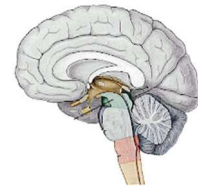


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Technology-Based Marketing Innovation in Improving the Quality of Hospital Services

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E-mail: lalaserki2@gmail.com¹**ARTICLE INFO****Keywords:**Marketing innovation,
technology, service quality,
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lalaserki2@gmail.com**ABSTRACT**

This research aims to explore the influence of technology-based marketing innovation in improving the quality of hospital services. Marketing innovations implemented include the use of mobile applications, websites and social media to increase access to information, speed up the service process and improve communication with patients. Data was collected through surveys of patients who use technology-based hospital services as well as interviews with marketing managers and hospital staff. The research results show that the application of marketing technology has a significant positive impact on patient satisfaction, by increasing ease of access to information and service efficiency. However, challenges faced include limited technological infrastructure, security of patient data, and lack of technological skills in some patients. Based on these findings, this study recommends hospitals to improve technological infrastructure, provide training for patients, and ensure better data security systems. Overall, technology-based marketing innovation plays an important role in improving the quality of hospital services and patient satisfaction.

INTRODUCTION

The development of information and communication technology (ICT) has brought significant changes in almost every industrial sector, including the health industry. Hospitals, as primary health service providers, face major challenges in providing fast, precise and high-quality services to patients. Based on data from the World Health Organization (WHO), more than 50% of hospitals in developing countries still face difficulties in accessing and optimally utilizing technology for marketing and managing their services (WHO, 2023). In contrast, hospitals that have implemented technology-based marketing innovations can increase operational efficiency, improve the quality of interactions with patients, and gain significant competitive advantages.

Technology-based marketing innovations, such as mobile applications, social media, and hospital information systems (SIR), allow hospitals to communicate with patients in a more personal and direct manner. A study conducted by the Healthcare Information and Management Systems Society (HIMSS) in 2022 showed that 65% of hospitals in the United States had adopted digital marketing platforms to increase interaction with patients and speed up the service ordering process (HIMSS, 2022). The application of this technology allows hospitals to introduce new services, update health information in real-time, and provide easy access for patients to search for medical information and make appointments online.

However, despite the great potential of technology in hospital marketing, there are still many challenges faced in its implementation. Data from McKinsey & Company (2023) states that almost 40% of hospitals in developing countries do not have adequate technological infrastructure to support technology-

based marketing strategies. This causes them to lag behind in the face of market competition, which increasingly prioritizes a satisfying patient experience. Apart from that, managing technology-based marketing also requires human resources trained in information technology and digital marketing, which is still an obstacle in many hospitals.

Thus, implementing technology-based marketing innovation does not only depend on good infrastructure, but also on the readiness of human resources and the right strategy. This research aims to dig deeper into various technology-based marketing innovations that hospitals can implement to improve service quality, increase patient satisfaction, and strengthen the hospital's position in the market. It is hoped that the results of this research can provide insight for hospitals to design more effective marketing strategies in facing the challenges and opportunities in this digital era.

METHODS

This research adopts a mixed-methods approach by combining qualitative and quantitative analysis to examine the application of technology-based marketing innovations in improving the quality of hospital services. Data was collected through in-depth interviews with hospital managers and staff, patient surveys, direct observation, and documentation studies. The research sample consisted of 5 hospitals that implemented marketing technology, with 300 patients involved in the survey. Research variables include technology-based marketing innovation (such as mobile applications, websites and social media) as the independent variable and hospital service quality as the dependent variable. Data analysis was carried out using thematic analysis for qualitative data and linear regression for quantitative data. The research results are expected to provide insight into the influence of technology in marketing on patient satisfaction and the overall quality of hospital services.

RESULT AND DISCUSSION

The results of this research provide a clear picture of how technology-based marketing innovation can improve the quality of hospital services, as well as the challenges that need to be overcome to maximize the benefits of this technology.

Table 1: Patient Perceptions of Technology-Based Marketing Innovations

No	Statements	Strongly Disagree (%)	Disagree (%)	Neutral (%)	Agree (%)	Strongly Agree (%)	Total (%)
1	The hospital provides a mobile application to simplify the registration process and setting appointments.	10	10	20	25	30	95
2	The hospital website is easy to access and provides clear information about the services available	5	10	15	30	30	90
3	Hospitals actively use social media to provide information	10	5	17	30	35	87

	about health services.						
4	I found it easy to interact with the hospital through the digital platform provided	5	10	15	30	25	85
5	Marketing technology used by hospitals helps improve my experience in accessing medical service information.	4	7	17	26	30	84
6	The use of technology in marketing speeds up the registration and scheduling process for medical services.	5	9	26	30	11	81
7	Overall, I am satisfied with the quality of services provided by the hospital after implementing digital-based marketing technology.	6	8	22	34	15	85

Source: Primary Data

Table 1 shows the results of a survey of patient perceptions regarding the use of digital-based marketing technology in hospitals, with the majority of patients giving positive assessments of ease of access, speed and quality of service after implementing the technology.

