


Structure of Travel Planning Processes and Information Use Patterns

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Abstract

Based on an empirical data set collected from Chinese tourists visiting Macau SAR, this study attempts to decompose the travel decision-making process into a multistage sequence (before purchase, at time of purchase, after purchase, after arriving at destination) with multiple decision choices for a vacation trip. The study results demonstrate that travel decision making follows a multidimensional, ongoing sequence and is a hierarchical process. This study further attempts to expand the framework for describing the travel decision-making structure by incorporating information use patterns across the overall course of the travel planning process. The contingent nature of decision making is partially validated by tracing the sequence of decision making and information use along the travel planning horizon. Furthermore, given the lack of studies based on Chinese tourists' decision-making behavior, the study results provide new insights for many tourism destinations and businesses eyeing the burgeoning Chinese tourists' market.

Keywords

structure of travel decision making, information use patterns, Chinese tourists, multistage sequence of travel planning

Typically, consumer behavior refers to the process of acquiring and organizing information in the direction of a purchase decision and of using and evaluating products and services (Moutinho 1987). On this basis, consumer decision making is interpreted as the process of acquiring information for and integrating information into related purchase decisions. Many consumer behavior studies have also maintained that consumer decision making requires a large amount of internal as well as external information processing, including information search, information evaluation, and integration (Beatty and Smith 1987; Jeng and Fesenmaier 2002; John, Scott, and Bettman 1987; Payne 1976). Similarly, the process of travel decision making has been described as evolving and dynamic information processing within the context of the travel planning process in several previous studies (Fodness and Murray 1998; Hwang, Gretzel, and Fesenmaier 2002; Jeng and Fesenmaier 2002).

The travel decision-making process has enjoyed substantial research interest. A number of models have been proposed to explain tourists' decision-making behavior or to predict destination choice processes (Crompton 1992; Um and Crompton 1990; Woodside and Dubelaar 2002; Woodside and Lysonski 1989). However, there has been criticism that these models simplify travel behavior to focus attention on the process and/or features by which one chooses a travel destination (Fesenmaier and Jeng 2000; Hyde 2004). The decisions tourists make are, in a real vacation context, not

single independent choices of separate elements (e.g., destination), but rather are complex, multifaceted decisions in which the choices of different elements are interrelated and evolve in a decision process over time (Dellaert, Ettema, and Lindh 1998). Recognizing that a travel decision is complex and multifaceted, recent studies indicate that travel decision making has a hierarchical structure in that some decisions are contingent on others that have already been made (Fesenmaier and Jeng 2000; Hyde 2004; Jeng and Fesenmaier 2002). It is also suggested that planning a vacation trip is part of a complex decision process involving many determinants that can be identified only if the structural scheme is well established (Zalatan 1996).

Although researchers have acknowledged the importance of the influence of information on every decision task and the nature of decision making as a sequential and contingent process, there has been no empirical research attempting to explore information use patterns within the structure of the

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decision-making process in the tourism literature. Thus, the overall purpose of this study was to fill this research gap by decomposing the sequence of the leisure travel decision process and to investigate information use patterns within the structure of this decision process. Unlike conventional approaches that emphasize the choice of destination and focus on the static nature of travel choice behavior, recently developed decision theories tend to describe travel decisions as temporal, dynamic, successive, multistage, and contingent processes that evolve through the course of travel planning (Fesenmaier 1990; Jeng and Fesenmaier 2002). This study attempts to produce empirical findings about the nature of travel decision making that has been addressed by researchers skeptical about conventional approaches. Furthermore, this study not only provides an empirical reflection of the conceptual model with this new orientation, but expands this model to a more comprehensive framework including tourists' information use patterns across the different stages of the travel planning process.

Related Literature

Traditional Approach to Travel Decision-Making Modeling

In general, much of tourist behavior research has been based on classical buyer behavior theory. Here decisions are thought to evolve in sequential steps: needs motivation, problem recognition, information search, evaluation of alternatives and decision, purchase, and postpurchase evaluation (Engel, Kollat, and Blackwell 1973). Drawing from this framework, a number of decision-making models have been suggested to describe tourists' decision-making processes or to uncover the general dynamics of internal and external factors influencing tourists' decision making. The models of Van Raaij and Francken (1984), Moutinho (1987), Woodside and Lysonski (1989), and Um and Crompton (1990) in particular have attracted attention in the tourism literature.

In a family vacation context, Van Raaij and Francken (1984) proposed a travel decision-making model represented as a sequence of subdecisions: (1) the generic decision to spend on a vacation, (2) information acquisition, (3) joint decision making by husband and wife, (4) experience of the vacation, and (5) subsequent levels of satisfaction. Woodside and Lysonski (1989) described traveler's decision making as a categorization process from which the preference, intentions and the final choice result. In this process, the choice was a function of intention to visit a destination and situational variables acting as moderators between intention and choice. Um and Crompton (1990) proposed a theoretical framework of the destination choice process using a choice-set structure. This framework asserts that destination selection is a three-stage process, including (1) composition of awareness set, (2) evoked set, and (3) final destination set. While their model illuminated the travel decision process as contingent in nature, the process of travel decision making

concentrated only on the destination choice before starting a vacation and did not encompass various subdecisions making up the overall travel experiences.

Moutinho (1987) suggested a more expanded conceptual framework of tourism decisions. In his model, destination choice is a compulsory decision among a group of other subdecisions (e.g., travel mode, timing, budget, intermediaries) that comes after the tourism need has been aroused, information has been gathered, and deliberated on before travel preparation. Marketing stimuli, social factors, characteristics of the destination and other external factors were listed as influences on the choice of travel destination. However, because of its extreme complexity and comprehensiveness, it has been argued that it is not possible to empirically test Moutinho's model (Decrop 1999; Sirakaya and Woodside 2005).

While focusing on intrapersonal mental processes and the interaction with psychological variables (e.g., attitudes, motivation, beliefs, and intentions) and nonpsychological variables (e.g., time, pull factors and marketing mix, situational and interpersonal factors), these traditional decision-making models have been used in many tourism studies (Huan and Beaman 2004). They support the idea that travel decision making is a sequential and contingent process, and tourists follow a funnel-like procedure of narrowing down choices among alternatives (Crompton and Ankomah 1993; Moutinho 1987; Jeng and Fesenmaier 2002; Sirakaya and Woodside 2005). Despite their contribution to advancing our knowledge of travel decisions, skepticism has been expressed by several researchers on their monolithic and deterministic view of the decision-making process (Decrop 1999; Dellaert, Ettema, and Lindh 1998; Hyde 2004; Jeng and Fesenmaier 2002; Woodside and MacDonald 1994). In a way, these studies have maintained the perspective of decision makers as functional men and women (utilitarian or rational decision makers) who are looking for optimal decision outcomes (Decrop 1999; Hyde 2004; Sirakaya and Woodside 2005). In addition, they tend to focus attention on the destination choice process but cannot encompass multifaceted decisions and purchases, involving a great number of decisions made during the overall course of vacation planning. The travel destination is not the only decision that is typically made before taking a trip, there is a range of subdecisions to be considered in relation to a vacation, such as travel companions, timing, transportation mode, route, accommodations, budget, activities, and others. As Decrop and Snelders (2005) indicated, travel planning or vacation decision making is an ongoing process that is not characterized by unchanging sequential stages and does not end when a decision is made.

