

## Multilevel Analysis on the Effect of Marketing Mix Strategy toward Patient Satisfaction in Magelang, Central Java

Lu'luatul Fuad<sup>1)</sup>, Didik Tamtomo<sup>2)</sup>, Endang Sutisna Sulaiman<sup>3)</sup>

<sup>1)</sup>Masters Program in Public Health, Universitas Sebelas Maret

<sup>2)</sup>Faculty of Medicine, Universitas Sebelas Maret

### ABSTRACT

**Background:** Hospital marketing is becoming increasingly competitive all over the world. The marketing mix strategy is considered one of the core concepts of marketing theory. This study aimed to examine the effect of marketing mix strategy toward patient satisfaction in Magelang, Central Java.

**Subjects and Method:** A cross sectional study was conducted at Magelang Hospital, Central Java, in December 2018. A sample of 200 patients was selected by simple random sampling. The dependent variable was patient satisfaction. The independent variables were product, price, place, promotion, process, people, physical appearance, and ward. The data were collected by questionnaire and analyzed by multilevel multiple logistic regression.

**Results:** Patient satisfaction increased with good product ( $b = 3.42$ ; 95% CI = 0.76 to 2.81;  $p < 0.001$ ), low price ( $b = 1.92$ ; 95% CI = -0.05 to 1.70;  $p = 0.054$ ), right place ( $b = 2.41$ ; 95% CI = 0.19 to 1.92;  $p = 0.016$ ), attractive promotion ( $b = 2.92$ ; 95% CI = 0.43 to 2.19;  $p = 0.004$ ), people ( $b = 1.91$ ; 95% CI = -0.24 to 1.75;  $p = 0.057$ ), good physical appearance ( $b = 2.42$ ; 95% CI = 0.20 to 1.97;  $p = 0.015$ ), and sound process ( $b = 2.07$ ; 95% CI = 0.45 to 1.72;  $p = 0.039$ ). Ward had a considerable contextual effect on patient satisfaction with ICC = 14.65%.

**Conclusion:** Patient satisfaction increases with good product, low price, right place, attractive promotion, people, good physical appearance, and sound process. Ward has a considerable contextual effect on patient satisfaction.

**Keywords:** marketing mix, patient satisfaction, hospital, multilevel analysis

### Correspondence:

Lu'luatul Fuad. Masters Program in Public Health, Universitas Sebelas Maret, Jl. Ir. Sutami 36A, Surakarta 57126, Central Java, Indonesia. Email: afuadlulu@gmail.com.  
Mobile: +6285643702066.

### BACKGROUND

According to Law No. 44 of 2009, a hospital is a health care institution that organizes individual health services in a comprehensive manner that provides inpatient, outpatient and emergency services.

The growing number of hospitals makes the community have many choices to determine which hospital they will choose. The community will choose a hospital that they perceive as providing maximum satisfaction for them.

Based on statistical data from the Ministry of Health of the Republic of Indo-

nesia, it is stated that the number of private-owned hospitals in Indonesia, both public hospitals and special type hospitals, experienced a significant increase in 2017 totaling 1225 hospitals which initially amounted to 925. With a percentage increase of 32.4%. While the government-owned hospitals in 2016 amounted to 910 hospitals increased to 967 in 2017, with a percentage increase of 6.2% (Indonesian Ministry of Health, 2017).

The tight competition requires hospitals to be able to meet the needs of health services for each patient. To be able to face

the competition, the hospital continues to increase the quantity and quality of its services to maximize patient satisfaction (Prastika et al., 2014).

Competition, especially among hospitals, is an important phenomenon and needs to be considered in health services (Antos, 2015). Hospitals compete by offering advantages of the products they have. To survive in this situation the hospital needs to know about the needs and desires of consumers in choosing products offered to be better prepared in facing market competition (Akbar et al., 2012).

The process of the twenty-first century globalization resulted in significant changes in all business environments. Companies must change their usual practices. Nowadays, trading companies that try to meet customer needs cannot rely on previous job application techniques. Customers become voters; they are not enough for traditional marketing solutions. Users are encouraged to exchange trade sector companies, while their management must adapt and provide an updated marketing mix (Isoraite, 2016).

However, now many hospitals have developed a marketing culture that makes it possible to increase profit targets. In the hospital services industry patients are important people in this changing environment, hospitals must strive for maximum patient satisfaction. In obtaining patient satisfaction, hospital marketing plays an important role. The marketing process involves marketing planning, marketing decision making and marketing mix strategies (Sreenivas et al., 2013).

