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ABSTRACT

This study aims to improve McKercher's (2002) cultural tourist typology methodology which uses cultural centrality and depth of cultural experience in its framework. Using a sample of Chinese tourists in Macau (n=595) collected via questionnaire surveys, the study confirmed the determination effect of cultural centrality on depth of cultural experience. Subsequently, the study demonstrated an improved approach which eliminates such a determination effect in typology identification. Compared to McKercher's (2002) approach, the improved typology presents a balanced segmentation of cultural tourists and distinguishes the segments more clearly in their socio-demographic characteristics. The improved typology generated more meaningful practical implications.

KEY WORDS: Cultural tourist segmentation; cultural centrality; depth of cultural experience; tourist typology; Chinese cultural tourists

INTRODUCTION

As market competition among tourist destinations becomes fiercer, many destinations would develop competitive advantages by targeting some specific segments characterized by such variables as motivations, expectations, and experiences that mirror a destination's strengths (e.g., Chen, 2016; Chen & Huang, 2017; Dolnicar, 2002; Li, Meng, Uysal, & Mihalik, 2013). Cultural tourism, closely associated with a destination's cultural resources (McKercher & du Cros, 2002; Richards, 1996; Silberberg, 1995), has gained its popularity all across the world (McKercher, 2002; Timothy, 2011; Vong, 2016). Particularly, there is a growing body of literature on segmenting cultural tourists (e.g., Chen & Huang, 2017; McKercher, 2002; McKercher, Ho, du Cros, & Chow, 2002; Nguyen & Cheung, 2014; Nyaupane, White, & Budruk, 2006; Vong, 2016). Among the numerous studies segmenting cultural tourists, McKercher's (2002) approach has been the most useful operational framework. This approach applies two core dimensions of the cultural tourist experience, namely, cultural centrality and depth of cultural experience, as the criteria to generate typologies of cultural tourists. Researchers have applied McKercher's (2002) typology approach to segment cultural tourists in a variety of contexts, including general cultural tourists (McKercher & du Cros, 2003) and cultural festival tourists (McKercher, Mei, & Tse, 2006) in Hong Kong SAR, China, heritage tourists in Hue City, Vietnam (Nguyen & Cheung, 2014) and Macau SAR, China (Vong, 2016), and museum-based cultural tourists in mainland China (Chen & Huang, 2017).

Although McKercher's (2002) approach has been proven to be valuable to open the avenue of cultural tourist typology research, it leaves space for improvement methodologically (Chen & Huang, 2017). Actually, many prior studies have implicitly

suggested that the two segmentation variables that McKercher (2002) used (i.e. *cultural centrality* and *depth of cultural experience*) are not independent but correlated. Some studies even suggest that tourists' cultural motives/centrality predicts and determines their trip satisfaction (e.g., Lee & Hsu, 2013; Savinovic, Kim, & Long, 2012; Schofield & Thompson, 2007) and cultural knowledge acquisition (Hou, Lin, & Morais, 2005). Therefore, it is reasonable to postulate that, when using McKercher's (2002) typology approach, the self-reported 'depth of cultural experience' does not sufficiently reflect the actual depth of cultural tourism experience, as it may be determined by cultural centrality. Therefore, using the two variables in their original forms as proposed by McKercher (2002) as typology criteria variables would create a methodological problem that should be addressed.

As such, this study aims to: 1) empirically examine whether cultural centrality determines the depth of cultural experience when using McKercher's (2002) approach; and, 2) if so, explore an improved approach which can effectively eliminate the determination effect and rectify the typology approach.

The rest of this paper is structured as follows. The second section reviews relevant literature of typology studies on cultural tourists, including the McKercher (2002) typology approach, the relationship between tourist motivation and experience, and lessons learned from the original importance and performance analysis (IPA) method. To empirically justify the need of an improved approach, the third section reports on the results of a stepwise multiple regression analysis of the data collected via a questionnaire survey of mainland Chinese cultural tourists in Macau. Subsequently, the fourth section elaborates on an improved approach and demonstrates the implementation of the proposed approach by using the data of the survey as reported in

the third section. Finally, conclusions and discussions are drawn in the last section.

LITERATURE REVIEW

Typology studies on cultural tourists

In the extant literature, cultural tourists have often been *technically* defined as travelers who visit cultural institutions or places, such as museums, archeological and heritage sites, operas, theatres, festivals, or architecture (e.g., McKercher & du Cros, 2002; Nguyen & Cheung, 2014; Silberberg, 1995; Vong, 2016). The heterogeneity nature of the cultural tourist market has been increasingly recognized with the growing body of literature on segmenting cultural tourists (e.g., McKercher, 2002; McKercher et al., 2002; Nguyen & Cheung, 2014; Nyaupane et al., 2006; Vong, 2016). Based on a thorough literature review, two basic categories of typology studies on cultural tourists can be identified. The first category consists of studies that used only one single typology criterion variable, which focuses on either tourists' pre-trip or onsite/post-trip behaviors. Such segmenting variables included prior knowledge of the visited site (Stebbins, 1996), travel motivations (Nyaupane et al., 2006), cultural tourism activity participation (McKercher et al., 2002), and depth of heritage tourism experience (Timothy, 1997), among others. The second category engages with multiple segmentation variables. As demonstrated by many previous studies (e.g., Kerstetter, Confer, & Bricker, 1998; Stebbins, 1996, Timothy, 1997), different tourists get involved with cultural attractions and destinations at different levels, depending on a number of factors, such as their prior knowledge, interests, and time availability. Based on the nature of cultural tourism, it is important to involve the depth of cultural experience together with cultural centrality (e.g., motivation and the importance of culture in the decision to visit a destination) in typologyzing cultural tourists for a deeper understanding of this significant tourist market. In this regard, McKercher (2002)

developed a cultural tourist typology along two core dimensions, namely, the centrality of cultural tourism in the decision to visit a destination and the depth of cultural experience. The McKercher (2002) typology approach is elaborated below.

