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Original article

Factors influencing decision making to use large private hospitals of Thai patients in Bangkok after COVID-19 outbreak

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Background: The worldwide pandemic of coronavirus infections disease 2019 (COVID-19 impacts the Thai medical's hub tourism industry. The private hospital sector needs to provide appropriate services for Thai consumers.
Objectives: The objectives of this research were to study: 1) The level of decision making of use large private hospitals of Thai patients living in Bangkok after COVID-19 outbreak; 2) The marketing mix related to the level of decision making to use large private hospitals; 3) The marketing mix that influences decision making to use large private hospitals.
Methods: This study was a survey research. The population was 8,757,843 Thai patients that used large private hospitals in Bangkok. The sample size was calculated to be 440 samples. A questionnaire was used as a research instrument for data collection. The statistics used to analyze data were descriptive statistics including frequency, percentage, mean, standard deviation, *t* - test, Pearson correlation. Inferential statistics employed was multiple regression analysis.
Results: The result showed that the average and the overall level of decision making to use large private hospitals was at a high level. The average and the overall level of marketing mix to use large private hospitals was at a high level. The correlation of marketing mix factors and decision making to use large private hospitals was at high level; 4) the results of a comparison between personal factors and decision making to use large private hospitals showed that there was difference.
Conclusion: It was found that the differences in age, occupation and medical care benefit scheme had the statistically significant differences that affected the level of decision making to use large private hospital. Marketing mix that affected the level of decision making of use large private hospitals were process, price, place and physical evidence factors could jointly predict 71.0% of decision making to use large private hospitals. This study suggested that the private large hospital may use marketing mix strategies 7p's during COVID-19 crisis.

Keywords: Decision making, large private hospitals, Thai patients, Bangkok, COVID-19 outbreak, marketing mix.

The worldwide pandemic of coronavirus infections disease 2019 (COVID-19) the economic of Thailand especially the Thai policy on medical hub for tourism industry. The first outbreak of COVID-19 in Thailand was in March 2020. Health tourists are limited to travel for at least 1 - 2 years. The relationship of COVID-19 with the tourism industry in the context of news coverage were heavily connected with the travel industry during March 5 - 12, 2020, with concentrations slightly favoring the hospitality industry. [1]

Thailand has the reputation of modern medical technology, skilled physicians, affordable medical expenses and friendly medical personnel. Department of Business Commerce (2019) has reported that the proportion of income tends to come from foreign patients. The number of patients who used private hospital services in 2017 reached 61.6 million (increase of 33.0% from 2011). There were 57.4 million Thai

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patients (93.2%) and 4.2 million (6.8%) of them were foreigners.[2] Almost half of the foreigners (45.6%) used the medical service in Bangkok. Most large private hospitals in Thailand (71.2%) are located in Bangkok.[3]

The COVID-19 pandemic has produced mass market failure in global private health, particularly in tertiary care. Private providers suffered a liquidity crisis, lockdown effect, government regulations and patient deferrals, and the secondary economic impacts of the pandemic.[4] The private hospital sector in Thailand wants to earn business income from other means of service and needs to provide appropriate services for the Thai consumers.

The marketing mix is a strategic tool for marketing consisting of product, price, place and promotion or better known as 4P's.[5] Zeithaml VA, *et al*. stated that in addition 3P's complement from the existing marketing mix: people, physical evidence and process.[6] The marketing mix 7p's is applicable to the services industry: 7p's can be described as follows. A product refers to an item that satisfies the consumer's needs or wants. Price refers to the amount a customer pays for a product. Refers to providing customer access is place. Promotion refers to marketing communications. Human factors are those who participate in service delivery is people. Process mean the procedures, mechanisms and flow of activities by which service is delivered and physical evidence is the environment in which the service occurs.

The decision making to use the service will be briefly presented after analyzing all the stages of the buying decision process. When purchasing an item, the buyer actually passes through five stages: problem recognition, information search, evaluation of alternatives, purchase decision, and post purchase behavior.[7] Problem recognition occurs when the buyer recognizes a problem or need triggered by external or internal stimuli. Information search is the amount of information needed in the buying process. Evaluation of alternatives is how the consumer processes information to arrive at brand choices. The purchase decision is the act by the consumer to buy the most preferred brand. The post-purchase decision is the satisfaction or dissatisfaction the consumer feels about the purchase.