According to Han and Hwang (2018), marketing of hospitals must try to increase the target of new patients and revisit old patients because customers are still more eager to return and use hospital and clinic facilities and services.

Hospital marketing strategies can be done by learning and understanding consumer behavior. Efforts to fulfill and expect customers can create an increase in the number of service utilization, so that hospital management needs to do marketing. One of the important things that must be known in marketing is the marketing mix. Marketing mix is the main business of a hospital that is closely related to the behavior of patients to make use of services. The marketing mix element consists of products (product), price (place), place (promotion), people (people), process (process), physical evidence (physical evidence) (Exprúa and Barberena, 2016).

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## SUBJECT AND METHOD

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### 1. Study Design

This was an analytic observational study with a cross sectional design. The study was conducted at 25 wards in Magelang Hospital, in December 2018.

### 2. Population and Samples

In this study, the total population studied was all patients. The study was conducted at 2 government-owned hospitals in Magelang. The sampling technique used was stratified random sampling at the ward level and simple random sampling at the individual level. The subjects used were 200 subjects from 8 subjects in each level 2 unit (ward).

### 3. Study Variables

The dependent variable was patient satisfaction. Independent variables include: product, price, place, promotion, process, person, physical evidence, and ward.

### 4. Operational Definition of Variables

Product was defined as services in the form of goods and services originating from hospitals. Price is the cost that must be spent by the patient to get it. Place is the location/place of hospital services pro-

vided. People are officers/human resources who carry out health services in hospitals professionally. Physical evidence is the physical environment of the hospital where services are created and the place for the provision of services and consumers interact, plus tangible elements used to communicate or support the role of the service. Process is a procedure for pre-transaction hospital services, transactions, and post-transactions.

Promotion was defined as the provision of communication with the aim of disseminating information to patients.

Patient satisfaction was defined as the feeling of being happy from patients that comes from comparisons between services obtained by their expectations.

### 5. Study Instrument

The data were collected by medical record and questionnaire.

### 6. Data Analysis

Univariate analysis was carried out to see the frequency distribution and characteristics of the research subjects, while bivariate analysis was performed using the chi-

**Table 2. The results of univariate analysis**

Variable	n	%
<b>Product</b>		
Not good (< mean)	108	54.0
Good (≥ mean)	92	46.0
<b>Price</b>		
Not affordable(< mean)	74	37.0
Affordable (≥ mean)	126	63.0
<b>Place</b>		
Not Strategic (< mean)	83	41.5
Strategic (≥ mean)	117	58.5
<b>Promotion</b>		
Not good (< mean)	95	47.5
Good (≥ mean)	105	52.5
<b>Process</b>		
Complex (< mean)	84	42.0
Simple (≥ mean)	116	58.0
<b>Person</b>		
Not good(< mean)	79	39.5
Good (≥ mean)	121	80.5
<b>Physical evidence</b>		
Not good (< mean)	72	36.0
Good (≥ mean)	128	64.0

square test with OR. Multivariate analysis was performed using multilevel logistic regression.

### 7. Research Ethics

The research ethics include informed consent, anonymity, confidentiality and ethical clearance. The ethical clearance was obtained from Faculty of Medicine, Universitas Sebelas Maret, Surakarta, Central Java, with number: 01/18/11/370.

## RESULTS

### 1. Sample Characteristics

Table 1 showed sample characteristics. Table 1 showed that most of the study subjects were at age >35 years old with 145 (72.5%), and male subjects were 112 (44%).

**Table 1. Sample Characteristics**

Characteristics	N	%
<b>Age</b>		
< 20 years	12	6.0
20 – 35 years	43	21.5
>35 years	145	72.5
<b>Gender</b>		
Male	112	56.0
Female	88	44.0

## 2. Univariate Analysis

Table 2 showed the results of univariate analysis. Table 2 showed the perceptions of good product products of 92 study subjects (46.0%), affordable prices of 126 study subjects (63.0%), strategic place of 117 study subjects (58.5%), good promotion of 105 study subjects (52.5%), easy process of 116 study subjects (58.0%), good people of 121

study subjects (80.5%), good physical evidence of 128 study subjects (64.0%).