Recent Development in Travel Decision Modeling

The multidimensionality and ongoing sequence in vacation decision making along with its contingent nature have been extensively discussed in recent tourism literature. Woodside

and MacDonald (1994) indicated that every choice of tourism-related services is interdependent to some degree, but there is a need to research the sequence of decision making, namely, the elements of the vacation. Zalatan (1996) examined the relationship between planning time and some explanatory variables to a specific trip, and maintained that there exists a certain pattern of stable behaviors in the leisure travel planning process. While emphasizing differences in planning times according to various situational variables, this study is still limited in illustrating the structure or patterns of the travel planning process because of its one-dimensional modeling approach. Dellaert, Ettema, and Lindh (1998) introduced a conceptual model incorporating the temporal sequence of multifaceted travel decisions, as well as relevant decision-making constraints focusing on a single leisure trip. From a telephone survey of 300 Swedish respondents, they found that the different choice components making up the total travel decision process were subsequent, yet interrelated, and identified the average periods between planning factors and actual trip moments. While they attempted to demonstrate the impacts of various constraints (e.g., authority, coupling, and capacity) on tourists' choice behavior, the study was limited in uncovering the dynamics of complex travel decision-making processes.

Hyde (2004) and Decrop and Snelders (2005) indicated that there may exist a plurality of vacation decision-making processes. For example, the decision made before departure (e.g., primary destination) can be explained by a typical decision process (deliberate, purposeful, and reasoned), but the decisions made while on vacation (e.g., restaurants for dining and shopping places) might be characterized by a less deliberate and rather simplistic decision process (Hyde 2004). Likewise, Decrop and Snelders (2005) suggested that some tourists (e.g., independent travelers) may not use well-defined decision strategies but adapt their choices to the particularities of the trip (e.g., travel companions or other environmental factors), while others may follow strictly the bound-rational decision paradigm. These findings support Payne, Bettman, and Johnson's (1993) contention that people are adaptive in that they use a variety of strategies to solve decision problems, contingent on task and contextual factors.

Fesenmaier and Jeng (2000) proposed a multistage hierarchical trip decision net model, in which all the subdecisions including destination choice had different levels of perceived importance; hence one subdecision might condition other subdecisions. Based on a hypothetical domestic trip planning survey, they attempted to decompose the travel decision-making process into constituent parts. Three stages of decisions were identified: (1) core decisions, which are planned in detail well in advance of the trip (e.g., destination, length of trip, travel companions); (2) secondary decisions, which are made prior to the trip but still are "flexible" to accommodate the possibility of change (e.g., secondary destinations, activities, attractions); and (3) en route decisions, which are not considered until the travelers are actually en route and actively seeking alternatives (e.g., restaurant stops, rest stops,

shopping places). This study demonstrated that the structure of the trip decision-making process was contingent and hierarchical in nature, in which the decisions made at an early stage appear to condition the decisions made at later stages.

Information Integration into the Travel Planning Process

Extending the model in Fesenmaier and Jeng (2000), Jeng and Fesenmaier (2002) outlined three key propositions for understanding the travel decision-making process: (1) multidimensionality, (2) sequentiality, and (3) contingency. This later study proposed that a travel planning process involved a sequential information search, information processing, and a decision process. In other words, the stage complexity of travel decision-making encourages individuals to develop decision heuristics that facilitate the trade-off process between satisfying multiple travel needs and the limited cognitive capability of a decision maker. During this trade-off process, information search and evaluation with varying levels of effort are also involved. Research suggests that this information integration process is central to the dynamics of the successive travel planning process and is a hierarchical and sequential structure whereby each decision element (or each piece of information) enters into the process of alternative evaluation in a successive fashion (Crompton 1992; Dellaert, Ettema, and Lindh 1998; Um and Crompton 1992). While theoretically well explained, the conceptual framework and propositions about the travel planning process in Jeng and Fesenmaier (2002) were not empirically supported. Fesenmaier and Jeng (2000) attempted to empirically test their decision net model, which provided the foundation for the Jeng and Fesenmaier (2002) study. However, the integration of information into the travel planning process was not examined in the study. More recently, Bieger and Laesser (2004), by using the process approach of information search, suggested the different patterns of tourists' information sourcing throughout the travel decision processes. Their study confirmed the shift of information sourcing and supported the proposition of information integration during the travel planning process. However, the travel planning process examined was too simple with two different stages—before and after a definite trip decision and the hierarchical or contingent nature of information searching was not examined. Zins (2007) introduced a longitudinal approach to examine the integration of information during the trip planning process. He claimed that new insights should be given into the complex structure of subdecisions, including planning effort, planning horizons, importance of information sources, and the amount and direction of search activities.

It is widely accepted that the main function of travel information use is to support decision making and product choice during the travel decision process (Bettman 1979; Hwang, Gretzel, and Fesenmaier 2002), and travel information has a substantial influence on individual decision making as well

as destination choice (Crompton 1992; Mansfeld 1992; Um and Crompton 1992). In addition, one of the main marketing objectives in today's competitive market is to present consumers with information on which to base their decisions (Crotts 1999; Bettman 1979). Recent studies suggest that travel information use does not take place only at a specific point in time (e.g., prepurchase search) within a decision process; rather, it is involved in every phase of the decision process (Hwang, Gretzel, and Fesenmaier 2002; Zins 2007). Although a few attempts were made to structure the vacation planning process, more rigorous empirical attempts should be made to examine information processing or information acquisition within the sequential structure of the multifaceted travel decision process. Decrop and Snelders (2005) stated that knowing when visitors are making their decisions across a range of purchase decisions has important implications for an entire region's tourism economy. For marketers, it is paramount to know which information should be presented in regards to each decision element in the multistage sequence of the travel planning process.

Study Objectives

This study aims to provide empirical evidence for an alternative view of travel decision making and to examine the information use patterns across the different stages of decision-making process.

Accordingly, the specific objectives of this study were to

1. decompose the multidimensional and ongoing sequence of the decision-making process, and describe its hierarchical structure;
2. identify the timing of different decision choices on the travel planning horizon;
3. demonstrate the information integration process in the sequential and hierarchical structure of decision making and examine how information acquisition evolves during the different stages of the travel planning process; and
4. develop an integrative model that simultaneously describes the nature of travel decision making, tourists' information use patterns, and a decision timing dimension.

