

Use Theory of Planned Behavior to Discuss Health Examination Intention in Foreign-Capital Medical Institutes - Evidence on Xiamen Chang Gung Hospital

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ABSTRACT Taiwanese health industry started to invest in China in 1990s. When the first Taiwanese hospital, Chang Gung Hospital, entered the China market, the territory of Taiwan-capital hospitals in the mainland market was opened. The healthcare expenses in China are so high that most citizens avoid seeking healthcare. In comparison with public hospitals, the charging standards of foreign-capital hospitals are much higher; however, the equipment and services are comparatively higher that some citizens would continuously seek healthcare at public hospitals. Theory of Planned Behavior is utilized in this study for discussing Xiamen citizens' intention of health examinations at Taiwan-capital hospitals. Total 533 valid copies of questionnaire are analyzed with Multiple Regression. The findings show that Chinese citizens with higher intention of health examinations at Xiamen Chang Gung Hospital appear stronger actual behaviors; and, the seniors would be more willing to visit the hospital for health examination.

INTRODUCTION

Under the economic and knowledge growth, the public has increased the demands for healthcare (Danaei et al. 2011). The public healthcare is then gradually emphasized by the government. Based on healthcare being the fundamental right of citizens, the government of China also establishes a lot of public hospitals to solve the demands for health examinations. Medical industry in Taiwan started to invest in China in 1990s. The first Taiwanese hospital, Chang Gung Hospital, getting into the mainland market opened the territory of Taiwan-capital hospitals in the mainland market. Healthcare system is regarded as the basis of national health. Under the promotion of technology and economic development, service industry also constantly innovates. The increasing demands for medical services also enhance the expectation of service

quality (Gruber and Frugone 2011; Perimal-Lewis et al. 2013).

Since the healthcare expenses in China are high, most citizens would avoid directly seeking healthcare by buying medicines to. Nevertheless, such a phenomenon has resulted in the boom of medical health examinations in China, as they would like to examine diseases through health examinations in order to save such a large amount of medical expenses. The promotion of domestic societies and healthcare environments enhancing the national health awareness and the comparison with the advanced experiences of foreign countries have preventive healthcare be gradually emphasized. The concept of Preventive Healthcare Service has Chinese citizens be enthusiastic about health examinations, expecting to discover risk factors, pathogenic factors, and diseases at the early stage. With properly reasonable intervention for the arrangement of further examinations, enquiries, and suggestions, it is expected to maintain health and reduce prevalence or mortality with disease prevention, early diagnoses, and illness release (Deyo et al. 1992; Hunter 1996; James and Savitz 2011).

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The health examination expenses at Taiwan-capital hospitals are comparatively higher than those at public hospitals in China. In addition to complete medical equipment and advanced medical standards, the care and concerns from Taiwan-capital hospitals are more careful than those from public hospitals. Medical health examinations are currently a primary income of Taiwan-capital hospitals, about 1/3 of annual total income. In spite of the better medical environment, the expenses are indeed twice higher than those at public hospitals. This study therefore aims to explore Xiamen citizens' intentions of health examinations at Taiwan-capital hospitals.

Literature Review

Theory of Reasoned Action (TRA), originally proposed by Fishbein and Ajzen (1975), tends to discuss the actual behaviors of consumers from the dimensions of Attitudes and Subjective Norms; but, they could not explain all problems of personal behaviors, as personal behaviors were not simply determined by personal attitudes and subjective norms, but controlled by personal will. Ajzen (1985), therefore, proposed Theory of Planned Behavior (TPB), in which perceived behavioral control was added to make the structure of Theory of Reasoned Action be more complete. In TPB, actual behavior was determined by behavioral intention, while behavioral intention was decided by attitudes, subjective norms, and perceived behavioral control. An individual being able to practice behaviors with opportunities and resources and to control the behaviors would affect the behavioral intention (Ajzen 1991). Behavioral intention refers to an individual tending to take specific behaviors, that is, that is, the expression of taking a behavior under the determination of behavioral choices. In this case, Behavioral Intention, as the decision before a behavior, was an essential process for any behaviors. Davids (1989) also considered the prediction of actual behavior with the measurement of behavioral intention that the prediction of sales market presented great help on consumer behaviors.

