

# THE DEMAND FOR MEDICAL COSMETOLOGY: EVIDENCE FROM CHINA

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## ABSTRACT

*The purpose of this study is to investigate the demand for medical cosmetology from the perspective of Mainland China, Hong Kong, and Macao people. We use a questionnaire, and examine the effects of demographic variables on the demand for medical cosmetology. The findings show that demographic variables may lead to significant differences in the most wanted channel, the most wanted surgery, and the acceptable expense. Only monthly income leads to significant differences in the main reason for medical cosmetology in Taiwan.*

**JEL:** I11, M30

**KEYWORDS:** Medical Cosmetology, Medical Tourism

## INTRODUCTION

With the advancement of technology and rising GDP, more people have a greater desire to enhance their beauty. They undergo various medical cosmetic procedures, such as breast augmentation, double eyelid surgery, nose augmentation, Botox injections, and cosmetic laser surgery, to make themselves look better or to retain their youthful looks.

Though Taiwan is in the early stages of developing medical care services for the international market, it has huge potential due to its advanced medical technology, highly qualified doctors, and cheaper medical expenses. Taiwan's medical tourism presently targets foreign visitors who expect to receive high quality medical services at reasonable prices. Over the past few years, most foreign medical tourists have sought out health examinations, minimally-invasive therapies, and cosmetic surgeries that do not require a long recovery period in Taiwan.

Mainland China, Hong Kong, and Macao residents are the most important consumers for Taiwan's medical tourism industry. This occurs because of accelerated development in cross-strait tourism, fast medical visas, a common language similar culture, and Taiwan's medical care being on par with international levels, but at reasonable prices. Research focusing on Taiwan's medical tourism industry or medical tourists from mainland China, Hong Kong, and Macao is rather limited. This study collected opinions of 535 medical tourists from these three areas to investigate their demand for medical cosmetology. We utilize a questionnaire format. Results of this study can provide a reference for medical and tourism industries in cross-industry cooperation as well as in the development of medical tourism programs and related facilities.

The rest of this paper is organized as follows. Section 2 reviews previous research on medical cosmetology and medical tourism. Section 3 describes the data and method we employ. Section 4 reports the results, and section 5 concludes the paper.

## LITERATURE REVIEW

With the advancement of technology and rising GDP, more people have a greater desire to enhance their beauty. They undergo various treatments, such as traditional facial treading, cosmetic products, and modern medical cosmetology, to make themselves look better or retain their youthful looks. The term "medical cosmetology" combines two key factors: medical and cosmetology. According to Frost and Sullivan Research Service in 2007, medical cosmetology can be classified into surgical cosmetic procedures and non-surgical cosmetic procedures. The former include invasive treatments such as breast

augmentation, liposuction, double eyelid surgery, nose augmentation and others. The latter encompass non-invasive treatments like chemical peel, Botox injection, cosmetic laser and others.

American Society of Plastic Surgeons (ASPS) statistics for all cosmetic surgical procedures in 2011, shows in the U.S., non-surgical cosmetic procedures accounted for 88%. The top five Minimally Invasive Solutions (MIS) are: Botox injection (46.3%), Autologous Fat Transplantation (15.4%), chemical peel (9.1%), laser hair removal (8.8%), and Microdermabrasion (7.4%), for a total of US\$13,828,760.

Medical tourism has grown rapidly in the past decade. The term “medical tourism” combines two key factors: medical and tourism. The word “medical” means the treatment of an illness, disorder, or injury, and the word “tourism” comprises “the activities of persons traveling to and staying in a place outside their usual environment for leisure, business and other purposes” according to the definition of the World Tourism Organization (WTO). In its broadest definition, medical tourism refers to “travel with the express purpose of obtaining health services abroad” (Ramirez, 2007). WTO defined medical tourism as “tourism services based on healthcare and nursing, sickness and health, and recovery and rehabilitation”, which consists of health tourism and medical tourism.

Carrera and Bridges (2006) classified health tourism as “organized travel outside one’s local environment for the maintenance, enhancement or restoration of an individual’s wellbeing in mind and body” and medical tourism as “organized travel outside one’s natural healthcare jurisdiction for the enhancement or restoration of the individual’s health through medical intervention”. Medical tourism focuses more on surgical procedures, while health tourism is a much broader concept centered mainly on maintaining or improving the body and relaxing the mind. This study focuses on medical tourism.