Method

The data used in this study were from the Macau Tourists Information Search Behavior Survey commissioned by the Institute for Tourism Studies in Macau. Chinese tourists to Macau were the study population. Known in some quarters as "Monte Carlo of the Orient," Macau traditionally has attracted large numbers of gaming tourists as well as sightseers for its unique Sino-Portuguese cultural heritage (Pao 2004). Most of the visitors (95%) come from Mainland China or

Hong Kong (Macao Statistics and Census Service 2005). While Macau has enjoyed a blistering increase in visitor arrivals from Mainland China since the Chinese government relaxed travel restrictions for its citizens under the Individual Visitor Scheme in July 2003, the continued relaxation of the travel restrictions is expected to spur even further increases in Mainland Chinese visitors in the coming years (Pao 2004).

Instrument

Based on a thorough review of the existing literature on information search, decision-making behaviors, and promotion materials printed by various Macau tourism organizations, a questionnaire was originally designed in English for this study. The questionnaire was then reviewed by three tourism researchers to check content validity. It was later translated into Chinese, Japanese, and Korean. These translated questionnaires went through multiple rounds of corrections and verifications, including back-translation by a group of multilingual tourism researchers and specialists for Macau tourism. A pretest was conducted from July 15 to July 17, 2005, in Macau to ensure the content validity of scaled items and the understandability of the instrument in each language.

The survey questionnaire included questions on (1) visitor sociodemographics, (2) visitor travel characteristics, (3) decision-making sequences and timing, and (4) information acquisition behavior in connection with the specific stages of the decision-making processes.

Data Collection and Sampling

The personal interview technique was used for data collection. The personal interview technique is known to produce a higher response rate and more reliable results than a self-administered mail or telephone survey, because face-to-face communication allows the interviewer to provide additional explanations to respondents or to probe for more detailed and accurate responses. In particular, it was more feasible in a destination area like Macau where the number of visitor contact sites is relatively concentrated (So 2005).

The data collection was designed to cover a wide span of sites during both weekdays and weekends. A more systematic sampling procedure accounting for other factors such as seasonal variations and nonresponse rate was not feasible because of the large scale of respondents and limited financial resources. The interviews were conducted at major tourist attraction sites in Macau as well as major hotels, the international airport, and the ferry terminal. For the interviews, 21 interviewers were recruited from the students majoring in tourism at the Institute for Tourism Studies, who went through a two-day training session. All the interviewers were able to communicate in Mandarin, Cantonese, and English. The sample respondents were limited to overnighters, who visited Macau for pleasure and sightseeing or

casinos from Asian countries. Potential respondents were approached randomly at interview sites, asked if they would participate in the survey, and then screened for their travel purposes and length of stay. Among the total of 3,223 responses, 1,693 Mainland Chinese respondents were chosen for the purpose of this study. The respondents were asked to indicate the approximate timing of initiating their trips, deciding their travel destination, booking trips, and the timing of different travel choice components on the travel planning horizon (i.e., before purchase, at time of purchase, after purchase, and after arriving in Macau). To describe the nature of the travel planning process from a more comprehensive perspective and to represent the ongoing nature of travel decisions, the four different stages of decision making were determined as before purchase, at time of purchase, after purchase, and after arriving in Macau, based on consultations with local travel agents and specialists. The travel choice items included departure date, travel budget, length of trip, travel mode (e.g., all-inclusive travel package, hotel and transportation package, and self-arranged travel), accommodation, attractions, and activities in Macau. Following these responses, respondents were presented with a full list of information sources and were asked to indicate which they consulted at different stages of the travel planning process. The list of information sources is reported in Table 6.

Statistical Analysis

Frequency analysis and graphics were used to describe the structure of travel planning process. Based on the respondents' usage of different information sources during the travel planning process, a four-way contingency table was drawn. Then a correspondence analysis using the four-way contingency table was performed to provide a visual representation of Macau tourists' information use patterns across the different stages of the travel planning process.

Correspondence analysis (CA) is a multivariate technique that converts multiway, cross-tabulation tables into graphical displays in which rows and columns are depicted as points. A map of these points can be constructed so that the higher proportions associated with the various levels of rows and columns are closer together on the map (Bendixen 2003; Hair et al. 1998). CA has become increasingly popular for dimensional reduction and perceptual mapping, because it provides a multivariate representation of interdependence for nonmetric data that is not possible with other multivariate methods (Hair et al. 1998). Mathematically, CA decomposes the chi-square measure of association into components in a manner similar to that of principal components analysis for continuous data. The dimensions identified in CA can be interpreted by pinpointing the largest relative contributor to the variance explained by the axis. As with principal components analysis for data reduction, CA explains most of the variation if only a few dimensions have strong dichotomies (Greenacre 1984).

Table 1. Summary of the Respondents' Travel Characteristics

Travel Characteristics	Descriptive Statistics	
	Frequency (n)	Percentage
Travel mode		
All-inclusive package	542	31.5
Hotel + transportation package	148	8.6
Self-arranged travel	1029	59.9
Total	1719	100
Multidestination behavior (multiple-response)		
Macau only	888	51.7
Hong Kong and Macau	725	42.2
China and Macau	104	6.1
Other Asian destination	49	2.9
Decision to visit Macau		
Before the trip	1693 (sample respondents)	98.5
During the trip	26 (excluded)	1.5
Total	1719	100
	<i>M</i>	<i>SD</i>
Length of stay in Macau (nights)	1.84	1.25
Length of entire trip (nights)	3.58	8.99
Size of travel group (persons)	4.13	5.07

Results

Table 1 summarizes the travel characteristics of the respondents. About 40% of the respondents were traveling to Macau on package programs offered by travel agents. The average length of stay in Macau was 1.84 nights and the average length of the entire trip was 3.58 nights. On average, the travel party size was 4.13 persons. Compared to general Mainland Chinese visitors to Macau in 2005, our study sample was more likely to use a package tour program and stay longer in Macau; 22% of Mainland Chinese visitors came to Macau through a package tour, and their average length of stay was 1.21 nights in 2005 (Macao Statistics and Census Service 2006).

Most respondents decided to visit Macau before starting their trips. About half of them were on multidestination trips. Among the multidestination tourists, 87% of them also traveled to Hong Kong. This study focused only on those who chose Macau as the primary destination, so the respondents who decided to visit Macau during their trips (26 respondents) were excluded. If the respondents had multiple destinations for their trips, they were assumed to have picked Macau as a primary destination jointly with other destinations as long as the decision to visit Macau was made before starting the trip.¹ As Fesenmaier and Jeng (2000) suggested, the study assumed that the choice of Macau was made earlier in the travel planning process as one of the core decisions. This was validated by the results of the average time spent in making a destination choice (Table 3).

