Study on The Customer Service of Hospitals and Clinics According to Franchised Form or Not

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Abstract

Purpose. This study compares and analyzes customer service on customer satisfaction and customer royalty on customer satisfaction targeting the customers visiting a hospital or a clinic which is franchised or not. And it aims at helping business rationalization for a medical institution.

Methods. This paper conducts a survey and selects a sample of 670 customers except the missing value targeting the customers of 4 primary health care institutions and 4 bigger health care institutions in Seoul and Gyeonggi province. It conducts frequency analysis for the purpose of investigating the respondents' generic characteristic and factor of their medical institution selection, and factor analysis, reliability analysis and regression analysis for the hypothesis testing.

Results. The first hypothesis testing result is significant in level of significance of 0.01. The second one is the same as the first one, but the dummy variable shows a negative regression coefficient(-0.479). The third one is significant in level of significance of 0.01, but the forth one is not significant. And the respondents prioritize website(Home page) and convenience in use of a hospital procedure for selecting a hospital or a clinic.

Conclusions. The additional analysis finds that the franchised group has more satisfaction than none franchised group. But in case of their royalty, the average of franchised and none franchised groups are not significantly different. Therefore, the results of this paper reveal to support the results of the advanced researches.

Key Words: Business rationalization, Factor of a medical institution selection, Franchised hospital, Royalty, Satisfaction

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1. Introduction

1.1. Research necessity

Recently, health care medical institutions have introduced new management techniques in the rapidly changing interior and exterior business environment. There is a boom for a medical health care, which attempts specialization by operating various medical offices in the same building, and a franchised clinic (so-called network hospital).

The definition of joint or collective opening of hospital means partnership operated by over 2 or 3 doctors in the same medical institution. On the other hand, that of franchised hospital (so-called network hospital), in a broad sense, means aggregation of over 2 medical institutions.[1] And a franchised hospital is the group of hospitals or clinics for the same medical examinations using co-brand, and has increased its brand value through joint marketing and public relations campaign.[2]

The domestic franchised hospital system was introduced in 1992 for the first time. In early years, it was growed with the medical treatment for beauty not covered by the medical insurance such as dental clinic, dermatology, plastic surgery, ophthalmology, etc. as the center.[2] At this present, it has at large spreaded medical community more and more with spine and joint hospital and dermatology as well as dental clinic as the center.

The medical health care institutions have shared therapy technique and brand, and managed public-relations campaign and marketing. Also, they collaborate in passing down therapy technique through clinical experience share and improving quality of medical service, enhancing business efficiency through business know-how share, improving the level of hospital employees through the staff training, sharing the newest information such as medical equipment, enhancing efficiency and cutting cost through corporate marketing, developing mutually through an active global marketing such as attracting foreign patents, and so forth. Thus franchised hospitals have connected and managed exhaustively to hold the therapy technique and medical service in the same level.

This study examines a causal relationship between customer satisfaction and customer service in conducting a survey of the franchised and none franchised hospital customers, and compares the customer satisfaction of the franchised hospital with that of the none franchised hospital. Therefore, it is to seek for a plan that a franchised hospital can develop rationally for the future.

2. Research purpose and method

2.1. Research purpose

The research on the business performance of franchised hospital was unsatisfactory condition so far, and also the study on the efficient analysis from customer point of view was not satisfactory. Thus the goal of this paper is to analyze the causal relationship between customer service and customer satisfaction and royalty, and the efficient marketing method from the customers who attend a franchised hospital as a primary health care institution and none franchised hospital as a bigger medical institution managing independently.

The main purpose of this study is as follows;

First, it investigates the factors of hospital selection(customer service) from the customers visiting a franchised or none franchised hospital to see what effect they might have on the

subjective satisfaction from the customers.

Second, it examines the subjective satisfaction from the customers to see what effect it might have on the customer royalty.

Third, it analyzes the difference of effect on the causal relationship between the customer service and satisfaction from the customers of franchised and none franchised hospitals.