## 3. Bivariate Analysis

Table 3 showed the results of bivariate analysis. Table 3 showed that good product, low price, place, promotion, process, people, and good physical appearance were associated with patient satisfaction.

**Table 3. The results of bivariate analysis**

Variable Group	Patient Satisfaction				OR	CI 95%		p
	Yes		No			Lower Limit	Upper Limit	
	n	%	N	%				
<b>Product</b>					7.59	3.77	15.27	<0.001
Poor (< mean)	48	47.8	60	82.2				
Good (≥ mean)	79	62.2	13	17.8				
<b>Price</b>					2.27	1.25	4.13	<0.001
High (< mean)	38	29.9	36	49.3				
Low (≥ mean)	89	70.1	37	50.7				
<b>Place</b>					5.58	2.98	10.45	<0.001
Not Strategic (< mean)	34	26.8	48	67.1				
Strategic (≥ mean)	93	73.2	24	32.9				
<b>Promotion</b>					4.83	2.58	9.04	<0.001
Poor (< mean)	43	33.9	52	71.2				
Good (≥ mean)	84	66.1	21	28.8				
<b>Process</b>					3.99	2.17	7.33	<0.001
Complicated (< mean)	38	29.9	46	63.0				
Easy (≥ mean)	89	70.1	27	37.0				
<b>People</b>					5.36	2.87	10.02	<0.001
Not Nice (< mean)	32	25.2	47	64.4				
Nice (≥ mean)	95	74.8	26	35.6				
<b>Physical Evidence</b>					2.97	1.62	5.43	<0.001
Not Good (< mean)	34	26.8	38	52.1				
Good (≥ mean)	93	73.2	35	47.9				

**Table 4. The result of multilevel analysis**

Independent Variables	b	CI 95%		p
		Lower Limit	Upper Limit	
Good product	3.42	0.76	2.81	0.001
Low price	1.92	-0.05	1.70	0.054
Good place	2.41	0.19	1.92	0.016
Promotion	2.92	0.43	2.19	0.004
Process	1.91	-0.24	1.75	0.057
People	2.42	0.20	1.97	0.015
Physical appearance	2.07	0.45	1.72	0.039
Ward				
Var (cons)	0.56	0.05	5.73	
N observation= 200				
N group= 25				
Log likelihood= -80.52				
p<0.001				
ICC= 14.65%				

#### 4. Multilevel Analysis

Table 4 showed the results of multivariate analysis. Table 4 showed that good product ( $b = 3.42$ ; 95% CI= 0.76 to 2.81;  $p = 0.001$ ), low price ( $b = 1.92$ ; 95% CI= -0.05 to 1.70;  $p = 0.054$ ), place ( $b = 2.41$ ; 95% CI= 0.19 to 1.92;  $p = 0.016$ ), attractive promotion ( $b = 2.92$ ; 95% CI= 0.43 to 2.19;  $p = 0.004$ ), process ( $b = 1.91$ ; 95% CI= -0.24 to 1.75;  $p = 0.057$ ), people ( $b = 2.42$ ; 95% CI= 0.20 to 1.97;  $p = 0.015$ ), and good physical appearance ( $b = 2.07$ ; 95% CI= 0.45 to 1.72;  $p = 0.039$ ) increased patient satisfaction. Ward had contextual effect on patient satisfaction with ICC= 14.65%.

### DISCUSSIONS

#### 1. The effect of product on patient satisfaction

The result of this study showed that marketing mix product has a significant effect on patient satisfaction. Patients who have a good perception of the marketing mix product increased patient satisfaction by 3.42 units compared to patients who have a poor perception of the product.

The result of this study was in line with a study by Sreenivas et al., (2013), which stated that there was an effect of product on patient satisfaction. If the product owned by a hospital agency included good service in surgical operations, the patient would have a sense of satisfaction.

#### 2. The effect of price on patient satisfaction

The result of this study showed that marketing mix price has a significant effect on patient satisfaction. Affordable price increased patient satisfaction by 1.92 units compared to patients who have expensive prices.

The result of this study was in line with a study by Yuliantine et al., (2018) which stated that Hospitals with the same

quality but low cost have a higher value of satisfaction in patients.

Prices can be owned in a particular service and product. Price would determine the type of product and service to be provided. A patient would be more satisfied with a product or health service if the price of the product or service was affordable. If the price of a product or health service was expensive, it would reduce the patient's satisfaction level (Muala and Qurneh, 2012).