Table 2. Structure of Travel Planning Process

Decisions	Before Purchase	At the Time of Purchase	After Purchase	After Arriving in Macau	Total	NA ^a
Departure date						
<i>n</i>	1,476	152	12	0	1,640	53
Valid %	87.2	9.0	0.7	0	96.9	3.1
Travel budget						
<i>n</i>	1,193	147	86	49	1,475	218
Valid %	70.5	8.7	5.1	2.9	87.0	12.9
Length of the trip						
<i>n</i>	1,238	329	30	26	1,623	70
Valid %	73.1	19.4	1.8	1.5	95.9	4.1
Travel mode						
<i>n</i>	1,148	462	0	0	1,638	55
Valid %	67.8	27.3	0	0	95.1	4.9
Accommodation						
<i>n</i>	683	655	99	135	1,572	121
Valid %	40.3	38.7	5.8	8.0	92.9	7.1
Attractions in Macau						
<i>n</i>	250	385	396	491	1,522	171
Valid %	14.8	22.7	23.4	29.0	89.9	10.1
Activities in Macau						
<i>n</i>	209	233	257	837	1,536	157
Valid %	12.3	13.8	15.2	49.4	90.7	9.2

a. N/A stands for a “no response” or “don’t know” answer. Some respondents were not able to recollect the exact decision time for each decision item.

The Chinese visitors to Macau made various trip-related decisions, and these were not all made at the same time. Decisions were made at different times along a travel planning horizon, which was ongoing until the trips were over. Table 2 shows when the different travel decisions were made by the respondents. Departure dates, travel budgets, trip lengths, and travel modes were decided on earlier in the planning process. Decisions on accommodation appeared to be more flexible and made later than the four other important decisions (i.e., departure date, travel budget, length of the trip, travel mode). In particular, 38.7% of the respondents indicated that they chose accommodations at the time of purchase. Destination attractions and activities were selected during the planning process before arriving in Macau by 41.3% of respondents, while 49.4% chose their destination activities after arrival in Macau.

The average period between travel decisions and trip departures are summarized in Table 3. These Chinese visitors started thinking about trips 3.83 weeks prior to departure; picked their travel destinations about three to four days after that; and purchased travel about 2.12 weeks before departure. Thus, they appeared not to hesitate long in making a destination choice and made a selection quite early after starting their travel planning. The Chinese visitors had shorter times planning to travel Macau compared with former studies examining the sequence of travel decision making. For example, Swedish travelers in Dellaert, Ettema, and Lindh’s

Table 3. Average Time Period between Important Decision Factors and Departure

	Initiation of Vacation Planning	Make Destination Choice	Purchase Vacation Trip
<i>n</i>	1,688	1,688	1,684
Mean (weeks)	3.8	3.4	2.1
Standard deviation (weeks)	4.2	3.9	2.4

study (1998) took about six to seven months of planning time for their holiday trips, while Canadian travelers tested in Zalatan’s study (1996) spent about 14.8 weeks (about three months) on travel planning for their overseas trips.

In his study, Zalatan (1996) suggested that trip attributes, individual’s socioeconomic characteristics and knowledge of the destination, and the involvement of a travel agent had a strong influence on planning time devoted to a pleasure vacation. Although limited, the data from this study allowed us to observe the relationships between the timing of travel decisions, the individuals’ socioeconomic status, the trip characteristics, and the decision roles in the traveling group (Tables 4 and 5). The results of Pearson’s correlation test in Table 4 indicate that previous visit experiences and length of stay have significant influences on travel planning timeline

Table 4. The Relationships of the Amount of Travel Planning Time and Individuals' Socioeconomic/Trip Characteristics/Decision Role in the Traveling Group

	Education	Age	Visiting Experiences	Length of Stay	No. of Traveling Companion	Importance of His/Her Decision in the Traveling Group
Initiation of vacation planning	-.009	.023	-.164**	.102**	.072**	.073**
Make destination choice	-.017	.047	-.147**	.121**	.093**	.084**
Purchase vacation trip	-.018	.096**	-.156**	.108**	.130**	.057*

Table 5. The Influences of Distance on the Amount of Travel Planning Time

	From Guangdong (<i>n</i> = 890)	From Other Provinces (<i>n</i> = 803)
Initiation of vacation planning		
<i>M</i>	3.06	4.74
<i>SD</i>	4.08	4.15
<i>t</i>	-8.41**	
Make destination choice		
<i>M</i>	2.65	4.20
<i>SD</i>	3.77	3.93
<i>t</i>	-8.29**	
Purchase vacation trip		
<i>M</i>	1.62	2.66
<i>SD</i>	2.02	2.71
<i>t</i>	-8.96**	

(initiation of vacation planning, making a destination choice, and purchasing the vacation trip). Different from Zalatan's study, levels of education and age were not well related to the amount of planning time. In addition, this study found that the number of trip companions and the tourist's role in making group decisions for the trip have positive relationships with the amount of planning time. The respondents were asked how influential his or her opinion was for the decision to travel. The results showed that the more influential the tourist is in the immediate travel group, the more time he or she spends on trip planning. To test the influence of distance on the amount of planning time, an independent samples *t*-test was conducted on the travel planning timeline grouped by the respondents' provinces of origin—Guangdong (*n* = 890) and other provinces (*n* = 803). Since the Chinese respondents were not evenly distributed across the country, and almost half of them were from Guangdong province, they were divided into two groups and an independent samples *t*-test was applied to examine the relationship between the travel distance and the amount of travel planning time. Bordering Hong Kong and Macau, the province of Guangdong is the nearest area to Macau. The result showed that travel distance had a small, but significant, influence on the amount of travel planning time (Table 5).

Figure 1 decomposes the travel decision-making structure in a visual format. The shaded square represents the response rate in percentage. The shaded arrow shows how many information sources are used in each stage of decision making. As the greater number of information sources are used, the shade is darker. To quantify the extent of information source usage, the total response for the information use on each decision-making (e.g., 4,124, 1,924, 1,392, and 1,632; see Table 4) stage was divided by the total number of respondents (1,693). The arrow on the "before purchase" stage, at which about 2.4 information sources were consulted on average, has the darkest shade. The arrow on the "after purchase" stage, at which about 0.8 information sources were consulted on average, has the lightest shade. The three most popular information sources in each stage of decision making are listed above the arrows. This design accommodates multiple decisions and sequential stages of travel decision making. It also shows the specific timing of each decision. The hierarchical structure and ongoing sequence of travel decision making is explicitly represented in Figure 1—a cascade-like structure formed after incorporating the travel decision choices into the different stages of the travel planning process. In addition, the figure shows that decision making evolves continuously through the entire process. Some decisions, like attractions and activities, are made during the trips. Figure 1 also represents the information use patterns within the structure of travel decision making. While information acquisition was the most extensive at the "before purchase" stage, these Chinese visitors sought information continuously throughout their travel planning.