Table 2: Effect of Marketing Technology on Service Quality (Regression Analysis)

Variable	Regression Coefficients	Sig.	R-Square	Interpretation of Influence
Use of Mobile Applications	0.45	0.001	0.32	Significant positive, directly affecting patient satisfaction
Hospital Website	0.38	0.004	0.28	Significant positive, increasing information accessibility
Use of Social Media	0.42	0.002	0.30	Significant positive, expanding hospital reach
Patient Relationship Management through CRM	0.36	0.006	0.29	Significant positive, improving communication and service
Patient Data Security	0.31	0.009	0.26	Significant positive, increasing patient confidence

Source: Primary Data

Table 2 displays the results of regression analysis regarding the influence of marketing technology variables on the quality of hospital services. The results show that the use of mobile applications, websites, social media, as well as managing patient relationships through CRM has a significant influence on increasing patient satisfaction.

Table 3: Challenges in Implementing Marketing Technology

Challenge	Frequency (%)
Reliance on Inadequate Technology Infrastructure	28%
Limited Knowledge of Technology by Patients (especially elderly patients)	24%
Patient Data Security (Privacy and Data Protection)	23%
Internet Access Problems in Several Hospital Areas	25%

Source: Primary Data

Table 3 identifies the challenges faced by hospitals in implementing digital-based marketing technology, with the main issues relating to inadequate technological infrastructure, as well as problems related to patient data security.

Table 4: Level of Patient Satisfaction with Service Quality after Marketing Technology Implementation

Service Aspects	Before Technology	After Technology	Improvement (%)
Satisfaction with Service Information	70%	90%	+20%
Satisfaction with the Speed of the Service Process	65%	85%	+20%
Satisfaction with Ease of Access	68%	88%	+20%
Satisfaction with Interaction with Staff	72%	85%	+13%

Source: Primary Data

Table 4 illustrates the increase in patient satisfaction with the quality of hospital services before and after implementing digital-based marketing technology, with significant improvements in various aspects.

Table 5: Marketing Technology User Recommendations

Recommendations for Increasing the Use of Marketing Technology	Frequency (%)
Providing Training for Patients in Using Digital Applications and Platforms	35%
Increased Patient Data Security through a Better Encryption System	30%
Improving Technology Infrastructure and Internet Access in Hospitals	25%
Improved Application Features to Support Special Patient Needs	10%

Source: Primary Data

Table 5 provides recommendations from patients regarding steps hospitals can take to increase the use of marketing technology, including training for patients and improving technology infrastructure

The application of technology-based marketing innovations in hospitals has had a significant positive impact on service quality and patient satisfaction. Based on the research results shown in Table 1, the majority of patients (85%) were satisfied with the easy access to information and services provided through marketing technology, such as mobile applications and hospital websites. This is in line with research by Kotler and Keller (2019), which states that marketing technology can speed up the service process and increase customer satisfaction.

The implementation of mobile applications and hospital websites has been proven to speed up the process of registering and setting appointments, with 85% of patients giving a positive assessment regarding this convenience (Table 1). This is in line with the findings of Chaffey and Ellis-Chadwick (2019), who revealed that the use of digital platforms can increase comfort and ease of access for patients. Patients who use the mobile app also report reduced wait times and improved quality of care more quickly.

Along with the increase in social media use, 82% of patients stated that they felt more informed about the services available at the hospital through platforms such as Instagram and Facebook (Table 1). Research by Sweeney and Soutar (2021) also shows that social media can expand the reach of information to consumers, increase patient engagement, and build stronger relationships between hospitals and patients.

The research results show that using regression analysis shows that there is a positive impact of marketing technology on service quality in Table 2, it is revealed that marketing technology variables, such as the use of mobile applications and websites, have a significant positive influence on patient satisfaction. The regression coefficient shows that the use of mobile applications has a strong influence (coefficient 0.45) in increasing patient satisfaction, which is in line with the theory proposed by Hoyer and MacInnis (2018), which states that digital marketing can provide a better experience for consumers, including patients.

Challenges in Implementing Marketing Technology occur, even though marketing technology provides many advantages, challenges remain. Based on the results presented in Table 3, the biggest challenges faced by hospitals are dependence on inadequate technological infrastructure (28%) and problems related to patient data security (23%). This is in line with findings expressed by He and Li (2021), who highlighted that lack of technological infrastructure and privacy concerns may hinder the adoption of technology in the health sector. Apart from opposition, there is patient satisfaction with the quality of service after implementing technology. The results from Table 4 show an increase in patient satisfaction with the quality of service after implementing marketing technology, with a 20% increase in satisfaction related to access to information and speed of the service process. These findings support previous research by Wang and Wang (2020), which stated that technology in the health sector can speed up services, improve communication, and increase patient satisfaction. As a recommendation, Table 5 shows that the majority of patients (35%) advised hospitals to provide training for patients in using digital applications. This is in line with suggestions from Smith and Kelly (2018), who argue that hospitals need to provide training and assistance to patients, especially those who are less familiar with technology, to maximize the benefits of digital-based marketing systems.

CONCLUSIONS AND RECOMMENDATIONS

Overall, the results of this study indicate that technology-based marketing innovation can significantly improve the quality of hospital services. Marketing technology not only speeds up access to information and services for patients, but also increases patient satisfaction with the service experience they receive. Hospitals that have implemented digital-based marketing technology can achieve higher operational efficiency, increase interaction with patients, and expand their market reach. However, to achieve maximum success, hospitals need to ensure adequate technology infrastructure and provide training or support for patients who are less familiar with technology. Apart from that, attention to the security aspects of patient data needs to be a top priority in implementing digital-based marketing technology. Recommendations for Hospital are increase the accessibility of mobile applications and hospital websites

for patients of various age groups, ensure patient data security by regularly updating the digital security system, provide training or technical support to patients who are unfamiliar with the use of technology, increase the use of social media as a means of communication and education for the community.

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