The McKercher (2002) typology approach

Using Hong Kong as a case study, McKercher (2002) identified five types of cultural tourists, namely, casual cultural tourists, incidental cultural tourists, purposeful cultural tourists, serendipitous cultural tourists, and sightseeing cultural tourists. Specifically, in the typology, as shown in Figure 1, incidental cultural tourists refer to those people whose cultural centrality was very limited (the cultural centrality was fairly low) and whose cultural experience was very shallow (the depth of cultural experience was low). In a similar way, casual cultural tourists were those whose cultural centrality was moderate and the depth of cultural experience was low. Sightseeing cultural tourists were those who indicated that culture played an important role in their decisions/motivations to visit (the cultural centrality was high), but who also indicated that the depth of cultural experience was fairly low. In addition, serendipitous cultural tourists stated that their cultural centrality was limited (moderate or low), but they ended up visiting cultural tourist attractions and having a fairly deep experience. Finally, purposeful cultural tourists were technically operationalized as those who reported that culture played a strong role in their decisions/motivations to visit and who also had a deep cultural experience.

Please insert Figure 1 about here

The applicability of the McKercher (2002) typology approach has been further tested (McKercher & du Cros, 2003). Furthermore, the McKercher (2002) typology has

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been frequently employed in subsequent empirical studies, especially those in an East Asian context, such as Hong Kong (e.g., McKercher & du Cros, 2003; McKercher et al., 2006), Macau (Vong, 2016), mainland China (Chen & Huang, 2017), and Hue City, Vietnam (Nguyen & Cheung, 2014).

The relationship between tourist motivation and experience

As shown in Figure 1, the two segmentation variables in the McKercher (2002) typology approach are the importance of cultural tourism in the decision to visit a destination (also termed as *cultural motives/motivations*, see McKercher, 2002; McKercher et al., 2006; Nguyen & Cheung, 2014; Vong, 2016) and the depth of cultural experience, respectively. As many previous studies in various settings have shown, tourist motivation and tourist experience are correlated; and furthermore, motivation determines experience. For instance, past studies have demonstrated that tourist motivation is a determinant of the level of tourist satisfaction with rural tourism destinations (Devesa, Laguna, & Palacios, 2010), nature-based resort destinations (Meng, Tepanon, & Uysal, 2008), and urban vacation destinations (Yoon & Uysal, 2005). In another line of research, previous studies have confirmed the determination effect of visitors' motivation on their place/activity attachment in the settings of a large urban park (Kyle, Mowen, & Tarrant, 2004) and skiing (Alexandris, Funk, & Pritchard, 2011), respectively .

In the cultural tourism context, in particular, a large number of past studies have also confirmed the determination effect of cultural tourists' motivations on their cultural experiences. For instance, in the setting of cultural festivals, tourism scholars have confirmed that tourists' motivation is a predictor of their satisfaction with a cultural

festival (e.g., Lee & Hsu, 2013; Savinovic et al., 2012; Schofield & Thompson, 2007). Similarly, in a case study of Pei-Pu, a famous cultural destination in Taiwan, Hou et al. (2005) found that the perceived importance of cultural tourism can positively influence tourists' cultural knowledge about the destination, and preference and willingness to stay longer at the destination.

Lessons learned from the original importance and performance analysis (IPA) method

If cultural centrality as a motivational force indeed determines the depth of cultural experience in the context of cultural tourism, applying the two seemingly correlated variables in the typology identification without considering the determination effect of one on another would present a methodological problem. This methodological problem associated with the McKercher (2002) framework resembles the problem identified with the original importance-performance analysis (IPA) in the literature (Chen, 2013; Deng, 2007; Deng, Kuo, & Chen, 2008). Despite a simple and effective method to assist practitioners in developing marketing strategies, the original IPA approach has been questioned for its methodological validity (e.g., Chen, 2013; Deng, 2007; Deng *et al.*, 2008; Huang, 2010; Oh, 2001; Ryan & Huyton, 2002). Major methodological flaws of the original IPA are twofold (Matzler, Bailom, Hinterhuber, Renzl, & Pichler; Oh, 2001; Sampson & Showalter, 1999; Ryan & Huyton, 2002): 1) performance and importance are not independent but correlated; 2) performance is a predictor of importance. These shortcomings suggest that the applicability of the traditional IPA is questionable. Therefore, the original IPA method has been subsequently modified or extended in tourism and hospitality research (Deng, 2007; Deng et al., 2008; Mount, 1997) and other service research areas (e.g., Matzler, Sauerwein, & Heischmidt, 2003).