Table 6 describes information use patterns across the four stages of the travel planning process in more detail. As indicated in Figure 1, tourists sought information more extensively during the before-purchase stage than at any other stage. Friends/relatives' recommendations and prior experiences were the most extensively used during the before-purchase stage. Interestingly, the most extensively used information sources were not the same at each stage. For example, TV and radio commercials were sources for 23.7% of the respondents during the before-purchase stage, but they were used by far fewer people during the other three planning stages. These Chinese visitors consulted travel agents and tour operators most extensively during the at-time-of-purchase stage. Since 42% of the respondents' accommodation choices

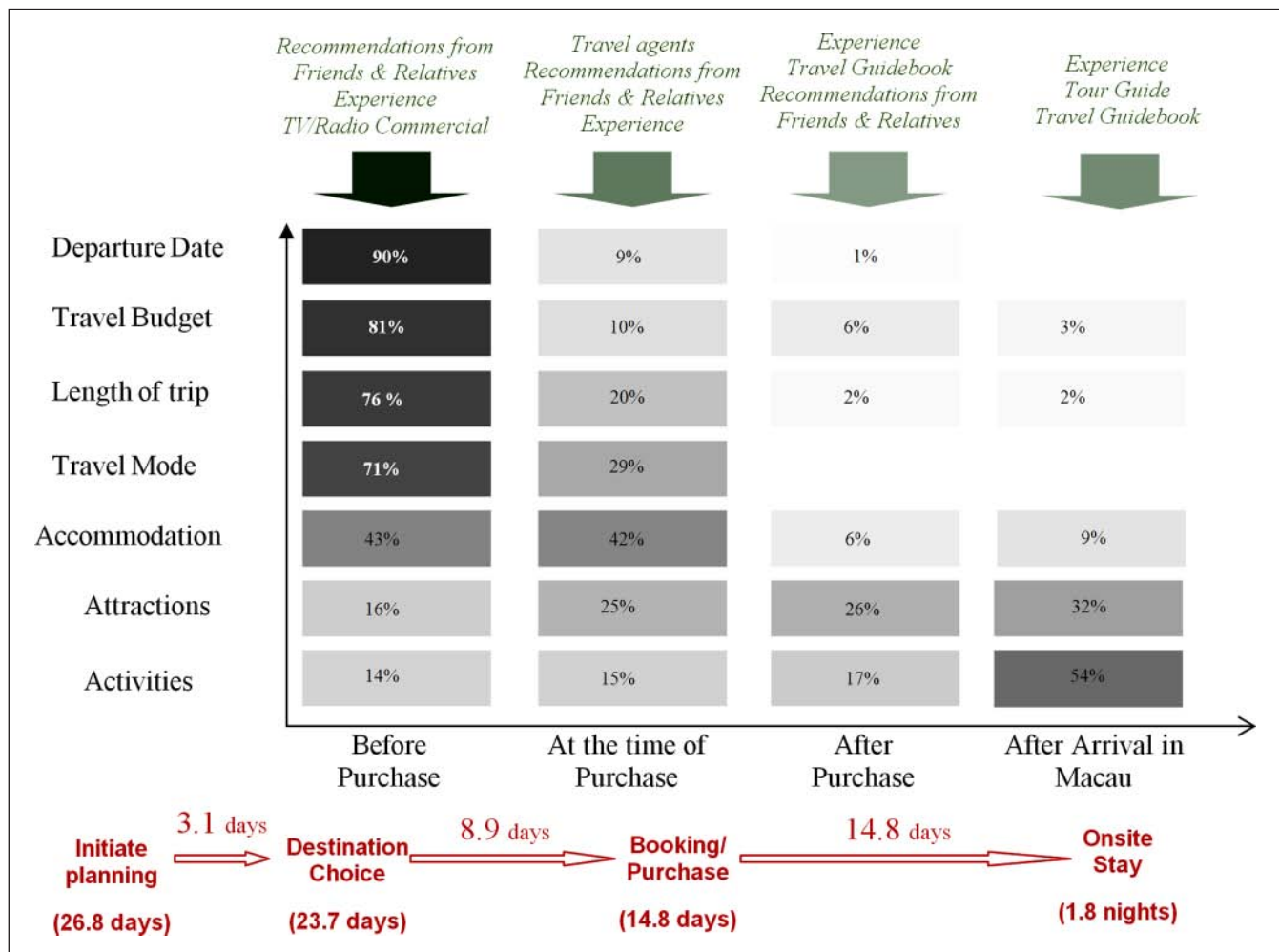


Figure 1. Visual Depiction of Hierarchical and Sequential Structure of Travel Planning Process

were made at time of purchase, it can be inferred that many accommodation selections were influenced by travel agents or determined by the tour package options. On-site decisions, which were mostly related to attractions and activities, were most influenced by tour guide recommendations (29.8%), previous experience (32.4%), and from information found in travel guidebooks (20.1%).

Within the period between travel purchase and trip departure (2.12 weeks), information acquisition was less active. That is, information needs appeared to decrease after purchasing the travel, but to increase again when novel or unexpected situations (e.g., to make international calls, to find a place for taking a rest, or to be lost at a certain sightseeing place at the travel destination) were encountered, or at the time decisions had to be made during trips. Internet information was not used much by these Chinese tourists, except for the official destination websites during the before-purchase stage, and then by just 15.7% of the respondents. This can be interpreted from two different perspectives. First, not many

Chinese tourists have Internet access or are skillful at searching for travel information online. Alternatively, there may be insufficient travel information on Macau travel on the Internet for Chinese residents.

Different information use patterns were also found between first-time visitors and experienced visitors, and between visitors living a short distance away and those a long distance away from Macau (Table 7). In general, first-time visitors ($n = 673$) extensively used travel agents and tour operators' information and tour guides' information, while experienced visitors ($n = 1,020$) depended more on their previous visit experiences. While recommendations from friends and relatives were the most extensively used during the before-purchase stage by both first-time visitors (65.9%) and experienced visitors (58.6%), travel agents and tour operators (29.5%) were consulted more by first-time visitors compared to experienced visitors (15.0%). Previous visit experiences were extensively used by experienced travelers (53.9%, first-time visitors 5.3%). During the at-time-of-purchase stage,

Table 6. Information Use Patterns across the Four Stages of Travel Planning Process