Materials and methods

Survey research was used as a methodology in this study. The population in this research was Thai population living in Bangkok who used services in large private hospitals in Bangkok. The inclusion criteria were Thai nationals, aged over 20 years who received medical services in large private hospitals. On the contrary, the exclusion criteria were inability to read or write in Thai. The total population was 440 samples. The collection instruments were: 1) a demographic data questionnaire; 2) marketing mix (7P's) -related questionnaires; 3) reasons to use the service of the private hospital questionnaires.

Research tools

The tool used for data collection was a questionnaire. First section was about demographic characteristics. The personalities of the respondents were gender, age, status, religion, occupation, income, level of education and medical care benefit scheme. The second was the five-point Likert scale developed to measure marketing mix strategy (7p's: 7 aspects, 30 items , rating scale from 1 to highest score of 5). The last section was the reasons to use private hospital services (9 items, rating scale from 1 to highest score of 5). These tools were developed by the researcher. After the reviewing by experts in the content validity and the index of item objective congruence of the questionnaire, then it was modified according to the advice of the experts: Cronbach's alpha coefficient method was calculated and the reliability of the second part questionnaire = 0.88, and the last part questionnaire = 0.93.

Sampling

There were 15 large private hospital (> 250 beds) in Bangkok.[8] The list of hospital were sort by size and then divide to 4 groups. Two hospital s in each group were randomly choosed. The 2017 Thai National Statistical Office reported of 8,757,843 Thai patients ever used large private hospitals in Bangkok.[3] The sample size was calculated by Taro Yamane to be 440 samples.

This study was performed during the COVID-19 crisis in Bangkok in July 2021 while the government locked down the public. Obtaining permission from the selected 8 large private hospitals that allowed this study to be conducted via online method only by introduction website QR-Code at the customer related department. In the next step, all the data was insert into SPSS software for statistical analysis. This study has been approved by the Institutional Review Board (IRB), the Faculty of Medicine, Chulalongkorn University (COA no. 363/2021). All subjects were informed of the objectives and methods of the present study.

Statistical analysis

The data were analyzed using the SPSS software for Windows 22.0. The rating scale was presented in point and ranking. Data were expressed as mean ± standard deviation (SD). The associated factors of marketing mix and the reasons to use hospital services were analyzed by Pearson's correlation coefficient. Significant factors from theoretical review and univariate analysis were entered into the multiple logistic regression model (95% confidence interval (CI)) to identify the potential predictors of reason to use the service in Thai patients. A P - value < 0.05 was considered statistically significant.

Results

Participant characteristics

Participants' demographic characteristics are shown in Table 1. The highest proportion in each groups were female (58.5%), age 40 - 50 years (37.7%), married (50.7%), employee (40.0%), bachelor's Degree (62.5%), income 25,001 - 50,000 (45.5%), and social security scheme (36.8%).

Table 1. Participants' demographic characteristics.

Demographic characteristics	N	Percentage
Gender		
Male	184	41.8
Female	256	58.8
Age (years)		
20 - 30	33	7.5
31 - 40	87	19.8
41 - 50	166	37.7
51 - 60	108	24.5
61 - 70	34	7.7
71 - 80	12	2.7
Marital status		
Single	170	38.6
Married	223	50.7
Divorced/Separated	47	10.7
Occupation		
Unemployed	28	6.4
Student	22	5.0
Government officer/State enterpriser	43	9.8
Employee/labor	176	40.0
Business owner	155	35.2
Other	16	3.6
Education		
Element school	17	3.9
Primary school	13	3.0
Secondary school or equivalent	52	11.8
High vocational certificate or equivalent	60	13.6
Bachelor's Degree	275	62.5
Master	22	5.0
Doctor of philosophy	1	0.2
Incomes (Baht/month)		
No income	32	7.3
≤ 10,000	31	7.0
10,001 - 25,000	134	30.5
25,001 - 50,000	200	45.5
50,001 - 100,000	31	7.0
> 100,001	12	2.7
Medicare benefit scheme		
Self-payment	130	29.5
Universal coverage scheme	12	2.7
Social security scheme	162	36.8
Civil servant/State enterprise medical benefit scheme	30	6.8
Health insurance	102	23.2
Other	4	0.9

Marketing mix

The average scale of the marketing mix factors demonstrate between 3.62 - 4.33 as in Table 2. The mean score of marketing mix was 4.02 ± 0.54. The mean of each factors could be sort as follow by order. Personal factor was the most important. Product, place, process, physical evidence, promotion and price were more in descending order. All factors were shown to be important.

The reasons for decision of choosing the services of large private hospitals.

