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Abstract

Since 1999, China has been considered an ageing society (China State Information Centre, 2016). As a result, the Chinese senior tourist market has become increasingly important for market professionals and scholars. Despite this, a thorough review of the existing research literature reveals some research gaps regarding this market. First, within the English research literature, the Chinese senior tourist market is underrepresented, and the researcher only found seven articles related to the subject. Second, within the Chinese research literature there are several critical limitations regarding research methods. This is because Chinese researchers in this field often failed to report their sampling process and tended to use rudimentary data analysis methods. Third, there was a potential to further investigate the decision-making process of Chinese senior tourists, as both the English and the Chinese research literature do not include the impacts of certain psychological and technological influencers, such as travel constraints and Information and Communications Technology (ICT) usage.

In order to address these research gaps, the current study aimed to investigate the travel decision-making process of Chinese senior citizens. In order to do this, five specific research objectives were developed. The first, objective was to examine the existing research literature in relation to tourism among senior citizens. Second, to develop a conceptual framework regarding Chinese seniors' travel decision-making process. Third, to assess Chinese seniors' travel behaviours and their general and travel-related ICT usage. Fourth, to address the impacts of travel constraints, travel motivation and travel-related ICT usage through the analysis of the proposed conceptual framework. Fifth, to put forward recommendations to relevant stakeholders, such as Chinese senior tourists, Chinese travel agencies and relevant market management bodies.

In order to achieve the research aims and objectives, the researcher designed and conducted a questionnaire survey for the proposed structural model. Data was collected from 587 senior citizens from five representative cities in mainland China.

Analysis of the collected data revealed five main findings. First, there was still a relatively high travel demand among Chinese senior citizens, despite the recent slowdown in economic growth. Second, based on their travel motivations, Chinese senior citizens can be divided into four segments, namely, travel enthusiasts, family-oriented travellers, cautious dream travellers and uninterested individuals. Fourth, while the findings suggested that most of the respondents employed ICT devices, their travel-related ICT usage was subject to their gender, age, employment status, income level, education level and household structure. Fifth, through analysis of the proposed structural model, the impacts of travel motivations, travel constraints and travel-related ICT usage were confirmed by the study. More specifically, the structural equation modelling (SEM) analysis identified that travel-related ICT usage was a significant moderator for the relationship between subjective norms and travel intentions, and that travel motivation was a significant mediator for the relationship between travel-related ICT usage and travel intention. In light of these research findings, relational implications (both theoretical and practical) were derived and practical recommendations were put forward to relevant stakeholders in the Chinese senior tourist market.

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Chapter 1: Introduction

1.1. Introduction

Today, societies across the globe have been shaped profoundly by the trend of population ageing. According to the United Nations (2013), the global population of those aged 60 or above will double from 841 million in 2013 to an unprecedented level of 2 billion by 2050. This ageing trend has also been experienced by China, as the country has been categorised as an ageing society since 1999. The increasing senior population has exerted its impact on the tourism industry. As a growing number of senior citizens enter the tourism market, this particular segment has received extensive media coverage and attention. However, although China has the largest senior population of more than 200 million in the world, its senior tourist market has remained relatively marginalised in relevant research literature (Hung and Lu, 2016). In light of this, this study aims to investigate the market of senior tourists depict a more comprehensive image and understanding of the market.

In order to achieve this, this thesis begins by providing context to the research process. As the starting chapter, Chapter 1 describes how the researcher identified the research aims and objectives, and outlines the structure of the thesis. First, this chapter serves to introduce of the research background. Second, it demonstrates the significance and potential of the research study in order to validate the need to investigate the senior tourist market. Third, based on a critical review of existing literature, it highlights the need to research the travel decision-making process of the target market. Fourth, it analyses and justifies the importance of conducting the study in the specific context of Mainland China. Following this analysis, this chapter then identifies relevant research gaps and formulates

the aims and objectives of the research. Finally, this chapter presents the overall structure of the thesis, placing particular emphasis on the significance of the current study.

1.2. The need to investigate the senior tourist market

The tourism industry has been aware of the ageing trend among its consumers (Mitas, Yarnal and Chick, 2012; Reece, 2004). In the recent 20 years, researchers from North America, Europe and Asia have all reported significant demographic shifts in the tourism market from younger age cohorts to older age cohorts (e.g. Chen, Liu and Chang, 2013; Jang and Ham, 2009; Mak, Carlile and Dai, 2005; Marvel 1999). According to Marvel (1999), the senior tourist market in the Western countries is growing rapidly in both absolute and relative terms. Supporting this statement, Jang and Ham (2009) predicted that the population of citizens in the United States (US) aged over 65 will grow to more than 40 million by 2020. Citing statistics from the European Commission, Chen, Liu and Chang (2013) also reported an anticipated drastic increase in the senior population in Germany, Italy and France by 2030. In the Asian tourism market, the trend of ageing in the tourism market was reported from Japan (Mak, Carlile and Dai, 2005), South Korea (Kim and Preis, 2016), Mainland China (Hsu, Cai and Wong, 2007) and Taiwan (Huang and Tsai, 2003). The generous pensions and security benefits enjoyed by seniors today means they are expected to be healthier, more affluent and more active than their counterparts in the past (Jang and Ham, 2009; Marvel, 1999). As a result, a large number of researchers and practitioners have been attracted by the senior tourist market due to its massive size, great growth potential and promising purchasing power.

The travel demands of seniors have increased drastically. Therefore, it has become important to accommodate the various needs of senior tourists. Nevertheless, tourism and hospitality studies regarding population ageing are surprisingly rare when compared to

other disciplines such as gerontology, psychology and medication (Hung and Lu, 2016). Marvel (1999) stated that there is a paucity of research studies devoted for the market of senior tourists. Hung and Lu (2016) also commented that, despite efforts made by the food and beverage sector, further investigation into the lodging, transportation, cruise and event planning needs of seniors is needed.

In addition to the need to increase the number of research studies, there is also a need to improve the quality of such research inquiries. For example, researchers (Hung and Lu, 2016; Nimrod, 2008; Sedgley, Pritchard and Morgan, 2011) have highlighted the dominance of quantitative approach in the field of senior tourist research. This has served to neglect important aspects of senior tourism, such as individual experience and attached meanings. At the same time, a critical review of the existing literature published in the Chinese language (see Chapter 3) also showed a predominant trend of using rudimentary data analysis methods. Although this phenomenon is not that serious in literature published in English (see Chapter 2), it also demonstrates the need for more rigorous research studies, especially for less developed regions.

1.3. The need to investigate the decision-making process of senior tourists

A wide range of research topics have been covered within the existing literature on the subject of senior tourists. For example, Nielsen (2014) identified four major research approaches from articles published in English:| comparative, constraint, heterogeneity and temporal analysis. Among those four methods of analysis, comparative analysis focuses on the behavioural differences between tourists in different age categories. Constraint analysis investigates the barriers influencing seniors' decision to go travel. Heterogeneity analysis, also known as market segmentation analysis, investigates the heterogeneous behaviours and motivations within the senior tourist market. Finally,

temporal analysis focuses on seniors' behavioural changes overtime. Hung and Lu (2016) identified similar research topics of market segmentation, travel decision-making, comparison with other age cohorts, and consumer behaviours.

However, two critical reviews of the existing literature published (see Chapter 2 and Chapter 3) found that not all research topics highlighted above have been fully investigated. Among them, the travel decision-making process of senior tourists requires specific research attention. Although previous studies (e.g. Alen et al., 2014; Lee, 2016; Losasda et al., 2016; Mahadevan, 2013) have already identified several influencing factors (e.g. demographic factors and tour features such as accommodation and tour group size) over seniors' travel decision-making process, they failed to take certain psychological and technological factors into consideration. For example, travel-related Information Communication Technologies (ICT) usage is an emerging factor that could potentially affect the travel decision-making process of senior tourists.

Since its introduction into the industry in the 1970s, ICT has significantly reshaped the tourism market (Buhalis and Law, 2008). Its importance was recognised by a number of researchers who investigated ICT from the perspectives of market demand and market supply (e.g. Fan and Miao, 2012; Kim et al., 2011; Stockdale, 2006; Woodside et al., 2011). Although several researchers (e.g. Casalo et al., 2010; Parra-Lopez et al., 2011) have extensively investigated ICT's impacts on tourists' behaviours, senior tourists were ignored by this research domain (Frew. 2000; Graeupl, 2006). Therefore, the exclusion of those influential factors such as ICT requires a new decision-making model to be developed that incorporates those factors.

1.4. The need to conduct research under the context of China

According to Hung and Lu (2016), there is an increasing trend in the number of research studies conducted in relation to the senior tourist market. However, an imbalance in research locations was also identified as more investigations have been conducted in developed regions such as Europe and North America (Hung and Lu, 2016). Upon analysing 87 articles published in the English language, the present study found only seven articles that focused on the Chinese senior tourist market (Chen and Gassner, 2012; Feng et al., 2013; Gao and Kerstetter, 2016; Hsu, Cai and Wong, 2007; Hsu and Kang, 2009; Lu et al., 2016; Wang et al., 2017). This is despite the fact that China is the largest developing country in the world and its senior population is expected to grow beyond 230 million by 2030 (CNTA, 2017). The paucity of research studies related specifically to the Chinese market indicated that the Chinese senior tourist market is significantly underrepresented within the literature published in English. In addition, several studies (e.g. Park, Lee, and Miller, 2015; Yu and Ko, 2012) already indicated that, due to cultural differences, Chinese tourists have different travel demands and needs to tourists from other parts of the world. Therefore, it is necessary to conduct research in the context of China because of the cross-cultural differences and a lack of existing relevant studies.

Although few relevant studies have been published in the English research literature, Chinese researchers (e.g. Bao, 2009; Jiang, Zhou and Chen, 2016; Jin, Dai and Wang, 2012; Li et al., 2014; Liu and Zhang, 2016) have published a large number of articles in the Chinese research literature. However, a review over these research articles (see Chapter 3) also identified three major problems, which were in accordance with the issues identified by Huang and Hsu's (2008) literature review over articles published on Tourism Tribune, China's leading tourism research journal. First, although there has been a gradual shift in the use of data analysis methods, from rudimentary methods to the more

advanced techniques, Chinese researchers still demonstrate a strong inclination towards the use of rudimentary techniques, such as frequency analysis, for their entire data analysis. Second, more than 50% of Chinese articles employed an essay format and did not conduct empirical research. Third, among those articles that did conduct empirical research, the sampling process of several Chinese research studies were problematic since some researchers often neglected to report their sampling methods and relevant information (e.g. sampling venue; procedure for random sampling). Given the aforementioned issues, there is also a need to conduct rigorous senior tourist studies in relation to the Chinese market.

1.5. Research aims and objectives

As highlighted above, the researcher identified a need to conduct a more in-depth investigation into the senior tourist market, and that the research should focus on the travel decision-making process of seniors in the context of China. Consequently, the researcher developed the following research aims and research objectives:

- Research Aim 1: To propose a conceptual framework regarding the travel decision-making process of Chinese seniors, which incorporates potential influencing factors such as ICT usage.

    - Research Objective 1: To critically review the research literature published in both the English and Chinese language in relation to senior tourism.

    - Research Objective 2: To develop a conceptual framework and create relevant measurement and structural models for it.

- Research Aim 2: To assess the proposed conceptual framework and the general travel behaviours of Chinese seniors.

    - Research Objective 3: To assess the travel behaviours of Chinese seniors and their general and travel-specific ICT usage.

    - Research Objective 4: To assess the relationships presented within the proposed structural model.

    - Research Objective 5: To provide recommendations to relevant stakeholders, such as Chinese senior tourists, Chinese travel agencies and relevant market management bodies.

1.6. Significance of study

Research studies on the senior tourist market have proliferated in recent years This is because of the profound demographic change brought by population ageing (Hung and Lu, 2016; Lu et al., 2016; Sedgley, Pritchard and Morgan, 2011). Whereas previous research focused on different travel preferences between various age cohorts, more recent research showed a specific interest in psychological factors (e.g. attitudes; cognitive age) that influence the travel behaviour and decision-making process of senior tourists (Lu et al., 2016). However, there remains a need to investigate the senior tourist market because research on the travel experience of senior tourists is still relatively sparse (Sedgley, Pritchard and Morgan, 2011). This is especially the case for some less developed countries and regions (Hung and Lu, 2016). Therefore, this study will contribute to extending the knowledge in relation to the senior tourist market.

It has also been highlighted that the existing literature also failed to consider certain newly emerged factors, such as ICT usage, that influences the travel decision-making of seniors. According to Chen and Shoemaker (2014), the current generation of senior tourists generally have younger cognitive age than did their previous counterparts. In addition, the young-olds (i.e. those who just enter the retirement stage) today are more confident and tech-savvy. For instance, Kim and Preis (2016) reported that the proportion of senior smart phone owners in South Korea rose drastically from 7.1% in 2011 to 46.8% in 2012. By including the construct of ICT usage in the travel decision-making process of seniors, the current study manages to address the issue brought by some of those newly emerged factors, thus developing a more holistic understanding of the travel behaviours of seniors.

Furthermore, the current study would contribute to filling the gap within the existing literature which is summarised by a lack of empirical studies on the Chinese senior tourist market. In addition, it also provides a better understanding of the perceptions and experience of Chinese seniors towards leisure travel. Gaining an understanding of how ICT usage influences the perceptions and experience of Chinese seniors can help market practitioners can target their market with more accuracy, and enables them to deliver a service that is more satisfactory to their senior customers. Therefore, the findings of the study may be beneficial for those who want to target the Chinese senior tourist market and those who are interested in the usage of new technologies among senior citizens.

1.7. Outline of the thesis

This thesis is comprised of eight chapters. Chapter 1 presents an introduction of the research study. Chapter 2 presents a critical review of research literature published in the English language. This review chapter first presents and analyses the various attempts

made by researchers to define the members of the senior tourism market. Following this, it categorises the existing research articles into six categories: constraint analysis, comparative analysis, market segmentation, travel decision-making, behavioural characteristics and others. The data collection, sampling, and data analysis methods performed in previous research studies are then summarised and presented. Finally, the information gathered from the literature review is used to outline the main research gaps, while also justifying the need to investigate the decision-making process of Chinese seniors.

Chapter 3 conducts a critical review of the research studies published in the Chinese language. This chapter begins by first analysing relational definition issues and research concerns that Chinese researchers developed for the senior tourist market. Second, it divides the empirical research literature into six categories: behavioural characteristics, destination development, market segmentation, travel constraints, travel decision-making and others. Third, it examines the research methods employed by Chinese researchers. Finally, a conclusion is drawn in relation to relevant gaps identified from within the Chinese literature, justifying the researcher's focus on the Chinese senior tourist market.

After reviewing existing literature and identifying research gaps, Chapter 4 develops a conceptual framework for the current study. Based on the research needs and gaps identified in Chapter 2 and 3, Chapter 4 begins with a review of the decision-making models developed in consumer behaviour studies. After assessing the effectiveness of those models, the most appropriate model is selected. This model is identified as the Theory of Planned Behaviour (TPB) model by Ajzen (1988, 1991). At the same time, relevant constructs for the theoretical model are also selected. Finally, after analysing and

specifying the relationships of the selected constructs, the conceptual framework for investigation is established.

Following the development of the conceptual framework the researcher continued to work with the methodological section that guides the conduct of the current study in Chapter 5. Therefore, Chapter 5 begins with the analysis of the philosophical positions that underlie the paradigm of inquiry for the study. Then, based on the identified inquiry paradigm, the methodological approach for the study is selected. Following this, the entire research process is mapped out, demonstrating the research design in a flowchart (see Figure 5.2). At the same time, methods for data collection, data analysis and sampling are also discussed in detailed. Furthermore, a questionnaire containing 67 questions (see Appendix 5.1) is developed based on the research design and construct measurements. The questionnaire was tested through pilot study for reliability and validity issues (see Section 5.3.4.5). The results suggested that the questionnaire achieved adequate reliability and validity for the study. Lastly, this chapter also describes how the researcher conducted primary data collection in China.

Primary data was collected in April 2018. Following this process, data analysis was conducted. The first stage of data analysis is presented in Chapter 6 and addresses the relationships between the social demographics among Chinese senior citizens and their travel behaviours, especially their travel motivations and travel-related ICT usage (as shown in Research Objectives 3 and 4). This chapter starts with a frequency analysis of the respondents' demographic profiles and travel preferences. After this, a factor-cluster analysis is performed in order to divide the respondents into four market segments. Following the identification of these four market segments, Chi-squared tests were conducted to find out the differences in segment members' demographic profiles. Next,

the results of the ANOVA tests, which were performed to analyse Chinese seniors' travel-related ICT usage, are presented. Finally, a discussion section and summary of the findings are presented.

Chapter 7 presents the second stage of data analysis and focuses on the analysis of the structural model proposed in Chapter 4. Addressing Research Objective 5, this chapter starts with an evaluation of the measurement models. After confirming the reliability and validity of the measurement models, this chapter continues to analyse the main structural model. This includes relevant mediation and moderation effects. Whereas 11 out of 16 proposed relationships obtained significant test results, a more detailed finding section discusses the causal relationships among latent constructs. In the cases of unestablished relationships, probable explanations are also provided. Finally, a conclusion section summarises the findings of this chapter.

Lastly, Chapter 8 summarises the key findings in Chapter 6 and 7 and, in order to address Research Objective 6, puts forward several recommendations to relevant stakeholders. This chapter begins with a summary of how the research aims and objectives have been addressed by the study. This chapter then discusses the implications (both theoretical and practical) of the current study and provides a series of recommendations to three stakeholders: Chinese senior tourists, industry professionals and relevant tourism authorities. Following this, the chapter assesses the limitations of the current study. Finally, the chapter outlines several expectations for future research in the field of senior tourism industry.

Chapter 2: Literature review: senior tourism research around the world

2.1. Introduction

The senior tourist market has become increasingly important for researchers and practitioners in the hospitality and tourism industry. According to many researchers, senior tourists comprised one of the fastest growing market for leisure travel services (e.g. Hsu and Kang, 2009; Javalgi, Thomas and Rao, 1992; You and O'Leary, 1999). However, despite this increasing market share, seniors today are also demonstrating a more active attitude towards leisure travel participation than their counterparts did a decade ago (Hsu and Kang, 2009). For the past three decades, researchers around the world have been interested in the travel decision-making, travel motivations, and travel behaviours of senior citizens. Their findings revealed that senior tourists were driven by heterogeneous motivations (e.g. Shoemaker, 1989, 2000; Kim, Wei and Ruys, 2003). In addition, senior tourists were found to behave similarly to younger tourists in terms of travel distance, travel expenditure and length of stay at the destination (e.g. Jang and Ham, 2009; Rosenfeld, 1986; Wang and Dong, 2013).

Western researchers were the first ones to investigate this market (e.g. Anderson and Langmeyer, 1982; Guinn, 1980). Their research studies, mostly published in relevant English journals, generated a comprehensive body of knowledge regarding senior tourists. Therefore, it is important that the researcher collect and analyse relevant articles published in the English research literature. This chapter aims to provide a comprehensive literature review on senior tourism studies published in the English literature. In addition, it also intends to address the following issues. First, to reveal how researchers in the West defined senior tourists. Second, to classify previously published articles by their research themes. Third, to scrutinise English research articles regarding Chinese seniors and

seniors' travel decision-making process. Fourth, to evaluate the research methods employed by Western researchers. These four purposes helped to identify the sampling criteria, research focus, research methods, and implication and limitation of the English literature. Then, from the findings of this chapter, the researcher could extract potential gaps and partly address Research Objective 1 of the current study.

Following the aforementioned purposes, this chapter first presents and analyses the various attempts by researchers to define the members of the senior tourism market. Then, it categorises English research articles into six categories, namely, constraint analysis, comparative analysis, heterogeneity analysis, travel decision-making, behavioural characteristics and others. After that, it summarises and presents the data collection, sampling, and data analysis methods performed in previous research studies. Finally, it concludes a list of main research gaps in the English research literature, while also justifying the need to investigate the decision-making process of Chinese senior tourists.

2.2. Defining senior tourists

Previous researchers have demonstrated their interest in naming and describing the market formed by aged individuals. It has been variously described as the "mature market" (Lazer, 1985, as cited in Shoemaker, 1989), the "older market" (Allan, 1981, as cited in Shoemaker, 1989), and the "muppie market" (Seelig, 1986, as cited in Shoemaker, 1989). However, after comparing those terms, Shoemaker (1989) found that the "senior market" was a more favourable term for the individuals who form the segment. Despite such descriptions, another fundamental task for researchers was to define the population of senior tourists, since such definitions underlay important criteria for sampling and data collection. According to Anderson and Langmeyer (1982) and Nielsen (2014), age was an effective variable for market segmentation. This is because older consumers were

oftentimes considered to have different preferences or behaviours than younger age cohorts. After the review of a range of research studies, it was found that most researchers agreed with Anderson and Langmeyer's (1982) statement, and that chronological age was the most popular measure for defining the senior population. Among those who adopted this approach, a large number of researchers (e.g. Shoemaker, 1989; Hsu, Cai and Wong, 2007) utilised the age of 55 as the definition criterion, whereas some other researchers utilised the age of 50 (e.g. Sellick, 2004), 60 (e.g. Horneman et al., 2002) and 65 (e.g. Kim and Woo, 2014). Most of the researchers who used this approach based their choices of age on the official retirement age of a country or definitions given by relevant post-retirement associations, such as the American Association of Retired Persons (e.g. Knutson, Elsworth and Beck, 2006; Tomljenovic and Faulkner, 2000;). Table 2.1 below demonstrates some of the definitions for the senior tourist population and the rationalism behind the definitions.

Table 2. 1 Five definitions and their rationales for the senior tourist market/ population

Researchers	**Age criterion**	**Rationale**
Hsu, Cai and Wong (2007)	Female: 55 Male: 60	"…in Mainland China, the official retirement age is 55 for females and 60 for males, the interviewees were selected according to this age criterion…" (p. 1266)
Kim, Wei and Ruys (2003)	50	"This study defined senior travellers as people aged 50 and over. This is based on the eligibility criterion of the Nation Seniors Association, which is the largest organisation of its kind in Australia." (p. 28)
Lee et al. (2012)	55	"In our study, a senior citizen is defined as aged 55 years or older, because this is the normal retirement age for civil servants in Hong Kong." (p. 456)
Tomljenovic and Faulkner (2003)	65	"…for the purpose of this study, older residents are defined as those 65 years…because it is the age when people are entitled to the aged pension in Australia and many retire at this point…" (p. 98)
Ward (2014)	50	"…the majority of retirement associations (American Association for Retired Persons, Active Retirement Association in Ireland and the UK Association for Retired and Older Persons)…consider those aged 50 and older to be part of the mature market… Therefore, for the purposes of this study, the mature market will be defined as individuals over the age of 50…" (p. 268)

However, the practice of using chronological age to define the senior tourist market has been criticised by some researchers. For instance, Chen and Shoemaker (2014) suggested that those aged between 55 and 60 today might have little interest in participating in senior tourism programmes. In another example, Nimrod (2008) directly stated that age alone was not always adequate in differentiating the behavioural traits of older and younger tourists. Furthermore, some researchers also pointed out potential problems associated with this approach. For example, Patuelli and Nijkamp (2016) analysed relevant studies regarding market segmentation and found that the samples included by a considerable number of studies were inconsistent in their inclusion criterion (i.e. the chronological age used as market definition and sampling criterion), contributing to some barriers for their follow-up meta-analysis. This issue, partly demonstrated in Table 2.1, was caused by the various retirement ages or criteria adopted by different countries and organisations.

However, despite its debatable and inconsistent nature, the chronological age approach remains a feasible and effective method for market definition. This is because although chronological age cannot represent one's subjective age, the difficulty in measuring the latter means it is unlikely that researchers will abandon the former, which can at least identify an approximate scope of the senior tourist market. In addition, although this approach suffers from inconsistency, most of the researchers can avoid this problem if they do not compare the data from previous studies. Finally, a frequency analysis of sampling criteria showed that most of the research articles analysed within this chapter utilised chronological age to select and describe their samples, thus re-confirming the effectiveness of this approach. Table 2.2 below illustrates the results of the frequency analysis.

Table 2. 2 The minimum age for sampling inclusion.

Age	Frequency	Percent
37	1	1.1
50	21	24.1
55	38	43.7
57	1	1.1
60	7	8.0
61	1	1.1
65	5	5.7
Mix	1	1.1
N.A.	12	13.8
Total	87	100.0

Note: "N.A." represents that an article did not present the minimum age for sampling inclusion; "Mix" means that an article adopted more than one age criterion for different groups of people (i.e. male and female).

2.3. Critical review of the English research literature

2.3.1. Key themes

One of the earliest publications in the Western academia regarding senior tourists dates back to Guinn's (1980) study on the motivations and satisfactions of senior tourists who used recreational vehicles for road-trips in the US. After this, an increasing number of researchers gradually became attracted by the growing size and the potential purchasing power of the particular market of senior tourists. For example, in the 1980s, Anderson and Langmeyer (1982) conducted a comparative study between travellers over and under 50 years old. Furthermore, Shoemaker (1989) investigated travel motivations, travel attitudes, travel behaviours, patterns and perceived travel barriers of Pennsylvania residents aged 55 and over.

Despite inheriting the knowledge produced in the 1980s, over the last 20 years, researchers have developed more research themes regarding the market. Nielsen (2014) examined relevant published articles to identified four major approaches in the research on the behaviour of senior tourists. These four trends are the analysis of constraints, comparative analysis, analysis of heterogeneity, and temporal analysis. Among them, the

constraint analysis investigates the factors that prevent senior citizens from taking leisure travel. The comparative analysis focuses on the behavioural differences between senior tourists and tourists from younger generations. The heterogeneity analysis confirms that this market is heterogeneous and therefore, various marketing strategies are needed. The temporal analysis investigates the behavioural change of senior tourists overtime. Reaching almost the same result in terms of research theme classification, Hung and Lu (2016) added a further two categories, namely, the decision-making process and consumer behaviours.

In light of the above, the researcher thought that a combination of the previously identified categories would be more appropriate to describe the literature collection. Therefore, the present study summarises six categories of research themes from the previous research literature. This is presented in Table 2.3 below. For a more detailed list of article classification, please refer to Appendix 2.1.

Table 2. 3 Article classification by research themes

Categories	**Number of articles**	**Articles included**
Behavioural characteristics	23	Chen et al. (2014); Chen and Shoemaker (2014); Feng et al. (2013); Gladwell and Bedini (2003); Gustafson (2002); Han, Hwang and Kim (2015); Hsu, Cai and Wong (2007); Huber, Milne and Hyde (2017); Hughes and Deutsch (2010); Kim et al. (2016); Kim, Lee and Bonn (2016); Kim and Preis (2016); Knutson, Elsworth and Beck (2006); Lee and McCleary (2012); Lee et al. (2012); Mitas, Yarnal and Chick (2012); Nimrod (2008); Pearce (1999); Pesonen, Komppula and Riihinen (2015); Ryan (1995); Tung and Ritchie (2011); Viallon (2012); Wang et al. (2013)
Comparative analysis	8	Anderson and Langmeyer (1982); Cai, Schwartz and Cohen (2001); Javalgi, Thomas and Rao (1992); MacKay and Smith (2006); Namkung and Jang (2009); Reece (2004); Smith and MacKay (2001); Wang and Dong (2013)
Constraint analysis	6	Blazey (1987); Fleischer and Pizam (2002); Gao and Kerstetter (2016); Huang and Tsai (2003); Hung, Bai and Lu (2016); Kazeminia, Chiappa and Jafari (2015)
Heterogeneity analysis/ market segmentation	25	Bai et al. (1999); Batra (2009); Chen and Gassner (2012); Chen, Liu and Chang (2013); Guinn (1980); Hawes (1988); Horneman et al. (2002); Hsu and Kang (2009); Hsu and Lee (2002); Sun and Morrison (2006); Hunter-Jones and Blackburn (2007); Jang and Wu (2009); Jang, Kim and Yang (2011); Kim, Wei and Ruys (2003); Le Serre and Chevalier (2012); Moschis, Curasi and Bellenger (2003); Sangpikul (2008a, 2008b); Sellick (2004); Shoemaker (1989, 2000); Tiago et al. (2016); Vincent and de la Santos (1990); Ward (2014); You and O'Leary (1999)
Travel decision-making	15	Alen et al. (2014); Bai et al. (2001); Baloglu and Shoemaker (2001); Bernini and Cracolici (2015); Hong, Kim and Lee (1999); Jang and Ham (2009); Kim, Woo and Uysal (2015); Lee (2016); Losada et al. (2016); Lu et al. (2016); Mahadevan (2013, 2014); Wang, Chen and Chou (2007); Wang et al. (2017); Zimmer, Brayley and Searle (1995)
Others	10	Chu and Chu (2013); Dann (2001); Hartman and Qu (2007); Mak, Carlile and Dai (2005); Marvel (1999); Milman (1998); Morgan, Pritchard and Sedgley (2015); Patuelli and Nijkamp (2016); Sedgley, Pritchard and Morgan (2011); Tomljenovic and Faulkner (2000)

The classification above removed Nielsen's (2014) category of 'temporal analysis' and included a new category of 'others'. This is because the category of temporal analysis contained very few articles and because other types of articles existed. Based on the title, abstract and main content of the articles, the researcher categorised 87 articles into the aforementioned six groups.

A phenomenon was revealed in the classification process that the research articles generally contained elements of several research themes. For instance, Although Fleischer and Pizam (2002) mainly focused on travel constraints experienced by members of the senior tourist market, the two researchers also studied the how those constraints affected senior tourists' decision to travel and their length of stay at a destination. In another example, Huang and Tsai (2003) analysed both the heterogeneous behaviours and travel constraints of Taiwanese senior tourists. Since this phenomenon could increase the complexity of the classification by creating duplicates in more than one categories, the researcher, concerned with the degree of coherence of the classification, decided to assign an article only by its main research theme. Although this classification approach might suffer from a lack of accuracy, it still created a useful reference list with respect to the main research themes of senior tourism research.

2.3.1.1. Behavioural characteristics

One of the key themes that attracted academics and practitioners in the field of tourism is the various behavioural traits of senior tourists, such as seniors' travel satisfaction, travel distance and usage of ICT for tourism purposes. In this category, researchers showed more inclination to employ qualitative methods for data collection and analysis. For instance, based on semi-structure interviews with 20 US seniors, Nimrod (2008) investigated the role tourism plays in post-retirement life. In addition, Milne and Hyde (2017) utilised a biographical participatory approach to explore the impacts of life events on tourism behaviour. They found that individual biographies could help create a context from which tourism behavioural changes in later life could be explained. Furthermore, Mitas, Yarnal and Chick (2012) employed an interpretive ethnographic approach to investigate senior tourists' positive emotions derived from the friendly and warm

atmosphere in a leisure trip. In addition to qualitative methods, quantitative approaches were also employed to study the behavioural difference among senior tourists. For example, Feng et al. (2013) utilised secondary data to investigate the influence of household structures on the travel behaviour of seniors. They found that seniors co-resided with their adult children demonstrated higher propensity to not taking leisure trips, and that young adults living with their parents tended to take fewer shopping trips than their counterparts who live in 'core families' (i.e. young adults who do not live with their parents). In addition, Han, Hwang and Kim (2015) employed a questionnaire survey to investigate senior tourists' behavioural intention to conduct airport shopping. Their findings verified the effectiveness of the theory of repurchase decision-making (TRD) in predicting seniors' airport shopping behaviours.

In addition to the highlighted topics above, the subject of service quality and travel satisfaction also attracted a few researchers. For example, Wang et al. (2013) probed into the factors that contribute to senior tourists' travel satisfaction. According to their research findings, five significant factors: tour leader, tour guide, restaurant, accommodation, mode of transportation and destination attractions, contributed to the satisfaction rate of Taiwanese senior tourists. The other three factors, namely, pre-tour briefing, restaurant and optional tour, significantly influenced the travel satisfaction of Mainland Chinese tourists. In addition, when investigating senior tourists' satisfaction level regarding accommodation, Chen et al. (2014) confirmed that senior-friendly facilities could significantly increase the level of satisfaction. Furthermore, they also found that staff explanation of the equipment functions did not improve seniors' satisfaction regarding an accessible hotel room.

The remaining research studies in this category mainly focused on usage of ICT among senior citizens for tourism purpose. For example, Pesonen, Komppula and Riihinen (2015) classified senior tourists into three groups: adventurous experimenters, meticulous researchers and fumbling observers. Kim et al. (2016) concluded that ease of use and usefulness significantly influenced seniors' intention to use ICT for travel information collection. In addition, when investigating seniors' intention to revisit travel-related social networking sites (SNS), Kim, Lee and Bonn (2016) claimed that social capital and altruism had significant impacts on SNS revisit intention. Finally, Kim and Preis (2016) stated that usefulness, enjoyment and prior knowledge had significant effects on seniors' usage of mobile devices for tourism-related purposes.

2.3.1.2. Comparative analysis

According to Nielsen (2014), age is an important factor that explains tourists' different behavioural patterns. As a result, this factor has been utilised by several studies to examine the behavioural differences between senior and non-senior travellers (e.g. Anderson and Langmeyer, 1982; Reece, 2004), and between younger and older seniors (e.g. Hong, Kim and Lee, 1999; Jang and Ham, 2009). One of the earliest research in this field was written by Anderson and Langmeyer (1982). They compared the tourist segments of under 50 and over 50 and found that the two groups differed in terms of purpose of travel, preferred time to travel, length of stay at destination and travel mode. Javalgi, Thomas and Rao (1992) compared three age cohorts: under 55, 55-64 and 65 and older. They discovered different patterns with respect to demographics, travel distance, mode of travel, purchase of travel package and accommodation. Reece (2004) tested the hypothesis that the senior market segments behave in the same way as non-senior segments. The results demonstrated that seniors behaved differently from non-seniors in that seniors tended to travel longer distances than non-seniors and that seniors were more

constrained by household income. Conversely, Wang and Dong (2013) discovered no significant difference in the travel distance of seniors and non-seniors. However, this finding also implied that senior tourists are still active and are willing to travel, just like non-senior travellers. Focusing on the marketing strategies for various age cohorts, Smith and MacKay (2001) and MacKay and Smith (2006) discovered no difference in information processing between non-senior and the senior cohorts, thus, suggesting that advertising format is a determinant for an impressive promotion effort, while age is not.

2.3.1.3. Constraints analysis

Another focus of research within the existing literature is the leisure travel constraints of the senior population. Leisure constraints was defined as "the perceived or experienced reasons which [limit or] prohibit an individual from leisure activity participation" (Hawkins et al, 1999, p.180). The analysis of general leisure constraints originated in the 1980s when researchers such as Franken and van Raaij (1981), Howard and Crompton (1981) and Godbey (1985) studied the perceived discrepancy between actual and desired leisure activities (Blazey, 1987). In many of those studies (e.g. Franken and van Raaij, 1981; Searle and Jackson, 1985), the factor of age demonstrated varying degrees of positive connection to constraints. Thus, barriers to travel have become main concerns for researchers focusing on the senior travel market. Early researchers (e.g. McGuire, 1984; Blazey, 1987) identified several constraining factors. These include lack of time, lack of money, health, lack of information and lack of travel companions. Later articles not only confirmed these findings but also further investigated the relationship between travel constraints and travel behaviours. Zimmer, Brayley and Searle (1995) discovered that as the health status of seniors deteriorated alongside increasing age. As a result, their inclination to travel decreases. Fleischer and Pizam (2002) confirmed that various travel constraints do not have the same effect on different age cohorts. The constraining effects

of time becomes less significant for individuals approaching to retirement (i.e. those aged 55-65), resulting in an increase in the number of vacation days. However, for those aged 65 and above, the constraints of health and income become more effective, causing a decrease in the length of vacation.

Kazeminia, Del Chiappa and Jafari (2015) employed the hierarchical leisure constraint (HLC) model devised by Crawford, Jackson and Godbey (1991) in order to analyse narratives of Western senior tourists on online travel platforms. They highlighted that senior tourists from the West generally had a very high interest and positive attitudes towards travel. Thus, the intrapersonal constraints (i.e. one of the three components of constraints in the HLC model) of Western senior tourists were reduced to a minimal degree. However, interpersonal constraints (i.e. the second component of constraints in the HLC model) formed the most powerful concerns of senior travellers, since they were capable of changing preferences and willingness to travel. Finally, structural constraints (i.e. the third component of constraints in the HLC model) were more limiting than prohibiting, and could be negotiated by shortening the length of stay or switching to less expensive accommodation. Utilising the same model, Gao and Kerstetter (2016) analysed the travel constraints among senior Chinese females and identified eight travel constraints for this particular group. In terms of intrapersonal constraints, the interviewees of the investigation had limited knowledge regarding tourism, were concerned about safety and health issues, and feared experiencing a culture shock. With respect to interpersonal constraints, the interviewees experienced a lack of travel companions. Finally, they were also deterred by structural constraints such as low-quality facilities, limited availability of information, negative reputation of tour guides and few employer-paid vacations. A further research that used the HLC model, written by Hung, Bai and Lu (2016), compared the differences between effects of travel constraints for senior Hong Kongese living in

private and public housings. They found that senior citizens who lived in public housing experienced more travel constraints, since a significantly higher proportion of public housing tenants indicated they had little interest in participating in leisure travel.

2.3.1.4. Heterogeneity analysis/market segmentation

In addition to categories outlined above, the researchers have also paid attention to the heterogeneity in the senior tourist market. Heterogeneity analysis, also known as the market segmentation approach, generally investigates through the lens of subjective dimensions such as personal preferences, benefits sought or activities participated in (Nielsen, 2014). Despite a few articles (e.g. Bai et al, 1999) that utilised age as a direct segmenting criterion, the majority of articles (e.g. Shoemaker, 1989; You and O'Leary, 1999) in this approach are based on the analysis of three broad aspects: motivations, psychographics and product selection attributes. Guinn (1980) was among one of the first studies to investigate the travel motivations of senior citizens. In this study, five major motivations were identified for senior recreational vehicle tourists in the US: rest and relaxation, association with friends and family, physical exercise, learning experience and self-fulfilment. Shoemaker (1989) further developed this type of investigation and identified three segments for the senior travel market: family travellers, active resters and the older set. Among them, family travellers preferred to stay with family members and enjoyed activities such as golf and shopping. Active resters tended to engage in socialising and physical activities. Formed mainly by those older than 64 years of age, the older set preferred to stay in all-inclusive resorts and liked to share their travel experiences with friends. Vincent and Santos (1990) further compared the behaviours of two segments, the active resters and the older set, in Shoemaker's (1989) theory. They found that the latter was generally older and more affluent than the former. However, the former was more active in participating in leisure travel during winter times.

Over time, researchers have proposed new segmentations for the senior tourism market. For example, Hsu and Lee (2002) analysed a selection of attributes of motorcoach tours. They classified this market into three main segments: dependents, sociable, and independents. While the dependent segment adopted strict criteria in selecting a motorcoach tour, the independent segment demonstrated the exact opposite. The sociable segment, unlike the other two segments, considered socialisation attributes to be the most important. Furthermore, Sellick (2004) identified 11 travel motive factors from which four further segments were recognised. These include discovery and self-enhancement, enthusiastic connectors, reluctant travellers and nostalgic travellers. Investigating the European senior market, le Serre and Chevalier (2012) identified four the segments (i.e. knowledge seeking resters, pure knowledge seekers, reluctant travellers and adventurers) for senior French tourists, while Ward (2014) classified senior Irish travellers into enthusiast travellers, cultural explorers, escapists and spiritual travellers. The inclusion of these new market segments indicated that the senior tourist market is changing overtime, and the senior market segments often varied from place to place.

Literature published after the new millennium also witnessed a shift in focus to the Asia-Pacific region. For example, studying the travel motivation of Taiwanese seniors, Jang and Wu (2006) discovered that senior Taiwanese tourists were driven by five push motivation factors (i.e. ego-enhancement; self-esteem; knowledge-seeking; relaxation; socialisation) and three pull factors (i.e. cleanliness and safety; facilities, events and cost; natural and historical attraction). In addition, Cai and Wong (2007) undertook 27 personal interviews in Beijing and Shanghai. Their findings suggested that senior Chinese tourists were motivated by the needs to improve one's wellbeing, escape from daily routine, socialise, seek knowledge, cultivate pride and patriotism, reward past hardships and

reminisce the old days. Finally, focusing on the Australian senior market and based on psychographic factors, Horneman et al. (2002) identified six heterogeneous segments, namely, conservatives, pioneers, Aussies, big spenders, indulgers and enthusiasts. Among them, conservatives made careful travel decisions, because reducing risks was a priority for them. Pioneers were attracted by adventurous and novel travel experiences, although certain level of safety and security must be assured. Aussies preferred to spend time with family members and liked to stay in quiet countryside. Big spenders comprised mainly by older senior citizens who sought good entertainment and shopping activities. Indulgers had a strong inclination to seek exclusive travel experience and would pay to get the best. Finally, enthusiasts did not have a preconceived idea of where they wanted to travel. However, they were attracted by the opportunities to meet and socialise with people.

2.3.1.5. Travel decision-making process

The decision-making process of senior travellers is another subject that has attracted researchers in recent years. Within this category, several research gaps within the literature were found. A review of the articles in this category revealed that while early decision-making studies generally focused on the effects of demographic factors, a trend of investigating the internal/ psychological factors has recently emerged. However, this trend still needs further investigation and consideration of the improvement of the research model. The review identified a number of psychological and external factors overlooked by previous researchers, such as travel constraints, willingness towards travelling and usage of high-tech devices (e.g. ICT). In addition, since the senior population today, as mentioned previously, differed from their counterpart decades ago in those aspects (e.g. Hsu and Kang, 2009; Chen and Shoemaker, 2014), an investigation into the influence of those factors may generate enlightening findings regarding the travel behaviours and decision-making process of senior citizens.

While the majority of the studies within this category utilised frequency of future visits as a means to analyse travel decision-making, a handful of studies focused on other relevant indicators such as travel intention, length of stay and power of influence in decision-making. Among them, the studies that investigated travel frequencies usually employed demographic factors (e.g. gender, self-perceived economic status) or destination attributes to predict the number of future visits by senior tourists. For example, Mahadevan (2013) found that the education, social activities and travel costs had significant effects on the travel frequency of Australian citizens. Investigating Taiwanese senior tourists, Lee (2016) pointed out that the diversity of natural and cultural resources at a destination was a significant predictor of travel frequency. Finally, Losada et al. (2016) confirmed that gender, self-perceived economic status and self-perceived available time were significant determinants for Spanish senior tourists.

In addition to the demographic and external factors highlighted above, travel motivations were also often used as mediators to investigate the travel decision-making process of senior citizens. Articles that focused on the travel intention of senior citizens usually followed this approach. For example, Lu et al. (2016) found that perceptions of time were related to seniors' travel intention, since two types of time perspectives, the present-time perspective and future-time perspective, had significant influence on travel motivations. In turn, this contributed to travel intention. Furthermore, Wang et al. (2017) discovered that intensive use of ICT was positively associated with seniors' travel intention, while certain travel motivations were mediators of the two variables.

Finally, some articles that did not focus on travel frequency or travel intention. For example, Wang, Chen and Chou (2007) investigated the power of influence of senior

family members in Taiwanese households when making a decision about travel. The research results indicated that Taiwanese husbands usually had a greater influence than wife did in the final purchase stage, and husbands demonstrated more influence on nine sub-decisions regarding taking leisure travel. Focusing on the determinants of length of stay at destination, Alen et al. (2014) discovered that age, purpose of travel, type of accommodation, size of tour group, and activities carried out at destination were significant predictors of a senior's length of stay at destination.

2.3.1.6. Others

Although most of the collected articles could be classified into the aforementioned categories, some articles focused on other less popular topics. Therefore, a category of 'Others' was created. For example, Milman (1998) investigated the relationship between individual well-being and leisure trips. Although the study did not confirm that taking leisure trips could contribute to one's happiness, it did state that the activities taken on the trip might positively change the psychological well-being of senior citizens. Similarly, Morgan, Pritchard and Sedgley (2015) explored the effects social tourism exerted on the level of happiness of economically disadvantaged seniors. They discovered that although social tourism trips can be anxiously anticipated, they did present an opportunity for senior citizens to escape from daily routine and to relieve of unhappiness.

In addition to the studies on health or spiritual promotion effects of senior tourism, researchers also paid attention to the attitude of local residents and tourism professionals towards senior tourists. For instance, Tomljenovic and Falkner (2000) investigated the perception of elderly residents on tourism development in Queensland, Australia. They found that senior citizens were more tolerant and less worried about tourism development than their younger counterparts. Concerning service quality, Chu and Chu (2013)

investigated the service attitude of tourism professionals towards senior tourists. They discovered that attitudes towards the elderly played a significant role in the service willingness towards senior tourists and that gaining knowledge about ageing could change attitude towards the elderly in a positive way. Finally, Western researchers also conducted a couple of literature reviews about the senior tourist market. Implementing systematic reviews, Nielsen (2014) and Hung and Lu (2016) analysed the existing literature in the field. Patuelli and Nijkamp (2016) conducted a meta-analysis of 29 heterogeneity studies and ascertained that year of publication and location of a study significantly influenced the findings within the literature. Furthermore, criticising the overuse of quantitative approaches, Sedgley, Pritchard and Morgan (2011) argued for a transition of research approach from quantitative to qualitative, in order to obtain knowledge that is empowering and transformative.

2.3.2. Methodological trends

2.3.2.1. Underlying theories in the senior tourist studies

While six key research themes in the English research literature were identified in the previous section, this section focuses on the analysis of underlying theories, research approach and research methods employed in the English research literature. According to Hung and Lu (2016) and Nielsen (2014), the underlying theory of senior tourist studies went through a process of changing and evolution. Early studies focused on the activity theory, which proposed that the more activities one engaged in, the more one would feel satisfied with his or her life (Hung and Lu, 2016). However, criticised for its inaccuracy and ineffectiveness, the activity theory was soon replaced by the continuity theory which suggested that seniors would continuously attempt to connect to their previous experience and maintain their lifestyle (Hung and Lu, 2016). Today, two main theories underlay the research themes of the existing literature: the life cycle and generational theory (Nielsen,

2014). At the same time, two other theories emerged as more robust theories for senior tourist studies: the selection, optimisation and compensation theory (SOC) and the socio-emotional selectivity theory (SES) (Hung and Lu, 2016).

However, studies of particular research themes tended to develop their theoretical framework from certain existing theories or models. For instance, the push-and-pull theory was commonly referred to in market segmentation (i.e. heterogeneity analysis) studies (e.g. Jang et al, 2006; Sangpikul, 2008a, 2008b). In addition, the hierarchy of leisure constraint theory (HLC) was frequently consulted in constraint analysis studies (e.g. Kazeminia, Chiappa and Jafari, 2015). Finally, a small number of decision-making studies (e.g. Kim and Preis, 2016) employed the extended models of Ajzen's (1988) theory of planned behaviour in their inquiries regarding seniors' intentions in using online devices for tourism purposes. In addition to those studies that employed existing theories or models, three studies in the literature reported the utilisation of a grounded theory approach for theory development (i.e. Hsu, Cai and Wong, 2007; Nimrod, 2008; Tung and Ritchie, 2011).

2.3.2.2. Research approach

After analysing the underlying theories presented in the English research literature, a frequency analysis was performed to scrutinise the research approaches adopted by Western researchers. The results of the frequency analysis, as demonstrated in Table 2.4 below, confirmed the observation of previous researchers (e.g. Hung and Lu, 2016; Nimrod, 2008; Sedgley, Pritchard and Morgan, 2011) that a quantitative research approach dominated the field of senior tourist research. Among the 87 articles included in this literature review, 67 articles (77%) employed the quantitative approach, 17 articles

(19.5%) utilised the qualitative approach and three (3.4%) articles implemented a mixed-method approach.

Table 2. 4 Research approaches employed in the English literature

Research approach	Frequency	Percent
Mixed method	3	3.4
Qualitative	17	19.5
Quantitative	67	77.0
Total	87	100.0

2.3.2.3. Data collection methods

Following the analysis of research approach, a further frequency analysis, as presented in Table 2.5 below, was conducted for the data collection methods employed in the English research literature. The results of the analysis demonstrated that, among the 67 articles that used a quantitative research approach, questionnaire surveys (45, 51.7%) were the most popular method of data collection. This is followed by secondary data (14, 16.1%), experiment (4, 4.6%), and the self-organised-map (SOM) technique. The remaining articles (2, 2.3%) employed more than one method to collect data. For example, Chen and Shoemaker (2014) combined their questionnaire survey data collected in 2006 with secondary data collected in 1986 and 1996 from two other surveys to form a set of time-series data. Furthermore, investigating senior tourists' visits to hot spring hotels, Chen, Liu and Chang (2013) collected their data from in-depth interviews and questionnaire surveys.

However, with respect to the qualitative studies in the literature, most of the researchers employed in-depth interviews (11, 12.6%) for their investigation. Literature reviews (2, 2.3%) were the second most popular popular data collection for qualitative researchers. Investigating the travel constraints of seniors, Kazeminia, Chippa and Jafari (2015) collected data from dialogues and comments of seniors on online discussion forums.

Furthermore, two studies employed more than one method to collect data. Marvel (1999) employed the methods of surveys and interviews, whereas Hartman and Qu (2007) employed the methods of interviews and observations.

Finally, researchers undertaking the mixed-method approach combined methods such as focus groups, surveys, interviews and observations in their investigations (e.g. Ryan, 1995; Viallon, 2012; Wang et al, 2013). Questionnaire survey was again the most popular method for data collection in this approach, followed by interviews, focus groups and observations.

Table 2. 5 Data collection methods employed in the English literature

Research approach	**Data collection methods**	**Frequency**	**Percent**
Quantitative	Survey	45	51.7
	Experiment	4	4.6
	Secondary data	14	16.1
	Neutral network/ SOM technology	2	2.3
	Survey and interview	1	1.1
	Survey and secondary data	1	1.1
Qualitative	Interview	11	12.6
	Micro-ethnography	1	1.1
	Discourse analysis	1	1.1
	Interview and observation	1	1.1
	Literature review	2	2.3
	Survey and interview	1	1.1
Mixed method	Focus group, interview and survey	1	1.1
	Survey and interview	1	1.1
	Survey and observation	1	1.1
Total		87	100.0%

2.3.2.4. Sampling methods

The sampling method is an important aspect of the data collection process. This is because it not only reflects the target population of research studies, but also determines whether the findings of a study can be generalised through representativeness (Veal, 2011). Therefore, this section focuses on the examination of the sampling methods employed by

Western researchers. While frequency analyses were conducted for the target population, sampling method and sample size, a comparison between the quantitative sampling technique and the qualitative technique was also made. At the end of this section, the researcher also analysed and discussed the sampling venues employed in the English research literature.

A thorough review of research samples shed light on the target market, or target population, in senior tourist studies. As illustrated in Table 2.6 below, the frequency analysis of the target market revealed that the majority of researchers focused on the North American and European senior tourist market. The number of journal publications for these two regions reached 31 (35.6%) and 16 (18.4%) respectively. The remaining researchers paid their attention to the Asia and Pacific region. The Taiwanese senior tourist market appeared to receive the most research attention in this region, as eight articles were published in journals. Australia (7, 8.0%) and Mainland China (7, 8.0%) witnessed the second largest number of publication in the region, followed by South Korea (5, 5.7%), Hong Kong (2, 2.3%) and Japan (2, 2.3%), and Israel (1, 1.1%).

Table 2. 6 Target population in the English literature.

Target market	Frequency	Percent
North America	31	35.6
Europe	16	18.4
Taiwan	8	9.2
Australia	7	8.0
Mainland China	7	8.0
South Korea	5	5.7
Hong Kong	2	2.3
Japan	2	2.3
Israel	1	1.1
Mix	6	6.9
N.A.	2	2.3
Total	87	100

Note: "mix" represents that an article targeted senior tourists in more than one country.

The results of this analysis highlighted that the senior tourist market in Mainland China, which is a large market of more than 200 million potential consumers (China National Office on Ageing, 2013), was underrepresented in the English research literature. This finding justified the researcher's investigation into the Chinese senior tourist market.

A further frequency analysis was performed for the sampling methods in the English research literature. According to the results, 36 articles did not mention their sampling methods. While this phenomenon was explainable because several studies utilised secondary data or conducted literature review research, this piece of information was indeed missing in a few studies that collected primary data. Five sampling methods were identified in the remaining literature: probability sampling (24, 47.1%), convenience sampling (12, 25.5%), snowball sampling (7, 13.7%), purposive sampling (6, 11.8%), and open sampling (1, 2.0%). For quantitative studies, probability sampling was the most popular sampling technique. This is followed by convenience sampling and purposive sampling. Lee et al. (2012) employed both snowball sampling and convenience sampling techniques for their research study. Snowball sampling was the most popular sampling method for qualitative studies, while a few qualitative researchers employed other techniques such as purposive sampling or open sampling. Finally, two of the three mixed-

method studies utilised convenience sampling in their data collection, while the other one did not provide such information. Table 2.7 below presents the frequency analysis of sampling methods.

Table 2. 7 Sampling methods employed in the English literature.

Research approach	Sampling method	Frequency	Percent
Quantitative	Probability sampling	24	47.1
	Convenience sampling	10	19.6
	Purposive sampling	4	7.8
	Mix	1	2.0
Qualitative	Snowball sampling	7	13.7
	Purposive sampling	2	3.9
	Open sampling	1	2.0
Mixed method	Convenience sampling	2	3.9
Total		51	100

Note: 36 articles did not conduct sampling for their investigations (e.g. literature review articles) or report their sampling methods (e.g. articles adopting secondary data).

At the end of this section, the sample size of the English studies was also analysed and presented in Appendix 2.2. This analysis incorporated sample size with the factors of research approach (i.e. quantitative/ qualitative) and sampling scale (i.e. local/ regional/ nationwide/ international). As demonstrated in Appendix 2.2, a large variety of quantitative studies adopted sample size larger than 200, while the sample size of most qualitative studies fell into the category of 1-100. In terms of sampling scale, while most of the quantitative studies enrolled samples from local or regional levels, a considerable number of articles collected data from a nationwide level. However, the majority of those using qualitative methods collected data from a local level. Notably, the sample size of seven articles was not reported, either because the nature of research did not include any primary or secondary survey data (e.g. literature reviews; forecast papers), or because of the inclusion of multiple samples in one article for different research objectives. With respect to sampling venues, populous public areas were often chosen for on-site surveys or interviews with convenience sampling or purposive sampling. Alternatively, mail

survey and telephone survey were also frequently employed in studies that utilised probability sampling techniques.

2.3.2.5. Data analysis methods

Data analysis techniques forms another fundamental methodological component for all research studies. While data collection and sampling methods used in English senior tourist studies were scrutinised in previous sections, this section examines data analysis methods in the English research literature. A review of the English research literature identified 33 quantitative data analysis methods, which are shown in Table 2.8 below. A frequency analysis was then undertaken for the identified quantitative methods. This revealed that descriptive statistics was the most commonly used data analysis method for quantitative studies (49, 25.39%). This was followed by factor analysis (19, 9.84%), cluster analysis (17, 8.81%) and Chi-square test (15, 7.77%). Analysis of variance (13, 6.74%), structural equation modelling (10, 5.18%), confirmatory factor analysis (7, 3.63%), discriminant analysis (7, 3.63%) and t-test (6, 3.11%) were also employed in more than five studies.

According to Hung and Lu (2016), most of the quantitative research articles published in the 1980s employed only one data analysis method, whereas more recent publications witnessed a significant increase in the average number of analysis methods used. Although the researcher did not statistically compare the quantitative data analysis methods used in different period, this phenomenon was confirmed through the literature review process. This is because articles that were published more recently tend to cover a more holistic analysis through the employment of multiple data analysis techniques. Overall, the 33 identified quantitative analysis methods appeared 193 times in the collection of 87 research studies.

Table 2. 8 Quantitative data analysis methods in the English literature.

Quantitative data analysis methods	**Frequency**	**Percent**
Descriptive statistics	49	25.39
Factor analysis	19	9.84
Cluster analysis	17	8.81
Chi-square test	15	7.77
ANOVA	13	6.74
SEM	10	5.18
CFA	7	3.63
Discriminant analysis	7	3.63
t-test	6	3.11
Cross-tabulation	4	2.07
EFA	4	2.07
Logistic regression	4	2.07
Negative binominal model	4	2.07
OLS regression	4	2.07
Probit regression	4	2.07
Correlation	3	1.55
Double-hurdle analysis	3	1.55
MANOVA	3	1.55
SOM	2	1.04
Truncated regression	2	1.04
ANCOVA	1	0.52
Chi-square goodness of fit	1	0.52
Destination mapping	1	0.52
IPA	1	0.52
Kruskal Wallis test	1	0.52
Logit meta regression models	1	0.52
Logit model	1	0.52
Multiple regression analysis	1	0.52
Post hoc analysis	1	0.52
Ridit analysis	1	0.52
Scheffe test	1	0.52
Seemingly unrelated regressions	1	0.52
Tobit regression	1	0.52
Total	193	100

Note: the researcher merged factor analysis with principle component analysis (PCA) because of the vague description of data analysis procedures in some articles.

In terms of qualitative data analysis methods, however, the most frequently employed data analysis method was coding. This phenomenon was also observed by Hung and Lu (2016). They stated that, "coding is the major strategy used for extracting and processing data from the transcripts. The authors presented different terms in their writing, such as 'coding', 'indexing', 'theming' and 'interpretive thematic analysis" (p. 141). In addition to this technique, researchers also utilised the method of data mining (e.g. Kazeminia,

Chiappa and Jafari, 2015) and content analysis (e.g. Dann, 2001; Hung and Lu, 2016; Kazeminia, Chiappa and Jafari, 2015) for concept identification and literature review.

2.4. Conclusion

Having some of the earliest published studies (e.g. Guinn, 1980; Anderson and Langmeyer, 1982), the English research literature produced a relatively comprehensive body of knowledge about the senior tourist market. The articles collected by this literature review were published over a time span of more than 30 years (i.e. 1980-2016), and reflected the evolution in seniors' definition, key research themes and research methods. Despite receiving several criticisms, chronological age remained to be the most effective criterion in defining the senior tourist market (largely because of its incomparable advantage as a simple and convenient measure). In terms of research themes, early researchers were attracted by the behavioural difference between senior tourists and their younger counterparts. However, this emphasis on research themes later shifted to travel constraints, market segmentation, travel decision-making and other relevant behavioural characteristics, such as travel satisfaction and shopping behaviours. More recently, more attention has been paid to the internal or psychological factors that have an effect on senior tourists' travel motivations and travel intentions.

In terms of research methods, a quantitative approach was confirmed as the dominant research approach in senior tourist studies. In addition, researchers that employed this approach made a significant amount of effort into generating more holistic findings through employing various data analysis techniques. As a result of the availability of relevant secondary longitudinal data, Western researchers today are capable of analysing the behavioural changes of a particular age cohort or comparing the behavioural differences of various generations of senior tourists. However, as pointed out by Nimrod

(2008) and Sedgley, Prichard and Morgan (2011), there was a paucity of qualitative research studies in the field. Furthermore, researchers need to pay more attention to investigating older senior tourists or economically disadvantaged seniors (Morgan, Pritchard and Sedgley, 2015).

Three main research gaps were also identified from this literature review. First, although several articles were recently published in relation to seniors' travel decision-making, there remains a need to incorporate certain psychological and technological factors into the decision-making models. For example, seniors' attitudes, subjective norms and perceived behavioural control (i.e. constraints) towards tourism may have a significant effect on their intention to travel. Second, although several researchers (e.g. Kim et al, 2016; Kim and Preis, 2016; Pesonen, Komppula and Riihinen, 2015) investigated seniors' usage of ICT for tourism purposes, few studies, except Wang et al. (2017), paid attention to its influence on seniors' travel decision-making. Third, as demonstrated in Section 2.3.2.4, only seven articles in the English research literature were in relation to the Chinese senior tourist market. Therefore, the Chinese senior tourist market was undoubtedly underrepresented in the English research literature, even though the population of Chinese senior citizens had reached the level of 200 million since 2013 (China National Office on Ageing, 2013). In light of this, a further literature review regarding the Chinese research literature (i.e. research literature published in the Chinese language) is performed and presented in the next chapter as a supplement of this literature review.

Chapter 3: literature review: senior tourism research in China

3.1. Introduction

Few research studies in the English research literature have investigated the Chinese senior tourist market. Therefore, this chapter presents a second literature review regarding senior tourist research in published in the Chinese language. More than 350 articles were collected from the data collection process for this literature review. Despite this, Chinese researchers did not initiate the investigation over the senior tourist market until the 1990s. Pei (1995), one of the pioneering researchers in this field, foresaw the great potential of this market. Although many travel professionals did not previously realise this fact, today, they perceived the senior tourist market as one of the most profitable tourism markets in China (Guo, 2009). As a result of the market's growing importance, it became increasingly attractive to Chinese scholars and market practitioners. Research studies in the Chinese literature started by investigating the feasibility and strategy of destination development (Zhang, 2008). Following this, more research efforts were invested on the empirical analysis of market demands (Zhang, 2008). Today, the Chinese research literature covered a wide range of topics such as travel decision-making, travel constraints and market segmentation, demonstrating an improvement in Chinese researchers' understanding of this market.

As part of the effort to address Research Objective 1, this chapter aims to cover the following aspects. First, to examine Chinese researchers' efforts to define the market and their concerns for market governance. Second, to categorise the Chinese research literature by research themes. Third, to scrutinise the identified research themes and research methods adopted by Chinese researchers. These three purposes helped to identify the implications and limitations within the Chinese research literature, from which

potential research gaps and relevant justifications for this study could then be drawn. Following these three research purposes, this chapter first analyses the relevant definitions Chinese researchers adopted to describe the market. Second, it divides the existing literature into six categories, namely, behavioural characteristics, destination development, heterogeneity analysis, travel constraints, travel decision-making process and others. Next, it examines the data collection, sampling and data analysis methods employed by Chinese researchers. Finally, it concludes relevant research gaps and provided further justifications for the researcher's focus on the Chinese senior tourist market.

3.2. Definition issues and concerns for market governance

This section examines Chinese researchers' efforts to define the senior tourism industry and their market-related concerns. More specifically, it examines three issues: the definition of Chinese senior tourists (Section 3.2.1), the scope of the Chinese senior tourism industry (Section 3.2.2), and researchers' concerns about market governance (Section 3.2.3).

This section is arranged differently from Section 2.2. This is because, unlike studies published in the English language, a large number of the studies published in the Chinese language are non-empirical studies. Among the 354 articles collected by this study, 242 articles did not collect empirical data (in other words, there were only 112 empirical research articles). While most of the empirical studies defined the senior tourist market from the demand side (i.e. the individuals who formed the customers of the market), many non-empirical studies provided their market definition from the supply side (e.g. the type or scope of tourism services offered to seniors). Consequently, to develop a comprehensive understanding of the Chinese senior tourist market, the researcher also

included the definition efforts by non-empirical studies in this section. In addition, market governance issues also formed another focus for non-empirical articles. Therefore, this topic is also included in this section.