Petty and Brinol (2010) indicated that individual behavioral intention could be predicted by personal attitudes towards behaviors, showing that an individual with positive attitudes towards the behaviors was likely to present such behaviors. Consequently, the choice of places

for health examinations would be affected by personal attitudes. An individual showing positive attitudes towards the place would likely go to the place for examinations. Subjective norms refer to individual perceived social compulsives to take specific behaviors, that is, individuals or groups who reveal influence on a person's behavioral decisions. As a result, an individual would subjectively judge other interested parties before taking certain behaviors (Morgan and Hunt 1994; Armitage and Conner 2001; Gefen et al. 2003). Xiamen Chang Gung Hospital is a Taiwan-capital hospital, and the physicians, medical equipment, prescription drugs, and charging standards appear large differences from public hospitals in China that a person intending to have health examinations at the hospital would pre-judge the others' perception. Perceived behavioral control shows individual perceived difficulty in engaging in a behavior. It reflects the effects of individual past experiences on the prediction of engaging in such behaviors, which would further affect the behavioral intention (Sideridis and Kaissidis-Rodafinos 2001; Geers et al. 2009). Accordingly, an individual with positive past experiences in the health examinations at Xiamen Chang Gung Hospital would present higher intention to choose the hospital again. The following hypotheses 1-3 are therefore proposed in this study.

- H1: An individual with more positive Attitudes towards the health examination center in Xiamen Chang Gung Hospital would more easily go for health examinations.
- H2: An individual with more positive Subjective Norms of the health examination center in Xiamen Chang Gung Hospital would more easily go for health examinations.
- H3: An individual with more positive Perceived Behavioral Control of the health examination center in Xiamen Chang Gung Hospital would more easily go for health examinations.

Behavioral intention and actual behavior are two different concepts. Behavioral intention could be regarded as the predecessor of actual behavior, while it would not necessarily result in actual behavior (Netemeyer and Burton 1990). When proposing TPB, Ajzen (1985) pointed out personal behavioral intention as the subjective probability of an individual intending to engage in certain behaviors; besides, other factors in

personal behaviors were indirectly affected by behavioral intention, revealing the high correlation between Behavioral Intention and behaviors (Webb and Sheeran 2006). An individual would tend to be continuously tested in an institute when presenting positive attitudes, perception, and experiences on the institute. As a consequence, the following hypothesis is further proposed in this study.

H4: An individual with more positive Behavioral Intention of the health examination center in Xiamen Chang Gung Hospital presents higher opportunities to go for health examinations.

What is more, the health examination behavior would appear distinctly on age (Rhodes 1983; West et al. 2002). Elder people would focus more on health examinations than younger ones do. Age, therefore, is considered as a moderator, and the following hypothesis is proposed.

H5: Age shows moderating effects on personal Behavioral Intention and Actual Behavior.

Concluding the above literatures, the research model (Fig. 1) is drawn as follows.

METHOD

Measurement

The TPB scale is referred to Bhattacharjee (2000) and Lin (2006). To avoid translation and interpretation errors, the staffs of Xiamen Chang

Gung Hospital and experts from College of Business Administration of Huaqiao University are inquired for revising the questions. The questionnaires are distributed with the agreement. The reliability of the scale is shown in Table 1.

Sampling

Xiamen City, a special economic zone in Fujian Province with the gross national income per capita 76000RMB, is a city showing better economic conditions in China. Xiamen is divided into six administrative districts. For the effective universality of the questionnaire survey, 200 copies of questionnaires are randomly distributed in each of the six administrative districts to make the total 1200 copies of questionnaires. Total 571 copies are collected, with the retrieval rate 47.58%; and, deducting 38 incomplete copies, the effective copies are 533, with the effective rate 93.34%.

After analyzing the basic data, it is found that most participants are male (51.6%), with the average age 42.7, the educational background being junior high school, and the occupation being business. The average income of participants is 3750RMB, and the average times of annual health examination is 1.3.

