

A Study on Chinese Senior Tourists' Involvement and Decision-making Types: The Influence of Self-efficacy, Frugality, and Family Function

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Abstract:

This research explains the specifics of senior tourists' decision-making, delegation or independent, by focusing on self-efficacy, frugality, and family function. A conceptual model was developed based on involvement theory. The primary data were collected using questionnaires issued by convenient sampling. The findings prove that the decision types of senior tourists include independent and delegation decisions. By using structural equation modelling, the effects of self-efficacy, frugality, and family function on senior tourists' decision-making were investigated and found to be important factors influencing seniors' travel decision-making in a Chinese context. Travel involvement was also a mediating variable that influences seniors' decision-making on travel.

Keywords: Senior tourist, Self-efficacy, Frugality, Family function, Travel involvement.

I. INTRODUCTION

Much work on tourists' decision-making [...] has been driven by historically prominent concerns over destination marketing and consumer services', thereby neglecting the ontology of the processes that include the elements, actors, relations, facts, circumstances, and interconnections that shape these processes^[1]. The traditional approach to decision-making uses input/output logic^[2,3] that associates many sub-decisions (Where to go? When? What budget?). Following the seminal work by Engel and Blackwell^[4], Van Raaij and Francken^[5] demonstrated its different sequences. Woodside and MacDonald^[2] provided a realistic interpretive approach to tourism decision-making and admitted that family or friends could influence choices, and that the context of decision-making, the history of those involved, and their interactions can all affect tourism decision-making. By studying tourism decision-making (the 'how?'), researchers have highlighted that tourists are not systematic, autonomous decision-makers, and that this is a particularly sensitive issue.

Scholars have demonstrated that senior tourist markets are more heterogeneous than those for young tourists^[6,7]. Differences in decision-making behavior by older and younger adult tourists are reflected in, among others, demographic, economic, physical condition, and social contextual factors.^[8-13] Various scholars have explained the characteristics of the behavior of older tourists; however, this may result in

senior tourist research being considered as similar to decision-making or behavior research in general^[14,15]. Previous studies on senior tourists may have failed to derive a deep and comprehensive understanding of the specific ageing factors that influence older adults' perceptions and reasons for travelling^[16].

While in the previous literature, the tourism decision-makers' values are taken into consideration^[17], the specificity of seniors' values (i.e. those values derived from the socio-historical context in which they live) has not been underlined. Nor has much attention been paid to the physical subjectivity of seniors, which includes their self-efficacy, personal and situational characteristics, and systematic power to influence decision-making. At a time when researchers and practitioners are interested in understanding the experience that each tourist has, analyzing the premises of tourists' decisions seems crucial. It also makes it possible to identify the real decision-makers and whether the family has influenced decisions.

For this reason, in recent years, researchers have suggested that the contributions made in gerontology could be introduced into the research on senior tourism decision-making, so as to include interdisciplinary theories^[15]. However, little empirical evidence exists to support how older age and environment factors impact the decision-making of senior tourists.

Our research addresses these issues in the specific context of China and has two objectives: (1) to advocate a psycho-sociological approach and propose specific psycho-sociological antecedents of senior tourists' decision-making, including self-perception (self-efficacy), consumption value (frugality), and social context perception (family function); and (2) to develop and test a theoretical model on the potential effects of self-efficacy, frugality, and family function on seniors' travel involvement and decision-making types. Subsequently, the results of this study fill the gap regarding the study of tourism in China and provide a sound theoretical basis for international tourism studies, thus allowing the industry to gain a better understanding of senior tourists.

II. MATERIALS AND METHODS

2.1 Involvement and Decision-making Types

Involvement levels are the key variables used to explain the differences in consumer decision-making types^[18]. Theoretically, involvement has been viewed as a useful variable for understanding and explaining differences in consumers' complex behavior and decision-making types^[19]. Researchers consider a range of different problems such as purchasing involvement levels, when analyzing the consumption decision-making types^[20]. Involvement is widely viewed as a predictor for understanding travelers' decision-making because of its potential impact on peoples' intent to travel, attitude, and risk perception^[21].