Information Sources	Before Purchase		At Time of Purchase		After Purchase		After Arriving in Macau (On-Site)	
	<i>n</i>	Valid %	<i>n</i>	Valid %	<i>n</i>	Valid %	<i>n</i>	Valid %
Offline								
Recommendations from friends and relatives	919	61.4	258	28.2	144	19.1	135	12.9
Previous visit experiences	520	34.7	196	21.4	191	25.3	339	32.4
TV/radio commercials	355	23.7	51	5.6	40	5.3	17	1.6
Travel agents and tour operators	311	20.8	554	60.5	143	19	60	5.7
Travel magazines	316	21.1	109	11.9	86	11.4	49	4.7
Travel guidebooks	262	17.5	90	9.8	149	19.8	210	20.1
Printed travel brochures	134	9.0	79	8.6	126	16.6	170	16.3
Travel shows	112	7.5	25	2.7	30	4	21	2.0
Consumer magazines and newspapers	98	6.5	51	5.6	44	5.8	30	2.9
Local tourist information centers	40	2.7	21	2.3	33	4.4	165	15.8
Tour guides	40	2.7	42	4.6	58	7.7	312	29.8
Other offline information	56	3.7	26	2.8	42	5.6	46	4.4
Online								
Official destination websites	265	15.7	102	11.1	81	10.7	18	1.7
Travel agency and tour operator websites	157	10.5	100	10.9	16	2.1	2	0.2
Hotel or other accommodation websites	123	8.2	77	8.4	25	3.3	5	0.5
Online travel guides	95	6.3	16	1.7	27	3.6	5	0.5
Travel magazine websites	62	4.1	24	2.6	21	2.8	6	0.6
Airline or other transportation websites	59	3.9	58	6.3	16	2.1	2	0.2
Map or weather sites	47	3.1	8	0.9	56	7.4	9	0.9
Consumer magazines and news websites	33	2.2	10	1.1	14	1.9	7	0.7
Travelogues or online travel communities	28	1.9	5	0.5	18	2.4	2	0.2
Other online information	72	4.7	11	1.2	20	2.7	14	1.3
Sum of the responses	4104	273.9	1913	208.7	1380	183.0	1624	155.4

travel agents and tour operators' recommendations were the most used information by both groups, but the dependency on this information is quite different between these two groups (75.6% for first-timers vs. 48.6% for experienced). The first-time visitors still heavily used information from travel agents and tour operators (24.5%) and tour guides (50.3%) after purchase and after arrival in Macau. Except for at-time-of-purchase stage, smaller numbers of experienced visitors consulted travel agents and tour operators or tour guides compared to first-time visitors. At every stage of the travel planning process, experienced visitors sought information from a wider range of sources than did first-time visitors. It is inferred that they were more active and skillful in searching for information owing to their previous experiences.

To investigate the differences in information use patterns between short- and long-distance visitors, the respondents were divided into two groups—those from Guangdong ($n = 890$) and those from other provinces ($n = 803$). The short-distance group showed a somewhat similar information use pattern with the experienced visitors, while for the long-distance group it was similar with first-time visitors. More long-distance visitors relied on information from travel agents and tour operators, while short-distance visitors consulted travel guidebooks slightly more during the overall travel planning

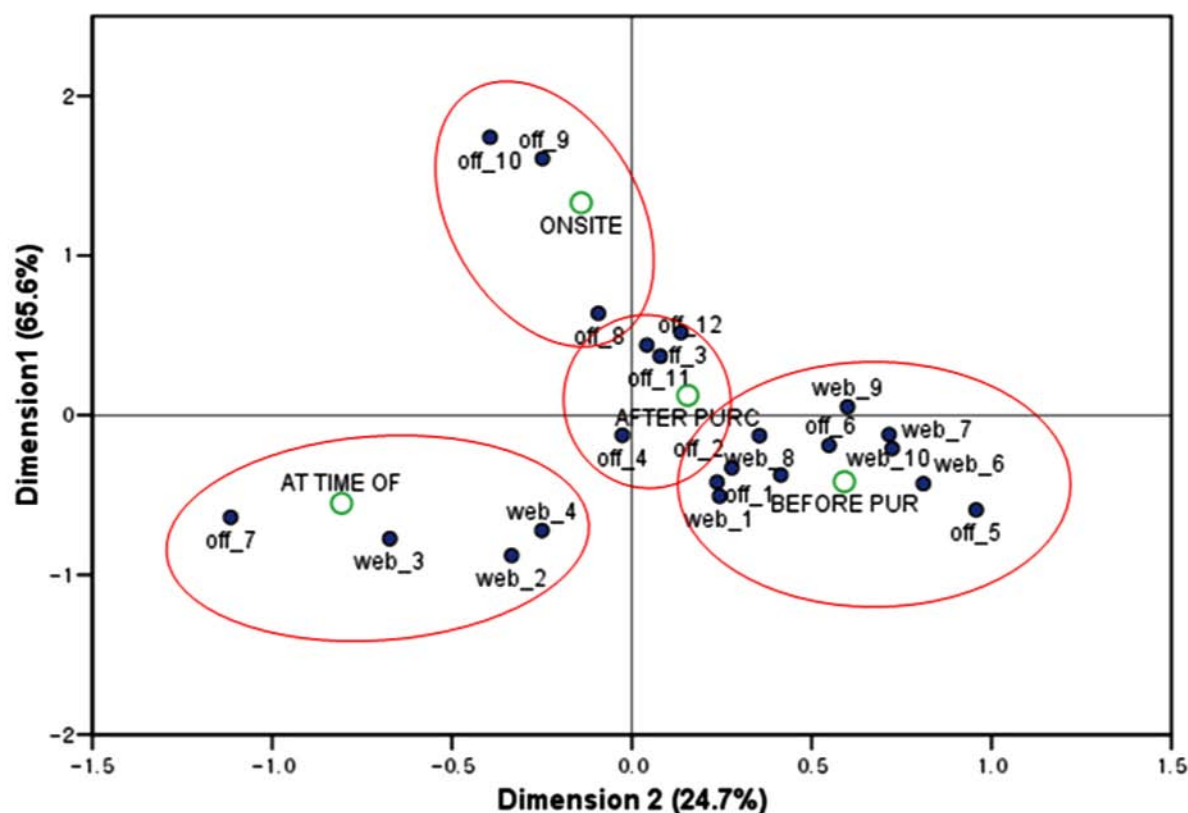
stages. This is because those from Guangdong had more experiences in Macau and did not use package tours. More than 80% of those from Guangdong arranged their trip by themselves, and they had more than four visits to Macau on average.