The reasons for decision of choosing the services of large private hospitals showed in Table 3. The mean score was 3.94 ± 0.59. The important reasons could be sorted from greatest to least. The most important reason was the well-known of the hospital. Other reasons were confident in quality of modern and efficient of the medical tools, physicians and nurses, requirement of using medical care benefit scheme or health insurance, reasonable cost. The least important reason was the requirement of service during non-working hours, such as evenings, public holidays.

Factors affecting the reasons for decision of choosing the services of large private hospitals.

The gender difference had no effect on the reasons for decision to choose the services of large private hospitals. The age factor between group 20 - 30 year and other group showed the different effect on the reasons for decision ($P < 0.05$). The comparison of medical benefit scheme between the Group Civil Servant/State enterprise medical benefit scheme showed the different effect on the reasons for decision ($P < 0.01$). Civil Servant /State enterprise occupation also showed the difference between the other groups on the reason for decision ($P < 0.01$) (Table 4). The relationship between marketing mix factors and reasons for decision of choosing the service had a high correlation ($P < 0.001$) (Table 5).

Table 2. Level of importance of marketing mix factors toward decision making of use large private hospitals.

Marketing mix (7Ps)	Mean	Standard deviation	Level of important
Personal	4.33	0.66	Most
Product	4.31	0.57	Most
Place	4.10	0.64	Most
Process	4.05	0.60	Most
Physical evidence	3.92	0.64	More
Promotion	3.62	0.69	More
Price	3.62	0.73	More
Overall	4.02	0.54	Most

Table 3. Mean and standard deviation, the important of the reasons for decision of choosing the services of large private hospitals.

The reasons for decision of choosing the services of large private hospitals	Mean	Standard deviation	Level of important
1. The hospital is well known.	4.53	0.66	Most
2. Confident in quality of modern and efficient medical tools, equipment of the hospital.	4.32	0.67	Most
3. Physicians who reliable in skill and good care Require a specialist.	4.22	0.62	Most
4. Nurses and other staffs provide services with politeness, gentleness, and hospitality.	4.22	0.68	Most
5. Service with convenience and speed.	3.77	0.84	More
6. The hospital cares about the rights of patients and provides equal service.	3.78	0.80	More
7. Require service during non-working hours, such as evenings, public holidays.	3.45	1.19	More
8. Reasonable cost.	3.60	0.80	More
9. Require the use of medical care benefit scheme or health insurance.	3.54	1.04	More
Overall	3.94	0.59	More

Table 4. Factors affecting the reasons for decision of choosing the services of large private hospitals.

Demographic characteristics	N	Mean	Standard deviation	Sig. (2-tailed)
Gender				
Male	184	3.90	0.59	0.230
Female	256	3.97	0.59	
Age (years)				
20 - 30	33	4.17	0.67	0.020*
Other groups	407	3.92	0.58	
Medicare benefit scheme				
Civil servant/State enterprise medical benefit scheme	30	4.27	0.58	0.001**
Other groups	410	3.91	0.59	
Occupation				
Government officer/ State enterpriser	43	4.36	0.53	< 0.001**
Other groups	397	3.89	0.58	

*$P < 0.05$, **$P < 0.01$

Table 5. Correlation of Marketing mix factor 7Ps toward the reasons for decision of choosing the services of large private hospitals.

Marketing mix factors 7P's		*R*	Interpretation of the relation
Product	Pearson correlation	0.640**	High
	Sig. (2-tailed)	<0.001	
Price	Pearson correlation	0.731**	High
	Sig. (2-tailed)	<0.001	
Place	Pearson correlation	0.721**	High
	Sig. (2-tailed)	<0.001	
Promotion	Pearson correlation	0.598**	High
	Sig. (2-tailed)	<0.001	
Personal	Pearson correlation	0.647**	High
	Sig. (2-tailed)	<0.001	
Process	Pearson correlation	0.755**	High
	Sig. (2-tailed)	<0.001	
Physical evidence	Pearson correlation	0.677**	High
	Sig. (2-tailed)	<0.001	
Overall	Pearson correlation	0.806**	High
	Sig. (2-tailed)	<0.001	
	N	440	

**$P < 0.01$

Factors predicted the reasons for decision of choosing the services of large private hospitals.