ANALYSIS RESULTS

The past research pointed out the effects of personal background on personal behaviors;

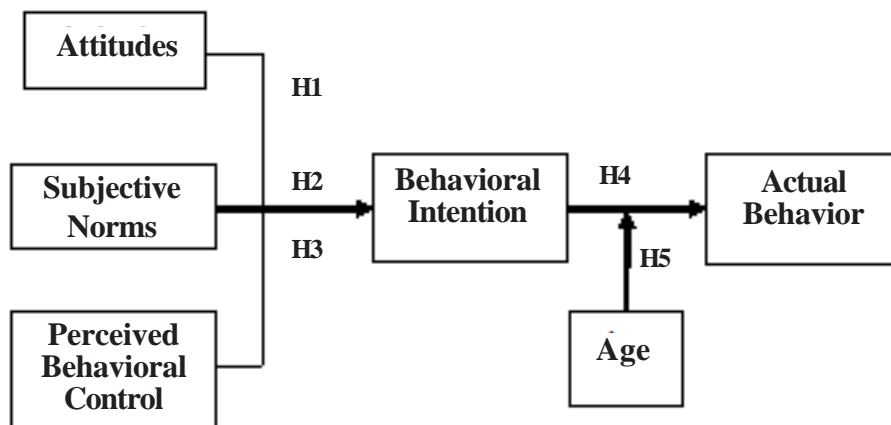


Fig. 1. Research model

especially, gender, age, educational background, and income showed the fiercest effects on personal behaviors (Kellermanns and Eddleston 2004; Wu et al. 2014). For this reason, four types of personal data were taken as the control variables in order not to affect the successive research results.

In regard to the hypothesis testing, the concept of Multiple Regression was utilized. Gender, age, educational background, and income were first regarded as the control variables, attitudes, subjective norms and perceived behavioral control as the independent variables and behavioral intention as the dependent variable for the analyses, Table 2. With control variables, the citizens revealing more positive attitudes ($\beta = .313, P < .001$), higher subjective norms ($\beta = .229, P < .01$), and perceived behavioral control ($\beta = .278, P < .001$) on Xiamen Chang Gung Hospital would present more positive Behavioral Intention. The hypotheses 1-3, therefore, were supported.

Similarly, behavioral intention and actual behavior were tested (Table 3). The citizens with higher behavioral intention ($\beta = .397, P < .001$) of health examinations at Xiamen Chang Gung Hospital showed actual behavior.

Table 3: Regression of reality behavior

	<i>Dependent variables</i>	
	<i>Reality behavior</i>	
	<i>M1</i>	<i>M2</i>
Gender	.093	.091
Age	.127*	.121
Education	.182**	.173*
Income	.197**	.182**
Behavior Intension		.397***
F values	17.415	31.731
Adj R ²	.146	.371
ΔR ²		.225

Note. N=533; * $p < .05$; ** $p < .01$; *** $p < .001$

The test of moderating effects was referred to the process proposed by Baron and Kenny (1986). The concept of Hierarchical Regression was applied to testing the significance of product terms. Similar to multiple regression analysis, gender, age, educational background, and income were first regarded as the control variables, behavioral intention and citizen age as the independent variables, behavioral intention and citizen age as the input for product terms and actual behavior as the dependent variable for multiple regression analysis (Table 4). The

Table 1: Measurement table

<i>Variable</i>	<i>Items</i>	<i>Cronbach's á</i>	<i>Source</i>
Attitudes	3	0.84	Lin (2006)
Subjective norms	6	0.86	Bhattacharjee (2000)
Perceived behavioral control	8	0.83	Bhattacharjee (2000)
Behavioral intention	3	0.94	Lin (2006)
Actual behavior	3	0.91	Lin (2006)

