PERCEIVED RISK OF COSMETIC SURGERY TOURISM: SCALE DEVELOPMENT AND ITS APPLICATION IN SEGMENTING CHINESE COSMETIC SURGERY TOURISTS

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HYE-MIN NAM

A thesis submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy

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CERTIFICATE OF ORIGINALITY

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Hye-Min Nam

ABSTRACT

Cosmetic surgery tourism, whereby people travel abroad to undergo cosmetic procedures to enhance their appearance, is a rapidly expanding global phenomenon. Despite the rapid growth in the number of international patients and extensive media coverage, knowledge of many key characteristics of cosmetic surgery tourists, such as their background and decision-making, remains limited (De La Hoz-Correa, Munoz-Leiva, & Bakucz, 2018). To fill this gap, this study investigated the perceived risk of cosmetic surgery tourism (PRCST). Specifically, it aimed to develop a valid and reliable scale to measure the PRCST. Applying the multi-attribute expected utility theory, the study examined the decision-making process of cosmetic surgery tourists by considering perceived risk as a key determinant of medical travel decisions. Furthermore, this study provided information on the personal and behavioral characteristics of cosmetic surgery tourists by investigating the heterogeneity of the cosmetic surgery tourism market with respect to perceived risk. China's outbound cosmetic surgery tourism market was used as the research context.

This research had two objectives: (1) to develop a scale to measure the PRCST and (2) to segment the cosmetic surgery tourism market based on the PRCST, then identify the personal and behavioral characteristics of the different segments. The PRCST scale was developed through a rigorous scale development procedure applying qualitative and quantitative research (Churchill, 1979; DeVellis, 2012; Hu & Bentler, 1999; Lynn, 1986; Su & Parham, 2002). The three main stages of scale development were item generation, scale purification, and scale validation. Subsequently, this study segmented cosmetic surgery tourists based on the PRCST, and profiled the segments obtained in terms of socio-demographic context, past experiences, and cosmetic surgery travel characteristics. It used a hybrid segmentation method combining

latent class (LC) modeling and the chi-square automatic interaction detection (CHAID) algorithm (Magidson & Vermunt, 2005).

The results showed that the multidimensional PRCST scale consisted of 4 dimensions with 19 items: Cost Risk (5 items), Medical Risk (5 items), Vacation Risk (5 items), and Destination Risk (4 items). Cost Risk represented the time and monetary costs associated with cosmetic surgery tourism. Medical Risk represented the problems related to poor surgical outcomes or poor performance of medical service providers. Vacation Risk represented the unfavorable situations encountered by cosmetic surgery tourists after their cosmetic procedures, such as complications, insufficient vacation opportunities, and immigration issues. Destination Risk represented the hostile environment of a cosmetic surgery tourism destination.

In addition, the results revealed that cosmetic surgery tourists were divided into three segments based on the PRCST. These segments were labeled "Risk Neutral," "Risk Concerned," and "Risk Sensitive," and represented 39%, 39%, and 22% of the cosmetic surgery tourism market, respectively. Tourists in these three segments had distinct personal and behavioral characteristics. Specifically, the number of visits to a destination, age, and gender were powerful predictors of the risk perception of cosmetic surgery tourists. In terms of cosmetic surgery travel characteristics, the three segments differed in terms of trip purpose, cosmetic surgery expenditure, length of stay, travel arrangement method, clinic decision horizon, accommodation type, and type of cosmetic procedure.

This study offers several theoretical contributions and practical implications. It contributes to the perceived risk literature by conceptualizing the perceived risk of patient-consumers or patient-tourists in the context of multi-purpose travel decisions and by developing a reliable PRCST scale. It also significantly contributes to the medical tourism literature by broadening knowledge on the risk perception, decision-making, and personal and behavioral characteristics of cosmetic surgery tourists. In addition, it broadens the range of

tourism segmentation methodologies. In terms of practical implications, this empirical study provides advice for marketing practitioners on establishing effective destination marketing strategies to attract Chinese cosmetic surgery tourists with different personal and behavioral characteristics. Moreover, this study helps service providers in the cosmetic surgery tourism industry to develop products suitable for various segments and to deliver quality services by adding value to their cosmetic surgery tourism products.

Keywords: CHAID, cosmetic surgery tourism, perceived risk, scale development, segmentation

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CHAPTER 1. INTRODUCTION

1.1 Chapter Introduction

This chapter presents the background of this study and identifies gaps in the cosmetic surgery tourism literature. Next, it explains the main purpose of the research and its specific objectives. It also identifies the research context. Finally, this chapter provides an overview of the thesis.

1.2 Background

Medical tourism is a growing global phenomenon and has become a multi-billion-dollar industry (Sawaya, 2016). It is generally accepted that medical tourism has flourished over the last decade, and that its growth will continue, but disparities have been observed in the estimates (Lunt et al., 2011). Accurate statistics on medical tourism, such as market size and number of medical tourists, are difficult to confirm due to the different definitions of medical tourism and the lack of authoritative data comparable between countries (Cohen, 2008; Connell, 2013; Health-Tourism.com, 2016; Helble, 2011; Lunt et al., 2011; Taylor, 2015; Woodman, 2016).

Allied Market Research (2016) predicted that the world medical tourism market will be worth US$143.8 billion by 2022, with a compound annual growth rate of 15.7% from 2015 to 2022. In addition, the market size will be between US$45.5 billion and US$72 billion, with a growth rate of 15% to 25%, based on an estimation of approximately 14 million international patients spending between US$3,800 and US$6,000 per visit. Many researchers have agreed that the market will achieve sustained growth, but others have argued that global medical tourism shows no signs of further growth, as it has remained static at around 7 million people for 5 years. Instead, each country's share of the total has changed rapidly (Youngman, 2016).

Medical tourism is a diverse industry. There are different types of medical tourism depending on medical treatment, each with a complex set of patient motivations (Hanefeld, Smith, Horsfall, & Lunt, 2014). Cosmetic surgery tourism is an important and growing area, which falls under the broad concept of medical tourism (Holliday, Bell, Cheung, Jones, & Probyn, 2015; Holliday, Bell, Jones, et al., 2015; Holliday, Bell, Jones, Probyn, & Taylor, 2014). Due to the availability of cheap flights and cosmetic surgery at a fraction of the normal cost, more and more people are undergoing cosmetic surgery abroad (Franzblau & Chung, 2013; Jeevan & Armstrong, 2008; Jenkin, 2014). The number of British people undergoing cosmetic surgery abroad rose by 109% from 2012 to 2014, with cosmetic surgery being a popular activity on vacation (Jenkin, 2014). Cosmetic surgery is one of the main specialties sought by medical tourists, alongside dentistry, health screening, and cardiovascular, orthopedic, cancer, reproductive, and weight loss surgery (Health-Tourism.com, 2016; Lunt et al., 2011; Woodman, 2016).

A survey of 1,000 British patients traveling abroad for medical procedures indicated that 42% went abroad for cosmetic surgery, 32% for dental treatment, and 9% for treatment for obesity (Treatment Abroad, 2013). According to the survey, the most popular cosmetic operations were breast augmentation, facelift, tummy tuck, liposuction, and eyelid surgery. Holliday et al. (2014) pointed out that cosmetic surgery accounts for up to 60% to 70% of all medical tourism procedures, as most dental treatments can be done for cosmetic purposes, and there may be a fine line between health and appearance when conducting obesity surgery. In Australia, cosmetic surgery tourists account for around 85% of all medical tourists (Connell, 2011). Australians spend around US$300 million a year on cosmetic surgery tourism, with around 15,000 people traveling overseas each year to undergo cosmetic procedures (Browne & Enriquez, 2014; SBS, 2013). This study aimed to generate in-depth information on the cosmetic surgery tourism market, given its considerable economic potential.

1.3 Problem Statement

Despite the rapid growth in the number of international patients and extensive media coverage, knowledge of many key characteristics of medical tourists remains limited (Chew & Koeshendro, 2016; Connell, 2013; Hanefeld et al., 2014; Helble, 2011; Lunt et al., 2011). Specifically, little is known about the background and behavior of medical tourists. Lunt et al. (2011) stressed the need to explore the demographic profile, social pattern, and health conditions and status of medical tourists to map the composition of the medical tourism market. Connell (2013) pointed out that the age, gender, and ethnic composition of medical tourist flows are largely unknown. He also called for further analysis of the behavior of medical tourists, such as information gathering, decision-making, length of stay, economic expenditure and activities, experience of medical tourism and medical care, and the extent to which medical and tourist expectations are met.

Similarly, Lunt, Horsfall, and Hanefeld (2016) argued that there is a lack of information on the social, economic, and demographic background of medical tourists, making it difficult to understand patient decision-making and the determinants of travel. In addition, based on the analysis of the thematic evolution of medical tourism research, De la Hoz-Correa et al. (2018) highlighted the need for more investigation of patient characteristics, number of patients traveling abroad, decision-making, sources of information, and perceptions. The same argument can be applied to cosmetic surgery tourists.

In recent decades, the concept of "perceived risk" has established an unprecedented research tradition in consumer behavior research (Mitchell, 1999). Specifically, perceived risk has been shown to be an important determinant of consumer decision-making (Cox & Rich, 1964; Moutinho, 1987). The literature has suggested that perceived risk strongly influences tourist behaviors and travel decisions (Fuchs, Uriely, Reichel, & Maoz, 2013; Lepp & Gibson, 2003; Sharifpour, Walters, Ritchie, & Winter, 2014; Sonmez & Graefe, 1998a, 1998b; Uriely,

Maoz, & Reichel, 2007). Previous research has revealed that tourists' perceived risk is related to various factors, including socio-demographic background, past tourism experiences, and travel characteristics (Lepp & Gibson, 2003; Reisinger & Mavondo, 2006; Sonmez & Graefe, 1998a, 1998b). Thus, it is essential to investigate this critical area to better understand the characteristics and behaviors of medical tourists. However, research on the perceived risk of medical tourists and its relationship to personal and behavioral characteristics is limited.

Cosmetic surgery tourism involves a range of risks. Risk is inherent in tourism and a major and fundamental concern for international travelers (Reisinger & Mavondo, 2005; Yavas, 1990). Regarding the medical aspect, all surgery carries an element of risk, even at the highest level of care (American Society of Plastic Surgeons [ASPS], 2016). Therefore, the act of traveling combined with surgery can significantly increase the potential risks (ASPS, 2016). While many people are attracted to cheap costs and travel abroad to undergo cosmetic surgery, many medical professionals warn of the dangers of cosmetic surgery tourism. They emphasize that patients must make an informed decision before undergoing any procedure abroad (American Society for Aesthetic Plastic Surgery [ASAPS], 2011, 2012; Australian Society of Plastic Surgeons [ASPS], 2017; British Association of Aesthetic Plastic Surgery [BAAPS], 2004, 2009; British Association of Plastic, Reconstructive and Aesthetic Surgeons [BAPRAS], 2008b, 2013). Moreover, the media often report on problems encountered during cosmetic surgery tourism, such as serious infection and even death (e.g., Agence France-Press, 2015; Buncombe, 2014; Head, 2015).

However, previous studies investigating the risk aspect of cosmetic surgery tourism have been limited, mainly analyzing the number and type of complications resulting from cosmetic surgery performed abroad and the associated costs incurred based on patients' assessment and management (Birch, Caulfield, & Ramakrishnan, 2007; Livingston, Berlund, Eccles-Smith, & Sawhney, 2015; Miyagi, Auberson, Patel, & Malata, 2012). In the general

concept of medical tourism, risk-related research topics include risk information provided by medical tourism websites or newspapers (Jun & Oh, 2015; Mason & Wright, 2011; Penney, Snyder, Crooks, & Johnston, 2011), surgical and infectious disease problems (e.g., Kotton, 2011; Rogers, Aminzadeh, Hayashi, & Paterson, 2011; Yakupoglu et al., 2010), ethical and legal issues (e.g., Crooks et al., 2013; Crozier & Martin, 2012; Deonandan, 2015; Hill, 2011), and the effect of risk aversion on tourists' destination decisions (Nugraha, Hamin, & Elliott, 2016).

Given the limited research on the risk of cosmetic surgery tourism, particularly from a demand-side perspective, this study sought to fill this research gap by exploring the perceived risk of cosmetic surgery tourism (PRCST) from the perspectives of tourists. The study defined cosmetic surgery tourism as international travel for two simultaneous purposes, namely vacationing and undergoing cosmetic surgery. It thus examined the concept of perceived risk in the context of multi-purpose travel decisions. Specifically, this research aimed to develop a valid and reliable scale to measure the PRCST by applying the multi-attribute expected utility theory. Considering the PRCST as a key determinant of medical travel decisions, this study attempted to provide more information on the decision-making of cosmetic surgery tourists. In addition, this study aimed to better understand the personal and behavioral characteristics of cosmetic surgery tourists by investigating the heterogeneity of the cosmetic surgery tourism market in terms of perceived risk. As different market segments have different characteristics and needs that determine their personal preferences for the attributes of medical tourism (Chew & Koeshendro, 2016), market segmentation can be an effective way to generate in-depth information on the nature of the cosmetic surgery tourism market.

1.4 Purpose of the Study

The purpose of this study was twofold: (1) to develop and validate a scale to measure PRCST; and (2) to segment the cosmetic surgery tourism market based on the PRCST and identify the personal and behavioral characteristics of the different segments. Using qualitative and quantitative research methods, this research identified the dimensions of perceived risk and the attributes associated with cosmetic surgery tourism, based on which the multidimensional structure of the PRCST construct was determined. Specifically, the PRCST scale was developed through a series of procedures, including item generation, scale purification, and scale validation. Subsequently, this study segmented cosmetic surgery tourists based on the PRCST scale. It also profiled each segment obtained in terms of socio-demographic context, past experiences, and cosmetic surgery travel characteristics.

1.5 Research Objectives

Due to the lack of understanding of the PRCST, this study had the following five research objectives.

- To define the concept of the PRCST;
- To identify the attributes and risk dimensions associated with cosmetic surgery tourism;
- To develop and validate a scale to measure the PRCST;
- To segment cosmetic surgery tourists based on their PRCST;
- To profile the segments obtained in terms of socio-demographic context, past experiences, and cosmetic surgery travel characteristics.

1.6 Research Context

China's outbound medical tourism market is growing rapidly. According to Global Growth Markets (2018), there are more than 500,000 Chinese medical tourists spending at least

US$10 billion a year, and the number of medical tourists should reach 900,000 by 2020. The average amount spent on medical tourism is estimated to be 10 times higher than general outbound travel (Ambler, 2017). China's outbound medical tourism is fueled by rising wealth, an increasingly top-heavy population pyramid, and the proliferation of lifestyle diseases (Read, 2016a, 2016b). The most popular treatments for Chinese medical tourists include cosmetic surgery, health checks, wellness programs, and serious illness treatment (IMTJ, 2017, 2018).

China has become one of the largest outbound medical tourism markets with strong growth potential and massive purchasing power (Juwai, 2016). For most Chinese outbound medical tourists, the main driver is the quality of services, not low prices (IMTJ, 2017). However, a large number of studies have focused on international patient flows from high-income countries to low-cost destinations (Lunt et al., 2016). Due to the different drivers of medical travel, the characteristics of medical tourists may vary across different markets (Holliday et al., 2014). Thus, to better understand this very lucrative market, China's outbound cosmetic surgery tourism market was chosen as the research context.

1.7 Organization of the Thesis

This thesis consists of six chapters: Introduction, Literature Review, Methodology, Results, Discussion, and Conclusions. Chapter 1 introduces the research background and identifies the research gaps of the cosmetic surgery tourism literature. This chapter also presents the purpose of the study, specific research objectives, and the research context. Chapter 2 reviews the relevant literature on medical tourism and cosmetic surgery tourism and the concept of perceived risk. Tourism studies using perceived risk as a segmentation basis and chi-square automatic interaction detection (CHAID) as a segmentation method are also reviewed.

Chapter 3 describes the research design, the study population, and the scale development process used in the study. This chapter also discusses the instrument development, sampling design, data collection procedures, and data analysis methods. Chapter 4 presents the results of the data analysis. Specifically, the results of descriptive statistics, scale purification, scale validation, segmentation, and profiling are presented. Chapter 5 discusses the results in detail based on the PRCST scale, cosmetic surgery tourists' decision-making, and the personal and behavioral characteristics of Chinese cosmetic surgery tourists. The last chapter, Chapter 6, highlights the theoretical contributions and practical implications of the study. It concludes the research by identifying the limitations of the study and providing recommendations for future research. The last section of the thesis provides the references and appendices.

CHAPTER 2. LITERATURE REVIEW

2.1 Chapter Introduction

Chapter 2 conducts a thorough review of the literature on medical tourism and cosmetic surgery tourism, perceived risk, and market segmentation. Specifically, this chapter begins by discussing the current definitions of medical tourism and the typology of medical tourists, based on which cosmetic surgery tourism is defined. In addition, it conceptualizes perceived risk and the PRCST, and reviews previous studies on perceived risk in tourism. The dimensions of perceived risk and the attributes of cosmetic surgery tourism are also identified. Finally, this chapter describes the market segmentation procedure and identifies the gaps in tourism segmentation research in terms of segmentation basis and methods.

2.2 Medical Tourism

2.2.1 Definition of Medical Tourism

There is no universally accepted definition of medical tourism (Connell, 2013, 2015; Kelly, 2013; Stolley & Watson, 2012). In the medical tourism literature, several terms, such as medical tourism, medical health tourism, medical mobility, medical travel, treatment abroad, and cross border health care, seem to be interchangeable when describing this concept. The current lack of consensus on a clear definition of medical tourism and inconsistent terminology have led to conceptual ambiguity in the literature (De La Hoz-Correa et al., 2018). Nevertheless, most accounts have used "medical tourism" as an umbrella term, with medical intervention treated as a key component of overseas travel (Connell, 2015).

Hanefeld, Horsfall, Lunt, and Smith (2013, p. 1) suggested that medical tourism refers to "the phenomenon of people traveling abroad to access medical treatment." Basically, medical tourism can be defined as "the act of traveling abroad to obtain medical care" (Keckley,

2008, p. 4). Carrera and Bridges (2006, p. 447) defined medical tourism as "the organized travel outside one's natural healthcare jurisdiction for the enhancement or restoration of the individual's health through medical intervention." Similarly, Marsek and Sharpe (2009, p. 4) described medical tourism as "the practice of traveling abroad in search of high-quality, low-cost medical care." Smith and Puczko (2009, p. 101) defined the concept as "travel to a destination to undergo medical treatments, such as surgery or other specialist interventions." Compared with these definitions, the definition adopted by the Medical Tourism Association (2013), as follows, is more elaborate.

> Medical tourism is where people who live in one country travel to another country to receive medical, dental, and surgical care while at the same time receiving equal to or greater care than they would have in their own country, and are traveling for medical care because of affordability, better access to care or a higher level of quality of care. (p. 1)

Although many definitions of medical tourism tend to be general and all-encompassing, other definitions emphasize intent (Connell, 2015). Lunt et al. (2011, p. 7) described medical tourism as "consumers elect[ing] to travel across international borders with the intention of receiving some form of medical treatment." Similarly, Johnston, Crooks, Snyder, and Kingsbury (2010, p. 1) defined medical tourists as "patients leaving their country of residence outside of established cross-border care arrangements with the intent of accessing medical care, often surgery, abroad." According to Ramirez de Arellano (2007), medical tourism involves patients intentionally traveling abroad to obtain medical services outside of formal cross-border care arrangements, which are typically paid out of pocket. Consequently, medical tourists can be considered as "patient-consumers" or "patient-tourists" who make personal decisions and move of their own volition (Connell, 2015; Lunt & Carrera, 2010). Given the notion of

deliberate movement for medical care across international borders, medical tourism is elective and discretionary, and therefore mainly self-funded (Connell, 2015).

Several definitions reflect the notion of tourism, rather than simply referring to medical treatment through travel. According to the World Tourism Organization, "tourism is a social, cultural, and economic phenomenon, which entails the movement of people to countries or places outside their usual environment for personal or business/professional purposes […] and tourism has to do with their activities (2014, p. 1)." Jagyasi (2008, p. 10) also defined medical tourism as "the set of activities in which a person travels often long distance or across the border to avail medical services with direct or indirect engagement in leisure, business, or other purposes." Jenner (2008, p. 236) described medical tourism as "the blending of tourism and medical treatment for both elective and necessary surgical and medical procedures as well as for dental procedures."

Furthermore, several definitions combine the purpose of medical treatment with that of vacation, linking medical travel with pleasure. For instance, Connell (2006, p. 1094) defined medical tourism as an industry "where people travel often long distances to overseas countries to obtain medical, dental, and surgical care while simultaneously being holidaymakers, in a more conventional sense." According to Cohen (2008, p. 25), "the term medical tourism applies to people who travel to another country for medical treatment, which they will often combine with a vacation, or to people who take the opportunity to receive such a treatment in the course of a vacation." Similarly, Heung, Kucukusta, and Song (2010, p. 236) referred to medical tourism as "a vacation that involves traveling across international borders to obtain a broad range of medical services. It usually includes leisure, fun, and relaxation activities, as well as wellness and health-care service."

Although most definitions agree that medical tourism refers to traveling abroad for medical services, there is no consensus on the types of medical treatments involved (Tourism

Research and Marketing, 2006). Reddy, York, and Brannon (2010) proposed that medical tourism involves elective procedures rather than emergency situations. Crooks, Kingsbury, Snyder, and Johnston (2010) and Al-Hinai, Al-Busaidi, and Al-Busaidi (2011) also considered medical tourism as the pursuit of non-emergency medical interventions. Singh (2008) argued that the medical treatments for which patients travel abroad include not only elective surgery, such as cosmetic surgery and dental operations, but also complex procedures, such as heart surgery and knee/hip replacements. Moreover, Heung et al. (2010) suggested that preventive medical services, such as medical check-up and health screening, may fall within the scope of medical tourism. According to Horowitz, Rosensweig, and Jones (2007), procedures for which patients pursue medical tourism include cosmetic surgery, dental procedures, bariatric surgery, assisted reproductive technology, ophthalmic care, orthopedic surgery, cardiac surgery, organ and cell transplantation, gender reassignment procedures, and executive health evaluations. Medical tourism involves a full range of medical services, the most common treatments being dental care, cosmetic surgery, elective surgery, and fertility treatment (OECD, 2010).

2.2.2 Typology of Medical Tourists

Given that there is no single universal definition of medical tourism and that the current definitions are only valid in specific circumstances, the identity and number of medical tourists in the market are unknown (Connell, 2013). The definition of medical tourists can vary depending on the perspective of those defining them (Wongkit & McKercher, 2013). In tourism studies, medical tourists have been described as travelers dedicated to receiving medical treatment or combining vacation with medical treatment (e.g., Connell, 2006; Heung et al., 2010). Medical professionals argue that traveling abroad for medical treatment cannot be considered a vacation; thus medical tourists are defined as people who travel abroad solely to seek medical services (Brotman, 2010; Medical Tourism Association, 2013; Nahai, 2009). It

is generally accepted that seeking medical treatment plays a key role in whole or in part in medical tourists' decision-making (Bookman & Bookman, 2007; Cohen, 2008; Pope, 2008).

Medical tourism research has generally treated medical tourists as a homogenous group, but only a few attempts have been made to develop the typology of medical tourists (Cohen, 2008; Wongkit & McKercher, 2013). Based on the extent to which medical treatment influences tourists' vacation travel decisions, Cohen (2008) developed a five-stage typology (Figure 2.1): a "mere tourist," who does not use medical services while on vacation in the host country; a "medicated tourist," who receives incidental medical treatment for health problems occurring in the host country; a "medical tourist proper," whose visit to the host country includes tourism and medical treatment (i.e., tourists who visit the country with the intention of receiving treatment while on vacation and who decide on treatment once in the country); a "vacationing patient," who visits the host country mainly to receive medical treatment, while making incidental use of vacationing opportunities during the convalescence period following an operation or specific treatment; and a "mere patient," who visits the host country only for medical treatment and makes no use of vacationing opportunities.

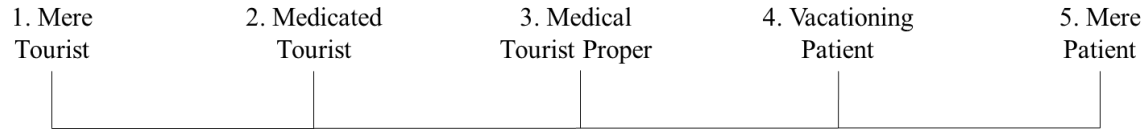

Figure 2.1 Cohen's (2008) Medical Tourist Typology

This typology identifies different types of medical tourists, each displaying different motivations and behaviors during trips. However, as most definitions of medical tourism emphasize deliberate movement to visit a destination for medical care (Connell, 2013), tourists who require medical treatment due to unexpected illness or accidents during a trip, expatriates, and other long-term foreign residents (e.g., retirees) should not be considered medical tourists

(Connell, 2013; Pope, 2008; Reddy et al., 2010). Wongkit and McKercher (2013) argued that Cohen's (2008) typology is a useful but problematic framework, as two of the five types (i.e., "mere tourist" and "medicated tourist") do not fit with the generally accepted definition of medical tourists. Thus, excluding mere tourists and medicated tourists from the categories of medical tourists is appropriate. Despite the crucial achievement in understanding medical tourists, no empirical evidence has been provided to support this argument.

Examining tourists who sought medical treatment in Thailand, Wongkit and McKercher (2013) identified four groups of medical tourists based on two dimensions, trip purpose and decision horizon (Figure 2.2). A "dedicated medical tourist" regards medical treatment as the main reason for traveling or as an equally important reason as traveling for pleasure, and decides to seek treatment before departure. A "hesitant medical tourist" regards treatment as the main or an equally important reason for traveling, but decides to obtain treatment after arrival. A "holidaying medical tourist" travels mainly for vacation purposes, but decides to seek treatment before departure. Finally, an "opportunistic medical tourist" travels mainly for vacation purposes, only deciding to seek treatment after arrival. Wongkit and McKercher (2013) found significant differences in the profile, travel characteristics, types of treatment sought, motivations for visiting Thailand, and decision-making process between the four groups, confirming the heterogeneity of the medical tourism market.

They also stated that 42% of the respondents in the holidaying and opportunistic medical tourist segments indicated that vacation was the main or only reason for their trip. In addition, the hesitant and opportunistic medical tourist segments included almost 40% of the respondents (Wongkit & McKercher, 2013), implying that medical tourists who decide to seek treatment after arriving at the destination represent a significant proportion of the market. Wongkit and McKercher (2013) also noted that their results contradicted the assumptions of

previous studies (Bookman & Bookman, 2007; Keckley, 2008), suggesting that seeking treatment is the main purpose of a trip and that medical tourism is a pre-planned activity.

Trip Purpose / Decision Horizon	Medical (equally or exclusively for treatment)	Pleasure Trip (mainly or exclusively for pleasure)
Pre-planned Treatment	Dedicated Medical Tourist	Holidaying Medical Tourist
Decision after Arrival	Hesitant Medical Tourist	Opportunistic Medical Tourist

Figure 2.2 Wongkit and McKercher's (2013) Medical Tourist Typology

Connell (2013) proposed a complex framework comprising five categories, which are not necessarily mutually exclusive, from the perspective of patient mobility. This categorization combined the concepts of intent, procedure, and duration. First, elite patients travel for exclusive and expensive medical treatment, which is a century-long tradition in medical tourism. Second, middle-class patients or a "second tier of wealthy patients" (Bookman & Bookman, 2007, p. 54) travel for cheap and necessary services or cosmetic procedures, widely discussed in the literature. Third, diasporic patients who differ in socioeconomic status return to their home country for medical care due to various issues, including political, economic, and cultural reasons. Fourth, cross-border patients seek cheap, fast, and culturally sensitive or reliable care across a nearby border rather than traveling long distances. Such cross-border flows are common in Europe (Lunt & Carrera, 2010). Finally, reluctant medical tourists have to pay considerable personal costs, and desperate medical tourists seek last resort or unavailable health care in their home country.

Although this typology is arbitrary and crude, and lacks reliable data, it is useful for understanding the complex structure of the medical tourism market. This typology indicates that medical tourist flows are multidirectional, with some patients leaving as others arrive in

specific countries (Connell, 2013). Connell (2013) mainly focused on conceptualizing cross-border patient mobility for medical care by examining the whole international market, while Cohen (2008) and Wongkit and McKercher (2013) identified different types of medical tourists based on specific factors (i.e., the degree of vacation, trip purpose, and decision horizon) and focusing on a single destination. Given the diversity and complexity of medical tourism, other ways to segment or differentiate the medical tourism market should be considered.

2.2.3 Cosmetic Surgery Tourism

Cosmetic surgery is a common treatment undergone by medical tourists (Horowitz et al., 2007; OECD, 2010; Reddy et al., 2010). The meaning of cosmetic surgery should be clarified to investigate cosmetic surgery tourism. The terms "cosmetic surgery" and "plastic surgery" are often used interchangeably, creating confusion and leading to misconceptions (American Academy of Cosmetic Surgery [AACS], 2014; American Board of Cosmetic Surgery [ABCS], 2016; Edwards, 2014).

Although both cosmetic surgery and plastic surgery are aimed at improving a patient's body, their overarching goals for patient outcomes are different (ABCS, 2016). Plastic surgery involves the repair, reconstruction, or replacement of physical defects in shape or function due to birth disorders, trauma, burns, or disease (AACS, 2014; American Board of Plastic Surgery (ABPS), 2016). That is, plastic surgery is performed on dysfunctional areas of the body to reconstruct normal function and appearance (ABCS, 2016). Reconstructive procedures are often considered medically necessary and can therefore be covered by health insurance (Edwards, 2014).

In contrast, cosmetic surgery is entirely focused on enhancing appearance through surgical and medical techniques; its main objective is to improve esthetic appeal, symmetry, and/or proportion (AACS, 2014; ABCS, 2016). As the procedures are performed on parts of

the body that function properly, cosmetic surgery is elective (AACS, 2014). Cosmetic surgery can be performed on all areas of the body to enhance appearance, and the scope of cosmetic surgery procedures includes facial contouring and rejuvenation, body contouring, breast enhancement, and skin rejuvenation (ABCS, 2016). In addition, the esthetic enhancement of the face and body can be achieved through not only invasive surgical procedures, but also various non-surgical procedures. Table 2.1 presents a wide variety of surgical and non-surgical cosmetic procedures. This study focused on cosmetic surgery, with the term "cosmetic surgery" referring to all types of esthetic procedures performed to improve one's appearance.

Table 2.1 Cosmetic Surgery Procedures

	Type of Cosmetic Procedure	
Surgical Procedures	Face and Head	Brow Lift
		Ear Surgery
		Eyelid Surgery
		Facelift
		Facial Bone Contouring
		Fat Grafting—Face
		Neck Lift
		Hair Transplantation
		Rhinoplasty
	Breast	Breast Augmentation—Saline/Silicone/Fat Transfer
		Breast Implant Removal
		Breast Lift
		Breast Reduction
		Gynecomastia
	Body and Extremities	Abdominoplasty
		Buttock Augmentation—Implants/Fat Transfer
		Buttock Lift
		Liposuction
		Lower Body Lift
		Penile Enlargement
		Thigh Lift

		Type of Cosmetic Procedure
		Upper Arm Lift
		Upper Body Lift
		Labiaplasty
		Vaginal Rejuvenation
Non-surgical Procedures	Injectables	Botulinum Toxin
		Calcium Hydroxylapatite
		Hyaluronic Acid
		Poly-L-Lactic Acid
	Facial Rejuvenation	Chemical Peel
		Full Field Ablative
		Micro-ablative Resurfacing
		Dermabrasion
		Microdermabrasion
		Non-surgical Skin Tightening
		Photo Rejuvenation
		Polymethyl Methacrylate
	Other	Cellulite Treatment
		Hair Removal
		Non-surgical Fat Reduction
		Tattoo Removal
		Leg Vein Treatment
		Sclerotherapy

Source: International Society of Aesthetic Plastic Surgery (2016).

Cosmetic surgery tourism, a subtype of medical tourism, is generally defined as travel to access procedures to enhance one's appearance (Casanova & Sutton, 2013; Holliday & Bell, 2015; Jones et al., 2014). As cosmetic surgery is considered an elective medical service, it is neither offered by public health care nor covered by private health insurance (Holliday & Bell, 2015; Holliday, Bell, Cheung, et al., 2015). In most cases, cosmetic surgery patients pay for their own procedures, making cost an important consideration; many choose to travel abroad to obtain cheap procedures (Holliday & Bell, 2015; Holliday, Bell, Cheung, et al., 2015). Other people travel abroad to access high-quality cosmetic surgery, which is expensive or unavailable

at home (Holliday & Bell, 2015; Holliday et al., 2014). Cost is an important driver of the former, while quality and availability are the drivers of the latter.

In addition, diasporic patient movements may occur, such as members of Korean diasporas returning to their home country to seek cosmetic procedures (Connell, 2013; Holliday & Elfving-Hwang, 2012; Holliday et al., 2014). Cosmetic surgery tourist flows and the purpose of patient mobility are diverse: middle and lower middle class individuals travel from developed countries for cheap services, elites and the middle class travel to less developed countries for good quality surgical procedures, and socioeconomically diverse diasporas return home from many regions for different reasons.

Different geographical trends exist in cosmetic surgery tourism. Cosmetic surgery tourism is largely regional, as patients often travel short distances or across nearby borders (Holliday et al., 2014). Diasporic cosmetic surgery tourism can involve long-distance travelers and cross-border patients. For instance, most European cosmetic surgery tourists travel to Belgium, Poland, Spain, and the Czech Republic; Japanese and Chinese people travel to South Korea; and Americans head south to Latin America. This indicates that popular cosmetic surgery destinations are likely the leading centers for specific regions (Senior, 2013). Moreover, the types of procedures undertaken vary considerably by region due to the different esthetic perceptions of body image in the East and the West or across countries. Breast augmentation, tummy tuck, and liposuction are the most popular procedures among British and Australian patients, while eyelid, jawbone, and nose surgery are the most common procedures among Chinese patients traveling to South Korea (Holliday et al., 2014).

As cosmetic surgery trips are marketed as vacation, cosmetic surgery tourism is often considered the practice of undergoing surgery combined with the practice of holidaying (ASPS, 2016). Many companies offer all-inclusive vacation packages that include surgery plus recuperation in a beautiful resort, luxurious hotel, or specialized retreat, together with tourist

activities, such as sightseeing for patients and traveling companions (ASPS, 2016; Bell, Holliday, Jones, Probyn, & Taylor, 2011). Websites and promotional materials frequently feature tourist images of the beach, the sun, and women in bikinis foregrounding the tourist experience, along with images of surgical components, such as state-of-the-art medical facilities, clinic exteriors, and smiling nurses (Holliday, Bell, Jones, et al., 2015). The idea of vacation plays a key role in the cosmetic surgery tourism industry, at least in terms of marketing cosmetic surgery tourism, highlighting that the experience can be pleasurable. However, concerns about the combination of surgery and vacation have been raised. Nahai (2009, p. 106), a plastic surgeon, stressed that "while we appreciate the involvement of the travel and hotel industries, we must never lose sight of the fact that traveling abroad for a medical procedure is not a vacation, it is surgery."

Regardless of whether patients perceive their trip as a cosmetic surgery vacation, they are directly or indirectly involved in the practice of holidaying, ranging from relaxation to engaging in various tourist activities (e.g., shopping and visiting local attractions; Holliday et al., 2014). Consequently, the experiences of cosmetic surgery tourists can vary. For instance, cosmetic surgery tourists who undertake relatively simple procedures may have the opportunity to engage in cultural, leisure, or other tourist activities in the destination. Conversely, when patients undergo complex procedures, they may be required to have a long recovery period, so that they can enjoy rest and recovery time after surgery. Various factors, such as accompanying party, duration of the trip, and risk perception, can affect the cosmetic surgery tourism experience. For people on budget travel without a vacation attached to their cosmetic surgery tourism, their experience may not be luxurious or pleasant (Bell et al., 2011; Holliday, Bell, Cheung, et al., 2015). Clearly, the motives, practices, and experience of cosmetic surgery tourism are diverse (Bell et al., 2011). This study defined cosmetic surgery tourism as the

movement of people to cosmetic surgery tourism destinations to access cosmetic surgery procedures to enhance their appearance with direct or indirect engagement in vacation.

2.3 Perceived Risk

2.3.1 Risk and Decision Theory

Risk has become one of the main topics in diverse fields, such as engineering, medicine, economics, social science, and psychology (Roeser, Hillerbrand, Sandin, & Peterson, 2012). In risk research, decision theory has widely been applied to explain rational decision-making under uncertainty. Decision theory can be divided into two branches: normative decision theory, which tells how people ought to make decisions in situations involving choice of alternatives, and descriptive decision theory, which describes how people actually make the decisions they do (Rapoport, 1994). Decision theory is used primarily for the normative notions about rational decision-making (Roeser et al., 2012). In classical decision theory, risk is commonly conceived as the variation in distribution in possible outcomes, likelihoods, and subjective values (March & Shapira, 1987).