Actually, the original McKercher (2002) typology approach is faced with a similar situation, as the two segmenting variables it uses (i.e., *cultural centrality* and *depth of cultural experience*) are not independent but correlated; and furthermore, as reviewed above, tourists' cultural motives can predict their satisfaction and knowledge learning. Therefore, it is reasonable to postulate that when using the original McKercher (2002) typology approach, cultural centrality may determine the depth of cultural experience. If such a determination effect really exists, the applicability of the original McKercher (2002) typology approach is methodologically questionable and an improved typology approach is thus required.

THE NEED FOR AN IMPROVED TYPOLOGY

APPROACH

In order to confirm whether cultural centrality determines the depth of cultural experience when using the original McKercher (2002) typology approach, this study conducted an empirical investigation by a questionnaire survey of mainland Chinese cultural tourists in Macau.

Sampling

The questionnaire consisted of five parts. The first part was designed with two choice questions to screen qualified respondents and two questions to record eligible respondents' travel styles and places of origin. Following previous studies (e.g., McKercher, 2002; McKercher & du Cros, 2003; Nguyen & Cheung, 2014), the second part consisted of questions relating to the respondents' prior knowledge about the history, culture and heritage in Macau, cultural travel motivations, and factors influencing their decision to visit Macau's cultural attractions. Particularly, in order to make the approach of the current study more comparable to relevant studies, following previous cultural tourist typology studies (e.g., Chen & Huang, 2017; McKercher, 2002; McKercher & du Cros, 2003) and cultural tourist studies in the Chinese context (e.g., Chen & Huang, 2017; Gan & Lu, 2012; Hou et al., 2005), the questions are measured using a 5-point Likert-type scale. The third part was designed with choice questions to identify respondents' onsite activities in Macau. The fourth part consisted of two questions to record respondents' depth of experience with Macau's culture and history. The last part was designed to collect the respondents' socio-demographic information.

A total of 29 college students who are fluent in both Mandarin and Cantonese were

recruited as field interviewers and specially trained for the current study. Field survey was conducted from 11th, October to 22th, November, 2015, strictly supervised by the first author of this paper. Field interviewers were divided into nine groups and allocated to the Gongbei entry and exit port in Zhuhai, Guangdong Province. As revealed by Macau Statistics and Census Service (2017), in 2016, 66.1% of mainland Chinese tourists entered and 77.0% of them departed Macau through the Gongbei port. Therefore, the Gongbei port represents an ideal site for the current study to target mainland Chinese tourists who have returned from a visit to Macau.

Potential eligible respondents were approached and asked by the field interviewers to fill in a questionnaire in Chinese (Mandarin and/or Cantonese). Then field interviewers stayed nearby for any possible queries while participants were filling in the questionnaires. Two approaches were used to select qualified respondents. First, field interviewers asked potential eligible respondents whether they have just finished visiting Macau. If yes, field interviewers would further ask them to fill in a questionnaire. Second, a yes/no question 'I have just finished visiting Macau' was placed at the very beginning of the questionnaire for further screening. Immediately after the above question, a further choice question was placed to record which cultural and heritage sites in Macau the respondents had visited. As a result, it is ensured that all the respondents are tourists who had just returned from a visit to Macau and had visited Macau's cultural and heritage sites.

Respondents

A total of 607 questionnaires were distributed and collected through convenience sampling by the study; 595 copies were deemed usable. As shown in Table 1, female participants slightly outnumbered their male counterparts (56.9% vs. 43.1%). More than

half of the respondents were in the age group of 21 to 35 (57.8%), followed by the 36-50 group (19.1%) and the ≤20 group (13.5%). The respondent profile by age is similar to some previous studies on both mainland Chinese cultural tourists (e.g., Gan & Lu, 2012; Peng, 2013) and Western cultural tourists (e.g., Adie & Hall, 2016; Huh, Uysal, & McCleary, 2006) demonstrating that cultural tourists tend to be young. Regarding educational background, 32.7% of the respondents reported an education level of undergraduate degree, and 28.5% were junior college graduates. In addition, 22.6% of the respondents reported a monthly personal income of 3001-4500 RMB, followed by the <1500 RMB group (21.1%) and the 1500-3000 RMB group (18.6%). Accordingly, when completing the survey questionnaire, 28.7% of the respondents were enterprise staff, 21.7% were students (e.g., high school student, college and university student, and graduate student), and 19.1% were private business owners.

Among the 589 (99.0%) respondents who have indicated their normal places of residence, as shown in Table 1, more than half of them (51.4%) were residing in a place outside Zhuhai but within Guangdong Province; 7.6% of them were from neighboring provinces (namely, Guangxi, Hunan, Fujian, Jiangxi, and Hainan); 24.4% of them were from other mainland Chinese provinces; and 16.5% of them were residents in Zhuhai. Among the 586 (98.5%) respondents who have indicated their travel styles, 56.3% of them reported that they visited Macau 'together with relatives and/or friends,' while 16.0% of them were 'in a package tour by travel agency.'

Please insert Table 1 about here

The relationship between cultural centrality and the depth of cultural experience

The cultural centrality of mainland Chinese tourists to Macau was measured by two

items, namely the importance of the motivation of learning the history/culture/heritage/arts in Macau and the importance of cultural learning in the decision to visit Macau. The average of the two items' scores was used to measure cultural centrality. Following previous studies (e.g., McKercher, 2002; McKercher & du Cros, 2003; Nguyen & Cheung, 2014), the depth of cultural experience of tourists to Macau was measured by one single item, asking respondents to indicate the level of their understanding of the history/culture/heritage/arts of Macau.