One hundred and twelve empirical articles were examined and reviewed in order to ascertain the definitions of Chinese senior tourists outlined in the literature. In doing so, the researcher addressed an important issue for this study: to define the individuals who comprise the Chinese senior tourist market. In addition, a review of the 242 non-empirical articles also shed light on other definitions and challenges regarding the senior tourism industry.

3.2.1. Defining senior tourist

Although not all Chinese researchers provided a definition for the senior tourist market, a considerable amount of effort was placed on attempting to develop a definition. Most of the Chinese researchers based their attempts to define the market on the analysis of the senior population and its constituents. Chronological age once again played an important role in such conceptualisation efforts. However, Chinese researchers, similar to their western counterparts, failed to reach an agreed age criterion. This disagreement might stem from a contradiction in three Chinese legal documents: State Council of the People's Republic of China (1978a, 1978b) and Standing Committee of the National People's Congress (1996). According to State Council of the People's Republic of China (1978a, 1978b), males and females have different retirement ages. More specifically, Males should retire at the age of 60. At the same time, females working on a non-managerial position should retire at the age of 50, whereas females working on a managerial position should retire at the age of 55. However, Standing Committee of the National People's

Congress (1996) stated that Chinese citizens who are 60 years and above should be considered as senior citizens.

Table 3. 1 Two definitions of the senior tourist market based on the previously mentioned documents.

Researchers	Age criterion	Rationale
Liu (2008)	60	"According to the Law of the People's Republic of China on Protection of the Rights and Interests of the Elderly, senior individuals are defined as those who are 60 years of age and above. Therefore, the current study utilised the age of 60 as a criterion for defining senior tourists" (p.9)
Zhang (2008)	55	"According to these two regulations[1], the retirement age for male employees is 60. Female employees are divided into two categories of ordinary workers/ employees and directors/ managers. Whereas female directors/ managers should retire at the age of 55, female ordinary workers should retire at the age of 50. Among the aforementioned criteria, the author considered the age of 55 to be the most appropriate one for defining senior tourists" (p.11)

Based on these legal documents, Chinese researchers adopted several definitions for the senior tourist market. A considerable number of researchers (e.g. Liu, 2008; Liu, 2010; Su, 2007) employed the age of 60 as the criterion for defining senior individuals, whereas several researchers (e.g. Tan, 2015; Yu, Zhang and Ren, 2003) utilised the age of 50 and 55 as their defining criteria. Table 3.1 above presents two definitions based on the three legal documents. As can be seen in the table, there is a difference in the legal retirement ages of male and female employees. Acknowledging the existence of such a difference, some researchers (e.g. Jiang and Liu, 2012) adopted two age criteria (e.g. the age of 60 and 55) for defining seniors of different genders.

[1] Author's note: State Council of the People's Republic of China (1978a, 1978b)

Table 3. 2 Minimum age for sampling in the Chinese literature.

Age	Frequency	Percent
40	1	0.9
45	5	4.5
50	14	12.5
51	1	.9
55	27	24.1
56	2	1.8
59	1	.9
60	28	25.0
65	1	.9
Mix	1	.9
N.A.	31	27.7
Total	112	100.0

Note: Among the 354 articles collected by the research, 242 articles did not include empirical data, and therefore, were not included in this table. "Mix" represents the number of articles that adopted more than one defining criterion for males and females. "N.A." shows the number of articles that did not present the information for sampling or market definition.

Chinese researchers' attempts to define the market were also reflected by their sampling inclusion criteria. Table 3.2 above demonstrates the minimum age for sampling inclusion in 112 research articles that conducted primary research. According to the table, Chinese researchers adopted a wide range of sampling criteria. The age of 60 was the most popular age criterion. This is followed by the ages of 55 and 50. However, the researcher of this study considered a consistent definition of 55 years of age for men and women to be more appropriate. The advantages of this definition were two-fold. First, a consistent measure avoids the complexity of dealing with two inclusion criteria in the sampling process. Second, there is a difference of ten years between the criteria of 50 and 60 years of age. While this difference might cause certain deviation in the sample, the age of 55 represents a compromise of the two criteria. Therefore, it may be more effective in mitigating the sampling deviation. Given the aforementioned, this study proposed the following definition for individuals who comprise the Chinese senior tourist market.

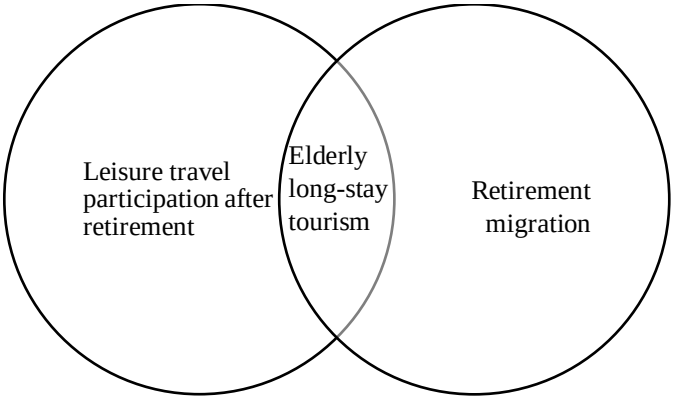
- Chinese citizens who comprise the senior tourist market are those aged 55 and above.

3.2.2. Defining the "senior tourism industry" and its service scope

Several Chinese researchers have attempted to define the senior tourist market from the perspective of market suppliers. For example, Zhou (2006) defined the senior tourist market from the perspective of travel agents and tour operators. In this research study, the market was described as "a group of senior citizens who have the demand and purchase power for tourism products" (Zhou, 2006, p. 11). In another example, Guo (2009) scrutinised this issue from the perspective of two related disciplines: tourism economics and tourism marketing. From the perspective of tourism economics, the market was defined as, "the combination of all exchange activities between product suppliers and senior travellers", and was described as, "consisting of all current and potential consumers of senior tourism products" from the perspective of tourism marketing (Guo, 2009, p. 8). Furthermore, Geng (2009) sought to define the senior tourist market by defining the products developed for it. In his attempt, senior tourism products were described as a combination of material products and services offered to senior tourists to meet their demands in one tour.

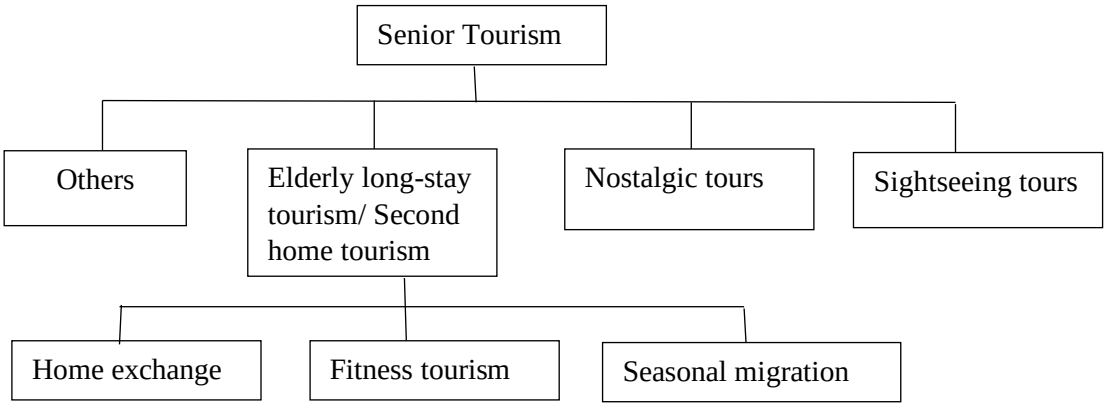
In addition to the definitions highlighted above, Chinese researchers also showed strong interest in identifying the service scope of the "senior tourism industry", a term that was frequently used in the Chinese research literature to describe the collection of all service suppliers of the senior tourist market. Dividing seniors' holiday-taking behaviour into short-stay behaviour and long-stay behaviour, several Chinese researchers (e.g. Wu, 2012; Yong, 2010) considered seniors' leisure travel participation to be closely associated to the activities of retirement migration.

Figure 3. 1 The association of the senior tourism activities with the retirement migration activities.



As illustrated in Figure 3.1 above, researchers (e.g. Wu, 2012; Yong, 2010) have argued that the leisure travel activities of senior citizens overlapped with the activities of retirement migration in a way a new category of activities—elderly long-stay tourism (or elderly second-home tourism)—emerged. Agreeing with this argument, Luo (2014) stated that elderly long-stay tourism activities, different from the traditional retirement migration activities, was not motivated by the intentions to seek employment, residency or citizenship at the destination and involved activities such as sightseeing, entertainment and medical care. Huang (2013), in another attempt to improve Wu (2012) and Wang's (2010) statement, considered that elderly long-stay tourism should have a length of stay at destination of between more than a month and less than a year.

Figure 3. 2 An example for defining the product scope without empirical support.



Source: Li and Zhong (2011).

However, the researcher of this study did not advocate such practice. Although this attempt to identify the service scope indeed shed some light on the behavioural characteristics of senior tourists (as demonstrated in the previous paragraphs), many researchers of this approach analyse this issue from the supply side and failed to include any empirical data regarding the demand side. Table 3.2 above shows a classification chart of senior tourism products proposed by a literature review article. With no empirical data to support this, the authors of the literature review article failed to adopt a consistent classification standard. To illustrate, whereas the authors utilised purpose of travel as a criterion to identify the products of nostalgic tours and sightseeing tours, they identified the product of elderly long-stay tourism by the criterion of length of stay at destination. In short, the attempt to define the market scope from a supplier point of view can only be applied to macro analysis. If a researcher wants to conduct analysis from a micro level, they need to conduct empirical investigation on market demands.

3.2.3. Challenges for managing the senior tourist market

Another main research focus within non-empirical research was the challenges associated with market management. Relational concerns with this domain began with the reports outlining market problems in the senior tourist market, such as the zero-dollar tour traps and lack of accessible equipment (see for example: Tian, 2017; Zhu, 2019). In 2015, such concerns culminated when a Yangtze River cruise—the Oriental Star—capsized, killing 454 people on board. While most of the victims were senior tourists, the accident made people question safety issues in the senior tourism industry. To further exacerbate the problem, the risks (e.g. health condition; high tour-organisation costs) associated with senior tourists let to some travel agencies adopting a discriminatory attitude towards this group of tourists (Fan et al., 2011; 2013). Analysing the development of the senior tourism industry, Wu and Zheng (2004) pointed out that one of the main reasons for this market

chaos was that the senior tourism industry was still at its infant stage, and thus lacked proper management. Consequently, in order to create a more friendly market environment for Chinese senior tourists, it is necessary to improve market management and solve potential issues and risks in the market.

In an effort to improve market management, the tourism governing bodies in China have published some laws and regulations in recent years. For example, aiming to enhance the service standards and market rules in the industry, the Tourism Law of the People's Republic of China established dos and don'ts on a range of market activities from tourism operation and tourist behaviours to service contracts and tourism dispute settlements. In addition, Travel Agencies' Service Standard for Senior Tourism made specific requirements regarding the quality of senior tourism products. For instance, it suggests that transportation time between attractions should be less than two hours and requires that a doctor be assigned to any tour groups with more than 100 senior tourists. However, because these rules have been released for only a few years, their implementation have not reached full effectiveness. Consequently, the chaos in the senior tourism market still exists to a certain extent (Tian, 2017).

In addition to the efforts made by tourism governing bodies, Chinese researchers (e.g. Fan et al., 2011, 2013; Wu, 2015) also offered their suggestions about market management. While tourist traps and safety issues form the main challenges facing market management, Chinese researchers devised various suggestions in order to address those challenges. For instance, in order to tackle the tourist traps in the market, Wu (2015) suggested the governing bodies to implement and refine relevant regulations and establish responsibility systems in service providers. In addition, in order to deal with the potential safety hazards in the market, researchers also suggested the introduction of a mandatory

insurance system (Fan et al, 2011, 2013; Wu, 2015), the improvement of the rescue systems at tourism attractions (Fan et al, 2013; Wu, 2015), the improvement of the design of senior travel products so as to meet seniors' travel needs (Wu, 2015), and the provision of education to both senior tourist and service providers about safety matters (Wu, 2015).

In spite of these suggestions, Chinese researchers still need to improve their research quality by incorporating empirical data into their research. In the case of governance-related studies, for example, one could employ the qualitative approach and organise interviews or focus groups with relevant stakeholders. Otherwise, without collecting and analysing primary data, researchers could easily draw biased conclusions because they might not have enough insight which enables them to gain a holistic picture.

3.3. Critical review of Chinese literature

This section examines the research themes (Section 3.3.1) and research methods (Section 3.3.2) of the Chinese research literature. Since the researcher performed a detailed statistical analysis for research techniques, such as data collection, sampling and data analysis methods, it is inappropriate to include non-empirical articles into this examination. Therefore, this section focused only on the 112 empirical studies collected by the researcher.

After analysing the research themes and methods of the 112 empirical articles, the researcher also made a comparison (Section 3.3.3) between the 112 studies published in the Chinese language and the 87 articles published in the English language. While the advantages and disadvantages of the Chinese research literature were made clear, the researcher summarised the key findings and main conclusions at Section 3.4.

3.3.1. Research themes

Chinese research publications incorporated a large variety of research themes. Although there was generally more than one research topic in a research article, the researcher classified the Chinese research literature into six main categories based on the main research theme of each article. The six categories were: behavioural characteristics, constraint analysis, heterogeneity analysis/ market segmentation, tourism development, travel decision-making, and others.

Table 3.3 below illustrates the six identified categories of the Chinese literature, as well as the articles included in each categories. As can be seen in the table, the category of behavioural characteristics contained the largest number of articles (48), followed by the category of tourism development and travel decision-making. A more detailed list of article categorisation is shown in Appendix 3.1.

Table 3. 3 Article classification by main research themes

Categories	Number of articles	Articles included
Behavioural characteristics	48	Ai (2016); Cai (2015); Chen and Wu (2011); Geng (2009); Guo (2009); Hou, Yin and Chen (2004); Hu (2007); Jin, Dai and Wang (2012); Li, (2008); Li (2006); Lin (2015); Liu (2016); Liu (2007); Liu (2008); Lu, Wang and Wang (2008); Ma (2013); Ma (2010); Ma (2007); Meng et al. (2012); Pan, Liu and Ma (2016); Pu (2013); Ran and Yang (2009); Tang (2001); Tao et al. (2014); Wang and Qian (2014); Wei and Zhang (2010); Wei (2011); Xia and Hu (2010); Xia (2013); Xu (2016); Xu and Chen (2001); Xue (2013); Yan (2009); Yang (2010); Yu, Zhang and Ren (2003); Zeng (2015a, 2015b); Zeng et al. (2009), Zhang (2006); Zhang and Li (2009); Zhang and Liu (2013); Zhao (2012); Zhou (2009); Zhou, Cao and Deng (2016); Zhou (2006); Zhou (2010); Zhu and Xu (2015); Zhu (2008)
Constraint analysis	10	Li et al. (2014); Liu (2016); Luo (2014); Wang (2012); Wang (2015); Yuan (2011); Yue (2011); Yue, Zhao and Yuan (2010); Zhang (2015); Zhao, Zhao and Yuan (2011)
Heterogeneity analysis/ market segmentation	10	Bao (2009); Cao (2011); Chen, B. R. (2013); Chen, Q. (2013); Gao (2010); Lang (2014); Liu and Li (2009); Wang (2015); Wang (2013); Zhou and Zhang (2015)
Tourism Development	18	Ai (2005); Hu (2009); Liang (2010); Lin (2010); Ling (2013); Liu and Zhang (2016); Ma (2008); Pang (2015); Rui (2013); Wang (2016); Wang (2007); Wang (2015); Wen (2008); Yang (2009); Yuan et al. (2013); Zhao, Liu and Kang (2013); Zhao (2015); Zuo (2012)
Travel decision-making	17	Jiang (2014); Jiang, Zhou and Chen (2016); Lin and Liu (2012); Liu (2010); Liu, Wang and Dou (2012); Mo and Zheng (2014); Ran (2010); Su (2007); Sun (2015); Tan (2015); Wang (2012); Wang (2007); Wang (2016); Zhang (2014); Zhang (2008, 2011); Zhou (2011)
Others	9	Liu, Feng and Ma (2015); Qiu, Chen and Lu (2000); Tang and Yang (2009); Wang and Shen (2010, 2011); Wu (2014); Xu (2015); Xu, Zhu and Jiang (2006); Yu (2012)

3.3.1.1. Behavioural characteristics

Chinese studies that investigated senior tourists' behavioural characteristics usually focused on aspects of market demand, such as length of stay (e.g. Tang 2001; Zhang, 2008), travel expenditure (e.g. Tang, 2001; Yu, Zhang and Ren, 2003), modes of transportation (e.g. Hou, Yin and Chen, 2004) and level of satisfaction (e.g. Ma, 2008; Zeng, 2015). Unlike the English research literature, within which the qualitative investigation approach gained much popularity, most of the Chinese research studies

employed quantitative methods to collect and analyse data. However, most of the articles in this category employed merely descriptive statistics to analyse the previously mentioned behavioural characteristics.

In terms of travel expenditure, early research studies oftentimes depicted Chinese senior tourists as frugal consumers. Based on a questionnaire survey of senior tourists visiting Fuzhou city, Fujian province, Tang (2001) ascertained that around 60% of the respondents travelled once a year, while 66% of the respondents spent less than 1000 CNY for their trip. Yu, Zhang and Ren (2003) investigated senior tourists visiting Jiangxi province and discovered that senior tourists generally spent less than younger tourists did. Targeting seniors residing in Shanghai, Hou, Yin and Chen (2004) confirmed the finding that senior tourists generally spent less than other tourists, and 66% of the respondents in their study spent less than 1000 CNY per trip. Investigating the travel demands of seniors living in Xi'an city, Shaanxi province, Ma (2007) pointed out that most of the respondents tended to spend 1000-2000 CNY per trip. Nevertheless, later studies dismissed the stereotypical opinion that the market of senior tourists was not profitable. Investigating Chinese outbound seniors, Zhu (2008) found that shopping, entertainment and sightseeing accounted for the biggest travel expenditure for survey respondents, suggesting a significant change in seniors' attitude towards travel consumption. Confirming Zhu's (2008) finding, Tan (2015) pointed out that tourists spending 3000-5000 CNY per trip accounted for the greatest share in her investigation of Nanjing seniors.

However, in terms of other aspects of travel behaviour, Tang (2001) and Zhang (2008) found that the majority of Chinese senior tourists tended to stay at destination for around a week. In addition, many researchers (e.g. Tang, 2001; Hou, Yin and Chen, 2004; Hu, 2007) confirmed that most domestic senior travellers utilised coach or other types of

vehicles as their mode of transportation. Targeting the satisfaction level of senior tourists, Ma (2008) and Zeng (2015) stated that tour guide service, food and beverage, accommodation and itinerary were important factors affecting the satisfaction level of senior tourists.

3.3.1.2. Constraint analysis

Within the literature collected, papers investigating the phenomenon of travel constraints dated back to the 2000s. Early Chinese researchers employed descriptive statistics to investigate travel barriers. For example, Zhou (2006) conducted a questionnaire survey of senior citizens residing in Nanjing city. From this survey eight travel constraints for Chinese seniors were listed: poor health condition, lack of time, lack travel companions, unpleasant travel experience, lack of travel information, inadequate budget, lack of appropriate products and inconvenient transportation. Later, as the HLC model by Crawford, Jackson and Godbey (1991) was introduced into the Chinese research literature, the investigation of travel constraints became more in-depth. Employing the HLC, Wang (2010) identified five internal constraints (i.e. little interest, feeling unsafe, feeling unfree, lack of companions and poor health condition), three interpersonal constraints (i.e. family commitment, inadequate budget and lack of time) and four structural constraints (i.e. poor destination security, inconvenient transportation, destination crowding effect and poor weather) for Chinese senior tourists. Consulting the same theoretical model, Zhao, Zhao and Yuan (2011) divided travel constraints into four categories: internal constraints, support constraints, environmental constraints, and economic and experience constraints. While the internal and support constraints included intrapersonal and interpersonal factors such as caring duty, poor health, and lack of travel companions, the environmental and experience constraints included external barriers such as negative travel experience, lack of budget and poor destination security. Comparing outbound senior tourists to their

younger counterparts, Li et al. (2014) discovered that Chinese seniors were more constrained by their concerns of destination security.

Notably, several Chinese researchers attempted to investigate the influence of travel constraints on Chinese seniors' travel intention. Investigating seniors residing in Sichuan province, Yuan (2011) ascertained that structural constraints had the greatest influence on the travel intention of seniors living Chengdu, the capital city of Sichuan, whereas intrapersonal constraints exerted the greatest impact on seniors living in prefecture cities. In addition, Yue (2011) found that intrapersonal and structural constraints played significant roles in influencing the travel intentions of seniors living in Xining city, Qinghai province and Shanghai.

3.3.1.3. Heterogeneity analysis/market segmentation

As previously mentioned in Chapter 2, heterogeneity analysis is an approach of investigation in which researchers utilise psychological factors, such as travel motivation, to segment the market. Factor analysis and cluster analysis are common methods employed for this approach of investigation. However, a small number of Chinese studies demonstrated an inclination to utilise only rudimentary data analysis methods, such as descriptive statistics, to investigate senior tourists' travel motivations. For instance, Chen, Q. (2013) employed descriptive statistics to identify three main motivations, namely, sightseeing, relaxation, and spending time with family, for seniors residing in Hebei Province. Employing the same technique, Wang (2009) confirmed three motivations for the senior tourism market in Wuhan city, Hubei province: reducing pressure, enjoying natural scenery, and experiencing new environments. The use of such methods could be problematic. This is because the results generated from the analysis are more likely to be biased or inaccurate.

However, more researchers, just as their Western counterparts did, employed more advanced methods to make their segmentation clearer and more coherent. For example, Lang (2014) utilised factor analysis to categorise seniors living in Zhejiang province into four market segments: nostalgic tourists, sensation seekers, trend followers and nature-lovers. In addition, Bao (2009) performed a principal component analysis (PCA) to ascertain travel motivations. Bao found that knowledge seeking and safety and hygiene at destination were two of the most important travel motivations for senior residents in Hangzhou city, Zhejiang province. Furthermore, using the same technique as Bao, Chen, B. R. (2013) identified four leisure attractions for senior citizens living in Zhejiang province: good environment at destination, good infrastructure at destination, acceptable travel expenditure at destination, and high-quality tour products.

Several researchers also consulted the push-and-pull theory in their investigation. For example, Cao (2011) identified three push motivations: enjoying beautiful views of nature, seeking relaxation, experiencing history and culture. He also identified three pull motivations: destination security, beautiful natural landscape, and high-quality tourism service. These motivations were based on an investigation of senior citizens living in Hebei province. Gao (2010) divided travel motivations into internal and external factors in his investigation of seniors in Anhui province. As a result, he verified three internal factors and three external factors. Internal factors included experiencing nature, seeking relaxation and seeking knowledge. External factors included favourable weather/ climate, destination security, and quality of service.

3.3.1.4. Tourism development

Another main research theme that interested Chinese researchers was the analysis of tourism development. Articles in this category shared particular similarity to behavioural characteristic articles in terms of research content and methods. The only difference between these two was that, based on the analysis of market demand, researchers focusing on tourism development would further analyse the development strategies of destinations and products. A mix-method approach was widely used in this category. While surveys and descriptive statistics were performed to investigate local tourism demands, qualitative methods were also employed to collect and analyse data from experts, professionals and relevant documentation.

Ai (2005) was among the earliest researchers to explore senior tourism destination developments. In his study, seniors' tourism demands regarding accommodation, transportation and shopping activities was analysed, and relevant suggestions put forward for policymaking and marketing practice. Wang (2007), conducted surveys and interviews with senior citizens in Sichuan province. He divided the senior tourism demands into three categories: sightseeing tourism, second-home tourism and home exchange tourism. He then explored the various development patterns of these tourism products and made two main suggestions. First, it is important to create a favourable image of senior tourism and focus on the promotion of senior tourism products. Second, a more in-depth segmentation of the market should be conducted in order to satisfy the heterogeneous travel demands of senior citizens. Lin (2010), conducted a SWOT analysis based on relevant survey results. He suggested travel agencies in Sichuan province improve service quality, offer discount promotions and develop new travel products based on market segmentation. Furthermore, after investigating the tourism destination of Xiamen city, Rui (2013) proposed the construction of a senior-friendly community that

provides a variety of functions for senior tourists, such as living, healthcare, communicating and culture experiencing.

Several researchers also showed interest in evaluating senior tourist destinations and employed the synthetic index analysis system to do so. For example, Liu and Zhang (2016) assessed Qingdao city, Shandong province for tourism real estate development. They first divided the evaluation system into three subsystems: tourism environment, elderly care environment and real estate environment. Each subsystem had a series of indicators, such as average satisfaction rate for tourism environment and urban green coverage rate for elderly care environment. Then, they marked the importance and performance of these indicators to calculate a weighted score for the suitability of developments. The results demonstrated that the destination is suitable for further real estate development to attract senior tourists. In a similar study, Yuan et al. (2013) evaluated the suitability of senior tourism development at the cities of Changsha, Zhuzhou and Xiangtan in Hunan province. This study selected thirteen indicators for evaluation, such as consumption level, transportation convenience and local medical system. The results indicated that all these three cities were suitable for tourism development.

3.3.1.5. Travel decision-making process

Similar to Western researchers, Chinese researcher also paid a significant attention on the decision-making process of senior tourists. Whereas most Chinese researchers utilised travel participation as an indicator for their investigation, a small number of researchers used travel frequency and length of stay at destination as alternative indicators. However, unlike the English research literature, which featured the investigations of various psychological constructs, Chinese articles tended to focus more on the influence of demographic factors. To illustrate, Wang (2007) concluded that health condition, time

available, cost of travel products and level of income had significant impact on seniors' participation in tourism. In another study, Tan (2015) found that seniors' participation in leisure travel was determined by their demographic factors and push-and-pull travel motivations. Wang (2012) investigated the decision-making process of Shanghainese seniors identified five significant determinants for their participation in tourism: age, level of income, interest in travelling, travel distance and level of satisfaction. Finally, Zhang (2014) utilised second-hand data from 22 Chinese cities to investigate the travel decision-making process of Chinese seniors. He ascertained similar findings in that age, gender, health condition, emotional attachment and place of residence could significantly affect seniors' participation in tourism.

Among the articles that investigated the travel frequency and length of stay, Liu (2010) found that level of income and attitude towards socialising had a significant impact on travel frequency. Zhang (2008), however, discovered that health condition, level of income, children's attitude, quality of the destination, seniors' attitude towards travelling and travel distance significantly influenced seniors' travel frequency. At the same time, he found that quality of the destination, cost of travel products, and food and accommodation could be used to predict the length of stay at a destination. Regarding the effects of travel constraints on travel participation, Yue (2011) concluded that intrapersonal and structural constraints played important roles in predicting the travel intention of seniors.

3.3.1.6. Others

The category of 'Others' contained articles that investigated less popular subjects in the field of senior tourism study. For example, Xu (2015) investigated the attitudes of local residents towards the development of a second-home tourism destination. This study

found that the majority of respondents were positive about tourism development and the arrival of senior tourists. This suggests that senior tourism development at the destination brought greater benefits than it did costs to the life of locals. In a similar study, Xu, Zhu and Jiang (2006) discovered that senior local residents at a village in Zhejiang province perceived tourism development from a more positive attitude than younger locals. In addition to these two studies, Chinese researchers also explored other aspects associated with the experience of senior tourists. This includes topics regarding virtual tourism (Liu, Feng and Ma, 2015), the effects of leisure travel on quality of life (Qiu, Chen and Lu, 2000; Wang and Shen, 2010) and the protection of consumer rights and interests (Yu, 2012).

3.3.2. Methodologies of the current studies published in the Chinese research literature

This section aims to present the analysis of the relevant methodological issues within the Chinese research literature. In order to do this, underlying theories presented within the Chinese research literature was first scrutinised. Following this, the research approaches adopted by Chinese researchers were examined. Finally, frequency analysis was employed to analyse the data collection, sampling and data analysis methods within the Chinese literature.

3.3.2.1. Underlying theories in the Chinese literature

In general, the underlying theory employed in the research studies was related to the research purpose of that investigation. For example, the push-and-pull theory was widely employed by articles focusing on heterogeneity analysis (e.g. Bao, 2009; Cao, 2011) and travel decision-making (e.g. Mo and Zheng, 2014; Tan, 2015). In addition to this, the hierarchy of leisure constraint theory (HLC) by Crawford, Jackson and Godbey (1991)

was commonly utilised by constraint analysis (e.g. Luo, 2014; Wang, 2010; Yue, 2011). Finally, some Chinese researchers (e.g. Sun, 2015) also employed the theory of reasoned action (TRA) and the theory of planned behaviour (TPB) in their investigation of the travel decision-making process of Chinese seniors.

3.3.2.2. Research approaches

Nimrod (2008) and Sedgley, Pritchard and Morgan (2011) once stated that the quantitative approach was overused in studies about senior tourism in the English research literature. A review of the Chinese research literature revealed that this view also applied to the Chinese literature. In addition, Chinese researcher seemed to be more quantitative-oriented than their western counterparts.

Table 3. 4 Research approaches employed in the Chinese literature

Research approach	**Frequency**	**Percent**
Mixed method	14	12.5
Qualitative	2	1.8
Quantitative	96	85.7
Total	112	100.0

Table 3.4 above displays the popularity of three research approaches within the Chinese research literature. Among the 112 articles included in this literature review, 96 papers (85.7%) utilised a quantitative approach in their investigation, while 14 (12.5%) and two (1.8%) articles employed a mixed-method approach and a qualitative approach respectively.

3.3.2.3. Data collection methods

Following the analysis of the research approaches, a further frequency analysis was conducted for the data collection methods used in the Chinese research literature. The analysis first divided the 112 Chinese research articles into three categories by their

research approach, and then respectively examined the methods employed by each research approach.

Table 3. 5 Data collection methods utilised by Chinese research studies

Research approach	**Data collection methods**	**Frequency**	**Percent**
Quantitative approach	Survey	88	78.6
	Secondary data	6	5.4
	Field trip and survey	2	1.8
Mixed-method approach	Survey and interview	10	8.9
	Survey, interview and GIS	1	0.9
	Delphi method and GIS	1	0.9
	Delphi method and secondary data	1	0.9
	Focus group, survey and interview	1	0.9
Qualitative approach	Interview	1	0.9
	Participant observation and interview	1	0.9
Total		112	100.0

As illustrated in Table 3.5 above, the frequency analysis found that among the 96 articles that employed a quantitative approach, the majority (90, 80.4%) utilised a survey method to collect primary data. A further six (5.4%) quantitative articles utilised secondary data for investigation. Despite using surveys, Chen (2013) and Yan (2009) also conducted field trips for the purpose of data collection. Furthermore, the simultaneous use of surveys and interviews as a mixed-method approach was particularly popular (12, 10.7%). While surveys were undertaken to collect quantitative information from respondents, interviews were used either to revise the design of survey instruments or to provide supplementary information for survey questions. Delphi method and the GIS technique (2, 1.8%) were the second most popular data collection techniques in this category. In addition to these four methods, focus groups were also employed in one article to collect qualitative data. Finally, interviews were the most popular method for qualitative studies. In fact, all the articles in this approach employed it for data collection. In addition, participatory observation was also employed once in this approach.

3.3.2.4. Sampling procedure

After the analysis of data collection methods, a further three frequency analyses were conducted in order to assess the sampling process within the Chinese research literature. The target populations/ destinations and sampling methods were first scrutinised. Following this, the sampling scale and sample size of the research studies were also examined.

Table 3. 6 Target population/destination within the Chinese literature.

Target population/destination	Frequency	Percent
Anhui province	3	2.7
Beijing city	3	2.7
Chongqing city	6	5.4
Fujian province	2	1.8
Guangdong province	5	4.5
Guangxi Zhuang autonomous region	2	1.8
Guizhou province	1	0.9
Hainan province	4	3.6
Hebei province	4	3.6
Heilongjiang province	2	1.8
Hubei province	5	4.5
Henan province	7	6.3
Hunan province	8	7.1
Inner Mongolia autonomous region	1	0.9
Jiangxi province	1	0.9
Jiangsu province	5	4.5
Jilin province	1	0.9
Ningxia Hui autonomous region	1	0.9
Shangdong province	2	1.8
Shanghai city	10	8.9
Shaanxi province	7	6.3
Shanxi province	2	1.8
Sichuan province	6	5.4
Taiwan province	1	0.9
Xinjiang Uygur autonomous region	1	0.9
Yunnan province	2	1.8
Zhejiang province	9	8.0
Mix (regional)	6	5.4
Mix (national)	1	0.9
N.A.	4	2.7
Total	112	100

Note: “mix (regional)” and “mix (national)” represent that an article targeted more than one senior tourist market from either a regional level or a national level. “N.A.” denotes that an article did not report the information in relation to target market population/destination.

A review of the literature revealed that Chinese researchers conducted their investigations in 28 of its 34 provincial administrative regions (including Taiwan). Table 3.6 above demonstrates the populations/destinations targeted in the Chinese research literature. Since a small number researchers did not specify whether they were investigating the travel demands of local residents or that of visiting senior tourists, this literature review used "target population/destination" to represent the location in which the researchers conducted their investigations. Gansu province, Liaoning province, Tianjin municipality, Tibet autonomous region and the special administrative regions of Hong Kong and Marco were the only six provincial administrative regions neglected by Chinese researchers. Not presented in the table, the senior tourist market of Qinghai province was investigated in one research study that targeted senior tourists from two different places (i.e. Xining city, Qinghai province and Shanghai city).

As can be seen in the table above, the senior tourist market in the city of Shanghai received the most research attention, with a total of ten investigations (8.9%) undertaken in Shanghai. Following Shanghai's lead, Zhejiang province (9, 8.0%) was the second most popular region for investigations regarding senior tourists. Another five regions, namely, Hunan province (8, 7.1%), Shaanxi province (7, 6.3%), Henan province (7, 6.3%), Chongqing city (6, 5.4%) and Sichuan province (6, 5.4%), were also among the most popular research areas for Chinese researchers. The popularity of these regions may come from their economic status and tourism resources. While Shanghai and Zhejiang were among the most economically developed regions in China, the other regions possessed both a relatively good economy and renowned travel resources.

Table 3. 7 Sampling methods employed within the Chinese research literature.

Research approach	**Sampling method**	**Frequency**	**Percent**
Quantitative	Probability sampling	13	11.6
	Convenience sampling	9	8.0
	Purposive sampling	1	0.9
	N.A.	73	65.2
Mixed-method	Probability Sampling	2	1.8
	Mix	1	0.9
	N.A.	11	10.0
Qualitative	N.A.	2	1.8
Total		112	100

Note: "mix" stands for more than one sampling methods employed in one article; "N.A." represents that a research study did not provide any information regarding its sampling method.

However, a review of the sampling methods utilised by Chinese researchers revealed a critical drawback. That is, the majority of the Chinese researchers failed to report the sampling methods used for their investigations. As shown in Table 3.7 above, only 23 of the 96 quantitative research studies reported their sampling methods. The situation was even worse for articles that adopted a mixed-method and qualitative approach. Among the 14 articles that adopted a mixed-method approach, only three papers reported their sampling methods, whereas the two qualitative research studies failed to report such information.

Table 3. 8 Sampling venues visited by Chinese researchers for data collection

Sampling methods	**Sampling venue**	**Frequency**	**Percent**
Probability sampling	Populous public areas/tourist attractions	7	6.3
	mix	1	0.9
	Local neighbourhoods/residential areas	1	0.9
	N.A.	6	5.4
Convenience sampling	Populous public areas/tourist attractions	7	6.3
	mix	1	0.9
	N.A.	1	0.9
Purposive sampling	Populous public areas/tourist attractions	1	0.9
Mix	N.A.	1	0.9
N.A.	Populous public areas/tourist attractions	42	37.5
	Local nursing homes	1	0.9
	Local institutes for after-retirement learning	1	0.9
	Local travel agencies	1	0.9
	Mail	1	0.9
	Mix	2	1.8
	N.A.	35	31.3
	Rural accommodation sites	1	0.9
	Special train for senior tourist	2	1.8
Total		112	100

Note: "mix" under the "sampling venue" column represents that a researcher collected data from more than one types of sampling venues listed in the table (e.g. mail and populous public areas; populous public areas and special trains for senior tourists). "N.A." under the same column shows that an article did not provide any information in relation to its sampling venue.

Despite a considerable number of articles failing to report their sampling methods, the review also highlighted other issues with Chinese researchers' sampling process. Table 3.8 above demonstrates the sampling venues, or distribution channels, selected by Chinese researchers. As can be seen from the table, the majority of Chinese researchers conducted on-site questionnaire surveys to collect data. This is most of them selected "populous public areas" or "local travel agencies" as their instrument distribution channels/locations. However, only a handful of articles provided a comparatively comprehensive description about their sampling procedure. More specifically, the majority of the researchers simply reported how their survey respondents were greeted and what kinds of assistance were provided to enable them to fill out the survey instrument. Nevertheless, almost all of the articles, even the ones that claimed the use of probability sampling methods, failed to mention about the procedures undertaken to select

a sample (e.g. selecting every fifth senior visitors to the site for a probability sampling technique). As a result, claims of using the probability sampling method was questionable for those articles that conducted on-site questionnaire survey.

Another interesting phenomenon to be noted in the table is that only two articles, among those that reported the distribution channels of the survey, utilised mail-survey instead of on-site survey for data collection. Although the distribution channel of "mail" has only one count in the table, another article employed both mail and on-site surveys, and thus, was counted as a "mix" in the table. It was also found that 43 of the 112 articles failed to report their sampling venues and related sampling procedures. Consequently, it was difficult for readers to evaluate the soundness of the sampling process of these studies.

Finally, the sampling scale and sample size of the Chinese research literature were analysed. This is outlined in Appendix 3.2. Similar to its counterpart in Chapter 2, this analysis incorporated sampling scale, sample size and research approach. Since ten articles did not report their sample size (i.e. articles that used secondary data or omitted such information), this analysis was performed for the other 102 research studies in the Chinese research literature. As can be seen in Appendix 3.2, the majority of the studies conducted their research at a local level. In addition, the sample size group of 201 and 300 had the greatest article counts, as the sample size of 32 articles fell into this category. The group of 101 and 200 had the second largest article counts, including 25 of the 102 articles.

3.3.2.5. Data analysis methods and research findings

The final analysis in this chapter was undertaken for the data analysis methods, which also formed an important component of the research methodology in the Chinese research literature. A frequency analysis was conducted on the quantitative research methods. This

is because most of the articles in the Chinese research literature contained quantitative elements.

Table 3. 9 Data analysis methods employed within the Chinese literature.

Quantitative data analysis methods	**Frequency**	**Percent**
Descriptive statistics	95	44.8
ANOVA	19	9.0
t-test	15	7.1
Factor analysis	13	6.1
PCA	9	4.2
Correlation	8	3.8
Regression analysis	7	3.3
Chi-square	6	2.8
EFA	6	2.8
Multiple regression	6	2.8
Cross-tabulation	4	1.9
Logistic regression	4	1.9
Cluster analysis	3	1.4
Logit model	3	1.4
SEM	3	1.4
Synthetic index method	2	0.9
CFA	1	0.5
Correspondence analysis	1	0.5
Forecast	1	0.5
Indifference curve simulation	1	0.5
IPA	1	0.5
Mann-Whitney's U test	1	0.5
Probit regression	1	0.5
Scheffe test	1	0.5
Thurstone's law of comparative judgement	1	0.5
Total	212	100

Twenty-five quantitative data analysis methods were identified from the Chinese research literature. This is demonstrated in Table 3.9 above. As can be seen from the table, descriptive statistics (95, 44.8%) was the most frequently used quantitative data analysis method. This is followed by ANOVA (19, 9.6%), t-test (15, 7.1%) and factor analysis (13, 6.1%). Principle component analysis (PCA, 9, 4.2%), correlation analysis (8, 3.8%), regression analysis (7, 3.3%), chi-square test (6, 2.8%), exploratory factor analysis (EFA, 6, 2.8%) and multiple regression (6, 2.8%) were also employed in more than five articles.

Overall, the 25 identified quantitative analysis methods appeared 212 times in 110 articles that employed quantitative and mixed-method approaches. On average, each articles employed 1.93 methods for quantitative data analysis. This is compared with the average of 2.22 methods used in the English research literature. Put simply, this shows that the Chinese research literature utilised fewer methods per article for data analysis. This phenomenon was caused by the existence of a considerable number of articles in the Chinese research literature that utilised only descriptive statistics for data analysis. This finding supports the observation of Huang and Hsu (2008), which based on their analysis of Chinese tourism research papers published between 2000 and 2005. They observed that "most quantitative studies only adopted descriptive statistics to illustrate research issues or profile research phenomena" (p. 281). However, a further analysis revealed that Chinese researchers were attempting to improve the quality of their research by performing more sophisticated data analysis techniques. For instance, the ten articles published between 2000 and 2006 used only descriptive statistics. However, 37.8% of the 45 articles published between 2007 and 2011 employed more than one analysis method, resulting in an average of 1.87 analysis methods for articles published in this period. Furthermore, the period between 2012 and 2016 witnessed another slight increase in the figure, as 41.1% of the 56 articles performed more than one data analysis methods. This raised the average number of quantitative analysis techniques to 2.11 methods per article. In terms of the qualitative data analysis methods, the majority of researchers (e.g. Ai, 2005; Geng, 2009; Zhang and Li, 2009) employed coding for analysis purposes, whereas a few scholars (Lin, 2010; Zhao, 2012) utilised SWOT analysis to examine tourism development issues.

3.3.3. A comparison between the Chinese and English research literature

Following the analysis of the Chinese research literature, a comparison analysis was conducted between the Chinese and English research literature. This is demonstrated in Table 3.10 below. As shown in the table, although Chinese researchers began their investigations some twenty years later than their Western counterparts, they managed to produce more publications. This demonstrated their strong interest in this particular market. However, Western researchers outperformed Chinese researchers in several aspects, such as the sampling process and data analysis methods. This is because Chinese researchers were inclined to neglect certain important information in relation to their sampling process. In addition, they used fewer methods than Western researchers in the data analysis process. This phenomenon can be explained by an overuse of descriptive statistics in data analysis, as well as by a lack of longitudinal secondary data which prevented Chinese researchers from employing certain methods such as double-hurdle analysis.

In addition to the aforementioned issues, the Chinese research literature, compared with the English research literature, showed more interest in the supply side of the market. However, this interest could sometimes produce misleading results if the researcher did not collect empirical data. Furthermore, the quantitative approach was more popular in the Chinese research literature than in the English research literature. This is despite the fact that Sedgley, Pritchard and Morgan (2011) had already criticised Western researchers for overusing it. In short, although Chinese researchers outperformed their Western counterparts in terms of the number of publications, there is still much potential to improve the quality of their investigations.

Table 3. 10 A comparison between literature published in Chinese and English.

	Chinese literature	**English literature**
Number of articles	112 articles were included for the literature review, while 243 articles were dismissed.	All 87 articles collected were used for the literature review.
Earliest publication	The earliest publication in the Chinese literature was published in 2000.	The earliest publication in the English literature was published in 1980.
Defining efforts	Chronological age was the most popular methods for defining the senior population. Efforts were made to define the senior tourism industry from a supplier's perspective	Chronological age was the most popular methods for defining the senior population.
Research themes	Six categories of research themes were identified, namely: • Behavioural characteristics • Constraint analysis • Heterogeneity analysis • Tourism development • Travel decision-making • Others	Six categories of research themes were identified, namely: • Behavioural characteristics • Comparative analysis • Constraint analysis • Heterogeneity analysis • Travel decision-making • Others
Underlying theories	Push-pull theory, the hierarchical leisure constraints theory (HLC), the theory of reasoned action (TRA) and the theory of planned behaviour (TPB) were employed.	Push-pull theory, HLC, extended models of TPB and the grounded theory approach were employed
Research approach	97 articles employed the quantitative approach, whereas 14 and two articles employed the mixed-method and qualitative approach respectively.	67 articles employed the quantitative approach, whereas 17 and three articles employed the qualitative and mixed methods approach respectively.
Data collection methods	Four qualitative and three quantitative data collection methods were employed by the Chinese research literature.	Six qualitative and four quantitative data collection methods were employed by the English research literature.
Sampling methods	Most of the researchers did not report information in relation to sampling methods and sampling procedures. A few reported the usage of probability sampling, convenience sampling and purposive sampling.	Most of the researchers employed the probability sampling methods, while convenience sampling, purposive sampling, and open sampling were also used.
Data analysis methods	24 quantitative analysis methods were identified, with an average of 1.93 analysis methods employed for each Chinese article.	33 quantitative methods were identified, with average 2.22 methods employed for each English article.

3.4. Conclusion

This literature review selected 112 senior tourist studies that included empirical data from the Chinese research literature. The collection of articles was published during a period

of 16 years, between 2000 and 2016. These articles not only revealed how Chinese researchers defined their target market, but also reflected the changes in research themes and methods. Chronological age was the most popular method for Chinese researchers when defining the market. However, because of an inconsistency in relevant legal documents, there was a disagreement on researchers' attempts to define the market. In terms of research themes, Chinese researchers were attracted by the behavioural characteristics, travel constraints, market segmentation and travel decision-making of senior tourists. In addition, Chinese researchers demonstrated a particular interest in tourism development issues.

In terms of research methods, the majority of Chinese researchers utilised a quantitative research approach. However, a critical limitation was found in that a large number of Chinese researchers failed to report their sampling process in a detailed manner. In addition, the review also revealed that many researchers employed only rudimentary data analysis methods in their investigations. Consequently, the potential for improving the quality of Chinese research studies is significant.

As a result of this literature review, three main research gaps were identified. First, since a large portion of the Chinese research literature focused on seniors' behavioural characteristics and tourism development issues, there remains a need to investigate less popular topics such as travel constraints, market segmentation and travel decision-making among Chinese senior tourists. Second, the majority of the Chinese researchers employed only basic methods for data analysis. In addition, only three articles utilised the SEM technique, which has been proven to be effective in investigating senior's travel decision-making process. Third, few Chinese researchers investigated the influence of ICT on the travel experience of senior citizens. In light of these research gaps, the researcher's

intention to investigate Chinese seniors' travel decision-making process is justified. Therefore, this study formulates a theoretical framework related to the impacts of the ICT on the travel decision-making process of Chinese seniors.

Chapter 4: A conceptual framework for understanding the decision-making process of Chinese senior tourists

4.1. Introduction

According to the two literature reviews regarding research studies published in the Chinese and English language, four main research gaps were identified. First, few research studies published in English focused on the Chinese senior tourist market. Second, when investigating the Chinese market, there was a need to shift the research focus from the supply side of the market to the demand side of the market. Third, there was a need for researchers to utilise more advanced research methods when investigating the Chinese market. Fourth, there was a need to incorporate certain psychological and technological factors into seniors' travel decision-making process. In order to address the identified gaps, this research project aims to investigate the travel decision-making process of Chinese senior tourists. More specifically, this research intends to, first, establish a predictive model for the travel decision-making process of Chinese senior tourists. Second, to explore the moderation role played by ICT usage with relational attributes.

The purpose of this chapter is to address Research Objective 2. It starts with an introduction to three decision-making models employed in consumer behaviour studies. Following this, the effectiveness of the models is assessed and the most appropriate constructs for the purpose of the research are selected. Finally, relationships of relational constructs are analysed and a theoretical framework for the investigation is established.

4.2. Theoretical framework

4.2.1. The consumer decision-making process

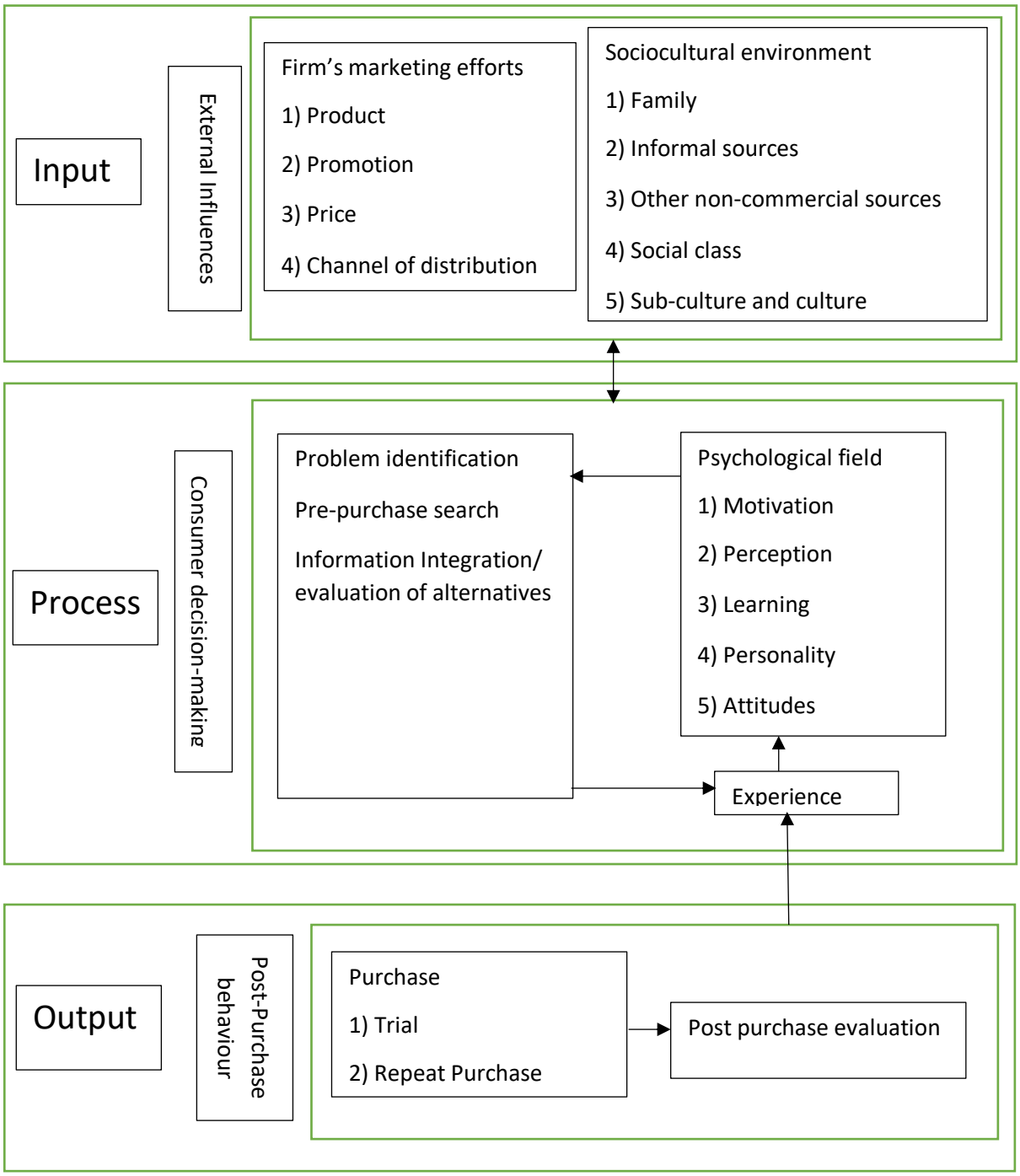
The study of human judgement and decision-making is grounded in a variety of disciplines (Ajzen, 1996; Hammond, McClelland and Mumpower 1980), such as economics, statistics, and psychology. In the field of marketing, investigation into decision-making was initiated during the 1950s. The main goal of this was to systematically deepen the understanding of the buying process (Sirakaya and Woodside, 2005). According to Hansen (2003) and Hiu et al. (2001), consumer decision-making is a complicated process which incorporates a number of influencing factors. This process involves the cognitive or emotional processing of relevant information (e.g. impulse, advertisements, role models and situations that influence a purchase) and results in the selection of a product or service from a number of alternatives (Cheung and Thadani, 2012; Schiffman and Kanuk, 2010).

4.2.2. A general model of the consumer decision-making processes

Schiffman and Kanuk (2004) developed a model of consumer decision-making by dividing the consumer decision-making processes into three different but interlocking stages: the input/pre-stage, the processing stage, and the output/outcome stage (Figure 4.1 below). The input stage involves the influence of external factors, such as the marketing efforts of firms and family influence (San and Yazdanifard, 2014; Schiffman and Kanuk, 2010). The processing stage represents the cognitive processing of three types of information: the external information from the output stage, the internal or psychological activities such as motivations, personalities and attitudes, and the previous consumption experiences obtained from the output stage (Schiffman and Kanuk, 2004; Sirakaya and Woodside, 2005). Finally, the output stage includes the decision and evaluation of the purchase, which in turn inform the processing stage (Schiffman and Kanuk, 2004; 2010).

Among these three stages, the processing stage and the output stage form a significant part that draws much attention from researchers. This part is also known as the information-processing theory (Sirakaya and Woodside, 2005). According to researchers such as Ajzen (1996), San and Yazdanifard (2014) and Sirakaya and Woodside (2005), the information-processing theory involves the following five steps: 1) identifying a problem that demands a decision. 2) searching relevant information; 3) evaluating and selecting different alternatives; 4) making a purchase; 5) evaluating the purchase. In the problem-identification step, an individual recognises that there is a gap between the actual state and a desired state, and that there is a consumption demand to bridge this gap. Once the problem has been identified, the individual would start seeking product information through various means and develop his consideration set of alternatives in the information search step. In the evaluation and selection step, the individual would compare the attributes and benefits of different products and select a few acceptable alternatives. In the purchase implementation stage, the individual makes a final decision on which product to buy and which channel to buy the product from. Finally, the individual would question about the rightness of the purchase decision, and evaluate whether the product has satisfied his demand.

Figure 4. 1 A three-staged consumer decision-making model.



Source: adapted from Ajzen (1996), San and Yazdanifard (2014), Schiffman and Kanuk (2004, 2010) and Sirakaya and Woodside (2005)

4.2.3. Levels of purchase involvement in the consumer decision-making processes

Another important concept related to the information-processing theory or the buying processes is the purchase involvement/problem solving level (Hansen, 2003; Hawkins, Best and Coney, 2001). This concept refers to the degree of concern for, or interest in, the purchase process (Hawkins, Best and Coney, 2001).. Based on this criterion, Sirakaya

and Woodside (2005) identified three types of consumption decision-making processes: the habitual or low-involvement purchase, limited involvement purchase and extensive or high-involvement purchase (Table 4.1). A habitual purchase is usually associated with products with few differences such as daily necessities and represents a reduced cognitive effort in the decision-making processes (Hoyer, 1984). Conversely, an extensive purchase is often in relation to expensive or highly differentiated products that require extended cognitive processing (Hoyer, 1984). The limited involvement purchase, on the other hand, is more complex than the former but simpler than the latter (Sirakaya and Woodside, 2005). Purchase involvement directly links to several stages of the buying processes. For example, in the information search and alternative evaluation stages, high involvement consumers generally search and compare alternatives in a more extensive way than low involvement consumers. In addition, in the post-purchase evaluation stage, low involvement consumers are more likely have a limited post-purchase evaluation than high involvement consumers.

Table 4. 1 The categorisation of consumer decision-making processes by the level of purchase involvement.

Type	**Key features**
Habitual	The habitual decision-making process features low purchase involvement and therefore requires a minimal level of problem solving.
Extensive	The extensive decision-making process, being just the opposite of habitual decision-making, is complex and associated with high purchase involvement.
Limited	The limited decision-making process falls between habitual decision-making and extensive decision-making, as it is simpler than the latter yet more complex than the former.

Source: Sirakaya and Woodside (2005).

4.2.4. Level of involvement of travel decision-making activities

In terms of travel decision-making, several researchers (Cohen, Prayag and Moital, 2014; Sirakaya and Woodside, 2005) stated that the nature of travel decision-making is complex and involves multiple decisions on the various elements (e.g. travel cost, amount of time, itinerary planning) of taking a vacation. Therefore, the decision-making process for travel

product purchases is often considered an extensive process in which high purchase involvement is required (Sirakaya and Woodside, 2005; Correia, Kozak and Ferradeira, 2011).

4.2.5. Approaches of investigation of the travel decision-making processes

No agreement has been reached within the literature regarding a unified consumer decision-making theory (Hung and Patrick, 2012). Pioneering researchers began the investigation of consumer decision-making with manufactured and tangible products (Sirakaya and Woodside, 2005). Later, several "grand models" developed by those researchers were employed by tourism scholars to explore the intangible service products (Mohammadi and Mohamed, 2011; Yoo and Chon, 2008). Today, tourism researchers conducts studies regarding destination choices by probing into tourists' psychological processes when making judgements and decisions, as well as by investigating the external factors that influence a person's judgement or selection of a particular destination (Sirakaya and Woodside, 2005).

According to Sirakaya and Woodside (2005), three main categories of investigation approaches, demonstrated in Table 4.2 below, could be identified within the context of tourism research. Among those three categories, the grand models (e.g. Engel, Kollat and Blackwell, 1968; Howard and Sheth, 1969) of consumer decision-making represent the early pioneering efforts of researchers. This approach assumes that the decision-making processes follow a sequence of information processing which shapes a consumer's attitude, need recognition, choices of alternatives and final decision-making (Cohen, Prayag and Moital, 2014; Decrop, 2010; Sirakaya and Woodside, 2005). According to Gilbert (1991), grand models have the following commonalities. First, grand models emphasise the behaviours of individual consumers, and individual consumers are viewed

as persons who search, evaluate and store purchase information. Second, grand models treat consumer behaviour as a functional decision-making process that is constant and can be explained. Third, grand models also investigate consumers' choices of alternatives and post-purchase evaluation as parts of the decision-making processes. In other words, the grand models cover all the five stages proposed by the information-processing theory (Sirakaya and Woodside, 2005).

Similar to the grand models, the foundational models also focus on the information-processing procedure. However, this type of models does not strictly follow the five-step information-processing procedure (i.e. stages from need recognition to post-purchase evaluation). Instead, they tend to incorporate various external or internal factors into a model that illustrates the predictable patterns of travel intentions and/or actual travel behaviours (Sirakaya and Woodside, 2005). For example, Thornton, Shaw and Williams (1997) investigated the influence of children on family holiday behaviours and found that families with children behaved significantly different from adult-only families. Since this study only collected data regarding family structure and the choices of leisure activities, it did not cover the entire information-processing procedure. In another study, Woodside and Lysonski (1989) focused on tourists' development of consideration sets and how this process influences their destination preferences and travel intentions. This study also did not cover the entire information processing procedure. However, through the inclusions of variables such as past experiences and choices of destinations, it indirectly reflects the stages of alternative selection and post-purchase evaluation of the procedure. Finally, Ajzen and Driver (1991) applied the theory of planned behaviour (TPB) into the context of leisure tourism, and confirmed that attitude, subjective norms, and perceived behavioural control had significant influence on a person's intention to travel. These three predicting variables summarise the elements of attitude, interpersonal influence

(subjective norms), previous experience and constraints (perceived behavioural control) within the decision-making processes. However, the model does not specify the information collection and alternative selection stages within the information-processing procedures.

The third approach is comprised of the behavioural and choice-set models which combine the funnel-like decision-making process with various sets of alternatives or destination choices (Decrop, 2010). Similar to the foundational models, this investigation approach also does not reflect the entire information-processing procedure. Nevertheless, the stages of information search and alternative selection were emphasised by this type of models. For instance, Woodside and Sherrel (1977) investigated the relationships among a person's awareness set, evoked set, inert set, and inept set, and how attitude influences tourists to select a destination from various alternatives. In a similar study, Um and Crompton (1990) investigated how an awareness set of a person evolves into an evoked set, and how this person makes a final choice of destination from the evoked set.

Table 4. 2 The three main investigation approach in travel decision-making

Investigation approach	**Features**	**Examples of research studies**
Grand models	Cover all the stages from the information-processing procedure.	Howard and Sheth (1969) Engel, Kollat and Blackwell (1968)
Foundation models	Treat travel decision-making process as a functional activity that is influenced by a number of internal and external factors. Do not strictly follow the five-step information-processing procedure.	Thornton, Shaw and Williams (1997) Woodside and Lysonski (1989) Ajzen and Driver (1991)
Choice-set models	Emphasise the stages of information search and alternative selection. Funnel-like process with various sets of alternatives.	Woodside and Sherrel (1977); Um and Crompton (1990)

Source: Sirakaya and Woodside (2005).

These three investigation approaches have contributed to the understanding of the travel decision-making processes (Sirakaya and Woodside, 2005). However, despite their contributions, they have their respective drawbacks. With respect to grand and foundational models, researchers (Cohen, Prayag and Moital, 2014; Gilbert, 1991; Smallman and Moore, 2010) have pointed out that these two types of models have several shortcomings in relation to tourism demand. For example, most of the grand and foundational models were firstly developed to investigate the purchase of goods instead of service. In addition, most of these models are based on individual decision-making rather than joint decision-making, which is a common phenomenon of travel decisions. Regarding the choice-set models, although the efficacy of these models has been confirmed, they are sometimes criticised as being deterministic in nature (Ben-Akiva and Boccara, 1995). In light of this, it is important that tourism researchers select appropriate travel decision-making theories for their respective research.

4.2.6. The theory of planned behaviour (TPB)

4.2.6.1. The structure of TPB

After comparing various types of decision-making models, the researcher decided to employ the TPB as a basic structure for the development of a conceptual framework. Although this underlying theory has several limitations (see Section 4.2.6.4 for a more detailed discussion), it is chosen for the following reasons: first, this model focuses on the individual decision-making processes, which suits the purpose of this study to investigate the individual travel decision-making processes of senior citizens. Second, the variables and causal relationships of the model are clearly defined and easy to operationalise. Third, although this model was not initially developed to study travel

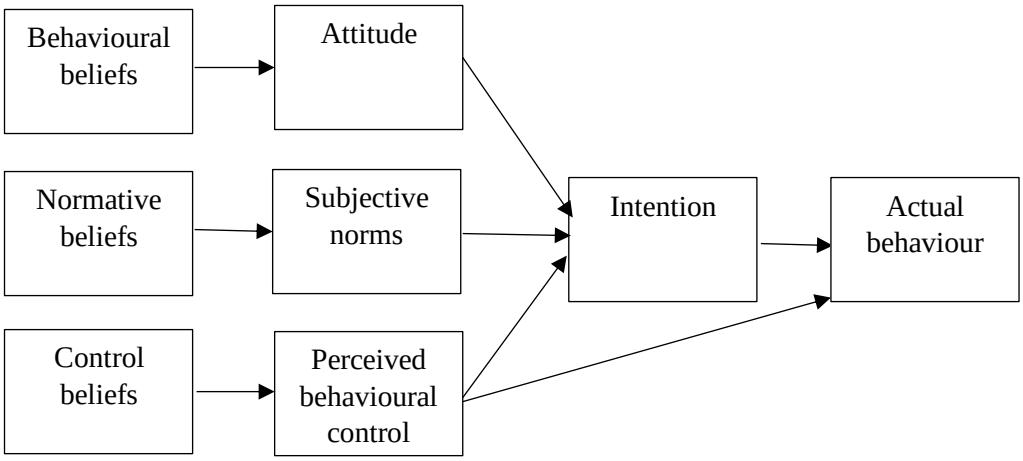
behaviours, its effectiveness within the domain of tourism research has been confirmed by previous studies (Sirakaya and Woodside, 2005).

