

Residents' Perceptions of Multi-linguistic Landscape in Tourism Destination

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Multi-linguistic landscape such as Macao's street names consisting of Chinese and Portuguese is regarded as a significant cultural artifact. However, the studies of street names of tourism destinations are rare in tourism field. This study therefore attempts to investigate the relationship between Macao's street names and residents' perceptions, and to identify residents' support for Macao's street names as a tourism attraction. Appropriately statistical analyses such as frequency analysis, independent-samples *t*-test, and analysis of variance (ANOVA) were used to achieve the objectives. The results of study show that trilingual street names consisting of Chinese, Portuguese, and English might satisfy residents' needs more than bilingual street names written in Chinese and Portuguese. Besides, residents with longer length-of-residence or residents who are willing to work in tourism related industry have a tendency to support Macao's street names for becoming tourism attraction.

Keywords: residents' perceptions, multi-linguistic landscape, bilingual street names, trilingual street names, Macao

Introduction

It is widely acknowledged that local residents of tourism destinations are most directly influenced by tourism development (Hamira & Ghazali, 2012). The tourism industry depends on the local residents' hospitality (Hamira & Ghazali, 2012). This is because residents generate both positive and negative impacts on the host tourism destination. The tourism literatures accord with the argument that increasing support among local residents is important for fostering tourism development (Ryan, Scotland, & Montgomery, 1998; Fredline & Faulkner, 2000; Gursoy, Jurowski, & Uysal, 2002; Teye, Senmez, & Sirakaya, 2002; Andriotis, 2004; Gursoy & Rutherford, 2004). The literatures also reveal that the possibility of gaining residents' support for tourism is influenced by the residents' characteristics. A happy, welcoming resident is essential for creating a positive image of the tourism destination which subsequently generates positive word of mouth (Snaith & Haley, 1999). Residents' attitudes affect the tourists' satisfaction and revisit intentions (Sheldon & Abenoja, 2001). Therefore, residents' perceptions are the most important part of tourism that determines the tourism impact on the residents (Simmons, 1994; Snaith & Haley, 1999; Haywood, 2000).

The measure of residents' perceptions of tourism development also plays an important role in the future

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success of a tourism destination (Andriotis, 2005; Faulkner & Tideswell, 1997). The study of residents' perceptions of tourism is not only rooted in social and economic impact research, which in the early days sought to examine the social and economic influence of tourist destination communities, but it is also based on residents' involvement in the production of tourism. If the residents like their local tourism resources, they will be able to enhance the tourism product significantly (Ap, 1992; Snaith & Haley, 1999).

The street names in Macao are a critical part of this study. Macao's street names might be regarded as an example of multi-linguistic landscape of tourism destination and are recognized as a unique product of Chinese and Portuguese culture. Macao street names which reflect the unique characteristics of Macao, distinguish the city from other tourists' cities. As part of the urban landscape, street names perform the major functions of conveying the humanity or geographic information. Moreover, there are some other significance that tourists or residents can have a glimpse of history, urban concepts, different social values, the way different ethnic groups coexist, culture interaction, art, and technology. Briefly, the evolution of street names is a profile of Macao's socio-political development that may conform to the development of the Macao tourism industry. Macao's street names might be an innovative element of Macao's image and a brand design if Macao street names can be an attraction.

Most researches have studied the positive and negative impacts of tourism in terms of the residents' perceptions (Mason & Cheyne, 2000; Ko & Stewart, 2002). Researches on residents' perceptions of street names might be rare in tourism area. Therefore, the aim of this paper is to identify residents' perceptions of street names in a rapidly growing leisure tourism destination, using Macao's street names as a study object. The specific research objectives to be addressed are:

1. To identify local residents' understanding of Macao's street names.
2. To examine the relationship between residents' perceptions and Macao's street names.
3. To discuss whether residents support Macao's street names becoming a tourism attraction in Macao.

Hypotheses should be predicted that:

H1: Residents with a lower level of education lacked an understanding of Macao's street names more than those with a higher level of education.

H2: Residents whose work was related to the tourism industry support Macao's street names becoming a tourism attraction more than those who did not.

H3: Residents who were willing to work in tourism related industry support Macao's street names becoming a tourism attraction more than those who were not willing.