Factors leading to increasing popularity of medical tourism include high costs and long waiting times in a patient’s home country (Grennan, 2003; Forgione and Smith, 2007), new technology and skills in the destination countries, reduced transport costs (Carrera and Bridges, 2006; Connell, 2006), and Internet marketing (Connell, 2006). Factors motivating medical tourism vary from place to place. For example, avoidance of waiting times is the main reason for medical tourism from the UK (Bies and Zacharia, 2007), whereas in the U.S., the leading factor is lower costs abroad (Forgione and Smith, 2007). The most popular medical tourist destinations are Argentina, Cuba, Colombia, Costa Rica, Hungary, India, Jordan, Malaysia, Philippines, Singapore, South Africa, Thailand, South Korea, Tunisia, Ukraine, and New Zealand (Gahlinger, 2008). Asian countries are famous for “First World Health Care at Third World Prices”, because medical expenses are about one-tenth of Western country prices (Cetron et al., 2006; Turner, 2007).

Most research studies in Asia focusing on medical tourism destinations target South Korea (Lee, Han, & Lockyer, 2012; Yu, & Ko, 2012), Thailand (NaRanong & NaRanong, 2011), India (Crooks, et al., 2011; Vijaya, 2010), and Hong Kong (Heung, Kucukusta, & Song, 2011; Ye, Qiu & Yuen, 2011). Lee, Han, & Lockyer (2012) applied the Theory of Planned Behavior to examine the intention of Japanese tourists to travel to South Korea. Yu, & Ko (2012) observed factors related to perceptions of and possible participation in medical tourism by Chinese, Japanese, and Korean visitors to Jeju Island in South Korea. NaRanong & NaRanong (2011) explored positive and negative effects of medical tourism on the economy, health staff and medical costs in Thailand. Heung, Kucukusta, & Song (2011) analyzed factors influencing the development of medical tourism in Hong Kong. Ye, Qiu & Yuen (2011) explored motivations and experiences of obstetric patients from mainland China for traveling to give birth in Hong Kong. However, research focusing on Taiwan’s medical tourism industry or medical tourists from mainland China, Hong Kong, and Macao is rather limited.

## DATA AND METHODOLOGY

We administered the questionnaires from January 1, 2013 to April 1, 2013 to residents from mainland China, Hong Kong, and Macao using convenience sampling. The questionnaires were administered at some of Taiwan’s most famous scenic attractions where mainland Chinese tourists were likely to visit, such as the

National Palace Museum, Alishan National Scenic Area, Sun Moon Lake and Taipei 101. A total of 588 surveys were distributed resulting in 535 usable responses, for a response rate of 90.99%.

Gauging scales are selected from the literature. The main reason for medical cosmetology in Taiwan is gauged by five items taken from Carrera and Bridges (2006), and Connell (2006). These items are advanced medical technology, star effect, lower cost, highly qualified doctors, and easy to communicate. The most wanted channels are measured by five items: recommendation from friends, mass media, website (Connell, 2006), travel agency, and others. The most wanted surgery is measured by six items: liposuction slimming, breast augmentation, whitening and anti-wrinkle, facial cosmetic surgery, repair surgery, and others. Acceptable expense is gauged by six items: lower than RMB\$20,001, RMB\$20,001 - 40,000, RMB\$40,001 - 60,000, RMB\$60,001 - 80,000, RMB\$80,001 - 100,000, and more than RMB\$100,000.

## ANALYSES AND RESULTS

Through descriptive statistics analysis in Table 1, we identified basic attributes of the sample are female (74.4%), unmarried (54.6%), 21-30 years old (48.2%), university education level (54.4%), monthly income RMB\$5,001-8,000 (33.5%), and work in service industry (35.1%).