Expected utility theory is the dominant model for the analysis of optimal decision-making under risk (Eeckhoudt & Louberge, 2012). The main principle of this theory is expected utility maximization. According to this theory, an individual makes decisions under risk as if he or she has maximized the expected utility of the outcomes (Von Neumann & Morgenstern, 1944). Therefore, rational choices in risky situations are driven by the maximization of subjective expected utility (Savage, 1972). The utility function reflects his or her subjectivity, which in turn defines his or her response to risk (Friedman & Savage, 1948). Rational decisions are determined by a combination of the decision maker's desires and beliefs—desires determining the utility of possible outcomes and beliefs determining the probabilities of outcomes—from which expected utility arises (Sahlin, 2012). Although a

number of alternative theories have been developed, “none of them has received widespread acceptance so far, and none has proved as fruitful and flexible as expected utility theory in the development of models explaining various features of economic life” (Eeckhoudt & Louberge, 2012, p. 116).

The multi-attribute utility theory, which combines psychological measurement models and scaling procedures, can be used to analyze preferences among available alternatives with multiple value relevant attributes (von Winterfeldt & Fischer, 1975). According to this theory, a decision maker evaluates each alternative based on its multiple attributes to make an overall evaluation of this alternative, then compares the overall evaluation of different alternatives to reach a decision (Weirich, 2012). Specifically, for a decision under risk in which the alternative involves uncertainty in outcomes, the multi-attribute expected utility theory can be applied to evaluate alternatives (von Winterfeldt & Fischer, 1975). In a choice situation, risk can be explained in terms of possible loss (Moutinho, 1987), which is proportional to the degree of mismatch between the required and the expected level of an attribute (Mitchell, 1999). In other words, risk can be interpreted in terms of the probability that the attribute will fail to meet the required level of performance (Mitchell, 1999). While operationalizing consumers’ perceived risk has resulted in various measurement models (Cunningham, 1967; Dowling & Staelin, 1994; Horton, 1976; Peter & Ryan, 1976; Pras & Summers, 1978; Stone & Winter, 1987), a number of models adopt a multi-attribute evaluation approach (Dowling & Staelin, 1994; Pras & Summers, 1978).

The notion of risk first appeared in a consumer behavior study by Bauer (1960), who noted that “consumer behavior involves risk in the sense that any action of a consumer will produce consequences which he cannot anticipate with anything approximating certainty, and some of which at least are likely to be unpleasant” (p. 390). He strongly emphasized that subjective (i.e., perceived) risk was his only concern, not actual or objective risk. Mitchell

(1999) also proposed that risk is complex and potentially changeable, making an accurate measure of objective risk difficult to obtain. However, subjective risk, perceived by consumers and motivating their behavior, can be assessed.

The concept of perceived risk is often defined in terms of consumers' perception of uncertainty and possible adverse consequences (Cox, 1967; Cox & Rich, 1964; Dowling & Staelin, 1994). Kogan and Wallach (1964) suggested that the concept of risk has two facets: a chance aspect, focusing on probability, and a danger aspect, focusing on the severity of negative consequences. Similarly, Cunningham (1967) conceptualized perceived risk in terms of the uncertainty and dangerousness of consequences; that is, "the amount that would be lost (i.e. that which is at stake) if the consequences of an act were not favorable, and the individual's subjective feeling of certainty that the consequences will be unfavorable" (p. 37). From a psychological perspective, Stone and Winter (1987) defined risk as a subjectively determined expectation of loss by consumers: the greater the probability of loss, the higher the risk for an individual. In the field of tourism, Tsaur, Tzeng, and Wang (1997) defined perceived risk as the possibility of severe conditions experienced by tourists during travel and at the destination.

Research has shown that services are riskier than products due to their higher level of uncertainty (Mitchell & Greatorex, 1993). The inherent properties of services that are intangible and work differently depending on the producer and those simultaneously consumed during production (Parasuraman, Zeithaml, & Berry, 1985) undermine consumers' confidence in their decisions and increase their perceived risk (Mitchell, 1999). Although there are different types of risk, consumers perceive all types as higher in the context of services than in that of goods (Murray & Schlater, 1990).

2.3.2 Conceptualization of PRCST

Given its significant power to explain decision-making under risk, the multi-attribute expected utility theory was used in this study. In the context of cosmetic surgery tourism, a cosmetic surgery patient-consumer will first decide whether to undergo cosmetic surgery at home or abroad. When choosing the cosmetic surgery tourism option, the cosmetic surgery tourist will make sub-decisions regarding the choice of destination, hospital/clinic, type of procedure, transportation, accommodation, activities, and so on. When doing this, the cosmetic surgery tourist will assess the utility of different alternatives with respect to various attributes to choose the alternative that maximizes the expected gains. To make a final decision, the cosmetic surgery tourist will face a certain degree of risk involved in the decision, namely that the desired levels of the attributes are not obtained from the choice.

Cosmetic surgery tourism can be seen as purchasing services for two purposes: undergoing cosmetic surgery and having a vacation. Therefore, decision-making in cosmetic surgery tourism involves a series of choices associated with both aspects. The assessment of alternatives includes the analysis of a variety of factors in relation to cosmetic surgery (e.g., cost, quality, hospital, and expertise) and vacation (e.g., time, destination, accommodation, attractions, and arrangements). Accordingly, the process of evaluating the various attributes of different alternatives in a cosmetic surgery tourism decision is more complex than that of purchasing a single good or service. Therefore, the perceived risk of cosmetic surgery tourism attributes is higher. It is important to note that this was the first study to examine perceived risk in the context of multi-purpose travel decisions.

Although perceived risk has been conceptualized in the literature primarily in terms of two components, probability and adverse consequences, Taylor (2012) argued that a time frame is a prerequisite for risk assessment, as the range of adverse events and the probability of occurrence can change over time. Therefore, to obtain a holistic view of the purchase and

consumption of the end product of cosmetic surgery tourism, the time frame for the PRCST assessment included the planning and preparation phase at destination and until complete recovery after surgery. The reason for including the recovery period not only in the destination country but also in the home country was that unlike general tourists, patient-tourists may face potential surgery-related problems after returning home from a cosmetic surgery trip. For instance, cosmetic surgery tourists may experience complications or surgery gone wrong after returning home, which may require postoperative care or revision surgery, causing time and financial losses. Therefore, in this study, the PRCST was defined as cosmetic surgery tourists' subjective assessment of potential adverse events and/or losses that occur in the purchase and consumption of cosmetic surgery tourism services.

2.3.3 Perceived Risk in Tourism

Generally, perceived risk is measured as a multidimensional construct: financial, performance, physical, social, psychological, time, and satisfaction risks (Cheron & Ritchie, 1982; Jacoby & Kaplan, 1972; Roselius, 1971). These types of risks have been used in many empirical studies of consumer perceived risk (Brooker, 1984; Cheron & Ritchie, 1982; Kaplan, Szybillo, & Jacoby, 1974; Laroche, McDougall, Bergeron, & Yang, 2004; Mitra, Reiss, & Capella, 1999; Peter & Tarpey, 1975; Stone & Gronhaug, 1993; Stone & Mason, 1995).

In the tourism literature, a number of studies have examined perceived risk in international travel and its relationship to travel behavior (Floyd & Pennington-Gray, 2004; Lepp & Gibson, 2003; Reisinger & Mavondo, 2005, 2006; Ritchie, Chien, & Sharifpour, 2017; Roehl & Fesenmaier, 1992; Seabra, Dolnicar, Abrantes, & Kastenholz, 2013; Sonmez & Graefe, 1998a, 1998b). The literature has suggested that risk perception is situation specific and should therefore be investigated using measures appropriate to the context of interest (Roehl & Fesenmaier, 1992). When evaluating a situation, an individual pays more attention

to certain risk dimensions than others, as specific risk dimensions are more important when making decisions (Slovic, 1972; Slovic & Lichtenstein, 1968a, 1968b). Thus, risk perception can vary depending on the types of risks perceived and their relative importance (Reisinger & Mavondo, 2005). Accordingly, perceived risk should be evaluated taking into account a particular situation encountered by an individual (Park & Tussyadiah, 2017).

As one of the first studies on perceived risk in tourism, Roehl and Fesenmaier (1992) investigated risk perceptions associated with pleasure travel. Specifically, they focused on the perception of risk occurring on vacation in general and the perception of risk occurring during the most recent trip. They included seven types of perceived risk: (1) equipment risk, the possibility of mechanical, equipment, or organizational problems occurring during travel or at destination (e.g., transportation, accommodation, and attractions); (2) financial risk, the possibility that the travel experience does not provide value for money; (3) physical risk, the possibility of physical danger or injury detrimental to health (e.g., accidents); (4) psychological risk, the possibility that the travel experience does not reflect a person's personality or self-image (i.e., disappointment with the travel experience); (5) satisfaction risk, the possibility that the travel experience does not provide personal satisfaction/self-actualization (i.e., dissatisfaction with the travel experience); (6) social risk, the possibility that the travel choice/experience affects others' opinion of the individual (i.e., disapproval of vacation choices or activities by friends/family/associates); and (7) time risk, the possibility that the travel experience takes too long or otherwise waste time. Using psychophysical scaling methods and multivariate analysis, Roehl and Fesenmaier (1992) identified three dimensions of perceived risk, namely physical-equipment, vacation, and destination risks. Their results suggested that the situational component influences risk perceptions, in turn influencing travel behavior.

Sonmez and Graefe (1998a) examined the effects of past international travel experiences, the types of risks associated with international travel, and the overall degree of

safety felt during international travel on individuals' likelihood of traveling or avoiding certain geographic regions during their next international vacation. To measure risk perception in international travel, they used 10 types of risks. Seven of them (i.e., equipment/functional, financial, physical, psychological, satisfaction, social, and time risks) were adopted from previous studies (Cheron & Ritchie, 1982; Roehl & Fesenmaier, 1992). Sonmez and Graefe (1998a) added three other types of risks: (1) health risk, the possibility of falling ill while traveling or at destination; (2) terrorism risk, the possibility of being involved in a terrorist act; and (3) political instability risk, the possibility of becoming involved in the political turmoil of the country visited. They showed that past travel experiences and risk perceptions influence future travel behavior. Moreover, perceived risk and safety have a greater effect on the avoidance of certain regions than on the likelihood of traveling to these regions (Sonmez & Graefe, 1998a). In contrast, past travel experiences have a greater influence on behavioral intentions. Another study by Sonmez and Graefe (1998b) revealed that international travel attitude, risk perception level, and income directly influence the choice of destination.

Lepp and Gibson (2003) identified the perceived risk factors associated with international tourism and examined the effect of tourist role, past experiences, and gender on risk perception. They identified seven perceived risk factors, namely health, political instability, terrorism, strange food, cultural barrier, political and religious dogma, and crime. The results revealed that tourist role is the most important characteristic in relation to risk perception; tourists seeking familiarity are the most risk averse. In terms of gender and travel experience, more experienced tourists downplay the threat of terrorism and women perceive higher risks associated with health and strange food.

Reisinger and Mavondo (2005) investigated the relationship between cultural and psychographic factors, travel risk perception, anxiety, safety perception, and intention to travel. Risk perception was measured using 13 types of travel risk, namely cultural,

equipment/functional, financial, health, physical, political, psychological, satisfaction, social, airplane hijacking, bomb explosion, biochemical attack, and time, which generated three underlying dimensions of perceived risk: terrorism, health and financial, and sociocultural risks. Comparing Australian and international tourist groups, Reisinger and Mavondo (2005) showed that travel risk perception is a function of cultural orientation and psychographic factors and anxiety is a function of a type of perceived risk. In addition, terrorism and sociocultural risks are the most significant predictors of travel anxiety. Examining cultural differences in travel risk perception, Reisinger and Mavondo (2006) suggested that there are significant differences in travel risk perception, safety perception, anxiety, and travel intention among tourists from different countries.

Many studies have explored perceived risk associated with international tourism in general, while others have focused on specific tourism areas, such as backpacking (Dayour, Park, & Kimbu, 2019; Reichel, Fuchs, & Uriely, 2009), air travel (Boksberger, Bieger, & Laesser, 2007), online airline reservations or airline ticket purchases (Cunningham, Gerlach, Harper, & Young, 2005; Kim, Kim, & Leong, 2005; Kim, Qu, & Kim, 2009), destination (Fuchs & Reichel, 2006), mobile travel booking (Park & Tussyadiah, 2017), festival (Sohn, Lee, & Yoon, 2016), and street food (Choi, Lee, & Ok, 2013). Several risk types relevant to a particular research context have been identified. For example, in the context of mobile booking, Park and Tussyadiah (2017) identified seven dimensions of perceived risk, including time, financial, performance, privacy/security, psychological, physical, and device risks. In a study examining consumers' risk perception of street food, Choi et al. (2013) investigated five risk types, including socio-psychological, hygienic, financial, environmental, and health risks. Table 2.2 summarizes the different perceived risk dimensions used in empirical research.

Table 2.2 Summary of Previous Studies on Perceived Risk

Author(s)	Perceived risk dimensions									
	Financial	Time	Performance	Functional	Health	Physical	Satisfaction	Cultural	Social	Psychological
Cheron and Ritchie (1982)	×	×	×			×	×		×	×
Roehl and Fesenmaier (1992)	×	×		×		×	×		×	×
Sonmez and Graefe (1998a)	×	×		×	×	×	×		×	×
Sonmez and Graefe (1998b)	×	×		×	×	×	×		×	×
Lepp and Gibson (2003)					×			×		
Reisinger and Mavondo (2005)	×	×		×	×	×	×	×	×	×
Reisinger and Mavondo (2006)	×	×	×	×	×	×	×	×	×	×

Author(s)	Perceived risk dimensions									
	Financial	Time	Performance	Functional	Health	Physical	Satisfaction	Cultural	Social	Psychological
Kim et al. (2009)	×	×	×			×			×	×
Seabra et al. (2013)	×	×		×	×	×	×		×	
He et al. (2013)	×	×		×	×	×	×		×	×
Choi et al. (2013)	×				×				×	×
Chew and Jahari (2014)	×					×			×	×
Park and Tussyadiah (2017)	×	×	×			×				×
Dayour et al. (2019)	×	×	×						×	×

Note: Only the 10 dimensions of perceived risk used in this study are presented. The dimensions associated with a specific research context are not included in the table.

In addition to conceptualizing perceived risk, previous research has identified the relationship between perceived risk and diverse factors, including demographics and travel experiences. Various demographic variables have been shown to influence tourists' risk perception. For example, Lepp and Gibson (2003) indicated that men perceive less risk than women. In terms of age, gender, and employment status, Floyd and Pennington-Gray (2004) found that tourists who perceive high risk are generally young, female, and unemployed or employed part-time. Reisinger and Mavondo (2006) reported similar results, indicating that age and gender are related to risk perception. In addition, Sonmez and Graefe (1998b) showed that the level of education and income have indirect effects on risk perception through travel experiences. However, they presented results inconsistent with other studies, as gender and age did not influence an individual's risk perception in their sample. In terms of past travel experiences, less experienced tourists perceive higher risk than those with more experience (Lepp & Gibson, 2003; Sonmez & Graefe, 1998b).

Risk perception has also been shown to be significantly related to travel characteristics. According to Roehl and Fesenmaier (1992), risk neutral individuals are more likely to visit a destination they have not visited before and to seek adventure and excitement and less likely to stay at friends or relatives' home during their trip. In contrast, individuals who perceive high risk show different characteristics, such as repeat visit, short stay, and travel with young children. Lepp and Gibson (2003) revealed that familiarity-seeking individuals perceive high risk. In addition, Sonmez and Graefe (1998a) found that perceived risk is a strong predictor of destination choice, especially in terms of avoiding a particular region.

The literature has suggested that the association between the PRCST and factors such as socio-demographic context, past experiences, and travel characteristics should be taken into account to better understand the personal and behavioral characteristics of cosmetic surgery tourists. Based on this discussion, the conceptual framework of this study was developed, as

shown in Figure 2.3. The attributes associated with cosmetic surgery tourism and the potential dimensions of the PRCST are discussed in the following section.

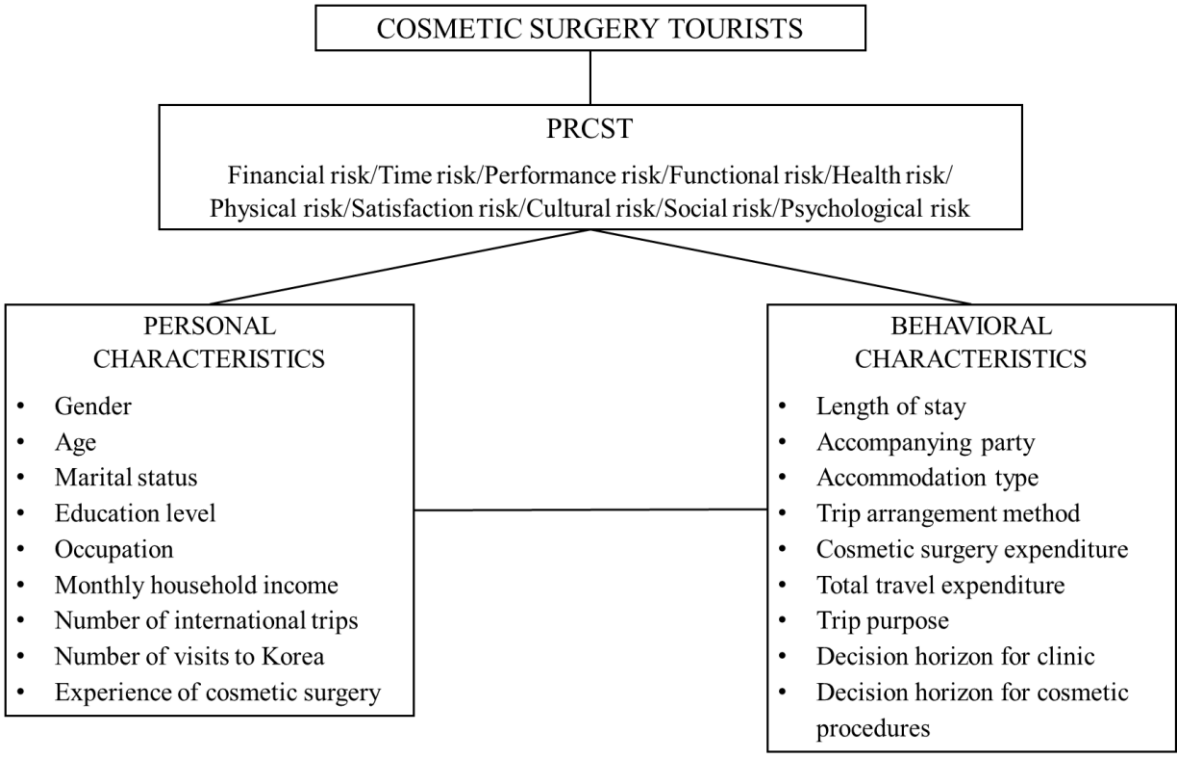

Figure 2.3 Conceptual Framework

2.3.4 Attributes and Risk Dimensions Associated with Cosmetic Surgery Tourism

This study applied the multi-attribute approach to develop a PRCST scale. In a multi-attribute utility model, a set of attributes depending on the options evaluated is a critical component. For a reliable application of the multi-attribute approach to risk, this set of attributes must be complete, operational, decomposable, non-redundant, and minimal (Keeney & Raiffa, 1993). Accordingly, this section discusses a variety of attributes associated with cosmetic surgery tourism.

As little research has investigated the perceived risk associated with cosmetic surgery tourism, this study identified all possible risk dimensions in cosmetic surgery tourism based on an in-depth literature review. The construct domain of the PRCST was initially based on 10

dimensions adopted from previous studies (Reisinger & Mavondo, 2006; Sonmez & Graefe, 1998a), namely financial, time, performance, functional, health, physical, satisfaction, cultural, social, and psychological risks. Table 2.3 presents the definition of each potential dimension of the PRCST examined in this study. A wide range of attributes and the appropriateness of the risk dimensions in the context of cosmetic surgery tourism were confirmed through in-depth interviews and an expert panel review.

Table 2.3 Conceptual Definition of the Potential Dimensions of PRCST

Dimensions	Definitions
Financial Risk	Possibility of not obtaining value for money; losing or wasting money if the expectations of cosmetic surgery tourism are not met
Time Risk	Possibility that the cosmetic surgery tourism experience may take too long; that cosmetic surgery tourists may lose or waste time
Performance Risk	Possibility of not receiving benefits due to the end product or poor service performance of cosmetic surgery tourism; possibility that the expectations of cosmetic surgery tourism are not met
Functional Risk	Possibility of problems related to organizational inefficiency, equipment, and regulations and laws during a cosmetic surgery trip or at the destination
Health Risk	Possibility that cosmetic surgery tourists fall ill due to the cosmetic surgery procedure during a cosmetic surgery trip or after returning home
Physical Risk	Possibility of physical danger or injury due to a hostile environment during a cosmetic surgery trip or at the destination
Satisfaction Risk	Possibility of not achieving personal satisfaction/self-actualization from cosmetic surgery tourism
Cultural Risk	Possibility of experiencing difficulties in communicating with service providers or locals; cultural misunderstanding; negative consequences due to different esthetic perceptions/beauty standards

Dimensions	Definitions
Social Risk	Possibility that the choice or experience of cosmetic surgery tourism may affect others' opinion of a cosmetic surgery tourist; that friends/family/associates may disapprove of this choice
Psychological Risk	Possibility that the experience of cosmetic surgery tourism may affect psychological well-being; that cosmetic surgery tourism may poorly reflect on personality or self-image

Note: Adopted from Reisinger and Mavondo (2006) and Sonmez and Graefe (1998a) and modified to adapt to the context of cosmetic surgery tourism.

Financial Risk

Cosmetic surgeons often warn of the allure of bargain-basement deals offered in cosmetic surgery tourism destinations and stress that international patients should carefully plan their travel and treatment (ASPS, 2016; Royal College of Surgeons, 2016; Woodman, 2015). Many patients choose cosmetic surgery abroad because of its low cost, but they often do not understand how much it may cost them to fix a bad result (Fakkert, 2014). The cost of revision surgery is often much higher than that of the original surgery (McVeigh, 2009). Postoperative problems are not always covered by medical insurance; therefore, additional costs incurred due to complications or unfavorable outcomes may have to be paid out of pocket (Melendez & Alizadeh, 2011).

Moreover, public health systems (e.g., the Medicare Benefits Scheme in Australia and the National Health Service in the U.K.) may offer treatment for life-threatening and serious situations, but may refuse treatment for less serious complications or bad outcomes caused by surgery abroad and at home (ASAPS, 2011; BAPRAS, 2015). According to ASAPS (2011) and BAPRAS (2015), an increasing number of patients who experience problems following cosmetic surgery abroad turn to public health systems. However, patients often end up being treated as private patients by the hospital and thus receive a private bill.

Livingston et al. (2015) revealed that to treat 12 cosmetic surgery tourists who went to a public hospital for complications, the overall financial burden of these complications for the hospital was AU$151,172.52, the highest cost spent on a single patient being AU$33,060.02. Cosmetic surgery abroad is presented as cheap because "there is less oversight, fewer regulations, less-expensive equipment, and poor supplies, and there is no follow-up care" (Fakkert, 2014, p. 1). Consequently, if something goes wrong, this bargain surgery becomes expensive, as the total cost is likely to exceed the cost of the initial operation if it had been performed in the home country in the first place (ASPS, 2016; Fakkert, 2014). Thus, cosmetic surgery tourists are advised to carefully consider the hidden costs before choosing to participate in cosmetic surgery tourism (ASAPS, 2011; ASPS, 2017; BAAPS, 2009).

Time Risk

Cosmetic surgery is expensive and time consuming. Compared with cosmetic surgery performed in the home country, undergoing cosmetic surgery abroad may require a relatively long time to search for information, plan the trip, or make decisions due to unfamiliarity. In addition, certain problems arising after the procedure not only result in additional costs, but also in serious time loss for individuals. Patients must either travel back to the destination country for corrections or seek private treatment in their home country, which involves a lot of time away from work (ASAPS, 2011; ASPS, 2016; Fakkert, 2014). Moreover, in case of infection during the cosmetic surgery trip, patients may have to stay longer at their destination for treatment, which was not originally planned. Therefore, medical professionals stress that it is very important to understand the details of the procedure, such as how long a patient will need to stay at home or off work during recovery, how long the results will last, and whether other procedures may be necessary in the future (BAAPS, 2009).

Performance Risk

'Fashions' also exists in cosmetic surgery, for which prospective cosmetic surgery patients travel abroad. For example, the "Korean look," with a particular facial shape (e.g., narrow jawline and wide eyes) created by Korean surgeons, has become popular in the East Asian region (Holliday, Bell, Cheung, et al., 2015). Destinations become associated with particular procedures and even with certain looks; thus cosmetic surgery tourists are attracted to a destination with certain expectations (Holliday, Bell, Cheung, et al., 2015). However, surgical outcomes that do not meet their expectations fail to provide the expected benefits of the cosmetic surgery trip.

In addition, the lack of face-to-face consultation can be a serious problem, as surgeons may not be able to assess patients thoroughly (Clarify Clinic, 2016). Patients may also have unrealistic expectations and may therefore be disappointed with the results (Watson, 2012). Therefore, achieving the desired outcomes in such circumstances may be difficult for cosmetic surgery tourists.

Functional Risk

The success of a cosmetic surgery procedure requires not only surgical skills, but also an appropriate preoperative assessment and post-operative follow-up by the surgeon performing the procedure. However, perioperative treatment is inevitably limited in cosmetic surgery tourism (Livingston et al., 2015; Miyagi et al., 2012). In many cases, tourists go through agencies that offer "package" deals combining cosmetic procedures with cheap flights, hotel accommodation, and even vacations. These deals usually require payment before the trip (Jeevan & Armstrong, 2008; Turner; 2012). Patients are unlikely to meet a surgeon before traveling for their surgery and are often only seen and advised by a company representative (Birch et al., 2007; Miyagi et al., 2012). A preoperative consultation should always be carried

out by a surgeon who plans to perform such a procedure, not only to inform patients of the potential risks of complications, but also because their unrealistic expectations can lead to dissatisfaction with the surgical outcomes (Jeevan & Armstrong, 2008; National Health Service [NHS], 2019a, 2019b).

In addition, as cosmetic surgery tourists stay for a relatively short time at their destinations, the postoperative monitoring and review offered to patients are limited to a few days or a week (Franzblau & Chung, 2013; Livingston et al., 2015; York, 2008). Inadequate arrangements for perioperative counseling and follow-up care create practical and logistical problems for patients when complications occur or when revision surgery is necessary, especially after they return to their home country (BAAPS, 2007, 2009; Miyagi et al., 2012; NHS, 2019a; York, 2008). Patients may have difficulty finding a qualified surgeon, and treatment or revision surgery may be complicated or nearly impossible, as local doctors may not know which surgical techniques have been used by physicians abroad during the initial operation (ASPS, 2016).

No international governmental body or system exists to accredit and regulate hospitals, physicians, or other health professionals (Clark, Adegunsoye, Capuzzi, & Gatta, 2013; Livingston et al., 2015). Different systems are used around the world, some may be strictly regulated, while others may have lax regulations. Thus, standards of care may vary considerably from country to country with regard to surgeons and nursing staff, medical facilities, products, equipment, and techniques/procedures (ASAPS, 2011; Clark et al., 2013; Livingston et al., 2015). Due to differences in standards and qualifications, patients may have difficulty determining whether the surgeon performing their cosmetic surgery is a fully trained surgeon (ASAPS, 2011; ASPS, 2016). Certain surgeons may only have training in general surgery but not in specialties, that is, not board certified in plastic surgery or similar specialties (ABCS, 2019).

International accreditation (e.g., the Joint Commission International [JCI] accreditation scheme) demonstrates that accredited medical centers or hospitals meet international standards for quality and patient safety (JCI, n.d.). However, many cosmetic surgery facilities are private clinics, thus checking the credentials of surgeons and other medical staff and guaranteeing certain standards regarding the quality of facilities and services may be difficult (ASPS, 2016).

In certain countries, cosmetic surgery products or devices that are low grade or not properly tested may be used, posing serious risks for cosmetic surgery tourists (ASPS, 2016). In 2011, BAAPS issued a warning to women who had gone abroad for breast augmentation. The rupture of breast implants had been reported by patients who had received implants prohibited in Europe but sold in other popular cosmetic surgery tourism destinations across the continent, such as Belgium, Poland, and the Czech Republic, where British patients travel regularly for low-cost procedures (BAAPS, 2011; Edmonds, 2012; Pollard, 2012).

Health Risk

The most common complication experienced by cosmetic surgery tourists is infection (ASPS, 2016). As all cosmetic surgery procedures carry risks, complications can occur whether cosmetic procedures are performed at home or abroad (ASPS, 2016; Australasian Society of Aesthetic Plastic Surgeons [ASAPS], 2011; BAPRAS, 2015; Holliday et al., 2014; NHS, 2019a). Medical concerns related to air travel can also be an issue. The risk of complications significantly increases by flying back to the home country shortly after surgery and may further increase when surgery is combined with vacation (ASPS, 2016; Handschin, Banic, & Constantinescu, 2007; Jeevan, Birch, Armstrong, 2011; Livingston et al., 2015; Miyagi et al., 2012). Indeed, vacation-related activities may compromise patient health due to improper healing and increased risk of complications (ASPS, 2019). In particular, long-haul flights or

long car rides after major surgery can increase the risk of deep vein thrombosis and pulmonary embolism (ASAPS, 2011; ASPS, 2016; Handschin et al., 2007; Jeevan et al., 2011; Livingston et al., 2015; Miyagi et al., 2012). Therefore, patients should be clear about how long they have to wait before traveling home. They should wait for 5 to 7 days after body procedures, such as breast augmentation and liposuction, and 7 to 10 days after facial cosmetic procedures or tummy tucks before flying home (ASAPS, 2011; ASPS, 2016).

Physical Risk

The environments of holiday destinations may be inadequate in terms of healing and infection prevention for cosmetic surgery patients. Crowded sites, such as tourist attractions and shopping areas, can also be risky for surgical patients. ASAPS (2011) and ASPS (2016) warned that patients should not sunbathe, drink alcohol, swim or engage in water sports, participate in extensive tours, or exercise after surgery to heal properly and reduce the risk of complications. However, certain patients drink alcohol soon after their surgery and others do not get enough rest, thus not following medical advice carefully (Holliday et al., 2014). Moreover, travel-related behaviors or activities can lead to physical injuries for cosmetic surgery tourists. Patients undergoing surgery (e.g., breast augmentation) should only take light walks immediately after and avoid strenuous activities for at least several weeks (Begovic, 2017).

Satisfaction Risk

Various factors influence the cosmetic surgery travel experience. The 2012 Treatment Abroad Medical Tourism Survey showed that one in five cosmetic surgery patients were mainly dissatisfied with esthetic results (17%), aftercare (17%), communication issues (16%), and the treatment experience (14%; Pollard, 2013; Stone, 2013). In addition, cosmetic surgery

tourists have suffered not only from complications, including wound dehiscence, contour abnormalities, hematomas, and unsightly scars, but also from unsatisfactory surgical outcomes (ASPS, 2016; Melendez & Alizadeh, 2011; Miyagi et al., 2012). Thus, cosmetic surgery tourists often undergo revision surgery due to dissatisfaction with the results of procedures undertaken overseas. A survey conducted by BAPRAS (2008a) revealed that out of 215 patients seen by local doctors following cosmetic procedures outside the UK in 2008, 26% had cosmetic concerns or were dissatisfied with the results.

Cultural Risk

Cultural differences may affect patient satisfaction with surgical outcomes and the cosmetic surgery travel experience. Different perceptions of body image exist in different countries. Thus, a lack of cultural understanding in terms of esthetic preferences can lead to patient dissatisfaction. Therefore, operations that consider people's needs are important. The nose shape favored by Western cosmetic surgery tourists may be different from favored by Asian patients. Similarly, in terms of breast augmentation, Australian women often prefer to go only a size up to look natural, while American patients have a "bigger is better" mindset (Clarify Clinic, 2016).

In addition, the language barrier can be a major concern for cosmetic surgery tourists. Connell (2013) stated that medical tourists generally choose to go to countries with the same cultural context and using the same language. A similar cultural context makes it easier to communicate and understand complex procedures. Therefore, a large proportion of medical tourists are diasporic (Connell, 2013).

Social Risk

Having someone (e.g., spouse, sibling, parent, or friend) for support during the recovery process is crucial (Kita, 2018; Watson, 2012). However, cosmetic surgery abroad that may be disapproved of or otherwise not supported by close relatives. Cosmetic surgery tourists may find it difficult to tell their friends and family about their surgery for fear of unpleasant reactions. Although cosmetic surgery has been increasingly accepted by society in recent years, many people choose to keep their procedures secret due to privacy and fear of being judged by their peers (Blaine, 2016). Lambert (2015) argued that up to one third of the patients hide their procedures, such as tummy tuck and breast implants, and for non-invasive procedures, the percentage of patients who keep silent is around 70%.

Psychological Risk

Having cosmetic surgery to improve one's appearance can have an emotional effect, yet many prospective patients fail to consider its possible psychological ramifications (Kita, 2018). Although cosmetic surgery has positive emotional effects (e.g., improved self-esteem), some people experience sadness, difficulty sleeping, loss of appetite, and an inability to concentrate after their surgery, a phenomenon known as post-surgical depression (Watson, 2012). Therefore, prospective patients must choose the best surgeon possible to have realistic expectations for their cosmetic surgery. They should also ask their surgeon how to deal with physical and emotional side effects after their operation (Watson, 2012). Cosmetic surgery tourists should be well prepared for the possibility of emotional side effects given the difficulty of seeking help from their surgeon after returning home. Table 2.4 summarizes the attributes of cosmetic surgery tourism related to the 10 risk dimensions.

Table 2.4 Attributes and Risk Dimensions Associated with Cosmetic Surgery Tourism

Dimensions	Attributes	References
Financial Risk	No value for money Less economical Unreasonable cost Unsatisfactory cost Unexpected costs Financial burden	ASAPS (2011); ASPS (2016, 2017); BAPRAS (2015); Fakkert (2014); McVeigh (2009); Melendez and Alizadeh (2011)
Time Risk	Too long Long planning time Unexpected loss of time More time needed	ASAPS (2011); ASPS (2016); BAAPS (2009); Fakkert (2014)
Performance Risk	No cost advantages Poor medical service quality No fulfillment of expectations	Clarify Clinic (2016); Holliday, Bell, Cheung, et al. (2015); Watson (2012)
Functional Risk	Doctors Medical staff Medical tourism agencies/brokers Translators Unfriendliness Insufficient perioperative management Responsibility Medical standards Medical equipment Regulations Laws Accommodation Transportation Food Vacation opportunities	ASAPS (2011); ASPS (2016); BAAPS (2007, 2009); Birch et al. (2007); Clark et al. (2013); Jeevan and Armstrong (2008); Livingston et al. (2015); Miyagi et al. (2012); NHS (2019a, 2019b)
Health Risk	Complications Physical pain Problems while traveling Problems after returning home	ASAPS (2011); ASPS (2016, 2019); BAPRAS, (2015); Handschin et al. (2007); Holliday et al. (2014); Jeevan et al. (2011); Livingston et al. (2015); Miyagi et al. (2012); NHS (2019a)
Physical Risk	Safety issue Unrest Bad weather Hostile locals	ASAPS (2011); ASPS (2016); Begovic (2017); Holliday et al. (2014)

Dimensions	Attributes	References
	Crowded sites Risky air travel Heavy baggage	
Satisfaction Risk	Unsatisfactory surgical outcomes Disappointing surgery Dissatisfied with the travel experience No appearance enhancement	ASPS (2016); BAPRAS (2008a); Melendez and Alizadeh (2011); Miyagi et al. (2012)
Cultural Risk	Communication problems Language barrier Cultural differences Different beauty standards	Clarify Clinic (2016); Connell (2013)
Social Risk	Negative opinion Disapproval of cosmetic surgery trip Damaged self-image Lower social status	Blaine (2016); Kita (2018); Lambert (2015); Watson (2012)
Psychological Risk	Discomfort No reflection of self-image Tension Anxiety Psychological repercussions	Kita (2018); Watson (2012)

2.4 Market Segmentation

2.4.1 Market Segmentation Procedure

Segmentation is the process of dividing a heterogeneous market into homogeneous subgroups (Smith, 1956). Market segmentation assumes that each subgroup has different and specific needs and characteristics (McDonald & Dunbar, 1995). As one of the most fundamental and important concepts of marketing, market segmentation has become a valuable and powerful tool for developing marketing strategies (Danneels, 1996; Dibb, 1998; Heath & Wall, 1992; Middleton & Clarke, 2001). The concept of segmentation has been used not only to develop marketing plans, but also to solve diverse management issues beyond marketing practices (Chen, 2003a). Market segmentation has been used in many tourism and hospitality

studies, as segmenting travelers help better understand their behavior and background, enabling marketers to develop products and services targeting specific groups of travelers.

According to Chen (2003a), segmentation procedures involve two analytical stages in sequence: (1) segment revelation and (2) segment diagnosis. A study sample is divided into different groups by using a segmentation method and according to a segmentation basis in the first stage of the analysis. Subsequently, descriptive and inferential statistics are used to profile the segments obtained in the second stage. Figure 2.4 illustrates the two sequential stages of segmentation analysis.