Literature Review

Definition and Process of Perception

Perception has been defined differently according to researchers. Mayo and Jarvis (1981) indicated that perception can be regarded as the process by which people make sense of the world, which includes objects, events, and behavior. This process of perception may occur immediately, but it is not simple. For example, people have a tendency to see and interpret differently when people experience together instead of seeing the same thing in exactly the same way. This point of view has been referred to several psychological studies, e.g., Jones (1990), Eagly and Chaiken (1993), and Jandt (2004). In the study by Sylvester and Cherry (2007), perceptions were defined as a process that explains and organizes individuals' sensory impressions as a result of giving a sense to their environment. Robbins (1993) considered that what an individual believes for a goal or

an event is a perception, and this belief comes from the individual's knowledge, concepts, or learning. Lim (1995) defines perception as sensory information which can be organized, identified, and interpreted. According to Lim (1995), people can get some information through environmental perception. However, there are essential differences between personal perception and objective reality (Sylvester & Cherry, 2007). That means, personal perception is not necessarily the real reaction of objective reality (Sylvester & Cherry, 2007). Personal perception has deviations in color, and certain distance (Sylvester & Cherry, 2007). These differences are attributed to differences in the feelings, opinions, and experiences of each person (Sylvester & Cherry, 2007). Hence, perception has no right or wrong aspects, and it is only the individual sensory system of objects. Perception can integrate prior knowledge with current sensations. As a result it involves activation of union areas in the cortex (Shirayev & Levy, 2004).

Besides, perception is a kind of process that mainly includes human's behavior procedures such as attention, perception, intention, memory, thinking, and language (D. Z. Huang & F. C. Huang, 2009). Mayo and Jarvis (1981) indicated that the process of perception is selective attention, comprehension, and choosy retention. The following example explains this. At an airport, there are some differences between a long trip traveler, people who are saying goodbye to relatives, and a person who has just arrived and is waiting for a taxi. At the same time, the long trip traveler looking for flight information may not even notice the passing taxi, and the person waiting for a taxi is also unaware of the departing from those next gates. This example illustrates that the process of perception is highly selective. Because there are so many objects in the surroundings, it is impossible to notice and remember all those things. The process is interpreting information obtained from the environment. This information must first be noticed, interpreted, and then integrated with other perceptions. Finally, it is retained and subsequently useful to influence behavior.

Residents' Perceptions

Tourism is regarded as an essential industry that assists the host destination to grow employment, tax revenues, and the local economy. Many tourism cities pay attention to this industry because it can improve the level and quality of life for residents. Moreover, the tourism industry has a mutual relationship between hosts and guests (Goeldner & Ritchie, 2003). Guests from foreign countries or other areas just want a warm welcome from the hosts. In this situation, residents' attitudes and perceptions towards tourists have been recognized as an important factor that impacts the attraction of a destination (Goeldner & Ritchie, 2003). Residents not only play an important role in the tourism industry, but also area component of tourism. The residents help the destination to achieve success if they have a positive attitude towards tourism (Siriporn & Choi, 2010). In tourism development, the destination residents are gradually regarded as the core of the tourism product. People also realize that affection for tourism, no matter positive or negative effects, reflects particularly outstandingly in the destination community (Simmons, 1994). Although there are many kinds of methods to evaluate the social cultural influence of tourism, since the 1970s, the most common empirical method has been to measure residents' perceptions using a quantitative approach (Lawson, Williams, Young, & Cossens, 1998).

According to the American Heritage Dictionary of the English Language (2009), a resident is defined as one who resides in a particular place permanently or for an extended period or as a member of an intelligence-gathering or non-uniformed law enforcement agency who resides in a certain locale. Based on the definition of resident, students who come from mainland China for studying in Macao; housekeepers, who

come from foreign countries; and professors, who come from overseas might be regarded as residents in this study.

Variables affecting residents' perceptions. It is necessary to discuss variables affecting the perceptions of residents. According to Husbands (1989) and Faulkner and Tideswell (1997), educational level is regarded as a feature, which has a significant relationship with residents' perceptions in the developing country. In Husbands' (1989) study about residents' perceptions in Zambia, he claimed that the level of education is the most critical factor which might affect perceptions in tourism. Accordingly, the following hypothesis was formulated based on the previous studies:

H1: Residents with a lower level of education lack an understanding of Macao's street names more than those with a higher level of education.

In addition to the educational level, the economy can be also discussed as a factor because tourism has a direct or indirect influence on enterprises and employment opportunity. A number of studies indicate that residents' perceptions of tourism are largely affected by their personal economic reliance on the tourism industry (Pizam, 1978; Krippendorf, 1987; Prentice, 1993; Lankford & Howard, 1994; Jurowski, Uysal, & Williams, 1997; Wyllie, 1998; Snaith & Haley, 1999). Pizam (1978) recognized that the economic effects of tourism alone do not give a comprehensive vision of the tourism phenomenon. He also found that residents with economic dependence on tourism agreed more with positive statements about it than those without an economic benefit from tourism. For example, residents with an economic reliance on tourism have a strong positive attitude towards tourism (Inbakaran & Jackson, 2006). However, several studies have found no significant difference between residents' perceptions of the tourism industry and their degree of personal economic reliance on tourism (Faulkner & Tideswell, 1997; Cavus & Tanrisevdi, 2003). One possible explanation is based on mature destinations. Faulkner and Tideswell (1997) believed that residents of mature destinations may be more likely to accept tourism as part of the community and as a necessary means of economic development; thus their views are not directly based on their personal stake in tourism. Based on the discussion, the following hypotheses were proposed:

H2: Residents whose work is related to the tourism industry support Macao's street names becoming a tourism attraction more than those who do not.