As mentioned previously, the TPB is an example of the foundational theories utilised by marketing researchers (Sirakaya and Woodside, 2005). This means that the model focuses on the processing and output stages of the three-stage decision-making model in Figure 4.1 above. However, as a foundational model, it does not strictly follow the five-step information-processing procedure. Nevertheless, several elements of these five steps, such as need recognition and post-purchase evaluation, are indirectly represented by the variables (e.g. attitude; subjective norms; perceived behavioural control; travel intentions) of the model.

The TPB is an extension of the theory of reasoned action (TRA), which was first developed for explaining rational and volitional behaviours (Fishbein and Ajzen, 1975). However, not all behaviours could be considered volitional (Hsu and Huang, 2012). For an example, potential travellers could encounter various internal or external obstructions (e.g. lack of money or time) that prevent them from undertaking the activity. Such a situation is particularly true with senior tourists, since many of them might have more travel constraints such as poor health or lack of travel companions, than the younger generations. In an attempt to modify TRA, Ajzen (1985) suggested that the degree of control (e.g. requisite information, skills or abilities) that an individual possesses to overcome the internal and external obstacles exert significant impact on successfully executing a behaviour. Taking this into account, Ajzen (1988, 1991) developed the TPB by introducing the construct of perceived behavioural control that represents an individual's evaluation of their abilities, resources and opportunity to perform a behaviour into the TRA.

The TPB was developed with the goal of explaining human behaviour. It posits a set of relationships among the antecedents, namely, attitudes (ATT), subjective norms (SN) and perceived behavioural control (PBC) of behavioural intentions and actual behaviours (Hsu and Huang, 2012). These three antecedents are, in turn, influenced by salient beliefs. These form the most basic level of explanation (Ajzen, 1991). Ajzen (1988, 1991) identified three kinds of salient beliefs: the behavioural beliefs that exert influences on ATT, the normative beliefs that underlie SN, and the control beliefs that comprise the basis of PBC. Figure 4.2 below illustrates the original structure of the TPB model.

Figure 4. 2 The structure of the TPB model



Source: Ajzen (1991).

4.2.6.2. Extended models of the TPB and the principles of construct addition

The TPB has often been employed to study a wide range of societal behaviours. Its efficacy in explaining and predicting certain behavioural intentions and behaviours has been confirmed by several studies (Ajzen, 2011; Armitage and Conner, 2001; McEachan et al., 2011; Notani, 1998). However, Conner and Armitage (1998) suggested that predictors of the model might not be sufficient in fully explicating an individual's intentions and behaviours. In practice, many researchers introduced new constructs into the model. For example, in an attempt to incorporate affective factors into the model,

Perugini and Bagozzi (2001) introduced anticipated emotions into the TPB. In other cases, Sparks and Shepherd (1992) added self-identity, and Ouellette and Wood (1998) introduced past behaviour into the model.

However, Ajzen (2006, 2011) and Fishbein and Ajzen (2010, Chapter 9) were concerned with the parsimony of the TPB. As a result, they specified a set of criteria for any additional variable propositions of the model. First, the proposed predictor should be in accordance with the principle of compatibility. That is, the additional construct should be behaviour-specific, measured in terms of the target, action, context and time elements that describe the actual behaviour. Second, the proposed construct should be a causal antecedent of behavioural intention and actual behaviour. Third, the proposed variable should be independent of the existing predictors of the model. Fourth, the proposed variable should have the potential to be applied to a wide range of behaviours. Fifth, the proposed factor should consistently enhance the predictive capability of the model. Table 4.3 below demonstrates the principles of TPB construct addition.

Table 4. 3 The principles of TPB construct addition.

Principles of additional construct proposition
• The proposed variable should follow the principle of compatibility. • The proposed variable should be a causal antecedent of intention and behaviour. • The proposed variable should be independent of the model's existing predictors. • The proposed variable should be applicable to a wide range of behaviours. • The proposed variable should constantly enhance the predicting capability of the model.

Source: Ajzen (2006, 2011) and Fishbein and Ajzen (2010).

4.6.2.3. The application of TPB in the field of tourism research

Similar to researchers of other disciplines, tourism scholars also demonstrated significant interest in employing the model for investigations. For example, Ajzen and Driver (1991) began using this theory in the context of tourism by investigating how instrumental beliefs influenced a person's intentions to take part in five leisure activities. Later, the number

of researchers who employed the model increased and they investigated behaviours such as the practice of green marketing and consumption (Chen and Tung, 2014; Han and Ryu, 2012), the selection of destination (Lam and Hsu, 2004; Hsu and Huang, 2012), and the participation of certain tourism vacations (Sparks, 2007). In addition, tourism researchers also introduced additional variables into the TPB model to improve its predictive capability. For example, Han, Jae and Hwang (2016) introduced personal norms as a predicting variable of environmentally responsible travel behaviours. In other cases, Sparks (2007) incorporated the construct of emotional attitude as a predictor for wine trip participations. Boley et al. (2018) added the construct of social return, or positive social media feedback, as an antecedent of one's travel intentions.

In order to better illustrate how tourism researchers have utilised the TPB model, this study examined 16 articles that employed an extended model of the TPB. All of the articles were published on five top tourism journals, namely, Annals of Tourism Research, International Journal of Hospitality Management, Journal of Hospitality and Tourism Research, Journal of Travel Research and Tourism Management. The examination focused on the research subjects of the studies and the additional constructs proposed by tourism researchers. Table 4.4 below exhibits the main topic, or behaviour of interest, of each study, as well as relational modification of the TPB model.

Table 4. 4 Examples of tourism research studies that employed extended TPB models.

Articles	**Behaviour of interest**	**Additional variable(s)**	**Causal relationships of the variable(s)**
Sparks (2007)	Participation in wine trips	Emotional attitude	Predictor of intention
Han and Kim (2010)	Revisit to green hotels	Customer satisfaction, overall image, frequency of past behaviour and service quality	Service quality is a predictor of both customer satisfaction and ATT. The rest of the proposed variables are predictors of intention.
Quintal, Lee and Soutar (2010)	Visit to a particular destination	Perceived risk and perceived uncertainty	Predictors of ATT and PBC
Chou, Chen and Wang (2012)	Green practices of restaurants	Perceived innovation characteristics	Predictor of ATT
Hsu and Huang (2012)	Visit to a particular destination	Travel motivations	Predictor of ATT and intention
Lee and Gould (2012)	Attendance of a senior dining program	Past behaviours	Predictor of intention
Wang and Ritchie (2012)	Crisis planning of hotel managers	Past crisis experience	Predictor of intention
Kim, Njite and Hancer (2013)	Visit to eco-friendly restaurants	Anticipated regret	Predictor of intention
Chen and Tung (2014)	Visit to green hotels	Perceived moral obligation and environmental concern	The former is a predictor of intention, while the latter is an antecedent to all of the predictors of intention (including the former).
Han (2015)	Green behaviour of tourists	Sense of obligation	Mediator between SN and intention
Kaplan et al. (2015)	Usage of bike-sharing during holidays	Interest in bicycle technology	Predictor of intention
Quintal, Thomas and Phau (2015)	Participation in wine trips	'winescape' or the combination of wine trip attributes	Predictor of ATT
Jun and Arendt (2016)	Healthy eating behaviours of restaurant customers	Prototype image and willingness	Prototype image is a predictor of behavioural willingness, which, in turns, influence one's actual behaviour.
Wang (2016)	Green behaviour of restaurant employees	Commitment of 'green food and beverage'	Mediator between PBC and intention
Goh, Ritchie and Wang (2017)	Non-compliant behaviour at national parks	Environmental values	Predictor of intention
Boley et al. (2018)	Visit to a particular destination	Positive social media feedback	Predictor of intention

As can be seen from the table, tourism scholars extended the TPB model with different variables. Whereas most of the researchers focused on the green behaviours of consumers and employees, several articles investigated customers' visits to particular destinations or restaurants. In terms of additional constructs, the majority of the researchers included psychological factors that influence an individual's decision-making. Only one article (Boley, 2018) took the influence of ICT related variable into consideration (i.e. positive social media feedback).

4.2.6.4. The advantages and limitations of the TPB

Nevertheless, the TPB model has also been criticised by several researchers (Hsu and Huang, 2012). For example, the TRA and TPB have frequently been criticised for only taking "rational factors" into account and ignoring cognitive and affective process that might bias human judgements and behaviours (Ajzen, 2011). In addition to that, Cohen, Prayag and Moital (2014) highlighted that, as a sequential decision-making model, the TPB was not capable of capturing the complex nature of travel decision-making processes. In another case, Sirikaya and Woodside (2005, p. 820) argued that the premise of the TPB seems to be, "without sufficient justification" in the tourism context and that the model could only be applied to a limited range of leisure activities.

Despite all of its limitations, the TPB is still a suitable underlying model for this study. This is because first, Ajzen (1988, 1991, 2011) has clearly defined the variables in the TPB model, and explicitly identified the causal relationships among them. Second, the TPB model is easy to operationalise because of its parsimony and the existing recommendations of doing so (Sutton, 2011). Third, the effectiveness of the TPB, as mentioned previously, has been confirmed with relational meta-analysis studies (Armitage and Conner, 2001; McEachan et al., 2011). Fourth, although the TPB has

limited application in the tourism context (Sirikaya and Woodside, 2005), it is appropriate for the purpose of this study, which focuses more on the individual decision-making among seniors.

4.2.7. Anticipated emotions, past behaviour and travel motivations

Since their development, the TRA and TPB have been frequently criticised for its superficial application that only incorporates rational, instead of cognitive and affective, factors (Ajzen, 2011). In an attempt to improve the TPB, Perugini and Bagozzi (2001) developed the model of goal-directed behaviours (MGB) by introducing the concepts of anticipated emotions, past behaviour and desire. Among the three additional constructs of the MGB, the anticipated emotions (i.e. positive and negative anticipated emotion) provide measurements for the emotional states of an individual. In addition, past behaviour acts as a predictor of behavioural intention. Finally, desire provides measurements of motivational factors, and acts as a mediator between intention and the predictors of intention. The effectiveness of the three MGB constructs were verified in a number of tourism research studies (e.g. Han, Jae and Hwang, 2016; Kim et al., 2012; Meng and Han, 2016; Song et al., 2012a, 2012b).

This study adopts two of the three additional constructs, namely, anticipated emotions and past behaviour. The inclusion of those variables helps improve the overall performance of the TPB model. Although the variable of desire was not included in the conceptual framework of this study, it was translated into the construct of travel motivations. This is because several researchers (e.g. Hsu and Huang, 2012; Lu et al., 2016; Wang et al., 2017) have confirmed the effectiveness of travel motivation as a predictor of intention to travel. In addition, the introduction of this variable also aligned

with the current research trends in senior tourism research, in which travel motivation is a main approach for investigation.

4.2.8. The role played by ICT in seniors' decision-making process.

4.2.8.1. The influence of ICT on the travel decision-making process

Several researchers (e.g. Okazaki and Hirose, 2009; Sheldon, 1997; Werthner and Klein, 1999) have stated that the travel and tourism industry has been significantly transformed by ICT. The travel and tourism industry is one of the earliest industries to adopt the use of ICT (Buhalis and Law, 2008). As a result, the use of internet for travel planning has reached a point of saturation (Xiang, Magnini and Fesenmaier, 2015). According to Xiang, Magnini and Fesenmaier (2015), the recent trends in ICT use in the tourism industry have been threefold. First, the internet has become the most significant tool for travel planning among all generations, with generational gaps being blurred in terms of the adoption of ICT. Second, newly emergent channels and ICT devices have encouraged the development of new online travel behaviours. Third, more secondary travel products (e.g. tickets of tourism attraction sites; dining and shopping coupons) have been included in ICT use for the travel and tourism industry.

Hudson and Thal (2013) investigated the use of social media in travel and argued that ICT significantly affects the entire decision-making process from the initiation of travel demands to the re-evaluation stage after purchase. For example, market practitioners could utilise the Internet to promote tourism products through various channels, creating potential travel demands. In addition, leisure travellers could evaluate the quality of tourism products from relational reviews on online platforms. In addition to this, a large number of customers today purchase their travel products online (Hudson and Thal, 2013). Furthermore, several tour operators, such as Southwest Airlines, began utilising social

media to deal with customer complaints and to establish a bond with consumers (Holmes, 2011).

4.2.8.2. Studies in relation to senior travellers' use of ICT published in English

Although the emergence of ICT has triggered interest among researchers, the senior tourist market has been regarded "out of fashion" in terms of travel-related ICT usage (Horneman et al, 2002; Wang et al., 2017). However, this situation is gradually changing as the new generation of senior citizens distinguish themselves from the previous generations. For example, Chen and Shoemaker (2014) suggested the new generation of senior citizens have a relatively young cognitive age, and are less interested in products tailored for senior tourists. They also highlighted that the new generation of senior citizens tend to be more tech-savvy and mainstream in their behaviours. According to Graeupl (2006), consumers in the United Kingdom (UK) in their 50s and 60s employed the internet extensively for the purpose of searching for information about flight and accommodation. In another study, Kim and Preis (2016) stated that the proportion of senior smart phone owners in South Korea rose dramatically from 7.1% in 2011 to 46.8% in 2012.

Today, only a small number of researchers (e.g. Fabricius and Eriksson, 2017; Pesonen, Komppular and Riihinen, 2015a, 2015b; Wang et al., 2017) have investigated senior tourists' use of ICT for tourism purposes. Regarding the topics of those studies, several researchers (Fabricius and Eriksson, 2017; Pesonen, Komppular and Riihinen, 2015a, 2015b) investigated the heterogeneity in senior tourists' use of ICT. For instance, Fabricius and Eriksson (2017) divided senior tourists into three categories: disinclined users, opportunistic users and 2.0 users. Among the three groups of users, disinclined seniors do not seek advice from unknown internet users, nor do they share any

information regarding their own travel experiences to others. Opportunist users, however, take advice from other online users' regarding travel experiences, but do not actively provide their own travel experiences to others. 2.0 users both take advice from online peers and share their personal travel experiences. In another research study, Pesonen, Komppula and Riihinen (2015b) discovered that senior tourists have various levels of knowledge in using online travel services. Moreover, this research also ascertained that, unlike the previous assumption that senior tourists would prefer traditional information sources, this cohort seem to favour the use ICT for tourism purposes.

In addition to the research attention paid to the typology of senior ICT users, tourism researchers also focused on the role ICT plays in seniors' travel decision-making process. Wang et al. (2017) investigated the influence of ICT usage on the intentions of senior citizens to travel abroad. This research discovered that the use of ICT significantly influences travel intentions. However, as an exploratory research study, it suffered from a few limitations. For example, within this research, the use of ICT for tourism purposes is defined as "the use of high-tech devices such as personal computers or mobile phones to make informed travel decisions" (Wang et al, 2017, pp.101-102). However, they only utilised daily online time, type of online device possessed, and ICT equipment brought and used on vacation to measure this construct. A problem with this measurement is that people could actually use their online time for many activities, such as reading news and chatting with friends, and these activities might have nothing to do with tourism activities or travel motivations. In other words, the measurement fails to establish a relationship between the use of ICT and travel motivations. Another issue stems from the inquiry into the types of online device that an individual possesses. The possession of various kinds of online device might correlate an individual's demographic variables (e.g. gender, income, profession, education level). For example, it is justified to assume that an

individual with higher income is more likely to possess and use more types of IT devices. Consequently, without excluding the effects of demographic variables, it is difficult to conclude that the possession and use of ICT devices could lead to higher travel intention. Therefore, it is necessary to deepen people's understanding regarding the use of ICT for tourism purposes and its influence on the travel decision-making process.

4.2.8.3. Studies in relation to senior travellers' ICT usage published in Chinese

Several researchers (e.g. Hu, 2007; Tan, 2015; Zhou, 2006) conducted descriptive statistics regarding the information sources of Chinese senior tourists. Although the internet constantly remained a small but important channel for Chinese seniors to collect travel information, existing literature did not specifically investigate the use of ICT among Chinese senior tourists. Furthermore, none of the studies discussed the potential influence of ICT usage on seniors' attitudes and intentions for leisure travel. This highlights a gap in the Chinese research literature in relation to seniors' use of ICT for travel purposes.

4.2.9. Hypotheses development for the decision-making process of senior tourists

4.2.9.1. The underlying models and behaviour of interest

This study adopts an extended model of TPB, which incorporates the original constructs of the model, three constructs from MGB, and the proposed variable of travel motivation (TM) and ICT usage. The behaviour of interest of this study is seniors' participation in leisure travel. In the section below, the impacts of the antecedent variables on intention and actual behaviour are explored. In addition, the examples of their usage in the field tourism studies are also discussed and explicated.

4.2.9.2. The relationship between behavioural intention and actual behaviour

Although the TPB established a solid relationship between attitude and intention, it appeared to ignore the question of how behavioural intention translates into actual behaviour (Garling, Gillholm and Garling, 1998). In addition, according to several meta-analysis of the TPB, the behavioural intention and perceived behavioural control only accounted for 34% of the variation to explain behaviour (Godin and Kok, 1996; Sutton, 1998). However, according to Fishbein and Ajzen (1975), behavioural intention is an immediate antecedent of actual performance of behaviour. Meanwhile, Ajzen (1985) argued that behavioural intention could be translated into actual behaviour when there is an opportunity to act. Therefore, it is necessary to explore the relationship between intention and actual behaviour in this research.

Theoretically, behavioural intention has been employed by many researchers as a proxy of actual action (Lu et al, 2016), and has been defined as a person's subjective probability to perform a behaviour (Fishbein and Ajzen, 1975). However, in practice, behavioural intention does not always transit itself into behavioural performance (Ajzen, 1985). A change in intention could lead to the failure of performing a behaviour. This change could come from the emergence of new information or a change in the salience of belief, which is partially affected by the lapse of time (Ajzen, 1985). The unclear relation between intention and behaviour somehow limits the predictive power of the TPB model. Ajzen (2011) pointed out that even if all the variables are carefully measured by a well-designed instrument, the reliabilities of the constructs seldom surpassed 0.75 or 0.80. In addition, it is reasonable to expect the correlation coefficients among the theory's constructs to reach around 0.60 at most (Ajzen, 2011).

However, despite the model's limitations, the efficacy of behavioural intention in investigating human decision-making is undeniable. For those behaviours that are not habitual, behavioural intention is an immediate antecedent of actual behavioural performance. Additionally, the difficulty in measuring an individual's attempt to perform a behaviour makes behavioural intention a relatively valid representative of actual behaviour. In the context of tourism, researchers studying the decision-making process of tourists (e.g. Hsu and Huang, 2012; Meng and Han, 2016; Han, Jae and Hwang, 2016) generally utilised behavioural intention as the predictor of actual behaviour. In this research, since senior citizens' participation of leisure travel is of interests, the behavioural intention towards participating in leisure travel is employed to predict senior citizens' future behaviour and likelihood of participating in those trips. The hypothesised relationship is demonstrated below.

H1: Chinese senior citizens' intention to participate in leisure travel has a positive impact on their actual behaviour to take leisure travel.

4.2.9.3. Attitude towards participating in leisure travel

Attitude has played an important role in the study of social psychology (Ajzen and Fishbein, 1980). During the early 20th century, several researchers (e.g. Thomas and Znaniecki, 1918; Watson, 1925, as cited in Ajzen and Fishbein, 1980) defined social psychology as the field of research on attitudes. The definitions of attitude put forward by researchers vary. However, as people's understanding of this variable grew deeper, social psychologists have gradually reached an agreement in defining attitude, even though there is a slight difference in the wording of these definitions. For example, Fishbein and Ajzen (2010) defined the construct of attitude towards a behaviour as an inclination to respond towards an object or behaviour with certain levels of

favourableness or unfavourableness. Meanwhile, Eagly and Chaiken (1993, p.1) defined attitude towards a behaviour as, “a psychological tendency that is expressed by evaluating a particular entity with some degree of favour and disfavour”.

In the TPB model, attitude towards a behaviour represents an individual’s behavioural belief of the probable consequence of performing a behaviour (Ajzen and Fishbein, 1980). In addition, both the attitude and behavioural belief are shaped by learning and personal experience (Hsu and Huang, 2012). Moutinho (1987) argued that, in the research context of tourism, attitude towards a behaviour demonstrates an individual’s deposition or feeling towards visiting a destination or using a particular tourism service (e.g. accommodation or transportation service). In this study, while Chinese senior tourists’ behavioural intention to participate in leisure travel is the main interest of research, the attitude that would be measured in this theoretical framework is, therefore, their attitude towards participating in leisure travel.

Research findings of various tourism studies have previously confirmed the efficacy of attitude in predicting tourists’ behavioural intentions. For example, Hsu and Huang (2012) conducted a study regarding mainland Chinese tourists. They verified the efficacy of attitude on the behavioural intention of their survey respondents to visit Hong Kong. Evidence was also presented in studies regarding the environmental awareness of tourists. For instance, Han, Jae and Hwang (2016) confirmed the impact of attitudes on an individual’s intention to choose environmentally friendly cruises. In addition, Meng and Han (2016) ascertained that attitude significantly influences an person’s decision in taking bicycle tours. In the context of senior tourism research, Han, Hwang and Kim (2015) confirmed the importance of attitude on the repurchase intention of senior tourists

in airport shopping. In another study, Kim and Preis (2016) also confirmed the role of attitude plays in senior citizens' use of mobile devices for tourism purposes.

Furthermore, several papers also provided circumstantial evidence for the connection between attitude and intention to travel. For example, Nimrod (2008) interviewed 20 male and female retirees who travelled regularly. He revealed five themes related to travelling. These five themes included the favourable opinions that tourism was a "compensation for the losses that accompanied retirement" (Nimrod, 2008, p.865), an activity that, "preserve old interests" (Nimrod, 2008, p.868), and a period of, "quality time with loved ones" (Nimrod, 2008, p.869). In light of this, this study proposes that attitude towards participating in leisure travel has an impact on Chinese seniors' intention to participate in leisure travel. The hypothesised relationship is demonstrated below.

H2: Chinese senior citizens' attitude towards participating in leisure travel has a positive influence on their intention to participate in leisure travel.

4.2.9.4. Subjective norm toward participating in leisure travel

Subjective norm have been defined as an individual's belief of whether their important others agree with their performance of a behaviour (Ajzen and Fishbein, 1980; Ajzen, 1988, 1991). Theoretically, subjective norm is a function of a person's normative beliefs, which are defined as the normative expectations of certain people's approval or disapproval about certain behaviour (Ajzen and Fishbein, 1980; Ajzen, 1988, 1991). In other words, subjective norm is a combination of the normative beliefs that an individual considers important (Ajzen and Fishbein, 1980). For example, when a husband considers about taking a vacation in this summer, he would probably take into account the normative beliefs he has about his family members and his boss at work. However, he

would less likely to be concerned with the normative beliefs that he has about his neighbours.

Subjective norm plays an important role in forming a person's intention to perform a behaviour. Ajzen and Fishbein (1980, p. 57) highlighted that, "the more a person perceives that others who are important to him think he should perform a behaviour, the more he will intend to do so". In the context of tourism, the role of this construct was also confirmed by several research studies (e.g. Hsu and Huang, 2012; Han, Jae and Hwang, 2016; Meng and Han, 2016; Kim and Preis, 2016). In addition, relational literature also provided indirect support for the predictive power of this construct. For example, one type of such support comes from the change of social attitudes on senior tourism in China. In the past, Chinese retirees were expected to commit certain family obligations (e.g. childcare), which constrained their capability to go travelling (Liu, 2010; Su, 2007). However, as the economy continued to grow quickly, Chinese society gradually adopted a more liberal attitude towards the travelling activities of senior citizens. Researchers such as Cai (2002) started to call for a dismissal of the traditional views that senior citizens should commit to family duties and refuse to travel. This general change in social attitude might have influenced the attitudes of the friends and family members of senior citizens. Consequently, senior citizens might have perceived a more favourable opinion from their important others in terms of taking vacations. Today, it is reported that the enthusiasm for travel among Chinese seniors is growing rapidly. Ctrip, one of the leading online travel agency in China, reported an overwhelming rate of 87% among senior citizens who said they plan to travel (Su, 2015). Therefore, a connection between the subjective norm and behavioural intention in seniors' travel decisions can be postulated. This is demonstrated in the hypothesis below.

H3: Chinese senior citizens' subjective norm towards participating in leisure travel has a positive influence in their intention to participate in leisure travel.

4.2.9.5. Perceived behavioural control towards participating in leisure travel

Perceived behavioural control is defined as, "people's perception of the ease or difficulty of performing the behaviour of interest" (Ajzen, 1991, p, 183). This definition was derived from the concept of perceived self-efficacy, which refers to, "people's beliefs about their capabilities to exercise control over their own level of functioning and over events that affect their lives" (Bandura, 1991, p.257). Commenting on the TRA, Ajzen (2002) stated that even ordinary routine behaviours could be thwarted by unforeseen barriers. Therefore, the degree of actual control that an individual possesses is important in predicting the performance of the behaviour. Consequently, perceived behavioural control is added into the TRA model for the investigation of behaviours that are not completely under volitional control. According to Ajzen (1991), at least two rationales support the hypothesised relationship between perceived behavioural control and behavioural intention. First, perceived behavioural control could maintain behavioural intention at a constant level (Ajzen, 1991), preventing a change of intention. In other words, a person who is confident in his ability to, for example, learn a musical instrument, is more likely to carry on learning than another person someone who is less confident. Second, perceived behavioural control is an effective proxy for actual control (Ajzen, 1991). When carefully and correctly assessed, it could reveal useful information about actual control and thus, be used as an additional predictor of intention (Ajzen, 2002).

In the research context of senior tourists, the connection between these two constructs could be indirectly shown by the abundance of studies focusing on senior tourists' travel constraints. According to Crawford, Jackson and Godbey (1991), leisure travel

constraints are factors that prevent an individual from forming travel preferences as well as from participating in and enjoying leisure travel activities. Because senior citizens are more likely to suffer from constraints such as declined mobility and poor health conditions, they are considered to have less actual control on their participation of leisure travel than people from the younger generation did. Therefore, their capability or actual control in negotiating these constraint factors is important for the formation of their travel intention. Therefore, a further hypothesis is presented below which is based on the presence of a connection between perceived behavioural control and senior tourists' behavioural intention towards visiting a destination.

H4: Chinese senior citizens' perceived behavioural control towards participating in leisure travel has a positive impact on their intention to participate in leisure travel.

4.2.9.6. Anticipated emotions toward participating in leisure travel

The anticipated emotions proposed by Perugini and Bagozzi (2001) include two different concepts, namely, the positive anticipated emotion, and the negative anticipated emotion. Conceptually, positive and negative anticipated emotions are defined as the affective states in which an individual anticipates a successful behavioural performance and unsuccessful performance regarding an experience (Bagozzi and Yi, 1988).

Despite having a similar definition to that of the construct of attitude, anticipated emotions are believed to differ from attitude in three respects (Perugini and Bagozzi, 2001). First, an individual's attitude focuses on behavioural attempts, or what an individual does or can do (Perugini and Bagozzi, 2001; Bagozzi, Dholakia and Basuroy, 2003). However, anticipated emotions are more closely related to the outcome of the behaviour, or the achievement of goals (Perugini and Bagozzi, 2001; Bagozzi, Dholakia

and Basuroy, 2003). For example, people who attempt to lose a certain amount of weight might not be able to attain that much weight loss. In short, anticipated emotions are more associated with the outcome than the attempt. Second, since an individual's attitude derived from their behavioural beliefs, which is affected by learning, their attitude towards certain behaviour remains relatively constant (Perugini and Bagozzi, 2001; Bagozzi, Dholakia and Basuroy, 2003). However, anticipated emotions are more dynamic and arise in response to the feedback of goal-achievement attempts (Perugini and Bagozzi, 2001; Bagozzi, Dholakia and Basuroy, 2003). Therefore, it is more contingent than attitude towards a behaviour. Third, anticipated emotions also distinct from attitude in terms of measurement (Perugini and Bagozzi, 2001; Bagozzi, Dholakia and Basuroy, 2003). While it is common for researchers to use bipolar items of "favourable" or "unfavourable" to measure attitude towards a behaviour, this method is inappropriate for anticipated emotions. Instead, positive and negative anticipated emotions have to be measured separately by unipolar items. This is because these two emotions co-exist and could be, "positively or negatively related (or unrelated) to each other" (Perugini and Bagozzi, 2001, p. 82). Empirical data (Bagozzi, Baumgartner and Pieters, 1998) has already provided support to the statement that the more positive in emotion an individual expects about a successful behavioural outcome, the more likely they would expect a negative emotion for the failure of that outcome.

In the MGB, anticipated emotions, along with other traditional TPB constructs (i.e. attitude, subjective norm, perceived behavioural control), are expected to influence desire. In turn, this influences intention. In the context of tourism, the relationships between anticipated emotions and desire have been testified by research studies regarding environmentally friendly travel behaviours (Han, Jae and Hwang, 2016), bicycle tours (Meng and Han, 2016), and responsible gambling (Song et al, 2012b). In addition, several

researchers (Bagozzi et al., 2016; Wang, 2011, 2013) also provided empirical support for the relationships between anticipated emotions and behavioural intention. Therefore, it is reasonable to expect anticipated emotions to be an antecedent of intention. Since leisure travel is an activity that entertains and delights senior citizens, it makes sense to assume that senior tourists might have certain emotional feelings towards a successful vacation. While the behavioural intention of interest is the intention to participate in leisure travel, the corresponding constructs are positive anticipated emotion towards participating in leisure travel, and negative anticipated emotion towards participating in leisure travel. Therefore, the following hypotheses regarding anticipated emotions can be put forward:

H5: Positive anticipated emotion towards participating in leisure travel has a positive impact on the intention to participate in leisure travel.

H6: Negative anticipated emotion towards participating in leisure travel has a positive impact on the intention to participate in leisure travel.

4.2.9.7. The effect of past behaviour

Another additional construct that MGB incorporated into TPB is the construct of past behaviours. Perugini and Bagozzi (2001) pointed out that past behaviours exert effects on an individual's behavioural intention. This effect has been confirmed by a number of tourism studies (e.g. Han, Jae and Hwang, 2016; Meng and Han, 2016). However, Ajzen (2011) argued that past behaviour did not match one of the criteria for including additional predicting variables in the TPB model. This is because past behaviour is not a causal antecedent of behavioural intention. In addition, Ajzen (1991) also stated that the predictive ability of past behaviour could be mediated by perceived behavioural control in the TPB model. Nevertheless, this study includes this construct into the model due to

its effectiveness from previous tourism studies. Therefore, hypothesis seven is presented below.

H7: Past behaviour of participating in leisure travel has a positive influence on senior tourists' intention to participate in leisure travel.

4.2.9.8. Travel motivations for participating in leisure travel

Motivation is a disposition or a state of demand that leads an individual to take actions that satisfy those demands (Li and Cai, 2012; Whang, Yong and Ko, 2016). In the context of tourism, motivation is an important factor that influences the travel decision-making process (Ho and Peng, 2017, Hsu and Huang, 2012; Wang et al., 2017). Travel motivation appears to be different among individuals due to the influence of internal and external factors such as personality, culture and periodical environment (Hsu and Huang, 2012; Whang, Yong and Ko, 2016). In an attempt to deepen the understanding of travel motivation, several researchers developed various theories and models (Li and Cai, 2012). For example, Dunn Ross and Iso-Ahola (1991) proposed the escape-seeking model. In addition, Dann (1977) and Crompton's (1979) recommended the push-and-pull model, which divides travel motivations into two categories: push factors and pull factors.

Travel motivation was also found to be an effective factor for the purposes of dividing the tourism market into smaller segments (Li and Cai, 2012; Wang et al., 2017). For example, Guinn (1980) concluded five major motivations for senior recreational vehicle tourists in the U.S., namely, rest and relaxation, association with friends and family, physical exercise, learning experience and self-fulfilment. In addition, Shoemaker (1989) categorised the senior tourist market into three segments according to travel motivations: family travellers, active resters and the older set.

Furthermore, travel motivation was also found to have significant relationships with variables in the attitude theory. For instance, Hsu and Huang (2012) identified that travel motivation had a significantly positive impact on a person's attitude to travel. Additionally, researchers (Hsu and Huang, 2012; Lu et al., 2016; Wang et al., 2017) also ascertained that travel motivation had a significantly positive impact on an individual's travel intention. In light of this, this study proposed the following hypotheses.

H8: Travel motivation to participate in leisure travel has a positive impact on the attitude to participate in leisure travel.

H9: Travel motivation to participate in leisure travel has a positive impact on intention to participate in leisure travel.

4.2.9.9. The impacts of the use of ICT

Wang et al. (2017, pp. 101-102) defined the use of ICT for tourism purposes as, "the use of high-tech devices such as personal computers or mobile phones to make informed travel decisions". In further attempt, Pesonen, Komppular and Riihinen (2015b, p.833) defined travel-related ICT usage as, "different World Wide Web sites that travellers use when they are searching for information either before the trip, during the trip or after the trip". Since these two definitions are mainly about the use of online platforms to collect relevant travel information or to solve relevant in-tour issues, this study summarises these ICT behaviours into two aspects:

- First, the travel planning and booking aspect. This corresponds to the stages of travel planning and booking in an individual's travelling cycle.

- Second, the problem-solving aspect. This aspect relates to other in-tour activities such as finding specific locations (e.g. restaurants; convenience stores) and navigation. This aspect corresponds to the in-tour stage of an individual's travelling cycle.

However, the definitions put forward by Wang et al. (2017) and Pesonen, Komppular and Riihinen (2015b) failed to consider other important aspects of travel-related ICT uses. This includes the elements of experience viewing and experience sharing on social media sites and/or other platforms. Two situations are associated with this kind of online behaviour. First, the viewing of the travel experiences of others on online platforms. Second, the sharing of a person's travel experiences on online platforms. According to Boley et al., (2018), positive feedback from online posts regarding an individual's travel experiences significantly influenced their future travel intention. In light of the importance of experience viewing and sharing activities, this study incorporates these two additional aspects into the behaviour of travel-related ICT usage:

- Third, the travel experience viewing aspect. This corresponds to the dream-forming stage of one's travelling cycle.

- Fourth, the travel experience sharing. This corresponds to the sharing stage of one's travelling cycle.

As an external factor in the attitude model, the use of ICT for tourism purpose was found to exert significant impact on the travel motivations and intention of Chinese seniors (Wang et al., 2017). In addition, Wang et al. (2017) also suggested that the relationship

within the factors of ICT usage, travel motivations and travel intention was likely to be a mediation in which travel motivations mediate the impact from the use of ICT to travel intention. Furthermore, ICT usage should also have the capability to influence the predictors of travel intention. Evidence supporting this argument is relatively straightforward if the relationships between ICT and travel intention's predictors are considered. First, ICT usage is associated with perceived behavioural control through the activities of information searching. Second, ICT usage is also linked with other predictors (i.e. attitude, subjective norm and anticipated emotions towards participating in leisure travel) through the activities of experience sharing and viewing. Since ICT usage is not a causal antecedent of these predictors (i.e. attitude, subjective norm, perceived behavioural control and anticipated emotions can all develop without it), this variable is more likely to be a moderator that strengthens the relationships between travel intention and these five predictors. Therefore, the current study proposed a final seven hypothesis, which are outlined below. With regard to the overall conceptual framework, Table 4.5 below illustrates all 16 hypotheses proposed by this study. Figure 4.3 below demonstrates the overall conceptual framework of the current study.

H10: The use of ICT for tourism purposes is a positive predictor for Chinese seniors' intention to participate in leisure travel.

H11: The use of ICT for tourism purposes is a positive predictor for Chinese seniors' travel motivations.

H12: The use of ICT for tourism purposes is a positive moderator for the relationship between attitude toward participating in leisure travel and intention to participate in leisure travel.

H13: The use of ICT for tourism purposes is a positive moderator for the relationship between subjective norm toward participating in leisure travel and intention to participate in leisure travel.

H14: The use of ICT for tourism purposes is a positive moderator for the relationship between perceived behavioural control toward participating in leisure travel and intention to participate in leisure travel.

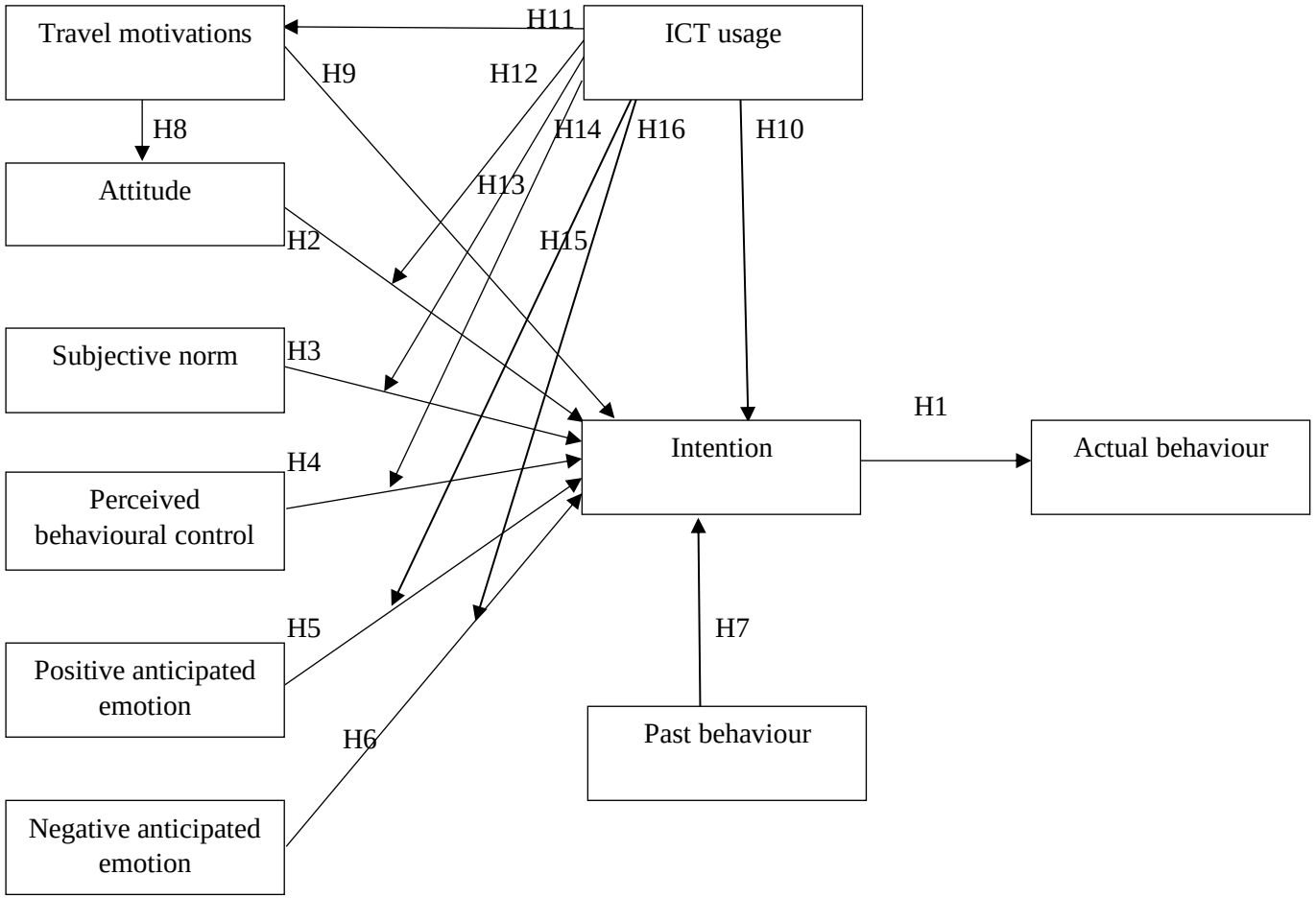
H15: The use of ICT for tourism purposes is a positive moderator for the relationship between positive anticipated emotions toward participating in leisure travel and intention to participate in leisure travel.

H16: The use of ICT for tourism purposes is a positive moderator for the relationship between negative anticipated emotions toward participating in leisure travel and intention to participate in leisure travel.

Table 4. 5 The 16 hypotheses proposed by the current study.

No.	Hypothesis
H1	Chinese senior citizens' intention to participate in leisure travel has a positive impact on their actual behaviour to take leisure travel.
H2	Chinese senior citizens' attitude towards participating in leisure travel has a positive influence on their intention to participate in leisure travel.
H3	Chinese senior citizens' subjective norm towards visiting participating in leisure travel has a positive influence in their intention to participate in leisure travel.
H4	Chinese senior citizens' perceived behavioural control towards participating in leisure travel has a positive impact on their intention to participate in leisure travel.
H5	Chinese seniors' positive anticipated emotion towards participating in leisure travel has a positive impact on the intention to participate in leisure travel.
H6	Chinese seniors' negative anticipated emotion towards participating in leisure travel has a positive impact on the intention to participate in leisure travel.
H7	Chinese seniors' past behaviour of participating in leisure travel has a positive influence on senior tourists' intention to participate in leisure travel.
H8	Chinese seniors' travel motivations form a positive predictor for attitude toward participating in leisure travel.
H9	Chinese seniors' travel motivations form a positive predictor for intention to participate in leisure travel.
H10	The use of ICT for tourism purposes is a positive predictor for Chinese seniors' travel intention.
H11	The use of ICT for tourism purposes is a positive predictor for Chinese seniors' travel motivations.
H12	The use of ICT for tourism purposes is a positive moderator for the relationship between attitude toward participating in leisure travel and intention to participate in leisure travel.
H13	The use of ICT tourism purposes is a positive moderator for the relationship between subjective norm toward participating in leisure travel and intention to participate in leisure travel.
H14	The use of ICT for tourism purposes is a positive moderator for the relationship between perceived behavioural control toward participating in leisure travel and intention to participate in leisure travel.
H15	The use of ICT for tourism purposes is a positive moderator for the relationship between positive anticipated emotions toward participating in leisure travel and intention to participate in leisure travel.
H16	The use of ICT for tourism purposes is a positive moderator for the relationship between negative anticipated emotions toward participating in leisure travel and intention to participate in leisure travel.

Figure 4. 3 The conceptual framework of the current study.



4.3. Conclusion

This chapter addresses Research Objective 2 (RO2) by developing a theoretical framework for Chinese seniors' travel decision-making process. The was achieved by an examination of individual decision-making processes. Following this examination, a grand model approach was selected as the most suitable approach for this study. Consequently, existing decision-making models were consulted and an extended Theory of Planned Behaviour (TPB) model was developed. While the key components from the original TPB model were included, additional factors such as Chinese seniors' travel motivations and their travel-related ICT usage were also included. As a result, 16 causal relationships were proposed for this structural model.

However, additional effort is still required in order to turn these hypothetical relationships into real research practice. In the following chapter, this process is discussed. This discussion determines the key methodological choices for this investigation. More specifically, relational philosophical positions, paradigms of inquiry, research approach, variable operationalisations and research methods will be discussed in the next chapter.

Chapter 5: Methodology

5.1. Introduction

Based on the conceptual framework developed in the previous chapter, this chapter presents the research methodology for this study. As an important part of academic investigations, research methodology provides a clear guide to the research process (Saunders, Lewis and Thornhill, 2016). More specifically, it helps researchers construct a research design with specific data collection and analysis methods that answer the research questions (Collis and Hussey, 2014).

Chapter 5 begins with an analysis of the philosophical positions that underlie the paradigm of inquiry. Following this, based on the identified inquiry paradigm, the methodological approach is selected. Next, the whole research process of the study is mapped, demonstrating the research design in a flowchart. Finally, methods of data collection, analysis and sampling are also discussed in detail. This is done in accordance with the procedures described in the research design.

5.2. The philosophical relationships for methodological development

In research practice, a number of factors determine the selection of certain methodological frameworks in a study. According to Gray (2013), these factors could include the researcher's own natural inclination, the epistemological stance, and the paradigm of inquiry adopted. In other words, while the philosophical assumptions of research could influence the selection of an inquiry paradigm, the inquiry paradigm would, in turn, influence the selection of a methodology. As a result, this determines the use of certain data collection and analysis methods. Crotty (1998) pointed out that the current social science studies often contain confusing philosophical analysis. Therefore, he suggested

that researchers should establish an interrelationship in their studies among ontology, epistemology, inquiry paradigm, methodology and methods. In light of this, a guideline of philosophical relationships adapted from the works of Collis and Hussey (2014), Crotty (1998), Howell (2013) and Saunders, Lewis and Thornhill (2016) was employed to decide the use of particular methodology and methods. As this chapter develops a methodological framework following the procedure shown by the proposed relationships, the concepts and definitions included will also be further explained and discussed in later sections. Figure 5.1 below illustrates the proposed relationships for social science research.

Table 5. 1 Proposed philosophical relationships for social science research.

→				
Philosophical assumptions	**Paradigms of inquiry**	**Approach of theory development**	**Methodological choice**	**Research design**
• Objectivism • Subjectivism	• Positivism • Post-positivism • Critical theory • Constructivism • Participatory	• Deductive • Inductive	• Experiment • Survey • Grounded theory • Hermeneutics • Ethnography • Action research • Discourse analysis • Post-structuralism • Post-modernism	• Data collection Survey Observation Interview Focus group Sampling Etc. • Data analysis Statistical analysis Content analysis Document analysis

Source: adapted from Collis and Hussey (2014), Crotty (1998), Howell (2013) and Saunders, Lewis and Thornhill (2016).

5.3. Philosophical and methodological analysis

5.3.1. Philosophy and paradigms of inquiry

According to the Concise Oxford Dictionary (2009, p. 1077), the term philosophy has three meanings. First, it describes, “the study of the fundamental nature of knowledge, reality and existence”. Second, it is defined as, “a set of theories of a particular philosopher”. Third, it is defined as, “the study of the theoretical basis of a branch of knowledge or experience”. However, in the research context, Saunders, Lewis and

Thornhill (2016) defined research philosophy as, “a system of beliefs and assumptions about the development of knowledge” (p.124). Therefore, a researcher’s philosophical position could provide important guidance to their conduct when carrying out a research study.

In addition to individual research philosophies, another key feature that assists with how a research is conducted is the choice of inquiry paradigm(s). As put forward by Usher (1996), a paradigm of inquiry is a framework that determines what research problems are to be addressed and defines appropriate theories, methods and techniques for problem-solving. In a similar attempt, Collis and Hussey (2014) defined paradigm of inquiry as a philosophical framework that guides how scientific research should be conducted. When carrying out a research study, the inquiry paradigm is also known as a combination of beliefs that represents the researcher’s worldview and that underpins their actions (Guba and Lincoln, 1994).

5.3.2. The selection of paradigm of inquiry

5.3.2.1. The underpinnings of positivism and phenomenology

Researchers (e.g. Bryman, 2012; Collis and Hussey, 2014; Howell, 2013) have defined two main paradigms of inquiry, positivism and phenomenology (also known as interpretivism by Collis and Hussey, 2014). While these two paradigms sit on the two opposite ends of the continuum of inquiry paradigms, they are underpinned by different beliefs regarding philosophical positions. Positivism, underpinned by the belief that reality can be completely understood through empirical approaches such as observation and experiment, provides the framework for natural science. However, this paradigm of inquiry has been continuously criticised for its limitations in the field of social research (Collis and Hussey, 2014; Sekaran and Bougie, 2013).

As stated by Collis and Hussey (2014), there are five main limitations associated with this paradigm. First, it is impossible to separate social actors (i.e. people) from the context in which they exist. Second, it is impossible to understand people without the examination of their own perspectives regarding their activities. Third, the research design of a positivist paradigm could impose constraints on findings and ignore other relevant enlightening aspects. Fourth, researchers cannot be completely detached from their process of social investigations. Fifth, it is inappropriate to utilise quantitative methods to measure complex social phenomena. As a result, phenomenological paradigms were developed to compensate for the limitations of positivism. Table 5.2 below summarises the main critisisms of the positivist paradigm.

Table 5. 2 Criticisms of the positivist paradigm.

Main criticisms of the positivist paradigm
• The impossibility of separating social actors (i.e. people) from their own social contexts • The impossibility of understanding social actors without studying the perceptions they have about their own activities. • The highly structured research design could impose constraints on results and ignore relevant findings. • Researchers are not likely to keep a detached position or wholly objective position during the research. In other words, they tend to introduce their own values and interests. • Reducing the richness of the data by using a single measurement could be misleading.

Source: Collis and Hussey (2014)

Developed as a critique of positivism and based on the beliefs that social realities are subjectively constructed by humans, phenomenology aims to explore the complexity of various social patterns (Collis and Hussey, 2014; Saunders, Lewis and Thornhill, 2016). These two paradigms (i.e. positivism and phenomenology) comprise a spectrum in which a number of newly emerged inquiry paradigms rest. Figure 5.1 below displays the continuum of inquiry paradigms by Collis and Hussey (2014).

Figure 5. 1 The continuum of inquiry paradigms by Collis and Hussey (2014).

5.3.2.2. A typology of paradigms of inquiry

According to Guba and Lincoln (1994), three main fundamental philosophical elements would have to be specified in order to establish an inquiry paradigm. That is, to clarify respectively the ontological position that considers the nature of reality, the epistemological position that deals with the relationship between the researcher and the object that is researched, and the methodological position concerning the process of the research.

The ontological assumption mainly considers the nature of reality, in addition to what human beings can know about it (Guba and Lincoln, 1994). According to Howell (2013), two extremes of ontological position exist, namely, complete objective and complete subjective (also known as constuctivist by Bryman, 2012). The former assumes that the reality is independent of social actors as well as humanity such as conscience and subjectivity (Nakkeeran, 2010). The latter suggests that the social reality investigated by researchers is continually achieved by social actors, and therefore is in a constant state of revision (Bryman, 2012). Put simply, the objective ontological position holds that there is only one reality, while the subjective stance holds that there are multiple realities.

The epistemological assumption deals with the question of what constitutes acceptable and valid knowledge in a discipline (Bryman, 2012). Additionally, the epistemological assumption also involves an evaluation of the relationship between the researcher and the reality that is researched (Collis and Hussey, 2014). The positivist epistemology suggests that the knowledge comes from objective evidence that derives from observable and

measurable behaviour (Bryman, 2012), and therefore, implies a separation between the researcher and the phenomena researched. On the contrary, the phenomenological epistemology considers that the knowledge comes from subjective evidence that derives from participants (Bryman, 2012). Thus, the phenomenological epistemology holds that researchers should interact with the issue under investigation.

The methodological assumption is concerned with the process of the research (Collis and Hussey, 2014). In other words, it considers the establishment of a framework of research methods. According to Collis and Hussey (2014) and Howell (2013), the positivist methodology has several features. First, it usually employs a deductive approach that is based on the falsification of hypotheses in a theoretical framework. Second, it tests theories and studies the cause and effect for the explaination, generalisation, and prediction of social patterns. Third, the study utilises a static design in which categories are identified in advance. Fourth, the confounding factors in the research study are carefully manipulated for quantitative analysis. Conversely, the phenomenological methodology generally takes an inductive approach; focuses on the development of theories; and employs an emerging design where categories are developed during the process.

Researchers have identified various paradigms of inquiry on the continuum. For example, Ayikoru (2009) identified three main paradigms of inquiry in the field of tourism research: positivism and post-positivism, constructivist, and critical theory. Similarly, Howell (2013) identified four major inquiry paradigms for social science: positivism, post-positivism, critical theory, constructivist and participatory. In another attempt, Saunders, Lewis and Thornhill (2016) identified positivism, critical realism (post-positivism), interpretivism, postmodernism, and pragmatism as five major social research paradigms.

While resting on different places on the inquiry paradigms spectrum, these paradigms of inquiry are distinguishable by their fundamental philosophical assumptions. However, due to the difficulty in giving clear definitions to each research paradigm, this study utilises the continuum of paradigms and identified five main research paradigms based on the works of Collis and Hussey (2014), Howell (2013), Lincoln and Guba (2000), and Morgan and Smircich (1980). Table 5.3 below illustrates the categorisation of the five identified research paradigms which were on the basis of the three fundamental philosophical assumptions.

Table 5. 3 The categorisation of five identified research paradigms

Positivism ◄ ——— ► Phenomenology					
	Positivism	**Post-positivism**	**Critical theory**	**Constructivism**	**Participatory**
Ontological assumption	Reality can be understood completely.	Reality exists, but can only be understood imperfectly.	Reality is a concrete process.	Reality is a projection of human imagination.	Reality is co-created through mind and the world.
Epistemological assumption	Personal values are compromised through the adoption of science procedures.	Objectivity is pursued, but pure objectivity is impossible.	To construct systems process and change.	To obtain phenomenological insight and revelation.	The distinction between researchers and research participants disappears.
Methodological assumption	Falsification of hypotheses based on experiments, surveys and quantitative analysis.	Modified scientific methods. Qualitative methods may be included.	Historical analysis.	Hermeneutical/ dialectical.	Collaborative action and political participation.

Source: adapted from Collis and Hussey (2014), Howell (2013), Lincoln and Guba (2000) and Morgan and Smircich (1980).

5.3.2.3. The determination of the paradigm of inquiry

The main aim of this study is to investigate the decision-making processes of Chinese senior tourists. In light of the recognition of several gaps in the existing research, the need to study the influential psychological and technological factors within the travel decision-making processes of senior citizens was highlighted. More specifically, as explained in

the previous chapter, this study plans to achieve the research aim by employing a predictive model to study the intention-behaviour relationship of Chinese senior tourists. Based on a thorough literature review of both the English and the Chinese research literature, a number of hypotheses were put forward to construct a conceptual framework for further falsification. As a result, the research aim of the study is illustrated by the proposed causal relationships of the predicting and resulting variables. Given the accordance of the research structure to the features and the objective of a positivist paradigm, the selection of positivism as the philosophical paradigm of inquiry is justified.

5.3.3. Research methodology

5.3.3.1. Approaches to theory development

In general, deduction and induction are referred to as two broad methods of reasoning when conducting research (Trochim, 2006). Underpinned by general theories, the deductive approach establishes a conceptual and theoretical structure that is to be tested by empirical observations. Therefore, particular instances are confirmed and deduced from general inferences (Collis and Hussey, 2014). Alternatively, the inductive approach works from specific observations to broader generalisations and theories (Trochim, 2006). In inductive reasoning, general inferences are developed from particular instances (Collis and Hussey, 2014).

This study adopts a positivist paradigm of inquiry and consults an extended version of the theory of planned behaviour (TPB) to construct a theoretical framework for the confirmation of research hypotheses. This is in accordance with the feature of a deductive approach whereby the reasoning goes from general theories to particular instances. Therefore, the use of a deductive approach in the theory development of this study is justified.

5.3.3.2. The methodological choice

In addition to the justification of approaches to research reasoning, another essential issue in this chapter is the establishment of a suitable research methodology. In general, the term 'methodology' refers to the study of methods (Collis and Hussey, 2014). However, in the context of a research study, this term has a different meaning. For example, Veal (2011) defined research methodology as, "the ways by which knowledge and understanding are established" (p. 30). Additionally, Collis and Hussey (2014) defined methodology as, "an approach to the process of the research, encompassing a body of methods" (p. 55). In Howell's (2013) work, methodology is defined as a research strategy that outlines the ways in which a researcher undertakes a research project.

Other researchers have adopted alternative terminology to describe a similar research framework. For instance, Creswell (2013) used the term "research approach" to describe the plans and procedures that specify detailed research methods of data collection and analysis. Nevertheless, despite the differences in terminology and wordings, the aforementioned terms and definitions expressed a common meaning. This is that the methodology of a research study is a framework of methods and procedures that guides a researcher. This research utilises "research methodology" to describe its methodological framework. The term "research approach" is used to specify the types of data and research methods (e.g. quantitative or qualitative) involved in the study.

This study selects a positivist paradigm of inquiry and follows a deductive approach to theory development. Therefore, a survey methodology is employed to investigate its research questions. According to Collis and Hussey (2014), survey is a methodology used

for collecting primary and secondary data from a sample, and then generalising the data analysis results to a wider population.

The rationale behind this methodological choice is presented as follows. First, the selection of research methodology relies on the philosophical positions of the inquiry paradigm (Collis and Hussey 2014; Denscombe, 2010). While the paradigm of inquiry for this study is positivism, the study focuses on the falsifications of proposed causal hypotheses among variables. Therefore, relevant data needs to be collected from a randomly selected sample to testify the conceptual framework. Second, in addition to the philosophical positions of the study, the employment of certain research methodology also depends on the nature of the research questions, the researcher's personal experience and inclination, and the audience of the study (Gray, 2013). Analysing the English and Chinese research literature regarding the senior tourism industry, this study discovered that both the positivist and the phenomenological methodologies have been used to study the travel demand of seniors. While the nature of this study could accept both methodologies, the existence of relevant consumer decision-making theories in the discipline of marketing offered valuable theoretical frameworks for understanding the decision-making processes of Chinese senior tourists. Thus, this study follows a deductive approach and utilises general marketing theories on particular social patterns. Third, this study is concerned with a specific population (i.e. Chinese senior tourists). Therefore, the quantitative information about their behaviours and attitudes are required by the research design. Since a survey is traditionally associated with a positivist paradigm (Collis and Hussey, 2014), the selection of a survey methodology is established.

After the research methodology has been determined, analysis on the research approach of the study can be conducted. Based on the type of data collected in a study, research

approaches can be divided into three major types, namely, quantitative, qualitative and mixed-method. According to several researchers (e.g. Creswell, 2013; Neuman, 2011; Veal, 2011), quantitative research is an approach that focuses on the quantification of the data and the employment of statistical analysis. In comparison, qualitative approach aims to develop theories or patterns for little known phenomena through the use of qualitative methods (Creswell, 2013; Saunders, Lewis and Thornhill, 2016). Adopting both quantitative and qualitative methods in its research design, a mixed-method approach intends to draw strengths from both the qualitative and quantitative methods and therefore minimise their respective weaknesses (Johnson and Onwueguzie, 2004).

Although positivist and phenomenological methodologies are often associated with quantitative and qualitative approaches respectively, it is actually quite normal for the two types of methodologies to employ both quantitative and qualitative methods. For example, a study with a survey methodology may need to collect qualitative data for the improvement of theoretical frameworks. At the same time, an investigation that is mainly phenomenological (e.g. positivist ethnography) could involve quantitative data collection and analysis methods. Based on the type and the number of the research methods used in a study, researchers could categorise the study into mono-method quantitative, mono-method qualitative, multi-method quantitative, multi-method qualitative or mixed method studies (Saunders, Lewis and Thornhill, 2016).

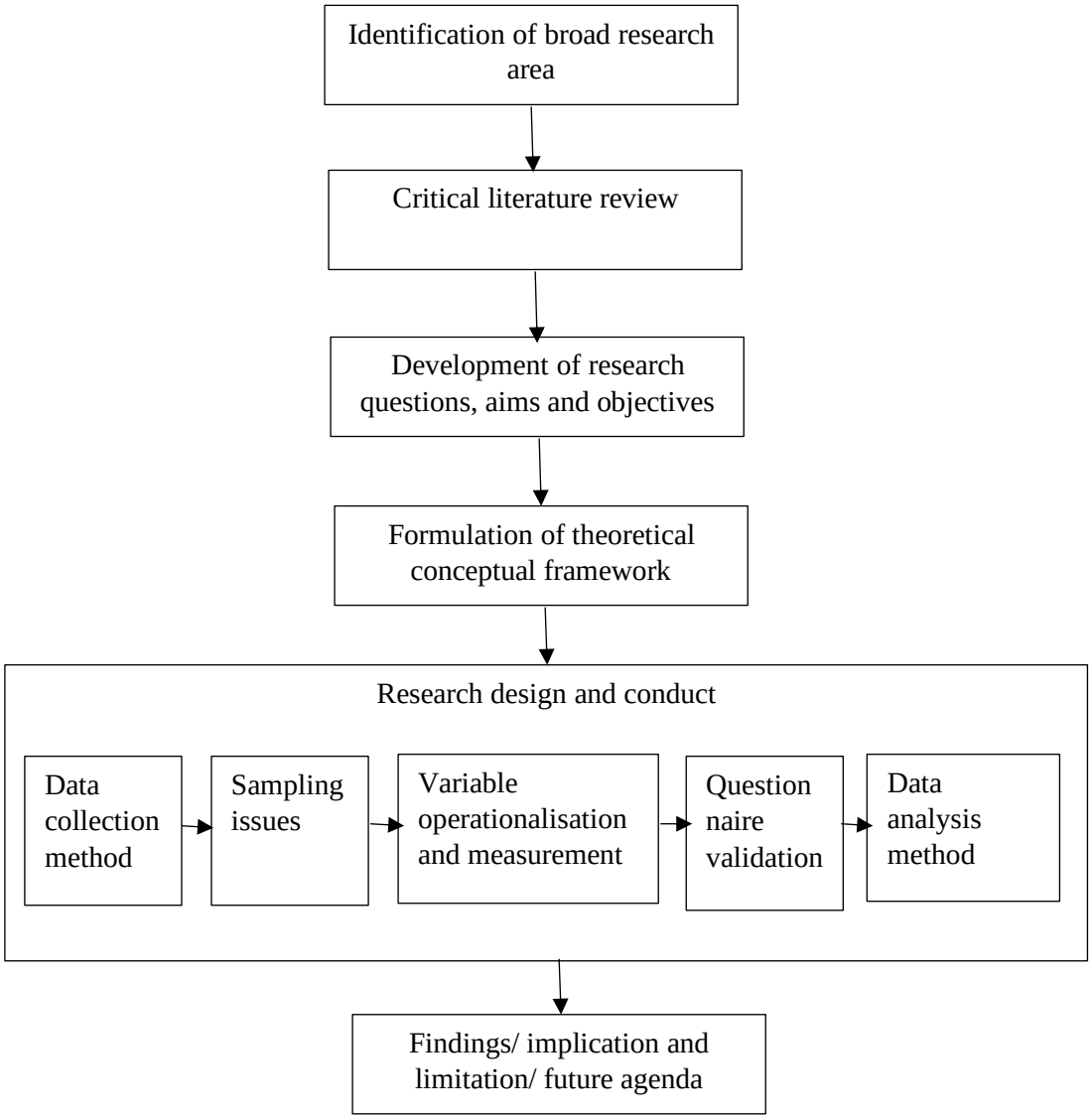
Underpinned by a positivist methodology of survey study, this research selects a quantitative research approach for data collection and analysis. This quantitative approach will provide robust foundations for testing and validating the constructed theories. Moreover, as predictions of future social patterns are allowed, the performance of a quantitative approach is further justified.