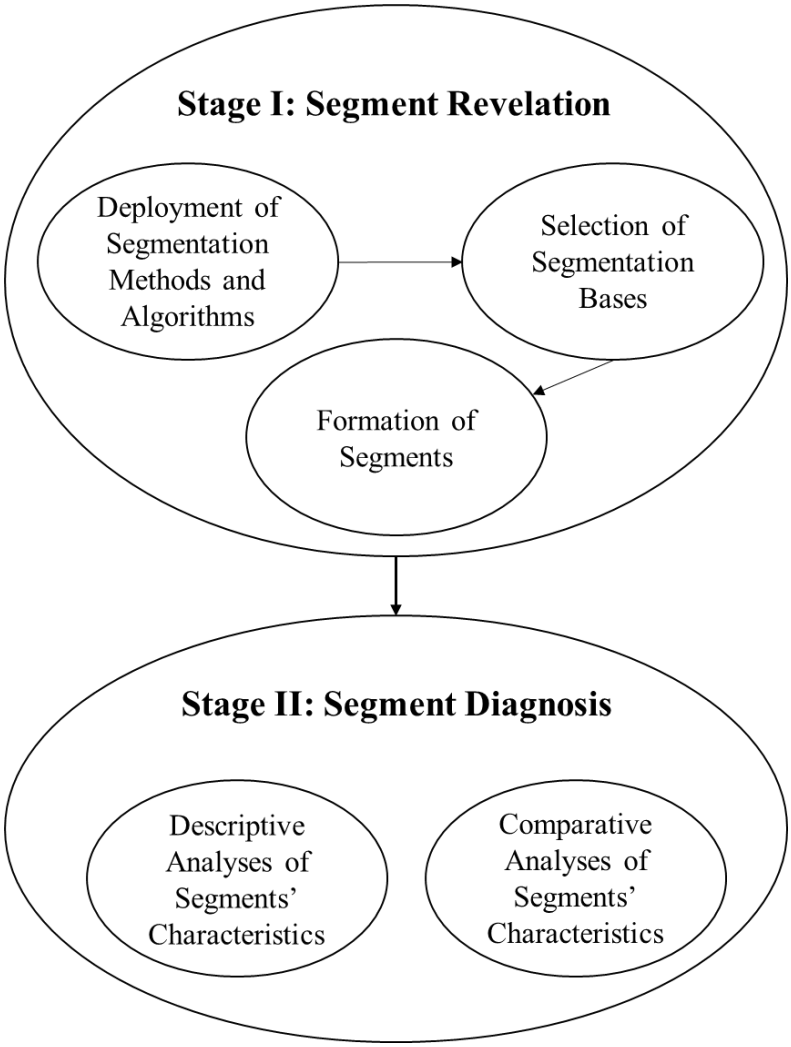

Figure 2.4 Stages of Segmentation Analysis
Source: Chen (2003a).

As mentioned earlier, a study sample is divided into different groups using a segmentation method. Segmentation methods can be described in two ways. First, in terms of segmentation approach, the a priori approach indicates that the type and number of segments are determined in advance by the researcher, while the post hoc approach indicates that the type and number of segments are determined based on the data analysis results. Second, in terms of analytical techniques, descriptive methods analyze the interrelationship of a single set of segmentation bases (i.e., no distinction between dependent and independent variables), while predictive methods assess the association between two sets of variables (i.e., one set of dependent variables to be explained or predicted by a set of independent variables; Wedel & Kamakura, 2000). Table 2.5 presents the classification of the methods used for segmentation.

Table 2.5 Classification of Segmentation Methods

	A priori	Post hoc
Descriptive	Contingency tables, log-linear models	Clustering methods: non-overlapping, overlapping, fuzzy techniques, artificial neural network (ANN), mixture models
Predictive	Crosstabulation, regression, logit, and discriminant analyses	AID/CHAID, CART, clusterwise regression, ANN, mixture models

Source: Wedel and Kamakura (2000).

In segmentation research, selecting a base variable that is suitable for the particular purpose of a given study is essential. A segmentation basis is a set of variables or characteristics used to assign potential customers to homogeneous groups (Wedel & Kamakura, 2000). Various variables have been used as a segmentation basis, including demographics (e.g., gender, age, family size, education, and race); socioeconomic information (e.g., occupation and income); motivations; personality; geography (e.g., region and degree of urbanization);

specific benefits sought by consumers; behavioral patterns, such as occasions and characteristics of purchase behaviors; psychological characteristics (e.g., attitudes, opinions, and lifestyles; and involvement profile (Andereck & Caldwell, 1994; Calantone & Johar, 1984; Davis, Pysarchik, Chappelle, & Sternquist, 1993; Dolnicar, 2002; Kim & Weiler, 2012; Kotler, Bowen, & Makens, 2014; Hu & Yu, 2007; Legohérel & Wong, 2006; Masiero & Nicolau, 2012; Mckercher, Ho, Cros, & So-Ming, 2002; Nyaupane & Graefe, 2008; Rid, Ezeuduji, & Pröbstl-Haider, 2014; Park & Yoon, 2009).

Frank, Massy, and Wine (1972) classified segmentation bases into *general* and *product-specific* bases. General bases represent variables independent of the products, services, or circumstances, while product-specific bases represent variables related to customers and products, services, and/or particular circumstances. Following Frank et al. (1972), Wedel and Kamakura (2000) proposed a 2 x 2 taxonomy of segmentation bases by classifying bases into *observable* (i.e., measured directly) or *unobservable* (i.e., inferred) bases. Table 2.6 shows the taxonomy of segmentation bases proposed by Wedel and Kamakura (2000).

Table 2.6 Taxonomy of Segmentation Bases

	General	Product-specific
Observable	Cultural, geographic, demographic, and socioeconomic variables	User status, usage frequency, store loyalty and patronage, situations
Unobservable	Psychographics, values, personality, and lifestyle	Psychographics, benefits, perceptions, elasticities, attributes, preferences, and intentions

Source: Wedel and Kamakura (2000).

2.4.2 Perceived Risk-based Segmentation

Considered as a major concept to explain consumer behavior, perceived risk has been used as a segmentation basis in several tourism studies (Dolnicar, 2005; Floyd & Pennington-

Gray, 2004; Ritchie et al., 2017; Roehl & Fesenmaier, 1992; Seabra et al., 2013). Roehl and Fesenmaier (1992) conducted a cluster analysis based on the three dimensions of perceived risk associated with pleasure travel. They identified three groups of travelers with substantially different risk perceptions of travel, namely a "Place Risk" group (individuals perceiving their vacation as fair and the destination of their most recent trip as risky); a "Functional Risk" group (individuals perceiving high physical and equipment risks); and a "Risk Neutral" group (individuals perceiving low risk in all dimensions). Their results indicated that the three risk groups differ in terms of the characteristics of their most recent trip, their information use and trip planning behavior, the travel benefits they seek, and their basic demographic characteristics.

Floyd and Pennington-Gray (2004) attempted to classify and profile tourists based on their perceived risk, and identified two segments. The first segment included tourists with a high risk perception for all risk types, who consider traveling itself to be risky. The second segment comprised tourists with a low risk perception, who believe that tourists are unlikely to be the target of terrorism. Floyd and Pennington-Gray (2004) found significant differences between the two segments with respect to risk factors, sources of information, and demographic characteristics.

Dolnicar (2005) investigated the heterogeneity of tourists with regard to perceived risk in the context of domestic and overseas travel. They found different patterns of perceived risk between destination contexts and tourist segments. Four segments of tourists were identified based on fears associated with leisure travel: a high-fear segment, comprising tourists who rate all risk factors above average; a overseas skeptics segment, comprising tourists who believe that terrorism and contagious diseases have a high probability of occurrence; a thrill seekers segment, comprising tourists who rate risky situations as relatively unlikely to occur during overseas travel, and rate thrill and excitement items higher than the overseas skeptics group;

and a low-fear segment, comprising tourists who rate all risk factors below average. Therefore, the perceived risk or fear associated with travel can be a useful basis for segmenting tourists.

Similarly, Seabra et al. (2013) conducted data-driven segmentation to investigate heterogeneity among international tourists in terms of risk perceptions. They identified seven segments of international tourists, differing in the amount and type of perceived risk. Based on the different risk patterns obtained, the seven segments were labeled “carefree,” “all risks concerned,” “satisfaction apprehensive,” “multiple risks concerned,” “health and personal risks concerned,” “terrorism and turmoil risks concerned,” and “materialist.” Significant differences were found in terms of income, travel motives, contact with crime in daily life, and nationality. However, the segments did not differ in terms of gender, age, education, and national and international travel experiences.

Ritchie et al. (2017) applied an integrated approach to traveler segmentation by including psychological, behavioral, and demographic variables. Specifically, risk perceptions and risk reduction strategies, socio-demographic characteristics, and travel behavior characteristics were used to identify homogenous segments of travelers. Using a two-step cluster analysis, three segments were generated: carefree travelers, risk-reducing travelers, and seriously concerned travelers. The results revealed that the variables related to psychological and behavioral attributes contribute more significantly to profiling travelers than socio-demographic variables. Ritchie et al. (2017) suggested that the integrated approach taking into account psychological, behavioral, and demographic characteristics simultaneously creates a comprehensive profile of travelers.

Table 2.7 provides an overview of previous perceived risk-based segmentation studies in the tourism context. Most studies have mainly focused on pleasure travel, while some studies have demonstrated the usefulness of the concept of perceived risk for segmentation and to better understand the tourism market. In addition, the segmentation methods used in previous

studies have been quite limited, with cluster analysis the most frequently used statistical approach. Segmentation has generally been performed based on tourists' perceived risk. Other variables, such as tourists' demographic and travel-related characteristics, have been used to profile tourist segments.

Table 2.7 Segmentation Studies on Perceived Risk

Author(s)	Context	Segmentation method	Variables
Roehl and Fesenmaier (1992)	Pleasure travel	Cluster analysis	Perceived risk, trip characteristics, planning horizon, sources of information, travel benefits, and demographic characteristics
Floyd and Pennington-Gray (2004)	Pleasure travel	Cluster analysis	Risk perception, sources of information, and demographic characteristics
Dolnicar (2005)	Overseas and domestic leisure travel	Cluster analysis	Perceived risk
Seabra et al. (2013)	International tourism	Data-driven segmentation analysis	Perceived risk, demographic and behavioral characteristics
Ritchie et al. (2017)	Outbound travel	Two-step cluster analysis	Risk perception, risk reduction strategies, travel characteristics, and demographic characteristics

Note: Variables include the segmentation basis (i.e., perceived risk) and other variables used to profile the segments obtained.

However, little attention has been paid to the heterogeneity of the cosmetic surgery tourism market, particularly with respect to risk perception. The nature of the cosmetic surgery tourism market is likely to be different from that of the general tourism market. Thus, distinct segments of cosmetic surgery tourists must be identified based on the PRCST. In addition, the

way in which these segments differ in their personal and behavioral characteristics must be examined. Following Ritchie et al.'s (2017) integrated segmentation approach, this study included psychological, behavioral, and demographic variables to obtain more information on the cosmetic surgery tourism market. Specifically, the PRCST was used as a segmentation basis and variables related to socio-demographic characteristics, past experiences, and future cosmetic surgery travel characteristics were used to investigate the different characteristics of the segments obtained. In terms of segmentation method, this research used a hybrid methodology combining the features of latent class (LC) modeling and CHAID. The following section discusses this segmentation method in detail.

2.4.3 Hybrid Method Combining LC Modeling and the CHAID Algorithm

This study used the hybrid method proposed by Magidson and Vermunt (2005), which integrates the CHAID tree-based segmentation technique and LC modeling. The CHAID algorithm was first developed by Kass (1980) for nominal dependent variables and further extended to ordinal dependent variables by Magidson (1994). It splits a sample into mutually exclusive and exhaustive subgroups or segments, so that the segments do not overlap and each object is included in only one segment (Kass, 1980). CHAID analysis is a criterion-based approach that allows researchers to generate segments with respect to a dependent variable (criterion) with two or more categories and in accordance with the combination of a range of independent variables (predictors; Chen, 2003a, 2003b; Díaz-Pérez & Bethencourt-Cejas, 2016; Díaz-Pérez, Bethencourt-Cejas, & Álvarez-González, 2005; Legohérel, Hsu, & Daucé, 2015). Therefore, CHAID has been shown to be an effective way to obtain meaningful segments that are predictive of a *K*-category criterion variable (Magidson & Vermunt, 2005).

According to Díaz-Pérez and Bethencourt-Cejas (2016), the CHAID method has several advantages as a tourism segmentation method compared with other methods. First,

CHAID is a non-parametric statistical method of free distribution, as it relies on the use of the chi-square statistic. That is, CHAID does not require the use of parametric tests for predictive variables. Second, not only ordinal or interval-based variables, but also nominal variables can be included as predictors. Therefore, the range of variables that can be included in the classification process is considerable, in terms of number and diversity. Third, continuous variables can be selected as criterion variables because they can always be dichotomized. Finally, a criterion variable can be established according to the objectives pursued by the researcher or tourism operator, due to the great flexibility of incorporating continuous criterion variables.

As a tree-building algorithm, CHAID builds a segmentation tree, making its results easy to interpret (Legohérel & Wong, 2006; Levin & Zahavi, 2001). CHAID analysis sorts the predictor variables with the greatest explanatory capacity in descending order (Schultz & Block, 2011). Therefore, CHAID identifies the most significant predictor of the criterion, which appears in the first node of the segmentation tree. The process of node formation ends when no significant dependency relationship exists between the criterion and the set of predictors (Díaz-Pérez & Bethencourt-Cejas, 2016; Magidson, 1993).

CHAID analysis has also been used in several tourism and hospitality segmentation studies to investigate the likelihood of tourists' return (Assaker & Hallak, 2012; Hsu & Kang, 2007), willingness to repeat a visit and recommend a destination (Vassiliadis, 2008), shopping preference and intention to revisit for shopping tourism (Kim, Timothy, & Hwang, 2011), expenditure (Díaz-Pérez et al., 2005; Legohérel & Wong, 2006), hotel preferences (Chung, Oh, Kim, & Han, 2004), and hotel and restaurant selection preferences (Legohérel et al., 2015). Table 2.8 presents an overview of previous studies using CHAID as the segmentation method.

Table 2.8 Previous Segmentation Studies Using CHAID Analysis

Author(s)	Dependent Variable (Criterion)	Independent Variable (Predictor)
Chen (2003b)	Willingness to make recommendations	Tourists' sentiments toward marketing
Chung et al. (2004)	Restaurant preferences	Demographic and behavioral variables
Díaz-Pérez et al. (2005)	Expenditure	Nationality, island, gender, age, occupation, traveling alone or accompanied, plan to return to the island for a holiday, type of accommodation, season
Legohérel and Wong (2006)	Expenditure	Trip profile, demographic variables
Hsu and Kang (2007)	Likelihood of return	Country of residence, trip purpose, repeat visit status, gender, age, education, income
Vassiliadis (2008)	Willingness to revisit and recommend	Destination product characteristics
Kim et al. (2011)	Intention to revisit for shopping tourism	Socio-demographic and shopping tour-related variables
Assaker and Hallak (2012)	Likelihood of return	Country of residence, gender, age, occupation, repeat visit status, travel party
Legohérel et al. (2015)	Travelers' restaurant and hotel preferences	Variety-seeking, travelers' characteristics
Díaz-Pérez and Bethencourt-Cejas (2016)	Expenditure	Season, nationality, profession, gender, income, age, services contracted, traveling alone or accompanied

CHAID has been shown to be a useful tool for broadening the analytical spectrum of segmentation and advancing the segmentation methodology in tourism research (Chen, 2003a, 2003b). The superiority of CHAID as a segmentation method has been demonstrated in certain studies comparing CHAID with other multivariate analysis techniques (Díaz-Pérez &

Bethencourt-Cejas, 2016; McCarty & Hastak, 2007). Díaz-Pérez and Bethencourt-Cejas (2016) argued that "the CHAID method is, in fact, one of the most advanced from the perspective of the objectives of market segmentation" (p. 277).

However, Magidson and Vermunt (2005) indicated that CHAID has one limitation: the segments are defined based on a single criterion variable. If there are multiple criteria, using each dependent variable separately as a criterion may result in different sets of segments. Moreover, the categories of a predictor may merge in different ways depending on the dependent variable used. To overcome this limitation, they proposed the hybrid method combining CHAID and LC modeling.

LC modeling is a statistical method used to identify a *K*-category latent (unobservable) variable that explains the associations between the observed response variables (Lazarsfeld & Henry, 1968; Goodman, 1974). In the LC model, each category of the latent variable represents a latent class, which is a homogeneous group of cases with common model parameters. In other words, latent classes are unobservable subgroups, in which cases in the same latent class are homogeneous according to certain criteria (e.g., interests, values, characteristics, and/or behavior), while cases in different latent classes are different in some important ways. The advantages of the LC model over other traditional ad hoc types of cluster analysis methods include model selection criteria and probability-based classification, in which posterior membership probabilities are estimated directly from the model parameters (Vermunt & Magidson, 2005a).

According to Magidson and Vermunt (2005), the hybrid approach has several advantages. LC models identify segments with multiple response variables in a single LC solution, so that the hybrid method builds a classification tree predictive of multiple criteria. Magidson and Vermunt (2005) stated that

> the segments resulting from the hybrid CHAID may fall somewhat short of predictability of any single dependent variable in comparison to the original algorithm, but makes up for this by providing a single unique set of segments that are predictive of all dependent variables. (p. 8)

Furthermore, this hybrid method can be described as an alternative to using covariates in LC modeling to profile classes. Although demographic or other exogenous variables are used in an LC model to profile latent classes, the CHAID-based alternative is especially advantageous when the number of covariates is large. Specifically, CHAID provides valuable results by ranking the covariates from most significant to least significant and by merging the categories of covariates that are not significantly different.

2.5 Chapter Summary

This chapter discussed the various definitions of medical tourism and the typology of medical tourists, thereby providing a basis for defining cosmetic surgery tourism. The concept of perceived risk and the theoretical framework of this study were described, followed by the conceptualization of the PRCST. Previous studies on perceived risk in tourism were discussed, and the various types of perceived risks and attributes associated with cosmetic surgery tourism were identified. Finally, previous segmentation studies in the tourism literature using perceived risk as the segmentation basis and CHAID as the segmentation method were reviewed. Next, the hybrid method combining LC modeling and the CHAID algorithm was discussed. The following chapter describes the methodology applied in this study.

CHAPTER 3. METHODOLOGY

3.1 Chapter Introduction

Chapter 3 presents the methodology used in this study. This chapter begins with a discussion of the research design, followed by an explanation of the study population. It also provides an overview of the scale development process, which includes item generation, scale purification, and scale validation. In addition, the development of the instruments is explained in terms of questionnaire design and translation and pretest procedures. With regard to data collection, the sampling design and survey procedures are described in detail. Finally, the data analytical methods for scale development and market segmentation are discussed.

3.2 Research Design

The study had two main objectives: (1) to develop a scale to measure the PRCST, and (2) to segment cosmetic surgery tourists based on the PRCST, in which the segments were further profiled in terms of socio-demographic context, past experiences, and cosmetic surgery travel characteristics. This exploratory study adopted a mixed methods approach. Specifically, the rigorous multi-step scale development procedure proposed by Churchill (1979) was adopted to develop the PRCST scale. To demonstrate the reliability of the measurements, the study followed the guidelines suggested in previous scale development studies (e.g., DeVellis, 2012; Hu & Bentler, 1999; Lynn, 1986; Su & Parham, 2002).

A thorough literature review, in-depth interviews, and an expert panel review were initially conducted to define the PRCST construct and develop an initial pool of PRCST items. In addition, a Web-based survey using a self-administered questionnaire was implemented for data collection. The primary data collected were used for descriptive analysis, exploratory factor analysis (EFA), and confirmatory factor analysis (CFA), through which the PRCST scale

was developed and validated. The scale development and validation process used in this study is summarized in Figure 3.1.

Then, market segmentation was performed by applying the developed PRCST scale. The segmentation of cosmetic surgery tourists with respect to their PRCST was conducted using LC analysis. The segments obtained were profiled in terms of personal and behavioral characteristics based on the CHAID analysis results.

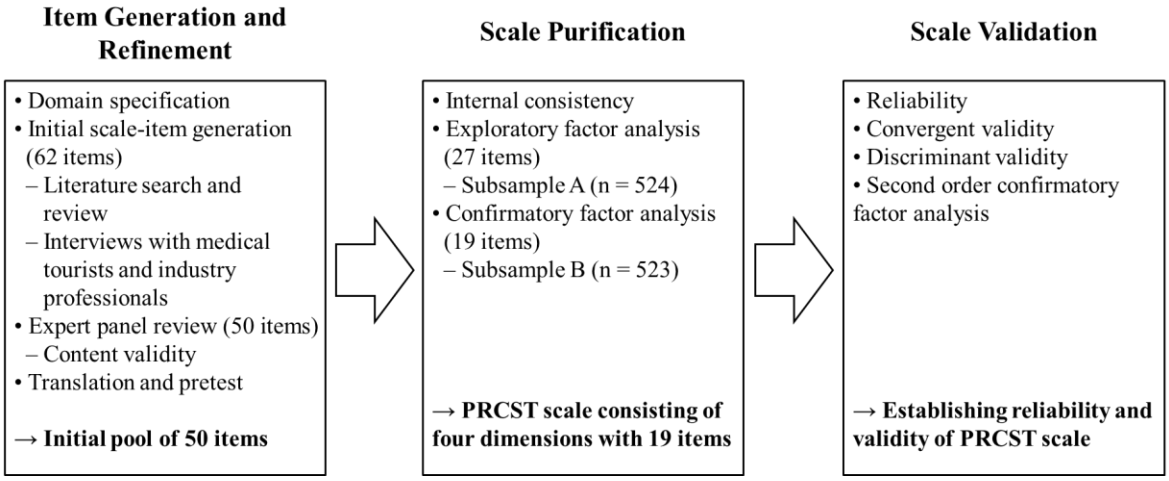

Figure 3.1 Scale Development Process

3.3 Study Population

With the significant improvement of living standards and increased appreciation of beauty, and the benefits of online-to-offline (O2O) platforms, the cosmetic surgery market in China has entered a period of rapid development (Deloitte, 2018). Statistics have shown that the value of the Chinese medical esthetic industry increased to RMB870 billion (about US$122 billion at an exchange rate of RMB1 to US$0.14) in 2015, RMB1,250 billion (about US$175 billion) in 2016, and RMB1,760 billion (about US$246 billion) in 2017. This value is expected to reach RMB4,640 billion (about US$650 billion) in 2020, with a compound annual growth rate of 40% (Yang, 2018). China is expected to become the second largest cosmetic surgery

market in the world after the United States. In China, cosmetic surgery is particularly popular among the younger generation. In 2018, around 22 million Chinese people underwent cosmetic surgery, 54% of whom were younger than 28 (Liu, 2018). For this group, cosmetic surgery is generally considered another luxury item, similar to a branded handbag, for which they are willing to spend money (Deng, 2018).

The demand for cosmetic surgery in China is skyrocketing (Flora, 2016), but many Chinese people remain skeptical of the expertise of medical service providers (Deloitte, 2018). Hyaluronic acid injections are among the most popular procedures in China, but 80% are reportedly fake or have been smuggled from overseas; only 20% have been approved by regulators (Wang, 2016). Moreover, although there are 3,000 certified private clinics, between 50,000 and 100,000 unregistered beauty salons perform cosmetic procedures in China (Wang, 2016). A lack of trust in medical professionals and the healthcare system has led Chinese consumers to travel abroad in search of cosmetic surgery (Agence France-Press, 2015; Gentlemen Marketing Agency, 2018; Medical Tourism Magazine, 2018).

While Chinese cosmetic surgery tourists seek cosmetic surgery in countries like South Korea, Japan, Thailand, and Singapore, South Korea is the most popular overseas destination due to the influence of Korean pop (K-pop) culture (Deng, 2018; Read, 2016a). Cosmetic surgery in South Korea has been reported as one of the top medical tourism products on China's leading online travel company, Ctrip (Meesak, 2016). Chinese cosmetic surgery patients choose South Korea mainly because of its surgical quality, technique, and technology, rather than low cost, which is the main driver of British and Australian cosmetic surgery tourists (Holliday et al., 2014). The most common cosmetic procedures sought in South Korea are eyelid, jawbone, and nose surgery procedures (Holliday et al., 2014).

In South Korea, the international boom in incoming cosmetic surgery tourism began in 2009, when the South Korean government first granted local cosmetic surgery clinics official

permission to receive foreign patients (Kim, 2012). The global success of K-pop culture, based on the phenomenon of the "Korean Wave" or *hallyu*, has made South Korea a popular cosmetic surgery destination that lures Asian cosmetic surgery tourists who want to look like celebrities (Connell, 2011; Fifield, 2014; FlorCruz, 2015; Holliday, Bell, Cheung, et al., 2015; Kim, 2012; Marx, 2015; Yu & Ko, 2012). South Korea has gained a global reputation as a cosmetic surgery tourism destination, with highly skilled doctors, state-of-the-art medical technology, and high-tech equipment (Das, 2014; Kim, 2012). This reputation has resulted in a drastic increase in the number of cosmetic surgery tourists traveling to South Korea. (See Appendix A for a cost comparison of cosmetic surgery procedures in South Korea and other destinations.)

According to the Korea Health Industry Development Institute (KHIDI, 2019), the number of cosmetic surgery tourists who sought cosmetic procedures and dermatology treatments in South Korea increased from 8,866 in 2009 to 130,640 in 2018, accounting for 28% of the total number of medical tourists (Table 3.1). In 2018, around 51,000 Chinese travelers visited South Korea for cosmetic and dermatological procedures, representing 40% of the total number of cosmetic surgery tourists in South Korea.

Table 3.1 Number of Medical Tourists Seeking Cosmetic Procedures in South Korea

	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018
Cosmetic surgery	2,851 (4.4)	4,708 (4.6)	10,387 (6.7)	15,898 (7.7)	24,075 (8.6)	36,224 (10.2)	41,263 (11.1)	47,881 (11.3)	48,849 (12.3)	66,969 (14.4)
Dermatology	6,015 (9.3)	9,579 (9.4)	12,978 (8.4)	17,224 (8.3)	25,101 (9.0)	29,945 (8.4)	31,900 (8.6)	47,340 (11.1)	43,327 (10.9)	63,671 (13.7)
Total	8,866 (13.7)	14,287 (14.0)	23,365 (15.1)	33,122 (16.0)	49,176 (17.6)	66,169 (18.6)	73,163 (19.7)	95,221 (22.4)	92,176 (23.2)	130,640 (28.1)

Note: The figures in brackets refer to the percentage of foreign patients undertaking cosmetic procedures in the medical tourism market.
Source: KHIDI (2019).

Given that South Korea is a top destination for cosmetic surgery tourism, prospective Chinese cosmetic surgery tourists interested in or planning to have cosmetic surgery in South Korea were selected as the study population. As this study focused on Chinese outbound cosmetic surgery tourists, Chinese expatriates and international students residing in South Korea were excluded from the target population.

3.4 Item Generation

3.4.1 Domain Specification

The first step in the scale development procedure was to specify the domain of the PRCST construct (Churchill, 1979). Churchill (1979, p. 67) noted that "the researcher must be exacting in the conceptual specification of the construct and what is and what is not included in the domain." Based on a thorough review of the literature, the domain of the PRCST construct was determined as follows:

> *The PRCST is the subjective assessment of cosmetic surgery tourists of adverse events and/or potential losses that occur in the purchase and consumption of cosmetic surgery tourism services, which may be associated with financial, time, performance, functional, health, physical, satisfaction, cultural, social, and psychological risks.*

It included all potential risks in the planning and preparation phase at the cosmetic surgery tourism destination and after returning home from a cosmetic surgery trip. Following Rossiter's (2002) suggestion, the definition described the construct in terms of object (cosmetic surgery tourism), attribute (perceived risk), and rater entity (cosmetic surgery tourists).

3.4.2 Initial Scale Item Generation

Literature Search and Review

Once the domain of the PRCST construct had been specified, the next step was to create a pool of items assessing the PRCST. Based on a thorough search and review of the literature on perceived risk, medical tourism, and cosmetic surgery, 10 potential dimensions of the PRCST (financial, time, performance, functional, health, physical, satisfaction, cultural, social, and psychological) and their conceptual definitions were identified (see Table 2.3 in Chapter 2). Next, a comprehensive list of attributes associated with each dimension was developed (see Table 2.4 in Chapter 2). A total of 56 attributes were considered: 6 for financial risk, 4 for time risk, 3 for performance risk, 15 for functional risk, 4 for health risk, 7 for physical risk, 4 for satisfaction risk, 4 for cultural risk, 4 for social risk, and 5 for psychological risk. As a result, 56 measurement items representing the identified attributes were generated.

In-depth Interviews

Semi-structured interviews were conducted to confirm these attributes and the 10 risk dimensions and to identify additional attributes related to cosmetic surgery tourism that were not identified from the literature review. The interviewees included nine people from mainland China who had undergone cosmetic surgery in South Korea in the last two years, two plastic surgeons, three clinic staff, and three medical travel agents. At the beginning of each interview, the interviewee was given a consent form and an information sheet describing the purpose of the study and the interview procedure (Appendix B). Open-ended questions were asked to probe the respondents' perceptions of the risks of cosmetic surgery tourism. Each interview lasted between an hour and an hour and a half. The interviews with the Chinese cosmetic surgery tourists were conducted in Chinese with the help of interpreters. The interpreters were

two bilingual research students with experience of cosmetic surgery, helping to avoid communication or translation problems.

Based on the interviews, the 10 dimensions identified from the literature review were considered to be representative of the PRCST. The 56 attributes were also confirmed to appropriately reflect the 10 dimensions. Six additional risk factors were identified from the in-depth interviews: fluctuation in exchange rates, no desired effect, medical accident, unsatisfactory quality, undesirable esthetic perceptions, and tension after surgery. As a result, 62 measurement items were generated, capturing the PRCST domain as specifying and reflecting the 10 risk dimensions (Churchill, 1979). The initial 62 items are presented in Table 3.2.

Table 3.2 Initial Measurement Items for PRCST

Dimensions	Initial measurement items
Financial Risk	• A cosmetic surgery trip to South Korea may not offer good value for money.
	• A cosmetic surgery trip to South Korea may involve additional costs due to fluctuating exchange rates.[a]
	• A cosmetic surgery trip to South Korea may be less economical than cosmetic surgery performed in my home country.
	• The cost of cosmetic surgery in South Korea may be unreasonable.
	• The cost of a cosmetic surgery trip to South Korea may be unsatisfactory.
	• A cosmetic surgery trip to South Korea may entail unexpected costs if the surgery goes wrong, such as the cost of flying back to South Korea or having revision surgery done by a local doctor in my home country.
	• A cosmetic surgery trip to South Korea may be a heavy burden on my finances.
Time Risk	• A cosmetic surgery trip to South Korea may take too long.
	• A cosmetic surgery trip to South Korea may require too much planning time.

Dimensions	Initial measurement items
	• A cosmetic surgery trip to South Korea may involve an unexpected loss in terms of time if the surgery goes wrong, e.g., extra time to search for an appropriate surgeon in my home country for corrective surgery or additional days off to fly back to South Korea. • A cosmetic surgery trip to South Korea may take more time than having cosmetic surgery in my home country.
Performance Risk	• A cosmetic surgery trip to South Korea may not offer benefits in terms of cost savings. • A cosmetic surgery trip to South Korea may not provide better quality medical services than my home country. • Cosmetic surgery performed in South Korea may not provide the desired effects.[a] • Cosmetic surgery performed in South Korea may not meet my expectations in terms of enhancing my appearance.
Functional Risk	• Surgeons in South Korea may not be highly trained and experienced. • Anesthesiologists and medical staff in South Korea may not be sufficiently experienced. • Translators may not have sufficient professional/medical knowledge. • Doctors and medical staff in South Korea may not be friendly. • Insufficient preoperative assessment and postoperative follow-up may occur due to the short stay in South Korea. • Medical service providers may not provide adequate treatment or corrective surgery if something goes wrong after I return home. • Cosmetic surgery hospitals/facilities in South Korea may have low medical standards. • State-of-the-art medical equipment may not be used during a cosmetic surgery procedure in South Korea. • The medical system in South Korea may not be strictly or sufficiently regulated. • Laws that protect medical tourists may not exist in South Korea. • Accommodation in South Korea may not be comfortable for surgical patients.

Dimensions	Initial measurement items
	• Transportation in South Korea may be inconvenient for surgical patients. • South Korean food may not suit my taste. • I may not have the opportunity to engage in tourist activities, such as shopping or sightseeing, during my recovery period in South Korea.
Health Risk	• Medical negligence may occur during a cosmetic surgery procedure in South Korea.[a] • Complications such as asymmetry, infection, the formation of excess scar tissue, and extreme blood loss may occur after cosmetic surgery in South Korea. • Severe physical pain may occur after cosmetic surgery in South Korea. • Infection problems may arise during post-operative outdoor activities (e.g., shopping and sightseeing) in South Korea. • I may experience complications after returning to my home country.
Physical Risk	• South Korea is not a safe place to visit for cosmetic surgery due to crime. • I may be exposed to danger due to social/political unrest in South Korea. • Weather conditions in South Korea may be unsustainable for surgical patients. • Locals may be hostile to foreigners. • Sites (e.g., tourist attractions, shopping areas, and airports) may be extremely crowded for surgical patients to visit after cosmetic surgery. • Air travel may be risky after cosmetic surgery. • Carrying heavy baggage may be dangerous after cosmetic surgery.
Satisfaction Risk	• The surgical outcomes obtained in South Korea may be unsatisfactory. • Cosmetic surgery performed in South Korea may be disappointing. • The quality of medical services offered in South Korea may not be satisfactory.[a] • I may be dissatisfied with the overall cosmetic surgery travel experience in South Korea.

Dimensions	Initial measurement items
	• A cosmetic surgery trip to South Korea may not provide personal satisfaction in terms of appearance enhancement.
Cultural Risk	• I may experience communication problems. • I may meet a language barrier. • Misunderstandings may arise due to cultural differences. • Esthetic perceptions in South Korea may not be preferable in my culture.[a] • Undesirable outcomes may arise due to different beauty standards between South Korea and my culture.
Social Risk	• A cosmetic surgery trip to South Korea may negatively affect the way other people think of me. • Other people may disapprove of my cosmetic surgery trip to South Korea. • A cosmetic surgery trip to South Korea may hurt my self-image. • A cosmetic surgery trip to South Korea may lower my social status.
Psychological Risk	• The thought of a cosmetic surgery trip to South Korea makes me uncomfortable. • A cosmetic surgery trip to South Korea may not reflect my self-image. • When I think of a cosmetic surgery trip to South Korea, I feel tense. • I may be worried about having surgery in South Korea. • I may feel tense until I see if the cosmetic surgery performed in South Korea is successful.[a] • I may have psychological repercussions if something goes wrong.

Note: [a] indicates the items added after the in-depth interviews.

3.4.3 Item Refinement

The initial item pool was reviewed by a panel of experts for content validity. The goal of this stage was to increase the relevance, clarity, and conciseness of the items and identify additional ways to exploit the construct (DeVellis, 2012). The expert panel included five

tourism and hospitality scholars who had completed research on medical tourism or relevant areas and three cosmetic surgery tourism industry professionals, such as plastic surgeons and medical tourism intermediaries. As this study investigated the perceived risk of prospective cosmetic surgery tourists, five tourists with multiple experiences of cosmetic surgery tourism were also invited to evaluate the relevance of the content of the items. Thus, the panel was made up of 13 experts. The experts received the conceptual definitions of the risk dimensions in cosmetic surgery tourism and were asked to rate each item based on its relevance to the associated dimension. In addition to evaluating each item, the experts were asked to provide suggestions for improving the items and to identify any aspect of the PRCST scale that was not adequately covered by the initial item pool (Appendix C).

Following the guidelines proposed by Lynn (1986), the content validity index (CVI) was computed to assess the content validity of individual items and that of the overall scale. As a typical item rating continuum, a 4-point scale (1 = *not relevant*, 2 = *somewhat relevant*, 3 = *quite relevant*, and 4 = *very relevant*) was used to avoid having an ambivalent midpoint (Davis, 1992; Lynn, 1986; Waltz & Bausell, 1981). The CVI for each item was calculated as the proportion of experts giving a rating of 3 or 4. For example, an item rated as quite or very relevant by 11 of the 13 judges had a CVI of .846. All items with a CVI below .80 were subject to revision. The CVI of the scale was calculated as the average of all item CVIs.

As shown in Table 3.3, some initial measurement items were revised. According to the CVIs and comments from the experts, 5 items were revised and 14 were eliminated. In addition, three items were added. One suggestion was to divide the statement "Insufficient preoperative assessment and postoperative follow-up may occur due to the short stay in South Korea" into two sentences, as two risk elements were mentioned. Another comment was to include an item on immigration issues, which may occur when returning home due to a major change in appearance after cosmetic surgery. For example, three Chinese women who had traveled to

South Korea for cosmetic surgery were detained at immigration because they were unrecognizable based on their passport photos (Hurst, 2017). Thus, the following statement was added: “I may experience problems when going through immigration after cosmetic surgery in South Korea due to my change in appearance.” As a result, 50 items were retained for the scale purification procedure. The scale-level CVI with the 50 items was .90, above the standard criteria of .80 (Davis, 1992). Table 3.4 shows the final measurement items.