H3: Residents who are willing to work in tourism related industry support Macao's street names becoming a tourism attraction more than those who are not willing.

Length of residence, another variable, has been investigated for a relationship with residents' perceptions of tourism. Many studies have attempted to determine the influence of length of residence on residents' perceptions of tourism. In the early 1980s, the length of residence was regarded as the major influential variable along with age, tourist pressure, and language (Brougham & Butler, 1981). However, a study in 10 United States rural towns found that the length of residence had negative impacts on residents' perceptions of tourism development (Allen, Hafer, Long, & Perdue, 1993). Similar results came from a study of residents along the Mississippi National River and Recreation Area (Clements, Schultz, & Lime, 1993). Short term residents and long term residents have different perceptions of tourism development (Stynes & Stewart, 1993; Ryan & Montgomery, 1994; Weaver & Lawton, 2001). Stynes and Stewart (1993) indicated that there is a wide difference between newer and longer-term residents. For instance, the former preferred further development for tourism, but the latter were concerned more about the character of the area and the results of such changes. Ryan and Montgomery (1994) reported that residents with shorter residence time in a place are more

enthusiastic about tourism than those with longer length-of-residence. Weaver and Lawton (2001) believed that short term residents more support tourism than long-time residents, and the former would spend more time contacting with tourists. Conversely, there is also a study of natives in the community who were more positive about tourism than new residents (Davis, Allen, & Cosenza, 1988). In summary, Faulkner and Tideswell (1997) explained why this relationship happened based on different views of tourism. According to the authors, new immigrants favored tourism in established destinations because it can offer opportunity for careers, whereas long term residents have to adapt to the pollution or other tourism problems. Therefore, a hypothesis was proposed as follows:

H4: Residents with longer length-of-residence in Macao support Macao's street names becoming a tourism attraction more than those with shorter residence time.

Macao's Street Names

Macao's street names are examples of significant cultural artifacts. There exist three types of street names in Macao with each type reflecting the socio-cultural significance. First, in Macao's traditional Chinese residential districts, traditional Chinese street names and the traditional gateways still survive. Second, at the same time, grand-standing Portuguese style street names can be seen in Macao's public spaces. Macao's emblematic blue-and-white ceramic street names have survived and existed long. The design of these signs might be regarded as art, and is a good example of the confluence of Chinese culture and Portuguese culture. The co-existence of different types of street names in Macao is not only the result of street and circulation regulations, but also is the physical reflection of the socio-political transformations of Macao, namely, the change in sovereignty from Chinese to Portuguese. Third, as a result of the change in political power from Portugal to China in 1999, the design of Macao's bilingual street names has been changing, giving more prominence to Chinese street names.

Macao's street names are distinct with street nameplates composed of eight pieces of equal sized Azuleos (blue and white ceramic tiles) and two completely different languages (Figure 1). This is very different from other cities of China. Macao's street names are an artistic work with rich connotations. They have inherited the romance of the Portuguese culture combined with the Chinese blue and white ceramic art. They also blend the scientific and technological achievements of two different cultures, and different stages of its coming of age show how each culture has learned to live and accommodate the other with respect. Not surprisingly, though its present image is profoundly endowed with artistic quality, the hardware also reflects the unique cultural and social environment of Macao by conveying both Chinese and European qualities. The present appearance should be seen as the result of centuries of socio-cultural development of the Macanese culture.

Most Macao's street names are presented in both Chinese and Portuguese. Trilingual street signs have an argument for presence. Huang (2005) indicated that Chinese, Portuguese, and English street names have met tourists' needs. However, there is a lack of English in Macao. The present study attempts to investigate residents' understanding as well as preference for bilingual or trilingual street names in Macao.

Based on this discussion, the following hypotheses were proposed:

H5: Portuguese residents prefer bilingual (Chinese and Portuguese) Macao's street names more than non-Portuguese residents.

H6: Non-native-born residents prefer trilingual (Chinese, Portuguese, and English) Macao's street names more than native-born residents.



Figure 1. Macao's bilingual street name.

Method

As Lawson et al. (1998) mentioned, the most common empirical method is a quantitative analysis in order to measure residents' perceptions. Accordingly, a face-to-face questionnaire survey was used to collect data from respondents. When selecting Macao's residents, proportionate stratified random sampling based on nationality was adopted. For this study, 400 samples were collected.