Table 2: Regression of behavior intension

	<i>Dependent variables</i>					
	<i>Behavior intension</i>					
	<i>M1</i>	<i>M2</i>	<i>M1</i>	<i>M2</i>	<i>M1</i>	<i>M2</i>
Gender	.093	.084	.093	.087	.093	.085
Age	.127*	.103	.127*	.101	.127*	.107
Education	.182**	.153*	.182**	.148*	.182**	.151*
Income	.197**	.161**	.197**	.147*	.197**	.167*
Attitudes		.313***				
Subjective norms				.229**		
Perceived behavioral control						.278***
F values	17.415	25.423	17.415	22.547	17.415	24.714
Adj R ²	.146	.302	.146	.247	.146	.273
ΔR ²		.156		.101		.127

Note. N=533; * $p < .05$; ** $p < .01$; *** $p < .001$

Table 4: Moderate effect of age

	<i>Dependent variables</i>		
	<i>Reality behavior</i>		
	<i>M1</i>	<i>M2</i>	<i>M3</i>
Gender	.093	.074	.071
Age	.127*	.098	.93
Education	.182**	.151*	.133*
Income	.197**	.162**	.149*
Behavior intension		.317***	.278**
Age		.248**	.221**
Behavior intension*Age			.287**
F values	17.415	29.714	34.322
Adj R ²	.146	.237	.274
ΔR ²		.091	.037

Note. N=533; **p*<.05; ** *p*<.01; ****p*<.001

findings presented the significance of the product terms ($\beta = .287, P < .01$) of behavioral intention and age with positive correlations. Apparently, senior citizens with higher behavioral intention revealed higher probability on actual behavior. H4 was therefore supported.

CONCLUSION

The competition in medical markets does not simply stress on medical skills; instead, medical equipment, service quality, and brand marketing have become the key competition in the market. Among various cheap and convenient public hospitals, how Taiwanese-capital Xiamen Chang Gung Hospital survives in the environment is worth discussing. Further, since the proposal of Theory of Planned Behavior by Ajzen, it has been applied to various social fields to discuss behavioral motivation and background. Theoretically, the participation in health examinations is a behavior. However, the past research seldom studied, discussed, and tested the issues related to Theory of Planned Behavior and the participation in health examinations. The integration of Theory of Planned Behavior and the participation in health examinations, therefore, is the key in this study to complete the theory testing.

The research results show that a participant with more positive attitudes towards Xiamen Chang Gung Hospital would more easily tend to visit the hospital for health examinations. Besides, subjective norms and perceived behavioral control of a participant appear positive correlations with behavioral intention. Such a re-

sult proves the result proposed by Ajzen that personal behaviors are not the impetuous reactions of personal behaviors, but the movements with careful considerations, various opinions, or cumulative experiences. Personal health examinations require preparations, including the selection of hospitals, the understanding of health examination contents, the security of equipment, or the sufficient information of physicians. Consequently, the present study is considered as an essential investigation for the public selecting hospitals for health examinations. Xiamen Chang Gung Hospital presents the most advanced medical team and equipment in Xiamen. Although the expenses are comparatively higher than those at public hospitals, local citizens, mostly senior citizens, would still choose it, as seniors appear more physical conditions that they concern more about the health. The expenses to seek healthcare in China is extremely high that the health examination market is developed.

RECOMMENDATIONS

In consideration of the broad and huge demands of Chinese citizens for health examinations but the expenses of foreign-capital medical institutes being much higher than those of local public hospitals, foreign-capital medical institutes are suggested to attract more citizens going for health examinations based on the medical quality, service quality, and advanced medical equipment. What is more, patient data are usually collected by medical institutes that the idea of consumer relationship management could be used for actively establishing the patient data and regularly trace patients who should return or are being treated to form the active marketing.

The research resulted with age as the moderator show that senior citizens are more willing to visit foreign-capital medical institutes for health examinations. Aiming at such a phenomenon, foreign-capital medical institutes are suggested to offer senior health examinations with preferential schemes, such as shuttle services and giving health examination items, to attract more seniors. In addition to promote health examinations, the revenue of medical institutes could be increased. Finally, the research design merely focuses on personal behavioral motivation, but not on the psychological description and tests. It is, therefore, suggested that suc-

cessive researchers could test the psychological factors of participants to understand the psychological factors in consumers choosing a Taiwan-capital hospital for health examinations.

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