In this study, we defined the degree of travel involvement as the level of perceived interest or need for tourism activities, which is embodied in the sense of emotional response and benefits experienced by the consumer^[22]. As a consumer's involvement level is dynamic, it is likely to be affected by their individual

psychology, context, and objective factors, including value, interest, self-efficacy, needs, etc [23-25]. The consumer and tourism literature demonstrate that there is a strong negative relationship between travel involvement level, prior experience, and extent of information searched [26-28]. Both high and low levels of travel involvement are also likely to influence the traveller's decision-making [29]. Zhang et al. [30] point out that decision-making types among seniors are influenced by cognitive ability, situational characteristics, and task requirements, and when seniors feel that the gap between task requirements and individual cognitive ability is large, they may adjust their decision-making types accordingly.

Sprotles and Kendall [31] describe one type of consumer decision-making as “a mental orientation” approach; they argue that the starting point of a consumption decision is recognizing a problem. Problems are then categorized as extended, limited, or routine response problems, reflecting the consumer's mental state towards a product [32]. It is assumed that different levels of purchasing involvement represent the consumer's interest in the product; therefore, problem categorization and consumer decision type differ accordingly.

Traditionally, consumer decision-making has been assumed to be independent, as the consumer searched for and evaluated the product information by themselves [33]. Aggarwal [34] reported that consumers might delegate the decision to someone as a strategy instead of searching for information and making the decision themselves. Decision-delegation is defined as ‘allowing another to make a decision (or part of a decision) on one's behalf [35]. The roles of experts in the consumption decision-process include structuring the decision problems, evaluating the product and validating the decision process [36,37]. In marketing research, the term ‘surrogate’ has been used to describe the delegation of decisions to an individual or agent. Senior consumers may be viewed as an appropriate market for surrogate shoppers, and it is important to identify target surrogates accordingly [38]. Therefore, independent decisions and delegation decisions on travelling are treated as dependent variables in the proposed model (Fig 1) to better understand actual senior tourist decisions in actual contexts. We used travel involvement as a mediator variable in the study; our proposed hypotheses were as follows:

H1: Travel involvement has a positive impact on senior tourists' independent decisions.

H2: Travel involvement has a negative impact on senior tourists' decision-delegation.

2.2 Self-efficacy and Tourism Decisions among Seniors

Perceived self-efficacy refers to peoples' beliefs regarding their abilities to fulfil specific tasks within the psychological domain [39]. The concept of self-efficacy has been widely adopted in the research of human behavior, such as physical and leisure activities [40,41]. Since the development of self-efficacy theory, most researchers suggest an examination of self-efficacy for a particular task and name the particular theory according to the study context, for example, dietary self-efficacy [42]. With predictable effects on different tasks' engagement variables (e.g. decision-making, goal setting, involvement), self-efficacy mediates the relationship between self-efficacy and performance and a lifespan treatment of

self-efficacy development is particularly compelling^[43]. Gerontology researchers hypothesize self-efficacy as an important psychological antecedent factor of personal behavior^[44], and a particular study showed that the higher self-efficacy level of seniors always results in the seniors partaking in more physical activities^[45]. Additionally, tourism studies suggest a strong relationship between self-efficacy, leisure involvement, and physical activities^[25]. Marcus and Eaton^[46] examined the relationship between the readiness stage of physical exercise and self-efficacy by using a three-step model-building approach and the results demonstrated that self-efficacy is an important indicator and predictor of current and future physical exercise behavior.

Some studies have tested and documented a strong link between self-efficacy and different decision-making behaviors of seniors, including making decisions about exercises and or insurance^[46,47]. Sundling^[48] noted that seniors' perceptions of self-efficacy might affect their behavioural decisions, because different people may assess their functional abilities differently. Hung and Petrick^[49] tested the moderating effect of self-efficacy by using the motivation-opportunity-ability (MOA) model and the moderating effect of self-efficacy was found on the path between self-congruity and travel intention. Shim, Gehrt, and Siek^[50] found that mature travelers who perceive themselves as younger tend to have a more positive affective attitude, have travelled more frequently in the past, and have stronger intentions regarding future travel. Kakoudakis, McCabe and Story^[51] also pointed out that self-efficacy has a positive impact on social tourists' decision-making. Self-efficacy has been suggested and viewed as a mechanism that may affect seniors' self-enhancing or self-debilitating tendencies^[52].