A questionnaire survey instrument consisted of two sections. The first section was designed to identify residents' perceptions of Macao's street names in terms of self-knowledge, daily life impacts, tourism development, and language. These items were based on studies by Yan and Lee (2014), and Zhao and Deng (2011). Six questions were generated. Two items (bilingual and trilingual writing) come from Yan and Lee (2014). Four questions were based on Zhao and Deng (2011): One item related to the unique image of Macao's street names; two paid attention to street names in residents' daily lives, and the final two questions asked residents' opinions about Macao's street names becoming a tourism attraction. The second of the two questions were open-ended; it required residents to write down suggestions if they thought that Macao's street names could become a tourism attraction in Macao. The second section of the questionnaire measured some independent: (1) the demographic characteristics, (2) length of residence, and (3) personal economic reliance related to tourism industry.

A pilot survey was conducted in January 2013 to ensure that the questions were comprehensible to respondents before the main survey was performed. The place of this pilot survey was conducted in Macao University of Science and Technology, the Garden of Flower City and St. Anthony's Church, Macao.

The main survey was carried out between 5th of March 2013 and 15th of April 2013. Several main sites were chosen as the interview venues in Macao: Bak Gap Chao Park, Cathedral, Senado Square, Garden of Flower City, St. Anthony's Church, and Macao University of Science and Technology. These places were

chosen because there were so many residents gathering together for sport, singing, dancing, studying, and chat. It was easy to communicate with them about what they think about Macao's street names in these chosen locations. In order to make respondents who have different nationalities understand this questionnaire easily and clearly, three types of questionnaires written in simple Chinese, traditional Chinese, and English were used. Four hundred valid questionnaires were collected with a reliability (Cronbach Alpha: 0.75) and the data were analyzed using SPSS 21.0.

Findings

Profile of Respondents

The demographic characteristics of the respondents are shown in Table 1. The gender distribution of the respondents was not even, with 70% female respondents and 30% male respondents. The dominant age group of the respondents was 18 to 25 years old (39.8%), followed by 26 to 35 years old (22.8%), 36 to 45 years old (18.5%), 56 to 65 years old (6.0%), and over 65 years old (1.5%) comprised the smallest groups.

Table 1

Respondents' Demographic Profile (n = 400)

Variable	Category	Frequency	Percent
Gender	Male	120	30.0
	Female	280	70.0
Age	18-25	159	39.8
	26-35	91	22.8
	36-45	74	18.5
	46-55	46	11.5
	56-65	24	6.0
	Over 65	6	1.5
Nationality	Portuguese	41	10.3
	Macao local Cantonese	197	49.3
	Chinese from mainland	103	25.8
	Filipino	23	5.8
	Vietnamese	11	2.8
	Indonesian	12	3.0
	Others	13	3.3
Native language	Chinese	318	79.5
	English	16	4.0
	Portuguese	22	5.5
	None of the above	44	11.0
Length of the residency	Less than 1 year	51	12.8
	1 year to 10 years	109	27.3
	11 years to 20 years	29	7.3
	21 years to 40 years	163	40.8
	41 years or longer	48	12.0
Marital status	Single	249	62.2
	Married with no child	22	5.5
	Married with children	124	31.0
	Other	5	1.3

Table 1 to be continued

Educational level	Elementary school graduate	6	1.5
	Middle school graduate	33	8.3
	High school graduate	59	14.8
	College degree	49	12.3
	Undergraduate student	92	23.0
	Bachelor degree	143	35.8
	Master degree or higher	18	4.5
Monthly income (MOP)	No income	105	26.3
	Low-income (< 2,000-8,000)	91	22.8
	Middle-income (8,001-50,000)	202	50.5
	High-income (> 50,000)	2	0.5

Nearly half of the respondents (49.3%) reported that they were Macao local Cantonese residents; 25.8% of the respondents were Chinese from mainland China, and 10.3% of respondents were Portuguese. According to the nationality, most of the respondents spoke Chinese as their native language (79.5%), only 4.0% of respondents spoke English, and 5.5% of respondents spoke Portuguese. The number using other languages, as their native language (11%) is higher than those of English and Portuguese.

The largest group (40.8%) of respondents had lived in Macao for 21 years to 40 years, followed by one year to 10 years (27.3%), less than one year (12.8%) and 41 years or longer (12.0%). Only 7.3% of the respondents had lived in Macao for 11 to 20 years. Most of the respondents (62.2%) were single; 31% were married with children, and 5.5% were married with no children. Over one third of the respondents (35.8%) had a bachelor degree, 23% were undergraduate students, and 14.8% of the respondents were high school graduates. Finally, the largest group (50.5%) comprised those with a monthly income of MOP 8,001 to MOP 50,000 (middle-income), followed by no income (26.3%) and less than MOP 2,000 to MOP 8,000 (low income) (22.8%). Only 0.5% of the respondents had a monthly income over MOP 50,000 (high income).