Table 3.3 Revised, Deleted, and Added Items

Initial measurement items	Revised, deleted, or added items
• A cosmetic surgery trip to South Korea may be less economical than cosmetic surgery performed in my home country.	• Compared with cosmetic surgery performed in my home country, a cosmetic surgery trip to South Korea may not provide satisfactory cost savings.
• The cost of cosmetic surgery in South Korea may be unreasonable.	(Deleted)
• The cost of a cosmetic surgery trip to South Korea may be unsatisfactory.	(Deleted)
• A cosmetic surgery trip to South Korea may be a heavy burden on my finances.	(Deleted)
• A cosmetic surgery trip to South Korea may not offer benefits in terms of cost savings.	(Deleted)
• Surgeons in South Korea may not be highly trained and experienced.	• Medical staff in South Korea may not be sufficiently experienced.
• Anesthesiologists and medical staff in South Korea may not be sufficiently experienced.	(Deleted)
• Doctors and medical staff in South Korea may not be friendly.	(Deleted)
• Insufficient preoperative assessment and postoperative follow-up may occur due to the short stay in South Korea.	• Insufficient preoperative assessment may occur due to the short stay in South Korea.
	• Insufficient postoperative follow-up may be provided due to the short stay in South Korea.
• The medical system in South Korea may not be strictly or sufficiently regulated.	(Deleted)
	• I may experience problems when going through immigration after cosmetic surgery in South Korea due to my change in appearance.

Initial measurement items	Revised, deleted, or added items
• Medical negligence may occur during a cosmetic surgery procedure in South Korea.	(Deleted)
• South Korea is not a safe place to visit for cosmetic surgery due to crime.	• I may be the victim of a crime in South Korea.
• Cosmetic surgery performed in South Korea may be disappointing.	(Deleted)
• I may experience communication problems.	• I may experience communication problems due to the language barrier.
• I may meet a language barrier.	(Deleted)
• A cosmetic surgery trip to South Korea may hurt my self-image.	(Deleted)
• The thought of a cosmetic surgery trip to South Korea makes me uncomfortable.	(Deleted)
• When I think of a cosmetic surgery trip to South Korea, I feel tense.	• I feel nervous when I think of a cosmetic surgery trip to South Korea.
• I may be worried about having surgery in South Korea.	(Deleted)
• I may feel tense until I see if the cosmetic surgery performed in South Korea is successful.	(Deleted)

Table 3.4 Final Measurement Items for PRCST

Dimensions	Items
Financial Risk	A cosmetic surgery trip to South Korea may not offer good value for money.
	A cosmetic surgery trip to South Korea may involve additional costs due to fluctuating exchange rates.
	Compared with cosmetic surgery performed in my home country, a cosmetic surgery trip to South Korea may not provide satisfactory cost savings.
	A cosmetic surgery trip to South Korea may entail unexpected costs if the surgery goes wrong, such as the cost of flying back to South Korea or having revision surgery done by a local doctor in my home country.
Time Risk	A cosmetic surgery trip to South Korea may take too long.
	A cosmetic surgery trip to South Korea may require too much planning time.
	A cosmetic surgery trip to South Korea may involve an unexpected loss in terms of time if the surgery goes wrong, e.g., extra time to search for an appropriate surgeon in my home country for corrective surgery or additional days off to fly back to South Korea.
	A cosmetic surgery trip to South Korea may take more time than having cosmetic surgery in my home country.
Performance Risk	A cosmetic surgery trip to South Korea may not provide better quality medical services than my home country.
	Cosmetic surgery performed in South Korea may not provide the desired effects.
	Cosmetic surgery performed in South Korea may not meet my expectations in terms of enhancing my appearance.
Functional Risk	Medical staff in South Korea may not be sufficiently experienced.
	Medical tourism agencies and brokers may not offer quality services.
	Translators may not have sufficient professional/medical knowledge.
	Insufficient preoperative assessment may occur due to the short stay in South Korea.
	Insufficient postoperative follow-up may be provided due to the short stay in South Korea.

Dimensions	Items
Functional Risk (cont.)	Medical service providers may not provide adequate treatment or corrective surgery if something goes wrong after I return home.
	Cosmetic surgery hospitals/facilities in South Korea may have low medical standards.
	State-of-the-art medical equipment may not be used during a cosmetic surgery procedure in South Korea.
	Laws that protect medical tourists may not exist in South Korea.
	Accommodation in South Korea may not be comfortable for surgical patients.
	Transportation in South Korea may be inconvenient for surgical patients.
	South Korean food may not suit my taste.
	I may not have the opportunity to engage in tourist activities, such as shopping or sightseeing, during my recovery period in South Korea.
	I may experience problems when going through immigration after cosmetic surgery in South Korea due to my change in appearance.
Health Risk	Complications, such as asymmetry, infection, the formation of bad scar tissues, and extreme blood loss, may occur after cosmetic surgery in South Korea.
	Severe physical pain may occur after cosmetic surgery in South Korea.
	Infection problems may arise during post-operative outdoor activities (e.g., shopping and sightseeing) in South Korea.
	I may experience complications after returning to my home country.
Physical Risk	I may be the victim of a crime in South Korea.
	I may be exposed to danger due to social/political unrest in South Korea.
	Weather conditions in South Korea may be unsustainable for surgical patients.
	Locals may be hostile to foreigners.
	Sites (e.g., tourist attractions, shopping areas, and airports) may be extremely crowded for surgical patients to visit after cosmetic surgery.

Dimensions	Items
	Air travel may be risky after cosmetic surgery.
	Carrying heavy baggage may be dangerous after cosmetic surgery.
Satisfaction Risk	The surgical outcomes obtained in South Korea may be unsatisfactory.
	The quality of medical services offered in South Korea may not be satisfactory.
	I may be dissatisfied with the overall cosmetic surgery travel experience in South Korea.
	A cosmetic surgery trip to South Korea may not provide personal satisfaction in terms of appearance enhancement.
Cultural Risk	I may experience communication problems due to the language barrier.
	Misunderstandings may arise due to cultural differences.
	Esthetic perceptions in South Korea may not be preferable in my culture.
	Undesirable outcomes may arise due to different beauty standards between South Korea and my culture.
Social Risk	A cosmetic surgery trip to South Korea may negatively affect the way other people think of me.
	Other people may disapprove of my cosmetic surgery trip to South Korea.
	A cosmetic surgery trip to South Korea may lower my social status.
Psychological Risk	A cosmetic surgery trip to South Korea may not reflect my self-image.
	I feel nervous when I think of a cosmetic surgery trip to South Korea.
	I may have psychological repercussions if something goes wrong.

3.5 Instrument Development

3.5.1 Questionnaire Design

In this study, a self-administered questionnaire was adopted as a data collection instrument. A questionnaire is the most popular data collection tool in business and social

science research (Ghauri & Grønhaug, 2005) and is particularly useful for collecting a large amount of data in a short time (Kelley, Clark, Brown, & Sitzia, 2003). The structured questionnaire comprised closed-ended questions. The questionnaire items were written in simple and concise language so that each respondent could get the same meaning from the questions and statements provided (Ghauri & Grønhaug, 2005).

The questionnaire was developed to collect information on the perceived risk of cosmetic surgery tourists in cosmetic surgery tourism, their past experiences, the characteristics of future cosmetic surgery tourism, and their socio-demographic context. The questionnaire consisted of four parts (Appendix D). Part 1 included the 50 PRCST items. The respondents were asked to indicate their level of agreement with each item on a 7-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*). Part 2 collected information on the respondents' past experiences in terms of number of international trips, number of visits to South Korea, and experience of cosmetic surgery. The respondents were also asked to indicate the type(s) of cosmetic procedure they had undertaken in the past, if any, and the procedures they wished to seek in the future through cosmetic surgery tourism in South Korea. Part 3 involved questions on the respondents' travel intentions and behavioral characteristics regarding future cosmetic surgery tourism. For items related to cosmetic surgery travel intentions, the respondents were asked to indicate their level of agreement with the statements using a 7-point Likert scale (1 = *strongly disagree* and 7 = *strongly agree*). In addition, Part 3 included nine items associated with the characteristics of future cosmetic surgery tourism. These nine items were length of stay, accompanying party, accommodation type, trip arrangement method, cosmetic surgery expenditure, total travel expenditure, trip purpose, and decision horizons for clinic and cosmetic procedures. The respondents were asked to answer the questions if they intended to travel to South Korea for cosmetic surgery in the next 12 months. Finally, six items related to socio-demographic information (i.e., gender, age, marital status, education level, occupation,

and monthly household income) were included in Part 4. Table 3.5 presents the measurement items for this study.

Table 3.5 Measurement Items for the Study

Construct	Items
PRCST	– Financial risk (4 items) – Time risk (4 items) – Performance risk (3 items) – Functional risk (14 items) – Health risk (4 items) – Physical risk (7 items) – Satisfaction risk (4 items) – Cultural risk (4 items) – Social risk (3 items) – Psychological risk (3 items)
Past experiences	– Number of international trips – Number of visits to South Korea – Experience in cosmetic surgery
Cosmetic surgery travel characteristics	– Cosmetic surgery travel intentions – Length of stay – Accompanying party – Accommodation type – Trip arrangement method – Cosmetic surgery expenditure – Travel expenditure – Trip purpose – Decision horizon for clinic – Decision horizon for cosmetic procedures – Type of cosmetic procedure
Socio-demographic information	– Gender – Age – Marital status

Construct	Items
	– Education level – Occupation – Monthly household income

3.5.2 Translation and Pretest

As the study sample consisted of prospective Chinese cosmetic surgery tourists visiting South Korea, the questionnaire was translated from English into Mandarin Chinese. Forward translation, back translation, and a pretest (Su & Parham, 2002) were performed to obtain a valid translation. Two bilingual translators with experience of cosmetic surgery translated the English version into Mandarin Chinese. They independently conducted a forward translation and compared the translated instrument to make revisions until consensus was reached. Next, the Mandarin Chinese version was back translated into English by two other bilingual translators who had not seen the original English version. After the back translation, the researcher compared the back-translated items obtained with the original version to ensure equivalence of meaning.

Finally, a pretest of the questionnaire was conducted in the form of a think-aloud protocol with six prospective cosmetic surgery tourists to ensure that the questions were clear and understandable for the survey participants (Drennan, 2003). When completing the questionnaire, the respondents were asked to verbalize their thoughts, based on which the changes were made. Appendix E presents the Mandarin Chinese version of the questionnaire used in the main survey.

3.6 Data Collection

3.6.1 Sampling Design

In this study, the sampling frame was defined as prospective Chinese tourists who intended to travel to South Korea for cosmetic surgery. The sampling criteria were the following: Chinese nationality, intention to travel to South Korea for cosmetic surgery, and residence in China (i.e., potential Chinese patients living in South Korea were excluded). This study included men and women of all ages eligible for cosmetic surgery. Convenience sampling, a non-probability sampling method that selects population members who are conveniently available to participate, was used to define the sample of prospective Chinese cosmetic surgery tourists visiting South Korea. Although the convenience sampling method involves significant errors and has limited persuasive power as a scientific statistical method, it is useful for roughly examining the characteristics of a population segment (Alan & Barbara, 2009).

Based on the scale of items to be purified through EFA and CFA, the sample size was determined by following the guidelines for factor analysis provided in the literature. Factor analysis requires a minimum of 300 cases (Norusis, 2005). In addition, the subject-to-variable ratio should be at least 5 (Bryant & Yarnold, 1995). The sample size was determined based on the number of PRCST items included in the data analysis (i.e., 50 items). As a result, the researcher decided to collect a sample of 800 respondents to produce undistorted results for EFA, CFA, and segmentation analysis.

3.6.2 Survey Procedure

The self-administered Web-based survey was conducted in January 2018. The Internet plays a key role in medical tourism by providing a platform for accessing healthcare information and advertising (Lunt, Hardey, & Mannion, 2010). Holliday, Bell, Cheung, et al.

(2015) argued that "without the Internet, medical tourism would probably not exist in its current form – online information is a vital resource for travelers, and those offering services have developed sophisticated online information and guidance" (p. 301). Various online channels, such as discussion forums, chat rooms, and blogs, are largely used by medical tourists to exchange important information, share ideas, seek advice, and make contact with other patients with experience of medical tourism (Hallem & Barth, 2011). As the Internet is a key driver of medical tourism and most medical tourists are Internet users, a Web-based survey was considered the appropriate method to collect data.

The online survey was distributed via SoJump, a reputable research agency in China. The progress of the online survey was monitored by the researcher throughout the survey period to ensure the quality of data. As an advantage of the online survey, the duration of participation was automatically recorded so that cases with extremely short participation time (i.e., less than five minutes) were eliminated during the survey process. Prior to the survey, ethical approval was obtained from the researcher's university.

The online survey started with a description explaining the purpose of the study and stating that all information collected from the respondents would be kept confidential and used solely for research purposes. Two screening questions were included at the beginning of the questionnaire to identify the appropriate respondents. The respondents were asked to answer the following two questions: "I have considered traveling abroad for cosmetic surgery in the last 12 months" and "Currently, I am not a resident of South Korea." Those who answered "Yes" to both questions were considered to be among the target respondents (i.e., prospective cosmetic surgery tourists) and were therefore included in the study. As this study focused on the Chinese cosmetic surgery tourism market, the survey was presented in Simplified Chinese.

3.7 Data Analysis

3.7.1 Scale Purification and Validation

The first step in the scale purification was to assess the internal consistency reliability of the 50 PRCST items developed, as suggested by Churchill (1979). SPSS 24.0 software was used to compute the item-total correlation to eliminate all items having a low correlation with the total score ($r < 0.3$). The items retained were included in the subsequent purification procedures.

The sample was divided into two subsamples (A and B) for EFA and CFA. Subsample A was used for EFA to explore the factor structure of the PRCST. Next, subsample B served as a holdout sample for CFA to verify the factor structure obtained from the EFA.

EFA was conducted using principal axis factoring (PAF) with promax rotation. PAF is one of the most popular factor extraction methods in EFA, with maximum likelihood (De Winter & Dodou, 2012). In the social sciences, a certain correlation between the factors is generally expected. Therefore, oblique rotation (e.g., promax), which allows the factors to be correlated, produces accurate and reproducible solutions (Costello & Osborne, 2005). The appropriateness of the data for EFA was examined using the Kaiser-Meyer-Olkin (KMO) test (values in the .90s = marvelous, in the .80s = meritorious, in the .70s = middling, in the .60s = mediocre, in the .50s = miserable, and below .50 = unacceptable) and Bartlett's test of sphericity. In terms of factor structure, various methods, including the Kaiser criterion (i.e., all factors with eigenvalues greater than one), Velicer's minimum average partial (MAP) test, parallel analysis, and the scree test, were used to determine the number of factors (O'Connor, 2000). In addition, multiple criteria were used to identify the items to be included in the factor solution obtained. Specifically, all items with low factor loadings (< 0.4), significant cross-loadings (> 0.4), or low communalities (< 0.3) were considered as candidates for deletion. After the factor structure was obtained, Cronbach's alpha (> 0.7) for each factor was computed to

test reliability. Moreover, the correlations between the factors (< 0.7) were examined to determine if the factors were distinct from each other. EFA was conducted using SPSS 24.0.

Following EFA, CFA was conducted using subsample B to confirm the four-dimensional structure of the PRCST and further purify the scale. AMOS 25.0 was used for CFA (Byrne, 2016). The overall fit of the model was assessed with a variety of goodness of fit indices, including the chi-square statistic (χ^2), the normed chi-square (χ^2/df), the root mean square error of approximation (RMSEA), the standardized root mean square residual (SRMR), the Tucker-Lewis index (TLI), and the comparative fit index (CFI). In addition, modification indices, inter-factor correlations, and indicator loadings were assessed, based on which some items were removed to improve the fit of the model. After modification, the final model of the PRCST scale was obtained.

The validity of the PRCST scale was assessed using composite reliability (CR), average variance extracted (AVE), and maximum shared variance (MSV). Specifically, the CR values for each factor identified were computed to examine the internal consistency of the construct indicators, while the AVE and MSV values were estimated to establish convergent and discriminant validity. Moreover, a second order CFA was performed to confirm that the main construct (i.e., the PRCST) loaded into the identified underlying sub-constructs or factors. In the second order CFA, the identified factors were considered as first order factors used as indicators of the second order factor PRCST.

3.7.2 Segmentation based on PRCST

The practical utility of the PRCST scale was established by using it to segment cosmetic surgery tourists based on their PRCST. Initially, an LC analysis was conducted to segment cosmetic surgery tourists based on their PRCST, then a CHAID analysis was performed to develop the profile of the identified segments.

LC analysis was conducted using Latent GOLD 5.1 to identify *K* latent classes (i.e., segments). The PRCST dimensions identified during the scale development process were used as indicator variables to estimate the LC model. Each indicator was generated by computing the scores of the items associated with a particular dimension. Using the indicator variables with the original seven categories resulted in slightly ambiguous LC models, in which specific and distinct risk perception patterns were difficult to distinguish between classes. Thus, the indicator variables were binarized to obtain an LC model in which the segments could be clearly distinguished and meaningfully interpreted. Linear scale transformation, a rescaling method, was used to convert the 7-point Likert scale into a binary scale (Kalmijn, 2014). The three options "strongly agree," "agree," and "somewhat agree" were combined, and the other four options, "strongly disagree," "disagree," "somewhat disagree," and "neutral," were also combined.

Several LC models were estimated to determine the smallest number of latent classes *K* explaining the associations observed between the manifest variables (Magidson & Vermunt, 2004). The one-latent-class model (1-class model) was considered as a baseline model, specifying mutual independence between the variables. The number of latent classes was incremented by one until the simplest model with an adequate fit to the data was found. Various statistics, including the Bayesian information criterion (BIC), the likelihood ratio statistic, and the bivariate residual (BVR), were used to assess the fit of the LC models. Based on the estimated conditional probabilities, each latent class identified was characterized and labeled.

In an LC model, covariates are often used to describe or profile latent classes in terms of demographic or other exogenous variables. Six socio-demographic variables (i.e., gender, age, marital status, education level, occupation, and monthly household income) and three past experience variables (i.e., the number of international trips, the number of visits to South Korea, and past experiences in cosmetic surgery) were included as covariates in the LC analysis. The

covariates were specified as inactive and therefore had no influence on the model parameter estimates. Although using inactive covariates does not change the estimates obtained from the LC model, it does not determine the statistical significance of the covariates. Therefore, the hybrid method combining LC and CHAID analyses was used as an advanced approach to the use of inactive covariates in LC models (Magidson & Vermunt, 2005; Vermunt & Magidson, 2005a).

After estimating the *K*-LC model, the CHAID analysis was performed to profile the LC segments obtained. CHAID can be useful to assess the statistical significance of various predictors in their relationship with the LC segments and ultimately develop a detailed profile of the segments (Vermunt & Magidson, 2005a). In addition, as CHAID uses posterior membership probabilities as weights to reproduce the actual (i.e., probabilistic) classes, the CHAID approach has zero misclassification error (Vermunt & Magidson, 2005b).

In CHAID analysis, chi-square goodness of fit test is used to identify significant predictors and merge predictor categories that do not differ in their prediction of the criterion variable (Magidson & Vermunt, 2005). The profile associated with all segments was first examined in a manner analogous to a three-group discriminant analysis (Vermunt & Magidson, 2005b). Next, the profile of each segment compared with that of the other segments was developed. SI-CHAID 4.0 statistical software was used for the analysis. The categories of the dependent variable were specified using the posterior membership probabilities obtained in the LC analysis (Magidson, 2005). For the predictor variables, the six socio-demographic variables and the three past experience variables were included in the analysis.

In terms of dependent variable scale type, the nominal CHAID algorithm was used to grow a segmentation tree. For the nine predictors, the predictor scale type was selected based on how the categories of a predictor could be combined. The “monotonic” scale type was used to combine only the adjacent categories when the predictor categories were known to be

ordered. The “float” type was the same as the monotonic type, except that the last category (generally containing missing values) could be combined with any other category. Finally, the “free” type was used to combine any category when the predictor categories had no natural ordering (Magidson, 2005).

Accordingly, the monotonic type was used for five variables (age, education level, monthly household income, number of international trips, and number of visits to South Korea) and the free type was used for four variables (gender, marital status, occupation, and experience of cosmetic surgery). In terms of minimum segment size, the “before merge” and “after merge” subgroup sizes were set at 100 and 40, respectively. The CHAID analysis results are illustrated in the form of a tree diagram, crosstabulations, and a gains chart summary.

After identifying the significant predictors of the segments among the socio-demographic and past experience variables, the segments were further profiled in terms of future cosmetic surgery travel characteristics using a chi-square test. The following nine variables for behavioral characteristics were included in the analysis: length of stay, accompanying party, accommodation type, trip arrangement method, cosmetic surgery expenditure, travel expenditure, trip purpose, and decision horizons for clinic and cosmetic procedures. In addition, the interest of the segments in 18 types of cosmetic procedures was investigated.

3.8 Chapter Summary

This chapter discussed the methodology used in this study. It first explained the research design, followed by a detailed description of the study population. Next, the scale development and validation process was described step by step. In addition, the instrument development and data collection procedures were discussed. Finally, the data analysis process for scale development and segmentation was described.

CHAPTER 4. RESULTS

4.1 Chapter Introduction

Chapter 4 presents the results of the quantitative analysis. After discussing the data screening process, the profile of the survey respondents and the descriptive statistics of the PRCST items are presented. With regard to scale purification and validation, the results of a series of analyses, including EFA, CFA, and second order CFA, are discussed. Finally, the results of cosmetic surgery tourist segmentation based on the PRCST and the detailed profile of the segments are provided.

4.2 Descriptive Statistics

4.2.1 Data Screening

One thousand and fifty-nine questionnaires were collected through the main survey. Among them, 12 questionnaires were eliminated for reporting the exact same answer for all items. As a result, 1,047 questionnaires were retained for the quantitative evaluation of the scale. In the data screening process, missing data, outliers, and normality were carefully checked. No missing values were detected for all categorical variables. For a continuous variable (i.e., length of stay), missing values and outliers were replaced by the mean. In addition, normality was checked with skewness and kurtosis values, using +/–2.2 as the cut-off point (George & Mallery, 2016). All skewness and kurtosis values for all PRCST variables were within the acceptable range, indicating that the data were normally distributed.

4.2.2 Profile of the Respondents

Table 4.1 shows the profile of the respondents. Among them, 74% were women and 26% were men, and the majority were in their 20s (53%) and 30s (32%). Among the

respondents, 43% were single and 54% were married. In terms of education level, 79% had obtained an undergraduate degree or higher. About 59% reported monthly household income below RMB50,000 (about US$7,000), while 10% earned more than RMB190,001 (about US$26,600). Although the majority of the respondents (77%) had traveled abroad at least once, 23% stated that they had not traveled abroad in the last three years. About two thirds (66%) of the respondents had previously visited South Korea, with 9% having traveled to South Korea at least 5 times in the last 10 years.

In terms of experience of cosmetic surgery, 26% indicated that they had surgical or non-surgical cosmetic procedures in the past. For those with experience of cosmetic surgery, the most common cosmetic procedures were nose and eye operations (Figure 4.1). In relation to future cosmetic surgery tourism in South Korea, more than 40% of the respondents were interested in undergoing rhinoplasty (nose surgery) and ophthalmoplasty (eye surgery). Other serious procedures, such as liposuction (33%) and face contouring surgery (31%), were also considered. In addition to cosmetic surgery procedures, non-surgical cosmetic treatments, such as laser skin rejuvenation (36%) and skin enhancement injections (34%), aroused great interest among the respondents.

Most of the respondents (92%) indicated that they intended to undergo cosmetic surgery in South Korea in the next 12 months. Table 4.2 presents the behavioral characteristics of the respondents with future cosmetic surgery tourism. During a cosmetic surgery trip to South Korea, 44% would stay for 1 to 2 weeks, 21% would stay for 3 weeks, and 15% would stay for 4 weeks. The rest (15%) would stay in South Korea for longer, i.e., for more than a month. In terms of travel companions, 16% would travel alone, 54% would travel with family or friends, and 30% would take a trip with someone who would also undergo cosmetic surgery. About 63% of the respondents would stay in hotel-type accommodation and 26% would choose specialized accommodation for postoperative recovery. More than half of the respondents

(58%) would organize their cosmetic surgery trip themselves, while others would go through travel agents (12%) or agents specialized in medical tourism (30%).

Among the respondents, 30% would travel primarily for cosmetic surgery, 49% would travel equally for cosmetic surgery and vacation purposes, and 20% would travel for vacation purposes combined with cosmetic surgery. In terms of cosmetic surgery expenditure, 13% planned to spend less than RMB10,000 (about US$1,400), 35% had a budget between RMB10,001 and RMB50,000 (US$1,400 and US$7,000), 21% would spend between RMB50,001 and RMB90,000 (US$7,000 and US$12,600), 16% would spend between RMB90,001 and RMB130,000 (US$12,600 and US$18,200), and 16% would spend more than RMB130,001 (US$18,200). In terms of travel expenditure per person (excluding cosmetic surgery expenditure), 19% would spend less than RMB20,000 (US$2,800), 43% would spend between RMB20,001 and RMB50,000 (US$2,800 and US$7,000), 19% would spend between RMB50,001 and RMB80,000 (US$7,000 and US$11,200), 12% would spend between RMB80,001 and RMB110,000 (US$11,200 and US$15,400), and 8% would spend more than RMB110,001 (US$15,400). In addition, most of the respondents said that they would choose their cosmetic surgery clinic (86%) and type of cosmetic surgery procedure (83%) before departure.

Table 4.1 Profile of the Respondents (*n* = 1047)

Variable	%	Variable	%
Gender		Monthly household income	
Male	26.4	Less than RMB10,000	19.2
Female	73.6	RMB10,001-RMB30,000	26.5
		RMB30,001-RMB50,000	12.9
Age		RMB50,001-RMB70,000	7.1
20 or under	7.6	RMB70,001-RMB90,000	4.0
21-30	52.7	RMB90,001-RMB110,000	4.0
31-40	32.3	RMB110,001-RMB130,000	5.2
41-50	6.0	RMB130,001-RMB150,000	3.1
51 and over	1.4	RMB150,001-RMB170,000	3.0
		RMB170,001-RMB190,000	3.0
Marital status		RMB190,001-RMB210,000	2.5
Single	43.0	RMB210,001-RMB230,000	1.7
Married	53.6	RMB230,001-RMB250,000	1.9
Divorced	1.2	RMB250,001 or more	6.1
Other	2.2		
		Number of international trips	
Education level		None	22.8
High school degree or lower	9.6	1-2	27.3
Undergraduate student	11.4	3-4	28.0
Undergraduate degree	69.0	5-6	14.2
Postgraduate degree	10.0	7-8	3.8
		9 or more	3.8
Occupation			
Company employee	38.1	Number of visits to South Korea	
Business owner	8.6	None	34.4
Professional	26.0	1-2	41.8
Freelancer	11.1	3-4	14.6
Student	12.6	5-6	5.4
Housewife	1.9	7-8	2.1
Not employed	1.7	9 or more	1.6
		Experience of cosmetic surgery	
		Yes	26.2
		No	73.8

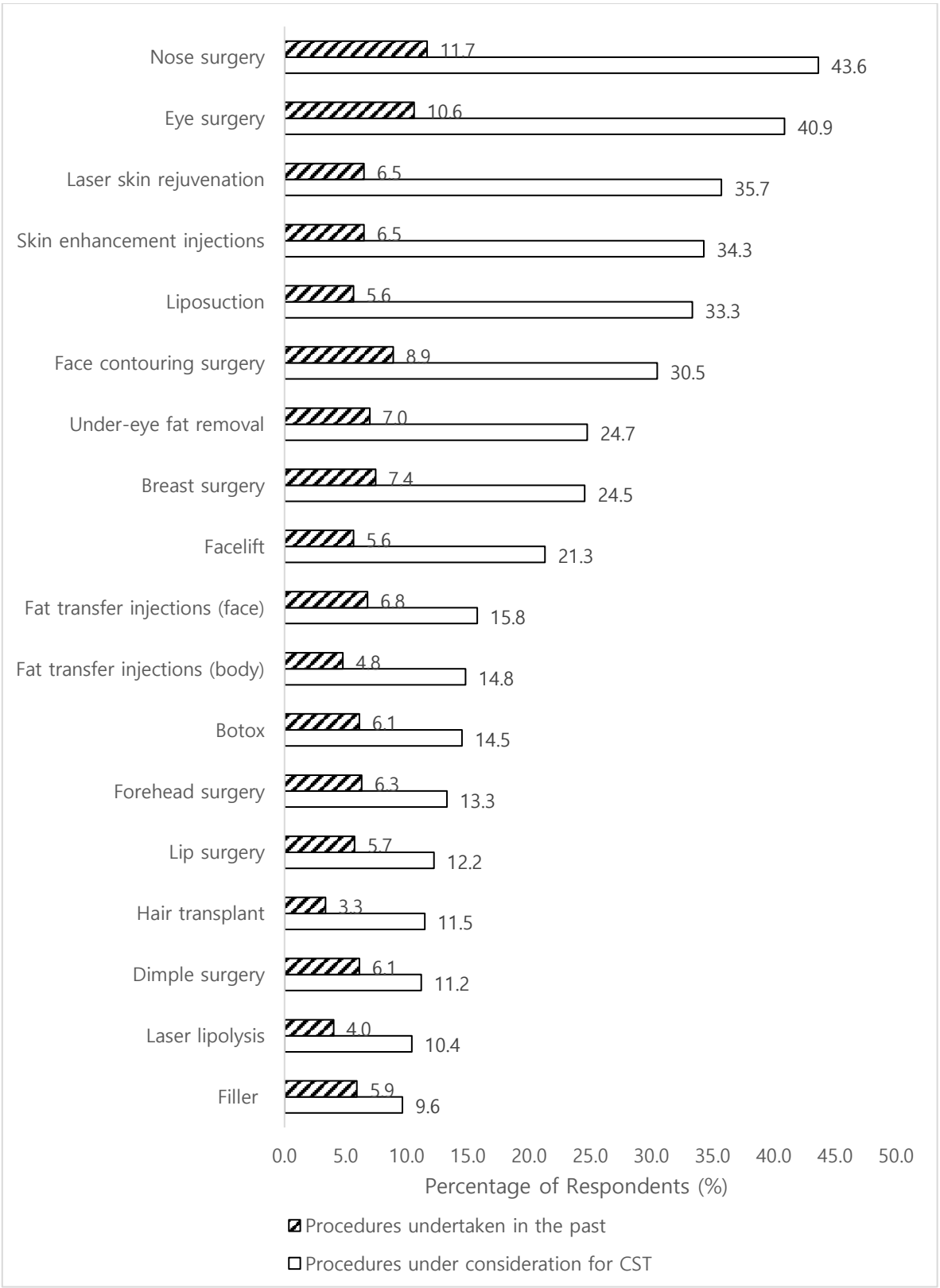

Figure 4.1 Type of Cosmetic Surgery Procedure Under Consideration for Cosmetic Surgery Tourism

Table 4.2 Characteristics of Future Cosmetic Surgery Tourism (*n* = 1047)

Variable	%	Variable	%
Cosmetic surgery tourism intention		Cosmetic surgery expenditure	
Neutral	7.3	Less than RMB10,000	12.5
Somewhat agree	45.8	RMB10,001-RMB30,000	20.1
Agree	33.5	RMB30,001-RMB50,000	14.8
Strongly agree	13.4	RMB50,001-RMB70,000	14.5
		RMB70,001-RMB90,000	6.2
Length of stay		RMB90,001-RMB110,000	9.9
≤ 1 week	22.7	RMB110,001-RMB130,000	5.6
≤ 2 weeks	21.4	RMB130,001-RMB150,000	4.9
≤ 3 weeks	21.2	RMB150,001-RMB170,000	4.5
≤ 1 month	14.9	RMB170,001-RMB190,000	1.9
≤ 2 months	8.8	RMB190,001-RMB210,000	2.2
More than 2 months	6.0	RMB210,001 or more	2.9
Accompanying party		Travel expenditure	
Alone	15.9	Less than RMB20,000	19.1
Family or relatives	30.2	RMB20,001-RMB30,000	20.1
Friends	23.8	RMB30,001-RMB40,000	13.5
Family who will undergo cosmetic surgery	6.1	RMB40,001-RMB50,000	9.1
Friends who will undergo cosmetic surgery	24.1	RMB50,001-RMB60,000	9.6
		RMB60,001-RMB70,000	3.9
Accommodation type		RMB70,001-RMB80,000	5.5
Hotel	30.2	RMB80,001-RMB90,000	3.6
Budget hotel	32.6	RMB90,001-RMB100,000	4.5
Inn/motel	2.7	RMB100,001-RMB110,000	3.6
Recovery accommodation	26.4	RMB110,001-RMB120,000	2.8
Airbnb	5.7	RMB120,001 or more	4.7
Family/friends' house	2.5		
		Decision horizon for clinic	
Trip arrangement method		Decide before departure	85.7
Self-arranged	58.3	Decide after arrival	14.3
Travel agents	11.8		
Medical travel agents	29.9	Decision horizon for procedures	
		Decide before departure	83.2
		Decide after arrival	16.8

Variable	%	Variable	%
Trip purpose			
Completely for cosmetic surgery	5.8		
Mostly for cosmetic surgery	24.6		
Equally for cosmetic surgery and vacation	49.4		
Mostly for vacation	12.8		
Completely for vacation	7.4		

4.2.3 Descriptive Statistics of PRCST Variables

Table 4.3 presents the descriptive statistics of the 50 PRCST variables, including the mean, standard deviation, skewness, and kurtosis. In general, the variables of time risk and financial risk had a higher mean score than those of other risk types. Specifically, among all PRCST variables, FIN4 (unexpected costs incurred) and TIME2 (long planning time) had the highest mean score (M = 4.88). This was followed by TIME3 (unexpected loss of time; M = 4.83), CUL1 (communication problems; M = 4.71) and TIME4 (more time required than cosmetic surgery at home; M = 4.68). In contrast, SOC3 (lower social status; M = 3.38) had the lowest mean score of the 50 variables. Other variables, including FUNC1 (insufficiently experienced medical staff; M = 3.41), PHY1 (crime; M = 3.46), and PHY2 (social unrest; M = 3.56) also showed a relatively low mean score.

Table 4.3 Descriptive Statistics of the PRCST Variables (n = 1047)

Variable		M	SD	Skewness	Kurtosis
Financial Risk					
FIN1	No value for money	3.77	1.705	.209	-.777
FIN2	Fluctuation in exchange rates	4.58	1.647	-.559	-.348
FIN3	Unsatisfactory cost savings	4.58	1.670	-.516	-.494
FIN4	Unexpected costs incurred	4.88	1.642	-.629	-.375

Variable		M	SD	Skewness	Kurtosis
Time Risk					
TIME1	Taking too long	4.59	1.764	-.429	-.763
TIME2	Long planning time	4.88	1.736	-.686	-.411
TIME3	Unexpected loss of time	4.83	1.722	-.630	-.406
TIME4	More time required than cosmetic surgery at home	4.68	1.737	-.437	-.752
Performance Risk					
PER1	Not having better quality medical services than cosmetic surgery at home	3.78	1.712	.228	-.776
PER2	No desired effect obtained	3.80	1.642	.131	-.724
PER3	Not meeting expectations	3.67	1.667	.197	-.769
Functional Risk					
FUNC1	Insufficiently experienced medical staff	3.41	1.740	.380	-.730
FUNC2	Medical tourism agencies not offering quality services	3.81	1.706	.150	-.799
FUNC3	Translators with insufficient knowledge	4.13	1.737	-.120	-.896
FUNC4	Insufficient preoperative assessment	4.53	1.692	-.424	-.665
FUNC5	Insufficient postoperative follow-up	4.66	1.711	-.500	-.657
FUNC6	Inadequate treatment after returning home	4.59	1.760	-.503	-.675
FUNC7	Low medical standards	3.93	1.686	.065	-.787
FUNC8	No state-of-the-art medical equipment	3.85	1.689	.074	-.798
FUNC9	No appropriate laws	4.15	1.743	-.116	-.827
FUNC10	No suitable accommodation for patients	3.90	1.680	.066	-.818
FUNC11	Inconvenient transportation	3.89	1.728	-.008	-.887
FUNC12	Unpalatable food	4.17	1.844	-.143	-1.060
FUNC13	No opportunity for tourist activities during the recovery period	4.41	1.746	-.342	-.816
FUNC14	Immigration issues	4.46	1.724	-.373	-.723
Health Risk					
HLTH1	Complications due to cosmetic surgery	4.48	1.698	-.358	-.652

Variable		M	SD	Skewness	Kurtosis
HLTH2	Physical pain	4.23	1.685	-.194	-.725
HLTH3	Infection problems while traveling	4.45	1.701	-.390	-.661
HLTH4	Complications after returning home	4.53	1.682	-.459	-.587
Physical Risk					
PHY1	Crime	3.46	1.729	.270	-.823
PHY2	Social unrest	3.56	1.732	.199	-.863
PHY3	Bad weather for patients	3.64	1.679	.175	-.820
PHY4	Hostile locals	3.68	1.746	.174	-.831
PHY5	Crowded sites	4.45	1.695	-.462	-.625
PHY6	Risky air travel	4.17	1.744	-.200	-.876
PHY7	Heavy Baggage	4.05	1.735	-.132	-.905
Satisfaction Risk					
SAT1	Unsatisfactory surgical outcomes	4.13	1.667	-.153	-.773
SAT2	Unsatisfactory quality	3.94	1.691	.011	-.806
SAT3	Dissatisfied with the travel experience	3.87	1.659	-.008	-.716
SAT4	No appearance enhancement	3.94	1.661	.010	-.741
Cultural Risk					
CUL1	Communication problems	4.71	1.793	-.549	-.684
CUL2	Cultural differences	4.56	1.727	-.477	-.655
CUL3	Undesirable esthetic perceptions	3.85	1.709	.049	-.787
CUL4	Different beauty standards	4.05	1.680	-.144	-.791
Social Risk					
SOC1	Think negatively of me	4.04	1.717	-.061	-.875
SOC2	Disapproval of cosmetic surgery trip	4.38	1.680	-.398	-.684
SOC3	Lower social status	3.38	1.741	.360	-.767
Psychological Risk					
PSY1	Not reflecting self-image	4.13	1.657	-.164	-.756
PSY2	Nervousness	4.22	1.724	-.242	-.878
PSY3	Psychological repercussions	4.65	1.721	-.585	-.514

Note: Min = 1 (*strongly disagree*) and Max = 7 (*strongly agree*).