Serre and Chevalier^[53] conducted an empirical study on retired older adults in France and found that seniors' subjective sense of their own state of ageing had a significant impact on their choice of tourist destinations and tourism products. Hsu, Cai, and Wang^[54] noted that subjective understandings of personal health should also be considered when researching the tourism motivations of seniors using semi-structured interviews. Their fourth proposition states that "Chinese seniors' motivation for leisure travel is subject to the perception of their health condition"^[54]. This demonstrates that one's perception of health does not necessarily decline with age, and that the increase of cognitive ability in older adults may have a positive impact on their decision-making regarding tourism. In summary, self-efficacy, travel/leisure involvement, and decision making are three widely studied psychological phenomena in both gerontology and tourism research field. However, there have been few studies that explore the relationships among these constructs of older people, especially in the leisure travelling context. Additionally, there has been a lack of attention paid to the interaction between seniors' self-efficacy, travel involvement, and decision-making types: it has not been empirically tested recently. Further, Faranda and Schmi^[55] suggest that self-perception variables such as life satisfaction and involvement degree, should be introduced into the research of tourism decision-making for seniors. Zhang^[56] found that the travel opportunity ratio of seniors with good self-assessment health was 63% higher than that of seniors with poor self-assessment of their health, while the travel opportunity ratio of seniors (70–79 years old) was only 22% lower than that of seniors with low self-assessment of their health (60–69 years old). Based on the above, therefore, in this research, the following specific hypotheses tested are:

H3: Self-efficacy has a positive impact on seniors' travel involvement.

H4: Self-efficacy has a positive impact on senior tourists' independent decisions.

H5: Self-efficacy has a negative impact on senior tourists' delegation decisions.

2.3 Frugality and Seniors' Decisions on Travelling

Value is defined as 'a belief that some condition is preferable to its opposite' [24]. It is viewed as a specific factor that enables marketers to understand evolving trends in consumer behaviors and their future decisions [20]. Consumers in different regions and countries have different group and regional value systems [57].

In China, Confucianism represents the mainstream values of older consumers. The core and significant consumption value of Confucianism is frugality [57]: researchers consider frugality to affect the mainstream values of tourism consumers in China [58]. Seniors who value frugality may tend to save as much as possible and would reduce unnecessary consumption such as travelling [59]. Wang [60] found that most Chinese seniors uphold industrious and frugal consumption values, especially with regard to self-consumption. Based on the hierarchical model of leisure constraints, Li [61] conducted an empirical study on the constraints on the outbound tourism of seniors in China; the findings include that consumption value is an important constraint variable that restricts senior tourism decision-making, and that older people are more likely to be frugal than middle-aged. Jang and Wu [62] found that the possibility of Taiwanese seniors to participate in tourism increased with improvements to their self-perceived economic situation. Alén, Losada, and Domínguez [63] conducted a study on the tourism frequency of seniors over 55 years old in Spain; they also found a positive correlation between the evaluation of older people's self-economic status and their travel frequency. Liu [64] found that seniors' perceptions on the cost of tourism is an important variable to constrain their tourism demand, because seniors regard tourism as an expensive and luxurious consumption expenditure.

However, Li [61] reported that Chinese seniors' consumption values are becoming more positive and optimistic, and this may affect their travelling behavior. Senior citizens were born in the last century from the 1940s to 1950s, or earlier. Most experienced poor physical conditions during their youth and had few chances to travel when they were young, and, influenced by traditional Confucianism, most Chinese senior citizens tend to be pragmatic about consumption and emphasize the 'practical', 'pragmatic', and 'real' nature of their consumption. Subsequently, frugal consumption value may have a negative impact on Chinese seniors' travelling involvement, as well as decision types [65]. Therefore, we hypothesized that frugality has a direct effect on their involvement in travel and their travelling decisions. Thus, the following hypotheses were proposed:

H6: Frugality has a negative impact on seniors' travel involvement.

H7: Frugality has a negative impact on seniors' independent decisions.

H8: Frugality has a positive impact on seniors' decision-delegation.

2.4 Family Function and Senior Tourists' Decision-making

Family function refers to the environmental support provided by the family for the behaviour or personal development of family members, including communication, problem-solving, emotional response, and behavior control ^[66].