A correspondence analysis (CA) was performed, and Figure 2 provides graphical information on the relative proximities of the information used by tourists and the different stages of the travel planning process. The contingency table used in the CA had four columns of travel planning stages and 22 rows of information source types. A valid percentage of cases for each information source consulted by tourists at each stage was calculated, and these were used as a distance measure among the information source types and the four travel planning stages in constructing a correspondence map (Table 8). The vertical axis (dimension 1) accounted for 65.6% of the variance and the horizontal axis (dimension 2) for 24.7%. Thus, the association of information source used by tourists at each stage of the travel planning process is mostly explained in dimensions 1 and 2 (90.3%). The singular values and chi-square statistics for the correspondence analysis are summarized in Table 8. As noted in the correspondence map, most of the information sources were clustered around the before-purchase stage, signaling that it was the

Table 7. Different Information Use Patterns of Short-Distance Visitors (Guangdongers) vs. Long-Distance Visitors (Non-Guangdongers) and First-Time Visitors vs. Experienced Visitors

	Recommendations from F&R (%)	Previous Visit Experience (%)	TV/Radio Commercial (%)	Travel Magazines (%)	Travel Guidebooks (%)	Travel Agents and Tour Operators (%)	Printed Travel Brochures (%)	Local Tourist Information Centers (%)	Tour Guides (%)	DMO Websites (%)	Travel Agents and Tour Operator Websites (%)
Before purchase											
Guangdongers	62.4	46.8	20.3	18.7	17.5					15.2	
Non-Guangdongers	60.4	20.8	27.8	23.6		31.0				20.6	
First-time visitors	65.9	5.3	27.3	24.6	18.2	29.5				20.7	
Experienced visitors	58.6	54.0	21.3	18.8	17.0	15.0				15.7	
At time of purchase											
Guangdongers	30.7	26.4		15.6	15.1	45.7				11.3	
Non-Guangdongers	26.7	18.1		9.0		71.1				10.8	12.5
First-time visitors	32.1			9.0	7.0	75.6				10.9	11.9
Experienced visitors	25.1	35.0		14.2	12.1	48.6				11.3	
After purchase											
Guangdongers	19.8	31.1		11.0	24.2	12.9	19.8				
Non-Guangdongers	18.5	20.2		11.9	16.0	23.7	14.1				
First-time visitors	23.6			11.0	14.9	24.9	16.8			16.8	
Experienced visitors	16.0	38.4		11.7	23.1	14.8	16.4				
Arriving in Macau											
Guangdongers	16.8	43.4			21.3			20.8	11.3		
Non-Guangdongers		21.8			20.0	7.7		10.5	48.0		
First-time visitors	13.7	9.1			20.5			11.4	50.2		
Experienced visitors	12.3	49.0			19.8			18.8	15.6		

Note: F&R = friends and relatives; DMO websites = official destination websites.



*Onsite = After arriving in Macau

Off_1	Recommendations from friends & relatives	Off_7	Travel agents & tour operators
Off_2	Travel magazines	Off_8	Printed travel brochures
Off_3	Travel guidebooks	Off_9	Local tourist information centers
Off_4	Consumer magazines & newspapers	Off_10	Tour guides
Off_5	TV/radio commercials	Off_11	Previous visit experiences
Off_6	Travel shows	Off_12	Other offline information
Web_1	Official destination websites	Web_6	Online travel guides
Web_2	Travel agency & tour operator websites	Web_7	Travelogues or online travel communities
Web_3	Airline or other transportation websites	Web_8	Consumer magazine & news websites
Web_4	Hotel or other accommodation websites	Web_9	Map or weather sites
Web_5	Travel magazine websites	Web_10	Other online information

Figure 2. Correspondence Map of Information Use Pattern across Four Stages of Travel Planning

Table 8. Inertia and Chi-square Decomposition

Dimension	Singular Value	Inertia	Chi-square	Proportion of Inertia	
				Accounted for (%)	Cumulative (%)
1	0.474	0.225		65.54	65.54
2	0.291	0.085		24.69	90.23
3	0.183	0.033		9.77	100
Total		0.343	281.500	100	

most extensive information consultation stage. With the exception of online travel agencies or tour operators, hotel or other accommodation websites, and airline or transportation websites, all online information sources were used closer to the before-purchase stage. While travel agents and tour operators were positioned closer to the at-time-of-purchase stage, tour guides and local tourist information centers closer to the on-site stage. Travel guidebooks and previous visit experiences were close to the after-purchase stage.

Discussion and Implications

Previous tourism studies have understood tourists' decision-making processes from different perspectives. They have either examined travel decision-making behavior in dynamic decision contexts or comprehensively described the overall travel decision-making process (Crompton 1992; Ankomah, Crompton, and Baker 1996; Fesenmaier and Jeng 2000; Hyde 2004; Jeng and Fesenmaier 2002; Woodside and MacDonald 1994). This research has revealed that (1) travel decision-making and choice behavior is a multifaceted hierarchical process, (2) travel decision-making and choice behavior involve a temporal-dynamic process, and (3) the decision heuristics used vary across decision facets. However, some of the propositions are yet to be supported by empirical research. This study decomposed the travel decision-making process into a multistage sequence (four stages), with multiple decision choices for a vacation trip. By examining tourists' decision-making process and information use patterns and depicting them in a visual form, this research demonstrated a multidimensional, ongoing sequence and hierarchical process of travel decision making with a considerable amount of data. While prior empirical studies were limited to the examination of hypothetical trips or past trip experiences of North American or European tourists (Dellaert, Ettema, and Lindh 1998; Fesenmaier and Jeng 2000; Zalantan 1996), this study tested a large number ($n = 1,693$) of Chinese tourists currently traveling within a specific destination (Macau SAR). This study's results may yield new and broader insights for many tourism destinations and businesses eyeing the burgeoning Chinese tourists' market.

The Chinese tourists made destination choices quite early in the overall travel planning process, and this was consistent with the findings of previous studies. Moutinho (1987) maintained that destination choice was a compulsory decision among a group of other subdecisions, coming after the need to travel has been aroused and information has been consulted. According to him, people may acquire and store information on potential destinations and build impressions of some destinations before having any travel needs or specific purpose of trip. However, the Chinese tourists are likely to make destination selections immediately after their travel needs are recognized and acted on. This is consistent with

the "awareness set" stage that was proposed in Um and Crompton's (1990) choice set model. Therefore, it may be inferred that destination information should be provided much earlier than during the travel need recognition stage.