Please insert Table 2 about here

As shown in Table 2, the results of a stepwise multiple regression analysis suggest that cultural centrality (F=85.372; β=0.355, t=9.240, p=0.000<0.001; Table 2 provides confidence intervals) was significantly and positively related to depth of cultural experience; cultural centrality explained 12.6% of the variance of depth of cultural experience ($\Delta R^2 = R^2 = 0.126$). This suggests that for mainland Chinese cultural tourists, their cultural centrality is associated with their depth of cultural experience. In other word, cultural centrality determines and predicts depth of cultural experience.

In summary, the above empirical results demonstrated the determination effect of cultural centrality on depth of cultural experience. Thus, a need for an improved typology approach which addresses the influence of cultural centrality on depth of cultural experience is justified.

PROPOSING AND DEMONSTRATING THE IMPROVED TYPOLOGY APPROACH

Basic steps for the improved typology approach

As has been demonstrated above, the depth of cultural experience is influenced by cultural centrality. It is therefore very important to generate the 'real sense' depth of cultural experience considering such an influence, in order to form an improved typology of cultural tourists. Inspired by the approach of the revised IPA (Deng, 2007) and based on the steps of the original McKercher (2002) typology approach, the following three basic steps are proposed for an improved typology approach to better segment cultural tourists.

1. *Step 1: Generation of the real sense measurement of depth of cultural experience.* Use the residual with each case in the regression analysis (with cultural centrality as the independent variable and depth of cultural experience as the dependent variable) as the real sense calibrated measurement of depth of cultural experience, which statistically eliminates the determination effect of cultural centrality.

2. *Step 2: Standardization of the scores.* Standardize both the calibrated scores of depth of cultural experience and cultural centrality, for instance, by using the function of standardization in the *Statistical Product and Service Solutions* (SPSS), the *Z method*, centering a value of 0.

3. *Step 3: Drawing the scattering diagram.* Use the Z-scores (standardized scores using the *Z method*) of both the calibrated scores of depth of cultural experience and cultural centrality to generate the scattering diagram. A

standardized score below 0 is regarded as low while a standardized score above 0 as high. An improved typology/matrix is therefore formed with four basic quadrants.

A demonstration of the applicability of the improved typology approach

Following Section 3's data analysis and the procedures elaborated above, a demonstration of the improved typology approach is provided below. As shown in Table 3 and Figure 2, four segments of cultural tourists are identified using the improved typology approach. According to the features of each of the four segments, they are labeled as purposeful cultural tourists, serendipitous cultural tourists, casual cultural tourists, and sightseeing cultural tourists, respectively (Table 3 and Figure 2). The 'incidental' and 'casual' segments in the original typology (McKercher, 2002) were lumped into one segment, 'casual', due to the dichotomy nature of the measurement of cultural centrality in the improved typology (see Figure 2).

Please insert Table 3 and Figure 2 about here

It is not difficult to find that, compared with the typology by using the McKercher (2002) approach, the typology using the improved approach represents a much more balanced segmentation of cultural tourists, after eliminating the determination effect of cultural centrality on depth of cultural experience. As shown in Figure 2, the improved typology approach identifies more purposeful (a remarkable increase of 34 per cents), serendipitous (a moderate increase of 15.8 per cents), and sightseeing cultural tourists (a moderate increase of 10.7 per cents) and much less casual cultural tourists (a dramatic decrease of 60.6 per cents) than the original McKercher (2002) approach does.

Specifically, taking the percentage changes of serendipitous cultural tourists (the cultural centrality is low while and the depth of cultural experience is high) and casual cultural tourists (both cultural centrality and depth of cultural experience are low) as an example, their percentages are 6.9% and 78.4%, respectively, in the original typology. However, after eliminating the determination effect of cultural centrality on the depth of cultural experience, the scores of depth of cultural experience are increased, thus generating more serendipitous cultural tourists while reducing the number of casual cultural tourists.

In addition, as shown in Table 4, significant age, educational, and occupational differences are found across the four segments identified by using the improved approach. However, only age shows significant differences across the five segments identified by using the original McKercher (2002) approach. These findings suggest that the typology identified by using the improved approach distinguishes the identified groups more effectively in terms of respondents' socio-demographic characteristics. As shown in Table 5, in both typologies, significant differences of prior knowledge, time spent to know the site before visit and number of attraction visited are identified across the segments.

Please insert Table 4 and Table 5 about here

CONCLUSION AND DISCUSSIONS

The purpose of the current study is to develop an improved approach of cultural tourist typology. First, the study aims to examine whether the cultural centrality determines the depth of cultural experience when using the original McKercher (2002) typology approach to segment cultural tourists. To this end, an empirical investigation through a questionnaire survey of mainland Chinese cultural tourists in Macau (n=595) demonstrated that there was indeed a determination effect of cultural centrality on depth of cultural experience. Therefore, the original McKercher (2002) typology approach can be methodologically improved, as the score of 'depth of cultural experience' used when adopting the original approach does not represent the actual depth of tourists' cultural experience. As such, second and more importantly, the study is further intended to identify an improved typology approach, based on the original McKercher (2002) approach, which eliminates the determination effect of cultural centrality on depth of cultural experience. In the improved typology approach, the residual with each case in the regression analysis (cultural centrality as the independent variable and depth of cultural experience as the dependent variable) is used as the real sense calibrated measurement of depth of cultural experience, in order to statistically eliminate the determination effect of cultural centrality. After standardizing both the calibrated scores of depth of cultural experience and cultural centrality by using the *Z method*, an improved typology is established with four quadrants, each of which representing a segment of cultural tourists. By comparing the typologies using the original approach (McKercher, 2002) and the improved approach, it is found that the improved typology represents a much more balanced segmentation of cultural tourists and shows more socio-demographic distinguishability among the identified segments.