Table 1: Descriptive Statistics Analysis of Sample

	Items	No. of Respondents	Percent
Gender	Male	137	25.6
	Female	398	74.4
Marital status	Unmarried	292	54.6
	Married	243	45.4
Age group	younger than 20 years old	18	3.4
	21-30 years old	258	48.2
	31-40 years old	140	26.2
	41-50 years old	57	10.7
	older than 50 years old	62	11.6
Education level	junior high school	45	8.4
	senior high school	162	30.3
	University	291	54.4
	graduate school	37	6.9
Residential area	northern China	119	22.2
	central China	49	9.2
	eastern China	69	12.9
	southern China	79	14.8
	Hong Kong and Macao	106	19.8
	northeastern China	65	12.1
	southwestern China	26	4.9
	northwestern China	22	4.1
Occupation	service industry	188	35.1
	manufacturing industry	110	20.6
	public servants & teachers	58	10.8
	students	98	18.3
	Others	81	15.1
Monthly income (RMB)	below 2000	113	21.1

Table 2 shows the main reason for medical cosmetic surgery in Taiwan is consumers can communicate with doctors without language barriers (32%), followed by advanced medical technology (29.3%). The channels that consumers most wanted are recommendations from friends (31.4%), mass media (28.2%), and website (26.2%). Some 41.1% of the subjects want to conduct facial cosmetic surgery, followed by whitening and anti-wrinkle (21.5%), and liposuction slimming (17.8%). Finally, the most acceptable expense is lower than RMB\$20,001 (32%), followed by RMB\$20,001 - 40,000.

Table 2: Demand Analysis

	Items	No. of Respondents	Percent
Main reason for medical cosmetology in Taiwan	advanced medical technology	157	29.3
	star effect	71	13.3
	much cheaper medical expenses	49	9.2
	highly qualified doctors	87	16.3
	easy to communicate	171	32.0
Most wanted channel	recommendation from friends	168	31.4
	mass media	154	28.8
	website	140	26.2
	travel agency	54	10.1
	others	19	3.6
Most wanted surgery	liposuction slimming	95	17.8
	breast augmentation	60	11.2
	whitening and anti- wrinkle	115	21.5
	facial cosmetic surgery	220	41.1
	repair surgery	39	7.3
Acceptable expense (RMB )	others	6	1.1
	lower than 20,001	171	32.0
	20,001-40,000	169	31.6
	40,001-60,000	131	24.5
	60,001-80,000	38	7.1
	80,001-100,000	22	4.1
	more than100,00	4	0.7

As presented in Table 3, the p-values of gender, marital status, age group, educational level, residential area, and occupation are all larger than 0.05 except monthly income (p-value=0.046). This suggests that monthly income may lead to significant differences in the main reason for medical cosmetology in Taiwan. The p-values of gender, marital status, age group, educational level, residential area, occupation, and monthly income are all smaller than 0.05 in Table 4, Table 5, and Table 6. This implies that all demographic variables may lead to significant differences in the most wanted channel, most wanted surgery, and acceptable expense.

From Table 4 we see that subjects who are female, unmarried, 21-30 years old, university or graduate school education level, students or work in service industry, recommendation from friends is their preferred channel. Subjects who are male, married, 31-40 or more than 50 years old, junior high school education level, public servants or work in manufacturing industry, monthly income RMB\$5,001 - 8,000, mass media is their preferred choice. For people who are younger than 20 years old, senior high school education level, website is the most wanted channel. Table 5 shows that facial cosmetic surgery is the most wanted surgery for all subjects dominantly. Additionally, Table 6 shows that lower than RMB\$20,001 is the preferred expense for subjects who are unmarried, 21-30 years old, university education level, students, monthly

income below RMB\$2,000. Otherwise, RMB\$20,001 – 40,000 is the primary acceptable expense for most other subjects.

Table 3: Chi-Square Analysis – Main Reason

		Main Reason					Total
		1	2	3	4	5	
Gender (p=0.067)	male	35	12	19	23	48	137
	female	122	59	30	64	123	398
Marital status (p=0.393)	unmarried	92	35	27	41	97	292
	married	65	36	22	46	74	243
Age (p=0.247)	younger than 20	9	4	0	1	4	18
	21-30	76	37	19	39	87	258
	31-40	45	14	15	24	42	140
	41-50	14	6	5	9	23	57
Education (p=0.264)	older than 50	13	10	10	14	15	62
	junior high school	15	8	1	10	11	45
	senior high school	47	21	23	25	46	162
	university	82	39	23	48	99	291
Residential area (p=0.114)	graduate school	13	3	2	4	15	37
	northern China	45	8	7	16	43	119
	central China	12	8	6	9	14	49
	eastern China	17	8	9	11	24	69
	southern china	26	13	13	11	16	79
	Hong Kong & Macao	31	19	6	17	34	107
	northeastern China	13	8	6	17	21	65
	southwestern China	7	2	2	4	11	26
	northwestern China	6	5	0	2	8	21
	service industry	52	31	13	34	58	188
Occupation (p=0.128)	manufacturing	33	12	10	15	40	110
	public servants	17	6	10	9	16	58
	students	33	15	8	12	30	98
	others	22	7	8	17	27	81
Income (p=0.046)	below 2,000	40	15	8	19	31	113
	2,001-5,000	40	28	9	23	57	157
	5,001-8,000	54	23	21	31	50	179
	8,001-11,000	16	3	10	6	17	52
	11,001-14,000	6	0	1	4	7	18
	more than 14,000	1	2	0	4	9	16
	Total	157	71	49	87	171	535