4.3 Scale Purification and Validation

4.3.1 EFA

Prior to EFA, the internal consistency reliability of the developed PRCST scale was assessed to eliminate all items with a low item-total correlation. The item-total correlation of 0.3 ($r > 0.3$) was used as a cut-off value. The 50 items had a high item-total correlation, ranging from .560 to .815. Therefore, all items were included in EFA. Cronbach's alpha for the 50 items was .982, indicating that the items were internally consistent.

The sample was randomly divided into two subsamples. Half of the sample (subsample A) was used for EFA, and the other half (subsample B) was used for CFA. After dividing the sample, the size of subsample A was $n = 524$ and that of subsample B was $n = 523$, both greater than 300 (Norusis, 2005). Moreover, the subject-to-variable ratio was 11:1, which was above the recommended ratio of 5:1 (Bryant & Yarnold, 1995). Thus, an adequate sample size was obtained for factor analysis.

EFA using PAF with promax rotation was conducted to identify the underlying dimensions of the PRCST. The KMO measure of sampling adequacy was 0.984 (KMO > 0.9, marvelous), and the Bartlett's test of sphericity was significant ($p < 0.05$). These results indicated that the data were suitable for factor analysis. With respect to determining the number of factors, the Kaiser criterion and Velicer's MAP test recommended a four-factor solution, while parallel analysis and the scree plot suggested a three-factor solution. The four-factor solution was chosen over the three-factor solution as it was considered more theoretically interpretable and representative of the PRCST factors.

Then, the set of 50 items was purified based on multiple criteria (i.e., communalities < 0.3, factor loadings < 0.4, and cross-loadings > 0.4). After examining the representativeness of the candidate items for deletion, 23 items were deleted. As a result, the four factors composed of 27 items were identified, explaining 67.43% of the variance. Seven items were included in

factor 1 (TIME1, TIME2, TIME4, FIN4, FIN2, FIN3, and TIME3), seven items in factor 2 (FUNC1, PER3, PER2, PER1, FUNC8, FUNC2, and FUNC7), nine items in factor 3 (HLTH4, HLTH3, HLTH1, FUNC5, PHY5, FUNC13, FUNC6, FUNC14, and HLTH2), and four items in factor 4 (PHY2, PHY1, PHY4, and PHY3). Based on the EFA results, the four PRCST factors were labeled Cost Risk, Medical Risk, Vacation Risk, and Destination Risk. Table 4.4 presents the factor structure with factor loadings and scale reliability.

Table 4.4 Factor Loadings and Reliability of the Four-factor Model (*n* = 524, subsample A)

Factor		Factor Loading	α
Factor 1: Cost Risk			.928
TIME1	Taking too long	.866	
TIME2	Long planning time	.831	
TIME4	More time required than cosmetic surgery at home	.751	
FIN4	Unexpected costs incurred	.748	
FIN2	Fluctuation in exchange rates[a]	.745	
FIN3	Unsatisfactory cost savings	.676	
TIME3	Unexpected loss of time[a]	.605	
Factor 2: Medical Risk			.934
FUNC1	Insufficiently experienced medical staff	.901	
PER3	Not meeting expectations	.884	
PER2	No desired effect obtained	.813	
PER1	Not having better quality medical services than cosmetic surgery at home	.674	
FUNC8	No state-of-the-art medical equipment[a]	.648	
FUNC2	Medical tourism agencies not offering quality services	.570	
FUNC7	Low medical standards[a]	.517	
Factor 3: Vacation Risk			.946
HLTH4	Complications after returning home[a]	.759	
HLTH3	Infection problems while traveling	.758	
HLTH1	Complications due to cosmetic surgery	.602	

	Factor	Factor Loading	α
FUNC5	Insufficient postoperative follow-up[a]	.586	
PHY5	Crowded sites[a]	.580	
FUNC13	No opportunity for tourist activities during the recovery period	.566	
FUNC6	Inadequate treatment after returning home[a]	.559	
FUNC14	Immigration issues	.544	
HLTH2	Physical pain	.501	
Factor 4: Destination Risk			.900
PHY2	Social unrest	.772	
PHY1	Crime	.765	
PHY4	Hostile locals	.602	
PHY3	Bad weather for patients	.594	

Note: [a] indicates items deleted in subsequent CFA.

Table 4.5 Factor Correlation Matrix (*n* = 524, subsample A)

Factor	Cost Risk	Medical Risk	Vacation Risk	Destination Risk
Cost Risk	1.000			
Medical Risk	.651	1.000		
Vacation Risk	.789	.752	1.000	
Destination Risk	.522	.759	.648	1.000

The communalities for all items were greater than 0.3. All factor loadings were above 0.4 and no significant cross-loadings were observed. Cronbach's alpha for individual PRCST factors ranged from 0.900 to 0.946, indicating good internal reliability. However, as shown in Table 4.5, some of the factors were too strongly correlated (i.e., the correlations between the factors were greater than 0.7), indicating a likely need to resolve a problem of discriminant validity.

4.3.2 CFA

Subsample B was used for CFA to confirm the four-dimensional structure of the PRCST and further purify the scale. Based on the recommended cut-off values of the goodness of fit indices ($\chi^2/df < 3$, RMSEA < .07, SRMR < .08, TLI ≥ .90, and CFI ≥ .90; Hooper, Coughlan, & Mullen, 2008; Hu & Bentler, 1999; Steiger, 2007), the overall fit of the four-factor model with 27 items was evaluated. The goodness of fit indices showed that the proposed model did not provide an acceptable model fit. The chi-square statistic for the four-factor model was significant ($\chi^2 = 1208.173$, $p < .001$), indicating that there was a statistically significant difference between the proposed model and the observed model. The SRMR value (.049) was within the acceptable range. In addition, both TLI (.907) and CFI (.916) were adequate. However, the normed chi-square value ($\chi^2/df = 3.799$) was above the recommended cut-off value of 3.0 and the RMSEA (.073) was also above the cut-off value of .07.

As an acceptable fit was not achieved in the proposed model, model modification was carried out by assessing the factor loadings, modification indices, and inter-factor correlations. The factor loadings for the 27 items were equal to or greater than .70, therefore no item had to be removed due to low factor loadings. Next, the four largest modification indices were treated by covarying the error terms that were part of the same factor (Hermida, 2015). After covarying the error terms of FUNC7 and FUNC8, FUNC5 and FUNC6, PER2 and PER3, and HLTH3 and HLTH4, an adequate model fit was obtained ($\chi^2 = 934.818$, $p < .001$, $\chi^2/df = 2.977$, RMSEA = .062, SRMR = .047, TLI = .934, and CFI = .941).

However, the model revealed a problem of discriminant validity, so further model modification was necessary. Due to the strong correlation between Cost Risk and Vacation Risk, EFA with the 16 items of these two factors was conducted to identify the items with significant cross-loadings. Similarly, due to the strong correlation between Medical Risk and Destination Risk, EFA with the 11 items of these two factors was carried out. As a result, eight

items, FIN2, TIME3, FUNC8, FUNC7, HLTH4, FUNC5, PHY5, and FUNC6, were removed after examining both statistical and theoretical interpretability in detail.

Therefore, a four-factor model with 19 items was obtained. The goodness of fit indices showed that the modified four-factor model had a good fit ($\chi^2 = 433.084$, $p < .001$, $\chi^2/df = 2.966$, RMSEA = .061, SRMR = .043, TLI = .952, and CFI = .959). Table 4.6 presents the model fit comparison between the initial model with 27 items and the final model with 19 items.

Table 4.6 Initial and Final Measurement Model Fit Comparison (*n* = 523, subsample B)

Model	χ^2	χ^2/df	RMSEA	SRMR	TLI	CFI
4-factor, 27 items	1,208.173 ($p < .001$)	3.799	.073	.049	.907	.916
4-factor, 19 items	433.084 ($p < .001$)	2.966	.061	.043	.952	.959

The CFA measurement model for the PRCST is presented in Figure 4.2. In the final model, five items (i.e., TIME1, TIME2, TIME4, FIN4, and FIN3) were included in Cost Risk and five items (i.e., FUNC1, PER3, PER2, PER1, and FUNC2) were included in Medical Risk. In addition, five items (i.e., HLTH3, HLTH1, FUNC13, FUNC14, and HLTH2) were included in Vacation Risk and four items (i.e., PHYS2, PHYS1, PHYS4, and PHYS3) were included in Destination Risk. As shown in Table 4.7, the factor loadings for the 19 items were above the cut-off value of .70. The factor loadings ranged from .770 to .804 for Cost Risk, from .749 to .880 for Medical Risk, from .702 to .858 for Vacation Risk, and from .772 to .865 for Destination Risk. In addition, the results indicated good internal reliability for each of the four PRCST factors, with Cronbach's alpha ranging from 0.88 to 0.91.

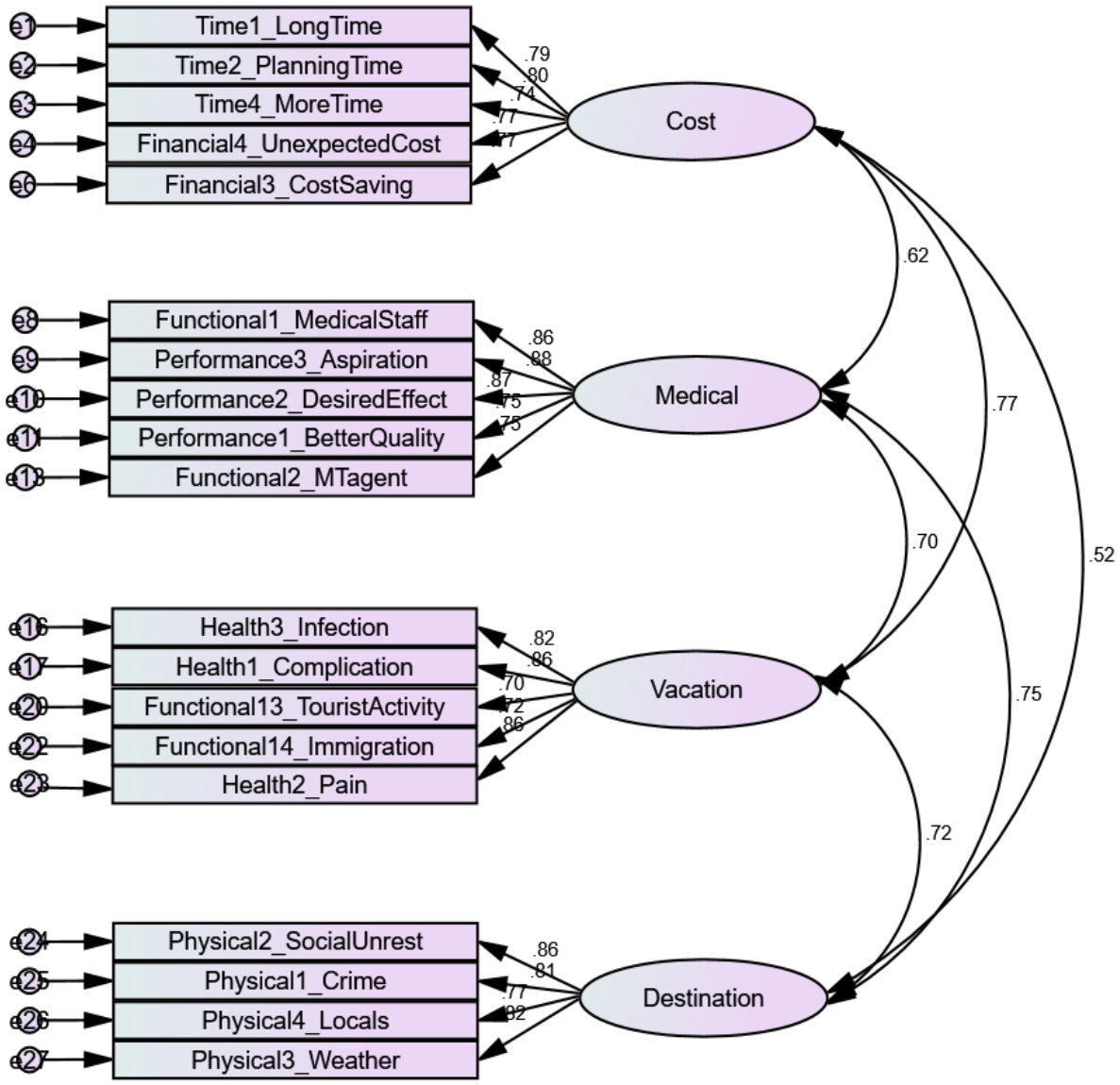

Figure 4.2 CFA Measurement Model for PRCST

Table 4.7 Results of the Final Model (*n* = 523, subsample B)

Factor			Factor Loading	α
Cost Risk (5 items)				.882
TIME1	←	Cost Risk	.794	
TIME2	←	Cost Risk	.804	
TIME4	←	Cost Risk	.737	
FIN4	←	Cost Risk	.772	
FIN3	←	Cost Risk	.770	

Factor			Factor Loading	α
Medical Risk (5 items)				.909
FUNC1	←	Medical Risk	.856	
PER3	←	Medical Risk	.880	
PER2	←	Medical Risk	.869	
PER1	←	Medical Risk	.749	
FUNC2	←	Medical Risk	.749	
Vacation Risk (5 items)				.892
HLTH3	←	Vacation Risk	.823	
HLTH1	←	Vacation Risk	.858	
FUNC13	←	Vacation Risk	.702	
FUNC14	←	Vacation Risk	.715	
HLTH2	←	Vacation Risk	.857	
Destination Risk (4 items)				.887
PHYS2	←	Destination Risk	.865	
PHYS1	←	Destination Risk	.811	
PHYS4	←	Destination Risk	.772	
PHYS3	←	Destination Risk	.816	

4.3.3 Validity of the Final Model

Table 4.8 presents the results of the reliability and validity of the PRCST scale developed. The results showed that the CR values for each of the four factors were above the recommended threshold of 0.7 (Hair, Black, Babin, & Anderson, 2010), indicating the internal consistency of the construct indicators. In addition, the AVE values were above the threshold of 0.5 (Fornell & Larcker, 1981), which provided evidence of convergent validity. Finally, the AVE value of each factor was greater than its MSV value, so that discriminant validity was established. Additional evidence of discriminant validity was provided by the fact that the square root of the AVEs was greater than any inter-factor correlation (Table 4.9).

Table 4.8 Reliability and Validity of the Final Model (*n* = 523, subsample B)

Factor	CR	AVE	MSV
Cost Risk	.883	.602	.591
Medical Risk	.912	.677	.558
Vacation Risk	.894	.630	.591
Destination Risk	.889	.667	.558

Note: CR is composite reliability, AVE is average variance extracted, and MSV is maximum shared variance.

Table 4.9 Inter-factor Correlations (*n* = 523, subsample B)

Factor	Cost Risk	Medical Risk	Vacation Risk	Destination Risk
Cost Risk	**.776**			
Medical Risk	.616	**.823**		
Vacation Risk	.769	.705	**.794**	
Destination Risk	.521	.747	.721	**.817**

Note: The square root of the AVEs is reported along the diagonal (in bold).

4.3.4 Second Order CFA

Figure 4.3 shows the second order CFA for PRCST. In the second order CFA, the four first order factors were used as indicators of the second order factor PRCST. The results showed that all model fit indices reached the required level: $\chi^2 = 497.747$, $p < .001$; $\chi^2/df = 3.363$; RMSEA = 0.067; SRMR = 0.054; TLI = 0.942; and CFI = 0.950. The normed chi-square was marginally higher than the threshold. However, according to Wheaton, Muthen, Alwin, and Summers (1977), a value less than 5 is acceptable. PRCST loaded well on the four sub-constructs, the factor loadings of Cost Risk, Medical Risk, Vacation Risk, and Destination Risk being .777, .816, .911, and .801, respectively. The effect of PRCST on all sub-constructs was statistically significant ($p < .001$). In addition, the CR and AVE values were above the recommended thresholds, suggesting that the PRCST construct was well explained by the four sub-constructs. The results of the second order CFA are presented in Table 4.10.

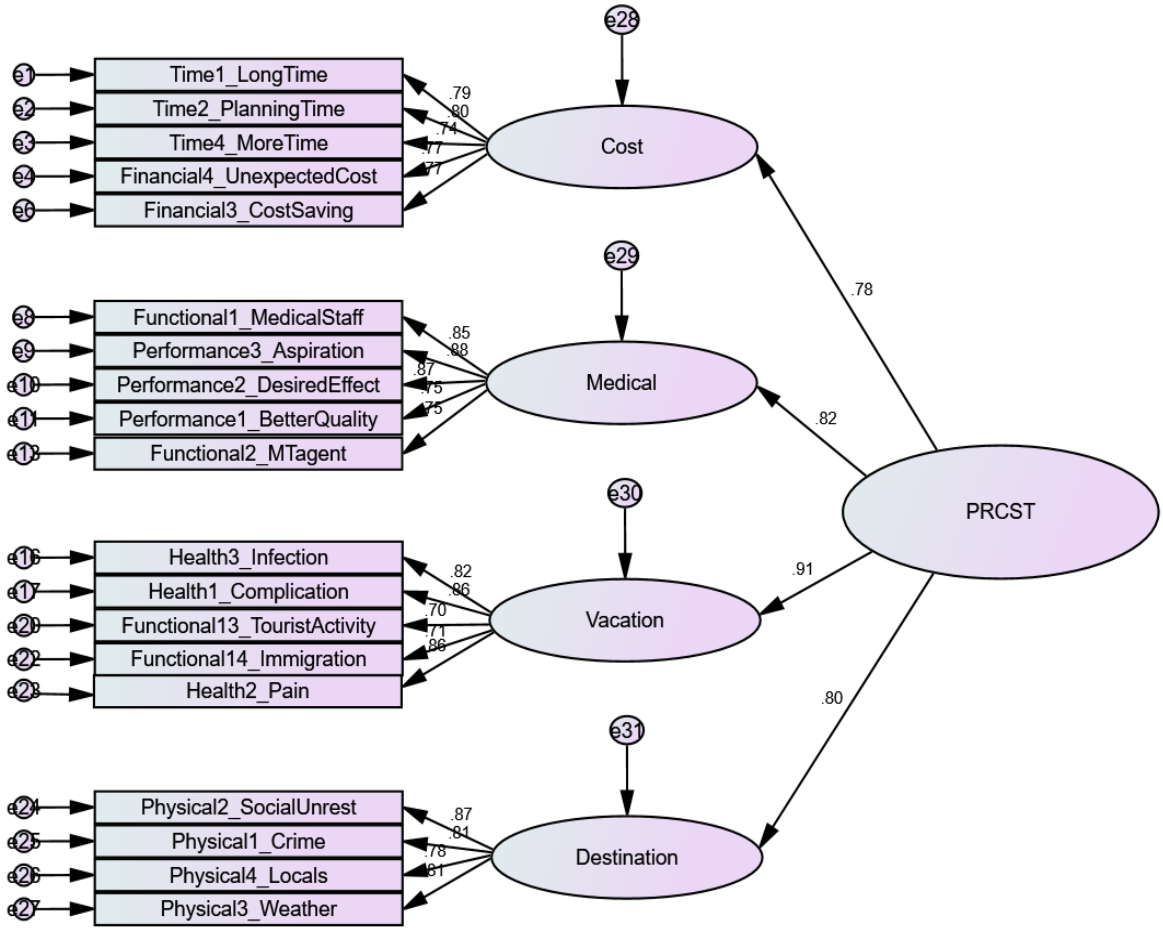

Figure 4.3 Second Order CFA Measurement Model for PRCST

Table 4.10 Second Order CFA Results

First Order Factor		Second Order Factor	Factor Loading (β)	CR	AVE
Cost Risk	←	PRCST	.777	.897	.685
Medical Risk	←	PRCST	.816		
Vacation Risk	←	PRCST	.911		
Destination Risk	←	PRCST	.801		

4.4 Segmentation of Cosmetic Surgery Tourists

4.4.1 LC Analysis

An LC analysis was conducted to segment the cosmetic surgery tourists based on their PRCST. The entire sample (n = 1,047) was used for segmentation. To determine the number of latent classes, three LC models were estimated, each with a different number of latent classes. The fit of the model was assessed using the BIC, which is the most commonly used fit statistic in LC modeling. Taking parsimony into account, the BIC is particularly useful for comparing models when a model with a lower BIC value indicates a better fit (Magidson & Vermunt, 2004). The goodness of fit statistic L^2, which "indicates the amount of the association among the variables that remains unexplained after estimating the model" (Vermunt & Magidson, 2005a, p. 170), was also used to assess the fit of the model: the lower the value, the better the fit of the model to the data. As shown in Table 4.11, the three-class model had lower BIC and L^2 values than the other models. If the *p*-value is greater than 0.05, the model fits the data well. In this study, the only model that was not statistically significant was the three-class model, indicating that it was the most suitable model for the dataset.

Table 4.11 Results of the Fit of Various LC Models to the Data

Model	BIC	L^2	*p*-value
1-class model	5,228.3	907.4	1.6e-187***
2-class model	4,436.2	80.6	2.7e-15***
3-class model	**4,392.1**	**1.6**	**0.20**

Note: *** *p*-value < 0.01.

In addition to the BIC and L^2, BVRs were used to assess the extent to which the two-way associations between any pair of indicators were explained by the model (Vermunt & Magidson, 2005a). In other words, BVRs test the local fit of the model rather than the overall

fit. If BVRs are substantially larger than 1, the model fails to reproduce the association between two indicators (Magidson & Vermunt, 2004). As shown in Table 4.12, the BVRs of the 3-LC model were all less than 1, indicating that the variables were not related beyond their association through the latent class variable. As a result, the model with three latent classes was found to be the best model for explaining the associations between the four indicators.

Table 4.12 BVRs Obtained with the 3-LC Model

Indicators	Cost Risk	Medical Risk	Vacation Risk	Destination Risk
Cost Risk	-			
Medical Risk	0.001	-		
Vacation Risk	0.025	0.017	-	
Destination Risk	0.095	0.039	0.005	-

Table 4.13 shows the statistical significance of each indicator in the 3-LC model. For each indicator, the *p*-value was less than .05, indicating that the effects associated with this indicator were statistically significant to distinguish between the latent classes. The results showed that 38.2%, 55.9%, 57.4%, and 54.5% of the variance in Cost Risk, Medical Risk, Vacation Risk, and Destination Risk, respectively, was explained by the 3-LC model.

Table 4.13 Parameter Estimates for the 3-LC Model

	Class 1	Class 2	Class 3	Wald	*p*-value	R^2
Cost Risk	-1.1804	0.0076	1.1727	83.6786	6.8e-19***	0.3816
Medical Risk	-1.3506	-0.2240	1.5746	67.7222	2.0e-15***	0.5586
Vacation Risk	-1.7507	0.1115	1.6391	18.2530	0.0001***	0.5743
Destination Risk	-1.2074	-0.2715	1.4789	93.8115	4.3e-21***	0.5451

Note: *** *p*-value < 0.01.

Table 4.14 presents the parameters re-expressed in the form of conditional probabilities showing how the classes were related to the indicator variables. Overall, around 39% of the cases were contained in class 1, 39% in class 2, and 22% in class 3. Similar to the "factor loadings" in factor analysis, the estimated conditional probabilities in LC analysis provide the measurement structure based on which the names of the latent classes can be assigned (Magidson & Vermunt, 2004).

The results showed that none of the four PRCST dimensions was perceived as a risk related to cosmetic surgery tourism by class 1 (Cost Risk = "disagree/neutral," Medical Risk = "disagree/neutral," Vacation Risk = "disagree/neutral," and Destination Risk = "disagree/neutral"). Thus, LC segment 1 was named "Risk Neutral." For class 2, Cost Risk and Vacation Risk were perceived as risks associated with cosmetic surgery tourism, unlike Medical Risk and Destination Risk. Thus, LC segment 2 was called "Risk Concerned." Finally, the conditional probabilities for class 3 indicated that all four dimensions were perceived as risks related to cosmetic surgery tourism. Therefore, LC segment 3 was labeled "Risk Sensitive."

Table 4.14 Structure of Individual Segments

	Class 1	Class 2	Class 3	Overall
	Risk Neutral	Risk Concerned	Risk Sensitive	
Segment Size (%)	39.20	38.94	21.86	
Indicators				
Cost Risk				
Agree	0.26	**0.79**	**0.98**	0.62
Disagree/Neutral	**0.74**	0.21	0.02	0.38
Medical Risk				
Agree	0.02	0.18	**0.89**	0.27
Disagree/Neutral	**0.98**	**0.82**	0.11	0.73
Vacation Risk				
Agree	0.05	**0.69**	**0.98**	0.50
Disagree/Neutral	**0.95**	0.31	0.02	0.50
Destination Risk				
Agree	0.02	0.12	**0.82**	0.23
Disagree/Neutral	**0.98**	**0.88**	0.18	0.77

Note: For all indicators, the numbers represent the conditional probabilities equal to 1 in each segment; Agree = The indicator is perceived as a risk associated with cosmetic surgery tourism; Disagree/Neutral = The indicator is not perceived as a risk associated with cosmetic surgery tourism.

In LC analysis, cases can be classified into classes using the modal assignment rule. For instance, as shown in the first row of Table 4.15, the 164 cases had the following response pattern: Cost Risk = Agree, Medical Risk = Agree, Vacation Risk = Agree, and Destination Risk = Agree. These cases were classified in class 3 because the probability of being in this class was the highest (.9710).

Table 4.15 Classification Output of the 3-LC Model

Response Pattern				Observation Frequency	Modal Class assignment	Posterior Membership Probability		
Cost Risk	Medical Risk	Vacation Risk	Destination Risk			Class 1	Class 2	Class 3
Agree	Agree	Agree	Agree	164	3	0.0000	0.0290	0.9710
Agree	Agree	Agree	Disagree/Neutral	71	3	0.0017	0.4968	0.5015
Agree	Agree	Disagree/Neutral	Agree	5	3	0.0084	0.3849	0.6067
Agree	Agree	Disagree/Neutral	Disagree/Neutral	19	2	0.1198	0.8402	0.0400
Agree	Disagree/Neutral	Agree	Agree	41	2	0.0026	0.5204	0.4770
Agree	Disagree/Neutral	Agree	Disagree/Neutral	173	2	0.0309	0.9430	0.0261
Agree	Disagree/Neutral	Disagree/Neutral	Agree	11	2	0.1667	0.7988	0.0345
Agree	Disagree/Neutral	Disagree/Neutral	Disagree/Neutral	169	1	0.5754	0.4241	0.0006
Disagree/Neutral	Agree	Agree	Agree	5	3	0.0013	0.2347	0.7639
Disagree/Neutral	Agree	Agree	Disagree/Neutral	10	2	0.0326	0.8809	0.0865
Disagree/Neutral	Agree	Disagree/Neutral	Agree	2	2	0.1699	0.7197	0.1104
Disagree/Neutral	Agree	Disagree/Neutral	Disagree/Neutral	10	1	0.6043	0.3939	0.0018
Disagree/Neutral	Disagree/Neutral	Agree	Agree	7	2	0.0474	0.8746	0.0780
Disagree/Neutral	Disagree/Neutral	Agree	Disagree/Neutral	57	2	0.2600	0.7380	0.0020
Disagree/Neutral	Disagree/Neutral	Disagree/Neutral	Agree	8	1	0.6911	0.3076	0.0013
Disagree/Neutral	Disagree/Neutral	Disagree/Neutral	Disagree/Neutral	295	1	0.9359	0.0641	0.0000

When cases are classified using the modal assignment rule, a certain amount of misclassification error is present (Vermunt & Magidson, 2005a). The classification table in Table 4.16 shows how well the modal assignment classification reproduced the actual (probabilistic) classes. The large numbers along the diagonal of the table indicate that overall, the modal class assignment reproduced the classes quite well. There were only a few misclassification errors in the model, as indicated by the small values in the off-diagonal cells. Specifically, in this 3-LC model, the modal assignment rule was expected to correctly classify 384.8992 cases for class 1, 267.6706 cases from class 2, and 201.6973 cases from class 3, for an expected total of 854.2671 correct classifications of the 1,047 cases. These results represented an expected misclassification rate of 18.41% (1-(854.2671/1,047)).

It should be noted that the hybrid method combining LC and CHAID analyses has zero misclassification error, as CHAID analysis uses posterior membership probabilities, thereby reproducing the actual (probabilistic, not modal) classes (Vermunt & Magidson, 2005a).

Table 4.16 Crosstabulation of Modal and Probabilistic Classes

Latent	Modal			
	Class 1	Class 2	Class 3	Total
Class 1	**384.8992**	25.3755	0.1727	410.4474
Class 2	96.9764	**267.6706**	43.1299	407.7769
Class 3	0.1244	26.9540	**201.6973**	228.7757
Total	482.0000	320.0000	245.0000	1,047.0000

Table 4.17, Table 4.18, and Table 4.19 present the conditional probabilities showing how the latent classes were related to the covariates (i.e., socio-demographic variables, past experience variables, cosmetic surgery travel characteristics, and the type of cosmetic surgery procedure). Specifying the covariates as inactive provided appropriate crosstabulations without influencing the original measurement model. However, a limitation of this approach is that it

is no longer able to assess the statistical significance of the covariates in relation to the latent classes (Magidson & Vermunt, 2001). Therefore, as an alternative to using inactive covariates in the LC model, a CHAID analysis was conducted to identify the most important covariates to profile the segments obtained. The results of the CHAID analysis are provided in the next section.

Table 4.17 Crosstabulations of Socio-demographic and Past Experience Variables

Covariate	Class 1	Class 2	Class 3	Overall
	Risk Neutral	Risk Concerned	Risk Sensitive	
Gender (GENDER)				
Female	0.77	0.75	0.67	0.74
Male	0.23	0.25	0.33	0.26
Age (AGE)				
20 or under	0.07	0.08	0.08	0.08
21-30	0.48	0.59	0.50	0.53
31-40	0.37	0.27	0.34	0.32
41-50	0.07	0.05	0.05	0.06
51-60	0.01	0.01	0.02	0.01
61 and over	0.00	0.00	0.00	0.00
Marital status (MARITAL)				
Single	0.40	0.48	0.40	0.43
Married	0.58	0.48	0.55	0.54
Divorced	0.01	0.01	0.02	0.01
Other	0.01	0.03	0.03	0.02
Education level (EDUCATION)				
High school degree or less	0.09	0.08	0.14	0.10
Undergraduate student	0.09	0.15	0.10	0.11
Undergraduate degree	0.71	0.68	0.68	0.69
Postgraduate degree or above	0.12	0.09	0.09	0.10
Occupation (OCCUPATION)				
Company employee	0.37	0.40	0.37	0.38
Business owner	0.10	0.06	0.09	0.09
Professional	0.28	0.25	0.25	0.26
Freelancer	0.11	0.10	0.13	0.11
Student	0.11	0.16	0.11	0.13

Covariate	Class 1	Class 2	Class 3	Overall
	Risk Neutral	Risk Concerned	Risk Sensitive	
Housewife	0.02	0.01	0.03	0.02
Not employed	0.01	0.02	0.03	0.02
Monthly household income (INCOME)				
Less than RMB10,000	0.16	0.19	0.25	0.19
RMB10,001-RMB30,000	0.24	0.30	0.25	0.26
RMB30,001-RMB50,000	0.14	0.12	0.12	0.13
RMB50,001-RMB70,000	0.07	0.08	0.06	0.07
RMB70,001-RMB90,000	0.04	0.03	0.05	0.04
RMB90,001-RMB110,000	0.03	0.05	0.04	0.04
RMB110,001-RMB130,000	0.06	0.05	0.05	0.05
RMB130,001-RMB150,000	0.03	0.03	0.02	0.03
RMB150,001-RMB170,000	0.03	0.03	0.02	0.03
RMB170,001-RMB190,000	0.03	0.03	0.04	0.03
RMB190,001-RMB210,000	0.03	0.02	0.02	0.02
RMB210,001-RMB230,000	0.02	0.01	0.02	0.02
RMB230,001-RMB250,000	0.03	0.02	0.01	0.02
RMB250,001 or more	0.09	0.04	0.05	0.06
Number of international trips (NUM_INTTRIP)				
None	0.18	0.23	0.32	0.23
1-2	0.28	0.28	0.25	0.27
3-4	0.27	0.30	0.27	0.28
5-6	0.19	0.13	0.09	0.14
7-8	0.04	0.04	0.03	0.04
9 or more	0.05	0.03	0.03	0.04
Number of visits to Korea (NUM_VISIT)				
None	0.29	0.34	0.46	0.34
1-2	0.39	0.48	0.36	0.42
3-4	0.19	0.13	0.10	0.15
5-6	0.09	0.03	0.03	0.05
7-8	0.03	0.01	0.02	0.02
9 or more	0.01	0.01	0.03	0.02
Experience in cosmetic surgery (CS_EXPR)				
Yes	0.29	0.25	0.24	0.26
No	0.71	0.75	0.76	0.74

Note: In each segment, the conditional probabilities are equal to 1.

Table 4.18 Crosstabulations of Cosmetic Surgery Travel Characteristics

Covariate	Class 1	Class 2	Class 3	Overall
	Risk Neutral	Risk Concerned	Risk Sensitive	
Length of stay (LENGTH)				
1 week	0.24	0.24	0.39	0.28
2 weeks	0.23	0.19	0.23	0.21
3 weeks	0.21	0.24	0.18	0.21
1 month	0.14	0.18	0.10	0.15
2 months	0.12	0.08	0.04	0.09
More than 2 months	0.06	0.07	0.05	0.06
Accompanying party (ACCOMPANY)				
Travel alone	0.16	0.13	0.20	0.16
Family or relatives	0.32	0.28	0.31	0.30
Friends	0.25	0.24	0.21	0.24
Family who will also undergo cosmetic surgery	0.07	0.06	0.05	0.06
Friends who will also undergo cosmetic surgery	0.20	0.29	0.22	0.24
Accommodation type (ACCOMO)				
Hotel	0.35	0.25	0.31	0.30
Budget hotel	0.29	0.33	0.37	0.33
Inn/motel	0.02	0.02	0.04	0.03
Recovery accommodation	0.26	0.30	0.21	0.26
Airbnb	0.05	0.07	0.04	0.06
Family/friends' house	0.02	0.03	0.02	0.02
Trip arrangement method (ARRANGE)				
Self-arranged	0.58	0.56	0.63	0.58
Travel agents	0.11	0.10	0.18	0.12
Medical travel agents	0.31	0.35	0.19	0.30
Cosmetic surgery expenditure (EXPS_CS)				
Less than RMB10,000	0.11	0.10	0.20	0.13
RMB10,001-RMB30,000	0.17	0.23	0.21	0.20
RMB30,001-RMB50,000	0.12	0.18	0.13	0.15
RMB50,001-RMB70,000	0.14	0.15	0.15	0.15
RMB70,001-RMB90,000	0.07	0.07	0.03	0.06
RMB90,001-RMB110,000	0.09	0.11	0.10	0.10
RMB110,001-RMB130,000	0.07	0.04	0.05	0.06
RMB130,001-RMB150,000	0.07	0.04	0.03	0.05
RMB150,001-RMB170,000	0.06	0.03	0.03	0.04
RMB170,001-RMB190,000	0.03	0.02	0.01	0.02

Covariate	Class 1	Class 2	Class 3	Overall
	Risk Neutral	Risk Concerned	Risk Sensitive	
RMB190,001-RMB210,000	0.04	0.01	0.00	0.02
RMB210,001 or more	0.02	0.02	0.06	0.03
Travel expenditure (EXPS_TRIP)				
Less than RMB20,000	0.16	0.19	0.25	0.19
RMB20,001-RMB30,000	0.17	0.23	0.20	0.20
RMB30,001-RMB40,000	0.13	0.13	0.14	0.13
RMB40,001-RMB50,000	0.10	0.08	0.08	0.09
RMB50,001-RMB60,000	0.11	0.10	0.07	0.10
RMB60,001-RMB70,000	0.03	0.04	0.04	0.04
RMB70,001-RMB80,000	0.06	0.05	0.04	0.06
RMB80,001-RMB90,000	0.04	0.04	0.04	0.04
RMB90,001-RMB100,000	0.06	0.04	0.04	0.04
RMB100,001-RMB110,000	0.05	0.03	0.02	0.04
RMB110,001-RMB120,000	0.04	0.02	0.02	0.03
RMB120,001 or more	0.05	0.03	0.07	0.05
Trip purpose (PURPOSE)				
Completely for cosmetic surgery	0.07	0.04	0.07	0.06
Mostly for cosmetic surgery	0.25	0.26	0.23	0.25
Equally for cosmetic surgery and vacation	0.54	0.51	0.38	0.49
Mostly for vacation	0.10	0.13	0.17	0.13
Completely for vacation	0.04	0.06	0.15	0.07
Decision on clinic (DECISON_CLINIC)				
Decide before departure	0.87	0.87	0.80	0.86
Decide after arrival	0.13	0.13	0.20	0.14
Decision on procedure (DECISON_TYPE)				
Decide before departure	0.84	0.84	0.80	0.83
Decide after arrival	0.16	0.16	0.20	0.17

Note: In each segment, the conditional probabilities are equal to 1.