Hypotheses' Tests

The most significant objective of this study is to examine the relationship between residents' perceptions and Macao's street names and to discuss whether Macao's street names can become a tourism attraction. Therefore, several hypotheses were proposed (Table 2) and tested by an independent sample *t*-test or one way ANOVA.

In terms of the effect of educational level on understanding street names, according to the result of post-hoc tests using Bonferroni, residents who are undergraduate students ($M = 3.97$, $SD = 1.010$) tended to understand Chinese street names more than residents who graduated from high school ($M = 3.15$, $SD = 1.201$) (Table 3). In addition, the residents who are undergraduate students ($M = 1.72$, $SD = 0.761$) had a tendency to understand Portuguese street names less than the residents who had a bachelor ($M = 2.41$, $SD = 1.176$) or master ($M = 2.67$, $SD = 1.534$) degree (Table 4).

For Hypothesis 3, there was a significant difference ($p = 0.021$). Residents who are willing to take tourism-related jobs ($M = 3.85$, $SD = 0.827$) tended to support Macao's street names becoming a tourism attraction more than the residents who are not willing to have tourism-related jobs ($M = 3.65$, $SD = 0.876$).

Regarding the effect of length of residency, there existed a significant difference ($p = 0.004$). The result of post-hoc tests using Bonferroni showed that residents with longer length-of-residence in Macao tended to

support Macao's street names becoming a tourism attraction more than those with shorter residence time as shown in Table 5.

Table 2

The Results of the Hypotheses' Tests

Variable	Hypothesis	Results
Educational level	H1: Residents with a lower level of education lack an understanding of Macao's street names more than those with a higher level of education	Supported (Chinese street names: $F = 5.682^*$, $df = 6$; Portuguese street names: $F = 6.207^*$, $df = 6$)
Personal economic reliance on the tourism industry	H2: Residents whose work is related to the tourism industry support Macao's street names becoming a tourism attraction more than those who do not	Not Supported ($T = -0.591^{n.s.}$, $df = 398$)
	H3: Residents who are willing to work in tourism related industry support Macao's street names becoming an attraction more than those who are not willing	Supported ($T = -2.318^{**}$, $df = 398$)
Length-of-residency	H4: Residents with longer length-of-residence in Macao support Macao's street names becoming an attraction more than those with shorter residence time	Supported ($F = 3.852^{**}$, $df = 4$)
Nationality	H5: Portuguese residents prefer bilingual (Chinese and Portuguese) Macao's street names more than non-Portuguese residents	Not Supported ($F = 2.832^{n.s.}$, $df = 6$)
	H6: Non-native-born residents prefer trilingual (Chinese, Portuguese, and English) Macao's street names more than native-born residents	Supported ($F = 5.998^*$, $df = 6$)

Notes. n.s.: not significant; * Significant at $p < 0.001$; ** Significant at $p < 0.05$.

Table 3

The Effect of Educational Level on the Understanding of Chinese Street Names

Educational level	N	Mean	Std. deviation	T	df	p
Elementary school graduate	6	4.33	1.211	5.682	6	< 0.001
Middle school graduate	33	3.33	1.242			
High school graduate	59	3.15	1.201			
College degree	49	3.18	1.167			
Undergraduate student	92	3.97	1.010			
Bachelor degree	143	3.57	1.031			
Master degree or higher	18	3.06	1.259			
Total	400	3.52	1.139			

Table 4

The Effect of Educational Level on the Understanding of Portuguese Street Names

Educational level	N	Mean	Std. deviation	T	df	p
Elementary school graduate	6	3.00	1.549	6.207	6	< 0.001
Middle school graduate	33	2.61	1.197			
High school graduate	59	2.36	1.030			
College degree	49	2.53	1.082			
Undergraduate student	92	1.72	0.761			
Bachelor degree	143	2.41	1.176			
Master degree or higher	18	2.67	1.534			
Total	400	2.29	1.129			

Table 5

The Effect of Length of Residency on Supporting Macao's Street Names Becoming an Attraction

Length of residency	N	Mean	Std. deviation	T	df	p
Less than 1 year	51	1.24	0.428	3.852	4	< 0.05
1 year to 10 years	109	1.27	0.444			
11 years to 20 years	29	1.48	0.509			
21 years to 40 years	163	1.55	0.897			
41 years or longer	48	1.44	0.501			
Total	400	1.41	0.684			

Table 6

Preference of the Bilingual (Chinese and Portuguese) Street Names in Macao

Nationality	N	Mean	Std. deviation	T	df	p
Portuguese	41	3.93	1.127	2.832	6	n.s.
Macao local resident	197	3.67	0.838			
Chinese from Mainland	103	3.75	0.813			
Filipino	23	3.26	1.096			
Vietnamese	11	3.09	0.831			
Indonesian	12	3.25	0.622			
Others	13	3.69	0.751			
Total	400	3.67	0.886			

Note. n.s.: not significant.

