EFFECTS OF SERVICE MARKETING IN AI MEDICAL INDUSTRY ON BRAND IMAGE AND CONSUMER BEHAVIOR

Wen-Jung TSAI, Shuen-Huei YAO

Effects of Service Marketing in AI Medical Industry on Brand Image and Consumer Behavior

Wen-Jung TSAI[1], Shuen-Huei YAO[2]

Abstract

Emerging smart technology in global medical & health care systems in past years results in the popularity of telework and telehealth. Besides, people's changing consumption patterns enhance explosive growth of medicine, life sciences, and digital technology in recent years to accelerate the transformation and reform of medical industry. Under real needs and the catalysis of technology, smart medicine becomes the mainstream in the future. For this reason, this study tends to discuss the effect of service marketing in AI medical industry on brand image and consumer behavior. AI medical industry customers in southern Taiwan, as the research samples, are distributed 500 copies of questionnaire. After deducting invalid and incomplete ones, 346 copies of questionnaire are valid, with the retrieval rate 69%. The research results reveal that service marketing would positively and significantly affect brand image, brand image would positively and remarkably affect consumer behavior, and service marketing would positively and notably affect consumer behavior. According to the results to propose suggestions, it is expected to provide effective guide for various service organizations practicing service marketing to grasp critical factors and build the service marketing systems being able to promote the benefit in AI medical industry.

Keywords: AI, medical industry, service marketing, brand image, consumer behavior

[1] College of Management, Chang Jung Christian University, TAIWAN ROC. E-mail: 109d00062@mail.cjcu.edu.tw

[2] Department of Accounting and Information Systems, Chang Jung Christian University, TAIWAN, ROC. E-mail: shyao@mail.cjcu.edu.tw (Corresponding author)

Introduction

Medicine, life sciences, and digital technology present explosive growth in past years, like emerging smart technologies of AI, 5G, blockchain, cloud computing, and big data. Moreover, telework and telehealth, in order to cope with the epidemic, become more popular; and, people's changing consumption patterns accelerate the transformation and reform of medical & health care industry. Under real needs and the catalysis of technology, smart medicine would become the mainstream in the future (Lin & Wu, 2022). The popularity of mobile phones, the evolution of artificial intelligence, sub-replacement fertility accompanying ageing, and consumers' consumption result in the approach of digital age that Internet media become an important channel for customers searching and selecting consumption.

People's enhancing medical choices and reducing barriers to medical care results in fiercer competition among hospitals. Some hospitals winning in the survival of medical market competition introduce the idea of business marketing for the operation conditions. Current marketing strategies do not simply rely on external publicity, but also require the promotion of service quality to have customers actually experience good service attitude (Lin & Wu, 2022). To realize such a goal, it is necessary to reinforce the interaction between service personnel and customers to form the service triangle among enterprises, employees, and customers. Such a research motivation triggers the expectation to deeply understand the service marketing strategy in medical industry. It is currently a brand age full of opportunities and challenges, involving in food, clothing, accommodation, transportation, education, and entertainment. People are interacting with various brands at any time, and medical industry appears no exception. Since patients stress more on brand image, the strong influence of brand has some medical industry strive for market share. It symbolizes the good word-of-mouth to successfully appeal to patients. It induces the understanding of the importance of brand in medical industry, including the effect of brand image on competitive strategies and patients' first choice for a medical institution being affected by brand image. In this case, the effect of service marketing in AI medical industry on brand image, service satisfaction, and consumer behavior is discussed in this study. It is expected to provide effective guide for various service organizations practicing service marketing so as to grasp critical factors and build the service marketing system being able to promote the benefit of AI medical industry.

Literature review

Mitra & Jenamani (2020) regarded finance & insurance industry as a part of service industry winning customer trust with professional trust and corporate performance. For this reason, banking specialists stressed more on the brand image of a life insurance company but emphasized less on the hardware equipment and building appearance of a life insurance company. When corporate image received positive evaluation, positively participated or sponsored social activities for public good, built good market reputation, and presented credit rating and high reputation, banking specialists would be more willing to constantly promote the marketing. Similarly, the higher brand recognition of a life insurance company would enhance banking specialists' selling willingness. According to Dewi *et al.* (2021), proper brand image, among diverse service marketing strategies, could bring positive effect for an enterprise. For a cram school, it was necessary to precede market segmentation, definitely ensure the target market, and promote internal hardware equipment through promotion. Furthermore, preceding service personnel's professional training, reinforcing administrative staff's explanatory ability, positively participating in community activities, and inviting the direct visit of parents and students would benefit the image creation of a cram school. Greco & Polli (2020) pointed out positive correlations between brand image and service marketing as well as important and obvious effects of brand image on service marketing. In conclusion, building good brand image in the service marketing promotion could effectively enhance corporate image and help make more powerful marketing strategies. Based on above theories, the following hypothesis is proposed in this study. *H1: Service marketing would positively and significantly affect brand image*.