Research has demonstrated that, in China, help and support from families and children have a significant impact on the life and subjective satisfaction of older adults. Research shows that family function is significantly related to the physical health and subjective well-being of older people, while older people with better family function have stronger desire for tourism and can receive more tourism support ^[67]. Hsu, Cai, and Wong ^[58] found that the willingness of older people to travel is related to their family prosperity, especially their children's support, known as 'filial piety', but at the same time, some older people's willingness to travel is limited by the lack of family resources. Grown-up children encourage and support their parents to have leisure trips by buying their parents travelling packages as gifts and paying attention to the spiritual needs of older people. Supporting one's parents to travel has become an important way for children to honor older people in China ^[68,69]. However, some scholars point out that family responsibility may also be a travel constraint for older people; some Chinese seniors sacrifice their travel time for their children because of traditional social pressure, family conditions, and to support their children; for example, to take care of their grandchildren. These were viewed as travel constraints unique to China ^[54,70].

As family function is hypothesized to have a direct effect on Chinese seniors' travel involvement and decisions, the following hypotheses were proposed:

H9: Family function has a positive impact on seniors' travel involvement.

H10: Family function has a negative impact on senior tourists' independent decisions.

H11: Family function has a positive impact on senior tourists' decision-delegation.

2.5 The Proposed Model and Hypotheses

As discussed above, in this study, based on involvement theory, a model is proposed to examine the relationships among self-efficacy, frugality, family function, and decision types. Studies have demonstrated that travel involvement has a positive impact on travel decisions and its important role in tourist decision-making is well-documented ^[71]. A significant number of tourism studies show that

travelling involvement has a positive impact on travel intention and decision-making. However, few studies tried to examine the antecedents of senior travelling involvement.

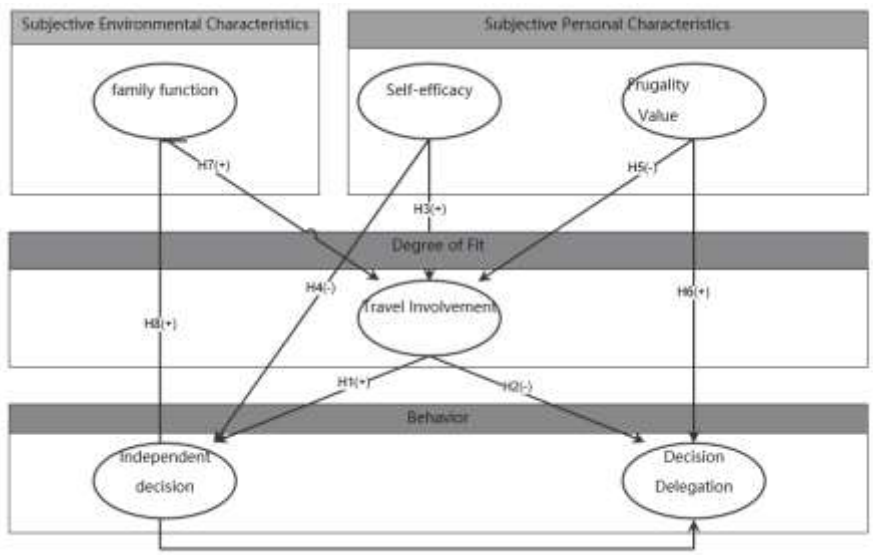


Fig 1: Proposed Model

As discussed above, the relationships among self-efficacy, frugality, family function, and travel involvement would also present the effects of them on travel decision-making types. Considering the above discussion, Fig 1 presents the proposed model with the hypothesized structural linkages among the variables.

III. METHODOLOGY

3.1 Observed Variables and Questionnaire Design

The observed variables in this study were adapted from previous literature. After initial selection of observed variables for each latent variable, the scale was refined based on the opinions of four tourism researchers. Some observed variables were deleted, added, and adjusted accordingly. A total of 37 observed variables were then used for the pilot test. In Table I, the observed variables of self-efficacy, frugality, family function, travel involvement, independent decision, and decision-delegation are presented with their references. The observed variables were measured using a 5-point Likert scale where the participants rated their agreement on the scale, ranging from (1) strongly agree to (5) strongly disagree.

The questionnaire used in this study has four parts and 45 questions. The first part contains a short introduction of the study background; the second includes questions on travel involvement and decision type; the third includes questions concerning self-efficacy, family function, and frugality; and the fourth includes questions on personal information.