Table 4.19 Crosstabulations of Cosmetic Surgery Procedures

Covariate	Class 1 Risk Neutral	Class 2 Risk Concerned	Class 3 Risk Sensitive	Overall
Eye				
No	0.61	0.58	0.57	0.59
Yes	0.39	0.42	0.43	0.41
Nose				
No	0.54	0.57	0.60	0.56
Yes	0.46	0.43	0.40	0.44
Forehead				
No	0.86	0.89	0.85	0.87
Yes	0.14	0.11	0.15	0.13
Face contouring				
No	0.64	0.70	0.77	0.70
Yes	0.36	0.30	0.23	0.30
Facelift				
No	0.75	0.83	0.77	0.79
Yes	0.25	0.17	0.23	0.21
Face fat transfer				
No	0.82	0.86	0.85	0.84
Yes	0.18	0.14	0.15	0.16
Dimple				
No	0.86	0.92	0.88	0.89
Yes	0.14	0.08	0.12	0.11
Under-eye fat removal				
No	0.74	0.77	0.75	0.75
Yes	0.26	0.23	0.25	0.25
Lips				
No	0.88	0.88	0.87	0.88
Yes	0.12	0.12	0.13	0.12
Breasts				
No	0.75	0.75	0.76	0.75
Yes	0.25	0.25	0.24	0.25
Liposuction				
No	0.67	0.67	0.65	0.67
Yes	0.33	0.33	0.35	0.33
Body fat transfer				
No	0.84	0.87	0.85	0.85
Yes	0.16	0.13	0.15	0.15

Covariate	Class 1	Class 2	Class 3	Overall
	Risk Neutral	Risk Concerned	Risk Sensitive	
Filler				
No	0.89	0.92	0.89	0.90
Yes	0.11	0.08	0.11	0.10
Botox				
No	0.86	0.88	0.81	0.85
Yes	0.14	0.12	0.19	0.15
Laser skin				
No	0.65	0.64	0.63	0.64
Yes	0.35	0.36	0.37	0.36
Skin injections				
No	0.65	0.64	0.69	0.66
Yes	0.35	0.36	0.31	0.34
Laser lipolysis				
No	0.89	0.92	0.88	0.90
Yes	0.11	0.08	0.12	0.10
Hair transplant				
No	0.90	0.89	0.86	0.89
Yes	0.10	0.11	0.14	0.11

Note: In each segment, the conditional probabilities are equal to 1.

4.4.2 CHAID Analysis

The CHAID analysis was performed to profile the LC segments obtained. The dependent variable had three categories, representing the Risk Neutral, Risk Concerned, and Risk Sensitive segments (respectively labeled SEG#1, SEG#2, and SEG#3 in the CHAID tree). The posterior membership probabilities obtained in the LC analysis were used to specify the categories of the dependent variable. The CHAID tree grows by splitting the grouped categories of the selected predictors. In CHAID, the smaller the *p*-value, the more statistically significant the predictor (Magidson, 2005). Once a significant predictor is selected, CHAID merges the original categories of the predictors into grouped categories as they do not significantly differ from each other. The *p*-value used by CHAID to rank the predictors is the

smallest of the *p*-values adjusted after category merging and the associated *p*-value before category merging (Magidson, 2005).

Figure 4.4 presents the CHAID tree, the nodes displaying the percentage of the first category of the dependent variable only (i.e., SEG#1). In the root node, overall, about 39% of the 1,047 cases were in the Risk Neutral segment. This result was consistent with the segment size obtained in the LC analysis (see Table 4.14).

The CHAID tree grew by splitting the grouped categories of four predictors: NUM_VISIT, GENDER, AGE, and MARITAL. NUM_VISIT was the most significant of all predictors and was therefore used for the first split of the tree. With the root node split on NUM_VISIT, the initial six categories were merged into three categories: 1, 2, and 3-6. The NUM_VISIT category 1 node was further split on GENDER, the two categories being kept as original. The tree continued to grow based on AGE, whose original six categories were merged into two categories: 1-2 and 3-6. In addition, the NUM_VISIT category 2 node was split on MARITAL, combining categories 1 and 4 and categories 2 and 3. As a result, six terminal nodes were formed in the CHAID tree (see Table 4.20 for the description of the predictor categories).

The results showed that of the respondents who had visited South Korea three or more times in the past (terminal node 6, defined as NUM_VISIT = 3-6), 53% were included in the Risk Neutral segment. In addition, when NUM_VISIT, GENDER, and AGE were taken together, 55% of the female respondents over 30 who had never visited South Korea (terminal node 2, defined as NUM_VISIT = 1, GENDER = 1, AGE = 3-6) were in this segment.

Table 4.20 shows the crosstabulations of the dependent variable by the four predictors and the statistical significance associated with the predictors before and after category merging.

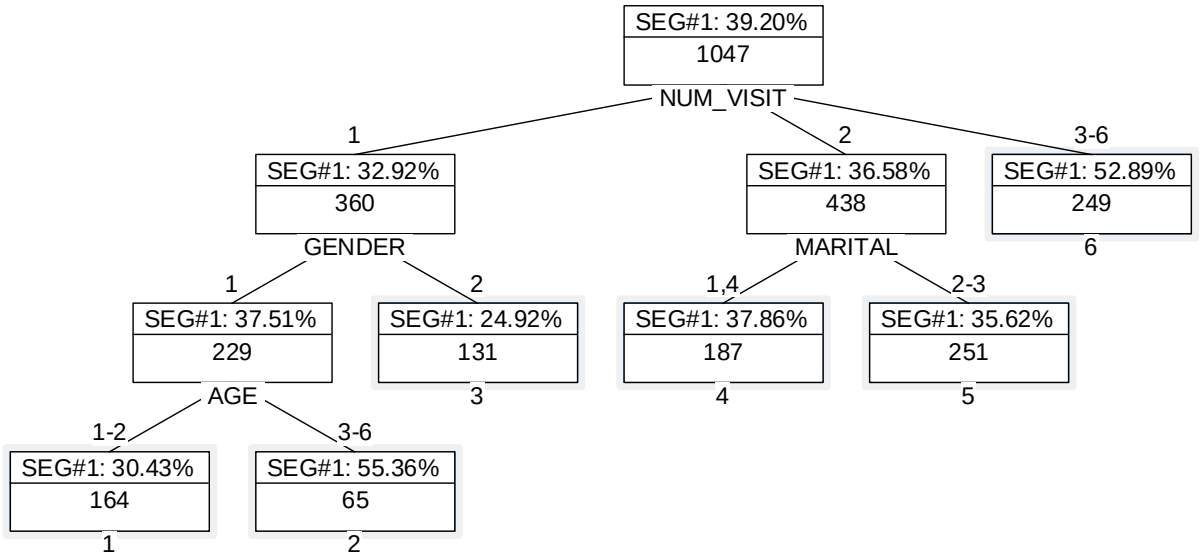

Figure 4.4 CHAID Tree with the Percentage of the Risk Neutral Segment in the Nodes

Table 4.20 Crosstabulations of Significant Predictors

Predictor	Categories	% in the segment				*p*-value
		Risk Neutral	Risk Concerned	Risk Sensitive	Total	
NUM_ VISIT	*Before merging*					1.2 x 10^-6
	1: None	28.88	33.65	45.56	34.38	***
	2: 1-2	39.04	47.76	36.29	41.83	
	3: 3-4	19.01	12.63	10.27	14.61	
	4: 5-6	9.07	3.34	2.70	5.44	
	5: 7-8	2.62	1.42	2.38	2.10	
	6: 9 or more	1.39	1.20	2.79	1.62	
	After merging					2.5 x 10^-6
	1	28.88	33.65	45.56	34.38	***
	2	39.04	47.76	36.29	41.83	(adj.)
	3-6	32.09	18.59	18.14	23.78	
	Number of cases	410	408	229	1,047	
GENDER	*Before merging*					0.0014***
	1: Female	72.46	66.61	49.61	63.61	
	2: Male	27.54	33.39	50.39	36.39	
	After merging					0.0014***
	1	72.46	66.61	49.61	63.61	
	2	27.54	33.39	50.39	36.39	

Predictor	Categories	% in the segment				*p*-value
		Risk Neutral	Risk Concerned	Risk Sensitive	Total	
	Number of cases	119	137	104	360	
AGE	*Before merging*					0.0015***
	1: 20 or under	17.39	17.78	18.97	17.90	
	2: 21-30	40.71	63.05	58.79	53.71	
	3: 31-40	35.78	17.07	9.03	22.27	
	4: 41-50	6.12	1.45	6.60	4.37	
	5: 51-60	0.00	0.61	4.73	1.31	
	6: 61 and over	0.00	0.03	1.88	0.44	
	After merging					0.011**
	1-2	58.10	80.84	77.77	71.62	(adj.)
	3-6	41.90	19.16	22.23	28.38	
	Number of cases	86	91	52	229	
MARITAL	*Before merging*					0.0083***
	1: Single	42.49	47.34	23.75	41.10	
	2: Married	54.48	49.90	71.71	55.71	
	3: Divorced	1.33	0.85	3.87	1.60	
	4: Other	1.70	1.91	0.67	1.60	
	After merging					0.0028***
	1, 4	44.19	49.25	24.42	42.69	(adj.)
	2-3	55.81	50.75	75.58	57.31	
	Number of cases	160	195	83	438	

Note: *** *p*-value < 0.01; ** *p*-value < 0.05.

Figure 4.5 shows the same CHAID tree, but with the percentage of the second category of the dependent variable (i.e., SEG#2) displayed in the nodes. For NUM_VISIT, 44% of the respondents who had visited South Korea once or twice in the past (NUM_VISIT = 2) were in the Risk Concerned segment. When considering both NUM_VISIT and MARITAL, of the respondents who were single and had visited South Korea once or twice (terminal node 4, defined as NUM_VISIT = 2, MARITAL = 1, 4), 51% were in the Risk Concerned segment. In

addition, 45% of the female respondents under 30 who had never visited South Korea (terminal node 1, defined as NUM_VISIT = 1, GENDER = 1, AGE = 1-2) were in this segment.

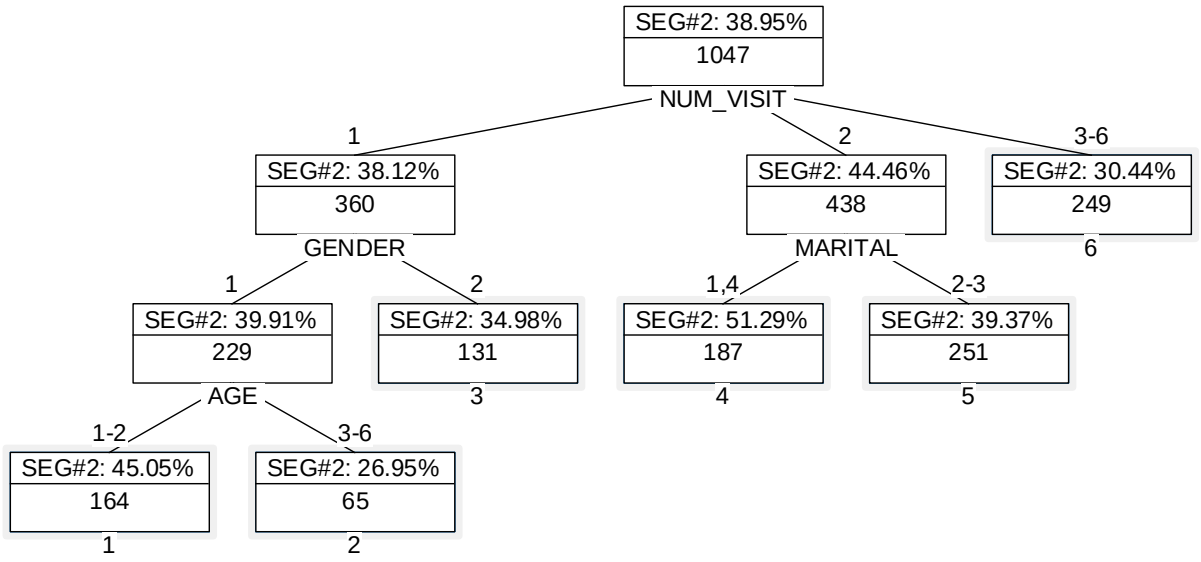

Figure 4.5 CHAID Tree with the Percentage of the Risk Concerned Segment in the Nodes

The CHAID tree for the third category of the dependent variable (i.e., SEG#3) is shown in Figure 4.6. The results showed that of the male respondents with no experience of visiting South Korea in the past (terminal node 3, defined as NUM_VISIT = 1, GENDER = 2), 40% were in the Risk Sensitive segment. In addition, this segment included 25% of the married respondents (with a few divorced respondents) who had traveled to South Korea once or twice (terminal node 5, defined as NUM_VISIT = 2, MARITAL = 2-3).

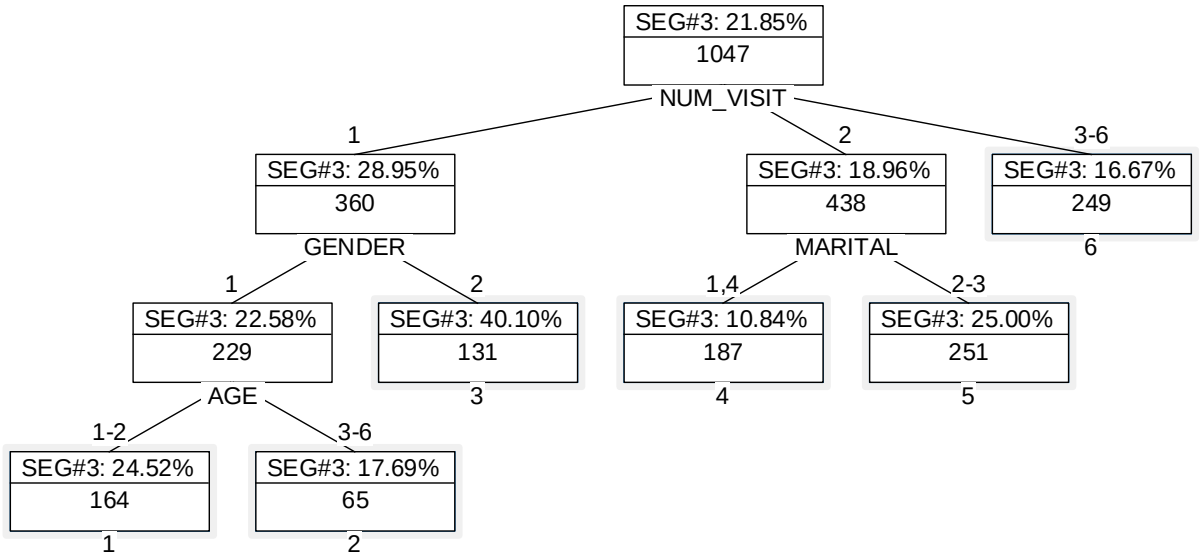

Figure 4.6 CHAID Tree with the Percentage of the Risk Sensitive Segment in the Nodes

Based on NUM_VISIT, GENDER, AGE, and MARITAL, the profile of the three segments was examined in a manner somewhat similar to three-group discriminant analysis (Vermunt & Magidson, 2005b). Another series of CHAID analyses was performed to develop a separate profile for each segment (compared with the other two segments). The following section discusses the profile of each segment.

Segment 1: Risk Neutral

Figure 4.7 shows the CHAID tree for the Risk Neutral segment compared with the other two segments. In this case, the first category of the dependent variable was the Risk Neutral segment, while the second category consisted of the other two segments (i.e., the Risk Concerned and Risk Sensitive segments).

As shown in Figure 4.7, the CHAID tree was based only on NUM_VISIT. Although other predictors, including NUM_INTTRIP, INCOME, and AGE, were also significant at the root node, the terminal nodes were defined only in terms of NUM_VISIT. In other words, once NUM_VISIT was considered, the effects of the other predictors were no longer significant.

Thus, NUM_VISIT was the only best predictor for distinguishing the Risk Neutral segment from others. For NUM_VISIT, the six initial categories were merged into two grouped categories, 1-2 and 3-6, as they were not significantly different to predict the probability of being in the Risk Neutral segment (Magidson, 2005). Accordingly, two terminal nodes were generated. The results showed that among the respondents who had traveled to South Korea at least three times in the past (terminal node 2, defined as NUM_VISIT = 3-6), 53% were in the Risk Neutral segment. This result was the same as that of the previous CHAID analysis. Table 4.21 shows the crosstabulations of the dependent variable by the significant predictors and the *p*-value associated with the predictors before and after category merging.

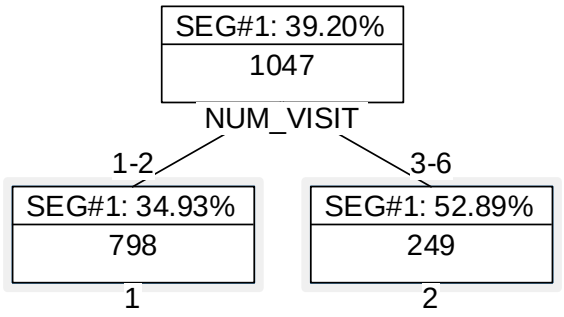

Figure 4.7 CHAID Tree for the Risk Neutral Segment

Table 4.21 Crosstabulations of the Predictors for the Risk Neutral Segment

Predictor	Categories	% in the segment			*p*-value
		Risk Neutral	Other	Total	
NUM_ VISIT	*Before merging*				3.9 x 10^-6
	1: None	28.88	37.93	34.38	***
	2: 1-2	39.04	43.64	41.83	
	3: 3-4	19.01	11.78	14.61	
	4: 5-6	9.07	3.11	5.44	
	5: 7-8	2.62	1.77	2.10	
	6: 9 or more	1.39	1.78	1.62	
	After merging				2.5 x 10^-6
	1-2	67.91	81.57	76.22	***

Predictor	Categories	% in the segment			*p*-value
		Risk Neutral	Other	Total	
	3-6	32.09	18.43	23.78	(adj.)
	Number of cases	410	637	1,047	
NUM_INTTRIP[a]	*Before merging*				0.0019***
	1: None	17.67	26.15	22.83	
	2: 1-2	28.28	26.70	27.32	
	3: 3-4	26.55	28.91	27.98	
	4: 5-6	18.52	11.47	14.23	
	5: 7-8	4.29	3.52	3.82	
	6: 9 or more	4.70	3.26	3.82	
	After merging				0.0014***
	1	17.67	26.15	22.83	(adj.)
	2-3	54.83	55.61	55.30	
	4-6	27.51	18.24	21.87	
	Number of cases	410	637	1,047	
INCOME[a]	*Before merging*				0.075*
	1: Less than RMB10,000	16.35	21.03	19.20	
	2: RMB10,001-RMB30,000	23.98	28.06	26.46	
	3: RMB30,001-RMB50,000	14.32	11.97	12.89	
	4: RMB50,001-RMB70,000	6.80	7.24	7.07	
	5: RMB70,001-RMB90,000	4.02	4.00	4.01	
	6: RMB90,001-RMB110,000	2.64	4.90	4.01	
	7: RMB110,001-RMB130,000	5.76	4.77	5.16	
	8: RMB130,001-RMB150,000	3.39	2.84	3.06	
	9: RMB150,001-RMB170,000	3.15	2.84	2.96	
	10: RMB170,001-RMB190,000	2.97	2.95	2.96	
	11: RMB190,001-RMB210,000	3.17	2.04	2.48	
	12: RMB210,001-RMB230,000	2.01	1.53	1.72	
	13: RMB230,001-RMB250,000	2.63	1.45	1.91	
	14: RMB250,001 or more	8.80	4.38	6.11	

Predictor	Categories	% in the segment			*p*-value
		Risk Neutral	Other	Total	
	After merging				0.015**
	1-6	68.11	77.20	73.64	(adj.)
	7-14	31.89	22.80	26.36	
	Number of cases	410	637	1,047	
AGE[a]	*Before merging*				0.11
	1: 20 or under	6.96	8.08	7.64	
	2: 21-30	48.39	55.52	52.72	
	3: 31-40	36.54	29.54	32.28	
	4: 41-50	7.07	5.34	6.02	
	5: 51-60	0.67	1.30	1.05	
	6: 61 and over	0.37	0.23	0.29	
	After merging				0.039**
	1-2	55.35	63.59	60.36	(adj.)
	3-6	44.65	36.41	39.64	
	Number of cases	410	637	1,047	

Note: [a] indicates that this predictor was found to be significant, but was not selected to grow the tree; *** *p*-value < 0.01; ** *p*-value < 0.05; * *p*-value < 0.1.

The gains chart in Table 4.22 summarizes the terminal nodes in terms of overall size, number of cases in the Risk Neutral segment, percentage of cases in the entire Risk Neutral segment, and percentage of the segment in a given node. In addition, the gains chart sorts the terminal nodes from best to worst based on their index scores. The index score indicated the proportion of the Risk Neutral segment in the terminal node relative to the proportion of the segment in the total sample. In other words, the higher the index score, the larger the proportion of the segment in the terminal node. For example, terminal node 2 represented 24% of all cases and accounted for 32% of the Risk Neutral segment. The index score for terminal node 2 was 135 (computed as 52.89%/39.20%), indicating that the proportion of the Risk Neutral segment in this terminal node was 35% higher than average. Only terminal node 2 had an index score greater than 100.

Table 4.22 Gains Chart for the Risk Neutral Segment

Terminal Node	Size (% in the Sample)	Number of Cases in the Risk Neutral Segment	% of Cases in the Entire Risk Neutral Segment	% of the Risk Neutral Segment in a Node	Index Score
2	249 (23.8%)	132	32.1	52.89	135
1	798 (76.2%)	279	67.9	34.93	89

Segment 2: Risk Concerned

Figure 4.8 shows the CHAID tree of the Risk Concerned segment (compared with the other two). The CHAID tree indicated that AGE and NUM_VISIT were two important descriptors for profiling the Risk Concerned segment. AGE was the most significant predictor, based on which the root node was first split. The categories of AGE were merged into two categories: 1-2 and 3-6. The tree node for the AGE category 1-2 was further split on NUM_VISIT, the initial six categories being merged into two categories: 1-2 and 3-6. In addition, the tree node for the AGE category 3-6 was split on NUM_VISIT, the original categories being merged into three categories: 1, 2-3, and 4-6. In the end, the tree had five terminal nodes. Table 4.23 presents the crosstabulations of the significant predictors for the Risk Concerned segment.

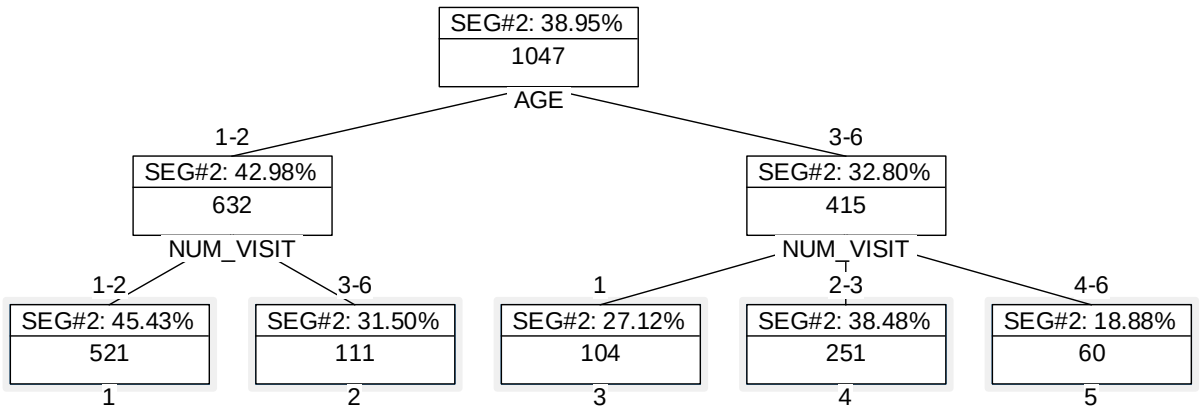

Figure 4.8 CHAID Tree for the Risk Concerned Segment

Table 4.23 Crosstabulations of the Predictors for the Risk Concerned Segment

Predictor	Categories	% in the segment			*p*-value
		Risk Concerned	Other	Total	
AGE	*Before merging*				0.036**
	1: 20 or under	7.85	7.51	7.64	
	2: 21-30	58.76	48.87	52.72	
	3: 31-40	27.03	35.64	32.28	
	4: 41-50	5.40	6.41	6.02	
	5: 51-60	0.83	1.19	1.05	
	6: 61 and over	0.13	0.39	0.29	
	After merging				0.0045***
	1-2	66.62	56.37	60.36	(adj.)
	3-6	33.38	43.63	39.64	
	Number of cases	408	639	1,047	
MARITAL[a]	*Before merging*				0.030**
	1: Single	48.15	39.68	42.98	
	2: Married	48.01	57.13	53.58	
	3: Divorced	1.12	1.32	1.24	
	4: Other	2.72	1.86	2.20	
	After merging				0.022**
	1, 4	50.87	41.55	45.18	(adj.)
	2-3	49.13	58.45	54.82	
	Number of cases	408	639	1,047	
NUM_VISIT[b]	*Before merging*				0.063*
	1: None	40.14	40.79	40.51	
	2: 1-2	46.99	38.11	41.93	
	3: 3-4	8.10	14.71	11.87	
	4: 5-6	2.68	2.69	2.69	
	5: 7-8	1.38	2.01	1.74	
	6: 9 or more	0.71	1.69	1.27	
	After merging				0.032**
	1-2	87.13	78.90	82.44	(adj.)
	3-6	12.87	21.10	17.56	
	Number of cases	272	360	632	
NUM_VISIT[c]	*Before merging*				0.031**
	1: None	20.72	27.18	25.06	
	2: 1-2	49.28	37.98	41.69	
	3: 3-4	21.67	17.39	18.80	
	4: 5-6	4.64	12.08	9.64	

Predictor	Categories	% in the segment			*p*-value
		Risk Concerned	Other	Total	
	5: 7-8	1.49	3.22	2.65	
	6: 9 or more	2.19	2.16	2.17	
	After merging				0.041**
	1	20.72	27.18	25.06	(adj.)
	2-3	70.96	55.37	60.48	
	4-6	8.32	17.45	14.46	
	Number of cases	136	279	415	

Note: [a] refers to a significant predictor not selected to grow the tree; [b] is the node for the AGE category 1-2; [c] is the node for the AGE category 3-6; *** *p*-value < 0.01; ** *p*-value < 0.05; * *p*-value < 0.1.

As shown in Table 4.24, terminal node 1 was ranked first because of its highest index score of 117 (45.43%/38.95%). The second highest index score was 99 for subgroup 4, slightly less than 100. The cumulative statistics indicated that the two terminal nodes constituted 74% of the total sample and 82% of the Risk Concerned segment. The index score for these terminal nodes was 111 (43.17%/38.95). Thus, taken together, the proportion of this segment in the two best terminal nodes was 11% higher than average. The results indicated that of young people under 30 who had no or little experience of visiting South Korea (terminal node 1, AGE = 1-2, NUM_VISIT = 1-2), 45% were in the Risk Concerned segment. In addition, 38% of the respondents over 30 with some experience of visiting South Korea in the past (terminal node 4, AGE = 3-6, NUM_VISIT = 2-3) were in this segment.

Table 4.24 Gains Chart for the Risk Concerned Segment

Terminal Node	Size (% in the Sample)	Number of Cases of the Risk Concerned Segment	% of cases in the Entire Risk Concerned Segment	% of the Risk Concerned Segment in a Node	Index Score
1	521 (49.8%)	237	58.0	45.43	117
4	251 (24.0%)	97	23.7	38.48	99
2	111 (10.6%)	35	8.6	31.50	81

Terminal Node	Size (% in the Sample)	Number of Cases of the Risk Concerned Segment	% of cases in the Entire Risk Concerned Segment	% of the Risk Concerned Segment in a Node	Index Score
3	104 (9.9%)	28	6.9	27.12	70
5	60 (5.7%)	11	2.8	18.88	48

Segment 3: Risk Sensitive

The CHAID tree in Figure 4.9 shows that NUM_VISIT, GENDER, and AGE were the best predictors for the Risk Sensitive segment. NUM_VISIT was the most significant predictor for distinguishing the Risk Sensitive segment from the other two segments, based on which the tree was first split. The six categories were merged into two categories: 1 and 2-6. Next, the NUM_VISIT category 1 node was further split on GENDER, the initial categories being kept as original. The tree continued to grow by splitting the NUM_VISIT category 2-6 node based on AGE, the categories being merged into three categories: 1-2, 3, and 4-6. Therefore, the tree resulted in five terminal nodes. Table 4.22 shows the crosstabulations of the significant predictors for the Risk Sensitive segment.

The gains chart for this segment (Table 4.26) sorts the terminal nodes according to their index scores in the following sequence: 2, 4, 1, 3, and 5. Terminal node 2 had the highest index score of 184. This node was followed by terminal node 4 with an index score of 108 and subgroup 1 with an index of 103. The cases of the Risk Sensitive segment in the terminal nodes 2, 4, and 1 represented 23%, 27%, and 23% of the entire segment, respectively. When all three were considered, the three best subgroups constituted 60% of the total sample and 73% of the Risk Sensitive segment, with an index score of 122. Terminal nodes 3 and 5 had an index score of less than 100.

Of the male respondents with no experience of travelling to South Korea (terminal node 2, NUM_VISIT = 1, GENDER = 2), 40% were in the Risk Sensitive segment. Of the

female respondents who had no experience of visiting South Korea (terminal node 1, NUM_VISIT = 1, GENDER = 1), 23% were in this segment. In addition, about 24% of the respondents who had visited South Korea at least once and were between the ages of 31 and 40 (terminal node 4, NUM_VISIT = 2-6, AGE = 3) were in this segment.

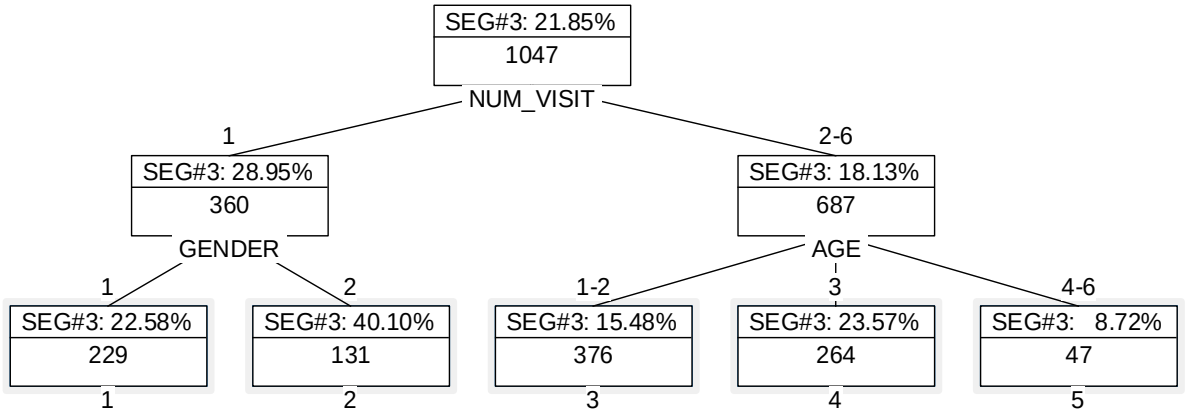

Figure 4.9 CHAID Tree for the Risk Sensitive Segment

Table 4.25 Crosstabulations of the Predictors for the Risk Sensitive Segment

Predictor	Categories	% in the segment			*p*-value
		Risk Sensitive	Other	Total	
NUM_VISIT	*Before merging*				0.00030***
	1: None	45.56	31.26	34.38	
	2: 1-2	36.29	43.38	41.83	
	3: 3-4	10.27	15.83	14.61	
	4: 5-6	2.70	6.21	5.44	
	5: 7-8	2.38	2.02	2.10	
	6: 9 or more	2.79	1.30	1.62	
	After merging				0.00036***
	1	45.56	31.26	34.38	(adj.)
	2-6	54.44	68.74	65.62	
	Number of cases	229	818	1,047	
NUM_INTTRIP[a]	*Before merging*				0.0026***
	1: None	32.42	20.15	22.83	
	2: 1-2	25.17	27.92	27.32	
	3: 3-4	27.25	28.19	27.98	
	4: 5-6	9.21	15.63	14.23	

Predictor	Categories	% in the segment			*p*-value
		Risk Sensitive	Other	Total	
	5: 7-8	2.86	4.09	3.82	
	6: 9 or more	3.10	1.02	3.82	
	After merging				0.00073***
	1	32.42	20.15	22.83	(adj.)
	2-6	67.58	79.85	77.17	
	Number of cases	229	818	1,047	
GENDER	*Before merging*				0.00048***
	1: Female	49.61	69.32	63.61	
	2: Male	50.39	30.68	36.39	
	After merging				0.00048***
	1	49.61	69.32	63.61	
	2	50.39	30.68	36.39	
	Number of cases	104	256	360	
AGE	*Before merging*				0.045**
	1: 20 or under	2.89	2.56	2.62	
	2: 21-30	43.84	53.94	52.11	
	3: 31-40	49.97	35.87	38.43	
	4: 41-50	3.27	6.57	5.97	
	5: 51-60	0.02	0.71	0.58	
	6: 61 and over	0.00	0.36	0.29	
	After merging				0.062*
	1-2	46.74	56.50	54.73	(adj.)
	3	49.97	35.87	38.43	
	4-6	3.29	7.63	6.84	
	Number of cases	125	562	687	

Note: [a] indicates that this predictor was found to be significant, but was not selected to grow the tree; *** *p*-value < 0.01; ** *p*-value < 0.05; * *p*-value < 0.1.

Table 4.26 Gains Chart for the Risk Sensitive Segment

Terminal Node	Size (% in the Sample)	Number of Cases of the Risk Sensitive Segment	% of Cases in the Entire Risk Sensitive Segment	% of the Risk Sensitive Segment in a Node	Index Score
2	131 (12.5%)	53	23.0	40.10	184
4	264 (25.2%)	62	27.2	23.57	108
1	229 (21.9%)	52	22.6	22.58	103
3	376 (35.9%)	58	25.4	15.48	71
5	47 (4.5%)	4	1.8	8.72	40

Future Cosmetic Surgery Travel Characteristics

A more detailed profile of the three segments of cosmetic surgery tourists was developed in terms of future cosmetic surgery travel characteristics. Table 4.27, Table 4.28, and Table 4.29 show the crosstabulations of the significant variables representing the behavioral characteristics and the type of cosmetic procedure for each segment, respectively. For the Risk Neutral segment, the results showed that three variables, EXPS_CS, PURPOSE, and EXPS_TRIP, were significantly related to the segment. For the Risk Concerned segment, five variables, EXPS_CS, LENGTH, ARRANGE, ACCOMPANY, and ACCOMO, were found to be statistically significant. Finally, five variables, PURPOSE, LENGTH, ARRANGE, EXPS_CS, and DECISON_CLINIC, showed a statistically significant relationship with the Risk Sensitive segment. However, the variable DECISON_TYPE was not statistically significantly related to the three segments. Regarding the type of cosmetic procedure, the Risk Neutral segment was more likely to undergo face contouring and facelift surgery than the other two segments. The Risk Concerned segment showed no interest in a facelift. However, members of this segment were interested in Botox injections. None of the other types of procedures showed statistically significant relationships with the segments.

Table 4.30 summarizes the profile of the three segments of cosmetic surgery tourists in terms of socio-demographic context, past experiences, and future cosmetic surgery travel characteristics.