5.3.3.3. Research process

Although business research projects can take many forms and commit to various research paradigms and methodologies, they share a common or similar approach to inquiry (Kumar, 2014; Zikmund, 1994). Calling this inquiry approach the "research process", Kumar (2014) compared it to a journey in which a sequence of sites/attractions are visited before the final arrival at the destination of "report writing". In reality, research process is generally considered as a pattern of research stages that are highly interrelated and continually overlapping (Zikmund, 1994). According to several researchers (e.g. Cooper and Schindler, 2014; Kumar, 2014; Zikmund, 1994), the stages in a research process generally include: 1) clarification of research questions; 2) writing a research proposal; 3) conceptualising a research design; 4) designing for sampling; 5) constructing an instrument for data collection; 6) collecting and preparing data; 7) analysing and interpreting data; 8) reporting results.

This study categorised its research process into six major stages. First, it identified a broad research area. Second, a systematic literature review of the identified area was conducted. Third, following the recognition of research gaps within the existing literature, a number of research questions, along with research aims and objectives, were developed. Fourth, with the intention to answer the research questions and to achieve research aims and objectives, a theoretical conceptual framework was formulated. In stage five, a structure of the research design was presented for the verification of the conceptual framework. Following the outline of the conduct of the research, findings and research implications were offered in the final stage, along with suggestions for a future research agenda and a discussion over research limitations. Figure 5.2 below displays the research process for this study.

Figure 5. 2 Research process of this study.



While Figure 5.2 demonstrates the entire research process for this study, this methodological chapter mainly focuses on the fifth stage of research design and conduct. As the previous sections of this chapter already justified the employment of a positivist paradigm and a quantitative survey research methodology, it further analyses the data collection methods, sampling issues, variable operationalisation and data analysis methods of this study.

5.3.4. Data collection: methods, design and conduct

5.3.4.1. Data collection method: two stage questionnaire survey

Although a survey methodology could involve conducting in-depth interviews to collect qualitative data, this study selects a questionnaire survey as the main data collection method. Questionnaire survey is a method designed to collect quantitative data through the administration of survey instruments. According to Veal (2011), it has been one of the most widely performed data collection techniques within leisure and tourism research. A questionnaire survey has some advantages compared with in-depth interviews. First, it can handle large-volume samples, and the information elicited from the survey can be easily processed by statistical packages (Brunt, 1997; Bryman, 2012; Veal, 2011). Second, this method offers greater anonymity than in-depth interviews (Kumar, 2014). As a result, the likelihood of obtaining accurate information for sensitive questions is increased. Third, when the questionnaire is self-administered, this method is cheaper and less time-consuming than in-depth interviews (Collis and Hussey, 2014). However, many researchers (e.g. Bryman, 2012; Kumar 2014) also highlighted the disadvantages of the questionnaire survey method. For example, data collected by questionnaire survey has been reduced to its simplest form. As a result, the richness of data may not be achieved for a questionnaire survey investigation. To mitigate the limitations inherited by this method, researchers often employ qualitative data collection methods as a complement.

Following the selection of a questionnaire survey for data collection, it is then necessary to decide which particular type of survey is to be used. Depending on how a research instrument is completed, questionnaire surveys can be divided into two major forms—interviewer-completed and respondent-completed (Brunt 1997; Veal, 2011). In an interviewer-completed survey, an interviewer reads the questions on the survey instrument to a respondent and records their answers. Conversely, questions were read

and answered by respondents themselves in a self-completed survey. In general, compared with its respondent-completed counterpart, an interviewer-completed survey can achieve more accuracy and higher response rates. In addition, less effort is needed to design an interviewer-completed survey. This is because the interviewer can assist the respondent to understand the questions (Veal, 2011). Conversely, a respondent-completed survey enjoys the advantages of being more cost effective and taking less time to complete. At the same time, the anonymity of the respondent is guaranteed (Veal, 2011). Taking into account the advantages and disadvantages of both survey forms, this study chose to perform a self-completed questionnaire survey. Although this requires greater care the design of the survey instrument, the merits of a self-completed survey could help this study to balance its limited resource in terms of time and budget.

Furthermore, this study formulated a conceptual framework that includes the relationship between travel intention and actual behaviour. However, it is difficult to measure these two constructs at the same time. Therefore, the researcher followed the advice of Ajzen (2006) and adopted a two-stage survey design for the verification of the conceptual framework. The entire conceptual framework was then divided into two parts. Part I of the model involves the relationships between travel intention and its predictors. Part II of the model involves the relationship between travel intention and actual travel behaviour. Correspondingly, the first-stage survey aimed to collect data for Part I, whilst the second-stage survey, intended to be performed seven months after the first-stage survey, focused on collecting data for Part II (see Section 5.3.4.2. and Appendix 5.1 for the designs of these two waves of surveys).

5.3.4.2. Questionnaire design and variable operationalisation

Following the decision to take a two-stage questionnaire survey, it is essential to operationalise the variables and formulate an appropriate survey instrument. The theoretical conceptual framework of this study is based on an extended model of the TPB. In addition, the theoretical framework was composed of ten variables: attitudes, subjective norms, perceived behavioural control, positive anticipated emotions, negative anticipated emotions, past behaviours, travel motivations, use of ICT, intentions and actual behaviour. Although several researchers have already employed the TPB for various research purposes (e.g. psychology, health and medication), appropriate wording adaptions were required to enable the questionnaire to fit into the research background and meet the research objectives.

The survey instrument was formulated to address threefold purposes. First, to gain understanding of the decision-making processes of Chinese senior tourists. Second, to explore the travel motivations of Chinese seniors. Third, to investigate the influences of use of ICT and travel motivations in senior tourists' decision-making processes. The original work of the TPB (Ajzen and Fishbein, 1980; Ajzen, 1991; 2011) was consulted in the process of questionnaire development. Additionally, a review was also conducted regarding previous tourism research (e.g. Han, Hsu and Sheu, 2010; Hsu and Huang, 2012; Han, Jae and Hwang, 2016; Lam and Hsu, 2004; Meng and Han, 2016) that had utilised the TPB and its extended versions. While the analysis of these works shed light on the development of measurement scale, two types of measurement techniques, the semantic differential and Likert summated rating scale, were employed in this study.

Developed from the work of Osgood, Suci and Tannenbaum (1957), a semantic differential scale has been adapted for the measurement of attitude (Churchill, 1995;

Osgood, Suci and Tannenbaum, 1957). Its appropriateness and popularity among a number of tourism studies (e.g. Han, Hsu and Sheu, 2010; Hsu and Huang, 2012; Lam and Hsu, 2004) was the reasoning behind the decision to utilise this scale to measure the construct of attitude in the survey instrument. In addition, the Likert scale was employed to measure the remaining variables in the conceptual framework. The Likert scale is a frequently used summated rating technique that quantifies an individual's favourableness towards the object of interest (Cooper and Schindler, 2014; Zikmund, 1994). It starts by asking respondents about their degree of agreement or disagreement with one or multiple statements regarding a certain object (Churchill, 1995; Finn, Elliott-White and Walton, 2000). Then, the responses of each participant are added together to obtain a total score (Cooper and Schindler, 2014). In research practice, Finn, Elliot-White and Walton (2000) suggested that five- or seven-point scale were most frequently performed for tourism research. Nevertheless, this study selected the latter for variable operationalisation. This is because it is able to ease the statistical analysis process.

Since this study employed a two-stage survey for data collection (see Section 5.3.4.1), previous TPB or MGB studies that utilised a two-stage survey design were consulted. The majority of the studies (e.g. Gabbiadini et al, 2017; Lam and Hsu, 2004) measured predicting variables in the first wave of surveying and actual behaviour in the second survey. Therefore, the antecedents of travel behaviour, namely, attitudes, subjective norms, perceived behavioural control, anticipated emotions, past behaviours, travel motivations, use of ICT and travel intentions, were measured in the first stage of surveying of this study. Seven months after the first wave, participants who had left a valid contact number at the end of the first wave questionnaire were approached and asked for their self-reported travel behaviour.

Utilising the aforementioned measurement techniques (i.e. semantic differential; Likert scale), 52 measurement items for the nine predicting variables, along with 13 demographic profile questions, were developed for the Stage I survey. The measurement development process is demonstrated in the paragraphs below. In Stage II survey, only one question was included. This question was whether the respondents have participated in any leisure trips in the seven months since they completed the first stage survey.

Attitudes. An attitude is defined as a deposition to respond towards an object or behaviour with certain levels of favourableness or unfavourableness (Ajzen, 2011). While Ajzen (1991) stated that either bipolar or unipolar scoring could be used justifiably to measure this construct, many tourism researchers (e.g. Han, Hsu and Sheu, 2010; Hsu and Huang, 2012; Lam and Hsu, 2004) consulted the work of Ajzen and Fishbein (1980) and utilised the bipolar semantic differential scale to measure attitudes. This study adopted five pairs of semantic differential statements on a seven-point scale to measure the attitudes towards taking a leisure travel: "All things considered, I think participating in a leisure travel in the next seven months would be…" enjoyable—unenjoyable, favourable—unfavourable, fun—boring, pleasant—unpleasant and positive—negative.

Subjective norms. According to Ajzen (1991), a global measurement of subjective norms can be conducted by asking respondents to rate the extent to which their "important others" would approve or disapprove of certain behaviour. In this study, subjective norms towards travelling to a tourism destination was evaluated via a seven-point Likert scale (1=*strongly disagree*; 7=*strongly agree*). Three items were developed to measure the construct of subjective norms. First, "Most people who are important to me would approve my participation in leisure travel in the next seven months". Second, "Most people who are important to me have visited or are planning to participate in a leisure

travel". Third, "People whose opinions I value have spoken positively of leisure travel participation or provided positive feedback about their leisure trips".

Perceived behavioural control. Similar to attitudes and subjective norms, perceived behavioural control can be measured either by asking direct questions about an individual's capability to perform the behaviour (global measurement), or by asking indirect questions about an individual's control beliefs (belief-based measurement) (Ajzen, 2002). According to Ajzen (2002), the significant majority of previous studies chose the former for the measurement of this construct. In this study, this variable was assessed using a belief-based measurement method with a seven-point Likert scale (1=*strongly disagree*; 7=*strongly agree*). Six statements were developed for the measurement. First, "My health condition will allow me to participate in leisure travel in the next seven months". Second, "I feel I have enough budget to participate in leisure travel in the next seven months". Third, "I feel I have enough time to participate in leisure travel in the next seven months". Fourth, "If I am about to participate leisure travel in the next seven months, I am able to find out relevant travel information (e.g. tourism attractions; accommodations; transportations; weather; travel agencies) about my trip". Fifth, "If I am about to participate in leisure travel in the next seven months, I am able to find travel companions". Finally, "Apart from the aforementioned factors (i.e. health condition; budget; time; travel information; travel companions), there are no other factors outside my control that could prevent me from participating a leisure travel". In addition, since this construct is rather formative (i.e. the construct is a combination of indicators rather than a trait explaining the indicators) in its nature, a global measurement item was also added into the questionnaire: "Overall, I feel I have enough control to participate in a leisure travel in the next seven months".

Positive anticipated emotions. According to Perugini and Bagozzi (2001), positive anticipated emotions are the affected states associated with the successful performance of a behaviour. In order to measure this construct, the questionnaire asked the respondents, "If I succeed to achieve my goal [to participate in a leisure travel in the next seven months], I will feel…" Five items representing five positive emotions (i.e. excited, accomplished, proud, happy and satisfied) were adopted. A seven-point Likert scale was used to measure the intensity of each emotion (1=*not at all*; 7=*very much*).

Negative anticipated emotions. Unlike positive anticipated emotions, negative anticipated emotions are linked with the unsuccessful performance of a behaviour (Perugini and Bagozzi, 2001). Consequently, the questionnaire asked the respondents "If I do not succeed in achieving my goal [to participate in a leisure travel in the next seven months], I will feel…" for the operationalisation of this construct. Four items (i.e. uncomfortable, disappointed, sad and depressed) with a seven-point Likert scale (1=*not at all*; 7=*very much*), representing the strength of four negative emotions, were developed for this study.

Intentions. As mentioned previously, the construct of intention incorporates an individual's desire and willingness to travel to an outbound destination. According to Ajzen (1991), intention demonstrates how much an individual is willing to try a behaviour and how much effort they are planning to exercise in order to attempt the behaviour. Based on this definition, several researchers (e.g. Leone, Perugini and Ercolani, 2004; Song et al, 2012; Han and Yoon, 2015) specified three aspects of intention (i.e. planning, direction and effort), and developed measurement items to cover this construct. In addition, some researchers (e.g. Han, Hwang and Kim, 2015; Han and Yoon, 2015; Perugini and Bagozzi, 2001) argued that one more aspects, the existence and strength of

an individual's desire, should be taken into consideration. Consulting the works of previous research, this study adopted four statements to measure the construct of intention. A seven-point Likert scale was employed to quantify the four statements (1=*strongly disagree*; 7=*strongly agree*). The first statement is, "I have the demand to participate in leisure travel in the next seven months". Second, "I intend to participate in leisure travel in the next seven months". Third, "I will make effort to achieve this goal [to participate in leisure travel in the next seven months]". Fourth "I have already started planning a leisure travel for the next seven months".

Past behaviours. Perugini and Bagozzi (2001) identified two aspects (i.e. frequency and recency) of past behaviours that exert influence on an individual's behavioural intention. However, this study employed one statement "How often did you participate in leisure travel last year?" to measure this construct. A seven-point Likert scale (1=*never*; 7=*more than six times*) is employed to quantify the degree of approval for the statement.

Travel motivations. Travel motivation is an additional construct included into the TPB and MGB models in this study. After consulting previous motivational studies such as Hsu and Huang (2012), Lu et al. (2016) and Wang et al. (2017), the researcher developed 20 items for the measurement of this construct. The 20 items were as follows: "making friends", "staying with family", "visiting family members at another location", "escaping from daily routine", "reducing pressure", "reducing the feeling of loneliness", "improving personal well-being", "seeking knowledge about a different culture", "seeking knowledge about history and nature", "seeking quality food", "seeking a luxury or comfortable place to stay", "seeking shopping opportunities", "seeking entertainment", "realising one's dream to visit different places", "fulfilling one's life", "cultivating confidence or a sense of pride", "reminiscing old days", "seeking adventure", "seeking unique landscape and

scenery", and "satisfying curiosity over a place". Since this construct is rather formative (i.e. the construct is a combination of indicators rather than a trait explaining the indicators) in its nature, a global item was also added into the questionnaire: "Overall, my travel motivation for the next seven months is high". A seven-point Likert scale (1=*not at all,* 7=*very much*) was employed to quantify the degree of approval for the statements.

Use of ICT. In this study, use of ICT is an extra construct added into the models of TPB and MGB. Following the discussions regarding the definition and dimensions of ICT usage in Section 4.2.9.9, this study employs four measurement items with a seven-point Likert scale (1=*not at ll*; 7=*very much/very often*). These measurements are, first, "Before participating in leisure travel, how much do you like to use online tourism platforms, such as Ctrip, Tripadvisor and Qunar, for searching travel information and planning your itinerary?" Second, "during your leisure travel, how much do you like to use travel-related applications such as Baidu Map, Ctrip and Tripadvisor to find specific locations or services?" Third, "After travel, how much do you like to share your own travel experience and/or photos on your social media accounts or other online platforms?" Fourth, "Do you often see people around you posting their travel experience or photos online?" Since this construct is rather formative (i.e. the construct is a combination of indicators rather than a trait explaining the indicators) in its nature, a global item was included into the questionnaire: "Overall, I oftentimes use ICT for tourism purposes".

Also included in the Stage I survey is an inquiry of the demographics of the interviewees. The study asked the respondents for their gender, age, monthly income/monthly net available funds, marital status, education level, occupation, employment status and household structure. With the exception of occupation, all demographic inquiries are presented with multiple-choice questions. For instance, for the inquiry of the respondents'

employment status, five choices are given: full-time, part-time, retired, re-employed and unemployed. In another example, household structure is provided with four choices, specifically single, married with children, married without children and others.

Consulting the work of Wang et al. (2017), this study also included three general questions which were designed to investigate each respondent's use of ICT in the demographics section. The three questions investigate the daily time spent online, ICT devices used, and ICT devices used during vacations. All three questions are formulated as multiple-choice, and more than one choice is allowed for the last two questions.

While the variable operationalisation for Stage I survey is displayed above, Stage II survey used only one measurement question for ***Actual behaviour***. In order to operationalise this construct, Ajzen (2006) suggested that it is important to define it before constructing its measurement. Since a main objective of this study is to investigate Chinese senior citizens' leisure travel, the actual behaviour for this study is defined as "visiting a tourism destination for leisure purpose". In order to obtain data for actual behaviour, this study re-contacted the participants to find out how many times they have travelled in the seven months since they answered the first survey. Since this study adopts PLS-SEM for structural model analysis (see Section 5.3.5.1 for this analysis), this question was measured using a 7-point Likert scale item (so as to comply with the measurement of travel intention). An answer of "1" represents that the respondent has not participated in a leisure travel, whereas an answer of "7" represents that the respondent has travelled six times or more over the past seven months. Appendix 5.1 demonstrates a fully developed research instrument of Stage I and II surveys for this study. Appendix 5.2 displays the Chinese version of the survey instrument.

5.3.4.3. Questionnaire improvement: supervisors' feedback

Questionnaire surveys have not emerged as fully-fledged (Oppenheim, 1992). They often suffer from limitations caused by their subjectivity (Black, 1999). Therefore, it is important that researchers follow correct procedures in designing and administering the questionnaire (Fonseca, Lencastre and Tavares, 2010). In general, it is suggested that the survey instrument be pre-tested, or piloted, before large-scale distributions (Brace, 2008; Oppenheim, 1992; Veal, 2011). The piloting work aims to test the reliability and validity of the survey instrument (Brace, 2008; Fonseca, Lencastre and Tavares, 2010). In addition, a pilot test can also be used to identify errors in the questionnaire (e.g. wording) and estimate the response rate and interview time for a study (Brace, 2008; Veal, 2011).

A two-step procedure for questionnaire validation and improvement was undertaken. First, the first draft of the questionnaire was sent to the researcher's supervisors for feedback and approval. Following this, a pilot test was carried out to examine the reliability and validity of the survey instrument before its finalisation. In the first stage of questionnaire improvement, the researcher had two meetings with the supervisor team to identify drawbacks in the design of the questionnaire. Five improper issues were identified and are listed in Table 5.4 below.

Table 5. 4 Feedback and suggestions from the two meetings held with the supervisory team

No.	Question content	Question type	Suggestions for revision	Revision results
1	Demographic question: Individual monthly net available funds of respondents	Multiple choice question	--Revise the amount of monthly net available income in each choice. --Reduce the number of choices. --Delete the choice of "Refuse to answer".	--The number of choices were changed from five to four. (A. 3000 CNY or less; B. 3000 to 5999 CNY; C. 6000 to 8000 CNY; D. 8000 or above)
2	Demographic question: highest degree of education	Multiple choice question	--Reduce the number of choices.	--The number of choices were changed from five to four. (A. high school degree or under; B. associate degree; C. college bachelor's degree; C. Advanced college degree)
3	Demographic question: employment status	Multiple choice question	--Reduce the number of choices.	--The number of choices were changed from five to four. (A. full-time; B. part-time; C. retired; D. other)
4	Demographic question: household structure	Multiple choice question	--Revise the wording of the choices.	--The wording for two of the four choices were revised.
5	Decision-making question: past travel behaviour	Likert scale	--Revise the wording of measurement items.	--The wording of the question was revised so that it is presented in a more clear way.

5.3.4.4. Questionnaire improvement: pilot study

During the second stage of questionnaire validation, a pilot study was conducted to test the previously mentioned reliability and validity issues. The researcher employed a Chinese online survey platform, Wenjuanxing, or Questionnaire Star, to deliver the questionnaire to Chinese respondents. The reasons for utilising this particular platform are two-fold. First, Wenjuanxing is one of the most widely used online survey platforms in China. Second, Wenjuanxing has incorporated some of its functions (e.g. user-friendliness and respondent rewards) into Wechat, the most widely used social media platform in China, making it a convenient platform for interviewing Chinese citizens. A

snowball sampling was performed to recruit the respondents for the pilot survey. In the sampling process, the researcher first contacted a number of relatives and friends, and then asked them to deliver the survey instrument through Chinese online communication platforms (e.g. QQ; Wechat) to respondents who fit into the age criterion.

The pilot test was conducted between 7th and 14th of October 2017. During this period, 77 online questionnaire surveys, among which 67 contained valid responses, were distributed and completed. Among those who provided a valid response, 70.1% fell in the group of 55-59, 22.4% aged in between 60-64, 3.0% were between 65 and 69 and 4.5% were older than 70 years of age. While most of the respondents were in the younger category, they received a comparatively high income-level. The majority of the respondents (68%) had a monthly income of 3000-8000 CNY, followed by above 8000 CNY (16.4%) and less than 3000 CNY (14.9%).

5.3.4.5. Questionnaire improvement: reliability and validity

Reliability and validity are two critical issues that ensure the appropriateness of the development of measurement items in a study (Veal, 2011). According to Brotherton (2008), these two issues are also of significant importance for any research studies that adopt a quantitative approach. In order to establish the reliability and validity of the questionnaire, the researcher coded and entered the respondents' answers in relation to their decision-making process into a SPSS Statistics 23 database for reliability and validity analysis.

Reliability analysis

The reliability of a survey instrument refers to the absence of differences in its answers (Collis and Hussey, 2014). In other words, it is an indicator of the instrument's capability

to provide, “a consistent distribution of responses from the same survey universe” (Brace, 2008, p. 174). Previous researchers (e.g. Drost, 2011; Litwin, 1995) suggested that questionnaire reliability could be evaluated through various methods. Test-retest, alternative forms and internal consistency were among the most popular methods for the verification of questionnaire reliability (Drost, 2011; Litwin, 1995). Among them, the test-retest method administers a questionnaire to the same respondents twice and checks whether the respondents answer the questions in the same way. Similar yet not exactly the same, the method of alternative forms compares respondents’ answers to different versions of questionnaire surveys and selects the most coherent version from the comparison. Finally, the internal consistency method employs statistical methods to examine how well a set of items performs in measuring a particular behaviour or psychological characteristic.

The internal consistency method was chosen to evaluate the appropriateness of questionnaire measurement items in this study. To measure the internal consistency of a survey instrument, the Cronbach’s alpha method is commonly employed (Everitt and Skrondal, 2010). The Cronbach’s alpha has a value ranging from 0 to 1. This shows the degree of correlation of the measurement items. A value of zero demonstrates that the items are not correlated at all, while a value of one shows a perfect correlation among the items. Since it is nearly impossible to achieve complete correlation, researchers generally utilise the value of 0.7 as the threshold of acceptance for the reliability test (Field, 2014; Hair et al., 2010). A value higher than 0.8 would be an indicator of adequate or satisfactory reliability for measurement items (Sekaran and Bougie, 2013).

Using the IBM SPSS Statistics 23 software, a test of reliability was conducted based on the data collected from the pilot study. The results of the reliability test are shown in

Appendix 5.3. As can be seen from the results, the values of the Cronbach's alpha for the eight constructs involved (i.e. attitudes; subjective norms; perceived behavioural control; positive anticipated emotions; negative anticipated emotions; intentions; travel motivations; use of ICT) were all above 0.7, indicating acceptable levels of consistency of the measurement items in the survey instrument.

Validity analysis

After confirming the reliability of the survey instrument, it was then necessary to analyse the validity of the measurement items. The validity of a questionnaire is concerned with whether the questionnaire is measuring what the researchers want it to measure (Brace, 2008; Collins and Hussey, 2014). To confirm the validity of the data collection instrument, the questionnaire should be assessed in the piloting work for its capability to adequately address the objective of a study (Brace, 2008). Veal (2011) stated that it is usually difficult to confirm the validity of a quantitative tourism research. However, there are actually a few ways, such as face validity, content validity, criterion-related validity and construct validity, for a researcher to assess this issue. Among the aforementioned methods, face validity examines whether the development of measures reflects the content of relevant concepts (Bryman and Bell, 2011). Content validity evaluates whether measurement items provide adequate coverage to the constructs they represent (Saunders, Lewis and Thornhill, 2016). Criterion-related validity is associated with using measurement criteria that guarantee the predictive capability of the questionnaire (Howell, 2013). Finally, the construct validity examines the extent to which a set of measurement items actually measures the constructs that a researcher intends to measure (Litwin, 1995).

Three methods of validity verification were employed in this study: face validity, criterion-related validity and construct validity. In terms of face and criterion-related

validity, a thorough literature review was conducted to ensure that the development of the items was in accordance to relevant concepts. In addition, an attempt was made to improve the content, wording and layout of the survey instrument through previously mentioned practices, such as utilising the feedback of supervisors, university colleagues and respondents of the pilot study.

To guarantee the construct validity of the survey, the study followed Bryman and Bell's (2011) suggestions and examined whether the measurement items conformed to the theoretical expectations of the constructs. Specifically, the relationships between various items and the extent to which those items correlate to relevant theories were examined. The results of the construct validity analysis have been demonstrated in the corrected item-total correlation of the reliability test outcome. According to Everitt and Skrondal (2010), the corrected item-total correlations examine how homogeneous a set of items can be and are used as a criterion to confirm construct validity. The rule of thumb for this indicator is suggested to be above 0.3 (Everitt and Skrondal, 2010; Field, 2014). As can be seen from the reliability test result, all but one measurement items (attitude: positive—negative, -0.069) achieved a relatively high corrected item-total correlation ranging from between 0.501 and 0.910. As a result, the questionnaire was concluded to achieve good construct validity.

5.3.4.6. Questionnaire improvement: revision after the pilot test

According to the feedback and analysis results of the pilot test, two main revisions in terms of wording and question layout were made to improve the questionnaire. First, since some respondents expressed their concerns regarding the unnatural wording of certain questions that were caused by bad translation, the researcher revised the wording of those questions and double-checked with the respondents to ensure that they could understand

the questions better. Second, according to the results of the reliability and validity test, one measurement item failed the validity test (attitude: positive—negative, -0.069). Further examination of this item revealed that this item had been arranged into the layout of a reverse measurement item. Therefore, the researcher revised the item layout into the opposite direction (i.e. from "positive—negative" to "negative—positive").

5.3.4.7. Research ethics

Research ethics are an essential part of research activities. They are concerned with how research is conducted and how findings are drawn and reported (Collis and Hussey, 2014). Honesty, the rights of participants in research (e.g. human beings or animals) and the integrity of the eco-system are three main issues regarding ethical research behaviour (Veal, 2011). When including people (especially customers) and organisations into research, business and marketing researchers should be cautious about research ethics and pay attention to issues such as dignity, privacy, confidentiality, anonymity, informed consent and risk or harm to participants (Brace, 2008; Collis and Hussey, 2014; Veal, 2011). In general, it is suggested that researchers consider ethical issues before conducting fieldwork. This way, the aforementioned issues can be properly addressed (Creswell, 2013; Saunders, Lewis and Thornhill, 2016).

In this study, research ethics were considered via the following procedures. First, the design of the questionnaire included most elements of informed consent. For example, the introduction section of the questionnaire presents the name of the researcher, the organisation the researcher belongs to, the purposes of the research, the arrangement of the research (i.e. two-wave survey), the anticipated length of time for the survey and the assurance of confidentiality and anonymity. Second, although some aspects of informed consent were not included in the questionnaire, they were practiced when the researcher

approached to potential research participants. When potential respondents were approached, the researcher explained the purpose and arrangement of the survey as stated by the questionnaire. Following this, the researcher further informed them of the voluntary nature of the survey and enquired whether they were willing to participate. While potential respondents were also informed of their right to withdraw from the survey, the researcher indicated a withdrawal deadline after which data would be anonymised and thus, could not be excluded. Finally, the researcher adopted an honest and open attitude towards the enquiry made by the respondents. Enquiries such as how the data would be processed were explained to respondents on request.

In addition to the aforementioned ethical considerations, an ethical approval application was submitted to the Research Ethics Committee of Plymouth Business School at the University of Plymouth prior to the outset of the pilot survey (see Appendix 5.4). The approval of this application guaranteed that the research conformed to the research ethics policy of the University of Plymouth. The application was submitted in November 2017 and was approved in January 2018.

5.3.4.8. Sampling method

The majority of surveys use a form of sampling (Alreck and Settle, 1994; Black, 1999). Due to budget, time and access restraints, it is not usually possible to collect information from all individuals, organisations and entities as research subjects (Saunders, Lewis and Thornhill, 2016; Veal, 2011). As a result, a procedure known as sampling is used to select a subset of the larger population as a representative of the population. The purpose of sampling is to enable researchers to draw estimations and conclusions about the population as a whole (Cooper and Schindler, 2014; Kumar, 2014; Zikmund, 1994). Finn, Elliot-White and Walton (2000) indicated that a sample should be reliable and free from

bias. Thus, it is important for researchers to develop a sound sampling plan to minimise the sampling bias in the data collection process.

A “golden standard” that can be used to guarantee a representative sample is to adopt the principles of probability sampling (Neuman, 2011). Researchers such as Churchill (1995), Sekaran and Bougie (2013) and Veal (2011) defined ‘probability sampling’ as a variety of methods that help to assure all members of a population a known and nonzero chance of inclusion in a sample. According to Saunders, Lewis, and Thornhill (2016) and Sekaran and Bougie (2013), probability sampling techniques can be divided into four main categories: simple random sampling, systematic sampling, stratified sampling and cluster sampling. Among the identified techniques, simple random sampling offers the least sampling bias and the greatest generalisability (Sekaran and Bougie, 2013). This is because all sampling elements of a population have an equal chance of being selected (Veal, 2011). However, the implementation of this method could be difficult and costly, because it is hard to construct a sampling frame in this method. As an alternative design to the simple random sampling, complex random sampling methods can be employed to avoid the complexity in implementation (Sekaran and Bougie, 2013). An example of a complex random sampling method is systematic sampling, which selects every nth element from a list of the population (Cooper and Schindler, 2014). Stratified sampling, another probability sampling technique, is distinguished by its unique sampling procedures. With regards to stratified sampling, the population is first divided into a number of subgroups.Then, a simple random sample is independently selected from each subset (Churchill, 1995; Hill and Busby, 2002; Saunders, Lewis and Thornhill, 2016). Sharing a similar, but different process to stratified sampling, cluster sampling divides the population into more subgroups when compared with stratified sampling. Each subgroup will contain only a few members. A number of subgroups will then be randomly

selected and all the elements contained within the chosen groups are measured (Cooper and Schindler, 2014).

When the accuracy of the questionnaire survey is not of the utmost importance, non-probability sampling techniques can be considered. Non-probability sampling refers to sampling methods that do not guarantee the inclusion of probability population elements (Churchill, 1995). According to Cooper and Schindler (2014), non-probability methods are suitable for exploratory research or for situations where there is no requirement for generalisations.

Four non-probability sampling techniques are frequently used in social and business research, namely, convenience sampling, judgment sampling, quota sampling and snowball sampling (Churchill, 1995; Cooper and Schindler, 2014). Due to its unrestricted nature, convenience sampling is the least reliable form of non-probability sampling techniques (Cooper and Schindler, 2014). However, it enjoys the advantage of being a simple and efficient method for gathering basic information for research (Sekeran and Bougie, 2013). Judgment sampling, an alternative form of non-probability techniques, is a method where researchers utilise their experience and judgment to select samples (Kumar, 2014; Zikmund, 1994). In similarity to the procedures of stratified sampling, quota sampling ensures the adequate representation of certain groups within a sample. To achieve this, it first divides the population into several subsets. Then, a pre-determined proportion of elements will be selected from each subset on a convenience (Sekeran and Bougie, 2013). Finally, snowball sampling begins with making contact with one or two members of a population. Then, new members will be recommended by previous survey participants for sampling inclusion until the researcher reaches the saturation point for data collection (Saunders, Lewis and Thornhill, 2016).

To establish the most appropriate sampling method for this survey, the researcher must analyse and compare the advantages and disadvantages of the aforementioned techniques. According to Sekaran and Bougie (2013), a series of issues would need to be taken into account when making a decision about sampling methods. The first issue to be considered concerns whether representativeness of the sample is critical for the study. According to Veal (2011), the representativeness of a sample is important because an unrepresentative sample could lead to bias in the conclusions of the research. However, with regards to this study, representativeness is not the most important consideration for the data collection process. This is because the population targeted by this investigation is Chinese senior tourists. The large number of the senior population has made it impossible to ascertain an accurate figure. In addition, the nature of this study is exploratory, which means that it does not have rigorous requirements for representativeness. As a result, a non-probability sampling method should be selected for the data collection process.

A second issue to be considered concerns whether the information collected by the study is relevant to certain groups. In other words, it needs to be determined whether a sample could be drawn using the unrestricted convenience sampling method. For this study, the answer is a no because it is not possible to identify senior tourists, which is the target population for this study, from the wider population of senior citizens using the convenience sampling technique. Therefore, convenience sampling is excluded from this research study. Lastly, since this investigation did not specify an interest in collecting data from particular minority groups, it will employ the judgement sampling method to meet its research purposes.

5.3.4.9. Specific sampling issues: population, sampling frame and sampling venue

As previously stated in Chapter 3, senior citizens are taken to be those aged 55 and above. Therefore, the sampling population for this study was Chinese senior citizens who were aged 55 and above at the time of the survey. Given the large size of the target population and the strict security methods for household information, it is difficult to access to the statistics regarding the target population. Consequently, judgement sampling, which is a non-probability sampling method, is deemed to be more suitable than a probability sampling method for the purpose of this study.

Judgement sampling was therefore identified as being the most appropriate sampling method for this study. Furthermore, the researcher also decided to perform onsite surveys for data collection. Since Chinese seniors resided in locations across the whole of China, various representative research locations were chosen. A review (demonstrated in Table 3.6) of the previous research locations found that the cities of Shanghai, Chongqing, and Beijing, along with the provinces of Zhejiang, Hunan, Shaanxi, Jiangsu and Guangdong were among the most popular locations for Chinese researchers. Given both their popularity and the researcher's familiarity of the locations, the cities of Beijing, Nanjing (the capital of the Jiangsu province), Guangzhou (the capital of the Guangdong province), Shenzhen (a Tier 1 cities of China) and Nanning (the capital of Guangxi Zhuang Autonomous Region) were chosen as locations for data collection.

In terms of sampling venues for data collection, public areas, such as popular tourist attractions, city squares, universities and the departure lounges of coach stations and train stations were selected. The rationale for this selection is twofold. First, Chinese seniors are more likely to visit some of these venues (e.g. popular tourist attractions; city squares) for leisure. Second, some of the venues (e.g. coach stations and train stations) are

transportation hubs where senior tourists start or end their leisure journeys. Consequently, the sampling frame for the study included all seniors at those sampling venues at the time of the survey.

5.3.4.10. Main survey for the study

The Stage I survey of the study was conducted in the five selected cities (see Section 5.3.4.9) in China between February 26 and April 26 2018. The researcher, along with five research assistants, performed data collections at the sampling venues specified previously in Section 5.3.4.9. These included tourist attractions; city squares; universities and the departure lounges of coach stations and train stations.

Among the five research assistants who helped with data collection, four were based in different cities and were responsible only for the cities in which they lived. Nevertheless, they were trained for the questionnaire interview process. For instance, they were instructed to perform a next-to-pass sampling approach and was told to provide an introduction about themselves and the purpose of the survey. While the anonymity and confidentiality of the survey respondents were guaranteed, it was once a respondent confirmed that they would take the survey that the interviewer would distribute the questionnaire to them. In cases where a respondent could not understand a particular question, or when they had problems reading the questionnaire, the interviewer would offer assistance. At the end of the data collection process, a total of 720 questionnaires, among which 587 had usable responses, were distributed and then retrieved.

Conversely, the Stage II survey was conducted through telephone interviews held between October 10 and October 25 2018, which was roughly seven months after the first stage survey. A total of 112 respondents (19.1%) answered the second stage interview.

Amongst these 112 respondents, 23 of them (20.5%) did not participated in any leisure travel over the selected time period. In comparison, 28 respondents (25.0%) travelled twice during this period, whereas 27 (24.1%) and 25 (22.3%) travelled either once and three times respectively. Nine respondents (8%) travelled 4-5 times. None of the participants travelled six times or more (at least once per month). Information about the main survey process (Stage I and Stage II surveys) are demonstrated in Table 5.5 below. Table 5.6 below illustrates the number of leisure travels taken by the respondents based on the second stage survey.

Table 5. 5 Details of the main survey process.

Survey location	**Survey dates**	**No. of interviewers**	**No. of questionnaire distributions**	**No. of valid responses for Stage I survey**	**No. of valid responses for Stage II survey**
Beijing	Feb 26 – Mar 5	3	131	106	28
Nanjing	Mar 8 – Mar 15	3	95	68	9
Guangzhou	Mar 20 – Mar 26	3	138	118	30
Shenzhen	Mar 31 – Apr 12	4	197	168	27
Nanning	Apr 15 – Apr 26	2	159	127	18
Total			720	587	112

Table 5. 6 Number of leisure travels (actual behaviour) taken by the second-stage survey respondents

No. of leisure travel participations	**Frequency**	**Percent**
1 = Never	23	20.5
2 = Travelled once	27	24.1
3 = Travelled twice	28	25.0
4 = Travelled three times	25	22.3
5 = Travelled four times	6	5.4
6 = Travelled five times	3	2.7
7 = Travelled six times or more	0	0.0
Total	112	100.0

5.3.4.11. A normality analysis for structural equation modelling

Normality is a fundamental assumption for multivariate analysis and thus should be carefully examined before performing an SEM analysis (Hair et al., 2006; Kline, 2010). This study employed the partial least squares structural equation modelling (PLSSEM),

which does not have strict requirements for normality (Chin and Newsted, 1999; Hair et al., 2012). However, there is still a need to guarantee that the data achieves satisfactory level for normal distribution (Hair et al., 2014). This study followed the recommendations of Hair et al. (2014) and Kline (2010), and utilised skewness and kurtosis, which are two measures of data distribution, to evaluate normality. According to Hair et al. (2014) and Kline (2010), the evaluation criteria for these two measures are that the absolute value of skewness should be smaller three and that the absolute value of kurtosis should be smaller than ten. Any scores that are not within this range could imply potential issues with respect to the SEM analysis and the interpretation of results. Therefore, the researcher used the descriptive statistics function of SPSS to determine the skewness and kurtosis scores of the data. The result of the analysis is demonstrated in Appendix 5.5. As can be seen from the appendix, the skewness for the manifest variables (absolute value) ranged from 0.027 to 1.585, whereas the kurtosis for the variables (absolute value) ranged from 0.010 to 1.907. Since these two measures fell within the guidelines, it could be concluded that the normality requirements for data distribution have been met.

5.3.5. Data analysis: choices of techniques and two-stage analysis approach

5.3.5.1. Data analysis techniques

After performing the main survey, the researcher started the data analysis process. For this study, there were two research objectives directly associated with data analysis. First, Research Objective 4 aimed to assess the travel behaviours of Chinese seniors and their general and their travel-specific use of ICT. Second, Research Objective 5 aimed to evaluate the proposed structural model for the travel decision-making processes of Chinese seniors. These two research aims required different data processing methods and software programmes. Therefore, the researcher utilised IBM SPSS Statistics 23 to achieve the former objective and SmartPLS 3 to achieve the latter objective.

Statistical Package for the Social Sciences (SPSS) for demographics and travel behaviours

The Statistical Package for the Social Sciences (SPSS) is one of the oldest and most widely used statistical analysis software programmes (Bryman and Teevan, 2005; David and Sutton, 2004). It enables researchers to code variables, compile survey responses and analyse quantitative data. In this study, SPSS 23 was utilised to achieve Research Objective 4, which concerned the travel behaviours and ICT usage (both general and specific) of Chinese seniors. A number of analyses, such as descriptive statistics, principal component analysis (PCA), cluster analysis, independent t-test, and one-way ANOVA, were performed using this software programme. Table 5.6 below demonstrates the details of tests conducted to achieve research objective 4.

Table 5. 7 Summary of SPSS tests.

Test	**Purpose**	**Related questions**
Descriptive statistics	To scrutinise the data and obtain the demographic profiles of the respondents.	All questions
PCA	To obtain the main motivational dimensions of Chinese' senior tourists.	Question 17
Cluster analysis	To segment the Chinese senior tourist market on the basis of the PCA results.	Question 17
Independent t-test	To compare the differences in travel motivation and ICT usage between male and female seniors.	Question 1, 8, 17 and 21
One-way ANOVA test	To compare the differences in travel motivation and ICT usage among seniors with different demographic backgrounds (except for gender).	Question 2, 3, 4, 6, 7, 8, 17 and 21

SmartPLS3 for structural equation modelling

Research Objective 5 intended to evaluate Chinese seniors' travel decision-making process. To achieve this objective, the researcher used a structural equation modelling (SEM) approach to analyse the data. As a second-generation technique for multivariate analysis (Fornell, 1987), SEM enables researchers to evaluate models with latent

variables and to analyse multiple independent-dependent relationships simultaneously (Gefen, Straub and Boudreau, 2000; Tabachnick and Fidell, 2007). According to researchers such as Hair et al. (2011; 2014) and Henseler, Ringle and Sinkovics (2009), there are two fundamental types of SEM techniques: covariance-based SEM (CB-SEM) and variance-based partial least squares SEM (PLS-SEM). Whereas these two techniques are considered complementary to each other (Henseler, Ringle and Sinkovics, 2009), they also contain a number of distinctive features, such as underlying mechanisms and relational software programmes (Chen, 2015; Hair, Ringle and Sarstedt, 2011; Henseler, Ringle and Sinkovics, 2009). In order to examine a structural model, CB-SEM would create an estimated covariance matrix and attempt to minimise the discrepancy between the estimated covariance matrix and the sample covariance matrix (Hair et al., 2012; Monecke and Leisch, 2012). PLS-SEM, on the contrary, employs the ordinary least squares techniques and tries to maximise the explained variances of endogenous variables (Gefen, Straub and Boudreau, 2000). A more detailed comparison of the two SEM approaches is presented in Table 5.8 below, which draws on previous research (see for examples: Hair et al., 2014; Henseler, Ringle and Sinkovics, 2009).

Table 5. 8 A feature comparison between CB-SEM and PLS-SEM.

	CB-SEM	**PLS-SEM**
Objective of SEM	Theory testing (parameter-oriented).	Theory building (prediction- and explanation-oriented).
Treatment of constructs	Considers latent variables as common factors explaining the covariations of its manifest variables.	Utilises proxies—weighted composites of indicators—to represent latent variables.
Employment of formative construct	Supports only models with reflective latent variables.	Supports models with either reflective or formative latent variables.
Assumptions	Parametric (normal distribution must be assumed).	Non-parametric (doesn't follow distributional assumptions).
Model complexity	Supports models with small or medium complexity	Supports models with high complexity.
Sample size	Minimal recommended sample size: 200 – 800.	Minimal recommended sample size: 30 – 100.

Adapted from Hair et al. (2014) and Henseler, Ringle and Sinkovics (2009).

This study adopted the PLS-SEM approach to test the structural model. The rationale for selecting this method was twofold. First, the SEM employed by this study contained both reflective and formative measurement models (see "perceived behavioural control", "travel motivations" and "use of ICT" in Section 5.3.4.2). Since formative measurement models were included, the PLS-SEM approach, was preferred as it supports the evaluation of formative constructs (see Table 5.8). Second, this study is one of the first attempts to investigate the role of ICT usage the travel decision-making process of senior tourists. Thus, the structural and measurement models used in the study are relatively new. Therefore, the advantages of PLSSEM in theory building and relationship prediction made it more appropriate than CB-SEM for the data analysis. Given both of these reasons, the PLS-SEM method is justified as being the most appropriate option for this study.

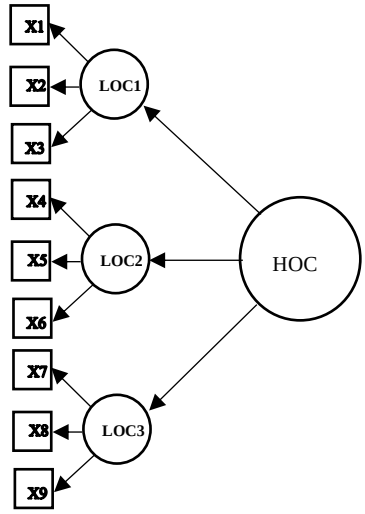
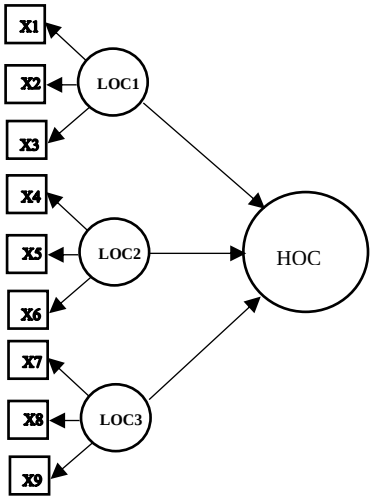
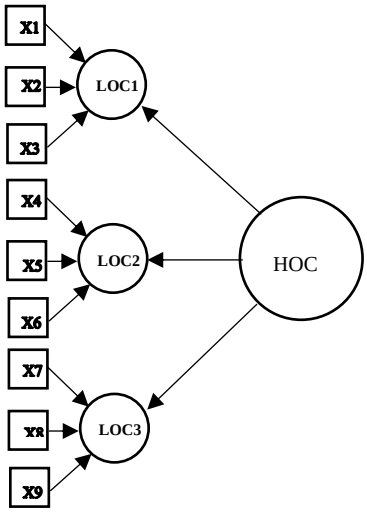
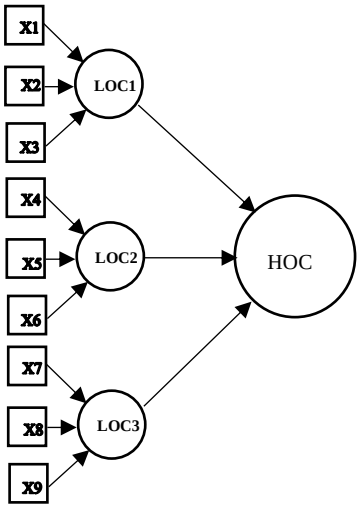
5.3.5.2. Two-stage analysis approach

While this study employed a two-stage approach for data collection (see Section 5.3.4.1 and Section 5.3.4.2), it also took a similar two-stage approach for the data analysis process. This was due to the research objectives and the specific concerns for the structural model. When developing the structural model, the researcher included the construct of travel motivations (TM), which contained 20 manifest variables. As a large formative construct, TM's complexity could have caused some potential issues, such as insignificant outer weights and small outer loadings for the measurement model evaluation. Therefore, in order to avoid deleting too many manifest variables from this construct and to retain most of its data, the researcher created a reflective-formative hierarchical component model (HCM) for the construct of TM.

Composed by lower-order components (LOC) and higher-order components (HOC), HCM (also known as hierarchical latent variable model or higher order construct)

represents a higher level of abstraction for a number of multidimensional constructs (Becker, Klein and Wetzels, 2012; Hair et al., 2017). Based on their LOC measurement models and the relationship between LOCs and HOCs, HCMs can be categorised into four different types: reflective-reflective HCM, reflective-formative HCM, formative-reflective HCM and formative-formative HCM (Becker, Klein and Wetzels, 2012; Cheah et al., 2019; Hair et al., 2017, 2018). In a reflective-reflective HCM (or Type I HCM), both the LOCs and HOC(s) are reflectively measured. In other words, the relationships between manifest variables and LOCs, and between LOCs and HOCs are all reflective. In addition, in a reflective-formative HCM (or Type II HCM) the LOCs are reflectively measured, whereas the relationship between LOCs and HOC(s) are formative. Similarly, a formative-reflective HCM (or Type III HCM) has formatively-measured LOCs and reflectively-measured HOC(s). Finally, a formative-formative HCM (or Type IV HCM) has LOCs and HOC(s) that are both formatively-measured. Table 5.9 below demonstrates the four types of HCMs.

Table 5. 9 Four types of hierarchical component models.

Type I: reflective-reflective	Type II: reflective-formative
	
Type III: formative-reflective	**Type IV: formative-formative**
	

Adapted from: Becker, Klein and Wetzels, (2012) and Hair et al. (2018)

In this study, the reflective-formative HCM was chosen for the construct of TM. Given this, it was then vital to determine the LOCs for this HCM. To do so, the researcher introduced a two-stage approach for data analysis. In the first stage of the analysis, the researcher employed a principal component analysis (PCA) to extract the relevant dimensions from the 20 indicators. Then, in the second analysis stage, the researcher utilised these extracted components, as well as their corresponding indicators, to form the LOCs for the formatively-measured HCM of travel motivations. The PCA analysis, or

the first-stage analysis, is presented in Chapter 6. Then, the SEM analysis, or the second-stage analysis which employed the results of the first-stage PCA analysis, is presented in Chapter 7.

5.4. Conclusion

This chapter presents the development of the research methodology. During this process, the researcher ascertained that a positivist research paradigm and a quantitative research approach were most suitable for the research purpose. Based on this, the researcher specified relational research methods to be used for this study. The questionnaire survey method was chosen for data collection and a survey instrument was developed using a series of procedures, such as expert reviews and a pilot test, which was performed to guarantee its reliability and validity. The data analysis methods were also determined. Two statistical data analysis programmes were selected for the data analysis process: SPSS and SmartPLS3. In addition, the researcher introduced a two-stage survey approach to combine the results of the SPSS and SmartPLS3 analysis. This way, the researcher could utilise the results from the SPSS principal component analysis to create relevant constructs for SmartPLS3 SEM analysis.

With regards to research conduct, the researcher employed a non-probability judgement sampling technique and conducted the primary data collection in five Chinese cities during Feb – Apr, 2018. A sample of 587 valid responses were collected during this process. In the next two chapters (i.e. Chapter 6 and Chapter 7), the researcher will use the aforementioned analysis programmes and techniques to process the dataset.

Chapter 6: Travel motivations and ICT usage of Chinese senior tourists

6.1. Introduction

Chapter 5 analysed the methodology of this study, whereas the next two chapters are devoted to discussing the key findings of the questionnaire survey. As the first stage of the data analysis process, this chapter focuses on the questions related to the social demographics and general travel behaviours of Chinese seniors. In doing so, Research Objective 3, concerning the travel behaviours and general and travel-specific use of ICT of Chinese seniors, will be addressed. The principal component analysis (PCA) results from this chapter will also be included in Chapter 7 for SEM analysis.

With respect to the structure of this chapter, it begins with an analysis of the socio-demographics of the survey respondents to assess the representativeness of the sample. An examination of the travel motivations of Chinese seniors will then follow, which will categorise travel motivations into four dimensions and divide the market into four segments. Finally, the use of ICT of Chinese seniors will also be analysed. While the Chi-square test was employed to compare the daily amount of time that was spent online amongst various demographic groups, a frequency analysis was also performed to analyse the use of ICT of seniors for the purpose of leisure travel.

6.2. Demographic profiles

With respect to the socio-demographic aspects (Table 6.1 below) of this study, gender, age, level of income, level of education, employment status and household structure of the respondents were analysed. With regards to gender, the result indicated a higher proportion of female respondents for the survey. Among the 587 usable responses, 244 (41.6%) were male respondents and 343 (58.4%) were female, demonstrating a gender

ratio of 1:1.41. Although this ratio was different from the general male-female ratio of 1.05:1 in China (National Bureau of Statistics of China, 2011), it still partially reflected the male-female ratio of the senior population. According to Shen and Jiang (2013), the average life expectancy of Chinese women is longer than Chinese men. Consequently, the male-female gender ratio would change after people reach a certain age. For instance, the male-female ratio for those aged between 50 and 54 was 1.05:1 in Beijing in 2010. However, that figure dropped to 1:1.02 for Beijing residents aged between 55 and 59 (National Bureau of Statistics of China, 2011). Therefore, even though the gender ratio of the survey respondents did not accord with that of the country as a whole, it is understandable that the female respondents outnumbered the male respondents. What is more, Ran and Yang (2009) also reported that female seniors could hold more cooperative attitudes towards surveys. This might also explain the higher proportion of female respondents for this survey.

Table 6. 1 Demographic profiles of the survey respondents (n=587)

Demographic factors	Characteristics	Frequency	Percentage
Gender	Male	244	41.6
	Female	343	58.4
	Total	587	100.0
Age	55-59	338	57.6
	60-64	149	25.4
	65-69	62	10.6
	>70	37	6.3
	Missing	1	0.2
	Total	587	100.0
Monthly net income	<3000	100	17.0
	3000-5999	251	42.8
	6000-8000	128	21.8
	>8000	107	18.2
	Missing	1	0.2
	Total	587	100.0
Education	High school or under	152	25.9
	Associate degree	207	35.3
	Bachelor's degree	208	35.4
	Master's degree or above	19	3.2
	Missing	1	0.2
	Total	587	100.0
Employment status	Full time	179	30.5
	Part time	33	5.6
	Retired	347	59.1
	Others	28	4.8
	Total	587	100.0
Household structure	Single	41	7.0
	Married couple without children	267	45.5
	Married couple with children	251	42.8
	Others	28	4.8
	Total	587	100.0

With regards to the size of age cohorts, those aged between 55 and 59 comprised the largest cohort (338, 57.6%) for this study. The 60-64 age group was the second largest (149, 25.4%), followed by those aged 65-69 (62, 10.6%) and those older than 70 (37, 6.3%). This can be compared with the Sixth National Population Census (National Bureau of Statistics of China, 2011), which showed that the cohort aged 55-59 was the largest at 32.5%, followed by those older than 70 (29.9%), the 60-64 age range (22.3%) and the 65-69 age range (15.1%). Although the data collected by this study did not precisely mirror the overall population, this is understandable since the travel desires of seniors is inclined

to decrease as their age increases (Zimmer, Brayley and Searle, 1995). This is especially the case for those aged 65 and over (Fleischer and Pizam, 2002). In addition, Fleischer and Pizam (2002) found that seniors at a younger age cohorts were more likely to demand leisure travel since they typically have less travel constraints. This might also explain the higher proportion of young-olds (i.e. those aged between 55 and 60) in the dataset of this study.

In terms of the level of income, most of the respondents (251, 42.8%) had a monthly income level of 3000-5999 Chinese Yuan (CNY), followed by 6000-8000 (128, 21.8%), more than 8000 (107, 18.2%) and finally, less than 3000 (100, 17.0%). According to the National Bureau of Statistics of China (2018), the average income level for Chinese urban citizens was 36,396 CNY per year, or 3,033 CNY per month. 83.0% of the respondents of this study had a monthly income level of more than 3,000 CNY. This data is therefore relatively in line with the average income level in urban areas of China.

Regarding the level of education, more than half (61.2%) of the survey respondents held an associate degree or under, whereas only 38.6% held a bachelor's degree or above. The smaller proportion of bachelor's degree holders could be explained by the unique circumstances faced by Chinese baby boomers (those born between 1950s and 1970s). According to Li, Zhou and Fan (2014), the Chinese government did not expand enrolment in the higher education system until late 1990s. This suggests that, for many of those born between 1950s and 1960s, the competition for higher education places was intense and only a small number of them were given the opportunity to study at higher education institutes.

With respect to employment status, more than half of the respondents (347, 59.1%) were retired, whereas 30.5% (179) of the respondents worked full-time. Thirty-three (5.6%) respondents worked part-time and 28 (4.8%) respondents had other types of employment. The relatively high proportion of full-time employees could be explained by the current official retirement ages of China, which holds that female employees working at management level can retire by the age of 55, whereas their male counterparts can retire by the age of 60. Finally, in terms of household structure, the majority of the respondents fell into the categories of "married couple living independently" (267, 45.5%) and "married couple living with children" (251, 42.8%). Forty-one (7.0%) respondents lived alone, whilst 28 (4.8%) had a different type of household structure, such as being widowed and living with children.

6.3. Travel behaviour and preference

In addition to demographic profiles, a different frequency analysis was conducted for the travel behaviours and preferences of the sample (Table 6.2 below). The analysis was based on three questions "would you choose to travel abroad", "how many times have you taken a leisure trip in the past five years" and "how many times have you taken a leisure trip in last year". Amongst the 587 respondents, the majority had travelled within the past 12 months (557, 94.1%). In addition, more than half of the respondents (337, 57.4%) indicated that they had an intention to travel abroad.

Table 6. 2 Travel behaviour and preference of the survey respondents (n=587)

	Characteristics	Frequency	Percentage
Intention to travel in the next seven months	Strongly disagree	46	7.8
	Disagree	26	4.4
	Slightly disagree	39	6.6
	Neutral	90	15.3
	Slightly agree	88	15.0
	Agree	98	16.7
	Strongly agree	200	34.1
Intention to travel abroad	Yes	337	57.4
	No	250	42.6
Travel behaviours within the past 12 months	Never	30	5.1
	1-3 times	223	38.0
	4-6 times	178	30.3
	>6 times	156	26.6

Compared with the findings of other Chinese researchers (e.g. Hou, Yin and Chen, 2005, Tan, 2015; Tang, 2001), who found that the percentage of annual travellers ranged from around 60% to 79%, the finding of this study demonstrated a higher percentage figure (94.1%). This suggests that the travel demand of Chinese seniors remains strong. In terms of international travel behaviours, China Tourism Academy (2017) reported a recent decrease in the growth of the Chinese outbound tourism market. Nevertheless, the results of this analysis suggest that there was still a demand for overseas travel from Chinese senior tourists, since more than 50% of the survey respondents reported an outbound travel intention.

6.4. Travel motivations and a market segmentation of Chinese senior tourists

6.4.1. Descriptive statistics of the travel motivations of Chinese seniors

Travel motivations formed another important aspect of this study. In order to analyse the travel motivations of the survey respondents, the researcher first undertook a frequency analysis. In this study, travel motivation is a construct that comprised of 20 measurement items. In addition, a 7-point Likert scale was applied to measure this construct (as mentioned previously in Chapter 5). The results of the frequency analysis, which includes

the mean scores and standard deviations of the 20 items, are displayed in Table 6.3 below. In comparison, Table 6.4 further illustrates the most and least popular travel motivations from previous studies.

Table 6. 3 The descriptive statistics of the 20 motivational items

Motivational items	**N**	**Mean**	**Std. Deviation**
X8 Seeking knowledge about a different culture	587	5.46	1.698
X15 Fulfilling one's life	587	5.26	1.78
X9 Seeking knowledge about history and nature	587	5.25	1.728
X7 Improving personal well-being	587	5.14	1.844
X19 Seeking unique landscape and scenery	587	5.12	1.84
X20 Satisfying my curiosity over a place	587	5.09	1.817
X14 Realising one's dream to travel	587	4.84	1.915
X16 Cultivating confidence or a sense of pride	587	4.82	1.949
X2 Staying with family	587	4.81	1.919
X10 Seeking quality food	587	4.74	1.93
X3 Visiting friends or family members at another location	587	4.1	2.016
X5 Reducing pressure	587	4.1	2.116
X13 Seeking entertainment	587	4.02	1.96
X17 Reminiscing old days	587	3.94	1.991
X11 Seeking a luxury or comfortable place to stay	587	3.9	2.003
X6 Reducing the feeling of loneliness	587	3.77	2.11
X18 Seeking adventure	587	3.43	2.016
X4 Escaping from daily routine	587	3.42	2.081
X1 Making new friends	587	3.4	2.05
X12 Seeking shopping opportunities	587	3.38	1.961

Judging from the mean score of each item, the analysis identified that "seeking knowledge about a different culture", "fulfilling one's life", "seeking knowledge about history and nature" and "improving personal well-being" were the top four travel motivations for the survey respondents. Compared with other research studies (Table 6.4 below), this result shared some similarities in terms of the popularity ranking of Chinese seniors' travel motivations. For example, seeking knowledge about nature and history (Bao, 2009; Cao, 2011; Gao, 2010; Wang et al., 2017) and fulfilling one's dream to travel (Wang et al., 2017) were among the top travel motivations for this study and some previous studies. Some differences also emerged. For example, motivations in relation to seeking relaxation, such as reducing pressure and seeking entertainment ranked relatively low in

this study. However, Bao (2009), Cao (2011), Chen, Q (2013), Gao (2010), and Huang and Tsai (2008) identified them as part of the leading motivations for this market. These differences in motivations suggest that seniors could have developed additional interests in seeking novel experiences and pursuing personal goals.

Table 6. 4 Most and least popular motivations in previous research

Articles	**Most popular motivations**	**Least popular motivations**
Bao (2009)	Sightseeing and enjoy my life; visit places that I want to visit; broad my horizon.	Revisit a place; meet people and socialisation; be able to do nothing
Cao (2011)	Sightseeing; get relaxation; seek knowledge; experience history and culture.	Pilgrimage; seek adventure; seek excitement; visit friends and relatives.
Chen, Q (2013)	Get relaxation; sightseeing and entertainment; stay with family; visit relatives.	Business travel; pilgrimage; tell friends about the trip; recognise myself.
Gao (2010)	Sightseeing; get relaxation; seek knowledge; visit famous attractions.	Pilgrimage; seek adventure; seek excitement; escape daily routine.
Huang and Tsai (2003)	Get rest and relaxation; meet people and socialisation; spend time with family; visit new places.	Engage in physical activities; tell friends about the trip; engage in special activities.
Jang and Wu (2006)	See things that I don't normally see; visit some places that I want to visit; see how other people live.	Visit places where my family is from; visit fashionable places; be able to do nothing.
Wang et al. (2017)	Knowledge; know about culture; know about nature; make dreams come true; peacefulness; life fulfilment.	Seek adventure; improve skills; nostalgia; curiosity; recognise myself.

In terms of the least popular travel motivations, Table 6.3 indicates that "seeking shopping opportunities", "making new friends", "escaping from daily routine" and "seeking adventure" were the four least popular travel motivations for this study. This result is partly similar to the findings within the research literature, since seeking adventure (Cao, 2011; Gao, 2010; Wang et al., 2017), making new friends (Bao, 2009) and escaping from daily routine (Gao, 2010) were among the least attractive motivations in the aforementioned studies. These similarities implied that Chinese seniors could hold conservative attitudes towards socialisation, relaxation and excitement when travelling. In other words, Chinese seniors could be more family-oriented and frugal than their

younger counterparts, thus they would be less likely to participate in travel activities that they perceive to be 'risky'.