TABLE I. LATENT VARIABLES AND OBSERVED VARIABLES

LATENT VARIABLE	OBSERVED VARIABLE	REFERENCE
Self-efficacy (SE)	1. If I try my best, I can always solve problems when I travel. 2. It is easy for me to achieve my goals when I travel. 3. I feel confident that I can deal with accidents when I travel. 4. I feel capable of travelling because I am confident about my abilities. 5. I am full of confidence with travelling. I am confident about travelling alone.	Bandura 1999 ^[39] ; Shen and Dan, 2004 ^[73] ; Sundling 2015 ^[48]
Frugality (FR)	7. Before I travel, I compare prices and quality carefully. 8. When I travel, cost will be the top priority. 9. When I travel, I only request clean food and accommodation. 10. When I travel, price is my first concern. 11. Travelling is very expensive. 12. It is more important to save money for a pension or supporting my children's life than travelling.	Wu, Wang, and Du 2012 ^[59] ; Hsu and Huang. 2016 ^[58]
Family function (FF)	13. In my family, we all like travelling and support each other accordingly. 14. I am supported to travel by my family members. 15. In my family, we often discuss the destination choice FF4: together before travelling. 16. In my family, we love to travel together. 17. In my family, the family members respect and love me. 18. In my family, my travelling requests can usually be satisfied.	Deng, Yang and Chen. 2012 ^[67] ; Li 2016 ^[73] ; Pires et al. 2016 ^[74]
Travel involvement (TI)	19. Travelling is a necessary part of my life. 20. It gives me pleasure to travel. 21. I am happy to spend money on travelling. 22. I attach great importance to a vacation. 23. I often travel. 24. I am happy to spend time travelling.	Zaichkowsky, 1994 ^[75] ; Kim, Woo and Uysal, 2015 ^[19] ; Yu and Tian 2013 ^[76]
Independent	25. Usually, I search for travel information	Price and Feick 1984 ^[36] ; Aggarwal

decision (ID)	by myself. 26. It is convenient to search for travel information by myself. 27. It is fun to search for travel information. 28. Usually, I decide to travel or not by myself. 29. Usually, I decide the travel destination by myself. 30. I prefer to decide to travel or not by myself. 31. I prefer to decide on the travel destination by myself.	and Mazumdar 2008 ^[37]
Delegated decision (DD)	32. Relatives and friends (RFs) search for travel information. 33. RFs help me to search for travel information. 34. I trust RFs to search for travel information for me. 35. RFs help me to decide whether to travel. 36. RFs help me to choose the destination. 37. I trust RFs to help me choose the destination.	Sprotles and Kendall 1986 ^[31] ; Decrop 2005 ^[17] ; Stone 2016 ^[35]

3.2 Pilot Test

A pilot test was conducted in December 2017. During the pilot test, 300 questionnaires were distributed; 250 were returned, of which 245 were valid, for a response rate of 82%.

The collected data were processed by SPSS 17.0 to test the reliability of the scales. CITC (corrected item–total correction) and Cronbach’s α were used as ratios to test the scales’ reliability. After the pilot test, some questions were rephrased to clarify the text.

3.3 Sample and Data Collection

The questionnaire was distributed to older Chinese adults (aged over 55) residing in Hangzhou, China. The target sample city was selected because first, the population of older adults in Hangzhou has steadily grown, and it is an aged city with 22% of the population over 60 years in 2017^[77]. Second, Hangzhou is ranked as one of the top tourism cities in China^[78]. As an aged and mature tourism market, Hangzhou has consistently attracted academic research^[79-81].

The research was conducted through on-site questionnaires, which were completed from 17 January to 18 March 2018. The questionnaires were issued conveniently by eight pre-trained undergraduate students

to collect the primary data. The participants were informed of the purpose of the study, that all responses would be anonymous, and that participation was voluntary. To avoid repetition, the students were told to ask and take pictures with the participants before issuing the questionnaires. During the survey, 2000 questionnaires were issued, and 1205 were collected, of which 768 were valid, creating an effective response rate of 77.11%. As shown in Table II, the respondents' profiles are listed.