Fesenmaier and Jeng (2000) identified three levels of vacation decision making (core, secondary, and en-route decisions) and placed the choice of primary travel destination into the core decisions that are planned at an earlier stage in advance of the trip and inflexible to change. In addition to the primary destination, these core decisions include lengths/dates of trips, travel companions, accommodations, travel routes, and travel budgets. Secondary decisions are made prior to trips and largely flexible to changes, such as secondary destinations, activities, and attractions. En-route decisions are made while on vacations and include rest stops on the road, food/restaurant stops, and shopping places. This study also indicates that the destination, departure dates, trip lengths, and travel budgets were decided on at an earlier stage in the decision process. However, the decision on accommodation choice was found to be different from the results of Fesenmaier and Jeng (2000). In addition, a significant proportion of the Chinese tourists chose attraction sites (29%) and destination activities (49%) after arrival in Macau. Macau is a small city, with most tourist attractions located conveniently in walking distance. Thus, tourists may not need to make detailed itineraries in advance for Macau trips. Moreover, about 40% of the respondents traveled to Macau through travel packages offered by travel agents. This might be the reason why many respondents made accommodation choices at the time of purchase and postponed making choices of attractions and activities until they arrived in Macau, or it may even be partly due to characteristics peculiar to Chinese tourists. However, it may be argued that these package tourists have limited choices of accommodation and destination activities. They still have the choice of different lodging properties, destination activities, or trip length by the different price ranges and travel agents. The study results rather reflect China's unique market structure: a heavy dependency on travel agents in travel distribution. In this respect, this study reveals that the market structure of tourists' origin might influence their decision-making patterns.

The average time periods between different travel decisions and actual trip departures were reported in this study. The Chinese tourists spent shorter times in preparing and planning trips than other tourists from other countries in previous studies. This difference can be explained by many contextual factors like destination characteristics, different culture, or a different market environment. Previous studies have examined individual differences (e.g., attitudes, demographic characteristics, household characteristics, family dynamics) and the influence of various contextual factors (e.g., marketing, social classes, culture) on travel decision processes (e.g., Ankomah, Crompton, and Baker 1996; Huan and Beaman 2004; Um and Crompton 1990; Van Raaij and Francken 1984).

Although limited, this study also attempts to examine the relationships between several contextual and individual factors and the timing of travel decision making. This study found that previous visit experience, length of stay, and the number of traveling companions have positive relationships with the time spent on travel decision making. In addition, it was found that when the tourist perceives his or her decision-making role to be larger in the present traveling party, he or she may make more prudent decisions for the trip. In the meantime, this study uncovered another interesting point. Destination-specific features and the structural characteristics of origin markets can substantially impact the dynamics of tourists' decision-making processes.

By incorporating tourists' information use patterns, this study attempts to expand the framework for describing the travel decision-making structure. Different types of information were sought across the four stages of the travel planning process. This implies that decisions made at earlier stages influence decisions made at later stages, and thereby different functional information needs are triggered as the travel decision process evolves. The contingent nature of decision making is partly explained by tracing the sequence of the multifaceted travel decision process and the accompanying information use patterns. In addition, this study indicates that tourists' information needs were not completely satisfied even after purchasing vacation products. Several researchers have argued that information search does not take place only at a specific point in time within a decision process but occurs at every phase of the decision process (Bieger and Laesser 2004; Dellaert, Ettema, and Lindh 1998; Fodness and Murray 1998; Hwang, Gretzel, and Fesenmaier 2002; Jeng and Fesenmaier 2002). In this research, it was especially interesting that while information source usage decreased after the travel purchase and as the travel planning process evolved, it increased again when trips started. This could signal a message to Macau tourism marketers. It can be argued that tourists may not recognize their information needs regarding travel activities or attractions until they reach the destination. Alternatively, information on attractions and activities (e.g., shopping, dining and restaurants, nightlife) may not be available in as much detail when compared to other travel information. This study recommends that MGTO more actively and widely distribute information for Chinese visitors on activities and attractions.

From a practical point of view, there are several important findings for local tourism businesses. The Chinese tourists were inclined to count on travel agents' or tour guides' consultations in making travel decisions. Although Macau is one of the travel destinations where individual Chinese travelers are allowed to visit without restriction, they showed high dependence on travel agents in choosing travel options. In particular, the longer the distance they travel, and the less visiting experience they have, the larger their dependence on travel agents' and tour guides' consultations. On the contrary,

more experienced and shorter-distance tourists are less inclined to seek travel agents' or tour guides' consultations. They instead relied on their own experiences and preferred consulting travel guidebooks to travel agents or tour guides. Accordingly, Macau tourism marketers should prepare customized and specialized communication strategy by the different segments and locations in order to efficiently market its destination to the Chinese market. For example, Macau's tourism businesses targeting long-distance tourists such as tourists from the Northern or Western part of China can develop and maintain close relationships with travel agents specializing in Macau travel from Mainland China. A variety of information on tourists' activities and specialized services in Macau should be provided for the repeat and short-distance tourists. TV and radio commercials were the third most used information source by the Chinese tourists at the before-purchase stage, and they represent a relatively efficient and potentially effective media channel for destination promotion in Mainland China. Contrary to the researchers' expectations, Internet information sources were not consulted much by the Chinese tourists. In addition, local tourist information centers and printed brochures were not used much. The low usage rates of these information sources can be interpreted in two different ways. First, there may be problems in ease of accessibility to these information sources, such as lack of internet access and inadequate number of tourist information centers or inappropriate locations. Alternatively, the ways that Chinese tourists are made aware of this information may be inadequate or ill-timed.

Conclusions

By establishing a visual depiction of the theoretical propositions maintained in recent literature of tourism decision making and information search, this study helps better understanding of the structure of travel decision-making and information use pattern. In particular, this study empirically substantiates the multidimensionality, sequential nature, and hierarchical structure of travel decision making with a sizable data set. This study further expands the framework for describing the travel decision-making structure by incorporating information use patterns across the overall course of the travel planning process. In addition, the contingent nature of decision making is partially validated by tracing the sequence of decision making and information use along the travel planning horizon.

While intuitively reasonable and theoretically explainable, it may seem somewhat unrealistic to rely on one population and one destination setting to uncover the complex dynamics and contingent nature of travel decision-making process in empirical settings. Nonetheless, this study encourages more empirical research to examine decision-making processes in different contexts. These efforts should not be stopped because tourists' (consumers') decision behavior is the

foundation on which marketing must be built (Sirakaya and Woodside 2005), and the understanding of travel decision making is at the core of consumer psychology of tourism. Furthermore, examining tourists' information use patterns within the multistaged decision-making structure can yield a number of practical implications to media and information channel strategies for local tourism organizations. By understanding tourists' information needs across the different travel planning stages, tourism marketers can be more efficient in releasing tourism information and communicating with their target markets.

This study calls for further effort in examining tourists' information use behavior at different facets of the complex travel decision-making process in different cultural, situational, and destination contexts. This study used cross-sectional data, and an important issue that should be addressed in future research is to use longitudinal or observational approaches to track the dynamics and trends in various factors in the complex travel decision-making process. A further area for improvement is to implement more rigorous sampling procedure to take into account nonresponse bias and seasonal variations.

Note

1. According to Mill and Morrison (2002), *primary destination* refers to the destination attractive enough to be the primary motivation for tourists' visit and *secondary destination* is defined as the destination that is either interesting or a necessary place to visit on the way to the primary destination or on the way back home. Accordingly, tourists may have multiple destinations to visit on a vacation trip.

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