The multiple correlation coefficient (R) between the variables selected into the forecast coefficient regression equation (R^2) and the increase in forecast coefficient significance (R^2 Change) were used to predict decision to use the large private hospital services are shown in model 1 - 4 (Table 6). The forecast coefficient was increased finally to 0.710 ($R^2 = 0.710$), which was a statistically significant at the 0.05 level. Marketing mix that affected the level of decision making of use large private hospitals were process(X1), price (X2), place (X3) and physical evidence factors (X4) could jointly predict 71.0% of decision making to use large private hospitals at the 0.05 level. Regression coefficient analysis by selecting variables with stepwise regression is shown in Table 7. Multiple regression analysis model in this study is Y (The reasons for decision of choosing the services of large private hospitals) = 0.519 + 0.324 X1 + 0.314 X2 + 0.149 X3 + 0.092 X4.

Table 6. Multiple regression analysis.

Model	R	R^2	R^2 Change	Sig. F Change
1	0.755[a]	0.570	0.570	< 0.001**
2	0.832[b]	0.692	0.122	< 0.001**
3	0.841[c]	0.706	0.014	< 0.001**
4	0.843[d]	0.710	0.003	0.023*

*$P < 0.05$, **$P < 0.01$

a. Predictors: (Constant), Process (X1)
b. Predictors: (Constant), Process (X1), Price (X2)
c. Predictors: (Constant), Process (X1), Price (X2), Place (X3)
d. Predictors: (Constant), Process (X1), Price (X2), Place (X3), Physical evidence (X4)
e. Dependent variable: The reasons for decision of choosing the services of large private hospitals (Y)

Table 7. Regression coefficient analysis by selecting variables with stepwise regression.

Model	B	Std. Error	Beta	*t*	Sig.
(Constant)	0.519	0.110			
Process (X1)	0.324	0.046	0.327	7.034	< 0.001
Price (X2)	0.314	0.028	0.384	11.373	< 0.001
Place (X3)	0.149	0.042	0.159	3.531	< 0.001
Physical evidence (X4)	0.092	0.041	0.099	2.274	0.023

R = 0.843, R^2 = 0.710, R^2 Change = 0.003, F Change = 5.169, Sig. F Change = 0.023, Sig. = 0.05

Discussion

Every aspect of the marketing mix strategy affects the reason for use large private hospital service. The results emphasize the important of the marketing mix factors which should be further discussed in result section (Table 2). Process, price, place and physical evidence may be first strategy to choose because of their close relate with a high level of correlation with reasons for choose the hospital service. The hospital departments should clearly separated, the service procedures were not complicated, easy to understand, followed by the cost-effectiveness strategy by focusing on medical services be appropriate medical expenses, medicines and medical supplies are reasonable and worthwhile. Place should be easily accessible. The other strategies is marketing promotion activities should be organized and providing health check-up packages at special prices in holidays and festivals. This was similar to the previous study of Laotha P, *et al.*[9] The reasons for decision of choosing the services of large private hospitals were the well known of the hospital, Confident in quality of modern and efficient of the medical tools, physicians and nurses. This was similar to the previous study before the COVID-19 pandemic of Raknak C.[10] These factors are therefore important to consider first because the patient need feeling of safe and security. Personal factors such as age, occupation, medical care benefit scheme related to the reason for choosing the hospital service especially in the younger age group. In this study implied that government officer and state enterpriser tend to choose the service in private hospital despite having the right in a government hospital showed the willing to pay for better services .Therefore, it should be studied as the target population among service users aged 20 - 30 years and Civil servants occupation. This will reflect the trend of the private healthcare business in the future.

Marketing mix that affected the level of decision making of use large private hospitals could jointly predict 71.0 % of decision making to use hospital service in this study. Therefore, the hospital should consider choosing process, price, place and physical evidence factors strategies as the priority. Strategic 7'sp can be used in the same way as before the outbreak of the disease.

COVID-19 outbreak can be considered as global crisis. It affects a wide range of people both mental and socioeconomic aspect so the study of the impact

socio-economic from the outbreak of COVID-19 that affect the reasons for choosing large private hospital services is an next interesting research topic.

Limitation of this study includes the high proportion of female patients, employee occupation. Some of the decision making questions may be present in marketing mix questionnaires which make the result high covariance correlation.

Conclusion

It was found that the differences in age, occupation and medical care benefit scheme had the statistically significant differences affected the level of decision making of use large private hospital. Marketing mix that affected the level of decision making of use large private hospitals were process, price, place and physical evidence factors could jointly predict 71.0% of decision making to use large private hospitals. This study suggested that the private large hospital may use marketing strategies 7p's during COVID-19 crisis.

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Conflict of interest

The authors, hereby, declare no conflict of interest.

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