TABLE II. RESPONDENTS PROFILE (N=768)

VARIABLES		NUMBER OF SAMPLES	FREQUENCY
Gender	Male	395	51.43%
	Female	373	48.57%
Age	55–60	230	29.95%
	61–70	359	46.74%
	71–80	143	18.62%
	81 and above	36	4.69%
Pre-retirement occupational composition	Civil servants	43	5.60%
	Enterprise employees	54	7.03%
	Institution employees	169	22.01%
	Workers	164	21.35%
	Farmers	188	24.48%
	Professionals	76	9.90%
	Self-employed people	35	4.56%
	Other	39	5.08%
Educational Background	Lower than high school	502	65.36%
	High school	170	22.14%
	College	91	11.85%
	Post-graduate degree	5	0.65%
Income source	Pension	491	63.93%
	Own savings	130	16.93%
	Children's donation	76	9.90%
	Other	71	9.24%
Marriage	Married	708	92.19%
	Widowhood	48	6.25%
	Divorced	10	1.30%
	Never Married	2	0.26%
Children	Single Child	329	42.84%
	Two or more children	436	56.77%
	No children	3	0.39%
Travelling method	Tour group	407	52.99%
	Independent travelling	361	47.01%
Travelling preference	With children	319	41.54%
	With relatives and friends	212	27.60%
	With spouse	237	30.86%

3.4 Reliability and Validity Test

The reliability and validity tests were carried out using SPSS17.0. The Cronbach α coefficient of the total scale was 0.893 and the reliabilities of the latent variables were all above 0.85, which indicate that the model internal quality was relatively high.

Exploratory factor analysis was employed to test the validity of the corresponding observation variables such as self-efficacy of supply, frugality, family functions, tourism involvement, tourism independent decision-making, and tourism delegation decision. Bartlett’s test of sphericity and Kaiser Meyer Olkin (KMO) measurement were used to check validity. In this study, the value of KMO above 0.9 is very suitable; 0.8 is suitable; 0.7 is general; 0.6 is not suitable; and 0.5 is not suitable. According to the results, the KMO value was 0.909 and therefore suitable for factor analysis. Principal Component Analysis was then employed to carry out the factor analysis. The cumulative contribution rate of these six factors to the total variance was 66.073%, which means the factors could be extracted to show that the dimensions of the relevant observation variables in seniors’ tourism decision-making model were reasonable. The rotating component matrix of relevant factors showed that the load coefficients of each latent variables on the observation variables were all above 0.5, which indicated that the observation variables were valid conceptually.

IV. DATA ANALYSIS AND RESULTS

A two-step model building approach was then used in the data analysis. First, the study introduced the latent variables and observed variables into the hypothesis model, then the fitting index, path coefficient, and t-test value of the model were calculated through AMOS7.0, measuring fitness in terms of absolute fitness, value-added adaptability, and simple fitness. Second, the proposed model was refined through a series of tests according to the test results.

The first step in testing the fit of the model was to estimate the path in the proposed model, which is presented in Fig 1. The parameters were estimated by the maximum likelihood method (ML). The results demonstrate that the fully standardized load of the observed variable was above 0.64, which has a high load and reaches a significant degree. The fitting results of the structural model in the proposed model are illustrated in Table III: $\chi^2/df = 6.533$; Root Mean Square Error of Approximation (RMSEA) = 0.193 < 0.08; Root of the mean square residual, (RMR) = 0.085 < 0.05; Goodness-of-fit Index (GFI) and Adjusted Goodness-of-fit Index (AGFI) are less than 0.900; Normed Fit Index (NFI) = 0.858 < 0.900, Relative Fit Index (RFI) = 0.842 < 0.90, Comparative Fit Index (CFI) = 0.877 < 0.900. The indicators above do not reach the desired level.

TABLE III. MODEL FITNESS RATIOS

	MODEL B: FITNESS RATIO VALUE
x ² /df	2.294
RMR	0.070

RMSEA	0.041
GFI	0.937
PGFI	0.756
AGFI	0.922
RFI	0.956
NFI	0.949
CFI	0.974

The results show that the fully standardized load of the observed variable was above 0.64, which indicates a high load and a reach that is significant. The fitting results of the structural model are shown as Model A in Table 3: $\chi^2/df = 6.533$; $RMSEA = 0.193 < 0.08$, $RMR = 0.085 < 0.05$; GFI and AGFI are less than 0.900; $NFI = 0.858 < 0.900$, $RFI = 0.842 < 0.90$, $CFI = 0.877 < 0.900$. The indicators above do not reach the desired level. To find a better model, it is necessary to modify and validate the model according to the test results and the Modification Index (MI) index.