Table 4.27 Cosmetic Surgery Travel Characteristics for the Risk Neutral Segment

Variable	Categories	% in the segment			*p*-value
		Risk Neutral	Other	Total	
EXPS_CS	*Before merging*				0.00019***
	1: Less than RMB10,000	11.45	13.19	12.51	
	2: RMB10,001-RMB30,000	17.01	22.02	20.06	

Variable	Categories	% in the segment			*p*-value
		Risk Neutral	Other	Total	
	3: RMB30,001-RMB50,000	12.30	16.42	14.80	
	4: RMB50,001-RMB70,000	14.10	14.79	14.52	
	5: RMB70,001-RMB90,000	7.26	5.53	6.21	
	6: RMB90,001-RMB110,000	9.11	10.46	9.93	
	7: RMB110,001-RMB130,000	7.32	4.55	5.64	
	8: RMB130,001-RMB150,000	6.58	3.77	4.87	
	9: RMB150,001-RMB170,000	6.49	3.20	4.49	
	10: RMB170,001-RMB190,000	2.59	1.47	1.91	
	11: RMB190,001-RMB210,000	3.99	1.04	2.20	
	12: RMB210,001 or more	1.80	3.55	2.87	
	After merging				4.3 x 10^-5
	1-6	71.23	82.42	78.03	***
	7-11	26.97	14.03	19.10	(adj.)
	12	1.80	3.55	2.87	
	Number of cases	410	637	1,047	
PURPOSE	*Before merging*				0.0037***
	1: Completely for cosmetic surgery	6.85	5.17	5.83	
	2: Mostly for cosmetic surgery	24.78	24.55	24.64	
	3: Equally for cosmetic surgery and vacation	53.62	46.65	49.38	
	4: Mostly for vacation	10.37	14.36	12.80	
	5: Completely for vacation	4.38	9.27	7.35	
	After merging				0.0015***
	1-3	85.25	76.37	79.85	(adj.)
	4-5	14.75	23.63	20.15	
	Number of cases	410	637	1,047	
EXPS_TRIP	*Before merging*				0.081*
	1: Less than RMB20,000	16.08	21.05	19.10	
	2: RMB20,001-RMB30,000	16.86	22.12	20.06	

Variable	Categories	% in the segment			*p*-value
		Risk Neutral	Other	Total	
	3: RMB30,001-RMB40,000	13.46	13.47	13.47	
	4: RMB40,001-RMB50,000	10.40	8.22	9.07	
	5: RMB50,001-RMB60,000	10.62	9.02	9.65	
	6: RMB60,001-RMB70,000	3.45	4.22	3.92	
	7: RMB70,001-RMB80,000	6.25	5.08	5.54	
	8: RMB80,001-RMB90,000	3.54	3.69	3.63	
	9: RMB90,001-RMB100,000	5.64	3.74	4.49	
	10: RMB100,001-RMB110,000	4.91	2.81	3.63	
	11: RMB110,001-RMB120,000	3.95	2.01	2.77	
	12: RMB120,001 or more	4.85	4.57	4.68	
	After merging				0.0096***
	1-2	32.94	43.17	39.16	(adj.)
	3-12	67.06	56.83	60.84	
	Number of cases	410	637	1,047	
Face contouring	*Before merging*				0.0037***
	1: No	64.37	72.86	69.53	
	2: Yes	35.63	27.14	30.47	
	After merging				0.0037***
	1	64.37	72.86	69.53	(adj.)
	2	35.63	27.14	30.47	
	Number of cases	410	637	1,047	
Facelift	*Before merging*				0.028**
	1: No	75.21	80.95	78.70	
	2: Yes	24.79	19.05	21.30	
	After merging				0.028**
	1	75.21	80.95	78.70	(adj.)
	2	24.79	19.05	21.30	
	Number of cases	410	637	1,047	

Note: *** *p*-value < 0.01; ** *p*-value < 0.05; * *p*-value < 0.1.

Table 4.28 Cosmetic Surgery Travel Characteristics for the Risk Concerned Segment

Variable	Categories	% in the segment			*p*-value
		Risk Concerned	Other	Total	
EXPS_CS	*Before merging*				0.015**
	1: Less than RMB10,000	9.54	14.41	12.51	
	2: RMB10,001-RMB30,000	22.84	18.28	20.06	
	3: RMB30,001-RMB50,000	18.49	12.45	14.80	
	4: RMB50,001-RMB70,000	14.63	14.44	14.52	
	5: RMB70,001-RMB90,000	6.96	5.73	6.21	
	6: RMB90,001-RMB110,000	10.71	9.44	9.93	
	7: RMB110,001-RMB130,000	4.41	6.42	5.64	
	8: RMB130,001-RMB150,000	4.11	5.36	4.87	
	9: RMB150,001-RMB170,000	3.05	5.41	4.49	
	10: RMB170,001-RMB190,000	1.57	2.13	1.91	
	11: RMB190,001-RMB210,000	1.41	2.70	2.20	
	12: RMB210,001 or more	2.29	3.24	2.87	
	After merging				0.0027***
	1	9.54	14.41	12.51	(adj.)
	2-6	73.64	60.34	65.52	
	7-12	16.82	25.25	21.97	
	Number of cases	408	639	1,047	
LENGTH	*Before merging*				0.031**
	1: 1 week	24.43	29.79	27.70	
	2: 2 weeks	18.81	23.04	21.39	
	3: 3 weeks	23.55	19.71	21.20	
	4: 1 month	18.21	12.79	14.90	
	5: 2 months	8.16	9.19	8.79	
	6: More than 2 months	6.85	5.49	6.02	
	After merging				0.012**
	1-2	43.24	52.83	49.09	(adj.)
	3-6	56.76	47.17	50.91	
	Number of cases	408	639	1,047	

Variable	Categories	% in the segment			*p*-value
		Risk Concerned	Other	Total	
ARRAN-GE	*Before merging*				0.013**
	1: Self-arranged	55.81	59.83	58.26	
	2: Travel agents	9.54	13.31	11.84	
	3: Medical travel agents	34.65	26.86	29.89	
	After merging				0.015**
	1-2	65.35	73.14	70.11	(adj.)
	3	34.65	26.86	29.89	
	Number of cases	408	639	1,047	
ACCOM-PANY	*Before merging*				0.025**
	1: Travel alone	13.09	17.62	15.85	
	2: Family or relatives	27.90	31.64	30.18	
	3: Friends	23.78	23.78	23.78	
	4: Family who will undergo cosmetic surgery	6.21	6.05	6.11	
	5: Friends who will undergo cosmetic surgery	29.03	20.90	24.07	
	After merging				0.043**
	1-4	70.97	79.10	75.93	(adj.)
	5	29.03	20.90	24.07	
	Number of cases	408	639	1,047	
ACCOMO	*Before merging*				0.039**
	1: Hotel	25.09	33.43	30.18	
	2: Budget hotel	33.40	32.04	32.57	
	3: Inn/motel	2.16	3.00	2.67	
	4: Recovery accommodation	29.54	24.34	26.36	
	5: Airbnb	7.20	4.79	5.73	
	6: Family member/friend's house	2.61	2.40	2.48	
	After merging				0.058*
	1, 3	27.25	36.43	32.86	(adj.)
	2, 4-6	72.75	63.57	67.14	
	Number of cases	408	639	1,047	
Facelift	*Before merging*				0.0066***
	1: No	82.96	75.98	78.70	
	2: Yes	17.04	24.02	21.30	
	After merging				0.0066***

Variable	Categories	% in the segment			*p*-value
		Risk Concerned	Other	Total	
	1	82.96	75.98	78.70	(adj.)
	2	17.04	24.02	21.30	
	Number of cases	408	639	1,047	

Note: *** *p*-value < 0.01; ** *p*-value < 0.05; * *p*-value < 0.1.

Table 4.29 Cosmetic Surgery Travel Characteristics for the Risk Sensitive Segment

Variable	Categories	% in the segment			*p*-value
		Risk Sensitive	Other	Total	
PURPOSE	*Before merging*				5.1 x 10^-7
	1: Completely for cosmetic surgery	6.52	5.63	5.83	***
	2: Mostly for cosmetic surgery	22.55	25.23	24.64	
	3: Equally for cosmetic surgery and vacation	38.10	52.53	49.38	
	4: Mostly for vacation	17.46	11.50	12.80	
	5: Completely for vacation	15.37	5.11	7.35	
	After merging				6.2 x 10^-7
	1-3	67.17	83.39	79.85	***
	4	17.46	11.50	12.80	(adj.)
	5	15.37	5.11	7.35	
	Number of cases	229	818	1,047	
LENGTH	*Before merging*				3.8 x 10^-5
	1: 1 week	39.49	24.40	27.70	***
	2: 2 weeks	22.96	20.96	21.39	
	3: 3 weeks	17.53	22.23	21.20	
	4: 1 month	10.18	16.22	14.90	
	5: 2 months	4.48	9.99	8.79	
	6: More than 2 months	5.35	6.20	6.02	
	After merging				2.2 x 10^-5
	1-2	62.45	45.36	49.09	***
	3-6	37.55	54.64	50.91	(adj.)
	Number of cases	229	818	1,047	
ARRAN-GE	*Before merging*				3.0 x 10^-5
	1: Self-arranged	62.86	56.97	58.26	***

Variable	Categories	% in the segment			*p*-value
		Risk Sensitive	Other	Total	
	2: Travel agents	17.75	10.19	11.84	
	3: Medical travel agents	19.39	32.83	29.89	
	After merging				3.0 x 10^-5
	1	62.86	56.97	58.26	***
	2	17.75	10.19	11.84	(adj.)
	3	19.39	32.83	29.89	
	Number of cases	229	818	1,047	
EXPS_CS	*Before merging*				0.00027***
	1: Less than RMB10,000	19.71	10.50	12.51	
	2: RMB10,001-RMB30,000	20.56	19.92	20.06	
	3: RMB30,001-RMB50,000	12.74	15.38	14.80	
	4: RMB50,001-RMB70,000	15.07	14.36	14.52	
	5: RMB70,001-RMB90,000	2.98	7.11	6.21	
	6: RMB90,001-RMB110,000	10.02	9.91	9.93	
	7: RMB110,001-RMB130,000	4.80	5.87	5.64	
	8: RMB130,001-RMB150,000	3.17	5.35	4.87	
	9: RMB150,001-RMB170,000	3.46	4.78	4.49	
	10: RMB170,001-RMB190,000	1.31	2.08	1.91	
	11: RMB190,001-RMB210,000	0.38	2.70	2.20	
	12: RMB210,001 or more	5.80	2.04	2.87	
	After merging				0.00099***
	1	19.71	10.50	12.51	(adj.)
	2-10	74.10	84.75	82.43	
	11	0.38	2.70	2.20	
	12	5.80	2.04	2.87	
	Number of cases	229	818	1,047	
DECISON_CLINIC	*Before merging*				0.01***
	1: Decide before departure	80.22	87.20	85.67	
	2: Decide after arrival	19.78	12.80	14.33	
	After merging				0.01***

Variable	Categories	% in the segment			*p*-value
		Risk Sensitive	Other	Total	
	1	80.22	87.20	85.67	(adj.)
	2	19.78	12.80	14.33	
	Number of cases	229	818	1,047	
Botox	*Before merging*				0.027**
	1: No	80.79	86.79	85.48	
	2: Yes	19.21	13.21	14.52	
	After merging				0.027**
	1	80.79	86.79	85.48	(adj.)
	2	19.21	13.21	14.52	
	Number of cases	229	818	1,047	

Note: *** *p*-value < 0.01; ** *p*-value < 0.05; * *p*-value < 0.1.

Table 4.30 Summary of the Characteristics of the Three Cosmetic Surgery Tourist Segments

Segment	Segment size (%)	Socio-demographic context and past experiences	Future cosmetic surgery travel characteristics
Risk Neutral	39.2	• Number of trips to South Korea: three or more (32%) • Number of international trips: five or more (28%) • Monthly household income: more than RMB110,000 (32%) • Age: 31 and over (45%)	• Cosmetic surgery expenditure: RMB110,001-RMB210,000 (27%) • Purpose: completely or mostly for cosmetic surgery (32%)/equally for cosmetic surgery and vacation (54%) • Travel costs per person: more than RMB30,000 (32%) • Cosmetic surgery procedure: face contouring (36%) and facelift (25%)
Risk Concerned	38.9	• Age: 30 and over (67%) • Number of trips to South Korea: no trip or one to two (81%) • Marital status: single (51%) • Age: 30 and under; no trip or one to two trips to South Korea (58%) • Age: Over 30; three or more trips to South Korea (24%)	• Cosmetic surgery expenditure: RMB10,001-RMB110,000 (74%) • Length of stay: three weeks or more (57%) • Arrangement method: through medical travel agents (35%) • Accompanying party: friends undergoing cosmetic surgery (29%) • Accommodation: budget hotel/Airbnb/recovery accommodation/family member/friend's house (73%)
Risk Sensitive	21.9	• Number of trips to South Korea: none (46%) • Number of international trips: none (32%) • Gender: male (33%) • Males who had never visited South Korea before (23%) • Aged 31 to 40 having visited South Korea at least once (27%)	• Purpose: mostly or completely for vacation (15%) • Length of stay: one or two weeks (62%) • Arrangement method: self-arranged (63%) or travel agents (18%) • Cosmetic surgery expenditure: less than RMB10,000 (20%) or more than RMB210,000 (6%) • Decision on clinic: after arrival (20%) • Cosmetic surgery procedure: Botox injections (19%)

4.5 Chapter Summary

This chapter presented the results of the data analysis. After data screening, the profile of the survey respondents and the descriptive statistics of the PRCST items were provided. In terms of scale purification and validation, the results of EFA, CFA, and second order CFA were discussed step by step, based on which the PRCST scale was developed. Finally, the results of cosmetic surgery tourist segmentation based on the PRCST and the detailed profile of the segments obtained were reported.

CHAPTER 5. DISCUSSION

5.1 Chapter Introduction

Chapter 5 discusses the results of this study. It begins by discussing the measure of PRCST, which is a multidimensional construct made up of Cost Risk, Medical Risk, Vacation Risk, and Destination Risk. It also discusses the decision-making of cosmetic surgery tourists in terms of the critical attributes of cosmetic surgery tourism and the associated perceived risks. Subsequently, it highlights the personal and behavioral characteristics of Chinese cosmetic surgery tourists with distinct perceived risk patterns.

5.2 PRCST Scale

Despite the growing interest in exploring medical tourism, little attention has been paid to the perceived risk of medical tourists. The literature has suggested that perceived risk should be investigated according to a particular consumption situation, using measures appropriate to the decision-making context (Conchar, Zinkhan, Peters, & Olavarrieta, 2004; Dowling & Staelin, 1994; Roehl & Fesenmaier, 1992). Thus, this study attempted to develop a scale to measure the perceived risk of medical tourists traveling abroad for beautification purposes. In this study, the multi-attribute expected utility theory was applied to explain the decision-making of cosmetic surgery tourists under risk. In particular, this study investigated perceived risk in the context of multi-purpose travel decisions. The time frame for the PRCST assessment included the planning and preparation phase in the home country, at the cosmetic surgery tourism destination, and until complete recovery after surgery.

The PRCST scale was developed through a rigorous scale development procedure that applied both qualitative and quantitative research (Churchill, 1979; DeVellis, 2012; Hu & Bentler, 1999; Lynn, 1986; Su & Parham, 2002). The three main stages of scale development

were item generation, scale purification, and scale validation. The domain of the PRCST construct was determined by adopting 10 types of perceived risks identified in the tourism and hospitality literature (Reisinger & Mavondo, 2006; Sonmez & Graefe, 1998a). Based on the literature review, in-depth interviews, and an expert panel review, 50 measurement items of PRCST were generated. The dimensional structure of PRCST was identified through EFA, then the measurement items were purified through CFA. As a result, the PRCST scale composed of four underlying dimensions with 19 items was developed. Finally, the developed PRCST scale was validated in terms of convergent and discriminant validity.

The results revealed that PRCST is a multidimensional construct composed of four facets of risk. They also showed that PRCST is a second order construct with significant paths to Cost Risk ($\beta = 0.78$; $p < 0.001$), Medical Risk ($\beta = 0.82$; $p < 0.001$), Vacation Risk ($\beta = 0.91$; $p < 0.001$), and Destination Risk ($\beta = 0.80$; $p < 0.001$). Cost Risk represented the time and monetary costs associated with cosmetic surgery tourism. Medical Risk represented problems associated with poor surgical outcomes or the poor performance of medical service providers. Vacation Risk represented the unfavorable situations that cosmetic surgery tourists may encounter after their cosmetic procedures, such as complications, insufficient vacation opportunities, and immigration issues. Destination Risk represented the hostile environment of a cosmetic surgery tourism destination. These four dimensions reflected the time, financial, performance, functional, health, and physical risks of cosmetic surgery tourism.

This study considered cosmetic surgery tourism as the purchase of services to fulfill two purposes, namely cosmetic surgery and vacation. Due to the nature of cosmetic surgery tourism, which differs from pleasure tourism, the PRCST scale included various medical attributes taken into account by cosmetic surgery tourists in decision-making. In addition, vacationing being an important part of cosmetic surgery tourism, several tourism and destination attributes were integrated into the PRCST scale. In the medical tourism literature,

little attention has been paid to the tourism aspects of medical tourism, hindering the ability to understand the importance of tourism aspects in medical travel and medical tourists' decision-making (Crooks et al., 2010). This study highlighted that not only the medical aspects, but also the tourism aspects of cosmetic surgery tourism should be included in the PRCST assessment.

5.3 PRCST as a Determinant of Decision-making

In the medical tourism literature, several studies have explored the motivations and decision-making of medical tourists in terms of push and pull factors (e.g., John & Larke, 2016; Veerasoontorn & Beise-Zee, 2010; Ye, Yuen, Qiu, & Zhang, 2008). Although studies have shed light on the reasons some patients seek medical treatment abroad, little is known about the decision-making of medical tourists (De La Hoz-Correa et al., 2018; Lunt et al., 2016). Therefore, this study examined the decision-making of cosmetic surgery tourists by considering perceived risk as an important determinant of decision-making (Cox & Rich, 1964; Moutinho, 1987). More specifically, this study identified various important attributes associated with cosmetic surgery tourism, based on which a cosmetic surgery tourist evaluates the alternatives available to make decisions.

The medical tourism literature has shown that the main reasons for medical tourists to travel abroad are costs, service quality, doctor and hospital reputation, expertise, and access to treatment (Lunt et al., 2016; Veerasoontorn & Beise-Zee, 2010; Ye et al., 2008). Especially for cosmetic surgery tourists, improving their appearance and boosting their confidence have been identified as important motivation factors (Ye et al., 2008). The results of this study revealed that taking into account these elements, prospective cosmetic surgery tourists were worried about not obtaining the expected benefits of cosmetic surgery tourism, such as cost savings, high quality medical services, and desired surgical outcomes.

In the literature, medical staff and hospital facilities have been frequently reported as important motivators for seeking medical treatment abroad (Crooks et al., 2010; Lunt et al., 2016). In addition, hospital facilities and doctors have been shown to be the two most important dimensions influencing the satisfaction of medical tourists (Musa, Doshi, Wong, & Thirumoorthy, 2012). In a study examining the quality of medical tourism services, Manaf, Hussin, Kassim, Alavi, and Dahari (2015) highlighted the importance of the service quality of medical staff, as a significant predictor of perceived value, overall satisfaction, and future intention.

Consistent with previous results, this study revealed that prospective cosmetic surgery tourists were concerned about the experience of medical staff, as this could have an immediate and crucial influence on surgical outcomes and overall satisfaction with cosmetic surgery tourism. However, the results did not reveal any serious concerns regarding hospital facilities. This may be partly due to the fact that Chinese cosmetic surgery tourists tend to choose high-end clinics with a luxurious exterior and plush interior, and they are aware of the quality of these facilities thanks to the enormous advertisement for clinics targeting Chinese cosmetic surgery tourists. This result needs to be confirmed with a different study setting with cosmetic surgery tourists traveling overseas mainly for cheaper procedures than cosmetic surgery in their home country. In addition to medical staff, it was found that prospective cosmetic surgery tourists have certain concerns regarding medical tourism facilitators, intermediaries, and brokers, as they play an important role in helping medical tourists by providing a wide range of services (Gan & Frederick, 2011).

As cosmetic surgery tourism requires relatively more time to plan and travel abroad than undergoing cosmetic surgery in the home country, time costs were found to be important considerations in decision-making in cosmetic surgery tourism. In addition, prospective cosmetic surgery tourists were concerned about the unexpected costs that could be incurred in

the event of bad surgery. Although the doctors who performed the original operation may offer postoperative treatment or revision surgery to correct the problems, it would result in a heavy financial burden for cosmetic surgery tourists to make another cosmetic surgery trip for such aftercare.

As all cosmetic surgery carries risks, whether performed at home or abroad (ASPS, 2016), prospective cosmetic surgery tourists were concerned about various surgical complications and severe physical pain. Specifically, the occurrence of infectious complications during postoperative outdoor activities in a destination was found to be a serious concern, as the majority of the respondents would engage in cosmetic surgery tourism to undergo surgery and take the opportunity to enjoy vacation time. However, it is important to note that they did not worry about the occurrence of complications and the continuity of care after returning home. This may be due to a lack of understanding of the scale and nature of the risks associated with cosmetic surgery abroad (Lunt et al., 2016).

The results showed that many prospective cosmetic surgery tourists were interested in undergoing invasive surgical procedures (e.g., face contouring surgery) or multiple procedures. Thus, there were some concerns related to immigration issues due to a significant change in appearance. This result may be largely related to the experience of three Chinese cosmetic surgery tourists detained at immigration in South Korea due to a significant change in their appearance, which made them unrecognizable based on their passport photos (Hurst, 2017).

The results also revealed that a large number of Chinese cosmetic surgery tourists participated in cosmetic surgery tourism primarily for vacation (20%) or equally for cosmetic surgery and vacation (50%), while about 30% reported that cosmetic surgery was their only or main reason for visiting South Korea. Therefore, the limited opportunity for vacation activities during the recovery period was a concern for cosmetic surgery tourism. The medical tourism literature has suggested that various environmental factors influence the attractiveness of a

medical tourism destination, including weather conditions, cultural and natural attractions, low corruption, a stable economy, and the country's image as a popular and exotic tourism destination (Fetscherin & Stephano, 2016). Accordingly, several destination attributes were shown to be important factors influencing medical travel decisions. Specifically, prospective cosmetic surgery tourists were concerned about hostile locals, social or political unrest, and crime in cosmetic surgery tourism destinations. They also showed concerns about bad weather, which may not be suitable for surgical patients and their post-surgery tourism activities.

5.4 Market Segments of Cosmetic Surgery Tourists and Their Profile

This study attempted to segment cosmetic surgery tourists based on their PRCST and to identify the personal and behavioral characteristics of the segments obtained. Based on the suggestions of Ritchie et al. (2017), this study adopted an integrated approach that included psychological, behavioral, and socio-demographic variables. Three segments were identified using four PRCST dimensions as indicators in the LC analysis. Next, the segments obtained were profiled by examining their differences in terms of socio-demographic context, past experiences, and future cosmetic surgery travel characteristics using the CHAID analysis. Using this hybrid method combining LC and CHAID analyses, a single set of segments predictive of the four dimensions of PRCST and the detailed profile of each segment were obtained.

The results showed that cosmetic surgery tourists can be grouped into three segments based on their perception of risk in cosmetic surgery tourism. These results confirm the previous results on the heterogeneity of the international tourism market with respect to perceived risk (Dolnicar, 2005; Lepp & Gibson, 2003; Roehl & Fesenmaier, 1992; Seabra et al., 2013). In addition, they corroborate that the medical tourist market should be viewed as a heterogeneous group (Wongkit & McKercher, 2013). The three segments were labeled Risk

Neutral, Risk Concerned, and Risk Sensitive, based on their distinct perceived risk patterns. Each segment represented 39%, 39%, and 22% of the cosmetic surgery tourism market, respectively. The Risk Neutral segment did not show any major concerns regarding cosmetic surgery tourism and indicated no significant risk in all four dimensions. The Risk Concerned segment had major concerns about time and monetary costs and vacationing after surgery, but were not concerned about medical performance and destination factors. In contrast, the Risk Sensitive segment had serious concerns about all four aspects of cosmetic surgery tourism.

This study found that the three cosmetic surgery tourist segments with different risk perceptions had distinct personal and behavioral characteristics. These results are consistent with previous findings that demographic factors and past travel experiences influence risk perception (Lepp & Gibson, 2003; Floyd & Pennington-Gray, 2004; Reisinger & Mavondo, 2006; Sonmez & Graefe, 1998a, 1998b). It should be noted that the number of visits to South Korea, age, and gender appeared to be powerful predictors of the risk perception of Chinese cosmetic surgery tourists. In particular, regarding the number of visits to South Korea, this result is consistent with that of Sonmez and Graefe (1998a) according to which personal experiences with a destination may change the perception of risk during travel decision-making. Other factors, including the number of international trips, marital status, and monthly household income, were also found to be important descriptors for differentiating between the different segments. However, the three segments did not differ in terms of education level, occupation, and experience in cosmetic surgery.

Furthermore, future cosmetic surgery travel behavior could be determined based on the degree of perceived risk of prospective cosmetic surgery tourists. Among the three segments, different characteristics were revealed in terms of trip purpose, cosmetic surgery expenditure, length of stay, trip arrangement method, and decision horizons on clinic and accommodation type. These results support Wongkit and McKercher (2013) who challenged

previous studies treating the medical tourism market as undifferentiated, seeking medical treatment being the main purpose of a trip and a pre-planned activity (Bookman & Bookman, 2007; Keckley, 2008).

Chinese cosmetic surgery tourists in the Risk Neutral segment tended to be over 30 years old and to have previously visited South Korea several times and made several international trips. This segment had relatively high monthly household income compared with the other two segments. Their future cosmetic surgery trip to South Korea would mainly focus on undergoing cosmetic surgery, which may be combined with some vacation time. Furthermore, this segment was shown to spend a lot of money on cosmetic surgery and to be interested in face contouring and facelift surgery.

In the Risk Concerned segment, Chinese cosmetic surgery tourists were typically young and single. This group of people had limited travel experience in South Korea. Although they would travel mainly for cosmetic surgery or equally for cosmetic surgery and vacation, they would probably travel for three weeks or more and to accompany friends who would also undergo cosmetic surgery. They would also arrange their trip through medical travel agencies and select the clinic before departure. Due to their young age and the long duration of the trip, they would choose economical accommodation types, such as Airbnb, recovery accommodation, family/friends' house, and budget hotels. In addition, this segment intended to spend relatively less money on cosmetic surgery than the Risk Neutral segment.

Although no statistically significant difference in terms of gender was observed for the first two segments, the Risk Sensitive segment mainly included male Chinese cosmetic surgery tourists. Having never been to South Korea before, they were more likely to travel mainly for vacation combined with minor cosmetic surgery procedures, such as Botox injections. In contrast to the other two segments, this group of cosmetic surgery tourists would make the decision on the clinic after arriving at the destination. These results support Wongkit and

McKercher's (2013) study, which revealed that medical tourists who travel mainly for vacation make their decision after arriving at the destination, while those who travel mainly for medical treatment are more likely to make their decision to receive treatment before leaving. In addition, the results revealed that their trip would last one or two weeks and would be arranged by travel agents or themselves. They would either stay in a budget or a luxury hotel. In terms of cosmetic surgery expenditure, they intended to spend either very little or a lot of money on cosmetic procedures. This may be due to their interest in minor operations rather than serious surgery or their serious concerns about cosmetic surgery.

5.5 Chapter Summary

This chapter discussed the results of the study. The chapter began by discussing the underlying risk facets of the PRCST scale. Next, the decision-making of cosmetic surgery tourists was discussed in terms of various important attributes of cosmetic surgery tourism and the associated perceived risks. Finally, the three segments of Chinese cosmetic surgery tourists and their detailed profile in terms of socio-demographic context, past experiences, and future cosmetic surgery travel characteristics were presented.

CHAPTER 6. CONCLUSIONS

6.1 Chapter Introduction

Chapter 6 discusses the theoretical contributions and practical implications of this study. Several theoretical contributions in terms of consumer perceived risk, decision-making and background of cosmetic surgery tourists, and tourism segmentation methodologies are discussed. In addition, this chapter highlights important practical implications for marketing practitioners and service providers in the cosmetic surgery tourism industry. Finally, this chapter discusses the limitations of the study and concludes with some suggestions for future research.

6.2 Theoretical Contributions

With a growing interest in research in medical tourism, valuable information on this topic has been obtained over the last decade. Despite increased knowledge of medical tourism, information on the decision-making, perception, and background of medical tourists remains limited (Crooks et al., 2010; De La Hoz-Correa et al., 2018; Lunt et al., 2016). In this regard, this study offers several theoretical contributions that should be highlighted.

First, this study extends the literature on consumer perceived risk by providing a theoretical and empirical conceptualization of the perceived risk of patient-consumers or patient-tourists. Specifically, this study is important as it is the first study to examine perceived risk in the context of multi-purpose travel decisions. It is also important to note that this study developed a valid and reliable PRCST scale, which is expected to be useful for various stakeholders, such as destination marketing organizations (DMOs), medical professionals, tourism service providers, and consumer behavior researchers.

Second, this study enriches the medical tourism literature by identifying PRCST as a multidimensional construct composed of Cost Risk, Medical Risk, Vacation Risk, and Destination Risk. In addition, applying the multi-attribute expected utility theory, the study sheds light on the decision-making of medical tourists based on perceived risk as a key determinant of medical travel decisions. This study is the first in-depth empirical study investigating a range of underlying attributes of decision-making among cosmetic surgery tourists in relation to perceived risk. It also adds to medical tourism research by providing empirical results based on primary data, lacking in previous studies (De La Hoz-Correa et al., 2018; Hopkins, Labonté, Runnels, & Packer, 2010; Lunt et al., 2016; Smith, Martínez Álvarez, & Chanda, 2011).

Third, this study highlights the background and consumption behavior of medical tourists who travel abroad for beautification purposes in relation to risk perception. This study offers significant insights into the personal and behavioral characteristics of potential cosmetic surgery tourists. Specifically, it broadens the knowledge of the social, economic, and demographic background of cosmetic surgery tourists, which has been a largely unexplored research area. It also provides evidence of the heterogeneity of the cosmetic surgery tourism market based on distinct perceived risk patterns.

Finally, from a methodological perspective, this study broadens the range of tourism segmentation methodologies by using the hybrid method combining LC modeling and the CHAID algorithm. As the segmentation methodologies used in tourism research have been limited (Chen, 2003a), this study is the first to apply the hybrid method in tourism segmentation research. It demonstrates that the hybrid approach is an advanced segmentation method, providing a set of segments predictive of multiple dependent variables and enabling researchers to develop detailed profiles based on a large number of predictor variables. In addition, this

study confirms the applicability of perceived risk as a significant segmentation criterion in the context of cosmetic surgery tourism.

In summary, this study contributes to the perceived risk literature by conceptualizing the perceived risk of patient-consumers or patient-tourists in the context of multi-purpose travel decisions and by developing a reliable PRCST scale. In addition, it makes important contributions to the medical tourism literature by enriching knowledge on the risk perception, decision-making, and personal and behavioral characteristics of cosmetic surgery tourists. Finally, this study expands the range of tourism segmentation methodologies from a methodological perspective.

6.3 Practical Implications

Many countries around the world have recognized the contribution of medical tourism to the local economy and have therefore started to compete for their share of this lucrative medical tourism market (BAAPS, 2017). This study has several important practical implications in terms of destination marketing and product development. As it focused on Chinese cosmetic surgery tourists, its implications are applicable and relevant to marketing practitioners and service providers in cosmetic surgery tourism who mainly target China's outbound cosmetic surgery tourism market or other markets with similar cultural backgrounds.

The results indicated that Chinese cosmetic surgery tourists travel abroad not only for cosmetic surgery. As a result, DMOs should promote a wide range of activities (e.g., shopping, sightseeing, experiencing local food, or taking cooking classes) in conjunction with the benefits of cosmetic procedures (e.g., cost savings and high quality) to strengthen a country's position as an attractive cosmetic surgery tourism destination. Developing a variety of tourism products is essential to satisfy different groups of cosmetic surgery tourists, from risk-sensitive tourists to risk-neutral tourists and from first-time visitors to frequent visitors. In addition, as Chinese

tourists worry about the danger of the hostile environment of a cosmetic surgery tourism destination, it is essential for DMOs not only to emphasize high quality medical services, but also to establish the destination image as a safe and pleasant place.

Although perceived risk patterns are linked with different personal and behavioral characteristics of cosmetic surgery tourists, medical service providers (i.e., hospitals or clinics) and medical travel intermediaries should develop cosmetic surgery tourism products and services adapted to the needs and preferences of their target consumers. For example, an effective way to target the Risk Neutral segment that tends to visit a cosmetic surgery tourism destination mainly for cosmetic surgery is to offer all-inclusive products that are best suited for surgical patients. These total care packages could include thorough and adequate preoperative consulting services using video calls, various aftercare services during the recovery period, accommodation in a convenient location (e.g., close to a hospital), a comfortable limousine service, and so on. Providing convenient experience of cosmetic surgery could be the focal point of product development.

The results also showed that Chinese cosmetic surgery tourists in the Risk Concerned segment visit a destination mainly for cosmetic surgery but also for vacation purposes, but have concerns about Vacation Risk and Cost Risk. As members of this segment are likely to be young and repeat visitors planning a long trip, service providers targeting this segment should focus on providing various options with different price ranges, budget flights, and affordable accommodation. Moreover, cosmetic surgery tourism products should be combined with other esthetic services (e.g., spa, facial treatment, and hair salon), cosmetic dental treatments, and shopping opportunities to increase customer needs to enhance their appearance.

For the Risk Sensitive segment, the results indicated that Chinese cosmetic surgery tourists in this segment have a high level of perceived risk in all four dimensions. They also tend to be first-time visitors to a destination and to have characteristics somewhat similar to

pleasure travelers. Thus, it would be desirable to develop medical tourism products that offer diverse cultural experiences combined with non-invasive or minor cosmetic surgery procedures, such as laser skin rejuvenation or skin rejuvenation injections.

In conclusion, this empirical study provides directions for marketing practitioners to develop effective destination marketing strategies to attract Chinese cosmetic surgery tourists with distinct personal and behavioral characteristics. Furthermore, its findings will help service providers in the cosmetic surgery tourism industry to develop appropriate products for various segments and to deliver quality services by adding value to their cosmetic surgery tourism products.

6.4 Limitations and Future Research

This study has several limitations. First, this study investigated PRCST in the context of prospective Chinese tourists who intend to travel to South Korea for cosmetic surgery. Therefore, the generalizability of the results to other cultural groups or destination countries remains unclear. Future research should replicate this research with different study settings, such as various outbound markets and cosmetic surgery tourism destinations, to better understand the perceived risk of cosmetic surgery tourists. In addition, cross-cultural studies should be conducted to compare the perceived risk of cosmetic surgery tourists with different cultural backgrounds.

Although this study helps conceptualize perceived risk in the context of cosmetic surgery tourism, it does not provide an explanation for the relative importance of various attributes that can influence overall risk perception and decision-making. Future research should investigate perceived risk not only in terms of the possible negative consequences associated with cosmetic surgery tourism, but also with regard to the importance of attributes

for individual cosmetic surgery tourists and their tolerance for loss to better understand risk perception and the decision-making process.

In this study, the cosmetic surgery tourism market was segmented based on perceived risk. Thus, future studies should segment cosmetic surgery tourists based on their perceived risk and their risk reduction strategies to better understand the decision-making and consumption behavior of cosmetic surgery tourists. Future research should also explore the relationship between PRCST and other factors, such as tourist satisfaction, revisit intentions, and information search behavior. Furthermore, future studies should examine how perceived risk changes at different stages of the decision-making process or before and after the cosmetic surgery tourism experience.

6.5 Chapter Summary

This chapter presented the theoretical contributions and practical implications of this thesis. A number of theoretical contributions to the field of consumer perceived risk, medical tourism, and tourism segmentation methodologies were discussed. Following these theoretical contributions, this chapter described the study's important practical implications for marketing practitioners and service providers who target China's outbound cosmetic surgery tourism market or other markets with similar cultural backgrounds. Finally, the limitations of the study were discussed and several directions for future research were proposed.

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APPENDICES

Appendix A. Prices of Cosmetic Surgery Procedures in Different Destinations

Procedure	US	Costa Rica	Colombia	India	Jordan	South Korea	Mexico	Israel	Thailand	Vietnam	Malaysia	Poland	Singapore	Turkey
Breast Implants	$6,400	$3,500	$2,500	$3,000	$4,000	$3,800	$3,800	$3,800	$3,500	$4,000	$3,800	$3,900	$8,400	$4,500
Rhinoplasty	$6,500	$3,800	$4,500	$2,400	$2,900	$3,980	$3,800	$4,600	$3,300	$2,100	$2,200	$2,500	$2,200	$3,100
Facelift	$11,000	$4,500	$4,000	$3,500	$3,950	$6,000	$4,900	$6,800	$3,950	$4,150	$3,550	$4,000	$440	$6,700
Liposuction	$5,500	$2,800	$2,500	$2,800	$1,400	$2,900	$3,000	$2,500	$2,500	$3,000	$2,500	$1,800	$2,900	$3,000
Tummy Tuck	$8,000	$5,000	$3,500	$3,500	$4,200	$5,000	$4,500	$10,900	$5,300	$3,000	$3,900	$3,550	$4,650	$4,000

Note: (1) Prices for 2019.

(2) Prices are approximate and not actual prices and do not include airfare travel or accommodation costs for patients and companions. Prices vary depending on many factors, such as hospital, doctor's experience, accreditation, and exchange rates.

Source: Medical Tourism Association (2019).