Excellent brand image is proved as an important factor in purchase intention as well as a motivation for consumers deciding to purchase (Quan *et al.*, 2022). A consumer, after perceiving the value, would further present corresponding consumer behavior (Silaban *et al.*, 2023). Brand image plays a critical role in the purchase decision-making process; particularly, brand image with high reputation would become the major consideration for consumers selecting specific products (Soleimani, Ahmadi, & Akbar Zohrehvand, 2021). Brand image therefore shows positive effects on consumer behavior (Sreedharan & Saha, 2021). However, brand image indeed reflects consumers' impression on an enterprise that consumers tend to purchase products from an enterprise with good image. Symbolic brand image could also induce higher consumer behavior. Satti, Babar, & Ahmad (2021) indicated that advertising appealing to emotions could better enhance consumer behavior than relatively rational advertising. Shahid *et al.* (2022) pointed out

positive effects of the promotion of brand image in LCD television industry on consumers' purchase intention. In other words, the better brand image would enhance consumers' purchase behavior. According to above theories, the following hypothesis is proposed in this study. *H2: Brand image would positively and remarkably affect consumer behavior.*

The research results of Haase, Wiedmann, & Bettels (2020) revealed remarkably mutual effects between customer satisfaction and consumer behavior, and customer satisfaction presented obvious mediating effects between service quality marketing and consumer behavior. Xu (2020) indicated that good service quality was the premise to realize higher customer satisfaction, and customer satisfaction was regarded as a method and tool to understand customers' ideas and enhance service quality. The importance lied in the emphasis on customers' feelings, and customer satisfaction was regarded as the antecedent factor in consumer behavior and repurchase intention. The measurement of customer satisfaction was merely a tactic for enterprises improving the service quality, and the major benefit was to assist enterprises in understanding customer needs so as to provide appropriate service (Kim *et al.*, 2021). From above theories, the following hypothesis is proposed in this study. *H3: Service marketing would positively and notably affect consumer behavior.*

Methodology

Research dimension definition

Service marketing: Referring to Zhong & Moon (2020), "internal marketing", "interactive marketing", and "external marketing" are applied to the measurement in this study. Service marketing contains three dimensions of internal marketing, interactive marketing, and external marketing, and 12 items are revised for the research and discussion.

Brand image: Referring to the opinions of Zaid *et al.* (2021), 6 items are drafted and revised for the measurement of the single dimensions, "brand image".

Consumer behavior: Referring to Tekin & Kanat (2023), the proposed items are used for the research and discussion.

Research subjects

AI medical industry customers in southern Taiwan, as the research samples, are distributed 500 copies of questionnaire. After deducting invalid and incomplete ones, 346 copies are valid, with the retrieval rate 69%.

Analysis method

Regression analysis is applied to understand the relations among service marketing, brand image, and consumer behavior.

Results and discussion

Effect analysis of service marketing and brand image

Using regressive analysis for testing hypotheses and the theoretical structure, the first regression, Table 1, shows the significance of the regression equation ($F=23.751$, $p<0.001$). Service marketing shows notable effects on brand image, where "internal marketing", "interactive marketing", and "external marketing" present significantly positive effects on brand image ($\beta=2.047$, $p<0.01$; $\beta=2.357$, $p<0.01$; $\beta=2.283$, $p<0.01$) that H1 is supported.

Table 1. Regression analysis of service marketing to brand image

dependent variable→	brand image	
independent variable↓		
service marketing	β	ρ
internal marketing	2.047**	0.000
interactive marketing	2.357**	0.000
external marketing	2.283**	0.000
F	23.751	
P	0.000***	
R2	0.241	
adjusted R2	0.228	

*Note: ** stands for p<0.01, *** for p<0.001.*

Effect analysis of service marketing and brand image on consumer behavior

Applying regressive analysis to test hypotheses and the theoretical structure, the first regression reveals the significance of the regression equation ($F=32.189$, $p<0.001$). Service marketing shows remarkable effects on consumer behavior, where "internal marketing", "interactive marketing", and "external marketing" in

service marketing appear notably positive effects on consumer behavior (β=2.244, p< 0.01; β=2.462, p< 0.01; β=2.376, p <0.01) that H3 is supported.