6.4.2. A principal component analysis of Chinese seniors' travel motivation

The frequency analysis (Table 6.3) also showed relatively large scores in the standard deviations of the 20 motivational items, which suggests that the travel motivations of seniors were more heterogeneous than homogeneous. This helps to justify the use of this construct as a segmenting factor for the Chinese senior tourist market. This study employed this construct as part of the factor-cluster analysis for market segmentation. A principal component analysis was first utilised to reduce the 20 motivational items to fewer dimensions. Then, a cluster analysis was performed to create relational segments in the next section.

A factor analysis is a statistical method that examines the correlations among a wide range of variables and that interprets those variables through their common factors (Collis and Hussey, 2014; Hair et al., 1995). This technique has two main purposes, namely, variable structural summarisation and data reduction (Field, 2014; Hair et al., 1995; Liu, 2015a). Due to the effectiveness of this approach, it has been widely employed in applied research (Brown, 2015). It is also favoured by segmentation studies in tourism marketing (e.g. Baloglu and Shoemaker, 2001; Galloway, 2002; Huang and Tsai, 2003; Lee et al., 2006; Petrick, 2005).

The researcher of this study followed the procedures set out by Liu (2015a). This is demonstrated in Table 6.5 below. First, the appropriateness of performing a factor analysis was justified by calculating a correlation matrix of the motivational items. Second, after confirming the suitability of a factor analysis, relevant factors were

extracted from the motivational variables. Third, after extracting the relevant factors, attempts were made to interpret the factor solution. While factor rotations were performed to uncover the composition of each component, relevant labels were assigned to those component to explain their meanings. Finally, the factor scores of the factor solution were calculated for each individual cases in the dataset for the subsequent cluster analysis.

Table 6. 5 Steps involved in the factor analysis

Step 1	Examining the appropriateness of the employment of factor analysis. Result: factor analysis is suitable for the current research study.
Step 2	Extracting relevant factors from the selected set of variables. Result: four components, with eigenvalues larger than one, were extracted by using the extraction method of principal component analysis.
Step 3	Interpreting the extracted factor solution. Result: varimax rotation was performed, and the composition of each factor was uncovered.
Step 4	Calculating factor scores Result: factor scores/means were calculated by computing the means of the extracted factors.

Source: Liu (2015a) and Hair et al. (1995).

6.4.2.1. Step 1: Examining the appropriateness of factor analysis

The SPSS software provided three approaches for evaluating the suitability of a factor analysis, namely, anti-image correlation matrix, the Bartlett test of sphericity, and the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy (Hair et al., 1995; Liu, 2015a). Among those three evaluation methods, anti-image correlation matrix shows the negative value of the partial correlation, whereas a relatively large value of partial correlation can suggest the inappropriateness of using factor analysis (Hair et al., 1995; Liu, 2015a). In addition, the Bartlett test of sphericity measures the entire correlation matrix with the null hypothesis that no significant correlations exist among the variables (Hair et al., 1995). If this null hypothesis cannot be rejected, then the use of factor analysis cannot be justified (Liu, 2015a). Finally, the KMO method puts forward a series of guidelines to determine the suitability of factor analysis. A KMO value of 0.50 or higher

indicates that factor analysis can be accepted for the analysis (Field, 2014; Hair et al., 1995).

Following the aforementioned procedures of the appropriateness analysis, the researcher of this study first analysed the correlation matrix with 190 correlation relationships, which is demonstrated in Table 6.6 below. As it can be seen from the table, each of the 190 correlations were significant at 0.001 level. In addition, only 13 (6.8%) correlation had a value less than the 0.3 level. According to Pallant (2013) and Hair et al. (1995), to guarantee the suitability of a factor analysis, some correlations of 0.3 and above are needed. Since most of the correlations in the matrix had a value larger than 0.3, the table provided a solid basis for continuing the appropriateness analysis.

Table 6.6 also illustrates the measures for the significance of the correlation matrix and the factorability of the variable items. As it can be seen at the bottom of the table, the Bartlett test of sphericity found a value of 8139.265 and a significance level of 0.0001. This result indicates that significant correlations exist among the 20 variable items. Finally, the Kaiser-Meyer-Olkin measure of sampling adequacy ascertained a value of 0.935, suggesting a marvellous condition for the employment of factor analysis for this study (Hair et al. 1995; Liu, 2015a).

Table 6. 6 Correlation matrix of the 20 travel motivational items.

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
X1 Making new friends	1.00	.386 .00*	.484 .00*	.464 .00*	.502 .00*	.545 .00*	.424 .00*	.373 .00*	.368 .00*	.432 .00*	.467 .00*	.493 .00*	.494 .00*	.450 .00*	.321 .00*	.479 .00*	.535 .00*	.488 .00*	.377 .00*	.332 .00*
X2 Staying with family		1.00	.562 .00*	.249 .00*	.322 .00*	.259 .00*	.478 .00*	.453 .00*	.408 .00*	.366 .00*	.310 .00*	.284 .00*	.339 .00*	.340 .00*	.390 .00*	.354 .00*	.316 .00*	.274 .00*	.352 .00*	.306 .00*
X3 Visiting friends or family members at another location			1.00	.354 .00*	.358 .00*	.353 .00*	.359 .00*	.308 .00*	.331 .00*	.352 .00*	.373 .00*	.422 .00*	.430 .00*	.305 .00*	.285 .00*	.353 .00*	.473 .00*	.394 .00*	.293 .00*	.308 .00*
X4 Escaping from daily routine				1.00	.606 .00*	.595 .00*	.317 .00*	.266 .00*	.264 .00*	.311 .00*	.392 .00*	.467 .00*	.374 .00*	.329 .00*	.241 .00*	.326 .00*	.365 .00*	.492 .00*	.245 .00*	.284 .00*
X5 Reducing pressure					1.00	.702 .00*	.529 .00*	.451 .00*	.430 .00*	.485 .00*	.443 .00*	.490 .00*	.497 .00*	.489 .00*	.397 .00*	.504 .00*	.461 .00*	.499 .00*	.298 .00*	.424 .00*
X6 Reducing the feeling of loneliness						1.00	.452 .00*	.339 .00*	.347 .00*	.389 .00*	.418 .00*	.490 .00*	.444 .00*	.426 .00*	.297 .00*	.436 .00*	.488 .00*	.516 .00*	.303 .00*	.326 .00*
X7 Improving personal well-being							1.00	.689 .00*	.641 .00*	.526 .00*	.408 .00*	.302 .00*	.461 .00*	.581 .00*	.670 .00*	.643 .00*	.341 .00*	.358 .00*	.588 .00*	.571 .00*
X8 Seeking knowledge about a different culture								1.00	.773 .00*	.625 .00*	.391 .00*	.294 .00*	.393 .00*	.512 .00*	.657 .00*	.537 .00*	.306 .00*	.338 .00*	.610 .00*	.581 .00*
X9 Seeking knowledge about history and nature									1.00	.653 .00*	.427 .00*	.315 .00*	.417 .00*	.550 .00*	.660 .00*	.568 .00*	.395 .00*	.413 .00*	.594 .00*	.607 .00*
X10 Seeking quality food										1.00	.623 .00*	.497 .00*	.558 .00*	.475 .00*	.516 .00*	.549 .00*	.410 .00*	.502 .00*	.615 .00*	.556 .00*
X11 Seeking a luxury or comfortable place to stay											1.00	.722 .00*	.636 .00*	.451 .00*	.369 .00*	.498 .00*	.445 .00*	.537 .00*	.444 .00*	.426 .00*
X12 Seeking shopping opportunities												1.00	.679 .00*	.403 .00*	.282 .00*	.383 .00*	.456 .00*	.572 .00*	.336 .00*	.353 .00*
X13 Seeking entertainment													1.00	.553 .00*	.477 .00*	.542 .00*	.465 .00*	.547 .00*	.482 .00*	.521 .00*
X14 Realising one's dream to visit different places														1.00	.668 .00*	.675 .00*	.460 .00*	.453 .00*	.577 .00*	.611 .00*
X15 Fulfilling one's life															1.00	.733 .00*	.417 .00*	.362 .00*	.645 .00*	.650 .00*

Variables	X1	X2	X3	X4	X5	X6	X7	X8	X9	X10	X11	X12	X13	X14	X15	X16	X17	X18	X19	X20
X16 Cultivating confidence or a sense of pride																1.00	.536 .00*	.473 .00*	.581 .00*	.580 .00*
X17 Reminiscing old days																	1.00	.516 .00*	.395 .00*	.371 .00*
X18 Seeking adventure																		1.00	.465 .00*	.459 .00*
X19 Seeking unique landscape and scenery																			1.00	.813 .00*
X20 Satisfying my curiosity over a place																				1.00
* Correlation is significant at the 0.001 level (one-tailed) Bartlett's test of sphericity: 8139.265; df: 190; significance: 0.000 Kaiser-Meyer-Olkin measure of sampling adequacy: 0.935																				

6.4.2.2. Step 2: Extracting factors

The second step involved the decision-making of the use of factor extraction methods. Factor analysis encompasses two main techniques for factor extraction: the principal component analysis (PCA) and the common factor analysis (Collis and Hussey, 2014; Hair et al., 1995; Liu, 2015a). These two methods differ based on their underlying mathematical procedures (Field, 2014). PCA is concerned with explaining the maximum amount of total variance, which is composed of common variance, specific variance and error variance. In comparison, common factor analysis seeks only to explain the maximum amount of common variance (Field, 2014; Hair et al., 1995). However, despite all of the differences in their mathematical procedures, these two techniques can generate solutions with no significant difference, provided that there is a large set of variables and high communalities (Field, 2014; Liu, 2015a). Since this study has a relatively large set of travel motivation items (n=20), and no low communalities (<0.4) were spotted from the data, it can be inferred that both the PCA and common factor analysis would generate results with no significant difference.

The researcher therefore used PCA, which is the default extraction method in SPSS, to extract relevant components from the 20 motivational items. Table 6.7 below illustrates the results of the PCA analysis. Two criteria, the eigenvalue criterion and the scree plot criterion, are commonly practised during a PCA analysis (Hair et al., 1995; Liu, 2015a; Pallant, 2013). Between these two methods, the rule of eigenvalue suggests that any factors or components with an eigenvalue larger than one are significant (Hair et al., 1995; Liu, 2015a). In contrast, the scree plot test plots each factor and its eigenvalue on a rectangular coordinate system (with the number of factors on the horizontal axis and eigenvalue on the vertical axis) to determine the point at which the plot has a direction change (Liu, 2015a; Pallant, 2013). With regards

to this study, the method of eigenvalue was employed to extract relevant components. As shown in Table 6.7, four components, highlighted in grey, had an eigenvalue larger than one. Therefore, these components were extracted from the analysis results. Table 6.7 also shows that the four extracted components accounted for 69.8% of the total variance.

Table 6. 7 The extraction solution of the PCA results.

Components	Eigenvalues		
	Total	% of Variance	Cumulative
1	9.712	48.558	48.558
2	2.066	10.331	58.889
3	1.123	5.614	64.503
4	1.050	5.251	69.754
5	0.822	4.110	73.864
6	0.635	3.176	77.040
7	0.605	3.024	80.064
8	0.480	2.399	82.463
9	0.432	2.161	84.624
10	0.403	2.013	86.638
11	0.382	1.908	88.546
12	0.364	1.821	90.367
13	0.329	1.644	92.011
14	0.318	1.589	93.600
15	0.265	1.324	94.924
16	0.251	1.255	96.180
17	0.223	1.115	97.295
18	0.200	1.000	98.295
19	0.186	0.928	99.223
20	0.155	0.777	100.000

6.4.2.3. Step 3: interpreting the factor solution through factor rotation

Third, after extracting the relevant factors from the set of variables, it is necessary to rotate the extracted factors to allow for interpretation. There are two rotation methods for factor analysis: orthogonal rotation and oblique rotation (Child, 1990; Field, 2014; Liu, 2015a). The difference between these two methods is that orthogonal rotation keeps each factor independent, while oblique rotation allows those factors to be related (Field, 2014). In this study, the Varimax orthogonal method was chosen, because it is,

"a good general approach that simplifies the interpretation of factors" (Field, 2014, p. 681).

Table 6.8 below displays the rotated factor loadings and communalities of each variable. Factor loadings are the correlations between each variable item and the extracted component factors (Field, 2014; Hair et al., 1995; Liu, 2015a). These are displayed in between the second and fifth columns of Table 6.8. By showing the highest loading of each variable, Table 6.8 also helps to identify the composition of each extracted components, which are highlighted in grey. A further examination ascertained that all loadings were above the rule of thumb of 0.3 suggested by Hair et al. (1995) and Liu (2015a). This indicates that the minimum significance requirement was met.

The communalities of the variables, or the squared sum of their factor loadings, are demonstrated to the far right of the table. Communality indicates the amount of variance within a variable that can be explained by the factor solution (Hair et al., 1995; Liu, 2015a). Although there are no definite criteria on how large the communality should be, Hair et al. (2014) suggested that it would be better to only include variables with communalities larger than 0.50. As Table 6.7 shows, all of the variables had a communality very close to or larger than 0.50. Consequently, the variable set satisfied Hair et al.'s (2014) standard, meaning that none of the variables should be removed.

Table 6. 8 Rotated component factor matrix

Variables	Components				Communalities
	1	2	3	4	
X1 Making new friends	0.208	0.364	0.513	0.393	0.593
X2 Staying with family	0.324	0.076	0.095	0.814	0.783
X3 Visiting friends or family members at another location	0.119	0.314	0.219	0.776	0.763
X4 Escaping from daily routine	0.090	0.230	0.775	0.112	0.674
X5 Reducing pressure	0.349	0.215	0.758	0.103	0.752
X6 Reducing the feeling of loneliness	0.201	0.225	0.824	0.101	0.780
X7 Improving personal well-being	0.744	0.043	0.315	0.273	0.729
X8 Seeking knowledge about a different culture	0.789	0.071	0.156	0.259	0.720
X9 Seeking knowledge about history and nature	0.778	0.160	0.144	0.223	0.701
X10 Seeking quality food	0.588	0.510	0.129	0.161	0.648
X11 Seeking a luxury or comfortable place to stay	0.284	0.783	0.183	0.138	0.747
X12 Seeking shopping opportunities	0.102	0.806	0.318	0.161	0.787
X13 Seeking entertainment	0.360	0.705	0.230	0.159	0.705
X14 Realising one's dream to visit different places	0.664	0.288	0.307	0.058	0.622
X15 Fulfilling one's life	0.839	0.132	0.133	0.126	0.754
X16 Cultivating confidence or a sense of pride	0.683	0.286	0.308	0.127	0.660
X17 Reminiscing old days	0.257	0.416	0.408	0.229	0.495
X18 Seeking adventure	0.267	0.592	0.427	0.088	0.611
X19 Seeking unique landscape and scenery	0.776	0.327	0.068	0.059	0.718
X20 Satisfying my curiosity over a place	0.769	0.325	0.111	0.007	0.709
					Total
Sum of squares (eigenvalue)	5.624	3.356	3.094	1.876	13.95
Percentage of trace*	28.120	16.781	15.471	9.382	69.754
Trace=20.001(sum of eigenvalue)					

After ascertaining the component composition and confirming the validity of the factor solution, the researcher assigned labels and meanings to the four extracted components. According to Hair et al. (1995), naming the extracted factors is a process related to the subjective opinions of the researcher, and therefore does not follow a scientific procedure. In this study, the researcher consulted the item with the highest loading in a component for the naming purpose. Table 6.9 below illustrates the label assigned to each extracted factor.

As it can be seen from Table 6.9, Component 1 is composed by nine variables: X15, X8, X9, X19, X20, X7, X16, X14, and X19. Among these variables, X15 (fulfilling one's life) had the highest loading of 0.839. In comparison, variables related to seeking novelty, such as learning about different culture (X8) and satisfying curiosity (X20), also had relatively high loadings. Therefore, this component was named 'dream fulfilling and novelty seeking'. Component 2 is a composite of five variables: X12, X11, X13, X18 and X17. The variable X12 (seeking shopping opportunities) had the highest loading. The variables in this component largely related to adventurous and hedonistic activities, such as shopping, luxury accommodations, and adventure. Therefore, this component was named 'adventure and pleasure seeking'. Component 3 is comprised of four variables: X6, X4, X5 and X1, with X6 (reducing the feelings of loneliness) having the highest loading. A quick examination of the composing variables found that this component is associated more highly with seeking relaxation and escaping daily routines. Therefore, this component was entitled 'relaxation seeking'. Finally, Component 4 is composed of only two variables: staying with families (X2) and visiting friends and relatives (X3). Therefore, this component was called being 'family-oriented'.

6.4.2.4. Step 4: calculating factor scores

The fourth step of the analysis was to calculate factor scores for subsequent analysis. Factor scores are composite variables created for each observation on the extracted factors. They can be utilised as representatives of the factor solution (DiStefano, Zhu and Mindrila, 2009; Hair et al., 1995). According to Distefano, Zhu and Mindrila (2009), methods to compute factor scores could be categorised as non-refined and refined ones. Whereas non-refined methods include various sum scores techniques (e.g. sum scores by factor; standardised sum scores), the refined methods encompass

three major techniques: regression scores, Bartlett scores and Anderson-Rubin scores (Distefano, Zhu and Mindrila, 2009). This analysis employed the non-refined method of sum score by factors (i.e. computing means), which sums the raw scores of all composing variables of a factor/component. Although this method suffers from several disadvantages such as giving equal weight to items, it is simple to compute. Moreover, the result of this method can be averaged to reflect the scale of the items, which makes subsequent analysis less difficult and easier to be interpreted. Consequently, four new variables reflecting the means of the contributing factors were created for all of the observation cases (n=587). These variables were named after the four extracted factors: ‘dream fulfilling and novelty seeking’, ‘adventure and pleasure seeking’, ‘relaxation seeking’, and ‘family-oriented behaviours’. All were utilised in the subsequent cluster analysis.

6.4.2.5. Discussion

The researcher also compared the factor solution ascertained by this study with those of Hsu and Kang (2009), Lu et al. (2016) and Wang et al. (2017). A range of similarities and differences were found. In terms of the similarities, all four of the studies discovered that both seeking pleasure and escaping from daily routines were significant motivations for Chinese seniors to travel. In addition, this study also shared a similar finding with Hsu and Kang (2009) that improving family bonds was a key motivation for this market segment. In terms of differences, Lu et al. (2016) and Wang et al. (2017) ascertained two different motivations of self-fulfilment and knowledge seeking. However, these two motivations are merged in this study. What is more, the aforementioned two studies also identified socialising as a key motivation factor for the Chinese senior market, but this factor is not considered in this study.

The reasons behind these differences may be threefold. First, there is a difference in the research locations of the four studies. Lu et al. (2016) and Wang et al. (2017) conducted their survey in Eastern China and Hsu and Kang (2009) collected data from both Northern and Eastern China. In contrast, this study collected data from five cities across the Central North, East and South of China. Consequently, difference in the level of development of the cities and the profiles of local residents may have influenced the results of the analyses. Second, the four studies were conducted at different times. While both Lu et al. (2016) and Wang et al. (2017) undertook their survey in 2012, Hsu and Kang (2009) collected their data between 2007 and 2008. These difference may have impacted the results of the factor analysis. Third, the survey instruments of the four studies were slightly different, which could also help to explain the variations in the results.

Table 6. 9 Label assignment for the extracted components

Variables and component labels	Factor loadings	Eigenvalue	Variance-explained	Cronbach's alpha
Component 1: dream fulfilling and novelty seeking		9.712	48.558	0.934
X15 Fulfilling one's life	0.839			
X8 Seeking knowledge about a different culture	0.789			
X9 Seeking knowledge about history and nature	0.778			
X19 Seeking unique landscape and scenery	0.776			
X20 Satisfying my curiosity over a place	0.769			
X7 Improving personal well-being	0.744			
X16 Cultivating confidence or a sense of pride	0.683			
X14 Realising one's dream to visit different places	0.664			
X10 Seeking quality food	0.588			
Component 2: adventure and pleasure seeking		2.066	10.331	0.863
X12 Seeking shopping opportunities	0.806			
X11 Seeking a luxury or comfortable place to stay	0.783			
X13 Seeking entertainment	0.705			
X18 Seeking adventure	0.592			
X17 Reminiscing old days	0.416			
Component 3: relaxation seeking		1.123	5.614	0.841
X6 Reducing the feeling of loneliness	0.824			
X4 Escaping from daily routine	0.775			
X5 Reducing pressure	0.758			
X1 Making new friends	0.513			
Component 4: family-oriented behaviours		1.050	5.251	0.719
X2 Staying with family	0.814			
X3 Visiting friends or family members at another location	0.776			
Total variance explained (%)			69.754	
Cronbach's alpha of all items				0.943

6.4.3. A cluster analysis for segmenting Chinese senior tourists

Cluster analysis represents a group of multivariate analysis techniques that aim to categorise observed cases into homogeneous groups (Hair et al., 1995; Liu, 2015b; Malhotra, Nunan and Birks, 2017). This group of techniques has been used in a large number of disciplines, such as psychology, biology, engineering, and sociology (Hair et al., 1995). In relation to tourism research, this approach has been utilised by several researchers (e.g. Cha, McCleary and Uysal, 2005; Hsu and Kang, 2009; Kau and Lim, 2005; Park and Yoon, 2009) to segment relevant tourist markets. Two techniques from this group of statistical methods, hierarchical clustering and iterative clustering, are the most popular with researchers (Liu, 2015b). Whereas the former involves the building of a treelike hierarchy, the latter does not involve such a procedure (Hair et al., 1995). This study utilised a combination of hierarchical and iterative clustering techniques to divide Chinese senior tourists into heterogeneous market segments. Table 6.10 below demonstrates the four steps involved in this analysis.

Table 6. 10 The four steps involved in the cluster analysis

Step 1	Examining the appropriateness of the cluster analysis. Result: The means of the extracted factors did not have a serious multi-collinearity issue, and therefore, were suitable for cluster analysis.
Step 2	Performing hierarchical clustering to identify potential cluster solutions. Result: solutions of two, three and four clusters were selected for the subsequent iterative clustering analysis.
Step 3	Performing iterative clustering to compare and select the most suitable solution. Result: K-means clustering and ANOVA tests were performed, and the four-cluster solution was determined to be the most suitable cluster solution for this study.
Step 4	Comparing and naming clusters. Result: Chi-square tests were performed to detect the associations between demographics and cluster memberships. A comparison among factor score means was also conducted. Based on the results of the comparison, the four groups were named as follows: ‘family-oriented travellers (Cluster 1, n=198)’, ‘travel enthusiasts (Cluster 2, n=150)’, ‘uninterested individuals (Cluster 3, n=123)’ and ‘cautious dream-fulfillers (Cluster 4, n=116)’.

6.3.3.1. Step 1: examining the appropriateness of cluster analysis

According to Hair et al. (1995), two assumptions must be satisfied before a cluster analysis should be conducted. First, the sample needs to be representative of the entire population. Second, the impact of multi-collinearity on the analysis should be minimal. Although the first assumption could not be formally tested, the sample was considered as being representative because this study employed a sufficiently large judgement sampling procedure. The second assumption was examined using the variance inflation factor (VIF) as suggested by Hair et al. (1995). Table 6.11 below displays the results of the multi-collinearity analyses. As it can be seen from the table, every VIF was below the cut-off point of 3 as suggested by Hair et al. (1995), thus implying the impact of multi-collinearity is minimal. Therefore, the two assumptions were satisfied, which means it was appropriate to perform a cluster analysis on the basis of the means of the four factors.

Table 6. 11 Results of the multicollinearity analysis

Items	VIF_1 (Dream fulfilling as dependent)	VIF_2 (Adventure/ pleasure seeking as dependent)	VIF_3 (Relaxation seeking as dependent)	VIF_4 (Family-oriented as dependent)
Dream fulfilling	-	1.596	1.437	1.822
Adventure/ pleasure seeking	2.153	-	1.858	2.448
Relaxation seeking	2.057	1.425	-	2.064
Family-oriented	1.404	1.627	1.908	-

6.3.3.2. Step 2: performing hierarchical clustering to identify potential cluster solutions

In the second step of the cluster analysis, a hierarchical clustering analysis was performed to determine the possible cluster solutions for the iterative clustering technique used in the second step. According to Hair et al. (1995), there are two types of hierarchical techniques: agglomerative and divisive methods. With respect to agglomerative methods, each observation is regarded as its own cluster at the beginning of the analysis (Hair et

al., 1995; Liu, 2015b). Then, the two closest cluster are merged to create a new cluster until all of the cases have been included to form one large cluster (Liu, 2015b). In comparison, the divisive method works in the opposite way to the agglomerative method (Hair et al., 1995; Liu, 2015b). It starts with one large cluster that includes all the observations, then, in the following steps, the observed cases with the greatest dissimilarities are divided into smaller cluster (Hair et al., 1995). By the end of the divisive method, each case becomes a cluster itself.

Five methods are usually used to create agglomerative clusters (Hair et al., 1995; Malhotra, Nunan and Birks, 2017). These methods include the following: (1) the single linkage method, (2) the complete linkage method, (3) the average linkage method, (4) Ward's method and (5) the centroid method. Although the five methods are based on different mechanisms, Ward's method has been particularly popular within the field of sociology (Liu, 2015b). This analysis employed an agglomerative approach using the Ward's method to conduct the initial analysis of the data. An assessment of the change of agglomeration coefficient, as suggested by Hair et al. (1995), was performed to identify possible solutions. Table 6.12 below illustrates the change of agglomeration coefficient from a one-cluster solution to ten-cluster solution. As it can be seen from the table, the agglomeration coefficient shows large changes from changing four clusters to three (3236.4-2689.0=547.4), three clusters to two (3850.4-3236.4=614.0) and two clusters to one (6288.3-3850.4=2437.9). Therefore, three solutions, namely, four clusters, three clusters and two clusters, were selected for the subsequent iterative clustering analysis.

Table 6. 12 The changes in the agglomeration coefficient for solutions of 1-10 clusters

Number of clusters	Agglomeration coefficient	Percentage change in coefficient to the next level
10	1514.2	6.9
9	1618.4	7.7
8	1743.8	7.3
7	1871.7	11.8
6	2093.0	13.9
5	2384.2	12.8
4	2689.0	20.4
3	3236.4	19.0
2	3850.4	63.3
1	6288.3	—

6.4.3.2. Step 3: performing K-mean clustering to compare and select cluster solutions

The iterative clustering technique is frequently referred to as K-means clustering (Hair et al., 1995; Liu, 2015b; Malhotra, Nunan and Birks, 2017). The procedure of conducting a K-means clustering typically involves the following steps: (1) selecting cluster seeds as initial centres, and (2) putting forward a pre-specified threshold distance and using it to assign all observations to their corresponding clusters (Hair et al., 1995). If the initial clustering centres of the data are unknown, then researchers can employ statistical packages, such as SPSS, to estimate initial centres from the data (Liu, 2015b).

Three methods were typically used to develop relevant iterative clusters: sequential threshold, parallel threshold and optimisation. This analysis employed the QUICK CLUSTER function, a parallel threshold method in SPSS, to select initial seed centres and iterate ten times for each solution. Following the procedures adopted by Beh and Bruyere (2007) and Lee, Lee and Wicks (2004), the researcher performed one-way ANOVA tests to scrutinise the contributions of the four motivational components in relation to the different cluster solutions. The ANOVA tests examined the null hypothesis, which is that, for each of the three cluster solutions, the means of each motivational component amongst the different clusters did not differ. The four motivational

components were utilised as dependent variables and the cluster number of each respondent, which can be obtained during the performance of K-means clustering, were utilised as the independent variables. Table 6.13 below shows the results of the ANOVA tests for the three cluster solutions.

Table 6. 13 Significance of each component's contribution to the three cluster solutions.

Component	**Two clusters**	**Three clusters**	**Four clusters**
Component 1	F value: 376.884 p-value: 0.000	F value: 386.327 p-value: 0.000	F value: 225.803 p-value: 0.000
Component 2	F value: 587.005 p-value: 0.000	F value: 424.586 p-value: 0.000	F value: 298.885 p-value: 0.000
Component 3	F value: 512.562 p-value: 0.000	F value: 473.027 p-value: 0.000	F value: 516.624 p-value: 0.000
Component 4	F value: 335.304 p-value: 0.000	F value: 259.496 p-value: 0.000	F value: 335.832 p-value: 0.000

As Table 6.13 shows, all of the three cluster solutions demonstrated statistically significant differences in the contribution of the four components. The four-cluster solution was considered as being the most suitable solution, although the two-cluster solution had a more substantial change in its agglomerative coefficient. This decision was made because the cluster sizes of the four-cluster solution, displayed in Table 6.14 below, were more evenly distributed than those of the other two solutions. In addition, given the considerable size of the Chinese senior population, it is unlikely that only two clusters could represent this tourist market. Since the four-cluster solution balanced the heterogeneity of the market and the manageability of the number of clusters, it was preferable to the alternative two solutions.

Table 6. 14 The number of cases in each cluster for the three solutions.

Two cluster solution		**Three cluster solution**		**Four cluster solution**	
Cluster number	Number of cases	Cluster number	Number of cases	Cluster number	Number of cases
Cluster 1	325	Cluster 1	285	Cluster 1	198
Cluster 2	262	Cluster 2	172	Cluster 2	150
		Cluster 3	130	Cluster 3	123
				Cluster 4	116
Total	587		587		587

6.4.3.3. Step 4: Comparing and naming the four clusters

After determining the most suitable cluster solution for the sample, the researcher analysed and compared their characteristics. Chi-square tests were employed first to examine the demographic profiles of the four clusters. To clarify, the Chi-square test is a non-parametric technique that detects associations between two categorical variables (Field, 2014; Malhotra, Nunan and Birks, 2017). The null hypotheses of the tests held that there were no associations between the demographics (i.e. gender, age, monthly net income, education, employment status and household structure) and the cluster membership of the sample. Table 6.15 below illustrates the results of the Chi-square tests. As it can be seen, all but one (i.e. age and cluster membership) of the relationships had a p-value larger than the 0.05 alpha level. With regards to the relationships that had a p-value larger than 0.05, the researcher failed to reject the null hypothesis and failed to accept the alternative hypothesis. However, with respect to the relationship between age and cluster membership, the researcher was able to reject the null hypothesis and accept the alternative hypothesis, with 95% of confidence, that there was an association between the age of a respondent and their cluster membership. A brief examination of the age structures confirmed the test results and found that Cluster 1 and Cluster 2 included more young-olds compared with the other two clusters. In addition, Cluster 3 and Cluster 4 shared similar age structures, where older seniors accounted for larger percentages.

Table 6. 15 The Chi-square test results for the association between demographics and cluster memberships

	Cluster 1 (n=198)	**Cluster 2 (n=150)**	**Cluster 3 (n=123)**	**Cluster 4 (n=116)**	**Chi-square test of independence**
Gender (%)					χ^2=1.529
Male	86 (43.4)	56 (37.3)	52 (42.3)	50 (43.1)	*p*=0.676
Female	112 (56.6)	94 (62.7)	71 (57.7)	66 (56.9)	*df*=3
					n=587
Age (%)					
55-59	111 (56.1)	101 (67.3)	64 (52.0)	62 (53.4)	χ^2=20.645
60-64	60 (30.3)	29 (19.3)	31 (25.2)	29 (25.0)	*p*=0.014
65-69	18 (9.1)	16 (10.7)	14 (11.4)	14 (12.1)	*df*=9
>70	9 (4.5)	3 (2.0)	14 (11.4)	11 (9.5)	*n*=586
Monthly net income (%)					χ^2=7.118
<3000	33 (16.7)	29 (19.3)	20 (16.3)	18 (15.5)	*p*=0.625
3000-5999	78 (39.4)	63 (42.0)	62 (50.4)	48 (41.4)	*df*=9
6000-8000	47 (23.7)	31 (20.7)	25 (20.3)	25 (21.6)	*n*=586
>8000	40 (20.2)	27 (18.0)	15 (12.2)	25 (21.6)	
Education (%)					
High school or under	47 (23.7)	39 (26.0)	38 (30.9)	28 (24.1)	χ^2=11.453
Associate degree	69 (34.8)	61 (40.7)	44 (35.8)	33 (28.4)	*p*=0.246
Bachelor's degree	72 (36.4)	47 (31.3)	38 (30.9)	51 (41.5)	*df*=9
Master's degree or above	10 (5.1)	3 (2.0)	3 (2.4)	3 (2.6)	*n*=586
Employment status (%)					χ^2=8.879
Full time	66 (33.3)	52 (34.7)	33 (26.8)	28 (24.1)	*p*=0.449
Part time	13 (6.6)	10 (6.7)	4 (3.3)	6 (5.2)	*df*=9
Retired	108 (54.5)	83 (55.3)	80 (65.0)	76 (65.5)	*n*=586
Others	11 (5.6)	5 (3.3)	6 (4.9)	6 (5.2)	
Household structure (%)					χ^2=6.577
Single	19 (9.6)	10 (6.7)	9 (7.3)	3 (2.6)	*p*=0.681
Married couple without children	87 (43.9)	65 (43.3)	59 (48.0)	56 (48.3)	*df*=9
Married couple with children	82 (41.4)	68 (45.3)	49 (39.8)	52 (44.8)	*n*=587
Others	10 (5.1)	7 (4.7)	6 (4.9)	5 (4.3)	

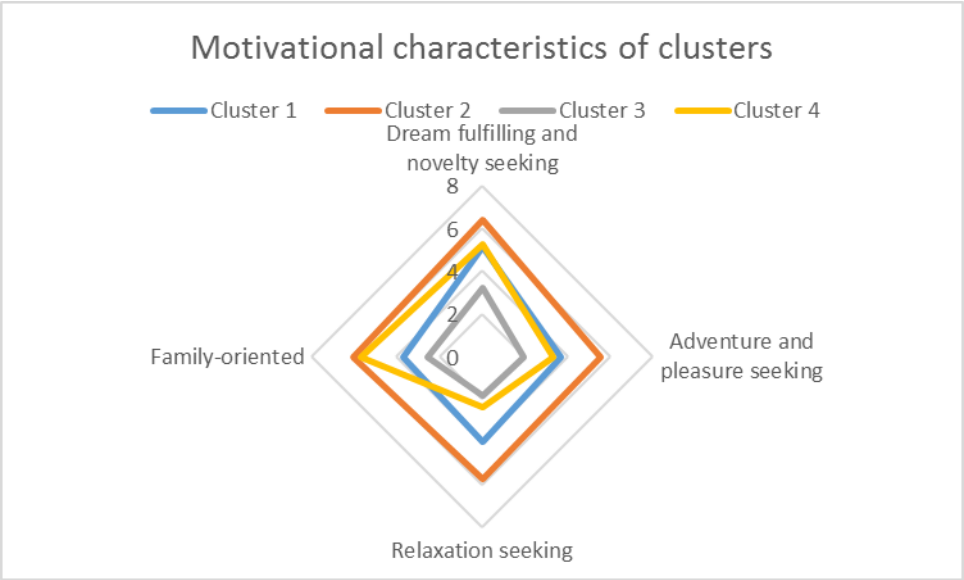
A second analysis was later performed to scrutinise the motivational characteristics of the four clusters. The researcher calculated the means of the four factor scores for each of the clusters to create a radar chart, which was demonstrated in Figure 6.1 below. This chart compares the motivational differences of the four clusters. As the figure shows, the four clusters demonstrate different levels of interest in the four identified motivational components. Among them, Cluster 2 (n=150) achieved the highest mean scores for all of

the four motivational components (dream fulfilling; adventure/pleasure seeking; relaxation seeking; family-oriented). Consequently, this cluster, which is largely composed of young-olds, was named ‘travel enthusiasts’ given its high ranking for each of the motivational components.

In comparison, Cluster 4 (n=116) showed a preference for staying with relatives during their trips. As a result, this cluster was named ‘family-oriented travellers’. In addition to their interest in staying with family, members of this group were also motivated to fulfil their dreams and seek novel experience. Unlike travel enthusiasts, however, the family-oriented travellers did not show a significant interest in seeking pleasure or travelling for relaxation.

In contrast, Cluster 1 and Cluster 3 had relatively low mean scores for the four motivational components. Nevertheless, fulfilling dreams and seeking novelty was the leading motivation for both groups. In order to distinguish Cluster 1 and 3 from Cluster 2 and 4, the researcher named them based on their key motivations. Accordingly, Cluster 1 (n=198) was named ‘cautious dream-fulfillers’, and Cluster 3 (n=123) was named ‘uninterested individuals’.

Figure 6. 1 The motivational characteristics of the four clusters.



6.4.3.4. Discussion

Several researchers (e.g. Chen, B.R., 2013; Zhou and Zhang, 2015) also attempted to segment the Chinese senior tourist market using clustering analysis. For example, Chen, B.R. (2013) separated the market into three segments based on the consumption behaviours and travel interests of seniors. The three groups were identified as follows: high-quality seekers, budget-sensitive travellers, and novelty seekers. In comparison, Zhou and Zhang (2015) divided the senior tourist market into four motivational segments: health seekers, culture and relaxation seekers, diversely motivated tourists, and spiritual pursuers. Compared with the findings from both studies, the category of 'travel enthusiasts' identified by this study shares similarities Chen, B.R.'s (2013) category entitled 'high-quality seekers' and "diversely motivated tourists" in Zhou and Zhang's (2015) study. In addition, the other three segments recognised by this study showed certain tendencies to avoid high travel expenditure as scores for relaxation seeking and pleasure seeking were comparatively low. This characteristic was shared by Chen, B.R.'s (2013) 'budget-sensitive travellers'.

6.5. Chinese seniors' use of ICT

The use of ICT of Chinese seniors for tourism purposes was another focus of this study. This section provides an analysis of Chinese seniors' ICT behaviours. In order to generate relevant findings, this section first examines the general online behaviours of the survey respondents. Then, it utilises descriptive statistics, Chi-square tests and ANOVA tests to analyse the travel-specific use of ICT of Chinese seniors. The influence of ICT upon the travel decision-making processes, however, is not the main focus of this section, and will instead be analysed in the next chapter.

6.5.1. ICT devices and daily amount of time spent online by Chinese seniors

6.5.1.1. ICT devices utilised by Chinese seniors

This study investigated two different aspects of Chinese seniors' general online behaviours: the use of ICT devices and the daily amounts of time spent online. In terms of the ICT devices used by Chinese seniors (Table 6.16 below), the majority of survey respondents (512, 87.2%) stated that they use mobile phones to access the internet. The second largest group used desktop computers (201, 34.2%), followed by tablets (82, 14.0%) and laptops (73, 12.4%). Only 18 (3.1%) respondents stated that they do not use any ICT devices in their daily lives, thus suggesting that a considerable number of Chinese seniors are able to find information online.

Table 6. 16 Types of ICT devices employed by Chinese seniors

	Mobile phone	**Laptop**	**Desktop**	**Tablet**	**None**
Yes (%)	512 (87.2)	73 (12.4)	201 (34.2)	82 (14.0)	18 (3.1)
No (%)	75 (12.8)	514 (87.6)	386 (65.8)	505 (86.0)	569 (96.9)
Total	587	587	587	587	587

6.5.1.2. Daily amount of time spent online by Chinese seniors

The daily amount of time spent online is a further aspect of the general online behaviours of Chinese seniors. By drawing upon Wang's et al. (2017) instrument design, the researcher adopted a multiple-choice question this investigation. The question asks the respondents how much time they spend online daily. Four options were included as possible answers: 'less than one hour (<1 hour)', 'one to two hours (1-2 hours)', 'two to three hours (2-3 hours)', and 'more than three hours (>3 hours)'. Chi-square tests were performed to examine the relationships between the daily time spent online by Chinese seniors, their social demographics and their cluster memberships. The researcher formulated six hypotheses in relation to these relationships, which are given in Table 6.17 below.

Table 6. 17 Hypotheses relating to the relationships between the daily time spent online by Chinese seniors, their social demographics and cluster memberships.

No.	Hypothesis
$H_{Chi\text{-}sq1}$	There are no association between Chinese seniors' gender and their daily time spent online.
$H_{Chi\text{-}sq2}$	There are no association between Chinese seniors' age and their daily time spent online.
$H_{Chi\text{-}sq3}$	There are no association between Chinese seniors' income level and their daily time spent online.
$H_{Chi\text{-}sq4}$	There are no association between Chinese seniors' education level and their daily time spent online.
$H_{Chi\text{-}sq5}$	There are no association between Chinese seniors' employment status and their daily time spent online.
$H_{Chi\text{-}sq6}$	There are no association between Chinese seniors' household structure and their daily time spent online.
$H_{Chi\text{-}sq7}$	There are no association between Chinese seniors' cluster membership and their daily time spent online.

The responses of the survey respondents, along with the Chi-square test results on the respondents' choices and their demographics, are shown in Table 6.18 below. As the table shows, respondents who spend between one and two hours online each day formed the largest group (201, 34.2%), while similar numbers of respondents spend more than three hours online (142, 24.2%) or between two and three hours online (140, 23.9%). Only 104

(17.7%) respondents spend less than one hour per day online. This result supports Pesonen, Komppular and Riihinen's (2015) theory, which is that seniors adopt heterogeneous behaviours with respect to information technology. Wang's et al. (2017) found that 28.9% of seniors spend more than one hour online, whereas the findings by this study indicates a much higher percentage (82.3%). As Wang's et al. (2017) research was conducted in 2012, the findings of this study could be reflective of a substantial increase in the use of ICT by Chinese seniors.

Table 6. 18 Chi-square analyses between time spent online daily and demographic profiles

	<1 hour (n=104)	**1-2 hours (n=201)**	**2-3 hours (n=140)**	**>3 hours (n=142)**	**Chi-square test of independence**
Gender (%)					χ^2=5.128
Male	41 (39.4)	75 (37.3)	69 (49.3)	59 (41.5)	*p*=0.163
Female	63 (60.6)	126 (62.7)	71 (50.7)	83 (58.5)	*df*=3
					n=587
Age (%)					
55-59	54 (51.9)	120 (60.0)	79 (56.4)	85 (59.9)	χ^2=29.512
60-64	18 (17.3)	48 (24.0)	42 (30.0)	41 (28.9)	*p*=0.001
65-69	15 (14.4)	24 (12.0)	13 (9.3)	10 (7.0)	*df*=9
>70	17 (16.3)	8 (4.0)	6 (4.3)	6 (4.2)	*n*=586
Monthly net income (%)					χ^2=39.068
<3000	35 (34.0)	29 (14.4)	16 (11.4)	20 (14.1)	*p*<0.001
3000-5999	41 (39.8)	100 (49.8)	58 (41.4)	52 (36.6)	*df*=9
6000-8000	18 (17.5)	39 (19.4)	38 (27.1)	33 (23.2)	*n*=586
>8000	9 (8.7)	33 (16.4)	28 (20.0)	37 (26.1)	
Education (%)					
High school or under	55 (52.9)	45 (22.5)	29 (20.7)	23 (16.2)	χ^2=70.233
Associate degree	29 (27.9)	91 (45.5)	42 (30.0)	45 (31.7)	*p*<0.001
Bachelor's degree	18 (17.3)	57 (28.5)	65 (46.4)	68 (47.9)	*df*=9
Master's degree or above	2 (1.9)	7 (3.5)	4 (2.9)	6 (4.2)	*n*=586
Employment status (%)					χ^2=22.627
Full time	27 (26.0)	57 (28.4)	43 (30.7)	52 (36.6)	*p*=0.007
Part time	4 (3.8)	10 (5.0)	8 (5.7)	11 (7.7)	*df*=9
Retired	60 (57.7)	126 (62.7)	86 (61.4)	75 (52.8)	*n*=587
Others	13 (12.5)	8 (4.0)	3 (2.1)	4 (2.8)	
Household structure (%)					χ^2=38.339
Single	12 (11.5)	9 (4.5)	4 (2.9)	16 (11.3)	*p*<0.001
Married couples without children	32 (30.8)	93 (46.3)	67 (47.9)	75 (52.8)	*df*=9
Married couples with children	53 (51.0)	92 (45.8)	67 (47.9)	39 (27.5)	*n*=587
Others	7 (6.7)	7 (3.5)	2 (1.4)	12 (8.5)	

With regards to the Chi-square test results, five out of six demographic factors (age, monthly net income, education, employment status and household structure) had a statistically significant relationship with the daily time spent online by Chinese seniors. This is because the p-values for those relationships were less than the alpha level of 0.05. Though, no significant relationship was observed between gender and daily time spent online. Therefore, the researcher rejected the null hypotheses of $H_{Chi\text{-}sq2}$, $H_{Chi\text{-}sq3}$, $H_{Chi\text{-}sq4}$,

$H_{Chi\text{-}sq5}$ and $H_{Chi\text{-}sq6}$ (see Table 6.17 above) and accepted their respective alternative hypotheses.

The results of the Chi-square tests concerning the cluster memberships of Chinese seniors and their daily time spent online is shown in Table 6.19 below. The table shows that the p-value (0.074) was larger than the alpha level set prior to the test (0.05). Therefore, the researcher failed to reject the null hypothesis and failed to accept the alternative hypothesis. In other words, the researcher could not be at least 95% confident that one's time spent online daily is associated with their market segments.

Table 6. 19 Chi-square analysis between daily time spent online and cluster membership.

	<1 hour	**1-2 hours**	**2-3 hours**	**>3 hours**	χ^2=15.660 *p*=0.074 *df*=9 *n*=587
C 1 "cautious dream fulfillers" (%)	26 (13.1)	75 (37.9)	51 (25.8)	46 (23.2)	
C 2 "travel enthusiast" (%)	20 (13.3)	56 (37.3)	35 (23.3)	39 (26)	
C 3 "uninterested individuals" (%)	34 (27.6)	36 (29.3)	26 (21.1)	27 (21.9)	
C 4 "family-oriented travellers" (%)	24 (20.7)	34 (29.3)	28 (24.1)	30 (25.8)	
Total	104	201	140	142	

6.5.1.3. Discussion

The Chi-square analyses suggest that the daily time spent online by Chinese seniors is heterogeneous and subject partly to their demographics. In terms of age (see 'Age' in Table 6.18 above), the result show that the proportions of age groups were inconsistent in the four length-of-time categories and that young-olds accounted for higher percentages in medium (1-2 hours), medium-high (2-3 hours) and high usage groups (> 3 hours). This is similar to the findings by the China Internet Network Information Center (CNNIC, 2018) that young-olds have higher levels of ICT usage compared with older seniors. This finding is also similar to those by Pan and Jordan-Marsh's (2010), who found that the increase of age had a negative effect on seniors' intentions and actual

behaviours surrounding the use of ICT. This finding could be explained by the fact that, typically, a person's capabilities decline with ageing. More specifically, ageing could negatively influence the cognition and eyesight of seniors, which may in turn, negatively influence their use of ICT (Wang et al., 2017).

With respect to monthly net income (see 'Monthly net income' in Table 6.18 above), the results show that the proportions of income groups were inconsistent among the four ICT usage categories and that the percentage of high-income earners was higher in medium, medium-high and high usage groups. This observation is similar to Choi and DiNitto's (2013) finding that a lack of financial resources could result in discontinued use of ICT. This could be owning to a person's perceived beliefs about the constraints of using ICT. According to Porter and Donthu (2006), individuals with lower income often feared that their investment in technology would quickly become obsolete. Therefore, they were less likely to develop a positive attitude towards using ICT. In addition, Ma, Chan and Chen (2016) also found that a person's level of income was negatively correlated with the perceived constraints on ICT usage by seniors. In other words, lower income levels seem to constrain the use of ICT by seniors.

With regards to education (see 'Education' in Table 6.18 above), the analysis suggest that a person's level of education could positively impact seniors' use of ICT. This is because less well-educated seniors constituted a higher percentage in the low ICT usage group, whereas individuals with higher-level degrees accounted for a higher percentage in the median and high usage group. This observation could be explained by the impact of education upon a person's attitudes and perceived abilities towards the adoption of ICT. According to Ma, Chan and Chen (2016) and Porter and Donthu (2006), education has a positive effect on seniors' attitudes towards the adoption of ICT. A higher education level

also means that individuals have increased opportunities to learn about ICT and to solve any problems associated with its adoption (Ma, Chan and Chen, 2016).

In terms of employment status (see 'employment status' in Table 6.18 above), the result suggests that respondents in part-time or full-time work were more inclined to spend longer time online, whereas those who are retired were less likely to spend more than three hours online per day. This finding could be explained by the perceived usefulness of ICT within the workplace. According to Davis (1989), the more useful a technology is perceived as being by an individual, the more likely it is that the individual would develop a positive attitude towards using that technology. Given the competitive advantages that ICT brings to those who work, such as convenience and effective communication, it is understandable that people who work use ICT for longer than those who are retired do.
In terms of household structure (see 'Household structure' in Table 6.18 above), the result also identified an inconsistency of household structures amongst the four categories of daily amount of time spent online. It is also suggested that married couples living without children tend to spend more time online, whilst married couples living with adult children are more likely to spend less time online. A possible reason for this finding is that a 'crowding-out effect' occurs when young adults have lived with their senior parents. This is because young adults are more active online than older adults (CNNIC, 2018) are, and so it is likely that seniors living with their adult children tend to dedicate their time to other routine matters rather than spending their time online. Furthermore, living with adult children may also be suggestive of a low level of income or education, which could in turn reduce the time that a person spends online.

Finally, although the researcher was unable to establish a significant relationship between the cluster memberships of Chinese seniors and their daily time spent online (see Table

6.19 above). Nonetheless, Table 6.19 reveals that ‘cautious dream fulfillers’ and ‘travel enthusiasts’ were more likely to spend at least one hour online per day. In contrast, ‘uninterested individuals’ were more likely to spend less than one hour per day online. This difference across the four clusters could possibly be explained by differences in social demographics, such as the age of the respondents. As mentioned previously, the four clusters demonstrate significant differences in age. It was found that older individuals were less likely to spend more than one hour per day online, and so ‘uninterested individuals’, who tend to be older, demonstrate lesser tendencies towards using ICT.

6.5.2. The use of ICT of Chinese seniors for tourism

6.5.2.1. A descriptive analysis of the travel-related ICT usage

With the exception of the aforementioned general online behaviours, this study also analysed four aspects of Chinese seniors’ travel-related ICT use (with regards to the identification of these four aspects, see Section 4.2.9.9), including: travel planning and booking, in-tour problem-solving, the sharing of travel experience (hereafter ‘travel experience sharing’) and the learning of the travel experience of others (hereafter ‘travel experience viewing’). These four aspects were indicators of the latent variable of travel-related ICT usage. In addition, they corresponded with the dreaming, travel planning and booking, experiencing, and sharing stages of the leisure travel cycle.

A descriptive analysis was first performed for the four travel-related ICT behaviours (Table 6.20 below). As it can be seen in the table, among the four items, travel experience viewing had the highest mean score (5.16). Travel planning and booking and travel experience sharing had the second highest mean scores of 4.36. In-tour problem-solving had the lowest mean score of 4.27. The mean scores of each of the four factors indicate

an apparent trend amongst the use of ICT by Chinese seniors for tourism purposes. This is because all of the items had a mean score larger than the median of the measurement scale (4 point). In addition, the ranking of the mean scores also reflects that travel experience viewing was the most frequently performed travel-related ICT behaviour for Chinese seniors.

Table 6. 20 Descriptive statistics of the ICT construct

	N	Min	Max	Mean	Std. Deviation
Travel experience viewing	587	1	7	5.16	1.825
Travel planning and booking	587	1	7	4.36	2.143
Travel experience sharing	587	1	7	4.36	2.102
In-tour problem-solving	587	1	7	4.27	2.207

6.5.2.2. The relationship between travel-related ICT usage and demographics/cluster memberships

Following on from the descriptive analysis, the relationships between Chinese seniors' travel-related ICT usage and their demographics and cluster memberships were investigated. The researcher utilised the independent t-test and ANOVA test to identify significant relationships. While the independent t-test was used to detect behavioural differences caused by gender, the ANOVA test was used to determine differences caused by other demographic factors (age; monthly net income; education; employment status; household structure) and by cluster memberships. Seven hypotheses were developed for the independent t-tests and ANOVA tests (Table 6.21 below).

Table 6. 21 Hypotheses for the relationships between Chinese seniors' travel-related ICT behaviours and their social demographics and cluster memberships.

No.	Hypothesis
$H_{Indep-t}$	There are no significant differences in Chinese seniors' travel-related ICT behaviours between the two genders.
H_{ANOVA1}	There are no significant differences in Chinese seniors' travel-related ICT behaviours between among various age groups.
H_{ANOVA2}	There are no significant differences in Chinese seniors' travel-related ICT behaviours between among various income levels.
H_{ANOVA3}	There are no significant differences in Chinese seniors' travel-related ICT behaviours between among various education levels.
H_{ANOVA4}	There are no significant differences in Chinese seniors' travel-related ICT behaviours between among various employment status.
H_{ANOVA5}	There are no significant differences in Chinese seniors' travel-related ICT behaviours between among various household structures.
H_{ANOVA6}	There are no significant differences in Chinese seniors' travel-related ICT behaviours between among various market segments.

Differences in ICT behaviours based on gender

The independent sample t-test, or independent t-test, is a test that uses the t-statistics to compare the mean scores of two independent samples of people or conditions (Field, 2014; Pallant, 2013). It was used in this study to detect differences caused by gender between the four travel-related ICT behaviours. Table 6.22 below indicates the independent t-test results, which includes a significant difference ($p<0.05$) between travel experience sharing amongst Chinese seniors ($t=-2.23$; $p=0.025$). Consequently, the researcher rejected the null hypothesis and accepted the alternative hypothesis, which is that gender does significantly impact Chinese seniors' travel-related ICT use of Chinese seniors in relation to the sharing of travel experiences A closer examination of the mean scores reveals that females are significantly more active than males regarding sharing their own travel experiences.

Table 6. 22 ICT behavioural differences based on gender

	Gender	**Mean**	**t-value**
Travel planning and booking	Male	4.30	-0.503
	Female	4.39	
In-tour problem solving	Male	4.31	0.346
	Female	4.25	
Travel experience sharing	Male	4.14	-2.243**
	Female	4.53	
Travel experience viewing	Male	5.00	-1.802
	Female	5.28	
**p<0.05; ***p<0.01			

Differences in ICT behaviours based on age

A one-way ANOVA test was undertaken to examine the hypothesis that no significant differences existed among the four age cohorts (i.e. 55-59; 60-64; 65-69; >70) for the travel-related ICT behaviours. An analysis of variance, or ANOVA in short, is a technique that examines the mean scores of more than two samples of people or conditions (Malhotra, Nunan and Birks, 2017; Pallant, 2013). The test results are illustrated in Table 6.23 below, which indicate significant behavioural differences ($p<0.05$) across all four travel-related ICT usage items. As a consequence, the researcher rejected the null hypothesis, and accepted the alternative hypothesis, which is that there are significant differences amongst the four age cohorts for travel planning and booking ($F=9.536$; $p<0.01$), in-tour problem-solving ($F=10.151$; $p<0.01$), travel experience sharing ($F=4.633$; $p<0.01$) and travel experience viewing ($F=6.941$; $p<0.01$).

Table 6. 23 ICT behavioural differences based on age

		Sum of squares	Df	Mean square	F	Post-hoc
Travel planning and booking	Between groups	125.931	3	41.977	9.536***	>70<65-69 >70<60-64 >70<55-59
	Within groups	2561.948	582	4.402		
	Total	2687.879	585			
In-tour problem solving	Between groups	141.798	3	47.266	10.151***	>70<65-69 >70<60-64 >70<55-59
	Within groups	2710.060	582	4.656		
	Total	2851.858	585			
Travel experience sharing	Between groups	60.306	3	20.102	4.633***	>70<65-69 >70<60-64 >70<55-59
	Within groups	2524.998	582	4.338		
	Total	2585.304	585			
Travel experience viewing	Between groups	67.417	3	22.472	6.941***	>70<60-64 >70<55-59 >70<65-69
	Within groups	1884.182	582	3.237		
	Total	1951.599	585			
**p<0.05, ***p<0.01						

Scheffe post-hoc test found that seniors who are aged 70 or above had significantly different behaviours with regards to travel-related ICT usage when compared to people belonging to other age cohorts. This suggest that those who are 70 years or older are less 'tech-savvy' than the other three groups. In addition, they also use ICT significantly less for travel planning and booking, in-tour problem solving, travel experience sharing, and travel experience viewing.

Differences in ICT behaviours based on monthly net income

An ANOVA analysis was performed to test the hypothesis that no significant differences existed among the four monthly net income categories (<3000; 3000-5999; 6000-8000; >8000). The test results displayed in Table 6.24 below indicates significant differences with respect to travel planning and booking ($F=11.359$, $p<0.01$) and in-tour problem-solving ($F=9.918$, $p<0.01$).

Table 6. 24 ICT behavioural differences based on monthly net income

		Sum of squares	Df	Mean square	F	Post-hoc
Travel planning and booking	Between groups	124.286	3	41.429	9.437***	"<3000" < "3000-5999" "<3000" < "6000-8000" "<3000" < ">8000"
	Within groups	2555.018	582	4.390		
	Total	2679.304	585			
In-tour problem solving	Between groups	138.329	3	46.110	9.918***	"<3000" < "6000-8000" "<3000" < ">8000" "3000-5999" < ">8000"
	Within groups	2705.773	582	4.649		
	Total	2844.102	585			
Travel experience sharing	Between groups	14.563	3	4.854	1.103	N.A.
	Within groups	2562.643	582	4.402		
	Total	2576.643	585			
Travel experience viewing	Between groups	14.202	3	4.734	1.422	N.A.
	Within groups	1938.071	582	3.330		
	Total	1952.273	585			
$^{**}p<0.05$, $^{***}p<0.01$						

Scheffe post-hoc test suggests that the 'less-than-3000 RMB' income group had the smallest mean scores for both behaviours. In addition, the '3000-5000 RMB' income group had significantly smaller mean score than the '8000 RMB' income group for in-tour problem-solving.

Differences in ICT behaviours based on education

The null hypothesis for ICT behaviours and education is that no significant differences existed amongst the four education groups (high school degree or under; associate degree; bachelor's degree; master's degree or above) for travel-related ICT usage. However, the ANOVA test results (Table 6.25 below) shows significant differences among the four education groups for the behaviours of travel planning and booking ($F=11.359$, $p<0.01$), in-tour problem-solving ($F=18.067$, $p<0.01$) and travel experience viewing ($F=5.737$, $p<0.01$).

Table 6. 25 ICT behavioural differences based on education

		Sum of squares	Df	Mean square	F	Post-hoc
Travel planning and booking	Between groups	148.726	3	49.575	11.359***	High school<bachelor's High school<master's
	Within groups	2540.018	582	4.364		
	Total	2688.744	585			
In-tour problem solving	Between groups	243.078	3	81.026	18.067***	High school<bachelor's High school<master's Associate<master's
	Within groups	2610.137	582	4.485		
	Total	2853.215	585			
Travel experience sharing	Between groups	33.264	3	11.088	2.528	N.A.
	Within groups	2552.853	582	4.386		
	Total	2586.118	585			
Travel experience viewing	Between groups	56.054	3	18.685	5.737***	
	Within groups	1895.545	582	3.257		
	Total	1951.599	585			
**p<0.05, ***p<0.01						

Scheffe post-hoc tests indicate that high school graduates generally use ICT less than bachelor's and master's degree holders for travel planning and booking and in-tour problem-solving. Despite this, the Scheffe test failed to generate any significant comparisons for the travel experience viewing item.

Differences in ICT behaviours based on employment status

The null hypothesis for ICT behaviours and employment status is that no significant differences in travel-related ICT behaviours exist amongst the four employment groups (full-time; part-time; retired; others). However, the ANOVA test results (Table 6.26 below) suggest that significant behavioural differences exist among the four groups for travel planning and booking ($F=2.746$; $p<0.05$) and in-tour problem-solving ($F=4.340$, $p<0.01$).

Table 6. 26 ICT behavioural differences based on employment status

		Sum of squares	Df	Mean square	F	Post-hoc
Travel planning and booking	Between groups	37.493	3	12.498	2.746**	Others<part timers
	Within groups	2653.093	583	4.551		
	Total	2690.586	586			
In-tour problem solving	Between groups	62.357	3	20.786	4.340***	
	Within groups	2792.484	583	4.790		
	Total	2854.842	586			
Travel experience sharing	Between groups	12.172	3	4.057	0.918	N/A.
	Within groups	2575.8111	583	4.418		
	Total	2587.983	586			
Travel experience viewing	Between groups	19.458	3	6.486	1.956	N/A.
	Within groups	1932.842	583	3.315		
	Total	1952.300	586			
**p<0.05, ***p<0.01						

The Scheffe post-hoc test found that seniors with part-time work had the highest mean score of 4.94 for travel planning and booking, which was significantly larger than that of the "others" group. Those who work part-time also have the highest mean score (5.09) for the in-tour problem-solving, yet the Scheffe test failed to generate any significant comparisons for this behaviour.

Difference in ICT behaviours based on household structure

The null hypothesis for ICT behaviours and employment status is that no significant differences in travel-related ICT behaviours exists amongst the four household structure groups (single; married couple with children; married couple without children; others). Nevertheless, the ANOVA tests results (Table 6.27 below) found significant differences among the four groups for in-tour problem solving ($F=3.310$, $p<0.01$). Although the Scheffe post-hoc test did not detect any significant comparisons, the test results show that 'married couple without children' and 'married couple with children' had the highest mean scores of 4.45 and 4.29. This suggests that these two groups could be more inclined to use ICT for in-tour problem-solving.

Table 6. 27 ICT behavioural differences by household structure

		Sum of squares	Df	Mean square	F	Post-hoc
Travel planning and booking	Between groups	33.737	3	11.246	2.468	N.A.
	Within groups	2656.849	583	4.557		
	Total	2690.586	586			
In-tour problem solving	Between groups	47.808	3	15.936	3.310**	
	Within groups	2807.033	583	4.815		
	Total	2854.842	586			
Travel experience sharing	Between groups	1.380	3	0.460	0.104	N.A.
	Within groups	2586.603	583	4.437		
	Total	2587.983	586			
Travel experience viewing	Between groups	1.818	3	0.606	0.181	N.A.
	Within groups	1950.482	583	3.346		
	Total	1952.300	586			
**p<0.05, ***p<0.01						

Differences in ICT behaviours based on cluster/market segment

The null hypothesis regarding market segment is that, among the four clusters, there would be no difference between the distribution of the four items. Nevertheless, the results of the analysis, as shown in Table 6.28 below, indicate that the null hypotheses should be rejected and that its alternative hypothesis should be accepted. Hence, there was statistically significant differences across the four aspects of travel-related ICT usage.