2.2. Sample data collection

This study conducts a survey of the customers attending in franchised hospital(primary health care institution) and none franchised one(bigger hospital); the number of franchised hospital is 4, that of none franchised is 4. The questionnaire is collected on 670 items except missing value such as non-response among total items of 700.

2.3. Research method

2.3.1. Model for the analysis of hospital selection factors and subjective satisfaction
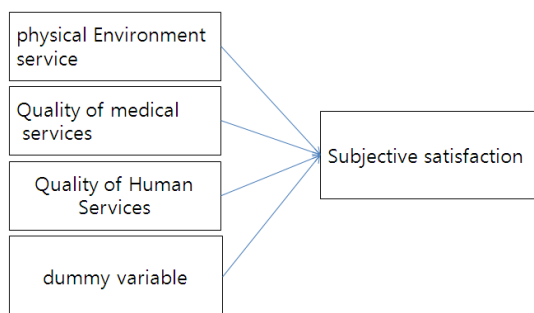

Figure 1. Research Model I and II

Hypothesis 1) Hospital selection factors(medical service, human service, and interior and exterior environment service) will have a positive(+) effect on customer satisfaction.

Hypothesis 2) In the causal relationship of hypothesis 1, it will have more positive effect on franchised hospital than none franchised hospital.

2.3.2. Model for the analysis of subjective satisfaction and customer royalty
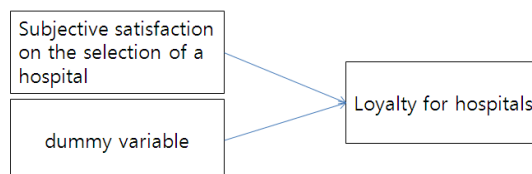

Figure 2. Research Model III and IV

Hypothesis 3) The customer satisfaction will have a positive(+) effect on customer royalty.

Hypothesis 4) In the causal relationship of hypothesis 3, it will have more positive effect on franchised hospital than none franchised hospital.

3. Result

3.1. General analysis

In gender distribution, the number of men is 306(45.7%), and that of women is 364(54.3%): The rate of women is rather stiff than that of men. In age, the number of the twenties(307, 45.8%) is the highest. Next up is the thirties(242, 36.1%), and the forties(109, 16.3%), over the fifties(8, 1.2%), and below the tenth(4, 0.6%) are appeared in order. In marital status, the number of the married is 365(54.5%), and that of a single is 305(45.5%); The rate of the married is rather stiff than that of a single. In educational level, the number of a college graduate(358, 53.4%) is the highest. Next up is a high school graduate(272, 40.6%), a graduate(31, 4.6%), and so forth in order. In occupation, the number of a housewife(174, 26.0%) is the highest. Next up

is a student(145, 21.6%), a office manage-ment(93, 13.9%), a computer management(80, 11.9%), and so forth in order. 265(39.6%) of the reponses are the patients of a franchised hospital, and 405(60.4%) of them are the pa-tients of a none franchised one.(Table 1)

Table 1. Demographic characteristic

Characteristic		Frequency	%
Gender	Men	306	45.7
	Women	364	54.3
	Total	670	100.0
Age	below 20	4	0.6
	20-29	307	45.8
	30-39	242	36.1
	40-49	109	16.3
	over 50	8	1.2
	Total	670	100.0
Marital status	married	365	54.5
	single	305	45.5
	Total	670	100.0
Educatio nal level	elementary	1	0.1
	middle school	8	1.2
	high school	272	40.6
	college graduate	358	53.4
	graduate	31	4.6
	Total	670	100.0
Occupat ion	housewife	174	26.0
	office mgmt.	93	13.9
	private bus.	53	7.9
	selling & service	48	7.2
	technical post	16	2.4
	student	145	21.6
	profession	51	7.6
	manufacturing	8	1.2
	computer mgmt.	80	11.9
	unemployed	2	0.3
	Total	670	100.0
Yes/No	franchised	265	39.6
	none franchised	405	60.4
	Total	670	100.0