#### 3. The effect of place on patient satisfaction

The result of this study showed that marketing mix place has a significant effect on patient satisfaction. A strategic location increased patient's satisfaction by 2.41 units compared to non-strategic locations.

The result of this study was in line with a study by Eltamo and Sorsa (2016), which stated that the place of service has a relationship with patient satisfaction. Hospitals that have strategic locations, which can be easily reached were more satisfying compared to hospitals that were not strategic. So that when there was an emergency, hospital with strategic location was easier to reach and would provide satisfaction to patients.

#### 4. The effect of promotion on patient satisfaction

The result of this study showed that marketing mix promotion has a significant effect on patient satisfaction. The better the perception of promotion, the more it increased patient's satisfaction by 2.92 units compared to perceptions of bad promotions.

The result of this study was in line with a study by Ahmad et al., (2013), which stated that promotion has an effect on patient's satisfaction. If the patient's perception of promotion was good then the patient would feel satisfied with the promo-

tion efforts of the Hospital in the dissemination of information. Good dissemination of information was through printed media and electronic media.

Promotion can also be by people, if patients were satisfied with the health services of a hospital, they would disseminate to others (Choi *et al.*, 2018).

Even with promotions by advertising services in the mass media was another way to encourage medical tourism that can increase the country's foreign exchange (Jabbari *et al.*, 2013)

### **5. The effect of process on patient satisfaction**

The result of this study showed that marketing mix process has a significant effect on patient satisfaction. The easier the process, the higher the patient's satisfaction which was 1.91 units compared to a difficult process.

The process of creating and providing services to consumers was a major factor in the service marketing mix because consumers would view the service delivery system as part of the service. Similarly, patient satisfaction. If the process was done well, the patient would have their own satisfaction with the health service. Such as administrative processes, service processes and service waiting times, this occurred because a positive assessment of patients did not need to wait for a long time to get services and treatment, registration administration processes were not convoluted, doctors and nurses worked systematically, effectively, and came on time. Conversely, if the patient's perception of the service process or procedure was not good, the patient would feel dissatisfied with all the activities in the hospital (Iliopoulos, 2013).

### **6. The effect of people on patient satisfaction**

The result of this study showed that marketing mix product has a significant effect

on patient satisfaction. The better the person who provided services in the hospital, the higher the patient satisfaction which was by 2.42 units compared to the lack of service provided by the people.

The result of this study was supported by a study by Bahadori (2016) which stated that Hospital officers have a very important role in evaluating a patient in providing service.

A study of Islam (2018), stated that patients wanted doctors and nurses to empathize. The relationship between patients, nurses and support staff has a positive impact on consumer perceptions of health. If health personnels provide good service, it would lead to good perceptions of health personnels so that it can increase patients' satisfaction. On the contrary, if health personnels provide poor service, it can cause a poor perception of health personnels.

### **7. The effect of physical evidence on patient satisfaction**

The result of this study showed that marketing mix product has a significant effect on patient satisfaction. A good perception of physical evidence increased patient satisfaction by 2.07 units compared to poor perceptions of physical evidence.

The physical appearance of a hospital was very influential on patient satisfaction. Physical appearances were in the form of buildings, room decorations, waiting room, and others. The patient's first impression of physical appearance would give a good perception of physical appearance which can increase or decrease patient satisfaction. Hospitals with good physical evidence would give good satisfaction and vice versa (Amriza and Susanto, 2017).

### **8. The effect of ward on patient satisfaction**

The result of this study showed that there was a contextual effect of ward on the variation of patient satisfaction. The variation in

patient satisfaction by 14.65% was determined by variables at the level of labor. The ICC score in this study was greater than the 8-10% rule of thumb, so the contextual effect of the ward was very important to note.

The main thing given by the hospital to patients was service. The first service obtained by the patient was the ward, so that it can be said that the first impression for the patient was the ward. The Head of the Nursing Room was an operational manager who was the leader who directly managed all the resources in the care unit to produce quality services, including the patient's ward. Patients who were sick can get treatment through outpatient care and hospitalization in the hospital ward. Hospital Ward provided quality health services, higher than the competitors which consistently provide satisfaction to patients (Aniza, 2015).

Based on the results of the study, it can be concluded that there was a significant effect of product, price, place, promotion, process, people, and physical evidence on patient satisfaction. Variations at the ward level indicated that there was a contextual effect on patient's satisfaction.

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