1=advanced medical technology, 2=star effect, 3=much cheaper medical expenses, 4=highly qualified doctors, 5= easy to communicate.

Table 4: Chi-Square Analysis – Most Wanted Channel

		Most wanted channel					Total
		1	2	3	4	5	
Gender (p=0.033)	male	35	51	31	12	8	137
	female	133	103	109	42	11	398
Marital status (p=0.001)	unmarried	100	66	82	28	16	292
	married	68	88	58	26	3	243
Age (p=0.012)	younger than 20	5	5	7	0	1	18
	21-30	93	61	69	19	16	258
	31-40	39	46	34	21	0	140
	41-50	16	15	17	9	0	57
Education (p=0.008)	older than 50	15	27	13	5	2	62
	junior high school	12	17	9	3	4	45
	senior high school	45	45	51	19	2	162
	university	90	88	70	30	13	291
Residential area (p=0.000)	graduate school	21	4	10	2	0	37
	northern China	31	17	43	15	13	119
	central China	18	15	9	7	0	49
	eastern China	30	23	11	4	1	69
	southern china	21	24	24	7	3	79
	Hong Kong & Macao	39	25	34	8	1	107
	northeastern China	15	29	12	8	1	65
	southwestern China	8	14	2	2	0	26
Occupation (p=0.002)	northwestern China	6	7	5	3	0	21
	service industry	67	52	50	17	2	188
	manufacturing	28	33	31	14	4	110
	public servants	13	23	12	9	1	58
	students	35	20	28	6	9	98
Income (p=0.000)	others	25	26	19	8	3	81
	below 2,000	40	16	33	12	12	113
	2,001-5,000	52	40	47	12	6	157
	5,001-8,000	38	82	44	15	0	179
	8,001-11,000	20	13	9	10	0	52
	11,001-14,000	11	2	2	3	0	18
	more than 14,000	7	1	5	2	1	16
	Total	168	154	140	54	19	535

1=recommendation from friends, 2=mass media, 3=website, 4=travel agency, 5= others, p=p value (2-sided)

Table 5: Chi-Square Analysis – Most Wanted Surgery

		Most Wanted Surgerv						Total
		1	2	3	4	5	6	
Gender (p=0.000)	male	26	2	34	40	31	4	137
	female	69	58	81	180	8	2	398
Marital status (p=0.000)	unmarried	57	27	50	147	7	4	292
	married	38	33	65	73	32	2	243
Age (p=0.000)	younger than 20	4	3	2	7	2	0	18
	21-30	57	27	51	115	4	4	258
	31-40	18	17	27	70	8	0	140
	41-50	12	8	11	16	9	1	57
Education (p=0.021)	older than 50	4	5	24	12	16	1	62
	junior high school	7	7	11	13	6	1	45
	senior high school	23	23	40	58	17	1	162
	university	55	27	57	136	14	2	291
Residential area (p=0.000)	graduate school	10	3	7	13	2	2	37
	northern China	31	4	14	67	2	1	119
	central China	5	8	10	22	4	0	49
	eastern China	14	6	18	28	3	0	69
	southern china	6	12	24	29	7	1	79
	Hong Kong & Macao	22	19	17	41	6	2	107
	northeastern China	6	8	20	20	10	1	65
	southwestern China	6	2	6	9	3	0	26
Occupation (p=0.001)	northwestern China	5	1	6	4	4	1	21
	service industry	32	32	32	84	6	2	188
	manufacturing	18	8	26	40	17	1	110
	public servants	8	5	15	26	4	0	58
	students	24	8	14	46	4	2	98
Income (p=0.003)	others	13	7	28	24	8	1	81
	below 2,000	30	10	15	53	4	1	113
	2,001-5,000	32	26	35	57	4	3	157
	5,001-8,000	19	21	45	69	23	2	179
	8,001-11,000	7	1	14	24	6	0	52
	11,001-14,000	3	1	3	9	2	0	18
	more than 14,000	4	1	3	8	0	0	16
	Total	95	60	115	220	39	6	535

1=liposuction slimming, 2=breast augmentation, 3=whitening and anti-wrinkle, 4=facial cosmetic surgery, 5=repair surgery, 6=others, p=p value (2-sided).