3.2 Empirical testing

3.2.1 Factor analysis

The results of the factor analysis of 13 in-dependent variables are as follows;

According to the result of factor analysis, 3

of factors are composed of a human service(5 items), a medical service(3 items), and interior and exterior environment(5 items).(Table 2)

Table 2. Rotated Component Matrix

	human service	int.&ext. environment	medical service
appointment	.792	.096	.178
congratulation	.774	.049	.138
reservation	.734	.029	.029
phone call to say hello	.645	.201	-.080
phone call to thanks	.503	.392	.011
waiting	.072	.737	.189
ambience	.230	.625	.156
locating	.167	.603	.245
patient	-.052	.535	-.379
re-visit	.103	.526	.172
minimum -wait	-.033	.095	.723
satisfaction	.115	.114	.458
preceding	.041	.300	.439

3.3. Reliability analysis

3.3.1. Human service

The result of reliability analysis on the vari-ables of human service factor is significant as 0.756 of cronbach's alpha.(Table 3)

Table 3. Analysis of Human service

	A	B	C	D	E
appointment	10.63	6.336	.634	.672	
congratulation	10.69	6.706	.586	.692	
reservation	10.39	6.460	.514	.716	
phone call to say hello	10.62	6.929	.477	.728	.756
phone call to thanks	10.58	6.914	.420	.750	

cf.) A: Scale Mean if Item Deleted
　　B: Scale Variance if Item Deleted
　　C: Corrected Item-Total Correlation
　　D: Cronbach's Alpha if Item Deleted
　　E: Cronbach's Alpha

3.3.2. Interior and exterior environment

The result of reliability analysis on the variables of interior and exterior environment is significant as 0.666 of cronbach's alpha.(Table 4)

Table 4. Analysis of interior and exterior environment

	A	B	C	D	E
wait	10.24	2.390	.536	.540	
ambience	10.23	2.368	.455	.595	.666
locat info.	10.23	2.670	.446	.603	
re-visit	10.00	2.538	.368	.656	

cf.) A: Scale Mean if Item Deleted
　　 B: Scale Variance if Item Deleted
　　 C: Corrected Item-Total Correlation
　　 D: Cronbach's Alpha if Item Deleted
　　 E: Cronbach's Alpha

3.3.3. Medical service

The result of reliability analysis on the variables of medical service is not significant as 0.262 of cronbach's alpha.(Table 5) It is understood that this result could be occurred by the difference from the customers because of the facility size of franchised and none franchised hospital. But the items of the questionnaire for medical service have been considerably used by existing relative researches. And they do not seem to be serious problem with this paper because this study investigates the difference of influence on the causal relationship for customer service and his satisfaction from a franchised and none franchised hospital.

Table 5. Analysis of medical service

	A	B	C	D	E	F
satis.	6.07	.812	.132	.018	.239	
wait	6.67	1.09	.170	.030	.144	.262
pre.	6.28	1.12	.138	.023	.204	

cf.) A: Scale Mean if Item Deleted
　　 B: Scale Variance if Item Deleted
　　 C: Corrected Item-Total Correlation
　　 D: Squared Multiple Correlation
　　 E: Cronbach's Alpha if Item Deleted
　　 F: Cronbach's Alpha

3.3.4. Customer satisfaction and royalty

The reliability analysis of the customer satisfaction as a dependent variable is not performed because the variable of the customer satisfaction is one.