Meanwhile, in the theoretical model, the following hypotheses were made: H2-b: frugality (FR) had a negative impact on older adults' independent decision (ID), H3-b: family function (FF) has a negative impact on older adults ID, and H1-c: self-efficacy (SE) has a negative impact on older adults ID. It can be observed through the P-value indicators that the three hypotheses are invalid. The relationships between the three hypotheses above will be omitted in model B.

The model was modified by the Confirmatory Factor Analysis (CFA) and the MI index. In the CFA, the factor loadings of FF3 and FF4 were below the minimum standard (< 0.7 , which can be considered for omission to improve the fitting effect). Meanwhile, in the theoretical model, the following hypotheses were made: frugality (FR) has a negative impact on independent decision (ID), family function (FF) has a negative impact on older adults' independent decision (ID), and self-efficacy (SE) also has a negative impact on ID. It was found through the Critical Ratio (CR) indicators that the three hypotheses above were invalid. The relationships between the three hypotheses above were then deleted in model B.

According to this study's hypothesis, there are direct or indirect dependencies among self-efficacy (SE), frugality (FR), family function (FF), travelling involvement (TI), independent decision (ID), and tourism decision-delegation (DD). The effects and hypothesis testing results are illustrated in Table IV.

TABLE IV. MODEL B HYPOTHESIS PATH TEST

			ESTIMATE	SE	CR	P	LABEL
TI	←	SE	0.342	0.042	8.057	** *	Self-efficacy has a positive impact on seniors' travel involvement.
TI	←	FR	-0.211	0.039	-5.42	** *	Frugality has a negative impact on seniors' travel involvement.

TI	←	F	0.553	0.0	10.1	**	Family function has a positive impact on seniors' travel involvement.
TI	←	S	0.471	0.0	9.05	**	Self-efficacy has a positive impact on senior tourists' independent decision.
TD	←	T	0.36	0.0	7.82	**	Frugality has a positive impact on senior tourists' decision-delegation.
TD	←	F	0.637	0.0	9.45	**	Family function has a positive impact on senior tourists' decision-delegation.
TI	←	TI	0.29	0.0	5.78	**	Travel involvement has a positive impact on senior tourists' independent decision.
TD	←	TI	-0.317	0.0	-6.03	**	Travel involvement has a negative impact on senior tourists' decision-delegation.

Self-efficacy and family function have positive impacts on seniors' involvement with travel, while frugality has a negative impact. Self-sufficiency, frugality, family function, and travel involvement all had positive impacts on the independent decisions of older adults on tourism. Involvement with travel had a negative impact on the delegation of tourism decisions, and the hypotheses above were validated.

V. DISCUSSION

The purpose of this study was to examine the relational linkage among seniors' travel decision-making types and self-efficacy, frugality, and family function through the mediating role of travelling involvement by using a structured equation model. A measurement model for six variable constructs was developed and tested. The exploratory and confirmatory factor analysis showed that the observed variables of the six latent variables, including self-efficacy, family function, frugality, travelling involvement, independent decision, and delegation decision, had good aggregation validity. The findings prove that seniors' tourism decision-making can be divided into two types, independent and delegation decisions, which had significantly different observation characteristics.

Self-efficacy, family function, and frugality of older people were found to have antecedent significance for explaining seniors' tourism decision-making types. The findings show that seniors' tourism decision-making types could be effectively explained and predicted by examining self-efficacy, family function, and frugality.

These results demonstrated that seniors' travelling involvement and decision-making types were the results of systematic and procedural effects of various factors, such as personal perceptions regarding the physical and social conditions of older adults, and has dynamic and changeable characteristics ^[82]. The tourism decision-making of senior travelers was influenced by their cognitive ability, situational characteristics, and task requirements ^[83].

In general, seniors' physical and social conditions were assumed to be in decline. However, strong self-efficacy may improve seniors' sense of control over the environment; conversely, this sense of control

may influence self-efficacy ^[84,85]. In the analyses of self-efficacy, the model hypothesis linking self-efficacy, travelling involvement, and independent decision-making on travel was significant. The results demonstrated that frugality and family function played an important role in affecting Chinese seniors' travel involvement and decision types. This implies that seniors' self-perception of specific social context and cultural background affect their decision-making on tourism, and their decision types will change with the transformation of economic and social conditions accordingly.