Appendix B. In-depth Interviews

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

School of Hotel & Tourism Management

CONSENT TO PARTICIPATE IN RESEARCH

Cosmetic Surgery Tourism in South Korea

I _____ hereby consent to participate in the captioned research conducted by Vivian Hye-Min Nam, Ph.D. Student at the School of Hotel and Tourism Management.

I understand that all information obtained during this research may be used in future research and published. However, my right to privacy will be protected, i.e., my personal details will not be revealed.

The procedure described in the attached information sheet has been fully explained. I understand the benefits and risks involved. My participation in the project is voluntary.

I acknowledge that I have the right to question any part of the procedure and can withdraw at any time without penalty of any kind.

Name of participant _____

Signature of participant _____

Name of researcher Vivian Hye-Min Nam

Signature of researcher _____

Date _____

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

School of HTM Hotel & Tourism Management

INFORMATION SHEET

Cosmetic Surgery Tourism in South Korea

You are invited to participate in a study conducted by Vivian Hye-Min Nam, who is a postgraduate student at the School of Hotel and Tourism Management at The Hong Kong Polytechnic University. The project has been approved by the Human Subjects Ethics Sub-committee (HSESC) of The Hong Kong Polytechnic University.

The purpose of this study is to better understand Chinese cosmetic surgery tourists who visit South Korea. This study will involve participating in an interview, which will last approximately an hour. Your interview will be tape-recorded. After the interview, you will receive a usable gift card worth ₩10,000 (about HK$70).

You have the right to withdraw from the study before or during the interview without penalty of any kind. All information about you will remain confidential. In addition, you will have the opportunity to review a summary of the study results.

If you would like more information on this study, please contact Vivian Hye-Min Nam (Tel: +852 3400 2284/E-mail: Vivian.nam@).

If you have any complaints regarding the conduct of this research study, please do not hesitate to contact in writing Miss Cherrie Mok, Secretary of the Human Subjects Ethics Sub-committee of The Hong Kong Polytechnic University (c/o Research Office of the University), clearly indicating the person and department responsible for this study and the HSESC Reference Number.

Thank you for your interest in participating in this study.

Dr. Ada Lo
Principal Investigator

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Appendix C. Expert Panel Review

Developing measurement items assessing tourists' perceived risk of cosmetic surgery tourism

This study investigates the risk perception of medical tourists traveling abroad for cosmetic surgery. Specifically, this study aims to develop an instrument to measure the perceived risk associated with cosmetic surgery tourism. The study population includes potential Chinese cosmetic surgery tourists interested in or planning to undergo cosmetic surgery in South Korea. The statements examined are related to the risks faced by cosmetic surgery tourists during the planning and preparation phase, at the cosmetic surgery tourism destination (i.e., South Korea), and when returning to their home country after surgery. The statements were derived from the literature on perceived risk, medical tourism, and cosmetic surgery, and from interviews with plastic surgeons, clinic staff, medical tourism agents, and nine people from mainland China who had undergone cosmetic surgery in South Korea in the last two years.

Please assess the relevance of the items to measure the associated dimensions by rating each item on the 4-point scale, with 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = very relevant.

Your comments are greatly appreciated.

Thank you very much!

Vivian Nam, Ph.D. Student
School of Hotel and Tourism Management
The Hong Kong Polytechnic University
E-mail: vivian.nam@
Tel: (852) 3400 2284/Fax: (852) 2362 9362

The following statements aim to describe the possible perceived risks faced by cosmetic surgery tourists. Please indicate your level of agreement with their relevance by circling the corresponding number: 1 = not relevant, 2 = somewhat relevant, 3 = quite relevant, and 4 = very relevant.

Financial Risk: Possibility of not obtaining value for money; losing or wasting money if the expectations of cosmetic surgery tourism are not met

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
1	No value for money	A cosmetic surgery trip to South Korea may not offer good value for money.	1	2	3	4	
2	Fluctuation in exchange rates	A cosmetic surgery trip to South Korea may involve additional costs due to fluctuating exchange rates.	1	2	3	4	
3	Less economical	A cosmetic surgery trip to South Korea may be less economical than cosmetic surgery performed in my home country.	1	2	3	4	
4	Unreasonable cost	The cost of cosmetic surgery in South Korea may be unreasonable.	1	2	3	4	
5	Unsatisfactory cost	The cost of a cosmetic surgery trip to South Korea may be unsatisfactory.	1	2	3	4	
6	Unexpected costs	A cosmetic surgery trip to South Korea may entail unexpected costs if the surgery goes wrong, such as the cost of flying back to South Korea or having revision surgery done by a local doctor in my home country.	1	2	3	4	
7	Financial burden	A cosmetic surgery trip to South Korea may be a heavy burden on my finances.	1	2	3	4	

Time Risk: Possibility that the cosmetic surgery tourism experience may take too long; cosmetic surgery tourists may lose or waste time

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
8	Too long	A cosmetic surgery trip to South Korea may take too long.	1	2	3	4	

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
9	Long planning time	A cosmetic surgery trip to South Korea may require too much planning time.	1	2	3	4	
10	Unexpected loss of time	A cosmetic surgery trip to South Korea may involve an unexpected loss in terms of time if the surgery goes wrong, e.g., extra time to search for an appropriate surgeon in my home country for corrective surgery or additional days off to fly back to South Korea.	1	2	3	4	
11	More time needed	A cosmetic surgery trip to South Korea may take more time than having cosmetic surgery in my home country.	1	2	3	4	

Performance Risk: Possibility of not receiving benefits due to the end-product or poor service performance of cosmetic surgery tourism; possibility that the expectations of cosmetic surgery tourism are not met

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
12	No cost advantages	A cosmetic surgery trip to South Korea may not offer benefits in terms of cost savings.	1	2	3	4	
13	Poor medical service quality	A cosmetic surgery trip to South Korea may not provide better quality medical services than my home country.	1	2	3	4	
14	No desired effect	Cosmetic surgery performed in South Korea may not provide the desired effects.	1	2	3	4	
15	No fulfillment of expectations	Cosmetic surgery performed in South Korea may not meet my expectations in terms of enhancing my appearance.	1	2	3	4	

Functional Risk: Possibility of problems related to organizational inefficiency, equipment, and regulations and laws during a cosmetic surgery trip or at the cosmetic surgery tourism destination

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
16	Doctors	Surgeons in South Korea may not be highly trained and experienced.	1	2	3	4	
17	Medical staff	Anesthesiologists and medical staff in South Korea may not be sufficiently experienced.	1	2	3	4	
18	Medical tourism agencies/brokers	Medical tourism agencies and brokers may not offer quality services.	1	2	3	4	
19	Translators	Translators may not have sufficient professional/medical knowledge.	1	2	3	4	
20	Unfriendliness	Doctors and medical staff in South Korea may not be friendly.	1	2	3	4	
21	Insufficient perioperative management	Insufficient preoperative assessment and postoperative follow-up may occur due to the short stay in South Korea.	1	2	3	4	
22	Responsibility	Medical service providers may not provide adequate treatment or corrective surgery if something goes wrong after I return home.	1	2	3	4	
23	Medical standards	Cosmetic surgery hospitals/facilities may have low medical standards.	1	2	3	4	
24	Medical equipment	State-of-the-art medical equipment may not be used during a cosmetic surgery procedure in South Korea.	1	2	3	4	
25	Regulations	The medical system in South Korea may not be strictly or sufficiently regulated.	1	2	3	4	
26	Laws	Laws that protect medical tourists may not exist in South Korea.	1	2	3	4	
27	Accommodation	Accommodation in South Korea may not be comfortable for surgical patients.	1	2	3	4	
28	Transportation	Transportation in South Korea may be inconvenient for surgical patients.	1	2	3	4	
29	Food	South Korean food may not suit my taste.	1	2	3	4	

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
30	Vacationing	I may not have the opportunity to engage in tourist activities, such as shopping or sightseeing, during my recovery period in South Korea.	1	2	3	4	

Health Risk: Possibility that cosmetic surgery tourists fall ill due to the cosmetic surgery procedure during a cosmetic surgery trip or after returning home

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
31	Medical accident	Medical negligence may occur during a cosmetic surgery procedure in South Korea.	1	2	3	4	
32	Complications	Complications, such as asymmetry, infection, the formation of bad scar tissues, and extreme blood loss, may occur.	1	2	3	4	
33	Physical pain	Severe physical pain may occur after cosmetic surgery in South Korea.	1	2	3	4	
34	Problems while traveling	Infection problems may arise during post-operative outdoor activities (e.g., shopping and sightseeing) in South Korea.	1	2	3	4	
35	Problems after returning home	I may experience complications after returning to my home country.	1	2	3	4	

Physical Risk: Possibility of physical danger or injury due to a hostile environment during a cosmetic surgery trip or at the cosmetic surgery tourism destination

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
36	Safety issue	South Korea is not a safe place to visit for cosmetic surgery due to crime.	1	2	3	4	
37	Unrest	I may be exposed to danger due to social/political unrest in South Korea.	1	2	3	4	

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
38	Bad weather	Weather conditions in South Korea may be unsustainable for surgical patients.	1	2	3	4	
39	Hostile locals	Locals may be hostile to foreigners.	1	2	3	4	
40	Crowded sites	Sites (e.g., tourist attractions, shopping areas, and airports) may be extremely crowded for surgical patients to visit after cosmetic surgery.	1	2	3	4	
41	Risky air travel	Air travel may be risky after cosmetic surgery.	1	2	3	4	
42	Heavy baggage	Carrying heavy baggage may be dangerous after cosmetic surgery.	1	2	3	4	

Satisfaction Risk: Possibility of not achieving personal satisfaction/self-actualization from cosmetic surgery tourism

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
43	Unsatisfactory surgical outcomes	The surgical outcomes obtained in South Korea may be unsatisfactory.	1	2	3	4	
44	Disappointing surgery	Cosmetic surgery performed in South Korea may be disappointing.	1	2	3	4	
45	Unsatisfactory quality	The quality of medical services offered in South Korea may not be satisfactory.	1	2	3	4	
46	Dissatisfied with the travel experience	I may be dissatisfied with the overall cosmetic surgery travel experience in South Korea.	1	2	3	4	
47	No appearance enhancement	A cosmetic surgery trip to South Korea may not provide personal satisfaction in terms of appearance enhancement.	1	2	3	4	

Cultural Risk: Possibility of experiencing difficulties in communicating with service providers or locals; cultural misunderstanding; negative consequences due to different esthetic perceptions/beauty standards

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
48	Communication problems	I may experience communication problems.	1	2	3	4	
49	Language barrier	I may meet a language barrier.	1	2	3	4	
50	Cultural differences	Misunderstandings may arise due to cultural differences.	1	2	3	4	
51	Undesirable esthetic perceptions	Esthetic perceptions in South Korea may not be preferable in my culture.	1	2	3	4	
52	Different beauty standards	Undesirable outcomes may arise due to different beauty standards between South Korea and my culture.	1	2	3	4	

Social Risk: Possibility that the choice or experience of cosmetic surgery tourism may affect others' opinion of a cosmetic surgery tourist; friends/family/associates may disapprove of this choice

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
53	Think negatively of me	A cosmetic surgery trip to South Korea may negatively affect the way other people think of me.	1	2	3	4	
54	Disapproval of cosmetic surgery trip	Other people may disapprove of my cosmetic surgery trip to South Korea.	1	2	3	4	
55	Damaged self-image	A cosmetic surgery trip to South Korea may hurt my self-image.	1	2	3	4	
56	Lower social status	A cosmetic surgery trip to South Korea may lower my social status.	1	2	3	4	

Psychological Risk: Possibility that the experience of cosmetic surgery tourism may affect psychological well-being; cosmetic surgery tourism may poorly reflect on personality or self-image

		Items	1 = Not relevant, 2 = Somewhat relevant, 3 = Quite relevant, 4 = Very relevant				Comments
57	Discomfort	The thought of a cosmetic surgery trip to South Korea makes me uncomfortable.	1	2	3	4	
58	No reflection of self-image	A cosmetic surgery trip to South Korea may not reflect my self-image.	1	2	3	4	
59	Tension	When I think of a cosmetic surgery trip to South Korea, I feel tense.	1	2	3	4	
60	Anxiety	I may be worried about having surgery in South Korea.	1	2	3	4	
61	Tension after surgery	I may feel tense until I see if the cosmetic surgery performed in South Korea is successful.	1	2	3	4	
62	Psychological repercussions	I may have psychological repercussions if something goes wrong.	1	2	3	4	

Other comments:

Thank you very much for your cooperation!

Appendix D. Survey Questionnaire—English Version

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

School of Hotel & Tourism Management HTM

Cosmetic Surgery Tourism in South Korea

Dear Sir/Madam,

Thank you very much for your consent to participate in this study. Your participation is valuable and highly appreciated. This research project aims to examine your perception of cosmetic surgery tourism in South Korea. Your opinion is important to advance our understanding and knowledge of medical tourism and cosmetic surgery tourism. Completing this questionnaire will only take 15 minutes. All of the information collected will be used for **RESEARCH PURPOSES ONLY** and will be kept **CONFIDENTIAL**. Please contact me if you have any questions.

Yours faithfully,

Vivian Hye-Min Nam, Ph.D. Student

School of Hotel and Tourism Management, The Hong Kong Polytechnic University

E-mail: vivian.nam@ /Tel.: (852) 3400 2284/Fax: (852) 2362 9362

Please read the following statements and tick the appropriate box.

Q1) **I have considered traveling abroad for cosmetic surgery in the last 12 months.**

☐ Yes

☐ No

Q2) **Currently, I am not a resident of South Korea.**

☐ Yes

☐ No

Part I—Perception of Cosmetic Surgery Tourism in South Korea

The following statements describe your perception of cosmetic surgery tourism in South Korea. Please read each statement and indicate your level of agreement by circling the corresponding number.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1	A cosmetic surgery trip to South Korea may not offer good value for money.	1	2	3	4	5	6	7
2	A cosmetic surgery trip to South Korea may involve additional costs due to fluctuating exchange rates.	1	2	3	4	5	6	7
3	Compared with cosmetic surgery performed in my home country, a cosmetic surgery trip to South Korea may not provide satisfactory cost savings.	1	2	3	4	5	6	7
4	A cosmetic surgery trip to South Korea may entail unexpected costs if the surgery goes wrong, such as the cost of flying back to South Korea or having revision surgery done by a local doctor in my home country.	1	2	3	4	5	6	7
5	A cosmetic surgery trip to South Korea may take too long.	1	2	3	4	5	6	7
6	A cosmetic surgery trip to South Korea may require too much planning time.	1	2	3	4	5	6	7
7	A cosmetic surgery trip to South Korea may involve an unexpected loss in terms of time if the surgery goes wrong (e.g., extra time to search for an appropriate surgeon in my home country for corrective surgery or additional days off to fly back to South Korea).	1	2	3	4	5	6	7
8	A cosmetic surgery trip to South Korea may take more time than having cosmetic surgery in my home country.	1	2	3	4	5	6	7
9	A cosmetic surgery trip to South Korea may not provide better quality medical services than my home country.	1	2	3	4	5	6	7
10	Cosmetic surgery performed in South Korea may not provide the desired effects.	1	2	3	4	5	6	7
11	Cosmetic surgery performed in South Korea may not meet my expectations in terms of enhancing my appearance.	1	2	3	4	5	6	7
12	Medical staff in South Korea may not be sufficiently experienced.	1	2	3	4	5	6	7
13	Medical tourism agencies and brokers may not offer quality services.	1	2	3	4	5	6	7
14	Translators may not have sufficient professional/medical knowledge.	1	2	3	4	5	6	7
15	Insufficient preoperative assessment may occur due to the short stay in South Korea.	1	2	3	4	5	6	7
16	Insufficient postoperative follow-up may be provided due to the short stay in South Korea.	1	2	3	4	5	6	7
17	Medical service providers may not provide adequate treatment or corrective surgery if something goes wrong after I return home.	1	2	3	4	5	6	7
18	Cosmetic surgery hospitals/facilities may have low medical standards.	1	2	3	4	5	6	7
19	State-of-the-art medical equipment may not be used during a cosmetic surgery procedure in South Korea.	1	2	3	4	5	6	7
20	Laws that protect medical tourists may not exist in South Korea.	1	2	3	4	5	6	7
21	Accommodation in South Korea may not be comfortable for surgical patients.	1	2	3	4	5	6	7

22	Transportation in South Korea may be inconvenient for surgical patients.	1	2	3	4	5	6	7
23	South Korean food may not suit my taste.	1	2	3	4	5	6	7
24	I may not have the opportunity to engage in tourist activities, such as shopping or sightseeing, during my recovery period in South Korea.	1	2	3	4	5	6	7
25	I may experience problems when going through immigration after cosmetic surgery in South Korea due to my change in appearance.	1	2	3	4	5	6	7
26	Complications, such as asymmetry, infection, the formation of bad scar tissues, and extreme blood loss, may occur after cosmetic surgery in South Korea.	1	2	3	4	5	6	7
27	Severe physical pain may occur after cosmetic surgery in South Korea.	1	2	3	4	5	6	7
28	Infection problems may arise during post-operative outdoor activities (e.g., shopping and sightseeing) in South Korea.	1	2	3	4	5	6	7
29	I may experience complications after returning to my home country.	1	2	3	4	5	6	7
30	I may be the victim of a crime in South Korea.	1	2	3	4	5	6	7
31	I may be exposed to danger due to social/political unrest in South Korea.	1	2	3	4	5	6	7
32	Weather conditions in South Korea may be unsustainable for surgical patients.	1	2	3	4	5	6	7
33	Locals may be hostile to foreigners.	1	2	3	4	5	6	7
34	Sites (e.g., tourist attractions, shopping areas, and airports) may be extremely crowded for surgical patients to visit after cosmetic surgery.	1	2	3	4	5	6	7
35	Air travel may be risky after cosmetic surgery.	1	2	3	4	5	6	7
36	Carrying heavy baggage may be dangerous after cosmetic surgery.	1	2	3	4	5	6	7
37	The surgical outcomes obtained in South Korea may be unsatisfactory.	1	2	3	4	5	6	7
38	The quality of medical services offered in South Korea may not be satisfactory.	1	2	3	4	5	6	7
39	I may be dissatisfied with the overall cosmetic surgery travel experience in South Korea.	1	2	3	4	5	6	7
40	A cosmetic surgery trip to South Korea may not provide personal satisfaction in terms of appearance enhancement.	1	2	3	4	5	6	7
41	I may experience communication problems due to the language barrier.	1	2	3	4	5	6	7
42	Misunderstandings may arise due to cultural differences.	1	2	3	4	5	6	7
43	Esthetic perceptions in South Korea may not be preferable in my culture.	1	2	3	4	5	6	7
44	Undesirable outcomes may arise due to different beauty standards between South Korea and my culture.	1	2	3	4	5	6	7
45	A cosmetic surgery trip to South Korea may negatively affect the way other people think of me.	1	2	3	4	5	6	7
46	Other people may disapprove of my cosmetic surgery trip to South Korea.	1	2	3	4	5	6	7
47	A cosmetic surgery trip to South Korea may lower my social status.	1	2	3	4	5	6	7
48	A cosmetic surgery trip to South Korea may not reflect my self-image.	1	2	3	4	5	6	7
49	When I think of a cosmetic surgery trip to South Korea, I feel nervous.	1	2	3	4	5	6	7
50	I may have psychological repercussions if something goes wrong.	1	2	3	4	5	6	7

Part II—Past Experiences

Please read the following questions about your international travel experience and past experiences in cosmetic surgery and indicate your answer by ticking the appropriate box.

1. How many international trips have you undertaken in the last three years (including trips to Hong Kong, Macau, and Taiwan)?

☐ None ☐ 1-2 ☐ 3-4
☐ 5-6 ☐ 7-8 ☐ 9 or more

2. How many times have you visited South Korea for vacation and/or business purposes in the last 10 years?

☐ None ☐ 1-2 ☐ 3-4
☐ 5-6 ☐ 7-8 ☐ 9 or more

3. Have you ever had cosmetic surgery or any non-surgical procedure?

☐ Yes ☐ No

4. Please indicate the cosmetic surgery procedure(s) you have undergone in the past, if any, AND those you would like to undergo in South Korea by ticking the box.

Cosmetic Procedure		IN THE PAST, I have undergone	IN THE FUTURE, I am interested in undergoing
Surgical	Eye surgery	☐	☐
	Nose surgery	☐	☐
	Forehead surgery	☐	☐
	Face contouring surgery	☐	☐
	Facelift	☐	☐
	Fat transfer injections (face)	☐	☐
	Dimple surgery	☐	☐
	Under-eye fat removal	☐	☐
	Lip surgery	☐	☐
	Breast surgery	☐	☐
	Liposuction	☐	☐
	Fat transfer injections (body)	☐	☐
	Hair transplant	☐	☐
Non-surgical	Filler	☐	☐
	Botox	☐	☐
	Laser skin rejuvenation	☐	☐
	Skin enhancement injections	☐	☐
	Laser lipolysis	☐	☐

Part III—Future Plans

A. Please indicate your level of agreement with the following statements describing your intention to travel to South Korea for cosmetic surgery by circling the corresponding number.

Strongly Disagree	Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Agree	Strongly Agree
1	2	3	4	5	6	7

1	I intend to travel to South Korea for cosmetic surgery in the next 12 months.	1	2	3	4	5	6	7
2	I want to travel to South Korea for cosmetic surgery.	1	2	3	4	5	6	7
3	It is likely that I will travel to South Korea for cosmetic surgery in the next 12 months.	1	2	3	4	5	6	7

B. Assuming that <u>you are going to take a cosmetic surgery trip to South Korea in the next 12 months</u>, …

1. How many nights will you stay in South Korea? _____ week(s)

2. Who will accompany you?

☐ I will travel alone ☐ Family or relatives ☐ Friends

☐ Family members who will/may also undergo cosmetic surgery ☐ Friends who will/may also undergo cosmetic surgery

3. What type of accommodation will you choose?

☐ Hotel ☐ Budget hotel ☐ Inn/motel

☐ Recovery accommodation ☐ Airbnb ☐ Family/friends' house

4. How will you organize the trip?

☐ Self-arranged ☐ Travel agents ☐ Travel agents specializing in medical tourism

5. How much will you spend on cosmetic surgery?

☐ Less than RMB10,000 ☐ RMB10,001-RMB30,000

☐ RMB30,001-RMB50,000 ☐ RMB50,001-RMB70,000

☐ RMB70,001-RMB90,000 ☐ RMB90,001-RMB110,000

☐ RMB110,001-RMB130,000 ☐ RMB130,001-RMB150,000

☐ RMB150,001-RMB170,000 ☐ RMB170,001-RMB190,000

☐ RMB190,001-RMB210,000 ☐ RMB210,001 or more

6. How much will you spend for the entire trip, excluding cosmetic surgery (per person if you accompany someone)?

☐ Less than RMB20,000 ☐ RMB20,001-RMB30,000

☐ RMB30,001-RMB40,000 ☐ RMB40,001-RMB50,000

☐ RMB50,001-RMB60,000 ☐ RMB60,001-RMB70,000

☐ RMB70,001-RMB80,000 ☐ RMB80,001-RMB90,000

☐ RMB90,001-RMB100,000 ☐ RMB100,001-RMB110,000

☐ RMB110,001-RMB120,000 ☐ RMB120,001 or more

7. What will be the purpose of your trip?

Solely for cosmetic surgery	Mostly for cosmetic surgery	Equally for cosmetic surgery and vacation	Mostly for vacation	Solely for vacation
☐	☐	☐	☐	☐

8.When will you make the final decisions regarding the medical service provider and the type of cosmetic procedure(s)?

Medical service provider		**Type of cosmetic procedure(s)**	
☐ Decide before departure	☐ Decide after arrival	☐ Decide before departure	☐ Decide after arrival

Part IV– Personal Information

Please read the following questions regarding your personal information and tick the appropriate box.

1. What is your gender?

☐ Female ☐ Male

2. What is your age?

☐ 20 or under ☐ 21-30 ☐ 31-40
☐ 41-50 ☐ 51-60 ☐ 61 or over

3. What is your marital status?

☐ Single ☐ Married
☐ Divorced ☐ Other

4. What is your highest level of education?

☐ High school degree or below ☐ Undergraduate student
☐ Undergraduate degree ☐ Postgraduate degree or above

5. What is your occupation?

☐ Company employee ☐ Business owner ☐ Professional
☐ Freelancer ☐ Student ☐ Housewife ☐ Not employed

6. What is your monthly household income?

☐ Less than RMB10,000 ☐ RMB10,001-RMB30,000
☐ RMB30,001-RMB50,000 ☐ RMB50,001-RMB70,000
☐ RMB70,001-RMB90,000 ☐ RMB90,001-RMB110,000
☐ RMB110,001-RMB130,000 ☐ RMB130,001-RMB150,000
☐ RMB150,001-RMB170,000 ☐ RMB170,001-RMB190,000
☐ RMB190,001-RMB210,000 ☐ RMB210,001-RMB230,000
☐ RMB230,001-RMB250,000 ☐ RMB250,001 or more

Thank you for your participation.

Appendix E. Survey Questionnaire – Chinese Version

THE HONG KONG POLYTECHNIC UNIVERSITY 香港理工大學

School of Hotel & Tourism Management

韩国医疗美容旅游

尊敬的先生/女士：

非常感谢您同意参与这项研究，您的参与对我的研究有非常重要的意义。这项研究是了解的是您对于韩国整容旅游的看法。你的意见对于提升我们对医疗旅游以及整容旅游方面的理解十分重要。回答这份问卷只需要 15 分钟。所有收集的信息将只会被用于此项学术研究并进行保密。如果您有任何疑问，请与我联络。

敬礼

南慧玟 (Vivian Hye-Min Nam)，博士学生

香港理工大学，酒店及旅游业管理学

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请阅读以下叙述并标记最符合的项目。

问题1） 我有考虑过在过去十二个月内出境进行医疗美容手术。

☐ 是

☐ 否

问题2） 我不是韩国居民。

☐ 是

☐ 否

第一部分 – 对于韩国整容旅游的认知

下列内容是表述您对于出国进行整容手术的认知。请阅读每一条内容并圈出对应数字以表示您的同意程度。

非常不同意	不同意	比较不同意	中立	比较同意	同意	非常同意
1	2	3	4	5	6	7

1	去韩国整容旅游可能不会物有所值。	1	2	3	4	5	6	7
2	去韩国整容旅游可能会由于汇率变化而引起额外支出。	1	2	3	4	5	6	7
3	相比于留在国内做手术，赴韩进行医疗美容的费用可能不会低到让人满意的金额。	1	2	3	4	5	6	7
4	在韩国进行整容手术可能会带来意外的费用，比如手术出现差错的时候会产生飞回韩国的往返机票的费用，或者在国内额外支付进行修复手术的费用。	1	2	3	4	5	6	7
5	去韩国做整容手术可能会占用我很多时间。	1	2	3	4	5	6	7
6	去韩国整容旅游可能需要较长的计划时间。	1	2	3	4	5	6	7
7	在韩国进行整容手术可能会因手术失败而造成意想不到的时间损失。例如需要额外时间在国内寻找另外一个合适的外科医生来进行矫正手术，或者需要再飞回韩国进行矫正手术。	1	2	3	4	5	6	7
8	去韩国做整容手术可能比在国内做整容手术花更多时间。	1	2	3	4	5	6	7
9	韩国整容手术可能不会比国内提供更高质量的医疗服务。	1	2	3	4	5	6	7
10	在韩国进行的整容手术可能无法达到我想要的效果。	1	2	3	4	5	6	7
11	在韩国进行的整容手术可能无法满足我改善外表的愿望。	1	2	3	4	5	6	7
12	在韩国医务人员可能没有足够的经验。	1	2	3	4	5	6	7
13	医疗旅游机构可能不会提供优质服务。	1	2	3	4	5	6	7
14	翻译人员可能没有足够的专业/医学知识。	1	2	3	4	5	6	7
15	由于我只在韩国短暂停留一段时间，可能会出现手术前医生评估不足的情况 。	1	2	3	4	5	6	7
16	由于我只在韩国短暂停留一段时间，可能会出现手术后检查不足的情况 。	1	2	3	4	5	6	7
17	如果在我回国后出现问题，医疗服务提供者可能无法为我提供足够的治疗或矫正手术。	1	2	3	4	5	6	7
18	整容医院/设施可能有偏低的医疗服务水准。	1	2	3	4	5	6	7
19	整容手术过程中可能不会使用最先进的医疗设备。	1	2	3	4	5	6	7
20	在韩国，可保护医疗游客的法律可能不存在。	1	2	3	4	5	6	7
21	在韩国的住宿可能让手术病人感到不舒适。	1	2	3	4	5	6	7
22	韩国的交通可能对外科手术病人不方便。	1	2	3	4	5	6	7
23	韩国的食物可能不适合我的口味。	1	2	3	4	5	6	7
24	在韩国休养期间，我可能没有机会参加购物或观光等旅游活动。	1	2	3	4	5	6	7

25	在完成整容手术后，由于外貌的改变，我可能会遇到无法顺利从韩国出境的情况。	1	2	3	4	5	6	7
26	可能会在术后出现诸如不对称、感染、严重的疤痕组织形成和极度失血等并发症。	1	2	3	4	5	6	7
27	在韩国进行整容手术后，可能会出现严重的身体疼痛。	1	2	3	4	5	6	7
28	在手术后进行户外活动（例如购物或观光）可能会发生感染问题。	1	2	3	4	5	6	7
29	我可能会在回国后经历一些并发症。	1	2	3	4	5	6	7
30	我可能会在韩国遭遇犯罪袭击。	1	2	3	4	5	6	7
31	我可能会因为韩国的社会/政治动荡而陷入在危险之中。	1	2	3	4	5	6	7
32	韩国的天气对医疗美容手术病人来说可能是难以忍受的。	1	2	3	4	5	6	7
33	韩国当地人可能对外国人怀有敌意。	1	2	3	4	5	6	7
34	在术后康复阶段， 旅游景点（购物区和机场）可能因为非常拥挤而不适宜我去参观旅游。	1	2	3	4	5	6	7
35	在进行整容手术后，乘搭航空交通工具可能会有风险。	1	2	3	4	5	6	7
36	在进行整容手术后，携带沉重的行李可能会有危险。	1	2	3	4	5	6	7
37	在韩国获得的手术结果可能并不令人满意。	1	2	3	4	5	6	7
38	韩国提供的医疗服务质量可能不令人满意。	1	2	3	4	5	6	7
39	我可能不满意韩国的整容手术旅行。	1	2	3	4	5	6	7
40	韩国整容旅行可能不会让我对自身的外观更加满意。	1	2	3	4	5	6	7
41	因为语言不通，我可能会面临沟通障碍。	1	2	3	4	5	6	7
42	可能会产生文化差异的误解。	1	2	3	4	5	6	7
43	在中国的文化中，韩国的美学观念可能并不可取。	1	2	3	4	5	6	7
44	由于韩国文化与我的文化不同的审美标准，可能会出现不良的手术结果。	1	2	3	4	5	6	7
45	去韩国整容可能会对别人对我的看法产生负面影响。	1	2	3	4	5	6	7
46	其他人可能不赞成我去韩国做整容手术。	1	2	3	4	5	6	7
47	韩国整容旅行可能会降低我的社会地位。	1	2	3	4	5	6	7
48	韩国的整容手术旅行可能不会影响我的个人形象。	1	2	3	4	5	6	7
49	当我想到韩国整容手术时，我感到紧张。	1	2	3	4	5	6	7
50	如果手术出现什么问题，我可能会产生心理反响。	1	2	3	4	5	6	7

第二部分 – 过往经历

以下内容是询问关于您出境旅游和过去整容的经历的问题。请阅读下列问题并勾选出您的答案。

1. 在过去的三年里，您曾经出境旅游过几次（包括港澳台旅游）？

□ 没有　□ 1-2 次　□ 3-4 次

□ 5-6 次　□ 7-8 次　□ 9 次或以上

2. 在过去的十年里， 您曾经去韩国度假或商务旅行过几次?

□ 没有　□ 1-2 次　□ 3-4 次

□ 5-6 次　□ 7-8 次　□ 9 次或以上

3. 您之前是否做过整容手术或非开刀整容手术?

□ 是　□ 否

4. 请挑选出您已经做过的整容手术或非开刀整容手术，和您将来有兴趣在韩国进行的整容手术。

程序		过去，我已经在进行了整容手术	将来，我有兴趣进行的整容手术
手术程序	眼部手术	□	□
	鼻部手术	□	□
	前额手术	□	□
	面部轮廓手术	□	□
	拉皮手术	□	□
	脂肪移植注射	□	□
	酒窝手术	□	□
	眼袋消除手术	□	□
	唇部手术	□	□
	胸部手术	□	□
	抽脂手术	□	□
	脂肪移植注射	□	□
	头发移植	□	□
非手术程序	填充物	□	□
	肉毒杆菌	□	□
	嫩肤激光	□	□
	皮肤改善注射	□	□
	激光脂解	□	□

第三部分 – 未来计划

A. 下列是描述您赴韩进行医疗美容的目的，请您圈出您对下列描述的赞同程度。

非常不同意	不同意	比较不同意	中立	比较同意	同意	非常同意
1	2	3	4	5	6	7

1	我有意向在未来的十二个月内赴韩进行医疗美容手术。	1	2	3	4	5	6	7
2	我想去韩国进行医疗美容手术之旅。	1	2	3	4	5	6	7
3	我可能会在接下来的十二个月内会有韩国进行医疗美容手术的旅程。	1	2	3	4	5	6	7

B. 假如您将会在接下来十二个月内赴韩进行医疗美容之旅，...

1. 您将会在韩国停留多长时间？_____星期

2. 谁将会陪您一同前往？

☐ 独自前往 ☐ 家人或亲属 ☐ 朋友

☐ 也同样有整容打算或计划的家人 ☐ 也同样有整容打算或计划的朋友

3. 您会选择什么类型的住宿？

☐ 酒店 ☐ 经济型酒店 ☐ 小酒馆/汽车旅馆

☐ 术后恢复院 ☐ 爱彼迎或同类住宿 ☐ 朋友/亲属家

4. 您将如何安排您的旅游？

☐ 自行安排 ☐ 旅行社 ☐ 医疗旅游的专门旅行社

5. 您将会为整容花多少钱？

☐ 少于人民币 10,000 ☐ 人民币 10,001 – 30,000

☐ 人民币 30,001 – 50,000 ☐ 人民币 50,001 – 70,000

☐ 人民币 70,001 – 90,000 ☐ 人民币 90,001 – 110,000

☐ 人民币 110,001 – 130,000 ☐ 人民币 130,001 – 150,000

☐ 人民币 150,001 – 170,000 ☐ 人民币 170,001 – 190,000

☐ 人民币 190,001 – 210,000 ☐ 人民币 210,001 或以上

6. 您在整个旅行中（不包括整容手术费用）将会花多少钱？（如若有陪同赴韩的朋友或亲属，只需标出人均支出）

☐ 少于人民币 20,000 ☐ 人民币 20,001 – 30,000

☐ 人民币 30,001 – 40,000 ☐ 人民币 40,001 – 50,000

☐ 人民币 50,001 – 60,000 ☐ 人民币 60,001 – 70,000

☐ 人民币 70,001 – 80,000 ☐ 人民币 80,001 – 90,000

☐ 人民币 90,001 – 100,000 ☐ 人民币 100,001 – 110,000

☐ 人民币 110,001 – 120,000 ☐ 人民币 120,001 或以上

7. 您的旅行目的是？

只为了进行医疗美容手术而赴韩	主要为了进行医疗美容手术而赴韩	想同时进行医疗美容手术和享受假期而赴韩	主要为了享受假期而赴韩	只为了享受假期而赴韩
☐	☐	☐	☐	☐

8.您何时最终挑选出医疗美容机构和最终决定出想进行的医美项目?

医疗美容机构		医疗美容项目	
□ 在旅行出发前确定	□ 在抵达目的地后确定	□ 在旅行出发前确定	□ 在抵达目的地后确定

第四部分 – 个人信息

请您阅读以下内容并勾选符合您个人情况的选项。

1. 您的性别?

□ 女性 □ 男性

2. 您的年龄?

□ 20 岁以下 □ 21-30 □ 31-40

□ 41-50 □ 51-60 □ 61 岁或以上

3. 您的婚姻状况?

□ 单身 □ 已婚

□ 离异 □ 其他

4. 你获得的最高学历?

□ 高中或以下 □ 在读本科生

□ 本科学历 □ 研究生学历或以上

5. 您的职业为?

□ 公司雇员 □ 企业所有者 □ 专业领域人员

□ 自由职业者 □ 学生 □ 家庭主妇 □ 未就业

6. 您的家庭月收入是?

□ 低于 10,000 人民币 □ 人民币 10,001 – 30,000

□ 人民币 30,001 – 50,000 □ 人民币 50,001 – 70,000

□ 人民币 70,001 – 90,000 □ 人民币 90,001 – 110,000

□ 人民币 110,001 – 130,000 □ 人民币 130,001 – 150,000

□ 人民币 150,001 – 170,000 □ 人民币 170,001 – 190,000

□ 人民币 190,001 – 210,000 □ 人民币 210,001 – 230,000

□ 人民币 230,001 – 250,000 □ 人民币 250,001 或以上

感谢您的参与。