotion.

SUGGESTIONS

The outcomes of the study offered valuable insights and recommendations for various stakeholders, such as the hospital industry, government hospitals, policymakers, and corporate entities. Here are some suggestions drawn from the outcomes:

- ❑ **Reducing Promotion Costs:** The study's understanding of the extent of digital channel usage by the hospital industry can significantly benefit hospitals by helping them reduce promotional costs. Hospitals can identify the most effective digital channels for reaching their target customers and allocate their marketing budgets more efficiently.
- ❑ **Enhancing Hospital Performance:** The identification of factors influencing hospital performance provides hospitals with actionable insights. They can use this information to formulate or modify their strategies for promoting their services effectively. For example, hospitals can focus on areas that have a more significant impact on their performance, such as patient engagement, online reputation management, or service quality.

- ❑ *Government Health Schemes:* Government hospitals can leverage digital marketing channels to reduce costs, promote health schemes, manage accommodation status, and showcase their competencies. The study's outcomes can guide policymakers in developing innovative approaches to using digital marketing for the public health sector. This can lead to better information dissemination, improved healthcare services, and cost savings.
- ❑ *Addressing Technological Challenges:* The study can provide insights into the challenges associated with people's access to technology. These challenges can include issues related to internet connectivity, digital literacy, and barriers to accessing healthcare services online. Recognizing and understanding these challenges can help healthcare providers and policymakers address them effectively.
- ❑ *Categorical Influence of Different Channels:* By understanding the impact of various digital marketing channels on hospital performance, corporate entities can tailor their marketing strategies to make the most of these channels. For instance, they can prioritize channels that have been shown to have a significant influence on hospitals' performance, ensuring a more effective and targeted approach.
- ❑ *Seeking Government Funding:* Given the potential benefits to the healthcare industry and public health, consider forwarding the project to government health authorities and agencies for funding. The study's outcomes can align with government healthcare initiatives and contribute to the overall improvement of healthcare services. Additionally, collaboration with non-governmental organizations (NGOs) operating in the healthcare sector can enhance the project's effectiveness, as these organizations often have valuable expertise and resources.

In conclusion, the outcomes of the study can provide valuable guidance for the hospital industry, government health agencies, policymakers, and corporate entities, contributing to more efficient and effective healthcare services and digital marketing strategies.

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