Table 6. 28 ICT behavioural differences by cluster membership

		Sum of squares	Df	Mean square	F	Post-hoc
Travel planning and booking	Between groups	2535.107	3	85.036	20.356***	Cluster 3<Cluster 1 Cluster 3<Cluster 4 Cluster 3<Cluster 2 Cluster 1<Cluster 2 Cluster 4<Cluster 2
	Within groups	2435.479	583	4.177		
	Total	2690.586	586			
In-tour problem solving	Between groups	308.455	3	108.818	23.540***	Cluster 3<Cluster 1 Cluster 3<Cluster 4 Cluster 3<Cluster 2 Cluster 1<Cluster 2 Cluster 4<Cluster 2
	Within groups	2546.387	583	4.368		
	Total	2854.842	586			
Travel experience sharing	Between groups	236.194	3	78.731	18.517***	Cluster 3<Cluster 1 Cluster 3<Cluster 4 Cluster 3<Cluster 2 Cluster 1<Cluster 2 Cluster 4<Cluster 2
	Within groups	2351.789	583	4.034		
	Total	2587.983	586			
Travel experience viewing	Between groups	230.723	3	76.908	26.044***	Cluster 3<Cluster 1 Cluster 3<Cluster 4 Cluster 3<Cluster 2 Cluster 1<Cluster 4 Cluster 1<Cluster 2
	Within groups	1721.577	583	2.953		
	Total	1952.300	586			
**p<0.05, ***p<0.01						

Scheffe post-hoc tests were performed for all four tourism-related ICT behaviours. Cluster 3 (disinterested individuals) had the smallest mean scores for all four travel-related ICT behaviours. Although no significant behavioural differences were spotted between Cluster 1 (icautious dream fulfillers) and Cluster 4 (i.e. family-oriented travellers) for the behaviours of travel planning and booking, in-tour problem-solving and travel experience sharing, the latter group demonstrated a stronger tendency to use ICT for travel experience viewing purpose. Furthermore, Cluster 2 (travel enthusiasts) had the highest mean scores for all four travel-related behaviours.

6.5.2.3. Discussion

The independent t tests and ANOVA analyses provide insights into the travel-related ICT usage of Chinese seniors from four perspectives: travel planning and booking, in-tour problem solving, travel experience sharing, and viewing the travel experience of others. The researcher proposed that the travel-related ICT usage of seniors is influenced by their social demographics (gender, age, income level, education, employment status and

household structure) and cluster memberships. Generally speaking, this proposition is supported by the test findings, especially as it was found that the use of ICT by Chinese seniors for tourism purposes was not homogeneous and was subject to a series of factors associated with social-demographics.

First, a significant difference was observed between males and females with regards to their sharing of travel experiences. Females were found to share their travel experience more frequently than males. This result differs slightly from the findings by Wang et al. (2017), who, based on the analysis of daily time spent online, suggested that males had higher levels of ICT usage than females. Nonetheless, this study demonstrates that females' potential for using ICT for tourism purposes should not be ignored by marketers. One reason to explain this finding is that women are more likely to seek social support using the internet (Fan and Miao, 2012; Gefen and Ridings, 2005). As the sharing of travel experiences involves a certain degree of social interaction, this behaviour could be more likely to occur amongst female seniors than amongst their male counterparts.

Second, age was found to be negatively associated with all four aspects of travel-related ICT usage. This result is similar to that of Pan and Jordan-Marsh (2010), who found that age had a negative effect on the use of ICT by seniors. However, it was only the '70 and above' group that demonstrated significant differences compared with other age cohorts. This could be because individuals in their 70s have been exposed less to the ICT in comparison to those who are younger. To help clarify, people in their 70s were approaching to their retirement age during late 1990s and early 2000s, but this was when online travel services were introduced into China (Huang and Law, 2003; Liu, Yang and Gu, 2009). This means the group aged 70 and above may not have had the same exposure

to ICT compared with the other three groups and, therefore, are less capable at using ICT for travel-related purposes.

Third, an individual's level of income was positively associated travel planning and booking and in-tour problem-solving amongst Chinese seniors. This observation is similar to Choi and DiNitto's (2013) finding that a lack of financial resources could contribute to lesser ICT usage. A reasonable explanation could be that seniors on lower incomes may fear that their investment in technology would quickly become obsolete and, therefore, they are less likely to hold a positive attitude towards the use of ICT. They may also feel more constrained in terms of its use (Ma, Chan and Chen, 2016; Porter and Donthu, 2006).

Fourth, a person's level of education was found to be positively associated with information searching, in-tour problem-solving and viewing the travel experience of others. Ma, Chan and Chen (2016) and Porter and Donthu (2006) similarly found that education positively impacts the ICT usage of seniors. This could be because education positively impacts on the attitudes of seniors towards the use of ICT. In addition, higher level of education also means that individuals could be better equipped to deal with the difficulties associated with the use of ICT (Ma, Chan and Chen, 2016).

Fifth, a person's employment status is associated with travel planning and booking, and in-tour problem solving. Furthermore, those who work part-time are the most inclined to use ICT for the purposes of tourism. This result shares some similarities with the findings by Nasi, Rasanen and Sarpila's (2012), which is that seniors who work tend to use ICT more frequently than those who are retired. The reasons for this finding could be two-fold. First, seniors still in work perceive ICT to be useful. For example, ICT provides

competitive advantages in the workplace, such as the convenience and effective communications. It is therefore understandable that people in employment use ICT more than retirees. Second, this study has found that approximately 10% of the full-time workers were employed in blue-collar positions (street cleaners; factory workers; household workers). In contrast, the majority of those who work part-time were retired. As people in part-time employment may need to use ICT more regularly to search job opportunities, it could be possible that this group will be more skilled at using ICT for tourism purposes.

Sixth, the structure of households was associated with the ICT in-tour problem-solving. This finding is similar to that by Ma, Chan and Chen (2016), which is that seniors living with their spouses tend to use ICT more actively. A possible reason why is that those who are singles could receive less technical support from family members. Consequently, their ICT abilities could be poor compared to the other groups.

Finally, there was a relationship between the cluster memberships of Chinese seniors and their ICT behaviours across all four areas. A possible reason for this concerns that age structures of the groups and their various levels of interest in leisure travel. The Chi-square tests in Section 6.4.3.3 indicate that the four segments significantly differed in age, which could impact the travel-related ICT behaviours of an individual. In addition, Fiore et al. (2014) found that the use of mobile technologies was correlated with a person's demand for travel. In other words, frequent ICT usage by certain groups (travel enthusiasts and family-oriented travellers) helped to motivate people to travel, and vice versa.

6.6. Conclusion

This chapter has provided an analysis of the general travel behaviour, motivations, market segmentations and travel-related ICT behaviours of Chinese senior tourists. With regards to general travel behaviours, the findings suggest that the demand to travel by Chinese seniors remains strong, despite a small recent decline in China's economic growth. The findings also indicate that dream fulfilling and novelty seeking, adventure and pleasure seeking, relaxation seeking, and family-oriented behaviours are key motivators for people to travel. As part of the main findings generated by the first stage data analysis, these key motivational dimensions will also be used as lower-order constructs (LOCs) within the next chapter's SEM analysis.

With respect to market segmentation, the analysis suggests that a segmentation comprising of 'travel enthusiast', 'family-oriented travellers', 'cautious dream-fulfillers' and 'disinterested individuals' was the most suitable solution. In addition, this study also established several significant relationships amongst an individual's online behaviours, their demographic profiles and their cluster memberships. For instance, a person's age, monthly net income, education, employment status, household structure and cluster membership were found to be significantly associated with their daily amount of time spent online. Furthermore, the results show that those who are female, working, younger, non-widowed, enthusiastic to travel, and well-educated and with a higher income are more likely to use ICT for tourism purposes.

The findings of this study have several practical implications. First, this study provides a segmentation of the market, which could be used by tourism marketers for product development and marketing promotions. As an example, an itinerary featuring entertainment and shopping activities could be developed for 'travel enthusiasts', whilst

a high-quality tour featuring cultural and historical experience could be promoted towards ‘cautious dream fulfillers’. Second, the study also reveals the growing importance of the use of online marketing platforms for senior tourists. Chinese seniors demonstrated various levels of interest in using ICT for travel. For instance, ‘travel enthusiast’ were the most competent at using ICT for their own travel purposes, and so online marketing initiatives could be aimed towards this target market. In addition, tourism companies could provide online services that help travel enthusiast to customise their holidays, especially since customisation is becoming a new trend favoured by many Chinese travellers (Rokou, 2018). Third, marketing professionals could also utilise social media platforms to spread positive electronic word-of-mouth (eWOM) recommendations for their travel products. Since many Chinese seniors share and view travel experiences online, this strategy could help to attract new customers and increase customer loyalty.

Chapter 7: The travel decision-making processes of Chinese seniors and the impact of ICT usage

7.1. Introduction

The previous chapter discussed the social demographics and market segmentation of Chinese seniors. In comparison, this chapter is devoted to developing a structural model of Chinese seniors' travel decision-making processes and the impact of ICT usage. The rationale for developing a decision-making model is that previous studies have not fully investigated this process in relation to Chinese senior tourists. Consequently, several psychological factors, such as travel motivations proposed by Hsu, Cai and Li (2010) and Huang and Hsu (2009), and technological factors, such as the digital technologies proposed by Graeupl (2006), have been neglected by previous researchers. By developing and analysing this decision-making model, this chapter will fulfil the fourth research objective of this study, which is to assess the relationships in the proposed structural model.

This chapter forms the second data analysis stage for this study. It will utilise the findings given in the last chapter to form a hierarchical component model (HCM) for the construct of travel motivations (TM). In Chapter 6, four main dimensions of travel motivations were extracted from the principal component analysis (PCA): dream fulfilling and novelty seeking, adventure and pleasure seeking, relaxation seeking and family-oriented behaviours. By adopting these four aspects as lower-order constructs (LOCs) for the HCM of TM, this chapter will analyse the results of the structural equation model (SEM) based on the partial least squares (PLS) technique.

In addition to this, this study utilised a two-stage survey to examine the relationship between Chinese seniors' travel intentions and their actual travel behaviours (see Section

5.3.4.1 and Section 5.3.4.2 for the justification of a two-stage survey). Consequently, the structural model analysis consisted of two parts. After splitting TM into four LOCs, Part I contained 12 constructs and 22 relationships (n=587). Part II contained two constructs and one relationship (n=112).

With regards to an analysis of these two parts, this chapter will begin by examining of the measurement models to assess whether a set of measurements are consistent with what they intend to measure. Then, the structural model will be discussed by first explaining the theoretical framework and then presenting the results of the theoretical hypotheses. Next, an updated map of the structural model will be presented and, finally, a detailed discussion with references to the literature will be provided for each hypothesis.

The potential relationships between certain factors, such as attitude, travel motivations and ICT usage, and travel intention will also be addressed through the analysis of the structural model. Insights could be gained by confirming relationships between the impact of travel-related ICT usage and the decision-making processes of Chinese senior tourists. Promotional strategies could also be developed on the basis of the analysis to help ensure the success of promotions and target seniors more effectively.

7.2. The analysis of the proposed model.

According to some researchers (Diamantopoulos, Riefler and Roth, 2008; Hair et al., 2014), it takes two types of models, the measurement model and the structural model, to form an SEM model. Whereas a measurement model displays the relationship between latent constructs and their corresponding indicators, a structural model identifies the hypothesised relationships among latent constructs (Diamantopoulos, Riefler and Roth, 2008; Edwards and Bagozzi, 2000; Hair et al., 2014). When employing the PLS technique,

researchers need to take both models into consideration, and should evaluate the measurement model first prior to the structural model (Hair, Ringle and Sarstedt, 2011; Lowry and Gaskin, 2014).

Following the aforementioned procedures, this study has presented the results of the measurement model evaluation. The reliability and validity of the reflective measurement models will be first examined, followed by the scrutiny of formative measurement models. The hypothesised relationships of the structural model will then be assessed.

7.2.1. Measurement model assessment

The term ‘measurement model’ is used to describe the relationships between an unobservable latent variable and its observable indicators (MacKenzie, Podsakoff and Podsakoff, 2011). Its evaluation process involves a series of criteria that examines the reliability and validity of the model (Hair et al., 2014; Hair, Ringle and Sarstedt, 2011). While the examination criteria differ for reflective models and formative models, this study provides an assessment of the reflective model prior to the formative model. The measurement models evaluated in the study are demonstrated in table 7.1 below, including their measurement types (reflective or formative) and abbreviations. Past behaviours (PB) and actual behaviours (AB) are single-item constructs and are therefore not included in the measurement model analysis.

Table 7. 1 The measurement models evaluated in the study.

Types of models	Measurement models	Abbreviation
Reflective	Attitude	ATT
	Adventure and pleasure seeking (LOC for TM)	ADV
	Behavioural intention	BI
	Dream fulfilling and novelty seeking (LOC for TM)	DRE
	Family-oriented behaviours (LOC for TM)	FAM
	Negative anticipated emotions	NAE
	Positive anticipated emotions	PAE
	Relaxation seeking (LOC for TM)	REL
	Subjective norm	SN
Formative	ICT usage	ICT
	Perceived behavioural control	PBC
	Travel motivation (HOC)	TM
Single item (not included in analysis)	Past behaviour	PB
	Actual behaviour	AB

7.2.1.1. Reflective measurement model evaluation

Four criteria are involved in assessing the reflective measurement models: internal consistency reliability, indicator reliability, convergent validity and discriminant validity (Hair, Ringle and Sarstedt, 2011; Gotz, Liehr-Gobbers and Krafft, 2010). When evaluating these criteria, it takes composite reliability to decide the level of internal consistency, outer loadings to evaluate indicator reliability, average variance extracted (AVE) to assess convergent validity, and Fornell-Larcker criterion and cross-loadings to appraise discriminant validity (Hair et al., 2014; Hair, Ringle and Sarstedt, 2011). The results of evaluation related to the aforementioned criteria will be presented and discussed in the following sections.

Internal consistency reliability

As discussed previously in Chapter 5 (Section 5.3), internal consistency is one of the most popular methods to estimate the reliability of a latent construct (Henson, 2001). Two commonly employed measures to assess internal consistency include Cronbach's alpha

and composite reliability (Peterson and Kim, 2013). Some researchers (e.g. Bollen, 1989; Hair et al. 2014; Kline, 2016; Shook et al. 2004) have argued that Cronbach's alpha is subject to a number of limitations and should therefore be replaced by composite reliability. In comparison, Chin (2010) suggested that Cronbach's alpha could be used in conjunction with composite reliability. This study took follows Chin (2010) and presents both measures.

The rule of thumb suggested by researchers (e.g. Hair et al., 2014; Lee et al., 2011; Nunnally, 1978) for these two measures is 0.70 and above. Despite setting the lower boundary of acceptance for the two measures, Hair et al. (2014) also suggested that values larger than 0.90 are not desirable. This is because such values, especially values larger than 0.95, are likely to suggest repeated measurements of the same phenomenon. However, a review of the existing literature that have employed a PLS-SEM approach (e.g. Carlson and O'Cass, 2010; Loureiro, Sardinha and Reijnders, 2012; Sanchez-Franco and Rondan-Cataluna, 2010) indicates that values larger than 0.90 do not pose a significant issue for internal consistency reliability. All things considered, this study took 0.70-0.95 to be an acceptable range for Cronbach's alpha and composite reliability.

Table 7.2 below demonstrates the results of an initial analysis of internal consistency reliability for the reflective measurement models. As it can be seen from the table, the Cronbach's alpha and composite reliability values are larger than the rule of thumb of 0.70. However, attitude (ATT), behavioural intention (BI; for both Part I and Part II of the model) and positive anticipated emotions (PAE) have composite reliability values of larger than 0.95. This suggests some potential issues related to repeated measurement. In response, the researcher recalculated the two measures for the three latent variables by omitting one indicator at a time. The results were then compared. The indicators that,

upon their absence, caused the greatest reduction in the values of the two measures were recognised as being repeated measurements and were therefore removed from the construct.

Table 7. 2 Initial values of Cronbach's alpha and composite reliability

Construct	Cronbach's alpha	Composite reliability
ATT	0.939	0.954
ADV	0.863	0.902
BI	0.942 (Part I model) 0.951 (Part II model)	0.958 (Part I model) 0.965 (Part II model)
DRE	0.934	0.945
FAM	0.720	0.876
NAE	0.931	0.949
PAE	0.953	0.964
REL	0.841	0.892
SN	0.876	0.923

Table 7.3 below shows the values of both measures following the removal of certain repeated measurements. With regards to the latent construct of PAE, three items were determined as measuring the same phenomenon. Thus, two of these indicators (PAE 3: "If I succeed to achieve my goal to take a leisure tour/vacation, I will feel proud"; PAE 4: "If I succeed to achieve my goal to take a leisure tour/vacation, I will feel happy") were identified as being repeated measurements and were removed. Out of the remaining two constructs, ATT 3 ("all things considered, I think taking a leisure trip would be boring/fun") was recognised as being a repeated indicator for ATT, while BI2 ("my desire to take a leisure tour/vacation is very strong.") was identified as being a repeated measurement for BI. After removing these items, all three constructs had an acceptable level of internal consistent reliability in relation to Part I of structural model. Although BI had a slightly higher internal consistency reliability rating for the Part II of the structural model, the researcher considered it to be acceptable. This is because first, Part I and Part II were connected through the construct of BI. Consequently, both parts should have a consistent measurement in relation to the BI construct. Second, if rounded to the

nearest hundredth decimal, the rho (c) figure of 0.9548 satisfies the criterion of the study (i.e. 0.70-0.95).

Table 7. 3 Cronbach's alpha and composite reliability after removing repeated measurements

Construct	**Initial alpha**	**Initial rho (c)**	**Indicator(s) removed**	**Final alpha**	**Final rho (c)**
ATT	0.939	0.954	ATT3	0.916	0.941
BI	0.942 (P1); 0.951 (P2)	0.958 (P1); 0.965 (P2)	BI2	0.914 (P1); 0.929 (P2)	0.946 (P1); 0.955 (P2)
PAE	0.953	0.964	PAE3; PAE4	0.917	0.948

Indicator reliability

According to Gotz, Liehr-Gobbers and Krafft (2010), the indicator reliability of an item concerns the amount of variance that can be explained by its underlying construct. The value of indicator reliability is equal to the square of the item's outer-loadings (Hair et al. 2014; Wong, 2013). According to Hair et al. (2014), a common threshold for the measure is 0.50 (50% of the indicator's variance be explained by the latent variable). This means that any indicator with an outer-loading equal to or larger than 0.708 is acceptable for the measurement model (Gotz, Liehr-Gobbers and Krafft, 2010; Hair, Ringle and Sarstedt, 2011; Wong, 2013). Hair et al. (2014) also recommended to keep indicators with outer-loadings between 0.40 and 0.70, unless removing such items would lead to an increase in the latent construct's composite reliability. This study follows Hair et al.'s (2014) criterion for examining the indicator reliability of reflective constructs. The outer-loading values of the indicators are demonstrated in Table 7.4 below.

Table 7. 4 Outer-loadings of reflective indicators.

Constructs	Indicators	Outer-loadings	Constructs	Indicators	Outer-loadings
ATT	ATT1	0.855	FAM	TM2	0.907
	ATT2	0.912		TM3	0.858
	ATT4	0.899	NAE	NAE1	0.926
	ATT5	0.911		NAE2	0.934
ADV	TM11	0.842		NAE3	0.938
	TM12	0.853		NAE4	0.829
	TM13	0.840	PAE	PAE1	0.927
	TM17	0.687 (removed)		PAE2	0.939
	TM18	0.793		PAE5	0.912
BI (Part I model)	BI1	0.912	DRE	TM7	0.811
	BI3	0.941		TM8	0.823
	BI4	0.920		TM9	0.831
BI (Part II model)	BI1	0.929		TM10	0.749
	BI3	0.955		TM14	0.774
	BI4	0.924		TM15	0.853
REL	TM1	0.796		TM16	0.801
	TM4	0.774		TM19	0.827
	TM5	0.864		TM20	0.822
	TM6	0.847			
SN	SN1	0.905			
	SN2	0.876			
	SN3	0.903			

As it can be seen from the table, only one indicator (TM17: "If I take a leisure travel/vacation, I would be motivated by seeking adventure") had an outer-loading smaller than the rule of thumb of 0.70. However, since this outer-loading value (0.687) fell within the reconsideration range of 0.40 - 0.70, the researcher had to examine whether omitting this item would lead to an increase in the composite reliability of the latent variable. The test result indicates that the composite reliability of the latent construct increased from 0.902 to 0.908, which still falls within the acceptable range of 0.70-0.95 set by this study. Therefore, the researcher deleted item TM17 from the latent variable of ADV.

Convergent validity

Convergent validity is one of the two measures that are frequently examined for construct validity (Henseler, Ringle and Sinkovics, 2009). It signifies the extent to which a set of indicators is positively correlated with an alternative set of indicators for the same latent

construct (Hair et al., 2014; Henseler, Ringle and Sinkovics, 2009). When evaluating a reflective construct, each of the construct's indicators are considered as being an alternative measure for the same construct (Gotz, Liehr-Gobbers and Krafft, 2010). Therefore, those indicators should share a large amount of variance with other indicators, which can be detected by calculating the average variance extracted (AVE) of the reflective construct (Fornell and Larcker, 1981; Hair et al., 2014; Henseler, Ringle and Sinkovics, 2009). According to Fornell and Larcker (1981), the value of AVE should at least be 0.50, which means the construct is capable of explaining 50% of the variances for its items on average, to indicate sufficient convergent validity. Table 7.5 below displays the AVE values of reflective constructs. As the table shows, all of the reflective constructs have an AVE value larger than 0.50. It can therefore be concluded that the convergent validities of the reflective constructs have been achieved.

Table 7. 5 AVEs of reflective constructs.

Construct	AVE	Construct	AVE
ATT	0.800	NAE	0.824
ADV	0.712	PAE	0.858
BI	0.854 (Part I model); 0.876 (Part II model)	REL	0.672
DRE	0.657	SN	0.801
FAM	0.780		

Discriminant validity

Discriminant validity is the other measure of construct validity that is used to complement the measure of convergent validity (Hulland, 1999). To clarify, it indicates the extent to which a latent construct diverges from other constructs by empirical standards (Hair et al. 2014; Hulland, 1999; Lowry and Gaskin, 2014). Two criteria, the cross-loadings and the Fornell-Larcker criterion, are usually used to assess the discriminant validity (Hair et al., 2014; Hair, Ringle and Sarstedt, 2011). Whereas the cross-loading criterion compares an indicator's outer-loadings (its loading on its corresponding construct) with its cross-

loadings (its loadings on other constructs), the Fornell-Larcker criterion compares a construct's square root of AVE to the correlations it has with other constructs (Hair et al. 2014; Wong, 2013). In order to meet both criteria, the following two conditions must be satisfied. First, an indicators' outer-loading should be greater than all of its cross loadings (Hair et al. 2014; Hair, Ringle and Sarstedt, 2011). Second, the squared root of a construct's AVE should be greater than any inter-correlations between that construct and other constructs (Hair et al., 2014; Peng and Lai, 2012). After presenting the mechanism of both criteria, this study demonstrates the output of item cross-loadings in Table 7.6 (Part I of the structural model) and Table 7.7 (Part II of the structural model). In comparison, the results of the Fornell-Larcker criterion in are demonstrated in Table 7.8 (Part I of the structural model) and Table 7.9 (Part II of the structural model).

Table 7. 6 The cross loading output of the reflective indicators (Part I structural model)

	ATT	ADV	BI	DRE	FAM	NAE	PAE	REL	SN
ATT1	0.855	0.1803	0.5031	0.4342	0.2264	0.1477	0.5601	0.1489	0.6147
ATT2	0.9128	0.1927	0.5319	0.4622	0.2355	0.1593	0.5862	0.1679	0.6341
ATT4	0.897	0.1829	0.4972	0.4605	0.206	0.1539	0.6176	0.1344	0.61
ATT5	0.9116	0.2274	0.549	0.4812	0.2262	0.1954	0.6307	0.1992	0.6427
TM11	0.204	0.8608	0.3816	0.5485	0.3825	0.3789	0.2653	0.529	0.2333
TM12	0.136	0.8712	0.3251	0.4297	0.3912	0.3873	0.1906	0.5912	0.1655
TM13	0.2238	0.8532	0.4216	0.6006	0.4297	0.3635	0.327	0.5611	0.22
TM18	0.1684	0.7883	0.3958	0.5212	0.3704	0.42	0.3124	0.6054	0.1772
BI1	0.5776	0.3781	0.9118	0.5728	0.2915	0.3032	0.5732	0.3327	0.6012
BI3	0.5474	0.4355	0.942	0.5876	0.3507	0.3115	0.5872	0.4077	0.5425
BI4	0.4862	0.4489	0.9179	0.5096	0.2863	0.3344	0.5165	0.3791	0.5075
TM7	0.4275	0.4579	0.5033	0.8108	0.4798	0.289	0.5723	0.5352	0.4018
TM8	0.4462	0.4235	0.482	0.8233	0.438	0.2004	0.4977	0.4477	0.4336
TM9	0.4662	0.4698	0.4717	0.831	0.422	0.2327	0.5124	0.44	0.4006
TM10	0.3493	0.6494	0.4057	0.7491	0.4066	0.3096	0.4291	0.5045	0.3023
TM14	0.3888	0.5548	0.515	0.7738	0.3662	0.3051	0.5169	0.5266	0.35
TM15	0.4739	0.4465	0.5124	0.8526	0.3868	0.2366	0.6072	0.3929	0.4695
TM16	0.3776	0.5672	0.4977	0.8008	0.4	0.3373	0.526	0.5447	0.3476
TM19	0.4022	0.5167	0.4834	0.8272	0.3676	0.2386	0.5214	0.4161	0.3835
TM20	0.4076	0.5261	0.526	0.8216	0.3467	0.237	0.4997	0.4239	0.4167
TM2	0.2823	0.3593	0.2916	0.4726	0.9069	0.2202	0.3807	0.3816	0.2801
TM3	0.1469	0.4796	0.3034	0.3951	0.858	0.2986	0.2567	0.4794	0.1949
NAE1	0.2232	0.424	0.3589	0.3403	0.2823	0.9258	0.2924	0.4496	0.1794
NAE2	0.219	0.4263	0.3574	0.3227	0.2472	0.9341	0.266	0.4158	0.1747
NAE3	0.1248	0.4335	0.2807	0.2669	0.2811	0.9383	0.2146	0.4579	0.107
NAE4	0.0376	0.3841	0.1925	0.2126	0.2385	0.829	0.1122	0.4493	0.0559
PAE1	0.6246	0.3092	0.5595	0.577	0.3232	0.2204	0.927	0.2847	0.591
PAE2	0.5679	0.3404	0.572	0.5792	0.363	0.2882	0.9393	0.3424	0.538
PAE5	0.6708	0.2623	0.5521	0.6311	0.3332	0.2091	0.9124	0.262	0.6061
TM1	0.2222	0.5756	0.3852	0.4846	0.4862	0.386	0.2982	0.7957	0.2031
TM4	0.0667	0.5094	0.2405	0.3523	0.3346	0.3946	0.1574	0.7741	0.0669
TM5	0.193	0.5718	0.3559	0.5605	0.3821	0.4004	0.3181	0.8644	0.1996
TM6	0.0643	0.5522	0.3061	0.4517	0.3406	0.4079	0.2349	0.8469	0.1013
SN1	0.6354	0.2507	0.5821	0.4567	0.2302	0.1628	0.5649	0.1829	0.9049
SN2	0.5426	0.1773	0.4845	0.3674	0.2279	0.1344	0.4944	0.1536	0.876
SN3	0.6937	0.2047	0.5275	0.4655	0.2759	0.1135	0.611	0.1653	0.9034

Table 7. 7 The cross-loading output of the reflective indicators (Part II structural model)

	AB	BI
AB	1.000	0.460
BI1	0.434	0.929
BI3	0.422	0.955
BI4	0.435	0.924

Table 7.6 and Table 7.7 above indicate that every reflective indicator has an outer-loading larger than its cross loadings, which are demonstrated in the same row as the outer-loading. Thus, it can be concluded that the criterion of cross-loading has been met in this research.

With respect to the Fornell-Larcker criterion, Table 7.8 and Table 7.9 below show that each of the reflective constructs used in this study have a square root of AVE that is larger than any of its inter-correlations with other reflective constructs. It can therefore be concluded that the Fornell-Larcker criterion has also been satisfied and the reflective measurement models have achieved discriminant validity.

Table 7. 8 Fornell-Larcker criterion for reflective constructs (Part I structural model)

	ADV	**ATT**	**BI**	**DRE**	**FAM**	**NAE**	**PAE**	**REL**	**SN**
ADV	0.844								
ATT	0.2197	0.8944							
BI	0.4547	0.5824	0.924						
DRE	0.6278	0.5142	0.6036	0.8106					
FAM	0.4672	0.2501	0.3355	0.4946	0.8828				
NAE	0.4593	0.1842	0.3419	0.3244	0.2888	0.9079			
PAE	0.3286	0.6698	0.606	0.6428	0.3671	0.2588	0.9263		
REL	0.6769	0.1829	0.4037	0.5769	0.4811	0.482	0.3205	0.8211	
SN	0.238	0.6995	0.5967	0.4829	0.2732	0.1539	0.6239	0.1877	0.8948

Table 7. 9 Fornell-Larcker criterion for reflective constructs (Part II structural model)

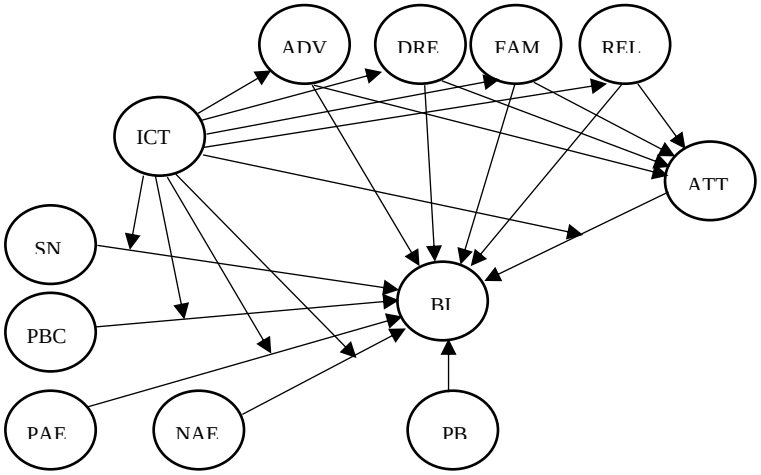
	AB	**BI**
AB	1.000	
BI	0.460	0.936

7.2.1.2. Calculating latent variable scores for lower-order constructs

Whereas the evaluation of reflective measurement models achieved satisfactory results, the evaluation of formative measurement models requires additional analyses and calculations. This is because one of the formative measurement models, travel motivation (TM), is a higher-order component (HOC) for the reflective-formative HCM of TM. According to researchers (e.g. Becker, Klein and Wetzels, 2012; Hair et al., 2017, 2018), a two-step HCM analysis is needed to analyse an endogenous reflective-formative HCM. This is because the repeated indicator approach that is used for analysing reflective-reflective HCMs could cause potential issues for a reflective-formative model. Such issues could include small path coefficients between LOCs and HOCs.

According to previous studies (e.g. Becker, Klein and Wetzels, 2012; Cheah et al., 2019; Hair et al., 2018), the first step of the analysis involves a calculation of LOCs' unstandardised latent variable scores (LVS). After obtaining the unstandardised LVSs, the second step involves using these scores as the indicators of the HOC to conduct an SEM analysis. Whilst this section only provides the first step of the HCM analysis, the researcher follows Becker, Klein and Wetzels's (2012) method to construct a first-order SEM model (see Figure 7.1 below) and use it for LVS calculation.

Figure 7. 1 The first-order SEM model for LVS estimation



By using SmartPLS3 to obtain indicator outer-loadings, the researcher manually calculated the relational LVSs using an Excel spreadsheet (LVSs for ADV, DRE, FAM and REL) for every respondent in the dataset. Formula 7.1 is used to calculate the unstandardised LVSs. In this formula, mv_n and w_n represents the nth manifest variable (indicator) and its corresponding outer-loading for the LOC of interest. The obtained LVSs will later be utilised in the formative measurement model evaluation and Part I structural model analysis (i.e. the structural model regarding travel intention and its predictors).

$$LVS = \frac{(w_1 \times mv_1 + w_2 \times mv_2 + \ldots + w_n \times mv_n)}{n} \quad (7.1)$$

7.2.1.3. Formative measurement model evaluation

Formative measurement models must be distinguished from reflective measurement models during the measurement model evaluation process (Hair et al. 2014; Hair, Ringle and Sarstedt, 2011; Henseler, Ringle and Sinkovics, 2009). Although it takes four steps to assess the reflective constructs (the four procedures displayed in Section 7.2.1.1), it only takes three procedures to assess the formative measurement models: construct validity, an evaluation of multi-collinearity and significance of outer-weights (Hair et al., 2014; Hair, Ringle and Sarstedt, 2011; Wong, 2013). The reason for excluding reliability examinations is that formative indicators, which represent the causes of the formative constructs, do not necessarily have a high inter-item correlation (Hair et al. 2014; Petter, Straub and Rai, 2007). In addition to this, formative measures should be uncorrelated with disturbance terms, in other words, errors (Diamantopoulos, 2006). Consequently, the concept of internal consistency reliability is meaningless for formative constructs and is not required for formative construct evaluation (Hair et al., 2014). However, it is necessary to establish validity for formative measurement models (Edward and Bagozzi, 2000). This study presents the results of the evaluation in accordance with the aforementioned three steps: construct validity; multi-collinearity issues; significance of outer-weights. Since the Part II of the structural model does not contain any formative constructs, none of its constructs will be included in this evaluation.

Construct validity

According to Diamantopoulos and Winklhofer (2001) and Gotz, Lieher-Gobbers and Krafft (2010), the first step to guarantee validity of a formative construct is to validate the domain of content for the construct. In other words, the definition and composing elements of the construct should be carefully analysed and formulated. By doing so, researchers can avoid the potential issues related to ignoring relevant formative indicators

and the omittance of a significant part of the formative construct (Diamantopoulos and Winklhofer, 2001). This step is usually completed during the model development process before the data collection stage (Gotz, Lieher-Gobbers and Krafft, 2010). It should be noted that this study has already analysed the range of contents for all of its three formative constructs (ICT usage, perceived behavioural control and travel motivations) in Section 4.2.9 and Section 5.3.4.

The second step involves the use of statistical analysis methods to evaluate the convergent validity of the formative constructs. According to Chin (1998) and Hair et al. (2014), when evaluating the convergent validity of a formative construct, a redundancy test needs to be performed to examine whether the formatively measured construct has a high correlation with a reflective measure of the same construct. In other words, a researcher needs to use the formatively-measured construct as a predictor for the same construct that is measured by reflective items; where their path coefficient decides the level of validity. Sarstedt et al. (2014) suggested a path coefficient of larger than 0.70 as being sufficient, while Chin (1998) suggested a path coefficient of at least 0.80 as being acceptable.

Before the primary data collection stage, the researcher of this study developed three questions as the global reflective items for the three formative constructs used in the study: ICT usage, perceived behavioural control and travel motivations. Those questions were presented in the survey instrument alongside other questions and were answered by survey respondents. This study utilised those three questions for the redundancy test, the results of which are demonstrated in Figure 7.2, Figure 7.3 and Figure 7.4 below. As it can be seen from the three diagrams, the path coefficient for formatively-measured PBC and reflectively measured PBC is 0.908. With regards to ICT and TM, the figures are 0.941 and 0.790 respectively. All of the path coefficients exceeded the rule of thumb

suggested by Sarstedt et al. (2014). Therefore, the three formative measurement models achieved an adequate level of convergent validity to assist with further analysis.

Figure 7. 2 Convergent validity of perceived behavioural control (PBC).

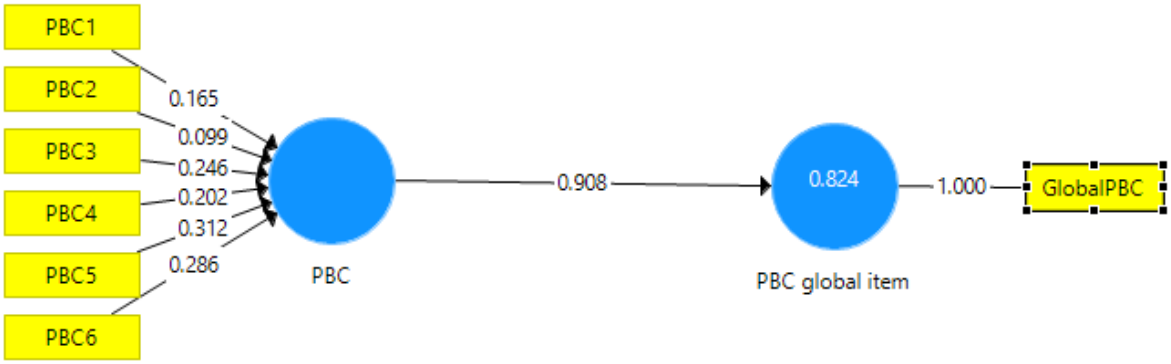


Figure 7. 3 Convergent validity of ICT usage (ICT).

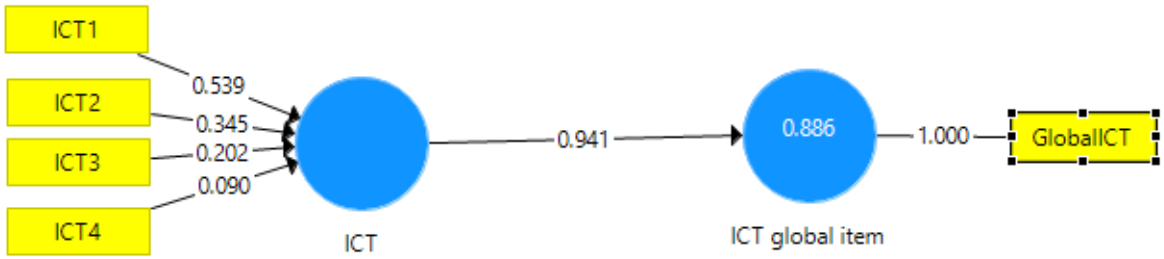
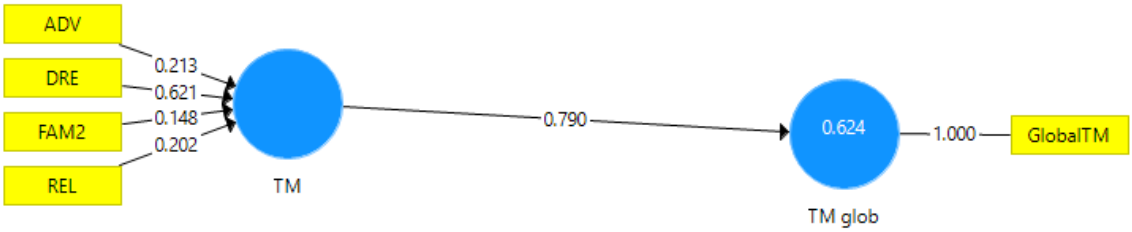


Figure 7. 4 Convergent validity of travel motivation (TM)



Indicator validity: multi-collinearity issues

The second step involves examining any potential multi-collinearity issues amongst the formative indicators. As mentioned previously, formative indicators do not necessarily

have high inter-item correlations. In fact, high correlations amongst indicators, or high collinearity, could be problematic to formative constructs. This is because they could substantially influence the statistical evaluation of formative constructs (Diamantopoulos and Winklhofer, 2001; Hair et al., 2014). The measures used to detect multi-collinearity issues (high correlations among more than two indicators) include the variance inflation factor (VIF) and its reciprocal, the level of tolerance (Hair et al., 1995; O'Brien, 2007). The general rule is that multi-collinearity issues will occur when the tolerance value is less than 0.2 or when the VIF value is larger than 5 (Chin, 1998; Hair et al., 1995; Hair et al., 2014). This study utilised the VIF value to measure multi-collinearity issues, the results of which are demonstrated in Table 7.10 below. As it can be seen from the table, the VIF values for the indicators of the three constructs ranged between 1.387 and 2.710. Thus, no significant issues of multi-collinearity were identified in relation to the three formative constructs.

Table 7. 10 VIF values for multi-collinearity issues.

Constructs	Indicators	VIF values
ICT	ICT1	2.574
	ICT2	2.71
	ICT3	1.794
	ICT4	1.651
PBC	PBC1	1.885
	PBC2	1.99
	PBC3	1.672
	PBC4	1.732
	PBC5	1.857
	PBC6	1.648
TM	ADV	2.179
	DRE	1.841
	FAM	1.387
	REL	1.965

Indicator validity: significance of outer-weights

The third step for the evaluation, as suggested by Hair et al. (2014) and Petter, Straub and Rai (2007), concerns the examination of the outer-weights of the formative items. The

values of outer-weights are useful indicators of the contribution and relevance of formative items (Diamantopoulos and Winklhofer, 2001; Tenenhaus et al., 2005). To obtain the outer-weights of formative indicators, the bootstrapping technique should be used. This technique draws a large number of subsamples from the original data and re-estimate the model for each subsample. (Hair, Ringle and Sarstedt, 2011, Hair et al., 2014; Sarstedt et al., 2014). Following on from this, the t-values and p-values of each indicator's weight can be obtained (Sarstedt et al., 2014). According to Hair, Ringle and Sarstedt (2011), critical t-values of a two-tailed test are 1.65 (p-value=0.10), 1.96 (p-value=0.05) and 2.58 (p-value=0.01).

If an indicator has a significant outer-weight, then there is adequate empirical support in favour of retaining it within the formative construct (Hair, Ringle and Sarstedt, 2011; Hair et al., 2014; Sarstedt et al., 2014). However, when the outer-weight of an indicator is non-significant, the magnitude of the indicator's outer-loading should be examined before a final decision to remove it from the formative construct (Chin, 1998; Gotz, Lieher-Bobbers, Krafft, 2010; Hair et al., 2014). If the indicator has an outer-loading larger than 0.5, it can be retained even if its outer-weight is not significant (Hair, Ringle and Sarstedt, 2011). Nevertheless, an indicator should be removed if both its outer-weight and outer-loading are non-significant (Hair, Ringle and Sarstedt, 2011; Wong, 2013).

This study follows the recommendation of Hair, Ringle and Sarstedt. (2011) and Sarstedt et al. (2014), which is that 5000 subsamples should be used for the bootstrapping procedure. Table 7.11 below illustrates the outer-weights, outer-loadings, t-values and significant levels (p-values) of the formative indicators. As the table shows, eight (ICT1, ICT3, ICT4, PBC1, PBC3, PBC4, PBC6 and DRE) indicators had significant outer-weights (alpha value=0.05). With respect to the six indicators with non-significant outer-

weights, five of them (i.e. ICT2, PBC2, PBC5, ADV and REL) had outer-loadings that were larger than the threshold of 0.50. Having an outer loading less than the recommended 0.50 level, the indicator of FAM was removed from the HCM of TM. After removing this LOC, the convergent validity (path coefficient between the formative construct and its global item being 0.784) and multi-collinearity (VIFs were all smaller than 3) of TM remained satisfactory. Despite this, since the LOC of FAM was composed by only two motivational questions, the researcher have kept most of the information for the construct of TM, which consisted of 20 motivational questions.

Table 7. 11 Significance and relevance of the formative indicators

Constructs	**Indicators**	**Outer-weights**			**Outer-loadings**		
		value	**t-statistics**	**p-value**	**value**	**t-statistics**	**p-value**
ICT	ICT1	0.340	3.353	0.000	0.737	16.429	0.000
	ICT2 (retained)	0.102	1.041	0.298	0.724	16.441	0.000
	ICT3	0.271	3.177	0.002	0.796	19.710	0.000
	ICT4	0.524	6.934	0.000	0.856	18.347	0.000
PBC	PBC1	0.276	3.109	0.002	0.779	18.482	0.000
	PBC2 (retained)	0.125	1.284	0.199	0.749	15.194	0.000
	PBC3	0.345	3.923	0.000	0.775	16.782	0.000
	PBC4	0.272	3.062	0.002	0.738	14.075	0.000
	PBC5 (retained)	0.100	1.150	0.250	0.708	13.487	0.000
	PBC6	0.183	2.047	0.041	0.713	13.469	0.000
TM	ADV (retained)	0.000	0.003	0.998	0.614	12.850	0.000
	DRE	0.998	23.986	0.000	0.994	224.241	0.000
	FAM (removed)	0.071	1.151	0.250	0.491	9.281	0.000
	REL (retained)	-0.061	1.038	0.299	0.550	12.068	0.000

7.2.2. Structural model evaluation

After assessing the measurement models, the researcher evaluated the structural model. The structural model evaluation covered a series of steps, including detecting multi-collinearity issues amongst the predicting constructs, testing hypothesised relationships and evaluating the impact of predicting variables upon dependent variables. The PLS

algorithm, unlike covariance-based algorithm, employs non-parametric tests to analyse the predictive capabilities of the model (Gotz, Lieher-Gobbers, and Krafft, 2010). Criteria involving in the structural model assessment range from the significance of path coefficient, the predictive accuracy R^2 and its effect size f^2 to the predictive relevance Q^2 and its effect size q^2 (Chin, 2010; Hair et al., 2014; Henseler, Ringle and Sinkovics, 2009). Every step and its corresponding criterion are presented in the following sub-sections, in accordance with the procedure recommended by Hair et al. (2014) and Sarstedt et al. (2014). Since this study adopts a two-step survey, the structural model evaluation is divided into two parts: a model for travel intentions and a model for actual behaviours. Figure 7.5 and Figure 7.6 below demonstrated the two components of the model.

Figure 7. 5 Part I of the structural model (n=587)

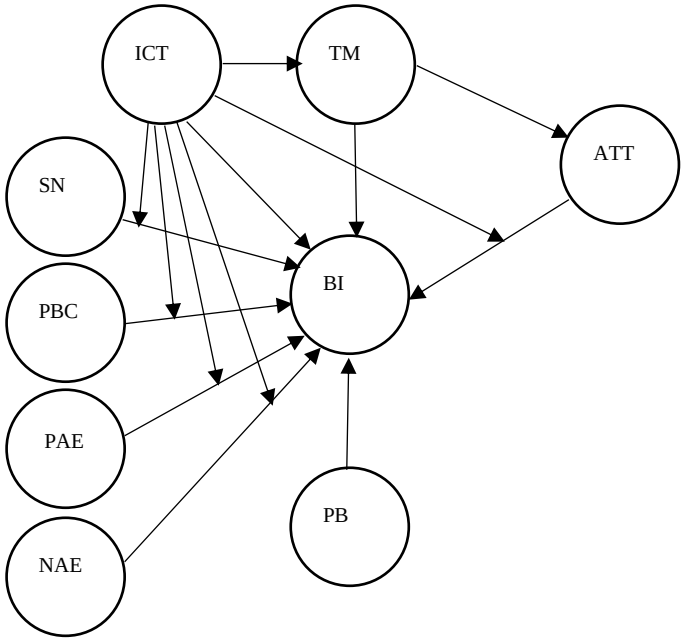


Figure 7. 6 Part II of the structural model (n=112)

7.2.2.1. Assessing the multi-collinearity of the structural model.

In addition to causing problems when estimating the outer-weights of formative indicators, multi-collinearity also present an obstacle when estimating the relationships within a structural model (Temme, Kreis and Hildebrandt, 2006). For example, high multi-collinearity amongst predicting constructs could lead to bias when evaluating the path models (Kristensen and Eskildsen, 2010; Hair et al., 2014). Therefore, it is necessary to evaluate any multi-collinearity issues within a structural model to determine whether any latent constructs need to be redeveloped, merged or removed (Wong, 2013).

When assessing multi-collinearity within the structural model, the model must be separated into different parts so that each set of predicting constructs can be evaluated (Hair et al., 2014). In this study, two sets of predictors were identified within the structural model. The first set of constructs are the predictors for BI, which include ATT, ICT, NAE, PAE, SN, PBC, PB and TM. The second set includes the predictors for ATT, namely, ICT and TM. Similar to the assessment of multi-collinearity within formative indicators, this evaluation used a VIF value of 5 and a tolerance level of 0.2 as its rule of thumb. Table 7.12 below shows the assessment results. The table shows that all VIF values are below the suggested threshold, indicating no serious issues of multi-collinearity.

Table 7. 12 Multi-collinearity assessment of the structural models.

First set (BI's predictors; Part I model)		**Second set (ATT's predictors; Part I model)**	
Construct	VIF	Construct	VIF
ATT	2.796	ICT	1.370
ICT	1.650	TM	1.370
NAE	1.230		
PAE	2.594		
PB	1.446		
PBC	2.421		
SN	2.566		
TM	2.008		

7.2.2.2. Structural path coefficients

Given that the multi-collinearity assessment did not identify any potential issues, the researcher then analysed the path coefficients amongst the latent variables. According to Hair et al. (2014), path coefficients represent the hypothesised relationships within a structural model and have a value between -1 and +1. The path coefficient and its significance (sample means; t-values) can be obtained using the bootstrapping technique (Hair, Ringle and Sarstedt, 2011; Hair et al., 2014; Wong, 2013). This analysis used 5000 subsamples for the procedure. Since all of the hypotheses made in this study are directional, the researcher manually calculated the p-value for each hypothesis as opposed to using the p-values generated by the test. The researcher followed the Hair's et al. (2014) suggestion and employed the TDIST function of the Excel spreadsheet to do the calculation. The degrees of freedom (the number of valid observations minus one) of 586 (for Part I) and 111 (for Part II) and the t-values generated from the bootstrapping test were then utilised to calculate the p-values. Table 7.13 below shows the results of the bootstrapping test, in addition to the significance level as calculated by the researcher.

Table 7. 13 The path coefficients and significance level of the proposed hypotheses

Proposed relations	Coefficient	t-values	p-values (one-tailed)	Sig. level	Same direction?	Reject null hypothesis?
Part I structural model (n=587)						
ATT -> BI	0.047	0.884	0.188	NS	Yes	No
SN -> BI	0.164	3.366	0.000	***	Yes	Yes
PBC -> BI	0.182	2.918	0.002	***	Yes	Yes
PAE -> BI	0.129	2.188	0.015	**	Yes	Yes
NAE ->BI	0.148	4.714	0.000	***	Yes	Yes
PB -> BI	0.147	4.192	0.000	***	Yes	Yes
TM -> BI	0.199	3.941	0.000	***	Yes	Yes
TM -> ATT	0.379	8.441	0.000	***	Yes	Yes
ICT -> BI	0.070	1.776	0.037	**	Yes	Yes
ICT -> TM	0.522	13.829	0.000	***	Yes	Yes
ATT*ICT -> BI	-0.024	0.539	0.295	NS	No	No
SN*ICT -> BI	0.108	2.092	0.018	**	Yes	Yes
PBC*ICT -> BI	-0.034	0.624	0.266	NS	No	No
PAE*ICT -> BI	-0.021	0.418	0.338	NS	No	No
NAE*ICT -> BI	-0.065	2.179	0.015	**	No	No
Part II structural model (n=112)						
BI -> AB	0.456	6.585	0.000	***	Yes	Yes
**p<0.05, ***p<0.01						

As the table shows, amongst the 16 proposed hypotheses 12 had a p-value smaller than the 0.05 alpha value, thus suggesting a significant relationship between the corresponding constructs. However, the direction of one of the hypotheses, NAE*ICT -> BI, differed from what the model hypothesised. Therefore, the researcher failed to reject the null hypotheses for this relationship, as well as failing to reject the null hypothesis for the other four relationships with non-significant p-values. Overall, 11 relationships (ithose highlighted in grey in Table 7.13 above) within the model were confirmed and established by the significance test.

7.2.2.3. Predictive accuracy: the coefficient of determination (R^2)

Despite the level and significance of the path coefficient, another primary assessment criterion for the structural model is the coefficient of determination R^2 (Hair, Ringle and Sarstedt, 2011). The R^2 value measures the predictive accuracy of a structural model and represents the combined effects of exogenous constructs on endogenous construct (Hair

et al. 2014; Peng and Lai, 2012; Ringle, Sarstedt and Straub, 2012). There is no universally agreed rule of thumb for coefficient of determination (Cronin, Brady and Hult, 2000; Gotz, Lieher-Gobbers and Krafft, 2010). Previous studies (e.g. Chin, 1998; Hair et al., 2014; Hair, Ringle and Sarstedt, 2011; Henseler, Ringle and Sinkovics, 2009) have proposed various rules of thumb for the coefficient of determination. For example, Falk and Miller (1992) and Roldan and Sanchez-Franco (2012) suggested that the R^2 value should reach a minimum level of 0.1 for a structural model. Chin (1998), on the other hand, suggested respective R^2 values of 0.67, 0.33 and 0.19 as being substantial, moderate and weak. In similarity to Chin's (1998), Hair, Ringle and Sarstedt (2011) and Henseler, Ringle and Sinkovics (2009) recommended R^2 values of 0.75, 0.50 and 0.25 as being substantial, moderate and weak. In addition to the aforementioned thresholds, researchers (e.g. Cohen, 1988; Hair et al. 2014) also proposed smaller R^2 values for certain disciplines. For example, Cohen (1988) proposed that R^2 values of 0.26, 0.13 and 0.02 correspond to the level of substantial, moderate and weak levels within behavioural science. Likewise, Hair et al. (2014) remarked that the R^2 value of 0.25 can be substantial within the field of consumer behaviours.

Table 7.14 below displays the R^2 values for the four endogenous constructs of the structural model used in this study. As it can be seen from the table, the R^2 values range from 0.270 (TM) to 0.591 (BI), all of the constructs have R^2 values that are larger than 0.10. Consequently, the R^2 values were identified as being sufficient for this study.

Table 7. 14 Coefficient of determination (R^2) for endogenous constructs

Endogenous constructs	R^2 value
Part I structural model (n=587)	
ATT	0.315
BI	0.591
TM	0.270
Part II structural model (n=112)	
AB	0.207

7.2.2.4. Impacts of predictive accuracy—effect size f^2

The fourth step of evaluating the structural model involves the effect size f^2 (e.g. Chin, 2010; Gotz, Lieber-Gobbers and Krafft, 2010; Hair et al., 2014). Derived from the change in coefficient of determination, effect size f^2 measures the level of impact an exogenous construct has upon an endogenous construct (Cohen, 1988; Gotz, Lieber-Gobbers and Krafft, 2010). The effect size f^2 is given as a formula by Cohen (1988) as follows:

$$f^2 = \frac{R^2_{included} - R^2_{excluded}}{1 - R^2_{included}} \quad (7.2)$$

As Formula 7.2 shows, the effect size f^2, or the change in coefficient of determination, of an exogenous construct is calculated by estimating the model twice: once with the predictor construct ($R^2_{included}$) and once without ($R^2_{excluded}$) (Gotz, Lieher-Gobbers and Krafft, 2010; Hair et al. 2014). The recommended rule of thumb for this criterion is 0.35, 0.15 and 0.02 for large, medium and small f^2 effects (Chin, Marcolin and Newsted, 2003; Cohen, 1988). However, it should be noted that a low effect size of f^2 does not necessarily represent a meaningless effect (Chin, Marcolin and Newsted, 2003; Henseler and Fassott, 2010; Wilson, 2010).

Table 7.15 below illustrates the effect size f^2 for the 11 established relationships. As it can be seen from the table, the f^2 effect size range from 0.007 (ICT -> BI) to 0.370 (ICT -> TM). According to Cohen's (1988) thresholds, one of the confirmed relationships, ICT -> TM, had large f^2 size, while another two relationships, TM -> ATT and BI -> AB, had

medium effect size. The rest of the relationships had small or very small effect sizes when rounded to the nearest hundredth decimal.

Table 7. 15 Effect sizes f^2 for the confirmed relationships.

Confirmed relationships	Effect size f^2	Rating
Part I structural model (n=587)		
SN -> BI	0.029	Small
ICT -> BI	0.007	Very small
SN*ICT -> BI	0.013	Very small
PBC -> BI	0.028	Small
PAE -> BI	0.016	Very small
NAE -> BI	0.045	Small
PB -> BI	0.040	Small
TM -> BI	0.049	Small
TM -> ATT	0.153	Medium
ICT -> TM	0.370	Large
Part II structural model (n=112)		
BI -> AB	0.260	Medium
Note: the f^2 values of 0.02, 0.15 and 0.35 represent small, medium and large effects respectively.		

7.2.2.5. Predictive relevance Q^2 and its effect size q^2

The fifth step of assessing a structural model is to analyse its predictive relevance (Hair et al., 2014; Roldan and Sanchez-Franco, 2012). Predictive relevance is often evaluated using the Q^2 value, as proposed by Stone (1974) and Geisser (1975). This value represents how well the original observations can be predicted using the structural model (Hair et al., 2014; Roldan and Sanchez-Franco, 2012). In order to obtain the Q^2 values, a blindfolding technique is required (Chin, 2010; Cronin, Brady and Hult, 2000; Tenenhaus et al., 2005). If the obtained Q^2 values are larger than zero, the structural model can be regarded as having adequate predictive relevance for endogenous constructs under consideration (Hair, Ringle and Sarstedt, 2011; Henseler, Ringle and Sinkovics, 2009; Peng and Lai, 2012). In contrast, if the Q^2 value is equal to or smaller than zero, the structural model lacks predictive relevance for the corresponding endogenous constructs (Hair et al., 2014; Roldan and Sanchez-Franco, 2012).

Regardless of the Q^2 value, the relative impact size q^2 should also be calculated and analysed with regards to the structural model (Hair et al., 2014; Henseler, Ringle and Sinkovics, 2009). The q^2 effect is assessed as follows:

$$q^2 = \frac{Q^2_{Included} - Q^2_{Excluded}}{1 - Q^2_{Included}} \quad (7.3)$$

As Formula 7.3 shows, the q^2 effect is assessed in a similar way to the f^2 effect (demonstrated in Formula 7.2). Likewise, the value of q^2 can be calculated by estimating the Q^2 twice: once with the predictor construct under consideration ($Q^2_{Included}$) and once without ($Q^2_{Excluded}$). According to researchers (Hair et al., 2014; Roldan and Sanchez-Franco, 2012), the same rule of thumb recommended for the f^2 effect also applies for the q^2 effect (0.02, 0.15 and 0.35 represent small, medium and large effects respectively).

This study utilises the blindfolding technique to estimate the Q^2 value. An omission distance of seven was chosen for Part I of the structural model, whereas a distance of five was selected for Part II of the structural model. This is because the sample size of the second model could be divided exactly by the default distance number of seven. The obtained Q^2 values, demonstrated in Table 7.16 below, are all larger than zero, thus suggesting adequate predictive relevance of the model with regards to the endogenous constructs.

Table 7. 16 Q^2 values for endogenous constructs

Endogenous construct	**Q^2 value**
Part I structural model (n=587)	
ATT	0.235
BI	0.464
TM	0.149
Part II structural model (n=112)	
AB	0.197

It should be noted that the SmartPLS3 software did not compute the q^2 effect values. The researcher therefore had to manually calculate the q^2 values for each of the 11 confirmed relationships, which are demonstrated in Table 7.17 below. As the table shows, the q^2 values range from 0.0002 (SN*ICT -> BI) to 0.245 (BI -> AB). According to the aforementioned standard, only one of the confirmed relationship had a medium q^2 effect. In comparison, two relationships (i.e. ICT -> TM and TM -> ATT) had small effects. The remaining the relationships had very small effects (less than 0.02) when rounded to the nearest hundredth decimal.

Table 7. 17 Effect size q^2 of the established relationships.

Relationships	**$Q^2_{Included}$**	**$Q^2_{Excluded}$**	**q^2 size**	**Rating**
Part I structural model (n=587)				
ICT -> TM	0.149	0	0.023	Small
TM -> ATT	0.235	0.155	0.033	Small
ICT -> BI	0.464	0.459	0.006	Very small
SN*ICT -> BI	0.464	0.4638	0.0002	Very small
SN -> BI	0.464	0.456	0.009	Very small
PBC -> BI	0.464	0.460	0.005	Very small
PAE -> BI	0.464	0.462	0.002	Very small
NAE -> BI	0.464	0.452	0.014	Very small
PB -> BI	0.464	0.455	0.011	Very small
TM -> BI	0.464	0.453	0.013	Very small
Part II structural model (n=112)				
BI -> AB	0.197	0	0.245	Medium
Note: the q^2 values of 0.02, 0.15 and 0.35 represent small, medium and large effects respectively.				

7.3. A summary and discussion of the findings

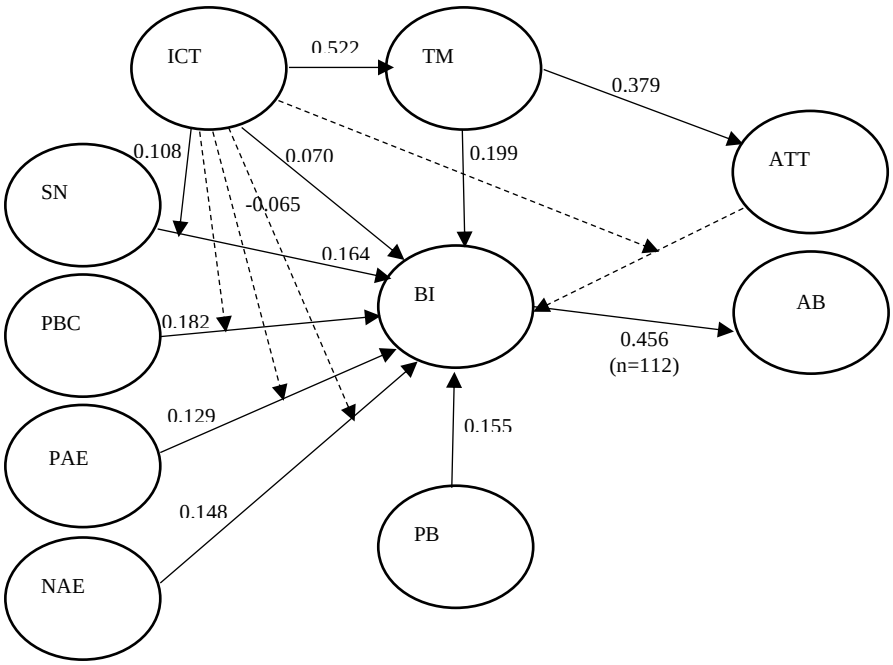
The aforementioned section evaluated the multi-collinearity issues, relationship significance, predictive accuracy and effect size of the structural model. Based on these assessments, this section will summarise the findings and compare them to findings within the existing literature. This section will be comprised of four parts. First, a map of the path model will be presented to highlight the confirmed relationships. Second, the relationships introduced from the TPB will be discussed and compared with previous research findings. Third, the paths adopted from the MGB will be analysed. Finally, the

last subsection is devoted to a discussion of the newly added constructs of the use of ICT (ICT) and travel motivations, including adventure and pleasure seeking (ADV), dream fulfilling and novelty seeking (DRE), family-oriented behaviours (FAM), relaxation seeking (REL).