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Consequently, the revised typology approach could better assist cultural tourism attraction/destination marketers and managers in understanding the market share and trip characteristics of each of the segments, as well as in developing competitive business advantages in their marketing activities. Specifically, in the case of mainland Chinese tourists visiting Macau, as elaborated above (see Table 3 and Figure 2), by using the original approach proposed by McKercher (2002), the market size of purposeful, serendipitous, and sightseeing cultural tourists would be underestimated to varying degrees, while the share of casual cultural tourists was overestimated remarkably. However, by using the improved approach, the market shares of each of the segments are calibrated. Cognizant of the more accurate structure of the mainland Chinese cultural tourism market, cultural tourism attraction/destination managers in Macau could develop effective and appropriate marketing and management measures toward each of the four segments identified using the improved approach. For instance, considering the actually larger proportion of Chinese sightseeing cultural tourists (20.3%), it is very important for local tourism organizations to find out the reasons behind their low level of cultural experience and take effective measures. According to previous research on Chinese cultural tourists (e.g., Chen & Huang, 2017; Gan & Lu, 2012; Wu & Wall, 2016), creative, innovative, and interactive ways of interpretation and display plays a critically important role in determining their cultural understanding and experience. Therefore, cultural and heritage attractions in Macau could fully utilize a variety of ways of display and interpretation, such as multimedia, virtual reality, and computer games, to deepen the cultural experience and understanding of Chinese sightseeing cultural tourists.

In addition, based on the calibrated segmentation of cultural tourists, the

socio-demographic characteristics of the segments are more clearly distinguished (see Table 4). For instance, as shown in Table 4, solely identified by using the improved approach, casual and serendipitous cultural tourists are more likely to be middle-aged (36-50 years old) and elderly people (51 and above years old), while purposeful and sightseeing cultural tourists are seemingly younger (21-35 and less than 21 years old). Similarly, the casual and serendipitous segments (both are lowly culturally-motivated) are found to have more of their members with an educational level of 'senior high school and below'. On the contrary, the purposeful and sightseeing segments (both are highly culturally-motivated) are found to include more members who report a relatively high educational level of 'junior college and above'. Therefore, popular social media commonly used by mainland Chinese (e.g., Wechat, Weibo, and mobile phone applications) could be utilized to communicate Macau's cultural and heritage information prior to the actual visits of those middle-aged and elderly tourists and those with an educational background of 'senior high school and below'. In addition, specialized programs, such as the aforementioned creative, innovative, and interactive ways of interpretation and display (i.e., multimedia and virtual reality), could be in place to improve the cultural understanding of the abovementioned tourist groups.

Several limitations of the current study should be acknowledged and future research directions be specified. First, the present study used a sample from one nationality, i.e., mainland Chinese cultural tourists visiting Macau. Fellow researchers are encouraged to use cross-cultural samples to further verify the improved typology approach proposed in this study. Second, field survey for data collection of this study was conducted intensively in October and November, 2015, which may have led the sample to be skewed by the specific tourist season. Future studies may collect data in

different months and tourist seasons in a year to further verify this proposed typology approach. Last, this study used a convenience sample. When (and if) conditions allow, future inquiries could use more solid sampling method to further verify the findings of this study.

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Table 1. Socio-demographical profiles and trip characteristics of respondents (n=574-594).

Variable (N)	Category	Frequency	Percentage
Gender (N=592)	Male	255	43.1
	Female	337	56.9
Age Group (N=593)	≤20	80	13.5
	21-35	343	57.8
	36-50	113	19.1
	51-64	46	7.8
	≥65	11	1.9
Education Level (N=594)	Junior high school and below	56	9.4
	Senior high school	161	27.1
	Junior college	169	28.5
	Undergraduate	194	32.7
	Graduate and above	14	2.4
Personal Monthly Income (RMB) (N=574)	<1500	121	21.1
	1500-3000	107	18.6
	3001-4500	130	22.6
	4501-6000	71	12.4
	6001-7500	49	8.5
	7501-10000	45	7.8
	10001-15000	28	4.9
	>15001	23	4.0
Occupation (N=586)	Enterprise staff	168	28.7
	Private business owner	112	19.1
	Student (e.g., high school student, college and university student, and graduate student)	127	21.7
	Government staff/civil servant	73	12.5
	Teacher	25	4.3
	Others	81	13.8
Normal place of residence (Place of origin) (N=589)	Zhuhai City	97	16.5
	Outside Zhuhai City but within Guangdong Province	303	51.4
	Neighboring Provinces, namely Guangxi, Hunan, Fujian, Jiangxi, and Hainan	45	7.6
	Other mainland Chinese provinces	144	24.4
Travel style (N=586)	A package tour by travel agency	94	16.0
	Together with relatives and/or friends	330	56.3
	An organized tour by my affiliation (e.g., school, company)	49	8.4
	Travelling alone	113	19.3

Note: The percentages were rounded up to one decimal point. Therefore, the percentage may not add to 100.0 because of rounding errors.