The result of the customer royalty is normally significant as 0.584 of cronbach's alpha, and then there is nothing wrong with this paper.(Table 6)

Table 6. Analysis of customer royalty

	A	B	C	D	E	F
re-visit	2.92	.477	.416	.173	.	.584
recomm.	3.10	.621	.416	.173	.	

cf.) A: Scale Mean if Item Deleted
　　 B: Scale Variance if Item Deleted
　　 C: Corrected Item-Total Correlation
　　 D: Squared Multiple Correlation
　　 E: Cronbach's Alpha if Item Deleted
　　 F: Cronbach's Alpha

3.4. Hypothesis(1 and 2) testing

3.4.1. Basic statistics analysis

In the hypothesis 1 and hypothesis 2, it analyzes the factors of human service, interior and exterior environment, and medical service to see what effect it might have on the customer satisfaction through a regression analysis. First, the variable value of each factor is replaced as an arithmetic mean of the items for each factor. The results of the descriptive analysis are as follows:(Table 7)

Table 7. Descriptive statistics

	Mean	SD	N
satisfaction	2.69	1.549	670
human service	2.645	.6262	670
int.&ext. environment	3.294	.4439	670
medical service	3.168	.4296	670
DM	.3955	.4893	670

cf.) SD: standard deviation
　　 N: number of sample
　　 DM: dummy variable

3.4.2. Corelation analysis

In the corelation analysis between the variables, the result has range 0.208 to 0.358 in level of significance of 0.01.(Table 8)

Table 8. Correlations on each variable

		satisfaction	human service	int.&ext. environment	medical service
P-Correlation	satisfaction	1	.263	.219	.175
	human service	.263*	1	.358	.208
	int.&ext. environment	.219*	.358*	1	.316
	medical service	.175*	.208*	.316*	1

* < 0.01

3.4.3. Coefficient of determination

The adjusted coefficient of determination is 0.10.(Table 9)

Table 9. Coefficient of determination

R	R^2	ADR^2	STDE	Change Statistics				
				R	F	df1	df2	sig
.32	.10	.10	1.46	.10	19.85	4	665	.00

3.4.4. Goodness of fitness

In ANOVA for the goodness of fitness, F value is 19.859 in level of significance of 0.01, and this model is proved suitably.(Table 10)

Table 10. ANOVA

	model	sum	df	M	F	sig
1	Regression	171.34	4	42.83	19.85	.000
	Residual	1434.49	665	2.15		
	Total	1605.80	669			

3.4.5. Result on hypothesis test

First, according to the result of the regression analysis, the regression coefficients of human service, interior and exterior environment, and medical service are positively significant(+) in level of significance of 0.01.(Table 11) It reaches substantially the same result as existing researches.

Second, in the regression analysis with dummy variable which is composed of 1 for franchised hospital group and 0 for none franchised, the regression coefficient of dummy variable is negative(-0.479) in level of significance of 0.01. It finds that the influence of franchised group is less than that of none franchised group for the causal relationship.

Table 11. Result of regression analysis
$$STF = \beta_0 + \beta_1 HRS + \beta_2 EVS + \beta_3 MDS + \beta_4 DM + e$$

Mode	U-C		S-C	t	Sig.
	β	Std. Err.	Std.β		
(Cnt.)	-2.22	.658		-3.37*	.001
HRS	.522	.098	.211	5.32*	.000
EVS	.755	.186	.216	4.05*	.000
MDS	.388	.141	.108	2.75*	.006
DM	-.47	.166	-.15	-2.89*	.004

cf.) STF: satisfaction variable
 HRS: human service variable
 EVS: interior & exterior environment
 MDS: medical service variable
 DM: dummy variable(1: franchised group)
 e: error, * < 0.01

In additional analysis of independent sample T-test, the difference of satisfaction between two groups is statistically significant.