7.3.1. Relationship significance of the model

An updated map of the confirmed relationships for the model is shown in Figure 7.7 below. As it can be seen from the figure, 11 out of the 16 proposed relationships were confirmed for the SEM analysis. These are demonstrated using solid lines with path coefficients. The majority of the unconfirmed relationships are demonstrated by dotted lines without path coefficients. The exception is the moderation relationship amongst NAE, ICT and BI, which has a significant p-value, yet flows in the opposite direction compared to what the model hypothesised. This relationship is demonstrated by dotted lines along its path coefficients. For a more detailed table illustrating the t-values and p-values of the proposed relationships, see Table 7.13 in Section 7.2.2.2.

Figure 7. 7 The updated route map of the overall structural model



7.3.2. A discussion of the findings

7.3.2.1. The relationships introduced from the TPB model

Four relationships were introduced to this study based on the TPB model: ATT -> BI, SN -> BI, PBC -> BI and BI -> AB. As Figure 7.7 above shows, three out of four relationships (i.e. SN -> BI; PBC -> BI; BI -> AB) from the TPB model were statistically established in this study. This subsection will discuss these four relationships and will make comparisons to previous studies to help provide possible explanations for any unanticipated findings.

Proposed relationship ATT -> BI: *Chinese senior citizens' attitude towards participating in leisure travel has a positive influence on their intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **unconfirmed)**.

As shown in Table 7.13 and Figure 7.7, the researcher failed to reject the null hypothesis for this proposed relationship (β=0.047; t=0.884; one-tailed p=0.188). This is in opposition to a number of studies in the field of tourism (e.g. Han, Hwang and Kim, 2015; Hsu and Huang, 2012; Jalilvand and Samiei, 2012; Phillips and Jang, 2012; Sparks, 2007) since it does not detect that attitude has a significant impact upon behavioural intentions. However, it does share similarities with various other findings (e.g. Lam and Hsu, 2006; Quintal, Lee and Soutar, 2010; Sparks and Pan, 2009), which is that attitude does not always significantly impact the travel intentions of Chinese senior citizens.

There could be two potential cultural reasons for this phenomenon. First, most Chinese seniors have experienced living in harsh conditions and so they are more likely to have developed a stronger sense of personal responsibility when compared with their own

personal preferences. They are reportedly willing to share domestic duties, such as child-care, with their adult children, thus resulting in a lack of personal leisure time (Feng et al., 2013; Hsu, Cai and Wong, 2007). Second, the collectivist culture of many Asian countries could suppress a person's travel attitude towards travelling. According to Quintal, Lee and Soutar (2010), people from collectivist cultures are more likely to follow social norms. Given this, it is understandable that a person's attitude could play a less significant role in influencing their travel intentions.

Proposed relationship SN -> BI: *Chinese senior citizens' subjective norm towards visiting participating in leisure travel has a positive influence in their intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.164; t=3.366; one-tailed p=0.000) and accepted its alternative hypothesis, which is that Chinese seniors' subjective norms towards leisure travel has a significantly positive relationship with their travel intentions. Despite mixed opinions on the impact of subjective norms within the literature on tourism studies (e.g. Lam and Hsu, 2004), this finding accords with a number of existing literature (e.g. Kaushik, Agrawal and Rahman, 2015; Hsu and Huang, 2012; Lam and Hsu, 2006; Sparks and Pan, 2009). It is also similar to the findings of Ajzen (1991), which is that subjective norms positively influence an individual's behavioural intentions. The confirmation of this relationship implies that tourism researchers could consider the subjective norms surrounding leisure travel when investigating the travel intentions of Chinese seniors.

Proposed relationship PBC -> BI: *Chinese senior citizens' perceived behavioural control towards participating in leisure travel has a positive impact on their intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.182; t=2.918; one-tailed p=0.002), and accepted its alternative hypothesis, which is that Chinese seniors' perceived behavioural control towards leisure travel positively influences their travel intentions. This finding is similar to others in the tourism studies literature (e.g. Hsu and Huang, 2012; Lam and Hsu, 2006; Meng and Choi, 2016a; Sparks, 2007; Sparks and Pan, 2009). It also conforms to Ajzen's (1991) suggestion that perceived behavioural control has a positive relationship with a person's behavioural intentions. Based on the findings of this model, the correlation coefficient indicates that perceived behavioural control had the second largest impact on travel intentions. This suggests that tourism researchers may wish to consider the effects of perceived behavioural control when investigating the travel intentions of Chinese seniors.

Proposed relationship BI -> AB (Part II structural model; n=112): *Chinese senior citizens' intention to participate in leisure travel has a positive impact on their actual behaviour to take leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.456; t=6.585; one-tailed p=0.000), and accepted its alternative hypothesis, that Chinese seniors' travel intentions positively influence their actual behaviours in relation to participating in leisure travel. The result partly conforms to the findings of a number of previous studies (e.g. Chow and Murphy, 2011; Hsu and Huang, 2012; Ziadat, 2015). It is also similar to Ajzen's (1991) proposal that behavioural intention is a predictor of actual behaviour.

7.3.2.2. Relationships introduced from the MGB model

Three relationships were introduced from the MGB model for this study, namely PAE -> BI, NAE -> BI, and PB -> BI. As Figure 7.7 shows, all three relationships have been statistically confirmed in this study. This subsection will now go on to discuss these four relationships in turn.

Proposed relationship PAE -> BI: *Chinese seniors' positive anticipated emotion towards participating in leisure travel has a positive impact on the intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.129; t=2.188; one-tailed p=0.015) and accepted its alternative hypothesis, that Chinese seniors' positive anticipated emotions towards leisure travel significantly influence their travel intentions. This finding is similar to those of various reports on tourism studies investigating other travel-related behaviours (e.g. Han, Jae and Hwang, 2016; Kim et al., 2012; Meng and Choi, 2016b; Meng and Han, 2016; Song et al., 2012b). This finding also shares similarities with Perugini and Bagozzi's (2001) suggestion that positive anticipated emotions positively influence behavioural intentions. The confirmation of this relationship implies that, researchers within the field of tourism should consider the importance of Chinese seniors' positive anticipated emotions when investigating their travel decision-making processes.

Proposed relationship NAE -> BI: *Chinese seniors' negative anticipated emotion towards participating in leisure travel has a positive impact on the intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.148; t=4.714; one-tailed p=0.000) and accepted its alternative hypothesis, which is that Chinese seniors' negative anticipated emotions towards leisure travel have a positive impact upon their travel intentions. This finding matches various findings in the literature regarding other travel-related behaviours (e.g. Han, Jae and Hwang, 2016; Kim et al., 2012; Meng and Choi, 2016b; Meng and Han, 2016; Song et al., 2012b). In addition, this finding also accords with Perugini and Bagozzi's (2001) suggestion that negative anticipated emotions have a positive effect upon behavioural intentions. The confirmation of this relationship implies that, when investigating Chinese seniors' travel intentions, tourism researchers should assess negative anticipated emotions towards travel.

Proposed relationship PB -> BI: *Chinese seniors' past behaviour of participating in leisure travel has a positive influence on senior tourists' intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.147; t=4.192; one-tailed p=0.000) and accepted its alternative hypothesis, that Chinese seniors' past travel experiences positively impact their travel intentions. This finding is similar to existing studies in the tourism literature investigating other travel-related behaviours (e.g. Han, Jae and Hwang, 2016; Huang and Hsu, 2009; Kim et al., 2012; Meng and Choi, 2016b; Meng and Han, 2016; Song et al., 2012b). In addition, this finding is similar to Perugini and Bagozzi's (2001) theory that past behaviours have a positive effect upon behavioural intentions. The confirmation of this relationship implies that, when investigating Chinese seniors' travel intentions, researchers in the field of tourism should investigate the past travel behaviours of this particular tourist group.

7.3.2.3. Impacts of ICT usage and travel motivation.

In this study, four direct relationships have been proposed regarding travel-related ICT usage and travel motivations (ICT -> BI, ICT -> TM, TM -> BI and TM -> ATT). At the same time, five moderation relationships have also been proposed in which ICT has acted as a moderator for five of BI's predictors (ATT*ICT -> BI, SN*ICT -> BI, PBC*ICT -> BI, PAE*ICT -> BI, NAE*ICT -> BI). Furthermore, Figure 7.7 suggests that certain mediation effects might also exist within the model (ICT -> TM -> BI). This subsection will divide these relationships into three parts (direct relationships involving ICT and/or TM; moderation effects of ICT; the mediation effect of TM) and discuss them respectively.

Direct impacts of ICT and TM

As mentioned previously, four direct relationships (ICT -> BI; ICT -> TM; TM -> BI; TM -> ATT) have been proposed regarding the constructs of ICT and TM. All of those relationships have been confirmed using an SEM analysis. Amongst them, two relationships (ICT -> BI; TM -> BI) show support for Wang et al.'s (2017) finding that ICT usage and travel motivations are positively associated with an individual's travel intentions. In addition, the results also show some support for Gursoy and McCleary's (2004) theory that higher levels of ICT usage enhance a person's travel motivations by reducing their perceived risks and improving their understanding of a destination. Kim et al. (1996) similarly found that different sources of information could lead to various motivational segments.

Proposed relationship ICT -> BI: *The use of ICT for tourism purposes is a positive predictor for Chinese seniors' travel intention* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.070; t=1.776; one-tailed p=0.037) and accepted the alternative hypothesis, that travel-related ICT positively impacts the travel motivations of Chinese seniors. This finding is similar to Wang et al.'s (2017) finding that travel-related ICT usage was positively related to the strength of Chinese seniors' travel intentions.

Proposed relationship ICT -> TM: *The use of ICT for tourism purposes is a positive predictor for Chinese seniors' travel motivations* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed relationship (β=0.522; t=13.829; one-tailed p=0.000) and accepted its alternative hypothesis, which is that Chinese seniors' ICT usage has a positive impact upon their travel motivations. A comparison between this study and Wang et al.'s (2017) research reveals similar findings, such as higher ICT usage tends to increase travel motivations.

Proposed relationship TM -> BI: *Chinese seniors' travel motivations form a positive predictor for intention to participate in leisure travel* (H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed**).

The researcher rejected the null hypothesis of this proposed relationship (β=0.199; t=3.914; one-tailed p=0.000) and accepted its alternative hypothesis, which is that Chinese seniors' travel motivations positively impact their travel intentions. Unlike various studies in the literature that have separated travel motivations into different constructs (e.g. Hsu, Cai and Li, 2010; Jang et al., 2009; Kim, Hart and An, 2017), this study merges different aspects of travel motivations into a single construct so that it can be examined as a whole. Nevertheless, the confirmation of this relationship is similar to

some of the findings within the existing literature. At least some aspects of travel motivations, such as dream fulfilling and novelty seeking, adventure and pleasure seeking and relaxation seeking, have significantly positive impacts upon a person's travel intention. Therefore, this finding implies that, when investigating one's travel intention, researchers could take into account the impact of travel motivations.

Proposed relationship TM -> ATT: *Chinese seniors' travel motivations form a positive predictor for attitude toward participating in leisure travel* (H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed**).

The researcher rejected the null hypothesis of this proposed relationship ($\beta=0.379$; $t=8.441$; one-tailed $p=0.000$) and accepted its alternative hypothesis, that Chinese seniors' travel motivations have a positive impact upon their attitude towards participating in leisure travel. This finding partly conforms to a number of existing research studies (e.g. Hsu, Cai and Li, 2010; Huang and Hsu, 2009). For instance, Hsu, Cai and Li (2010) found that novelty seeking was a travel motivation that significantly impacts on an individual's attitude towards travel. Likewise, Lee, Bruwer and Song (2017) ascertained a similar finding that escapism was a travel motivation significantly influence a person's attitude towards travel. The confirmation of this relationship further suggests that researchers could take into account the impact of travel motivations upon a person's attitude towards travel.

The moderation effects of ICT usage

A moderation effect, in similarity to a mediation effect, is a function of third variables (Baron and Kenny, 1986). However, these two functions differ in a way such that mediation explains a relationship between two variables, whereas moderation influences

the strength of a relationship between two variables (Baron and Kenny, 1986; Frazier, Tix and Barron, 2004; Holmbeck, 1997). In addition to influencing the strength of a relationship, the moderation effect can also influence and change the direction of a relationship between an independent variable and a dependent variable (Baron and Kenny, 1986; Hair et al. 2014).

This study hypothesised that the use of ICT is a positive moderator of the following five relationships: ATT -> BI, SN -> BI, PBC -> BI, PAE -> BI and NAE -> BI. To test these hypotheses, the researcher employed the ICT usage as a continuous moderator and created five interaction terms (ATT*ICT, SN*ICT, PBC*ICT, PAE*ICT and NAE*ICT) for the structural model. Since ICT usage is a formative construct, the researcher followed the guidelines set out by Hair et al. (2014), which is to employ a two-stage analysis approach for the five interaction terms. However, the results of the analysis showed that only one of the five hypothesised effects (SN*ICT -> BI) could be established. Because no previous study had analysed such moderation effects of the use of ICT, the researcher was only able to provide a range of plausible explanations to the unexpected findings. No comparisons to previous studies have been made.

Proposed relationship ATT*ICT -> BI: *The use of ICT for tourism purposes is a positive moderator for the relationship between attitude toward participating in leisure travel and intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **unconfirmed)**.

The researcher failed to reject the null hypothesis of this proposed effect (β= -0.024; t=0.539; one-tailed p=0.295) and failed to accept its alternative hypothesis. This is because the p-value is larger the alpha value of 0.05 set prior to the test. In addition to this, the path coefficient suggests that ICT usage could negatively impact the relationship

between Chinese seniors' travel attitudes and their travel intentions. A possible explanation could arise from the idea that Chinese seniors are of the 'digital immigrant generation'. The term 'digital immigrants' originated from Prensky's (2001) article and is used to describe those who were born in an era when the digital technology had not yet been invented. Compared with 'digital natives', digital immigrants learnt about this new type of technology at a later stage and could therefore have encountered more difficulties during its adoption (Prensky, 2001). This is especially true with Chinese seniors, who often find using digital technology exhausting and frustrating (Zhao et al., 2014). Consequently, Chinese seniors could feel uneasy about using ICT for travel purposes and, therefore, the strength of the relationship between ATT and BI could be reduced.

Proposed relationship SN*ICT -> BI: *The use of ICT tourism purposes is a positive moderator for the relationship between subjective norm toward participating in leisure travel and intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **confirmed)**.

The researcher rejected the null hypothesis of this proposed effect ($\beta=0.108$; $t=2.092$; one-tailed $p=0.018$) and accepted its alternative hypothesis, that ICT usage has a positive moderation effect on the relationship between Chinese seniors' subjective norms towards leisure travel and their travel intentions. Travel experience viewing and travel experience sharing could be the activities that contribute substantially to this effect.

Proposed relationship PBC*ICT -> BI: *The use of ICT for tourism purposes is a positive moderator for the relationship between perceived behavioural control toward participating in leisure travel and intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **unconfirmed)**.

The researcher failed to reject the null hypothesis of this proposed effect (β= -0.034; t=0.624; one-tailed p=0.266) and failed to accept its alternative hypothesis. This is because the p-value is larger than the alpha value set prior to the test and also because the path coefficient is opposite to what the study proposed. A possible explanation might be owing to the constraints felt by Chinese seniors regarding the adoption of the ICT. In other words, the difficulties faced when using ICT might make Chinese seniors feel as though they are less capable, which could in turn reduce strength of the relationship between their PBC and BI.

Proposed relationship PAE*ICT -> BI: *The use of ICT for tourism purposes is a positive moderator for the relationship between positive anticipated emotions toward participating in leisure travel and intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **unconfirmed)**.

The researcher failed to reject the null hypothesis of this proposed effect (β= -0.021; t=0.418; one-tailed p=0.338) and failed to accept its alternative hypothesis. This is because both the p-value and the path coefficient direction are inconsistent with the criteria and assumptions set prior to the test. Again, the constraints experienced by seniors when adopting ICT could offer an explanation for this finding. Although anticipated emotions share a similar definition with attitudes, they are more dynamic and arise from the feedback of goal-achievement attempts (Perugini and Bagozzi, 2001; Bagozzi, Dholakia and Basuroy, 2003). This characteristic makes the PAE construct more contingent than the ATT construct. Therefore, when seniors experience difficulties in utilising ICT for travel purposes, their frustrations might be more likely to suppress the relationship between their PAE and BI.

Proposed relationship NAE*ICT -> BI: *The use of ICT for tourism purposes is a positive moderator for the relationship between negative anticipated emotions toward participating in leisure travel and intention to participate in leisure travel* **(**H_0: $\beta \leq 0$; H_a: $\beta > 0$; **unconfirmed)**.

The researcher failed to reject the null hypothesis of this proposed effect (β= -0.065; t=2.179; one-tailed p=0.015) and failed to accept its alternative hypothesis. This is because the direction of the path coefficient differs from what the study previously hypothesised. However, a significant p-value appears to confirm the explanation that anticipated emotions are more dynamic and could therefore more easily be influenced by the frustration experienced by seniors when using ICT. Even though this finding cannot be generalised to the entire tourist population, researchers could nevertheless consider the suppressive impact of ICT usage on anticipated emotions when investigating the tourism market of Chinese senior tourists in particular.

The mediation effect of travel motivation

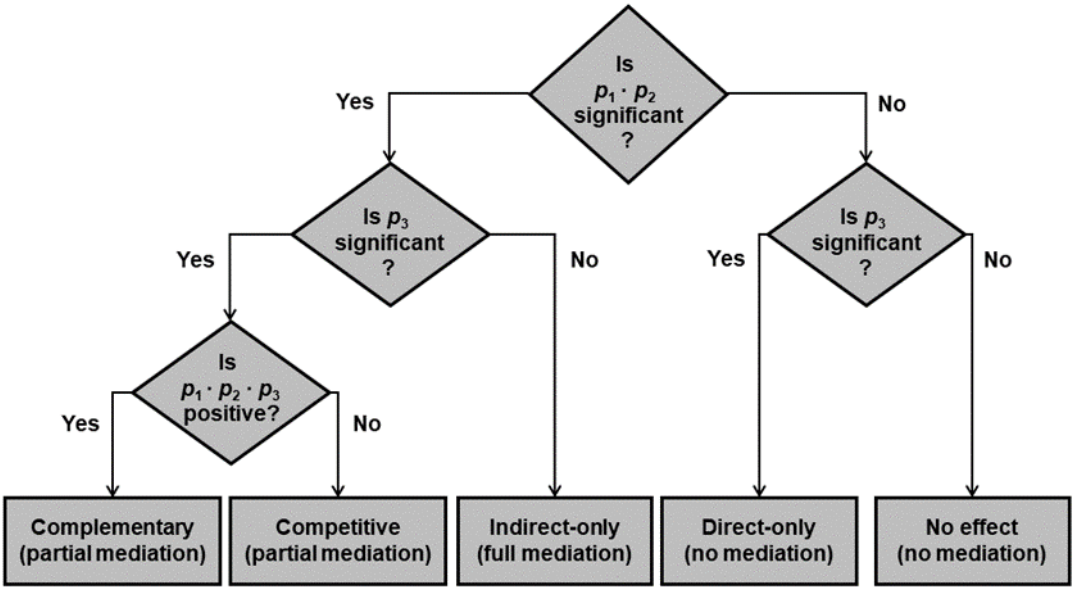
The research findings in Table 7.13 and Figure 7.7 demonstrated that travel-related ICT usage (ICT) significantly influenced travel intentions (BI) and travel motivations (TM). And the latter (TM) also significantly impacts the former (BI). This observation suggests a likely mediation effect amongst these three constructs, where TM acts as a mediator.

According to some researchers (e.g. Baron and Kenny, 1986; Frazier, Tix and Barron 2004; Holmbeck, 1997), mediation effects occur when a third variable, also known as a 'mediator', partly or completely diverts the influences of a predictor through the mediator itself. Analysing mediation effects could provide a more precise understanding of the relationships among the latent constructs and the mechanism of the model (Wu and

Zumbo, 2008). It can also allow researchers to comprehend why, how and when certain phenomena emerge (Nunkoo, Ramkissoon and Gursoy, 2013).

Hence, to achieve better understanding of the impact of travel motivations of Chinese seniors upon their travel decision-making processes, it is necessary to investigate and examine this potential mediation effect. In order to evaluate this effect, the researcher adopted the assessment criteria developed by Zhao, Lynch and Chen (2010), who synthesised previous research findings on mediation analysis to make several improvements to the conceptual and methodological problems facing Baron and Kenny's (1986) approach (Hair et al., 2014). In addition, three types of mediation were also identified from Zhao, Lynch and Chen's (2010) work: complementary mediation, competitive mediation and indirect-only mediation. Figure 7.8 below demonstrates the criteria developed by those three researchers, which were utilised by this study.

Figure 7. 8 The evaluation criteria employed in this study.



Source: Hair et al. (2014).

As the figure shows, the evaluation process involves three steps. First, the researcher determines whether there is a significant indirect effect diverted through the hypothesised mediator (demonstrated by p_1*p_2 in the graph). If the indirect effect is significant, then the researcher will continue to examine the direct effect of the predictor (demonstrated by p_3 in the graph). Again, if the direct effect is significant, then the researcher will be required to perform the third step of evaluation: evaluating the product of the coefficients of the direct and indirect effects. A positive product indicates a complementary mediation effect, whereas a negative product is suggestive of a competitive mediation effect.

Following the aforementioned procedure, the researcher first performed the bootstrapping technique to obtain the significance result for p_1*p_2 (the total indirect effect in the bootstrapping report). As Table 7.19 shows below, the total indirect effect for ICT -> BI is significant. Therefore, the first step of the evaluation is confirmed, and so the researcher continued to examine the significance of p_3 (the direct effect of ICT -> BI). Again, the assessment result is significant (as it can be seen in Table 7.13 in Section 7.2.2.2 and Table 7.18 in this section). Hence, it could be concluded that this effect is a partial mediation, rather than a full mediation. In the third and final step of the analysis, the researcher examined the value of $p_1*p_2*p_3$ and found that it had a positive value. Consequently, TM could be confirmed as being a significant mediator for the relationship between ICT and BI, and its effect is a complementary partial mediation.

Table 7. 18 Significance analysis of direct and indirect effects.

Relationship	**Direct effect**	**t value**	**Significant? (p < 0.05)?**	**Indirect effect**	**t value**	**Significant? (p < 0.05)?**
ICT -> BI	0.070	1.776	Yes	0.127	3.442	Yes

7.4. Conclusion

Based on the research findings given in Chapter 6, this chapter has addressed the study's Research Objective 5 by conducting a thorough analysis of the proposed SEM. By employing the PLS-SEM technique the researcher examined the measurement models and the structural model of the SEM. The results indicated that, whereas the measurement models achieved satisfactory levels for a structural model analysis, the structural model analysis established 11 of the 16 proposed relationships. More specifically, the structural model analysis provided supports for an extended TPB model, which included additional psychological and technological elements for the Chinese senior tourist market.

Through an analysis of the structural model, the researcher revealed that travel-related ICT usage, a construct that only few previous studies have investigated, could either directed or indirectly significantly impact upon one's travel intentions. Some travel motivations mediated the impact of ICT upon travel intentions. In addition, ICT could have a significant positive impact upon the relationship between an individual's social norms and their travel intentions. In addition to revealing the importance of ICT usage for a person's travel decision-making processes, this study also found the negative impact of use of ICT upon travel intentions owing to moderation. This is especially the case for Chinese seniors, who could find it difficult to adopt ICT for travel purposes.

The findings given in this chapter provide valuable insights for the Chinese senior tourist market. Based on these findings, in addition those given in Chapter 6, the researcher is able to offer a set of recommendations to stakeholders in this market. In the following chapter the researcher will explain the key findings and their implications, and provide relevant suggestions to three key types of stakeholders: senior tourists, travel agencies, and relevant governing bodies.

Chapter 8: Conclusion and recommendation

8.1. Introduction

Chapter 8 is the final chapter and will summarise the key findings presented in Chapter 6 and Chapter 7. With a focus on the Chinese senior tourist market, this study holistically investigated the travel behaviours and decision-making processes of Chinese senior tourists and it has produced a considerable amount of findings. More specifically, the research findings cover behaviours such as attitudes towards travel, travel motivations, travel intentions, past travel experiences and travel-related ICT usage. Based on these research results, this chapter will draw a series of conclusions related to the research objectives. This chapter will also provide a series of recommendations for relevant stakeholders based on the conclusions, thus addressing Research Objective 5 of the study.

In terms of the structure of this chapter, the discussion begins by presenting the main findings of this study in relation to its original research aims and objectives. The findings show that the study has successfully investigated the Chinese senior tourist market and the travel decision-making processes of Chinese seniors. This chapter will then discuss the theoretical and practical implications of the study and various recommendations will be provided for relevant stakeholders. Next, it will analyse and discuss the limitations of the research and, finally, the researcher will discuss their expectations regarding future research on senior tourism service and digital marketing.

8.2. Key research findings

This study has produced new knowledge on the area of the senior tourist market in China. All of the research aims and objectives have been achieved and a number of relevant findings have been generated. This section presents the key findings from the previous

chapters and discusses how these findings have addressed the respective research objectives.

As it can be seen in Table 8.1 below and the discussion in Section 1.5, this study developed five research objectives with two broad research aims, which were addressed in Chapters 2 – 8. More specifically, Chapter 2 and Chapter 3 addressed Research Objective 1, which aimed to critically review the existing research literature on senior tourism. Chapter 4 and Chapter 5 addressed Research Objective 2, which aimed to propose a conceptual framework for the travel decision-making processes of Chinese seniors. Then, Chapter 6 and Chapter 7 focused on Research Objectives 3 and 4. Both chapters evaluated the general travel behaviours of Chinese seniors and assessed the hypothetical relationships given in the proposed structural model. Finally, this chapter addresses Research Objective 5 by providing recommendations to a range of relevant stakeholders within the Chinese senior tourist market. This section presents the findings from Chapters 2 -7 in relation to the first four research objectives. Then, Section 8.3.2 in this chapter will address Research Objective 5.

Table 8. 1 The research aims and objectives developed by this study.

Research Aim 1			
To propose a conceptual framework regarding the travel decision-making process of Chinese seniors, which incorporates potential influential factors such as ICT usage.			
Corresponding research objectives			
No.	Statements	Relational chapter(s)	Relational sections in Chapter 8
RO1	To critically review the research literature published in both the English and Chinese language in relation to senior tourism.	Chapter 2 and 3	Section 8.2.1
RO2	To develop a conceptual framework and create relevant measurement and structural models for it.	Chapter 4 and 5	Section 8.2.2
Research Aim 2			
To assess the proposed conceptual framework and the general travel behaviours of Chinese seniors.			
Corresponding research objectives			
No.	Statements	Relational chapter(s)	Relational sections in Chapter 8
RO3	To assess the travel behaviours of Chinese seniors and their general and travel-specific ICT usage.	Chapter 6	Section 8.2.3
RO4	To assess the relationships presented within the proposed structural model.	Chapter 7	Section 8.2.4
RO5	To provide recommendations to relevant stakeholders, such as Chinese senior tourists, Chinese travel agencies and relevant market management bodies.	Chapter 8	Section 8.3.2

8.2.1. Research Objective 1: to critically review the research literature published in both the English and Chinese language in relation to senior tourism

This study conducted two reviews (in Chapter 2 and Chapter 3) on the existing senior tourism research literature, one review focused on publications in the English language and the other focused on publications in Chinese. By examining the research themes and methods used in these studies, the literature reviews identified several research gaps that needed to be filled. In terms of the English research literature, a relational review (Chapter 2) indicated that comparison studies, travel constraints, market segmentations, travel decision-making processes, and other general travel behaviours were among the key research topics for researchers around the world. However, this literature review also identified several research gaps. For example, there was a need to further investigate seniors' travel decision-making processes as previous studies had failed to assess the

impact of certain psychological and technological influences, such as travel constraints and ICT usage. What is more, this literature review found that the Chinese senior tourist market was underrepresented in the English research literature. Only seven articles were found in relation to this market, despite an estimated 200 million potential customers (China National Office on Ageing, 2013).

In terms of the Chinese research literature, a relational review (Chapter 3) revealed that general travel behaviours, travel constraints, market segmentations and travel decision-making processes were amongst the key research themes focused on by Chinese researchers. This review chapter also discovered critical limitations regarding research methods, since Chinese researchers often failed to report their sampling processes and tended to use rudimentary data analysis methods. Despite that, the Chinese research literature, in similarity to its English counterpart, ignored some of the potential psychological and technological factors that could impact upon the travel decision-making processes of seniors. Therefore, the research gaps identified by Chapter 2 and Chapter 3 justified the researcher's intention to investigate the travel decision-making processes of Chinese seniors. The researcher decided to create a conceptual framework that includes the relevant psychological and technological factors (e.g. travel attitudes; travel constraints; ICT usage) for Chinese seniors' travel decision-making processes.

8.2.2. Research Objective 2: To develop a conceptual framework and create relevant measurement and structural models for it

Chapter 4 of this study developed a theoretical framework for Chinese seniors' travel decision-making processes to help to address Research Objective 2 (RO2). In this chapter, the researcher adopted a grand decision-making model and established an extended TPB model. The researcher included all of the original components of the TPB model and

included a number of external factors into the model, such as travel motivations, positive and negative anticipated emotions, and travel-related ICT usage. By analysing the relationships amongst these factors, the researcher proposed 16 causal relationships for this structural model.

Chapter 5 also sought to address RO2. In this chapter, the researcher analysed and developed the research methodology for the study and a positivist research paradigm and quantitative research approach were adopted. In addition, the measurement models for the conceptual framework were analysed and established. These were used to develop measurement models that were then incorporated into the questionnaire for data collection purposes. In addition to developing the measurement models for the conceptual framework, this chapter also specified how the primary data was collected, as well as what methods would be used for data analysis.

8.2.3. Research Objective 3: To assess the travel behaviours of Chinese seniors and their general and travel-specific ICT usage

8.2.3.1. General travel behaviours and travel motivations

Given the objective to evaluate Chinese seniors' travel behaviours and use of ICT, this study specifically evaluated the travel intentions, past travel behaviours and travel motivations of this group of tourists. Utilising descriptive statistics, the researcher found that Chinese seniors have a strong demand for leisure travel, despite the current economic slowdown in China. In addition, the researcher used a factor-cluster analysis and identified four major travel motivations and four market segments for the group of Chinese senior tourists.

With respect to travel intentions, the study suggested that the majority of respondents (65.8%) had the intention to participate in leisure travel for the 2018 National Day Golden Week, whereas more than half (57.4%) of the respondents had the intention to travel abroad. The study also found that most of the respondents (94.1%) had travelled for leisure in the past. Overall, these three parameters suggested a relatively high travel demand amongst Chinese seniors.

In terms of travel motivations, four motivational components were extracted from the 20 motivational items by using a principal component analysis technique. By performing the varimax orthogonal rotation method, the researcher ascertained the compositions of the four motivational components and named them 'dream fulfilling and novelty seeking', 'adventure and pleasure seeking', 'relaxation seeking' and 'family-oriented behaviours' respectively. Based on these four components, the researcher then divided the respondents into four segments: 'family-oriented travellers', 'travel enthusiasts', 'uninterested individuals' and 'cautious dream-fulfillers'.

Whereas the characteristics of the four segments can be seen in Figure 6.1 (Section 6.4.3.3), it is clear that, amongst the four segments, 'travel enthusiasts' had the highest interest on all four motivational components. In comparison, 'Family-oriented travellers' had an apparent preference for the motivational component of family-oriented behaviours. Although 'cautious dream travellers' and 'uninterested individuals' had a similar motivational preferences based on Figure 6.1, both groups had different levels of interest in each of the motivational components. The former showed a stronger interest than the latter for all four of the motivational factors. Finally, among the six demographic factors measured in this study (gender; age; income; education; employment; household structure), the four segments showed significant differences in age only.

8.2.3.2. General and travel-specific ICT usage

By recognising the increasing importance of ICT in the tourism industry, this study was able to investigate and shed light on the general ICT behaviours (type of ICT devices; daily time spent online) and travel-related ICT usage (travel planning and booking; in-tour problem solving; travel experience sharing; travel experience viewing) of Chinese seniors. In addition, since previous studies (e.g. Choi and DiNitto, 2013; Ma, Chan and Chen, 2016) have stressed the importance of the impact of demographic factors upon ICT usage, this study examined and clarified the influence of those factors on the ICT behaviours of Chinese seniors in particular.

In terms of general ICT behaviours of Chinese seniors, the majority of respondents (96.9%) reported that they use at least one type of ICT devices. Among the four types of ICT devices (mobile phones; laptop; desktop; tablet) investigated in this study, mobile phones were the most popular as 87.2% of the respondents reported using them. This figure was followed by desktop users (34.2%), tablet users (14.0%) and laptop users (12.4%). The daily time spent online by Chinese seniors also suggested frequent ICT usage among the respondents; 82.3% of the respondents reported that they spent more than one hour online per day. Though, daily time spent online was subjected to the age, income, education, employment status and household structure of the recipients. More specifically, a Chi-square test (presented in Table 6.18) showed that those who were younger, working, and living with other family members, held higher educational degrees and on greater incomes were more likely to spend longer hours online per day.

In terms of Chinese seniors' travel-related ICT usage, the researcher employed an independent t-test and ANOVA test to examine the impact of demographic factors on

four specific travel-related ICT behaviours: travel planning and booking, in-tour problem solving, travel experience sharing and travel experience viewing. The test results shown in Table 6.22 – 6.28 indicate that gender, age, income, education, employment status, household structure, and the motivational cluster of Chinese seniors all have a significant impact on their travel-related ICT usage. More specifically, those who are 'travel enthusiasts', female, working, younger and living with other family members, who are well-educated and on higher incomes were more likely to adopt ICT for tourism purposes.

8.2.4. Research Objective 4: To assess the relationships presented within the proposed structural model

The researcher utilised the research findings from Chapter 6 to create a hierarchical component model for the SEM analysis in Chapter 7, where the researcher assessed the proposed theoretical framework and established 11 of the 16 proposed relationships. The impact of travel motivations (TM) and travel-related ICT usage (ICT), as well as the influences of other relational factors, were obtained via the SEM analysis

More specifically, the SEM analysis confirmed that the relationships between indicators and constructs (measurement models) were suitable for a structural model (relationships among constructs) analysis. The structural model analysis evaluated and identified the impact of seven underlying predictors of Chinese seniors' travel intentions: subjective norms, perceived behavioural control, positive anticipated emotions, negative anticipated emotions, past behaviours, travel-related ICT usage and travel motivations. As it can be seen in Figure 7.7, all of these predictors had a direct positive correlation with Chinese seniors' travel intentions. This means an increase in these seven factors would directly lead to an increase in Chinese seniors' travel intentions.

In addition to confirming the direct impact of travel motivations and travel-related ICT usage upon Chinese seniors' travel intentions, this study also discovered that ICT usage not only directly impacted on Chinese seniors' travel behaviours, but also diverted some positive impacts through the construct of TM. In accordance with Hair et al.'s (2014) guidelines (VAF = total indirect effects/total effect), the researcher concluded that this mediation effect contributed to 53.3% of ICT's total effect on travel intentions.

Finally, the study identified a couple of moderation effects of travel-related ICT usage on Chinese seniors' travel decision-making processes. The findings of the study indicate that travel-related ICT usage has a positive moderation effect on the relationship between subjective norms and travel intentions (β=0.108; t=2.092; one-tailed p=0.018), and a negative moderation effect on the relationship between negative anticipated emotions and travel intentions (β= -0.065; t=2.179; one-tailed p=0.015). While the first moderation effect suggests that ICT could be an effective means of boosting Chinese seniors' travel intentions by enhancing their subjective norms towards leisure travel, the second moderation effect implies that their travel intentions might, to a limited extent, be negatively impacted by ICT usage. This is likely to be because of a lack of skills in relation to the use of digital technology.

8.3. Implications of the research findings

As summarised in Section 8.2 above, this study met its the research objectives and has found that Chinese seniors still have a strong demand for leisure travel. In addition, this market can be divided into four main segments (travel enthusiasts; family-oriented travellers; cautious dream-fulfillers; uninterested individuals) on the basis of their travel motivations. Furthermore, their travel decision-making processes are determined by a number of factors, including psychological factors (e.g. anticipated emotions and

subjective norms towards travel), perceived travel constraints (e.g. perceived behavioural control), travel motivations and the use of digital technologies.

However, despite fulfilling its research objectives, it is also important to analyse the implications of these findings. The researcher has identified two types of implications based on the research findings: theoretical implications and practical implications. The theoretical implications address the bridging of research gaps in theory and will now be presented in Section 8.3.1. On the other hand, the practical implications address the recommendations for stakeholders and will be presented in Section 8.3.2.

8.3.1. Theoretical implications

According to Mitas, Yarnal and Chick (2012) and Wang et al. (2017), the importance of the senior tourist market has long been recognised by researchers and practitioners within the tourism industry. Reviews of the existing literature have revealed that behavioural characteristics (e.g. Chen and Shoemaker, 2014; Feng et al., 2013), comparative analysis (e.g. Namkung and Jang, 2009; Wang and Dong, 2013), constraint analysis (see for example Huang and Tsai, 2003; Gao and Kerstetter, 2016), market segmentation (e.g. Chen and Gassner, 2012; Chen, Liu and Chang, 2013) and travel decision-making process (e.g. Jang and Ham, 2009; Lu et al., 2016) are of key main concern to researchers. However, the literature reviews within this study have identified several research gaps across the English and Chinese research literature. The identified gaps included the need for a greater understanding of the travel decision-making processes of seniors, the necessity of investigating technology's impact upon seniors' travel experience, and more in-depth studies on the Chinese senior tourist market. By attempting to bridge these research gaps, the research findings of this study have produced various theoretical implications, which will now be discussed in the following:

First, the research findings can make important contributions to the research on senior tourists' travel decision-making processes by taking into consideration several factors that have been neglected in previous studies, such as the impact of the use of digital technologies and travel motivations. More specifically, by aiming to increase the understanding of the influence of these factors, this study adopted a novel approach towards evaluating their impact upon Chinese seniors' travel intentions. Despite recognising the direct impact of ICT usage on Chinese seniors' travel intentions, this study has also identified the moderation effect of ICT usage on one of the traditionally recognised predictors of travel intention: a person's subjective norm towards travel. In addition, this study has examined the role of travel motivations in relation to Chinese seniors' travel decision-making processes. While Wang et al. (2017) reported that positive relationships existed among seniors' ICT usage, travel motivations and travel intentions, this study has confirmed that certain travel motivations mediate the positive impact of ICT usage upon travel intentions. Based on these relationships, the study then proposed a structural model to provide a holistic examination of Chinese seniors' travel decision-making processes.

Second, this study has made various theoretical contributions to the literature by developing valid and reliable measurement scales for the structural model. Specifically, this contribution is focused on the development of a measurement scale for the construct of travel-related ICT usage. The existing studies within the literature have typically investigated individual aspects of travel-related ICT usage, such as the influence of electronic word-of-mouth recommendations (e.g. Fan and Miao, 2012; Jalivand et al., 2013) and the intentions to use ICT for tourism purposes (e.g. Casalo et al., 2010; Parra-Lopez et al., 2011). Hence, there was a lack of measurements within the literature that

could have been used to assess the impact of travel-related ICT usage upon consumers' travel decision-making processes. Therefore, by developing a multi-item measurement for travel-related ICT usage covering the dreaming, planning, booking, experiencing and sharing travel phases, this study has helped to fill a research gap in the literature.

Third, this study has also contributed to research on senior tourism in the context of China. More precisely, it has increased understanding and filled a gap in the literature on the importance of Chinese senior tourists as a market segment, in addition to the importance of their travel decision-making processes. As it has been noted, existing studies focused mostly on developed regions such as North America and Europe, whereas research focused on the Asia is less developed (Hung and Lu, 2016). In addition, a large proportion of studies published in Chinese are non-empirical (see Chapter 3). Therefore, by investigating the travel decision-making processes of Chinese seniors using a large sample scale, this study also has helped to fill a research gap in the literature.

8.3.2. Practical implications

In addition to the theoretical implications arising from this study, its research findings also provide several implications for stakeholders within the Chinese senior tourism industry. This section therefore addresses Research Objective 6 of the study, which is to provide recommendations to relevant stakeholders. Its focus is on three groups of stakeholders: Chinese senior tourists, industry practitioners and Chinese tourism authorities. Based on research findings from the literature review and data analysis chapters, various suggestions will be given for senior tourists in Section 8.3.2.1, for industry professionals in Section 8.3.2.2 and for tourism authorities in Section 8.3.2.3. To help clarify, the appendix (Appendix 8.1) provides a table summarising the key recommendations to the stakeholders.

8.3.2.1. Recommendations to Chinese senior tourists

According to the research findings, many Chinese seniors have already started to use digital technology in their daily lives. However, there still faced several limitations in relation to their use of ICT. For example, some respondents (17.7%) reported that they only spend less than one hour online per day and, although the majority of respondents (82.3%) use mobile phones in their daily lives, more than half of them reported that they do not use other types of ICT devices, such as laptops (percentage of users: 12.4%), desktops (percentage of users: 34.2%) and tablets (percentage of users: 14.0%). These findings suggest that Chinese seniors could be lacking in certain ICT skills and may be unfamiliar with using more complex ICT devices.

The limitations associated with using ICT also influenced Chinese seniors' travel decision-making processes. An analysis of the theoretical model used in this study suggests that travel-related ICT usage (ICT) has a significant negative moderation impact upon the relationship between Chinese seniors' negative anticipated emotions (NAE) and their travel intentions (BI). This finding was surprising as this study found that ICT is a significant positive predictor of travel motivations (TM) and BI, as well as it being a significant positive moderator for the relationship between subjective norms (SN) and BI. While this finding could be explained in terms of the frustrations that seniors feel due to poor ICT skills (see Proposed Relationship NAE*ICT -> BI in Section 7.3.2.3), it can also be suggested that Chinese seniors may not have used ICT to its full extent for tourism purposes. In other words, there is still potential to enhance Chinese seniors' travel intentions by either encouraging them to use ICT or by improving their ICT experience.

Consequently, the implications and recommendations for Chinese senior tourists mainly concern the impact and usage of ICT for travel purposes. It has been known for a while that the use of ICT has substantially changed the tourism and hospitality industry, particularly owing to its convenience in terms of searching for information and communicating (Buhalis and Law, 2008; Law, Leung and Buhalis, 2009). It therefore makes sense that the use of ICT could have a large impact on the travel decision-making processes and travel experiences of tourists. However, as digital immigrants who do not use ICT extensively for travel purposes, Chinese seniors could consider the following suggestions:

First, Chinese senior tourists should improve their knowledge and skills to use ICT for tourism purposes, especially the skills needed to conduct effective information search and travel booking. This is because ICT could provide a powerful platform for gathering tourism information, which could in turn significantly impact seniors' travel decision-making processes and travel experiences. In addition, improved information searching skills would enable seniors to consult the online travel reviews uploaded by other tourists. As a result, this could help them to avoid potential tourist traps. According to Tian (2017), tourist traps remain common in China and senior tourists often fall victims to them. Hence, if more Chinese seniors are able to assess online travel reviews it will help them to avoid potential scams. They could also protect their legitimate rights and interests more effectively. Furthermore, by avoiding such potential traps, poor-service providers could be gradually weeded out so that the market would become healthier and better regulated.

Second, Chinese seniors should be encouraged to share and report their travel experience on social media or other online platforms, such as WeChat, QQ, Ctrip and TripAdvisor. Sharing travel experiences online could lead to two major advantages. On one hand,

constructive travel feedback posted on online travel platforms could provide valuable information for industrial practitioners to improve their services. It could also provide an effective means of market supervision, since people can warn others about the poor service providers. Furthermore, they could use the 12301 Online Complaint Platform, which has been developed by the China National Tourism Administration, to protect their legal rights. On the other hand, sharing travel experiences on social media could create effective interactions between seniors and their friends, which could increase happiness and improve the attitudes of others towards travel. In similarity to some studies in the literature (e.g. Lam and Hsu, 2006; Quintal, Lee and Soutar, 2010), this study has found that attitudes towards travel was not a significant predictor of travel intentions in the context of China. Nevertheless, sharing travel experiences with friends could help to improve their attitudes towards travel. A positive attitude towards travel is important given the present economic environment, especially as leisure travel is a potential source of growth for the Chinese government, which is aiming to stimulate domestic demand (Chen and Shen, 2018).

Although many Chinese seniors could find the aforementioned suggestions challenging, support could be provided. For example, by giving seniors the opportunity to practice their ICT skills, by asking others for technical support or by attending courses. With regards to these three solutions, the first tactic would enable seniors to familiarise themselves with the features of online travel platforms, such as the functions and interfaces of the platforms and the trustworthiness of the reviews. The second method involves receiving supports from experienced individuals. According to Pesonen, Komppula and Riihinen (2015), some seniors already employ this method when searching for travel information online. Finally, many Tier 1 and Tier 2 cities in China (e.g. Beijing; Guangzhou; Nanning) have set up U3A institutes, which provide computer skill trainings

for seniors. Therefore, seniors could take advantage of these courses to improve their skills in relation to information searching and decision-making. Although developing ICT skills could be difficult to begin with, the researcher believes that individuals could make significant progress in terms of gathering useful travel information and making effective travel decisions once they are familiar with using online travel platforms.

8.3.2.2. Recommendations to industry practitioners

Although some service providers consider the Chinese senior tourist market as being a low-profit market, the research findings of this study paint a different picture. According to the research findings, 82.8% of the respondents had a monthly income of more than 3000 Yuan and 40.0% of the respondents had a monthly income of more than 6000 Yuan. Compared to the average monthly income of 3034.4 Yuan for urban citizens (National Bureau of Statistics, 2019), this finding suggests that a large number of Chinese seniors are affluent enough to afford leisure travel. In addition, the findings indicate that Chinese seniors have a strong demand for tourism. For instance, 94.1% of the respondents have travelled within the past 12 months, whereas more than 50% reported an intention to travel abroad. Given these findings, it could be inferred that Chinese seniors could form a profitable market sector and their demand for leisure travel should be treated seriously. Thus, this study provides the following suggestions to industry professionals:

First, marketing professionals should divide the senior tourist market into various heterogeneous segments so that they can more easily design and offer customised products towards those segments. The factor-cluster analysis of the current study generated four heterogeneous groups—travel enthusiasts, family-oriented travellers, cautious dream-fulfillers and uninterested individuals. Although these four segments demonstrated several differences in their motivational preferences (see Figure 6.1), three

of them (i.e. travel enthusiasts; family-oriented travellers; cautious dream-fulfillers) shared some similarities in their desires to fulfil dreams of visiting different places. Therefore, tourism marketers could try to cultivate a common atmosphere of dream-fulfilling or sense of achievement in their marketing promotion towards the three groups. What is more, differences in age, income and level of travel interest (or willingness to travel) should also be considered. Among these three segments, the travel enthusiasts demonstrated a stronger interest in travel based on seeking relaxation and adventure (see Figure 6.1). However, when compared with the other two groups, their higher levels of interest seemed to be owing to their overall younger age, rather than from a higher income level (see Table 6.15). In other words, travel enthusiasts are mostly younger seniors on slightly lower incomes than the members of the other two groups. By taking these characteristics into consideration it can be seen that tourism marketers should emphasise the uniqueness of their travel services when advertising towards this market segment. In addition, younger seniors tend to travel more but spend less than older seniors (Jang and Ham, 2009) and so service providers should pay more attention to budget. For example, by including fewer shopping activities within tours. Cautious dream-fulfillers, on the other hand, consist largely of older seniors on greater incomes. This group of tourists have shown an interest in travelling for relaxation and so service providers could try to develop a high-quality product to target this segment of market. Family-oriented travellers have shown more interest in staying with families as opposed to travelling for relaxation or adventure. Therefore, tourism marketers could organise customised family tours for this group of senior tourists. In terms of promotions, marketers could emphasise the family-friendly or social aspects of their services. In addition, they could try to promote their services to the adult children or friends of these seniors. Finally, disinterested individuals are typically those with greater travel constraints (e.g. health issues; lack of income).

Given this, it is difficult to provide reasonable suggestions for effectively engaging with this segment in terms of leisure travel.

Second, industry professionals should also attach more importance to digital marketing activities when targeting the Chinese senior tourist market. This study suggests that there has been an increasing trend in Chinese seniors using ICT for tourism purposes. In addition, the study has found that Chinese seniors' travel-related ICT usage significantly influences their travel motivations and travel intentions. Therefore, tourism marketers should attempt to maintain positive electronic word-of-mouth recommendations (eWOM) for their travel services. As discussed by a number of researchers (e.g. Litvin, Goldsmith and Pan, 2008; Jalivand et al., 2013), effective tactics for creating a positive eWOM include, but are not limited to: establishing social media accounts (such as an official WeChat account), allowing community discussions on enterprises' websites, quick responses to online feedback, and using feedback to improve the quality of tourism services. What is more, tourism operators could aim to encourage seniors to share their travel experiences on social media platforms. For example, when visiting a tourist attraction a tour guide could help and encourage tourists to take pictures, which could then be shared on social media. By posting travel pictures online, more information about the tourist service can be provided to members of the publicand a positive eWOM could be created. Furthermore, travel enterprises with control over their own websites should also pay attention to the unique needs of senior tourists. According to MacKay and Smith (2006), seniors struggle to process text contents as efficiently as younger people. Pesonen, Komppula and Riihinen (2015) also noted that pictures are important for seniors to learn about a destination or a tourism service. Consequently, tourism website designers should try to maintain a good balance between texts, pictures and colours, as well as providing information that is simple to understand and trustworthy.

Third, tourism service providers should monitor demand from Chinese seniors for international travel. This study has found that more than half of the respondents (57.4%) intend to travel abroad, thus suggesting a strong demand for outbound travel. This finding is supported by existing literature (e.g. China Tourism Academy, 2014, 2018). According to China Tourism Academy (2014), Chinese seniors made approximately 10 million outbound trips in 2014, which accounted for roughly 10% of overall outbound journeys. In 2017, the number of outbound journeys taken by Chinese citizens reached 131 million, generating an overall expenditure of 115.3 billion US dollars (China Tourism Academy, 2018). It can be reasonably assumed that Chinese seniors accounted for roughly 10% of the number of outbound journeys in 2017 and that they had the same level of expenditure as other outbound tourists. If this is shown to be the case, then this group of tourists could have contributed around 12 billion US dollars to the tourism industry. In other words, this is a lucrative niche market that should not be ignored. When targeting this market, service providers should focus on the main tourist regions (e.g. Tier 1 cities such as Beijing, Shanghai, Chongqing, Shenzhen and Guangzhou), and the areas where the number of outbound tourists have increased sharply (e.g. some provincial capitals located in central China such as Xi'an, Changsha and Wuhan). In addition, service providers should work on the features of their outbound package tours to meet the needs of Chinese seniors. For example, Wang et al. (2013) identified six factors that influence Chinese seniors' outbound travel experiences: pre-tour briefing, tour leaders and tour guides, restaurants, hotels, the coach, scenic locations, and optional tours. Tour operators could therefore develop these aspects of their tours to offer improved and more customisable services to Chinese senior tourists.

8.3.2.3. Recommendations to market governing bodies

While the main research focus of this study is on Chinese seniors' travel decision-making processes, its findings have also revealed some concerns relating to leisure travel activities. According to the findings, a number of respondents (according to the PBC global item 25% of the respondents had a score equal to or less than 4) experience at least some difficulties with regards to participating in leisure activities. This finding suggests that several Chinese seniors have concerns about safety issues, such as their health conditions or a lack of essential travel information. This finding is supported by a series of studies and reports on these risks (e.g. poor health condition; tourist traps; lack of accessible equipment) within the senior tourist market (e.g. Tian, 2017; Wu and Zheng, 2004; Zhu, 2019). According to Tian (2017), although authorities already released a service standard known as the Travel Agencies' Service Standard for Senior Tourism (2016), some chaos and risks remain in the short term. Zhu (2019) has pointed out that there are still many tourist traps (e.g. zero-dollar shopping tours) being targeted towards senior travellers. Given the current market conditions, the researcher provides two suggestions to tourism governing bodies: first, keep working on the implementation and refinement of market rules and, second, educate tourism stakeholders (e.g. service providers and senior tourists) to improve service qualities and help eliminate tourist traps.

In more detail, market governing bodies should continue to work on the implementation and refinement of market rules, regulations and service standards. As indicated by the research results, a number of (25% for the samples of this study) Chinese seniors lacked confidence about their capabilities to travel, or about travel-related issues. To relieve some of their concerns, measures such as improving service designs (Wu, 2015), establishing a more holistic insurance system (Fan et al., 2011, 2013) and improving the health and safety measures at tourism destinations (Wu, 2015) could be included into

relevant market rules. Further, improved market rules would also help to gradually eliminate the hazardous tourist traps. Although these tourist traps are a key source of difficulty within the market (Tian, 2017; Zhu, 2019), improving the rules against such market fraud could enhance seniors' confidence in terms of participating in leisure travel.

In relation to the second point, it is vital for market governing bodies to educate relevant stakeholders (e.g. senior tourists; service providers) on travel and safety-related issues. The findings of this study suggest that Chinese senior tourists, when compared to their younger counterparts, lack certain skills, such as the ICT skills, in travel information search. Given that such a lack of skills could prohibit senior tourists from obtaining essential market information, market governing bodies could enhance seniors' capabilities by presenting lectures or holding publicity events. When organising this kind of activities, the relevant governing bodies could provide some basic market information to senior participants, such as the dos and don'ts of making leisure travel purchases. They could also teach seniors how to use ICT, to improve their information searching skills. As service providers play a significant role in the creation of a healthy market environment, lectures could also be organised regarding product designs and safety issues. The newest service standards should be introduced to service providers in a comprehensive manner and it is necessary that any public lectures facilitate the understanding of policies and enhancement in service quality.

8.4. Limitations

After discussing the contributions of the study, it is also important to address the limitations of the study and the expectations for future research. This limitations of the study will be discussed in this section, whereas the needs of future research will be discussed in the next section (Section 8.5).

The researcher has identified five major limitations of this study. The first concerns the definition of senior citizens. In this study, the chronological age of 55 was utilised as the definition for Chinese senior citizens. This criterion was selected as a cut-off point for the three retirement ages (i.e. 50, 55 and 60 years of age) that China adopts for male and female employees (see Table 3.1 in Section 3.2.1 for a more detailed discussion). The selection of this cut-off point may have some problems. For example, this criterion could include in the sample a higher proportion of male respondents who were still working, thus influencing further analyses such as the behavioural comparisons between genders or between employment status. However, the researcher considered that this limitation is inescapable, because an inconsistency in the operational definitions (i.e. selecting two operational definitions for males and females respectively) may cause even bigger issues in the sample. For instance, a five or ten-year difference in the age structure between males and females could lead to greater bias in behavioural comparisons. In addition, it is not practical to use subjective age to define senior citizens, due to the difficulty in measuring this concept. Using a consistent chronological definition can at least identify an approximate scope of senior citizens for this study. Furthermore, a number of previous studies that investigated the Chinese senior tourist market also adopted the age of 55 as the sampling criterion (e.g. Chen and Gassner, 2012; Gao and Kerstetter, 2016; Lu et al., 2016; Wang et al., 2017). These studies did not report a significant bias caused by this definition, suggesting that its effect is minor and not serious.

The second limitation relates to the structural model used. To clarify, the study's theoretical model was influenced by previous studies and incorporated 11 latent constructs as predictors of travel intention and actual travel behaviour: attitudes, subjective norms, perceived behavioural control, two types of anticipated emotions, past

behaviours, four types of travel motivations and travel-related ICT usage. However, as this study focused mainly on the influence of technologies and personal factors, certain potentially influential external factors, such as cultural influences, have not been discussed. The exclusion of cultural influencers has led to some unexpected research findings. For example, this study failed to establish a significant relationship between travel attitudes and travel intentions among Chinese senior tourists. This finding opposes those of many studies, especially the ones focusing on European and North American countries (e.g. Han, Hwang and Kim, 2015; Hsu and Huang, 2012; Jalilvand and Samiei, 2012; Phillips and Jang, 2012; Sparks, 2007). However, it aligns with the findings of some studies that focused on the East Asian tourist market (e.g. Quintal, Lee and Soutar, 2010; Sparks and Pan, 2009). A possible explanation of this phenomenon is that people living in a collectivist culture tend to hold a reserved or conservative attitude towards leisure activities. In light of this, it is reasonable to assume that the collectivist culture within East Asian countries (e.g. China; Japan; South Korea) may suppress the relationship between travel attitudes and travel intentions, and thus influence the overall travel decision-making processes. Future studies should take this into consideration and include cultural effect and other potentially influential factors in their models.

The third limitation relates to the selection of sampling locations. The researcher collected data from five Tier 1 and Tier 2 Chinese cities: Beijing, Guangzhou, Shenzhen, Nanjing and Nanning. The selection of these locations was mainly based on the economic scales and sizes of urban populations, yet concerns might be raised regarding the representativeness of the sample. This is because residents of these economically well-developed cities, when compared with the overall Chinese senior population, might be more likely to use ICT for tourism purposes and could be more inclined to travel for leisure. However, this limitation is somewhat unavoidable given that it was necessary for

the researcher to target the population most likely to participate in leisure travel and use technologies as a means of travel assistance.

Fourth, another limitation concerns the sampling method that was used. Due to a limited research budget, this study adopted a non-probability judgement sampling technique. Although this judgement sampling method was low cost, it generated a sample with some degrees of bias. For example, the sample collected included more women and younger seniors than men and older seniors. Hence, the generalisability of the research findings might be influenced by the sample's. However, this limitation derives from the study's budgetary limitations and was therefore inevitable.

Fifth, the data analysis technique is also limited. The study used the PLS-SEM approach to analyse the research data, but it should be noted that this approach has some limitations. For example, Dijkstra and Henseler (2015) pointed out that PLS-SEM has a tendency to overrate the absolute values of item loadings and underrate the path coefficients between constructs. However, this is an intrinsic limitation of the analysis technique and so the bias within the analysis is unavoidable.

8.5. Expectations for future studies

This section is the last section of the study and is dedicated to the researcher's expectations for future studies. First, with regards to the study's second limitation concerning the omission of potentially influential constructs and its sole focus on the impact of ICT and personal factors use on Chinese seniors' decision-making processes, future studies could focus on testing other potential factors that influence seniors' travel decision-making processes. For example, this could include cultural influence, which seems to have a suppressing effect for the relationship between travel attitudes and travel

intentions in several East Asian countries. In addition, destination image, perceived value of a trip, and destination-related motivations could also be included in a decision-making model. According to researchers (e.g. Chen and Tsai, 2007; Jalilvand et al., 2012), these factors significantly affect an individual's travel intentions. In addition, most of these factors could potentially be influenced by a person's use of technology. Therefore, a consideration of these factors and an investigation of the possible influence of ICT could help to shed more lights on the travel decision-making processes made by seniors.

Second, future studies could also apply the theoretical model developed in this study to different places and market segments. This is because it is difficult to replicate studies and produce the same results in different places or at different times within social sciences (Veal, 2011). Based on the grand model of consumer decision-making process, this study has helped to establish a model that incorporates the impact of travel motivations and related technologies. However, this study only focuses the senior tourist market in the context of China. Hence, given the cultural and generational differences, future studies could apply this theoretical model to investigate the senior tourist market in other regions/countries or to different market segments, such as the younger tourists or outbound tourist market to generate greater knowledge about those places or markets.

The final expectation is that future studies will gain important insights from other stakeholders, such as policy makers and industry professionals, about the development and governance of the senior tourism industry. At the present little is known about the supply side of the market and so the opinions of other stakeholders would enable researchers to become more knowledgeable about this market segment. While conducting these studies, researchers should design a rigorous approach to collect primary data from

the stakeholders and topics, such as consumer rights protection and seniors' in-tour experience could be examined in greater detail.