Table 2. Regression analysis for cultural centrality predicting depth of cultural experience (n=595).

	R	R^2	Adjusted R^2	ΔR^2	F	ΔF	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity diagnostics	
							B	Std. Error	Beta			Tolerance	VIF
(Constant)							1.864	0.102		18.200	0.000		
Centrality	0.355	0. 126	0.124	0.126	85.372[*]	85.372[*]	0.317	0.034	0.355	9.240	0.000	1.000	1.000

Note: Dependent variable: depth of cultural experience. Durbin-Watson =1.928.
*$p < 0.001$.

Table 3. Typologies of cultural tourists using two different approaches (n=595).

Cultural centrality	Depth of cultural experience	Cultural tourist typology	Number in sample (Percentage of sample)
Using the original approach†(McKercher, 2002)			
Medium (an original score of 2.5 or 3 or 3.5)	Low (an original score of 1 or 2 or 3)	Casual	334(56.2)
Low (an original score of 1 or 1.5 or 2)	Low (an original score of 1 or 2 or 3)	Incidental	132(22.2)
High (an original score of 4 or 4.5 or 5)	High (an original score of 4 or 5)	Purposeful	31(5.2)
Low (an original score of 1 or 1.5 or 2) or Medium (an original score of 2.5 or 3 or 3.5)	High (an original score of 4 or 5)	Serendipitous	41(6.9)
High (an original score of 4 or 4.5 or 5)	Low (an original score of 1 or 2 or 3)	Sightseeing	57(9.6)
Using the revised approach			
Low (a standardized score < 0)	Low (a standardized score < 0)	Casual	106(17.8)
High (a standardized score > 0)	High (a standardized score > 0)#	Purposeful	233(39.2)
Low (a standardized score < 0)	High (a standardized score > 0)#	Serendipitous	135(22.7)
High (a standardized score > 0)	Low (a standardized score < 0)	Sightseeing	121(20.3)

Note: The percentages were rounded up to one decimal point. Therefore, the percentage may not add to 100.0 because of rounding errors.

Table 4. Cross-tabulation results using two different approaches for the groups of cultural tourists (socio-demographics) (n=595).

Variable (N=574~594)	Category	Casual (%/rank)		Incidental (%/rank)	Purposeful (%/rank)		Serendipitous (%/rank)		Sightseeing (%/rank)	
		The McKercher (2002) approach N=334	The improved approach N=106	The McKercher (2002) approach N=132	The McKercher (2002) approach N=31	The improved approach N=233	The McKercher (2002) approach N=41	The improved approach N=135	The McKercher (2002) approach N=57	The improved approach N=121
Gender	Male	39.6(5)	44.6(2)	46.2(4)	51.6(1)	37.6(4)	48.8(2)	49.1(1)	47.4(3)	43.1(3)
	Female	60.4(1)	55.4(3)	53.8(2)	48.4(5)	62.4(1)	51.2(4)	50.9(4)	52.6(3)	56.9(2)
Age groups[a][b]	≤20	12.3(3)	12.4(2)	18.9(2)	0.0(5)	20.9(1)	19.5(1)	10.4(4)	10.5(4)	11.2(3)
	21-35	63.6(2)	51.2(4)	48.5(4)	64.5(1)	55.2(3)	53.7(3)	56.6(2)	45.6(5)	63.4(1)
	36-50	17.2(4)	21.5(1)	22.7(2)	19.4(3)	15.7(4)	14.6(5)	20.8(2)	24.6(1)	19.0(3)
	51 and above	6.9(5)	14.9(1)	9.8(4)	16.1(2)	8.2(3)	12.2(3)	12.3(2)	19.3(1)	6.5(4)
Education level[b]	Senior high school and below	35.0(3)	44.6(2)	43.5(1)	25.8(5)	34.3(4)	26.8(4)	46.7(1)	42.1(2)	36.5(3)
	Junior college and above	65.0(3)	55.4(3)	56.5(5)	74.2(1)	65.7(1)	73.2(2)	53.3(4)	57.9(4)	63.5(2)
Occupation[b]	Enterprise staff	32.3(1)	22.5(4)	23.3(4)	29.0(2)	31.1(2)	26.8(3)	25.0(3)	21.1(5)	32.2(1)
	Private business owner	18.6(3)	25.0(2)	20.9(2)	12.9(5)	13.6(4)	14.6(4)	26.9(1)	24.6(1)	15.7(3)
	Student	20.4(3)	18.3(3)	25.6(2)	16.1(5)	28.0(1)	26.8(1)	17.3(4)	19.3(4)	21.7(2)
	Government staff/civil servant	11.3(5)	13.3(2)	13.2(3)	16.1(1)	15.9(1)	14.6(2)	10.6(4)	14.0(4)	10.9(3)
	Teacher	4.0(4)	6.7(1)	2.3(5)	6.5(2)	0.8(4)	4.9(3)	3.8(3)	8.8(1)	5.2(2)
	Others	13.4(3)	14.2(3)	14.7(2)	19.4(1)	10.6(4)	12.2(5)	16.3(1)	12.3(4)	14.3(2)
Personal monthly income (RMB)	<3000	40.8(2)	39.3(3)	43.8(1)	24.1(5)	46.6(1)	37.5(3)	39.8(2)	33.9(4)	35.9(4)
	3001-6000	36.1(3)	37.6(1)	30.5(5)	37.9(2)	31.3(4)	32.5(4)	34.0(3)	39.3(1)	36.3(2)
	6001-10000	16.2(4)	14.5(3)	14.8(5)	17.2(3)	14.5(3)	20.0(1)	17.5(2)	17.9(2)	17.9(1)
	>10001	6.9(5)	8.5(3)	10.9(2)	20.7(1)	7.6(4)	10.0(3)	8.7(2)	8.9(4)	9.9(1)