As for the preference of bilingual street names, the result of one way ANOVA provided substantial evidence of one significant difference ($F = 2.832$, $df = 6$, $Sig. = 0.010$) in terms of the preference of bilingual street names among the residents who have different nationality. However, it is worthy to note that there was no significant difference among the residents who have different nationalities based on the post-hoc tests using Bonferroni.

With regard to Hypothesis 6, there was a significant difference ($p < 0.001$). After post-hoc tests using Bonferroni, Cantonese residents and mainland Chinese residents showed significant differences in preference for trilingual Macao's street names. Macao local Cantonese residents and Indonesians also showed significant differences in their preference for trilingual Macao's street names. For instance, mainland Chinese residents ($M = 4.00$, $SD = 0.950$) and Indonesian residents ($M = 4.42$, $SD = 0.515$) tended to prefer the trilingual Macao's street names more than Macao local Cantonese residents ($M = 3.47$, $SD = 0.993$).

Discussion

This study investigated residents' perceptions of Macao's street names. Residents' understanding and perceptions of Macao's street names were identified. Whether Macao's street names can become a tourism attraction was discussed.

Based on the results of this study, the variable of educational level tends to have statistically significant relationships with residents' perceptions. Macao's residents have an inclination to understand bilingual street names as their academic attainments. Especially, residents with a higher educational level might have a tendency to understand the meaning of Portuguese street names more than those with a lower level.

The length-of-residence had been regarded as the major influential variable in the early of 1980s

(Brougham & Butler, 1981). The variable of length-of-residence affects residents' perceptions of the Macao's street names. Most of the residents, new immigrants, or long-time residents were closely related to the tourism industry in Macao. However, in particular, residents with longer length-of-residence tend to recognize that Macao's street names were a part of the development that can strengthen Macao's diversified cultural characteristics.

In terms of the language of street names, Macao's residents tend to know the meaning of Chinese street names better than Portuguese and English ones. This is highly related to their nationality. As the demographic data showed, 49.3% of respondents were Macao local Cantonese residents and 25.8% of respondents were from mainland China. From this point of view, Chinese street names help them get geographical information as well as explore the city more easily. However, Portuguese street names, which are also written on the street name-plates, might merely present the cultural value of the harmony of two different cultures. It is worthy to note that a slightly higher proportion of residents preferred trilingual street names than those favoring bilingual street names. Besides Macao local Cantonese residents, mainland Chinese residents, and native-born Portuguese, there are many foreign residents who immigrated to Macao for working, such as Filipino, Vietnamese, Indonesian, and western countries residents. All these immigrants use English as their communicative language in Macao, so bilingual street names cannot satisfy their needs. This explains the necessity of designing trilingual street names including English. According to Yan and Lee (2014), tourists also prefer trilingual street names and signs because trilingual street names and signs might help them better identify every street and thus stimulate their desire to visit Macao. Briefly, trilingual street names might satisfy both residents' and tourists' needs. Genuinely, it would be much better if the street names are presented by a language that they are familiar with. Although most respondents chose trilingual street names, different groups of respondents had different concerns. Macao local Cantonese residents and residents from mainland China viewed this issue very differently. Mainland Chinese residents ($M = 4.00$, $SD = 0.950$) are more willing to accept trilingual street names than Macao local Cantonese residents ($M = 3.47$, $SD = 0.993$). This can be explained by the fact that some mainland Chinese residents had just moved to Macao for working or studying; they were not born in Macao thus regarded as new immigrants. Ryan and Montgomery (1994) reported that residents who have lived in a place for a short period tended to be more enthusiastic about tourism. On one hand, these residents from mainland China may have a more positive attitude toward supporting the Macao's tourism industry and therefore chose trilingual street names that meet tourists' requirements. On the other hand, the proportion of Macao local Cantonese residents who prefer a trilingual street name is less than that of Indonesians. Indonesian residents ($M = 4.42$, $SD = 0.515$) are more willing to accept trilingual street names than Macao local Cantonese residents ($M = 3.47$, $SD = 0.993$). This can be explained by the high rate of the popularization of English in Indonesia; almost every Indonesian in Macao can speak or read English. As a result, it is not surprising to find that Indonesian residents prefer trilingual street names greatly.