3.5. Hypothesis(3 and 4) testing

3.5.1. Basic statistics analysis

In hypothesis 3 and 4, it analyzes the factor

of the customer satisfaction to see what effect it might have on the customer royalty through a regression analysis. First of all, the results of the descriptive analysis are as follows.(Table 12)

Table 12. Descriptive analysis

	Mean	Std.	N
royalty	3.007	.6227	670
satisfaction	2.69	1.549	670
DM	.395	.4893	670

cf.) DM: dummy variable

3.5.2. Corelation analysis

The result of corelation analysis for the customer royalty and satisfaction is 0.26 in level of significance of 0.01.(Table 13)

Table 13. Corelation analysis of royalty and satisfaction

		royalty	satisfaction	DM
P-Correlation	royalty	1.000	.260	.066
	satisfaction	.260*	1.000	.100
	DM	.066**	.100	1.000
	N	670	670	670

cf.) DM: dummy variable
  * < 0.01, ** < 0.05

3.5.3. Coefficient of determination

The adjusted coefficient of determination is 0.067.(Table 14)

Table 14. Coefficient of determination

R	R^2	$ADJR^2$	STDE	Change Statistics				
				R	F	df1	df2	sig
.263	.069	.067	.601	.069	24.88	2	667	.000

3.5.4. ANOVA

In ANOVA for the goodness of fitness, F value is 24.88 in level of significance of 0.01, and this model is proved suitably.(Table 15)

Table 15. ANOVA

model		sum	df	M	F	sig
	R	18.01	2	9.00	24.88	.000
1	Res	241.44	667	.362		
	Total	259.46	669			

3.5.5. Result on hypothesis test

According to the result of the regression analysis, the regression coefficient of customer satisfaction is positively significant(0.103) in level of significance of 0.01.(Table 16)

In the regression analysis with dummy variable which is composed of 1 for franchised hospital group and 0 for none franchised, the regression coefficient of dummy variable is positive(0.052), but there is no difference between two groups statistically.

Table 16. Result of regression analysis

$RTD = \beta_0 + \beta_1 STF + \beta_2 DM + e$

Model		U-C		S-C	t	Sig.
		B	Std. Er	Stdβ		
1	(Constant)	2.710	.049		55.44*	.000
	satisfaction	.103	.015	.256	6.82*	.000
	DM	.052	.048	.041	1.08	.278

cf.) RTD: royalty   STF: satisfaction
  DM: dummy variable(franchised group 1)
  e: error,   * < 0.01

In additional analysis of independent sample T-test, the difference of royalty between two groups is not statistically significant.

3.6. Evaluation of service and marketing

3.6.1. Visit motivation in a hospital

This paper conducts frequency analysis on the survey of multiple choice item from 525 patients visiting a hospital of franchised group and none franchised.

The result is the highest as 30%, and next

up is telephone counselling(24%), SMS(22%), E-mail(20%), postal mail(4%) in order.(Table 17)

Table 17. Visit motivation in a hospital

	N	frequency	%
home page	525	429	30
phone	525	334	24
SMS	525	308	22
e-mail	525	280	20
postal mail	525	59	4
N		1,410	100

3.6.2. Service evaluation of a hospital

In analysis of item asked what service they were served from a hospital, medical reservation is the highest as 34%, and next up is hospital guidance(33%), medical counselling and thing on their own illness(each 17%) in order.

Table 18. Service analysis of a hospital

	N	frequency	%
counselling	525	208	17
reservation	525	416	34
illness	525	211	17
guidance	525	403	33
other	525	0	0
N	525	1,238	100

3.7. Motivation of a hospital choice

This paper conducts a survey of 3 items set priorities on motivation of a hospital choice; From each item, the total amount is calculated by multiplying and adding the item as 3 point of the first rank, 2 point of the second and 1 point of the third. These results are as follows.

The highest motivation of a hospital choice is convenience in use of a hospital procedure(28.1%), and next up is technique and specialty of medical team(27.9%), explanation for a medical service and its information offer-

ing(17.4%), and so forth in order.