Note: (a) $p < 0.05$ when using the McKercher (2002) approach. (b) $p < 0.05$ when using the improved approach.

Table 5. Cross-tabulation results using two different approaches for the groups of cultural tourists (knowledge and travel characteristics) (n=595).

Variable (N=586~595)	Category	Casual (%/rank)		Incidental (%/rank)		Purposeful (%/rank)		Serendipitous (%/rank)		Sightseeing (%/rank)	
		The McKercher (2002) approach N=334	The improved approach N=106	The McKercher (2002) approach N=132	The improved approach	The McKercher (2002) approach N=31	The improved approach N=233	The McKercher (2002) approach N=41	The improved approach N=135	The McKercher (2002) approach N=57	The improved approach N=121
Prior knowledge[*(a)(b)]	Low[**]	65.9(3)	76.9(2)	80.3(1)		38.7(5)	69.4(3)	46.3(4)	84.0(1)	68.4(2)	51.7(4)
	High[**]	34.1(3)	23.1(3)	19.7(5)		61.3(1)	30.6(2)	53.7(2)	16.0(4)	31.6(4)	48.3(1)
Time spent to know the site before visit [(a)(b)]	Few[***]	91.9(2)	90.9(3)	93.9(1)		61.3(5)	91.0(2)	68.3(4)	96.2(1)	87.7(3)	82.9(4)
	Much[***]	8.1(4)	9.1(2)	6.1(5)		38.7(1)	9.0(3)	31.7(2)	3.8(4)	12.3(3)	17.1(1)
Travel styles	Travelling in group	80.2(4)	85.0(2)	82.2(3)		83.9(2)	79.7(3)	70.7(5)	85.4(1)	85.7(1)	77.0(4)
	Travelling alone	19.8(2)	15.0(3)	17.8(3)		16.1(4)	20.3(2)	29.3(1)	14.6(4)	14.3(5)	23.0(1)
Number of attractions visited [(a)(b)]	1-3	74.8(1)	76.7(2)	72.7(2)		45.2(4)	68.7(3)	39.0(5)	77.4(1)	61.4(3)	61.5(4)
	4-6	20.1(5)	20.0(4)	25.0(4)		35.5(2)	24.6(2)	48.8(1)	22.6(3)	31.6(3)	29.1(1)
	7 and above	5.1(4)	3.3(3)	2.3(5)		19.4(1)	6.7(2)	12.2(2)	0.0(4)	7.0(3)	9.4(1)