Table 6. Chi-Square Analysis – Acceptable Expense

		Acceptable Expense						Total
		1	2	3	4	5	6	
Gender (p=0.012)	male	36	33	44	14	8	2	137
	female	135	136	87	24	14	2	398
Marital status (p=0.000)	unmarried	122	94	48	16	9	3	292
	married	49	75	83	22	13	1	243
Age (p=0.000)	younger than 20	5	8	4	1	0	0	18
	21-30	108	88	38	12	9	3	258
	31-40	36	42	46	11	5	0	140
	41-50	11	17	17	7	5	0	57
Education (p=0.025)	older than 50	11	14	26	7	3	1	62
	junior high school	14	16	12	2	1	0	45
	senior high school	43	49	48	12	8	2	162
	university	101	92	67	22	9	0	291
Residential area (p=0.000)	graduate school	13	12	4	2	4	2	37
	northern China	89	24	4	2	0	0	119
	central China	8	20	13	7	1	0	49
	eastern China	19	27	16	5	2	0	69
	southern china	19	31	18	5	4	2	79
	Hong Kong & Macao	17	34	36	9	10	1	107
	northeastern China	11	22	27	2	2	1	65
	southwestern China	4	5	12	4	1	0	26
	northwestern China	4	6	5	4	2	0	21
	service industry	50	62	51	14	10	1	188
Occupation (p=0.001)	manufacturing	31	27	33	12	6	1	110
	public servants	19	18	13	5	3	0	58
	students	48	34	10	3	1	2	98
	others	23	28	24	4	2	0	81
Income (p=0.000)	below 2,000	78	31	3	0	0	1	113
	2,001-5,000	55	63	29	8	2	0	157
	5,001-8,000	21	49	81	20	7	1	179
	8,001-11,000	14	11	14	7	5	1	52
	11,001-14,000	1	5	3	3	5	1	18
	more than 14,000	2	10	1	0	3	0	16
Total		171	169	131	38	22	4	535

1=lower than 20,001, 2= 20,001-40,000, 3= 40,001-60,000, 4= 60,001-80,000, 5= 80,001-100,000, 6=more than 100,000.

## CONCLUSION AND SUGGESTIONS

This study’s demand analysis shows the main reasons for medical cosmetic surgery in Taiwan are that consumers can communicate with doctors without any language barrier and the use of advanced medical technology. The channels that consumers most wanted are recommendations from friends, mass media, and websites. The surgery most mainland Chinese want is facial cosmetic surgery, and the most acceptable expense is below RMB\$40,000. We suggest that providers of medical cosmetology should



devote more efforts to improve their medical technology, lower the medical cost and strengthen their communication with medical tourists. Additionally, they can work with mass media or websites in order to provide promotions that primarily focus on facial cosmetic surgery and attract more foreign visitors when they are marketing their services in the future.

Chi-square analysis shows that all demographic variables lead to significant differences in the most wanted channel, most wanted surgery, and acceptable expense. Thus, we propose that providers of medical cosmetology should develop different marketing strategies for people with different attributes. For example, they could develop a low-cost strategy for people who are 21-30 years old, students, or low-income salary earners through recommendations from friends or by word of mouth. On the other hand, they can develop a higher cost strategy for people who are male, married and older than 30 years old mainly through mass media.

The primary limitation of this study is that it only focuses on the main reason, the most wanted channel, the most wanted surgery, and the acceptable expense for medical cosmetology, as well as the effects of demographic variables on these dimensions. We suggest that future research can further consider what causes this study's findings and why Taiwan is a medical tourism destination. Moreover, because there are many determinants of behavioral intention for medical cosmetology, future research can also look into motivations, expectations, risks, and quality and availability of care or service quality in a more comprehensive model.

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