As many scholars mentioned, personal economic reliance on the tourism industry is an important variable that affects residents' perceptions directly. Even though hypothesis 2 is not supported by the findings, Macao's residents who are willing to take tourism-related jobs have a tendency to support Macao's street names to be a tourism attraction, supporting the study of Pizam (1978) where residents with economic dependence on tourism have a positive image on tourism more than those without an economic benefit. As a part of tourism development in Macao, Macao's street names might help play a major innovative role. However, the major possibility might be tourism development having positive perceived economic impacts. Accordingly, residents'

attitudes toward tourism development by street names might appear to depend on the perception by the perceiver of the benefits and costs.

As mentioned above, trilingual street names are preferred by residents for their better understanding and getting geography information. It is like a tendency that trilingual street names may be popular among residents, no matter how long they live in Macao. However, based on the data from this study, bilingual language is one of the characteristic features that reveal the unique of Macao's street names. Therefore, it still needs to argue whether Macao's bilingual street names have to be changed or not.

Conclusion

In conclusion, this study provided a general picture of residents' perceptions of Macao's street names and analyzed several variables affecting residents' perceptions. However, there are several limitations. Firstly, the attributes chosen as independent variables could be limited because other attributes not used in this study could impact residents' perceptions. Secondly, the population sample obtained for the survey instrument presented some challenges because of insufficient information. This limitation might result from the one-time measurement for data collection, a limited questionnaire, and the timing of the survey. Thirdly, this study did not conduct post evaluation of the attributes; respondents may not have provided answers in a very similar way to their perceptions, thus making distinctions. Nevertheless, it is hoped that such limitations could suggest and encourage additional research directions and guidelines for future study.

References

- Allen, L. R., Hafer, H. R., Long, P. T., & Perdue, R. R. (1993). Rural residents attitudes toward recreation and tourism development. *Journal of Travel Research*, 31(4), 27-33.
- Andriotis, K. (2004). The perceived impact of tourism development by Cretan residents. *Tourism and Hospitality Planning and Development*, 1(2), 123-144.
- Andriotis, K. (2005). Community groups' perceptions of and preferences for tourism development: Evidence from Crete. *Journal of Hospitality and Tourism Research*, 29(1), 67-90.
- Ap, J. (1992). Residents' perception on tourism impacts. *Annals of Tourism Research*, 19(4), 665-690.
- Brougham, J., & Butler, R. W. (1981). A segmentation analysis of resident attitudes to the social impact of tourism. *Annals of Tourism Research*, 8(4), 569-590.
- Cavus, S., & Tanrisevdi, A. (2003). Residents' attitudes toward tourism development: A case study in Kusadasi, Turkey. *Tourism Analysis*, 7(3-4), 259-269.
- Clements, C., Schultz, J., & Lime, D. (1993). Recreation, tourism, and the local residents: Partnership or co-existence? *Journal of Park and Recreation Administration*, (11), 78-91.
- Davis, D., Allen, J., & Cosenza, R. M. (1988). Segmenting local residents by their attitudes, interests and opinions toward tourism. *Journal of Travel Research*, 27(2), 2-8.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Fort Worth, TX: Harcourt Brace Jovanovich.
- Faulkner, B., & Tideswell, C. (1997). A framework for monitoring community impacts of tourism. *Journal of Sustainable Tourism*, 5(1), 3-28.
- Fredline, E., & Faulkner, B. (2000). Host community reactions: A cluster analysis. *Annals of Tourism Research*, 27(3), 763-784.
- Goeldner, C., & Ritchie, J. R. B. (2003). *Tourism: Principle, practices, philosophies* (9th ed.). New York: Wiley.
- Gursoy, D., Jurowski, C., & Uysal, M. (2002). Resident attitudes—A structural modeling approach. *Annals of Tourism Research*, 29(1), 79-105.
- Gursoy, D., & Rutherford, D. G. (2004). Host attitudes toward tourism—An improved structural model. *Annals of Tourism Research*, 31(3), 495-516.
- Hamira, Z. F., & Ghazali, M. (2012). The relationship between Islamic religiosity and residents' perceptions of socio-cultural impacts of tourism in Iran: Case studies of Sare'in and Masooleh. *Tourism Management*, 33(4), 802-814.