Note: [*] Knowledge about the culture/history/arts of and as displayed in the site before visit.
[**] 'Do not know at all,' 'Do not know too much,' and 'Nothing more nor less' were lumped into 'Low' while 'Know a little' and 'Know very much' into 'High'.
[***] 'Very few,' 'Few,' and 'Nothing more nor less' were lumped into 'Few' while 'Much' and 'Very much' into 'Much.'
[(a)] $p < 0.05$ when using the McKercher (2002) approach. [(b)] $p < 0.05$ when using the improved approach.
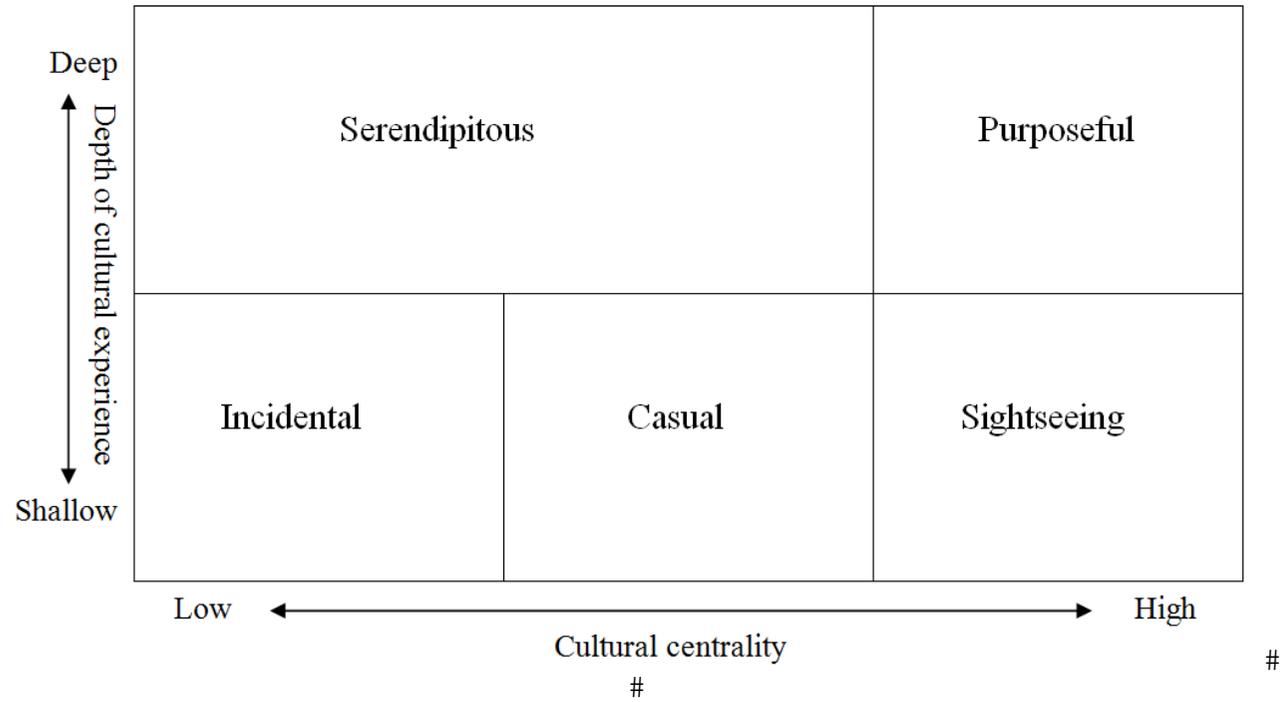
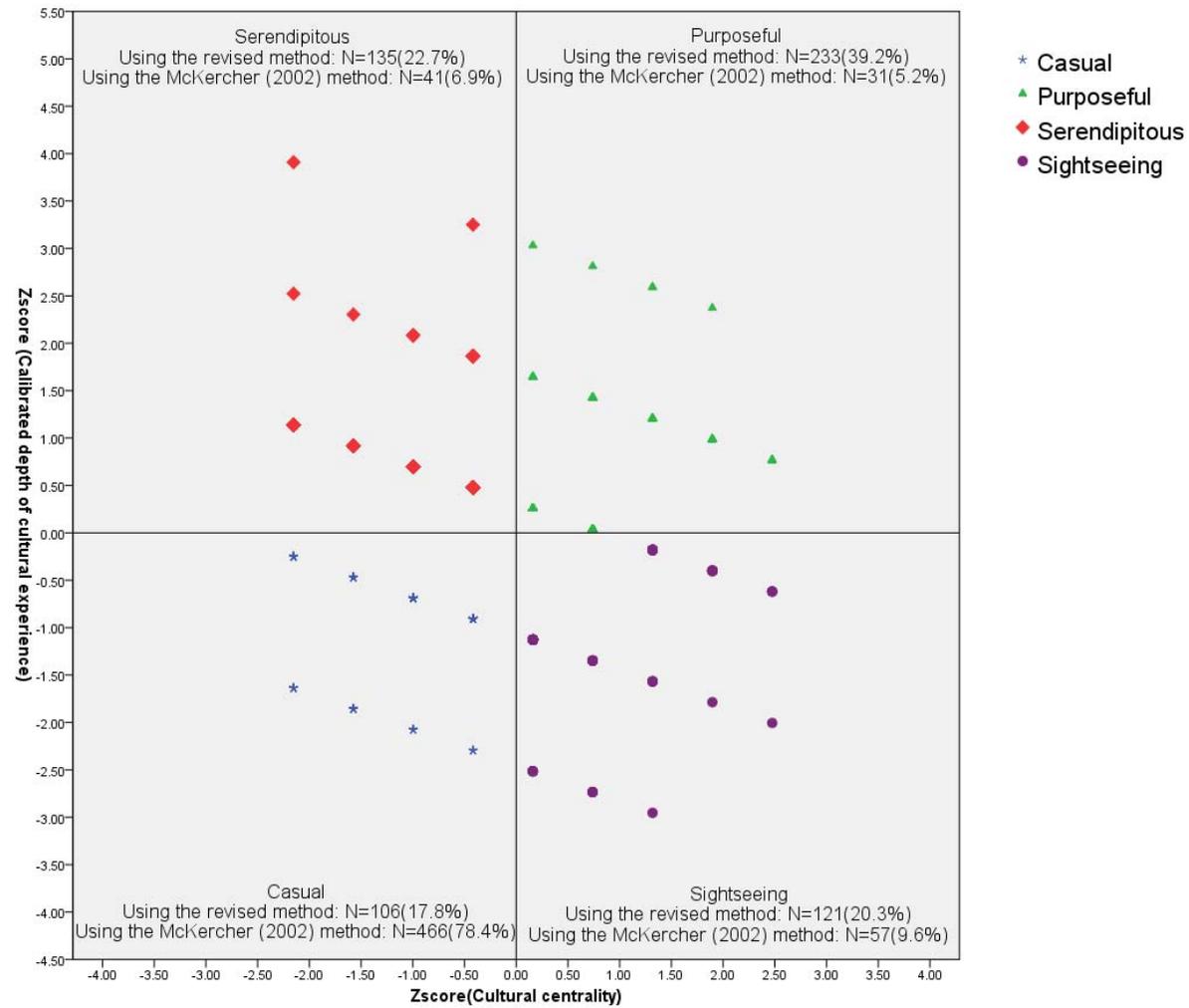**Figure 1. The McKercher (2002) typology**
Source: McKercher (2002)

Figure 2. The typology using the approved approach