Travelling involvement played an intermediary role in seniors' tourism decision-making. In the structural equation test of Model A, the three hypotheses, 'frugality has a negative impact on seniors' independent decision, self-efficacy has a negative impact on the tourism delegation decision, and family function has a negative impact on seniors' independent decision-making', were not supported. However, in the structural equation test of model B, the results show that with travelling involvement as a moderating factor, self-efficacy had an indirect negative impact on tourism delegation decision; frugality had an indirect negative impact on tourism independent decision-making with the help of tourism involvement; and family function had a negative impact on seniors' independent decision-making with the help of tourism involvement. The findings of this study show that tourism involvement was an important indicator of seniors' tourism behavior and independent decision, which has an important mediating significance for seniors' tourism decisions.

This research introduced the concepts of self-efficacy, family function, frugality, and travelling involvement as the antecedents of seniors' tourism decision-making and probed into the connotation of the antecedent variables and decision-making types of seniors' tourism decision-making and the complex interactions among them.

VI. CONCLUSION

This study contributes to the research on senior tourism decision-making in multiple ways. The study successfully integrated the self-awareness and situation cognition features of older people into the research framework of tourism decision-making, and effectively breaks through the research bottleneck of the 'characterization' of decision-making in senior tourism.

The study has both theoretical and practical contributions. Theoretically, the study contributes to the following four aspects of innovation: first, it is one of the first attempts to develop and empirically test a conceptual model of travel decision-making by adopting cognitive variables, including self-efficacy, frugality, family function, and travel involvement. The study probed into the self-awareness and situation cognition features affecting senior tourism decision-making and provides new theoretical support for understanding the characteristics of the senior tourism market. Second, the paper proposes a theoretical relationship between the self-situation characteristics of older people and tourism decision-making types, adopting the quantitative research data to validate the hypothesis and providing empirical evidence for the study of decision-making in senior tourism. Finally, the study enriches and expands the boundaries of theoretical research. Traditionally, tourism academia considers older people to be a homogenous travel

population and lacks a guiding theoretical framework, including special situations and cognitive features of tourists in systematic research. This paper introduces involvement theory into the research of decision-making in senior tourism. The research not only discusses the embedded relationship among ‘cognition’, ‘situation’, and ‘tourism decision-making’ theoretically, but also constructs an innovative model of decision-making in senior tourism, thus providing a reasonable theoretical foundation for the introduction of appropriate theoretical variables of decision antecedents and types of decision-making in senior tourism.

Although our research is specific to China, it offers an interesting perspective on the behavior of senior tourists from other countries. We demonstrate that a comprehensive approach to decision-making should consider what is happening in the minds, bodies, and environment of senior tourists. Our model also explains the existence of a third party in the decision-making process, often a family member, who becomes a prescriber. Our model did not make this third party’s participation an exogenous variable in the decision-making process but rather explored the conditions of recourse to this third party (family function, involvement, values, and self-efficacy). In this way, we deepened our understanding of how senior tourists make decisions. Therefore, innovative policies could encourage participation, which could boost the development of the seniors’ tourism industry and provide an appropriate method to guide healthy ageing. For example, the National Tourism Administration launched its Elderly Tourist Service Specifications for Travel Agencies in 2016. This explicitly stipulated that travel agencies covering senior tourists should include tour group doctors, and that senior tourists over the age of 75 should be accompanied by an adult from the lineal family or with travel upon their written permission. However, our investigation indicates that these provisions could be blamed for the mobility failures of 80-year-olds. Some older people even regard 75 as the last year appropriate for them to travel and believe that travel after 75 is not feasible. The study’s results reveal that the market oriented to older adults is not a niche based on age. The ageing process has gradually deepened with socioeconomic development, and tourism activities and decision-making patterns have become more varied. Further, the product preferences of older adults will change in future decades, and travel agencies should recognize the issue of intergenerational replacement, and continuously focus on the changing demands of tourists and developing new suitable products.

However, a few limitations and problems exist in this research due to the topic’s complexity. Hangzhou was selected as the sample city for quantitative research, and the conclusions are subject to geographical restrictions to some extent, which may influence its generalizability. China is an enormous market and can be divided into several submarkets, such as the northern and southern China markets, first-tier and second-tier city markets, or urban and rural markets^[58]. Future research incorporating industry perspectives should combine the characteristics of the older adults’ market and select different generational samples.

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