- Haywood, K. M. (2000). Responsible and responsive tourism planning in the community. In C. Ryan and S. Page (Eds.), *Tourism management: Towards the new millennium*. Oxford, UK: Elsevier Science Ltd.
- Huang, D. Z., & Huang, F. C. (2009). A study on the effect of Mainland residents visiting Taiwan: Based on the visual perceptions of Taiwan residents. *Tourism Science*, 23(3), 48-54.
- Huang, Y. (2005). The linguistic status quo and language planning in Macao. Unpublished doctoral thesis, Beijing Language and Culture University.
- Husbands, W. (1989). social status and perception of tourism in Zambia. *Annals of Tourism Research*, 16(2), 237-253.
- Inbakaran, R., & Jackson, M. (2006). Resident attitudes inside Victoria's tourism product regions: A cluster analysis. *Journal of Hospitality and Tourism Management*, 13(1), 59-74.
- Jandt, F. (2004). *An introduction to intercultural communication: Identities in a global community* (4th ed.). London: Sage Publications.
- Jones, E. E. (1990). *Interpersonal perception*. New York: W. H. Freeman and Company.
- Jurowski, C., Uysal, M., & Williams, R. (1997). A theoretical analysis of host community resident reactions to tourism. *Journal of Travel Research*, 36(1), 3-11.
- Ko, D. W., & Stewart, W. P. (2002). A structural equation model of residents' attitudes for tourism development. *Tourism Management*, 23(23), 521-530.
- Krippendorff, J. (1987). *The holiday makers: Understanding the impact of leisure and travel*. England, London: Heinemann.
- Lankford, S. V., & Howard, D. R. (1994). Developing a tourism impact attitude scale. *Annals of Tourism Research*, 21(1), 121-139.
- Lawson, R. W., Williams, J., Young, T., & Cossens, J. (1998). A comparison of residents' attitudes towards tourism in 10 New Zealand destinations. *Tourism Management*, 19(3), 247-256.
- Lim, S. B. (1995). *Environmental psychology and behavior*. Seoul: Bosungmunwhasa.
- Mason, P., & Cheyne, J. (2000). Residents' attitudes to proposed tourism development. *Annals of Tourism Research*, 27(2), 391-411.
- Mayo, E. J., & Jarvis, L. P. (1981). *The psychology of leisure travel*. Massachusetts, MA: CBI Publishing Company, Inc.
- Pizam, A. (1978). Tourism's impacts: The social costs to the destination community as perceived by its residents. *Journal of Travel Research*, 16(1), 8-12.
- Prentice, R. (1993). Community-driven tourism planning and residents' preferences. *Tourism Management*, 14(3), 218-227.
- Robbins, S. P. (1993). *Organizational behavior*. N. J.: Prentice-Hall Inc.
- Ryan, C., & Montgomery, D. (1994). The attitudes of Bakewell residents to tourism and numbers in community responsive tourism. *Tourism Management*, 15(5), 358-369.
- Ryan, C., Scotland, A., & Montgomery, D. (1998). Resident attitudes to tourism development: A comparative study between the Rangitikei, NZ and Bakewell, UK. *Progress in Tourism and Hospitality Research*, 4(2), 115-130.
- Sheldon, P. J., & Abenoja, T. (2001). Resident attitudes in a mature destination: The case of Waikiki. *Tourism Management*, 22(5), 435-443.
- Shiraev, E., & Levy, D. (2004). *Cross-cultural psychology: Critical thinking and contemporary applications*. New York: Pearson Education.
- Simmons, D. G. (1994). Community participation in tourism planning. *Tourism Management*, 15(2), 98-108.
- Siriporn, M. D., & Choi, Y. (2010). A comparative analysis of Thailand residents' perception of tourism's impacts. *Journal of Quality Assurance in Hospitality and Tourism*, 11(1), 36-55.
- Snaith, T., & Haley, A. (1999). Residents' opinions of tourism development in the historic city of York, England. *Tourism Management*, 20(1), 595-603.
- Stynes, D., & Stewart, S. (1993). Tourism development and recreation: Some findings from a case study. *Journal of Parks and Recreation Administration*, 11(4), 30-44.
- Sylvester, Y., & Cherry, L. (2007). Perception and attitude of Hong Kong hotel guest-contact employees towards tourist from Mainland China. *International Journal of Tourism Research*, 9(9), 395-407.
- Teye, V., Senmez, S. F., & Sirakaya, E. (2002). Residents' attitudes toward tourism development. *Annals of Tourism Research*, 29(3), 668-688.
- The American Heritage Dictionary of the English Language (4th ed.). (2009). Print and CD-ROM Edition.
- Weaver, D. B., & Lawton, L. J. (2001). Resident perceptions in the urban-rural fringe. *Annals of Tourism Research*, 28(2), 439-458.

- Wyllie, R. W. (1998). Development and controversy in a Hawaiian tourism community. *Tourism Management*, 19(2), 171-178.
- Yan, L., & Lee, M. Y. (2014). Tourist perceptions of the multi-linguistic landscape in Macau. *Journal of China Tourism Research*, 10(4), 432-447.
- Zhao, W. B., & Deng, Y. H. (2011). *About some thinkings of construction of a world leisure tourism center in Macao*. Macao: Macao Economic Society (in Chinese).