Table 19. Motivation of a hospital choice

class	1st. 3^*	2nd. 2^*	3rd. 1^*	sum	%
1	24	31	40	174	4.3
2	229	187	66	1,127	28.1
3	201	182	152	1,119	27.9
4	58	91	54	410	10.2
5	109	107	158	699	17.4
6	20	21	69	171	4.3
7	3	4	70	87	2.2
8	25	46	59	226	5.6
9	0	0	1	1	0.0
Total	669	669	669	4,014	100.0

cf.) 1 of missing value
* point
1: hospital facility and environment
2: convenience in use of hospital procedure
3: technique and specialty of medical team
4: brand perception of franchised group
5: explanation for medical service and its information offering(phone, SMS, etc.)
6: advertising medium
7: hospital employees' kindness
8: treatment result
9: other

4. Conclusion

The franchised business was introduced in America in the early of 20th century, and in the present it is widely known all over the world. In Korea, it was first introduced in food service industry, and spreaded to manufacturing industry. Today, it has been enlarged to medical service industry.

This paper conducts a survey of 670 patients except missing value like non-response visiting franchised or none franchised hospital, and investigates a causal relationship of customer service and satisfaction, and of customer satisfaction and royalty. And also, it examines what factor might be affected by when customers select a hospital.

In the existing researches on business superiority between franchised and none franchised

business, they resulted that sales of franchised business was, other things being equal, higher than that of none franchised because of a brand name of franchised business.[3] And according to other existing research, average score of customer satisfaction in franchised hospital(62.63) was high that of customer satisfaction in none franchised hospital(58.55)[4]. Lee JG.[5] positively evaluated performance satisfaction of a dental clinic network in terms of improvement of its perception, level of medical treatment, or medical service. Kim KE.'s study[6] found that the factor influencing on patient's hospital selection was technique and specialty of medical team as the highest rank(41.3%). and next up was hospital employee's kindness(27%), but that the factor of a hospital perception was relatively low(4.7%). Thus according to other research[7], we might conclude that the improvement of a hospital perception as one of the motivations for joining franchise have crucial no effect on satisfaction of medical service or a hospital selection.

This study establishes and analyzes the hypotheses based on the existing researches. First, in reliability analysis, the variables of the human service, the interior & exterior environment, and the customer royalty is investigated to have credibility(each 0.756, 0.666, 0.584).

In hypothesis testing, Hypothesis 1 is positive(+) significant in level of significance of 0.01. Hypothesis 2 is negative(-), and then it finds franchised group is lower level of influence that none franchised. But in additional independent sample T-test analysis on the average satisfaction score of franchised and none franchised group, franchised group appears significantly higher than none franchised. This result may give rise to the difference of size between franchised and none franchised group.

Hypothesis 3 is positive(+) significant in level of significance of 0.01. Hypothesis 4 is not significant. In additional independent sample T-test analysis on the average royalty score of franchised and none franchised group, it appears not to be significant.

According to the result of service marketing, it finds that the patients make use of homepage(30%) when they search a hospital. It may have important implications for improvement of image of a hospital for the future. And medical reservation among services offered by a hospital is the highest(34%), and next up is technique and specialty of medical team.

The limitation of this paper is, first of all, to be a sampling which is limited in Seoul and Kyunggi province. Second, it is not to consider of a hospital size between the sample groups; franchised hospital is a primary health care institution but none franchised one is bigger hospital.

Study supplementing these limitations is required in the future.

References

1. Lee SS. Current networksubscription status of Korea's dental clinic And its satisfaction rate, Yonsei University, 2006.

2. Chung HT, Kim KH, et al. A study on networking effects of financial leverage in middle-sized hospital, SDPM, 2013;11(1):340-341.

3. Kim GH. A Study on the Health Care Service Marketing Strategy, KOCOMA, 1999;(1);269-283.

4. Moon SJ. A study on satisfaction at management results of primary medical institutes, Business Administration Graduates School of Kyung Hee Univ, 2014.

5. Lee JG. The Study on the Network

Marketing Strategies of Hospitals - centered on the case of pusan yedental clinic, Kyunghee University, 2001.

6. Kim KE. The analysis on the degree of recognition of and satisfaction with network clinics, Kyunghee University, 2003.

7. Yun JY. Theoretical Analysis on the Strategy of Dental Clinic Network, Dep. of Dental Science, School of Dentistry, Chonnam National University, 2009.