The second regression, Table 2, shows the regression equation achieving the significance (F=53.625, p < 0.001). Brand image presents remarkable effects on consumer behavior, where brand image reveal notably positive effects on consumer behavior (β=2.591, p < 0.01). H3 is therefore supported.

Table 2. Regression analysis of service marketing to brand image

dependent variable→ independent variable↓	consumer behavior			
service marketing	β	ρ	β	ρ
internal marketing	2.244**	0.000		
interactive marketing	2.462**	0.000		
external marketing	2.376**	0.000		
brand image			2.591**	0.000
F	32.189		53.625	
P	0.000***		0.000***	
R2	0.294		0.351	
adjusted R2	0.276		0.338	

*Note: ** stands for p<0.01, *** for p<0.001.*

Conclusion

The research results show support H1 that service marketing would positively and significantly affect brand image. It matches the statements of Dewi *et al.* (2021) and Greco & Polli (2020) that there are positive correlations between brand image and service marketing, and brand image presents important and obvious effects on service marketing. In service marketing promotion, good brand image could effectively enhance corporate image to help make more powerful marketing strategies. H2: brand image would positively and remarkably affect consumer behavior is supported. It matches the statements of Soleimani *et al.* (2021) and Sreedharan & Saha (2021) that brand image plays a critical role in the purchase decision-making process; particularly, brand image with high reputation would become consumers' main consideration to selecting specific

products. As a result, brand image reveals positive effects on consumer behavior. H3: service marketing would positively and notably affect consumer behavior is supported. It matches the indications of Xu (2020) and Kim *et al.* (2021) that good service quality is the premise to realize higher customer satisfaction, and customer satisfaction is considered as a method and tool to understand customers' ideas and promote service quality. The importance is to stress on customer perception that customer satisfaction is regarded as the antecedent factor in consumer behavior and repurchase intention. The measurement of customer satisfaction is simply a tactic for enterprises improving the service quality, and the major benefit is to assist enterprises in understanding customer needs in order to provide appropriate services. Apparently, service marketing and brand image in AI medical industry are the antecedent variables as well as critical factors in consumer behavior. In this case, the management of service marketing and brand image is the prior point in AI medical industry. It is necessary for AI medical industry possessing good service marketing and brand image. Service marketing and brand image in AI medical industry allow the served customers aware of the better service offered than other industries. Service marketing ad brand image in AI medical industry would influence the consumer behavior. Accordingly, it is an important issue for AI medical industry using service marketing and brand image to promote customers' service satisfaction and loyalty.

Suggestion

Aiming at service marketing in AI medical industry, the following suggestions are proposed in this study.

– Well applying service marketing to promote customer perception of service marketing. Regarding suggestions for service marketing, education and training of medical employees in AI medical industry should be reinforced. All medical service personnel are trained to present high-standard service attitude to immediately provide customers with proper and real-time service when there are problems. The attitude of medical service personnel in AI medical industry towards customers should have customers feel like good friends. The corresponding skills of medical service personnel in AI medical industry should be enhanced to leave pleasant experiences for customers in the service process and be willing to recommend to friends so as to advertise the AI medical industry with customers' word-of-mouth effect. Customers with enhancing service marketing and relationship quality of AI medical industry as well as overall service satisfaction would present higher customer loyalty. The higher customer loyalty would induce the active recommendation for more customers understanding the excellent service of AI medical industry.

– Building good relationship quality with customers to enhance customer perception of service marketing in AI medical industry. The attitude of medical service

personnel in AI medical industry towards customers should have customers feel like friends. When customers need assistance in problems, medical service personnel in AI medical industry should timely understand the problems and give correct responses to prevent customers from bad perception. When the problems cannot be immediately solved, it is necessary to explain the situation to customers with sincere attitude, record the problems which could not be solve at the time, understand the problems and find out solutions within certain time, as well as actively contact customers and solve the problems. It delivers that the AI medical company stresses on promise and is trustable, satisfactory, and more excellent than other competitive AI medical companies to promote customer perception of service marketing in AI medical industry.

– It is suggested that the parent company in high tech industry could investigate expatriates in the oversea subsidiaries, understand the oversea adaptation, and deeply understand the difficulty encountered to provide assistance and support spiritually, materially, or at work.

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