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Appendix 2.1. Research themes of English research articles

Research theme	Title	Journal/ Book	Author(s)	Year of Publication
Behavioural characteristics	Age and cohort effects: the American senior tourism market.	Annals of Tourism Research	Chen and Shoemaker	2014
	Does a friendly hotel room increase senior group package tourists' satisfaction? A field experiment.	Asia Pacific Journal of Tourism Research	Chen et al.	2014
	The impacts of household structure on the travel behaviour of seniors and young parents in China.	Journal of Transport Geography	Feng et al.	2013
	In search of lost leisure: the impact of caregiving on leisure travel.	Tourism Management	Gladwell and Bedini	2003
	Tourism and seasonal retirement migration	Annals of Tourism Research	Gustafson	2002
	Senior travelers and airport shopping: deepening repurchase decision-making theory	Asia Pacific Journal of Tourism Research	Han, Hwang and Kim	2015
	A model of senior tourism motivations: anecdotes from Beijing and Shanghai	Tourism Management	Hsu, Cai and Wong	2007
	Biographical research methods and their use in the study of senior tourism.	International Journal of Tourism Research	Huber, Milne and Hyde	2017
	Holidays of older gay men: age or sexual orientation as decisive factors?	Tourism Management	Hughes and Deutsch	2010
	Why seniors use mobile devices: applying an extended model of goal-directed behavior.	Journal of Travel and Tourism Marketing	Kim and Preis	2016
	Does knowledge matter to seniors' usage of mobile devices? Focusing on motivation and attachment.	International Journal of Contemporary Hospitality Management	Kim et al.	2016

	The effect of social capital and altruism on seniors' revisit intention to social network sites for tourism-related purposes.	Tourism Management	Kim, Lee and Bonn	2016
	Restaurant discounts for seniors--perceptions of the mature market	Cornell Hotel and Restaurant Administration Quarterly	Knutson, Elsworth and Beck	2006
	The relationship between perceived health, helth attitude, and healthy offerings for seniors at family restaurants	Cornell Hotel and Restaurant Administration Quarterly	Lee and McCleary	2012
	Selection of outbound package tours: the case of senior citizens in Hong Kong.	Journal of China Tourism Research	Lee et al.	2012
	Jokes build community: mature tourists' positive emotions.	Annals of Tourism Research	Mitas, Yarnal and Chick	2012
	Retirement and tourism themes in retirees' narratives.	Annals of Tourism Research	Nimrod	2008
	Touring for pleasure: studies of the senior self-drive travel market.	Tourism Recreation Research	Pearce	1999
	Typology of senior travellers as users of tourism information technology.	Information Technology and Tourism	Pesonen, Komppula and Riihinen	2015
	Learning about tourists from conversations: the over-55s in Majorca	Tourism Management	Ryan	1995
	Investigating the memorable experience of the senior travel market: an examination of the reminiscence bump.	Journal of Travel and Tourism Marketing	Tung and Ritchie	2011
	Retired Snowbirds	Annals of Tourism Research	Viallon	2012
	Seniors' perceptions of service features on outbound group package tours.	Journal of Business Research	Wang et al.	2013
Comparative analysis	The under-50 and over-50 travelers: a profile of similarities and differences.	Journal of Travel Research	Anderson and Langmeyer	1982
	Senior tourists in the Holy Land.	Journal of Teaching in	Cai, Schwartz and Cohen	2001

		Travel and Tourism		
	Consumer behavior in the US pleasure travel marketplace: an analysis of senior and nonsenior travelers	Journal of Travel Research	Javalgi, Thomas and Rao	1992
	Destination advertising: age and format effects on memory.	Annals of Tourism Research	MacKay and Smith	2006
	The effects of interactional fairness on satisfaction and behavioral intentions: mature versus non-mature customers	International Journal of Hospitality Management	Namkung and Jang	2009
	Are senior leisure travelers different?	Journal of Travel Research	Reece	2004
	The organization of information in memory for picture of tourist destinations: are there age-related differences?	Journal of Travel Research	Smith and MacKay	2001
	Travel distance of senior tourists: an application of the GIS techniques.	Journal of Hospitality and Tourism	Wang and Dong	2013
Constraint analysis	The differences between participants and non-participants in a senior travel program.	Journal of travel research	Blazey	1987
	Tourism constraints among Israeli seniors.	Annals of Tourism Research	Fleischer and Pizam	2002
	Using an intersectionality perspective to uncover older Chinese females' perceived travel constraints and negotiation strategies.	Tourism Management	Gao and Kerstetter	2016
	The study of senior traveler behavior in Taiwan.	Tourism Management	Huang and Tsai	2003
	Understanding travel constraints among the elderly in Hong Kong: a comparative study of the elderly living in private and in public housing.	Journal of Travel and Tourism Marketing	Hung, Bai and Lu	2016
	Senior's travel constraints and their coping strategies.	Journal of Travel Research	Kazeminia, Chiappa and Jafari	2015
Heterogeneity analysis	Senior-sensitive segments: looking at travel behaviour.	The Practice of Graduate Research in Hospitality and Tourism	Bai et al.	1999

	Senior pleasure tourists: examination of their demography, travel experience, and travel behaviour upon visiting the Bangkok Metropolis.	International Journal of Hospitality and Tourism Administration	Batra	2009
	An investigation of the demographic, psychological, psychographic and behavioral characteristics of Chinese senior leisure travelers.	Journal of China Tourism Research	Chen and Gassner	2012
	Essential customer service factors and the segmentation of older visitors within wellness tourism based on hot spring hotels	International Journal of Hospitality Management	Chen, Liu and Chang	2013
	Elderly recreational vehicle tourists: motivations for leisure.	Journal of Travel Research	Guinn	1980
	Travel-related lifestyle profiles of older women	Journal of Travel Research	Hawes	1988
	Profiling the senior traveler: an Australian perspective.	Journal of Travel Research	Horneman et al.	2002
	Chinese urban mature travelers' motivation and constraints by decision autonomy	Journal of Travel and Tourism Marketing	Hsu and Kang	2009
	Segmentation of senior motorcoach travelers.	Journal of Travel Research	Hsu and Lee	2002
	Senior citizens and their dining-out traits--implications for restaurants	International Journal of Hospitality Management	Sun and Morrison	2006
	Understanding the relationship between holiday taking and self-assessed health: an exploratory study of senior tourism.	International Journal of Consumer Studies	Hunter-Jones and Blackburn	2007
	Seniors' travel motivation and the influential factors: an examination of Taiwanese seniors	Tourism Management	Jang and Wu	2009

	Mature consumers' patronage motives and the importance of attributes regarding HMR based on food-related lifestyles of the upper middle class	International Journal of Hospitality Management	Jang, Kim and Yang	2011
	Segmenting the market of West Australian senior tourists using artificial neural network.	Tourism Management	Kim, Wei, and Ruys	2003
	Marketing travel services to senior consumers.	Journal of Consumer Marketing	Le Serre and Chevalier	2012
	Restaurant-selection preferences of mature consumers	Cornell Hotel and Restaurant Administration Quarterly	Moschis, Curasi and Bellenger	2003
	A factor-cluster analysis of tourist motivations: a case of U.S. senior travelers.	TOURISM—An International Interdisciplinary Journal	Sangpikul	2008a
	Travel motivations of Japanese senior travellers to Thailand.	International Journal of Tourism Research	Sangpikul	2008b
	Discovery, connection, key travel motives within the senior market.	Journal of Traveling and Tourism Marketing	Sellick	2004
	Segmentation of the senior pleasure travel market	Journal of Travel Research	Shoemaker	1989
	Segmenting the mature market: 10 years later.	Journal of Travel Research	Shoemaker	2000
	Baby boomers turning grey--European profiles	Tourism Management	Tiago et al.	2016
	Winter Texans: two segments of the senior travel market.	Journal of Travel Research	Vincent and de la Santos	1990
	Segmenting the senior tourism market in Ireland based on travel motivations.	Journal of Vacation Marketing	Ward	2014
	Destination behaviour of older UK travellers	Tourism Recreation Research	You and O'Leary	1999
Travel decision-making	Determinant factors of senior tourists' length of stay.	Annals of Tourism Research	Alen et al.	2014

	Determinants of travel mode choice of senior travelers to the United States	Journal of Hospitality and Leisure Marketing	Bai et al.	2001
	Prediction of senior travelers' motorcoach use from demographic, psychological and psychographic characteristics.	Journal of Travel Research	Baloglu and Shoemaker	2001
	Demographic change, tourism expenditure and life cycle behaviour	Tourism Management	Bernini and Cracolici	2015
	Travel expenditure patterns of elderly households in the US.	Tourism Recreation Research	Hong, Kim and Lee	1999
	A double-hurdle analysis of travel expenditure: baby boomer seniors versus older seniors.	Tourism Management	Jang and Ham	2009
	Tourism experience and quality of life among elderly tourists	Tourism Management	Kim, Woo and Uysal	2015
	An investigation of factors determining destination satisfaction and travel frequency of senior travelers.	Journal of Quality Assurance in Hospitality and Tourism	Lee	2016
	Travel frequency of senior tourists.	Tourism Management	Losada et al.	2016
	Do perceptions of time affect outbound-travel motivations and intention? An investigation among Chinese seniors.	Tourism Management	Lu et al.	2016
	Understanding senior self-drive tourism in Australia using a contingency behavior model.	Journal of Travel Research	Mahadevan	2014
	Social valuation and repeat visitation of grey nomads in regional Queensland of Australia.	Tourism Analysis	Mahadevan	2013
	Information technology usage, motivation, and intention: a case of Chinese urban senior outbound travelers in the Yangtze River Delta region.	Asia Pacific Journal of Tourism Research	Wang et al.	2017

	Senior tourists' purchasing decisions in group package tour.	Anatolia: An International Journal of Tourism and Hospitality Research	Wang, Chen , and Chou	2007
	Whether to go and where to go--identification of important influences on seniors' decisions to travel	Journal of Travel Research	Zimmer, Brayley and Searle	1995
Others	Service willingness and senior tourists: knowledge about aging, attitudes toward the elderly, and work values.	The Service Industries Journal	Chu and Chu	2013
	Targeting seniors through the language of tourism	Journal of Hospitality and Leisure Marketing	Dann	2001
	The senior travel market: do's and don'ts	Journal of Quality Assurance in Hospitality and Tourism	Hartman and Qu	2007
	Impact of population aging on Japanese international travel to 2025	Journal of Travel Research	Mak, Carlile and Dai	2005
	Competing in hotel services for seniors	International Journal of Hospitality Management	Marvel	1999
	The impact of tourism and travel experience on senior travelers' psychological well-being.	Journal of Travel Research	Milman	1998
	Social tourism and well-being in later life.	Annals of Tourism Research	Morgan, Pritchard and Sedgley	2015
	Travel Motivations of Seniors: A Review and a Meta-Analytical Assessment	Tourism Economics	Patuelli and Nijkamp	2016
	Tourism and Ageing: a transformative research agenda.	Annals of Tourism Research	Sedgley, Pritchard and Morgan	2011
	Tourism and older residents in a sunbelt resort	Annals of Tourism Research	Tomljenovic and Faulkner	2000

Appendix 2.2. The sample size of 80 English senior tourist studies

Research approach	Sampling scale	Sample size								Total
		1-100	101-200	201-300	301-400	401-500	501-600	601-1000	>1000	
Quantitative	Local		1	4	5	3	2		4	19
	Regional	2	2	4	3	3	1	4	4	23
	Nationwide			4	4	2	1	2	1	14
	International							1	5	6
	N.A	1	1							2
Qualitative	Local	6	1							7
	Regional	2								2
	N.A.	4								4
Mixed	Local	1		1						2
	Regional					1				1
Total		16	5	13	12	9	4	7	14	80

Note: Information in relation to sample size was not available in seven articles.

Appendix 3.1. Research themes of the Chinese articles

Research theme	Title	Journal/ Institution	Author (s)	Year of publication
Behavioural characteristics	A study on seniors' travel consumption behaviour--taking Nanyan city, Henan province as an example.	Tourism Overview	Ai	2016
	Research on the development of the elderly tourism market in Xiangtan	Xiangtan University	Cai	2015
	Research on travel behaviors the elders in suburban leisure agriculture tourism in Changsha	Journal of Hunan University of Commerce	Chen and Wu	2011
	Tourism consumption behavior of elderly	Liaoning Normal University	Geng	2009
	Survey on senior tourism market in Urumqi	Xinjiang University	Guo	2009
	A discussion on Shanghai senior tourist behavior characteristics and market development strategies	Population and Economics	Hou, Yin and Chen	2004
	The study on behavioural pattern of senior tourism consumption market--taking Shanghai as an example	Consumer Economics	Hu	2007
	An analysis on the current status and future trend of Taiwanese seniors' travel consumption	Inquiry into Economic Issues	Jin, Dai and Wang	2012
	A research on consumer behaviors of the elderly tourists in Chengdu--a case study of the survey on tour group by train for the elderly tourists in Chengdu	Sichuan Normal University	Li	2008
	A study on the travel consumption of the senior tourist market in Chongqing	Chongqing University	Li	2006
	The research of developing elderly tourism market under the background of ageing problem-Wenzhou for example	Zhejiang Ocean University	Lin	2015
	An investigation of senior citizens' participation in sport tourism--based on a survey in Honghuagang district, Zunyi city.	Contemporary Sports Technology	Liu	2016
	The current status of senior's tourism consumption and	Tong Ji Yu Zi Xun	Liu	2007

	relevant development strategies			
	An investigation on the behavioural patterns of seniors living in Wuhan city	Hubei University	Liu	2008
	An investigation on the travel demand of senior citizens living in Harbin city	Journal of Harbin Institute of Vocational Technology	Lu, Wang and Wang	2008
	The current status of the senior fitness tourism market in Henan province	Chinese Journal of Gerontology	Ma, H. B.	2013
	The travel behaviour of Zhengzhou seniors	Chinese Journal of Gerontology	Ma, H. L.	2010
	Empirical study on tourism consumption behaviors of senior citizens living in urban Xi'an city	Northwest University	Ma, Z.	2007
	Guilin endowment tourism market and present situation of the development of countermeasures	Tourism Today	Meng et al.	2012
	The study on the factors influencing the citizen elderly's choice for tourism destination	Science Technology and Industry	Pan, Liu and Ma	2016
	The empirical research of tourism purpose and tourism trend of silver peer—take Yanbian for example	Yanbian University	Pu	2013
	An empirical study on seniors' travel behaviour--based on a survey conducted in the main urban district in Chongqing city.	Journal of Chongqing Institute of Technology	Ran and Yang	2009
	Journal of Chongqing Institute of Technology	Tourism Science	Tang	2001
	Evaluation and construction of tourist facilities in Dujiangyan city based on the angle of senior tourist	Areal Research and Development	Tao et al.	2014
	An analysis on the leisure travel consumption pattern of Shanghai seniors	Heart to Heart	Wang and Qian	2014
	An investigation on seniors' travel motivation and destination selection preference	Economic Research Guide	Wei and Zhang	2010
	An investigation on the senior tourism consumption market and seniors' travel behaviour pattern--taking Xi'an city as an example	New West	Wei	2011
	The perception on the tourism hotspot and the	Tourism Forum	Xia and Hu	2010

	willingness of tourism of Shanghai senior.			
	Study of elderly people's rural tourism market in Yuelu district of Changsha city.	Central South University of Forestry & Technology	Xia	2013
	A study on the behavioural patterns of Chinese senior tourists and market development countermeasures	Jing Ji Shi	Xu	2016
	The olds travel market in China	Journal of Guilin Institute of Tourism	Xu and Chen	2001
	An investigation on the senior tourism market in Heilongjiang province	Decision & Information	Xue	2013
	Analysis of the silver tourism in Hebei province	Hebei Normal University	Yan	2009
	An investigation on the senior tourism industry in Sanya city.	China Business Update	Yang	2010
	A research on traveling behavior of senior tourists: taking the senior market in Jiangxi Province as an example	Tourism Tribune	Yu, Zhang and Ren	2003
	The study of elderly outbound tourism market's satisfaction	Tianjin University of Commerce	Zeng	2015
	An analysis on the behavioural patterns of senior outbound tourists--taking Wuhan as an example.	Modern Economic Information	Zeng	2015
	A study on the development potential of tourism market of elderly people in Beibei of Chongqing.	Economic Research Guide	Zeng et al.	2009
	A survey of senior citizen oriented tourist market in Shanxi province--a case study of the city of Taiyuan	Social Sciences Journal of Colleges of Shanxi	Zhang	2006
	Research on travel motivations of elderly people based on content analysis method	Journal of Beijing Technology and Business University (Social Science)	Zhang and Li	2009
	An analysis on the regional differences of senior tourists' behavioural patterns and destination preferences--taking Zhejiang province,	Northern Economy	Zhang and Liu	2013

	Henan province and Sichuan province as examples			
	Research on sport tourism of the “migratory birds” old people in Haikou	Hainan Normal University	Zhao	2012
	Study on the theory and practice of senior migration tourism	Areal Research and Development	Zhou	2009
	Gap between the subjective age and the chronological age of senior tourists and its relation to tourist motivation	Journal of Chongqing Normal University (Natural Science)	Zhou, Cao and Deng	2016
	Regarding the tourism market development for Chinese elderlies	Southeast University	Zhou	2006
	The characteristics and development path of the elderly tourists market in China	The Theory and Practice of Finance and Economics	Zhou	2010
	An investigation on the current status of the development of medical tourism for Nanjing senior citizens.	Modern Business Trade Industry	Zhu and Xu	2015
	Comparative study on elder outbound tourists: characteristics and behaviours	Journal of Guangdong AIB Polytechnic College	Zhu	2008
Constraint analysis	Demands and constraints on Chinese elderly people traveling abroad: based on a market survey of middle-aged and elderly people in Beijing	Tourism Tribune	Li et al.	2014
	The motivation and constraint factors of senior tourists	Social Scientist	Liu	2012
	Studies on the urban elderly's tourist will and tourist constraints--a case study of Wuhu	Anhui Normal University	Luo	2014
	Research on tourism constraints of senior citizens—with data collected from urban areas, Xi’an city	Shaanxi Normal University	Wang	2012
	An empirical study on the influencing factors of Zhengzhou seniors' leisure travel participation	Journal of Yantai Vocational College	Wang	2015
	Research on the constitution and difference of urban	Shaanxi Normal University	Yuan	2011

	citizens' tourism constraints in Sichuan Province			
	The analysis of tourism constraints for senior citizens living in urban areas of Eastern and Western China—with data collected from Shanghai city and Xining city	Shaanxi Normal University	Yue	2011
	An investigation on the travel constraints for seniors living in Xi'an city	Jing Ji Shi	Yue, Zhao and Yuan	2010
	Investigation and analysis in the elderly to participate in sports tourism factors	Journal of Anyang Institute of Technology	Zhang	2015
	Study on travel constraints for seniors in Chengdu city	Resource Development and Market	Zhao, Zhao and Yuan	2011
Heterogeneity analysis/ market segmentation	A study on seniors' travel motivation in Hangzhou based on push-pull theory	Tourism Tribute	Bao	2009
	The study of influencing factor and motivation of the gerontic travel	Yanshan University	Cao	2011
	A study on influencing factors of senior citizen vacation in Zhejiang province	Zhejiang Gongshang University	Chen, B. R.	2013
	A research on tourism preference of the aged--based on the survey of Shijiazhuang city	Hebei University of Economics and Business	Chen, Q.	2013
	A research of the aged tourism market development based on tourism motivation--a case study of Hefei city	Anhui University	Gao	2010
	A study on the consumption behaviours of senior tourists	Journal of Shaoxing University	Lang	2014
	Analysis on types and characteristics of tourism psychology of old age group	Tourism Forum	Liu and Li	2009
	Empirical research on tourism purposes of Zhengzhou elderly people	Journal of Jinan Vocational and Technical College	Wang, X. Q.	2015
	A study on tourism consumption behavior of the aged in Wuhan City	Huazhong University of Science and Technology	Wang, Y.	2013
	Research of segmentation in senior tourism market based on motivation	Research of segmentation in senior tourism	Zhou and Zhang	2015

		market based on motivation		
Tourism development	A research on the current state of fitness tourism of urban aged-people in Hunan Province	Hunan Normal University	Ai	2005
	An analysis on the current status of the senior tourist market and its future development	Special Zone Economy	Hu	2009
	A research on senior tourists market and marketing development strategies--taking Guangzhou as an example	Jinan University	Liang	2010
	Thoughts on developing senior tourism products for travel agencies in Chengdu city	Tourism Today	Lin	2010
	Research on leisure and endowment tourism of the city's old people in Henan Province seasonally moving to the country	Zhengzhou University	Ling	2013
	Evaluation research on the development suitability of pension real estate in tourism city--taking Qingdao city as an example	Journal of Qingdao University of Science and Technology (Scoial Sciences)	Liu and Zhang	2016
	Present situation of the elder-citizen travel in Hebei and its development strategies	Hebei Normal University	Ma	2008
	Tourism endowment destination site selection research--take Zhejiang province Jinhua city as an example	Zhejiang Normal University	Pang	2015
	Construction research on Xiamen's senior tourism functional system	Huaqiao University	Rui	2013
	Financing gap analysis of endowment tourism industry in Shandong province	Journal of Wuxi Instititute of Commerce	Wang, J.	2016
	Study on urban aged people tourism market of Chengdu	Sichuan Normal University	Wang, L. J.	2007
	A research of the Sanya "migratory birds" elderly tourism market development	Northwest Normal University	Wang, Y. L.	2015
	A research on marketing strategies of senior tourists in Guangzhou.	Southwest Jiaotong University	Wen	2008

	Analysis of elderly tourism market in Changsha Jiancheng District	Central South University of Forestry and Technology	Yang	2009
	The assessment study of destination suitability for interactive tourism retirement scheme among different places based on GIS	Economic Geography	Yuan et al.	2013
	An investigation on seniors' psychological tourism market and product development--taking Kunming city as an example	Journal of Hebei Tourism Vocational College	Zhao, Liu and Kang	2013
	Research on marketing strategy of elderly tourism product in Ningxia A travel agency	Ningxia University	Zhao	2015
	Demand surveys of Taiyuan elderly tourism market and development strategies	Shanxi University	Zuo	2012
Travel decision-making	Analysis of seniors' willingness to and influence factors of rural tourism--based on survey of 200 seniors in Nanjing	Hunan Agricultural Sciences	Jiang	2014
	Research on long stay products multiple purchasing behaviors of migrant seniors	Resource Development and Market	Jiang, Zhou and Chen	2016
	An empirical study on the senior tourist market--based on a survey with 300 senior citizens in Xinning county, Hunan province	China Journal of Commerce	Lin and Liu	2012
	An analysis on the desire and behavior of old folks tour and its influence factors in city—based on a survey on old folks in Changsha city	Hunan Normal University	Liu	2010
	Empirical research on the elderly tourist spending--a case study of Hongshan District	Economic Research Guide	Liu, Wang and Dou	2012
	Old-age tourism wishes empirical analysis of factors affecting: based on push-pull theory	Resource Development and Market	Mo and Zheng	2014
	An investigation on the influencing factors of senior tourists' consumption level--based on a survey from the main urban district of Chongqing city.	Southwest University	Ran	2010

	The study on tourism decision-making constraints among seniors—a survey on seniors of urban areas in Shanghai	Shanghai Jiao Tong University	Su	2007
	Impact factors study of senior citizens' tourism decision-making based on self-construal theory	Zhejiang Gongshang University	Sun	2015
	Research on consumption behavior and its influence factors of senior fitness tourism—with data collection from Nanjing city	Nanjing Normal University	Tan	2015
	Study on Chinese elderly seeking marriage tourism impact factors—a case of Shanghai	Ocean University of China	Wang, F. Y.	2012
	Study on traveling influence factors of senior in Nanjing	Nanjing Agricultural University	Wang, L. Y.	2007
	An investigation on the influence of self-perceived travel safety on seniors' travel intention--based on a survey with seniors living in Shanghai	Shanghai Normal University	Wang, W.	2016
	Whether to travel: the logit model of Chinese senior	Northwest Population	Zhang, H. C.	2014
	Research on the development model of domestic senior tourism product in Xi'an based on market analysis	Shaanxi Normal University	Zhang, J. K.	2008
	Research on the impact factors of domestic old people's tourism consumption through multiple stepwise regression analysis	Tourism Research	Zhang, J. K.	2011
	Reference group influence on elderly grant event perceived value--take 2010 Shanghai Expo for example.	East China Normal University	Zhou	2011
Others	Research on virtual tourism based on elderly anthropology--a case study of senior citizens in Chifeng	Tourism Research	Liu, Feng and Ma	2015
	An investigation on seniors' psychological status prior and after a group tour	Science of Travel Medicine	Qiu, Chen and Lu	2000
	The influence of tourism development on the leisure activities of the old Mosuos: a case study of Luoshui	Journal of Yunnan University of Nationalities	Tang and Yang	2009

	village and Kaiji village in the Lugu Lake area.	(Social Sciences)		
	An analysis on senior tourists' satisfaction level regarding their quality of life and its influencing factors	Business Economy	Wang and Shen	2011
	Tourism and seniors' quality of life--based on a survey with 1213 urban senior citizens in Guangdong province	Special Zone Economy	Wang and Shen	2010
	Leisure travel activities and its influence on seniors' quality of life--taking domestic senior tourists visiting Hangzhou as an example	Ke Ji Feng	Wu	2014
	The empirical research on the perception and attitude of residents in the elderly long-stay tourism destination.	Zhejiang Normal University	Xu	2015
	Old residents' environmental perceptions and rural tourism development	Journal of Subtropical Resources and Environment	Xu, Zhu and Jiang	2006
	Research on the senior tourism rights and interests protection system in China	Shanghai Normal University	Yu	2012

Appendix 3.2. The sample size of 102 Chinese research studies

Research approach	**Sampling scale**	**Sample size**								**Total**
		1-100	101-200	201-300	301-400	401-500	501-600	601-1000	>1000	
Quantitative	Local	4	20	25	8	2	2	5	2	68
	Regional		1	4		1	3	5	4	18
	N.A	1		1			1			3
Mixed	Local		3	1	3	1				8
	Regional			1				1	1	3
	N.A.				1					1
Qualitative	Local		1							1
Total		5	25	32	12	4	6	11	7	102

Note: information in relation to sample size was missing in 10 articles.

Appendix 5.1. Survey instrument (English version)

Questionnaire ID: _____

Survey location: _____

An investigation on the decision-making process for Chinese senior travellers (Stage I)

Dear Sir/madam,

I am a postgraduate research student from the School of Tourism and Hospitality, Faculty of Business, Plymouth University, UK. I am currently working on a research project regarding the decision-making process of Chinese senior travellers. I would be grateful if you could kindly spare less than 20 minutes of your precious time to take part in this two-wave survey that spans over seven months. The first survey will take roughly 15 minutes, while the second survey, conducted seven months after the first survey, will take only two minutes. To include you in the survey, I may need to ask for a valid contact number (e.g. email; Wechat) from you to deliver the second survey. Your personal details and answers will be treated confidentially and anonymously. All your information will be used only for academic and research purpose. I am truly appreciative for your kind assistance.

Screening question:

Are you over 55 years of age?

Stage I survey:

Section 1: demographic profile

1, Gender: A. Male B. Female

2. Your age: A. 55-59 B. 60-64 C. 65-69 D. 70 or above

3. Your monthly available funds: A. Less than 3000 CNY B. 3000 – 5999 CNY C. 6000 - 7999 CNY D. 8000 CNY or above

4. Highest degree of education: A. High school graduate or under B. Associate degree C. College bachelor's degree D. Advanced college degree

5. Your occupation: _____.

6. Employment status: A. Full-time B. Part-time C. Retired D. Other_____.

7. Household structure: A. Single B. Married co-reside without children C. Married co-reside with children D. Other

8. How much time do you spend online daily?

A. Less than 1 hour per day B. 1-2 hours per day

C. 2-3 hours per day D. Over 3 hours per day

9. Which of the following ICT devices do you use to surf the Internet daily? (Multiple choices are allowed)

A. Cell phone B. Laptop computer

C. Desktop computer D. Tablet computer

10. Which of the following ICT devices do you use for online surfing during vacations? (Multiple choices are allowed)

A. Cell phone B. Laptop computer C. Tablet computer

11. Based on your current situation, would you choose to travel abroad?

A. Yes

B. No

Section 2: Travel decision-making

12. All things considered, I think participating in a leisure travel in the next seven months would be_____. (Example: 1=extremely unfavourable; 7=extremely favourable)

	1	2	3	4	5	6	7	
Unfavourable								Favourable
Unenjoyable								Enjoyable
Boring								Fun
Unpleasant								Pleasant
Negative								Positive

13. Please indicate your level of agreement with the following statements (1=strongly disagree; 7= strongly agree)

	1	2	3	4	5	6	7
Most people who are important to me would approve my participation in leisure travel in the next seven months.							
Most people who are important to me have visited or are planning to participate in a leisure travel.							
People whose opinions I value have spoken positively of leisure travel participation or provided positive feedback about their leisure trips.							

14. Please indicate your level of agreement with the following statements (1=strongly disagree; 7= strongly agree)

	1	2	3	4	5	6	7
My health condition will allow me to participate in leisure travel in the next seven months.							
I feel I have enough budget to participate in leisure travel in the next seven months.							
I feel I have enough time to participate in leisure travel in the next seven months.							
If I am about to participate leisure travel in the next seven months, I am able to find out relevant travel information (e.g. tourism attractions; accommodations; transportations; weather; travel agencies) about my trip.							
If I am about to participate in leisure travel in the next seven months, I am able to find travel companions.							
Apart from the aforementioned factors (i.e. health condition; budget; time; travel information; travel companions), there are no other factors outside my control that could prevent me from participating a leisure travel.							
Overall, I feel I have enough control to participate in a leisure travel in the next seven months.							

15. If I succeed to achieve my goal to participate in leisure travel in the next seven months, I will feel_____. (1=not at all; 7= very much)

	1	2	3	4	5	6	7
Excited							
Accomplished							
Proud							
Happy							
Satisfied							

16. If I do not succeed in achieving my goal to participating in leisure travel in the next seven months, I will feel_____. (1=not at all; 7= very much)

	1	2	3	4	5	6	7
Uncomfortable							
Disappointed							
Sad							
Depressed							

17. If I take a leisure travel/ vacation, I would be motivated by the following desire items. (1=strongly disagree; 7=strongly agree)

	1	2	3	4	5	6	7
Making new friends							
Staying with family							
Visiting friends or family members at another location							
Escaping from daily routine							
Reducing pressure							
Reducing the feeling of loneliness							
Improving personal well-being							
Seeking knowledge about a different culture							
Seeking knowledge about history and nature							
Seeking quality food							
Seeking a luxury or comfortable place to stay							
Seeking shopping opportunities							
Seeking entertainment							
Realising one's dream to visit different places							
Fulfilling one's life							
Cultivating confidence or a sense of pride							
Reminiscing old days							
Seeking adventure							
Seeking unique landscape and scenery							
Satisfying my curiosity over a place							
Overall, my travel motivation for the next seven months is high							

18. Please indicate your level of agreement with the following statements (1=strongly disagree; 7= strongly agree)

	1	2	3	4	5	6	7
I have the demand to participate in leisure travel in the next seven months.							
I intend to participate in leisure travel in the next seven months.							
I well make effort to achieve this goal to participate in leisure travel in the next seven months.							
I already started planning a leisure travel for the next seven months.							

19. Please answer the following question (1= never; 2= one time; 3= two times; 4= three times; 5= four to five times; 6= six times; 7= more than six times)

	1	2	3	4	5	6	7
How often did you participate in leisure travel last year?							

21. Please answer the following questions (1=not at all; 7=very much/ very often)

	1	2	3	4	5	6	7
Before participating in leisure travel, how much do you like to use online tourism platforms, such as Ctrip, TripAdvisor and Qunar, for searching travel information and planning your itinerary?							
During your leisure travel, how much do you like to use travel-related applications, such as Baidu Map and TripAdvisor to find specific locations or services?							
After travel, how much do you like to share your own travel experience and/or photos on your social media accounts or other online platforms?							
Do you often see people around you posting their travel experience or photos online?							
Overall, I oftentimes use ICT for tourism purposes.							

22. Please leave a contact number (e.g. telephone, social media or email) so that we could re-contact you for the confirmation of your actual travel behaviour for the next seven months.

Preferred title: _____

Contact: _____

Questionnaire ID: _____

Survey Location: _____

An investigation on the decision-making process for Chinese senior travellers (Stage 2)

1. Please answer the following question (1= never; 2= once; 3= twice; 4= three times; 5= four times; 6= five times; 7= six times or more)

	1	2	3	4	5	6	7
How many times have you taken a leisure trip/ vacation in the last 7 months?							

Appendix 5.2. Survey instrument (Chinese version)

问卷编码：————————

问卷地点：————————

退休及近退休人群旅游决策过程调查问卷

尊敬的先生/女士：

您好！我是一名在英国普利茅斯大学旅游管理学院就读的博士生。现在我正在为我的研究课题"退休及近退休人群的旅游决策过程"进行问卷调查，希望占用您宝贵的二十分钟时间。此份调查问卷分为两阶段，两阶段之间的间隔为七个月。第一阶段的问卷所需时间约为十五分钟，而七个月后展开的第二阶段问卷所需时间约为两分钟。由于需要发放第二阶段问卷的原因，这份问卷需要您提供一个有效的联系方式（如：QQ、电话或微信）。我们保证您的回答是匿名保密的，所有的信息都只会用于学术研究。再次感谢您的帮助！

筛选问题：

请问您的年龄是否在 55 岁以上？

第一阶段问卷：

基本信息：

1. 性别：A. 男　B. 女
2. 年龄：A. 55-59　B. 60-64　C. 65-69　D. 70 或以上
3. 月收入：A. 3000 元以下　B. 3000-5999 元　C. 6000 – 8000 元　D. 8000 元以上
4. 教育程度：A. 高中或以下　B. 大专　C.大学本科　D. 硕士或以上
5. 职业：_____
6. 就业状况：A. 全职工作　B. 兼职工作　C. 退休　D. 其它_____
7. 家庭结构：A. 独居　B. 夫妻共居　C. 子女及夫妻共居　D. 其它_____
8. 您每日的上网时间有多久？

   A. 小于 1 小时　B. 1-2 小时　C. 2-3 小时　D. 大于 3 小时

9. 您通常使用哪一种设备上网？（可多选）

A. 手机　B. 手提电脑　C. 台式电脑　D. 平板电脑

10. 在出游时您通常使用哪一种设备上网？（可多选）

A. 手机　B. 手提电脑　C. 平板电脑

11. 根据您的个人情况，您会选择参加出境游吗？

A． 会　B. 不会

旅游决策过程

请您回答以下问题：

12. 您对于在未来七个月内参加旅游度假这件事的看法是怎样的？（例：1=完全不赞同；7=完全赞同）

	1	2	3	4	5	6	7	
不赞同								赞同
花钱买罪受								充满享受
无聊								有趣
令人厌烦								使人愉悦
态度消极								态度积极

13. 下列陈述描述了不同人群对旅游度假活动的看法，请根据您对这些陈述的赞同情况进行打分（1 表示非常不赞同，7 表示非常赞同）

	1	2	3	4	5	6	7
我身边重要的亲友大部分都认为我在未来七个月内应参加旅游度假活动。							
我身边重要的亲友大部分打算在未来七个月内参与旅游度假活动。							
影响我做出决策的人（如：亲人、好友、同事、公众人物）曾表达过对度假旅游的积极看法，或曾对自己的旅游经历表达过积极的回馈。							

14. 请根据您对下列陈述的赞同情况进行打分（1 表示非常不赞同，7 表示非常赞同）

	1	2	3	4	5	6	7
我的身体状况允许我在未来七个月内进行旅游度假活动。							
我有充足的资金支持我在未来七个月内参加旅游度假活动。							
我有充裕的时间允许我在未来七个月内参与旅游度假活动。							
如果我在未来七个月内参与旅游度假活动，我有能力查找出与旅游相关的信息 (如： 景点、住宿、交通、天气或旅行社等)。							
如果我在未来七个月内进行旅游度假活动，我可以找到一同出行的伙伴。							
除了上述因素外（即：资金、时间、信息、健康状况、旅行伙伴），没有其它不可控因素阻碍我参与旅游度假活动。							
总的来说，我能够很好地掌控（在未来七个月内参与旅游度假活动）这件事。							

15. 当我成功实现在未来七个月内进行旅行度假的愿望后，我会感到_____。（1 表示完全不赞同；7 表示完全赞同）

	1	2	3	4	5	6	7
兴奋							
有成就感							
自豪							
快乐							
满意							

16. 当我没能实现在未来七个月内旅行度假的愿望时，我会感到_____。（1 表示完全不赞同；7 表示完全赞同）

	1	2	3	4	5	6	7
不舒服							
失望							
难过							
抑郁							

17. 下列哪些因素会让您希望在未来七个月内参加旅游度假活动？（1 表示非常不赞同，7 表示非常赞同）

	1	2	3	4	5	6	7
认识、结交新朋友							
陪伴家人							
拜访亲朋好友							
逃离日常生活							
减少压力							
减少孤独感							
提升个人幸福感							
了解不同文化							
寻求自然历史知识							
找寻美食							
寻找豪华舒适的居住场所							
寻找购物机会							
寻找娱乐活动							
实现旅游的梦想							
充实人生							
培养自信心或自豪感							
怀念过去							
寻求探险的机会							
寻找独特的美景							
满足自己对某个目的地的好奇心							
总的来说，我有强烈的动机在未来七个月内参加旅游度假活动							

18. 请根据您对下列陈述的赞同情况进行打分（1 表示非常不赞同，7 表示非常赞同）

	1	2	3	4	5	6	7
我有在未来七个月内参加旅游度假活动的需求。							
我打算在未来七个月内参加旅游度假活动。							
为了达成这一目标（在未来的七个月参加旅游度假活动），我会做一番努力。							
我已经开始对（未来七个月内的）旅游度假活动进行规划了。							

19. 请您回答以下问题（1 表示从未，2 表示一次，3 表示两次，4 表示三次，5 表示四至五次，6 表示六次，7 表示超过六次）

	1	2	3	4	5	6	7
请问在过去 12 个月内您一共参加过多少次旅游度假活动？							

20. 请您回答以下问题 （1 表示完全不喜欢/完全没有，7 表示非常喜欢/非常频繁）

	1	2	3	4	5	6	7
在旅行前，您是否通过网上旅游平台（如：携程、猫途鹰、乌去哪儿等）搜寻旅游相关信息？							
在旅行途中，您是否经常使用与旅游相关的 APP（如：百度地图、猫途鹰）帮您寻找特定的地点或服务？							
在旅行结束后，您是否喜欢将您的旅行经历及相片分享到社交媒体（如：QQ、微信、微博）或其它网络平台上？							
您是否经常看到周围的亲朋好友在网上分享他们的旅行经历及相片？							
总的来说， 我常常为了度假旅游而使用 ICT 工具。							

21. 请您留下一个联系方式（如：QQ 或微信），方便我们联系您参与第二阶段的问卷调查。

首选称呼：_____

联系方式：_____

问卷编码：_____

问卷地点：_____

退休及近退休人群旅游决策过程调查问卷（第二阶段）

1. 请回答以下问题 (1= 从不; 2= 一次; 3= 两次; 4= 三次; 5= 四次; 6= 五次; 7= 六次或六次以上)

	1	2	3	4	5	6	7
在过去的 7 个月时间里您一共参加了多少次度假旅行？							

Appendix 5.3. Pilot test findings

Construct 1: Attitudes towards tourism.

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of attitudes in the research study. The value of the Cronbach's alpha for this construct is 0.735, indicating sufficient reliability for the construct. The correlations for the all but one measurement items ranged from 0.672 to 0.831, indicating good construct validity for those items. The item of negative—positive attitude had a correlation of -0.069. However, a further examination of this item revealed that it had been arranged into a reverse measurement item. Therefore, the researcher should revise the item layout into the opposite direction (i.e. from 'positive—negative' to 'negative—positive').

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.735	.802	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Attitude 1=Unfavourable--favourable	20.45	19.706	.715	.717	.606
Attitude 2=Unenjoyable--enjoyable	20.60	20.032	.672	.605	.622
Attitude 3=Boring--fun	20.30	19.879	.831	.898	.578
Attitude 4=Unpleasant--pleasant	20.31	19.946	.769	.848	.594
Attitude 5=Positive--Negative	23.30	28.910	-.069	.010	.934

Construct 2: Subjective norms towards tourism.

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of subjective norms in the research study. The value of the Cronbach's alpha for this construct is 0.816, indicating sufficient reliability for the construct. The correlations for the measurement items ranged from 0.626 to 0.750, indicating good construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.816	.820	3

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SN 1=Most people who are important to me would approve my visit to a destination for leisure purpose in the near future.	11.01	8.197	.638	.443	.783
SN 2=Most people who are important to me have visited or are planning to visit a destination for leisure purpose.	10.33	8.588	.750	.563	.670
SN 3=People whose opinions I value have spoken positively of leisure travel or provided positive feedback about their leisure tours.	10.69	8.915	.626	.427	.789

Construct 3: Perceived behavioural controls towards tourism.

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of perceived behavioural controls in the research study. The value of the Cronbach's alpha for this construct is 0.878, indicating sufficient reliability for the construct. The correlations for the measurement items ranged from 0.533 to 0.782, indicating good construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.878	.880	6

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
PBC1= My health condition allows me to participate in leisure travel in the next seven months.	27.04	52.680	.782	.843
PBC2= I feel I have enough budget to participate in leisure travel in the next seven months.	27.46	53.252	.622	.867
PBC3= I feel I have enough time to participate in leisure travel in the next seven months.	27.57	55.249	.533	.881
PBC4= If I am about to participate leisure travel in the next seven months, I am able to find out relevant travel information about my trip.	27.67	50.436	.713	.852
PBC5= If I am about to participate leisure travel in the next seven months, I am able to find travel companions.	27.49	50.526	.721	.850
PBC6= Apart from the aforementioned factors, there are no other factors outside my control that could prevent me from participating a leisure travel.	27.76	49.336	.755	.844

Construct 4: Positive anticipated emotions towards tourism.

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of positive anticipated emotions in the research study. The value of the Cronbach's alpha for this construct is 0.950, indicating sufficient reliability for the construct. The correlations for the measurement items ranged from 0.805 to 0.910, indicating good construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.950	.950	5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
PAE 1=Excited	21.51	28.223	.862	.764	.939
PAE 2=Accomplished	21.49	27.042	.906	.878	.931
PAE 3=Proud	21.61	25.999	.910	.881	.930
PAE 4=Happy	21.10	28.186	.805	.670	.948
PAE 5=Satisfied	21.39	27.302	.832	.709	.944

Construct 5: Negative anticipated emotions towards tourism

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of negative anticipated emotions in the research study. The value of the Cronbach's alpha for this construct is 0.888, indicating sufficient reliability for the construct. The correlations for the measurement items ranged from 0.590 to 0.889, indicating good construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.888	.893	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
NAE 1=Uncomfortable	10.07	25.403	.798	.792	.839
NAE 2=Disappointed	9.94	26.209	.772	.802	.849
NAE 3=Sad	10.46	25.071	.889	.804	.807
NAE 4=Depressed	10.63	27.086	.590	.609	.923

Construct 6: Travel motivations

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of travel motivations in the research study. The value of the Cronbach's alpha for this construct is 0.941, indicating sufficient reliability for the construct. The correlations for the measurement items ranged from 0.545 to 0.751, indicating good construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.940	.941	20

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
TM 1=Making new friends	84.04	611.346	.590	.721	.938
TM 2=Staying with family	82.28	610.479	.609	.755	.938
TM 3=Visiting friends or family members at another location	82.94	608.239	.636	.808	.937
TM 4=Escaping from daily routine	83.66	608.562	.633	.775	.937
TM 5=Reducing pressure	83.15	606.250	.676	.832	.937
TM 6=Reducing the feeling of loneliness	83.58	605.005	.663	.703	.937
TM 7=Improving personal well-being	82.43	604.673	.707	.781	.936
TM 8=Seeking knowledge about a different culture	81.67	619.769	.667	.899	.937
TM 9=Seeking knowledge about history and nature	82.03	604.848	.751	.888	.935
TM 10=Seeking quality food	82.33	608.163	.674	.751	.937

TM 11=Seeking a luxury or comfortable place to stay	83.54	609.616	.670	.787	.937
TM 12=Seeking shopping opportunities	83.97	615.545	.586	.762	.938
TM 13=Seeking entertainment	83.01	621.651	.569	.594	.938
TM 14=Realising one's dream to visit different places	82.27	621.836	.578	.701	.938
TM 15=Fulfilling one's life	81.67	629.981	.545	.763	.939
TM 16=Cultivating confidence or a sense of pride	82.48	595.162	.774	.798	.935
TM 17=Reminiscing old days	83.04	605.922	.649	.701	.937
TM 18=Seeking adventure	83.51	616.648	.575	.726	.938
TM 19=Seeking unique landscape and scenery	81.91	613.386	.680	.760	.937
TM 20=Satisfying my curiosity over a place	82.31	612.855	.637	.619	.937

Construct 7: travel intentions.

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of travel intentions in the research study. The value of the Cronbach's alpha for this construct is 0.893, indicating sufficient reliability for the construct. The correlations for the measurement items ranged from 0.593 to 0.861, indicating good construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.940	.940	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
TI1= I have the demand to participate in leisure travel in the next seven months.	15.00	28.667	.890	.912
TI2= I intend to participate in a leisure travel in the next seven months.	14.99	28.409	.878	.915
TI3= I will make effort to achieve this goal [to participate in leisure travel in the next seven months].	15.33	27.921	.866	.919
TI4= I already started planning a leisure travel for the next seven months.	15.54	28.071	.801	.941

Construct 8: ICT usage in relation to tourism.

The below tables show the Cronbach's alpha and the corrected item-total correlations for the construct of ICT usage in the research study. The value of the Cronbach's alpha for this construct is 0.744, indicating sufficient reliability for the construct. The correlations for the measurement items are ranged from 0.501 to 0.588, indicating sufficient construct validity for those items.

Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.744	.752	4

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
ICT 1=Before taking a holiday, how much do you like to use online tourism platforms for travel information search?	14.61	18.605	.588	.409	.655
ICT 2=How much do you like to share your own travel experience and/ or photos on your social media accounts or other online platforms?	14.63	19.601	.501	.371	.706
ICT 3=Do you often see people around you posting their travel experience or photos online?	13.72	22.024	.548	.385	.691
ICT 4=Do you often use travel applications, such as Baidu Map and Tripadvisor, during your travel?	14.90	17.095	.547	.392	.686

Appendix 5.4. Ethical approval form

RESEARCH WITH PLYMOUTH UNIVERSITY	**Faculty of Business Academic Partnerships** **Faculty Research Ethics Committee** **APPLICATION FOR ETHICAL APPROVAL OF RESEARCH**	**(For FREC use only)** Application No:	
		Chairs action (expedited)	Yes/ No
		Risk level -if high refer to UREC chair immediately Cont. Review Date	High/ low / /
		Outcome (delete)	Approved/ Declined/ Amend/ Withdrawn

1.	**Investigator/student** **Note:1* Tao Xu	Student – *Rong Huang (Director of Study)* and Course/Programme: MPhil/PhD in Tourism and Hospitality
	Contact Address: 510 Cookworthy Building, Plymouth University	
	Tel: 07397240909	Email: tao.xu@plymouth.ac.uk
2.	**Title of Research:** Exploring the decision-making process of Chinese senior tourists and their usage of Information Communication Technologies.	
3.	**Nature of approval sought** (Please tick relevant boxes) **Note:2* a) PROJECT: [x] b) PROGRAMME [ ] (max 3 years) *If a) then please indicate which category:* Funded/unfunded Research (*staff)* [ ] MPhil/PhD, ResM, BClin Sci [x] Masters [ ] Undergraduate [ ] Or Other *(please state)* [ ]	
4.	**Funding:** a) Funding body (if any): N.A. b) If funded, please state any ethical implications of the source of funding, including any reputational risks for the university and how they have been addressed. **Note: 3* N.A.	
5.	a) Duration of project/programme: 3 years **Note:* 4	b) Dates: 1st October 2016 – 1st October 2019
6.	Has this project received ethical approval from another Ethics Committee? No a) Please write committee name: b) Are you therefore only applying for Chair's action now? Yes	

7.	**Attachments** (if required) a) Application/Clearance Form — No b) Information sheets for participants — No c) Consent forms — Yes d) Continuing review approval (if requested) — No e) Other, please state:

**1. Principal Investigators are responsible for ensuring that all staff employed on projects (including research assistants, technicians and clerical staff) act in accordance with the University's ethical principles, the design of the research described in this proposal and any conditions attached to its approval.*

**2. In most cases, approval should be sought individually for each project. Programme approval is granted for research which comprises an ongoing set of studies or investigations utilising the same methods and methodology and where the precise number and timing of such studies cannot be specified in advance. Such approval is normally appropriate only for ongoing, and typically unfunded, scholarly research activity.*

**3. If there is a difference in ethical standards between the University's policy and those of the relevant professional body or research sponsor, Committees shall apply whichever is considered the highest standard of ethical practice.*

**4. Approval is granted for the duration of projects or for a maximum of three years in the case of programmes. Further approval is necessary for any extension of programmes.*

8.	**Aims and Objectives of Research Project/Programme:** **Research aim** To investigate the decision-making process of Chinese senior tourists. **Research objective 1** To develop and validate the measurement of ICT usage in tourism decision-making context. **Research objective 2** To assess the decision-making process of senior Chinese travellers. **Research objective 3** To explore the moderation role of ICT usage with relational attributes (attitude, subjective norm, perceived behavioural control, anticipated emotions, and past behaviour) and travel intention. **Research objective 4** To construct a predictive model for the decision-making process of Chinese senior tourists.

9. **Brief Description of Research Methods and Procedures:**

The research project adopted a quantitative approach for its investigation. Prior to the conduct of data collection, a thorough literature review has been undertaken to construct the conceptual framework and the initial item pool of relational attributes (e.g. attitude; subjective norm; perceived behavioural control) and ICT usage. This construction was established on the basis of the Theory of Reasoned Action, Theory of Planned Behaviour and the Model of Goal-directed Behaviour (e.g. Fishbein and Ajzen, 1975; Ajzen, 1988; Perugini and Bagozzi, 2001) and existing measurement of ICT usage in tourism decision-making. Then the selected items would be submitted to the researchers' supervisor for further judgement. The revised items would then be used to form a two-stage survey to address the above-mentioned research objectives. The purposes of the two stages and corresponding research objectives are presented in table below:

	Stage 1 survey	Stage 2 survey (6 months later)
Research purposes	To empirically explore the mediation and moderation roles of relevant attributes (e.g. attitude, subjective norm, perceived behavioural control) and travel intention. To empirically examine whether ICT usage influence senior tourists' decision-making process.	To empirically examine the relationship between travel intention and actual travel behaviour.
Research objectives	1, 2 and 3	4
Research strategy	Quantitative method of large-scale questionnaire survey	Quantitative method of large scale questionnaire survey

Since the second-stage survey examines only the actual behaviour of respondents in the first-stage survey (whether one has travelled in the previous six months and where he/she has travelled), it doesn't contain questions that utilise measurement scales. As a result, the researcher does not need to conduct a pilot survey to validate the second-wave survey. However, since the second survey needs to recruit the same participants of the first survey, it does require a valid contact number (e.g. email account, instant message account or social media account) for its own delivery.

On the other hand, including all the operationalised variables and their measurement scales, the first-stage of the questionnaire survey would be pretested to verify the validity and reliability of measurement items. After a second revision of the questionnaire in accordance with the pilot test results, the survey would be formally conducted to collect the primary data needed for the research.

The researcher would employ a Chinese online survey platform—Wenjuanxing or Questionnaire Star—for the delivery of the survey. In terms of respondent recruitment, the researcher would recruit survey respondents through four key methods: 1) the researcher has established two screening criteria for survey inclusion. First, research subjects should be at a minimum age of 55 years or older. Second, research subjects should reside in economically-developed regions in China. The survey has identified Beijing, Nanjing, Chongqing and Guangzhou as the targeted areas for data collection.

2) Research subjects of the pilot test would be recruited via a snowball sampling of people fitting the aforementioned criteria. The researcher would firstly contact a number of relatives and friends who fit into the previously mentioned inclusion criteria, and then ask them to deliver the questionnaire to eligible respondents via individual or group chats of online communication platforms (e.g. email; QQ; Wechat). A short announcement would be made in the questionnaire for making the respondents aware about the study, offering them voluntary involvement in the survey, and ensuring the anonymity and confidentiality of their data. The participants of the pilot study would not be asked for their names or contact number, since they do not need to participate in the second-stage survey.

3) Research subjects of the main survey would be recruited via a judgment sampling method in which the researcher would identify potential respondents and distribute the electronic survey questionnaire at public areas of the aforementioned cities. When the approached respondents meet the screening criteria, he or she would be informed about the nature of the two-stage survey, the need for a valid contact number for the second survey, and the purpose of this study. The same short announcement employed in the pilot test would also be used in the main survey to inform the investigation purpose, the voluntary nature of the survey and the promise of data anonymity and confidentiality. While the main survey requires a valid contact number for the second-wave survey, another guarantee to destroy and delete respondent contact number is also added into the information sheet announcement. The contact numbers are scheduled to be deleted one month after the completion of the second survey.

Specify subject populations and recruitment method. Please indicate also any ethically sensitive aspects of the methods. Continue on attached sheets if required.

10.	**Ethical Protocol:** To the best of our knowledge and belief, this research conforms to the ethical principles laid down by the University of Plymouth and by any professional body specified in section 14 above. This research conforms to the University's Ethical Principles for Research Involving Human Participants with regard to openness and honesty, protection from harm, right to withdraw, debriefing, confidentiality, and informed consent. Please indicate how you will ensure this research conforms with each clause of the University of Plymouth's *Principles for Research Involving Human Participants.* Please attach a statement which addresses each of the ethical principles set out below.

(a) Informed Consent:

What is the purpose of the study?

There are many factors that are known to influence how and why people choose to travel. However, there is a lack of study focusing on the decision-making process of Chinese senior travellers. This research project investigates a range of different aspects of travel decision-making.

Who are the researchers and who is funding the research?

Mr. Tao Xu, Plymouth University, is the principle researcher of this study. The study is funded partly by Faculty of Business at Plymouth University.

Who can take part?

We are asking people 55+ to take part in the study by completing this questionnaire.

What do I have to do?

You can take part in the study by filling in this two-stage survey. You will need to provide a valid contact number for the delivery of the second stage survey, which is scheduled to be carried out six months after the first survey. It should take no more than 30 minutes to complete this two-stage survey.

Can I withdraw from the study?

You can withdraw anytime during the study. Considering the success of the study, the withdraw of participation is limited to the point of data analysis. To withdraw from studies, please contact the researcher via the contact details below.

Will my taking part be confidential?

Despite the contact number, the questionnaire does **not** ask for your name or for any other information that might identify you. In terms of information storage, the researcher will **never** reveal your contact information to other individuals/parties and will **destroyed** it immediately after the completion of the second stage survey. In addition, information you provide will be held totally anonymously, making it **impossible** to trace it back to you.

What will happen to the information that I give?

The questionnaires will only be accessible to members of the research team and will be kept securely, in strict accordance with Plymouth University's Data Protection Act. An analysis of the information will form part of our report at the end of the study, which may be published. At a later stage, the findings may also be

reported to academic or professional audiences in journals, presentations or a book.

Contact information

If you would like further information about the study please do not hesitate to contact:

Contact Person:	**Email:**	**Postal Address:**
Mr. Tao Xu	tao.xu@plymouth.ac.uk Mobile: +44(0)7397240909 +86 13557710811	Plymouth University Drake Circus, Plymouth PL4 8AA

Agreement: I've read and agree to participate in the studies described above.

Signature: _____ **Date:** _____

(b) Openness and Honesty:

There is no deception involved with this research and all correspondence and discussion will be conducted and presented in and open and honest manner. All the procedure will under the supervision of my supervisors.

Note that deception is permissible only where it can be shown that all three conditions specified in Section 2 of the University of Plymouth's Ethical Principles have been made in full. Proposers are required to provide a detailed justification and to supply the names of two independent assessors whom the Sub-Committee can approach for advice.

(c) Right to Withdraw:

Consent form will inform participants at the outset of the study that they have the right to withdraw at any time without giving a reason. Considering the success of the study, the withdraw of participation is limited to the point of data analysis. The withdraw rights and limits will be clearly presented in Informed Consent Form. The participant's data will be destroyed after they withdraw and those data will not be used in my research.

Note that this section should also clarify that participant's data will be destroyed should they withdraw, in accordance with best practice.

(d) Protection From Harm:

Participants - Participating in this research will cause no greater harm than participating in everyday life. The nature of this research study (leisure/ tourism) prevents the inquiry of information that may cause embarrassment or anxiety. The risk of harm in the process of data storage, however, is possible, because the survey asks for a valid contact number for the delivery of the second-wave survey. However, such risk could be minimised by strict implementation of the procedures described in the information sheet.

Researcher - There are no anticipated issues of personal safety to the researcher.

(e) Debriefing:

Subjects will be provided an email address and two telephone numbers for requesting a detailed debriefing if they want to know more about the purpose of the study as well as its procedures. If there is any change in the process, the researcher will provide it on completion of the study.

(f) Confidentiality:

Each participant will be assigned a randomly generated code either by the online questionnaire platform which will be used to identify all pieces of data collected. The code (e.g. 01, 02) will be attached to the participant's responses in the data downloaded from the platform. Additional measures should be put into place to ensure that even though the item is assigned an anonymising code, the contents of data are reviewed and analysed only by the researchers so that the identity of the participant is protected.

All the data and transcriptions will be password protected files and retained by Plymouth University's or the researchers' computers. The data may be used in

future studies of a similar nature, but only for the purposes of academic research by the researcher and my supervisor.

(g) Professional Bodies Whose Ethical Policies Apply to this Research:

British Academy Ethics Policy

*The committee strongly recommends that prior to application, applicants consult an appropriate professional code of ethics regardless of whether or not they are members of that body (for example, Social Research Association . http://www.the-sra.org.uk/ethical.htm Market Research Society http://www.mrs.org.uk/standards/codeconduct.htm British Sociological Association http://www.britsoc.co.uk/equality/). Applicants **MAY** choose to write "not applicable" in the "Relevant Professional Bodies" section of the Ethical Application Form. However, it is very rare that there would be no professional/academic code of ethics relevant to a given research project. If based on the information written in other sections of the form, FREC considers a particular professional code to be of relevance, then the Committee may make its consultation and adherence a condition of acceptance.*

11. **Declaration*:**

To the best of our knowledge and belief, this research conforms to the ethical principles laid down by Plymouth University and by the professional body specified in 6 (g).

	Name	**E-mail (s)**	**Date**
Principal Investigator:		Tao.xu@plymouth.ac.uk	21/11/17
Other Staff Investigators:			
Director of Studies (only where Principal Investigator is a postgraduate student):			

Appendix 5.5. Descriptive statistics for normality examination

Descriptive Statistics									
	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ATT1	587	1	7	5.53	1.691	-1.014	.101	.238	.201
ATT2	587	1	7	5.62	1.590	-1.120	.101	.681	.201
ATT3	587	1	7	5.80	1.432	-1.080	.101	.575	.201
ATT4	587	1	7	5.89	1.384	-1.222	.101	1.097	.201
ATT5	587	1	7	5.88	1.455	-1.293	.101	1.206	.201
SN1	587	1	7	5.41	1.725	-.885	.101	-.102	.201
SN2	587	1	7	5.47	1.681	-.947	.101	.008	.201
SN3	587	1	7	5.66	1.444	-.981	.101	.369	.201
PBC1	587	1	7	5.92	1.552	-1.585	.101	1.907	.201
PBC2	587	1	7	5.48	1.798	-1.076	.101	.146	.201
PBC3	587	1	7	5.32	1.848	-.886	.101	-.264	.201
PBC4	587	1	7	5.32	1.871	-.897	.101	-.333	.201
PBC5	587	1	7	5.38	1.801	-.981	.101	-.014	.201
PBC6	587	1	7	5.35	1.702	-.859	.101	-.091	.201
GlobalPBC	587	1	7	5.41	1.450	-.733	.101	.021	.201
PAE1	587	1	7	5.25	1.651	-.805	.101	.010	.201
PAE2	587	1	7	5.12	1.688	-.684	.101	-.219	.201
PAE3	587	1	7	5.05	1.715	-.641	.101	-.335	.201
PAE4	587	1	7	5.71	1.509	-1.199	.101	.932	.201
PAE5	587	1	7	5.63	1.507	-1.125	.101	.866	.201
NAE1	587	1	7	3.44	1.906	.316	.101	-.892	.201
NAE2	587	1	7	3.48	1.959	.328	.101	-.948	.201
NAE3	587	1	7	3.16	1.932	.521	.101	-.797	.201

NAE4	587	1	7	2.78	1.937	.757	.101	-.580	.201
TM1	587	1	7	3.40	2.050	.288	.101	-1.143	.201
TM2	587	1	7	4.81	1.919	-.555	.101	-.694	.201
TM3	587	1	7	4.10	2.016	-.143	.101	-1.135	.201
TM4	587	1	7	3.42	2.081	.284	.101	-1.192	.201
TM5	587	1	7	4.10	2.116	-.131	.101	-1.216	.201
TM6	587	1	7	3.77	2.110	.099	.101	-1.275	.201
TM7	587	1	7	5.14	1.844	-.815	.101	-.269	.201
TM8	587	1	7	5.46	1.698	-1.018	.101	.245	.201
TM9	587	1	7	5.25	1.728	-.828	.101	-.118	.201
TM10	587	1	7	4.74	1.930	-.482	.101	-.827	.201
TM11	587	1	7	3.90	2.003	.027	.101	-1.111	.201
TM12	587	1	7	3.38	1.961	.329	.101	-.970	.201
TM13	587	1	7	4.02	1.960	-.092	.101	-1.046	.201
TM14	587	1	7	4.84	1.915	-.553	.101	-.764	.201
TM15	587	1	7	5.26	1.780	-.852	.101	-.204	.201
TM16	587	1	7	4.82	1.949	-.564	.101	-.759	.201
TM17	587	1	7	3.94	1.991	-.046	.101	-1.088	.201
TM18	587	1	7	3.43	2.016	.298	.101	-1.079	.201
TM19	587	1	7	5.12	1.840	-.786	.101	-.319	.201
TM20	587	1	7	5.09	1.817	-.763	.101	-.320	.201
GlobalTM	587	1	7	4.47	1.368	-.280	.101	-.232	.201
BI1	587	1	7	5.08	1.850	-.697	.101	-.488	.201
BI2	587	1	7	5.12	1.896	-.775	.101	-.459	.201
BI3	587	1	7	4.90	1.864	-.595	.101	-.611	.201
BI4	587	1	7	4.57	2.051	-.388	.101	-1.059	.201
PB	587	1	7	4.79	1.789	-.307	.101	-.874	.201
ICT1	587	1	7	4.36	2.143	-.289	.101	-1.227	.201
ICT2	587	1	7	4.27	2.207	-.227	.101	-1.346	.201

ICT3	587	1	7	4.36	2.102	-.241	.101	-1.251	.201
ICT4	587	1	7	5.16	1.825	-.793	.101	-.349	.201
GlobalICT	587	1	7	4.60	1.815	-.414	.101	-.753	.201
AB (Stage 2 survey)	112	1	6	2.76	1.303	.335	.228	-.541	.453

Appendix 8.1. A summary of recommendations to stakeholders.

Stakeholders	Suggestions	How to do it
Chinese senior tourists	1. Improve knowledge and skills about using ICT for tourism purposes. 2. Try to share and report their travel experiences through social media or other online platforms.	(For both suggestions) 1. Keep practicing ICT skills. 2. Seek supports from friends and families 3. Attend computer courses in U3A institutes.
Industrial professionals	1. Divide the market into various segments and use different marketing strategies towards those segments.	(For suggestion 1) 1. Cultivate an atmosphere of sense of achievement for travel enthusiast, cautious dream-fulfillers and family-oriented travellers in marketing promotions. 2. For travel enthusiasts, emphasise the uniqueness of products; pay attention to budget control issues. 3. For cautious dream-fulfillers, develop a cosy and high-quality product. 4. For family-oriented travellers, stress the family-friendly or social aspects of the product; promote the product to seniors' families or friends.
	2. Pay more attention to digital marketing activities.	(For suggestion 2) 1. Maintain positive eWOM. 2. Encourage tourists to share travel experience online. 3. Pay attention to website design.
	3. Pay attention to the outbound market.	(For suggestion 3) 1. Focus on main tourist source regions and regions where the growth is fast. 2. Customise products so as to fit seniors' needs.
Tourism authorities	1. Working on the implementation and refinement of market rules.	(For suggestion 1) 1. Establish a more holistic travel insurance system. 2. Improve the rescue system at destinations/ tourism attractions. 3. Refine rules against market frauds.
	2. Educate relevant stakeholders about travel-related or safety-related issues	(For suggestion 2) 1. Organise lectures to help senior tourists with information search 2. Organise lectures to help service providers with policy interpretation and quality enhancement.