

## Typology of Gaming Tourists Based on the Perception of Destination Image

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### Abstract

This study investigated the perception of gaming tourists toward Macau and developed a typology of gaming tourists. The 1,497 responses from tourists in Macau were collected through convenience sampling method. The dimensions of multi-culture, convenience, economy, gaming, and unsafety, were subsequently extracted as the factors of perception of gaming tourists in Macau. Cluster analysis was performed using the delineated factors (perception of tourists on Macau). Four heterogenous groups were generated, namely, gaming lovers (n=467, 31.2%), exotic lovers (n=509, 34.0%), reasonable budget seekers (n=269, 18.0%), and convenience seekers (n=252, 16.8%). Further analysis was performed to investigate any difference in gaming behavior and tourist activities. The findings are expected to contribute to the efforts of destination marketing organizations (DMOs) in establishing effective business strategies, provide a profile of gaming tourists in certain market segments, and assist DMOs and casino managers in establishing more effective marketing strategies for target markets.

**Keywords:** Gaming tourists; Destination image; Segmentation; Macau

### Introduction

Macau, the so-called Las Vegas of Asia, is booming because of the casino business. According to the Macau Government Tourist Office (MGTO), visitor arrivals reached 29,324,822 in 2013, showing a 4.4% growth rate compared with that in 2012. The total visitor expenditures demonstrated a continuous increase from 2008 to 2013. In 2013, visitor expenditures reached US\$ 53.2 billion. Compared with that in 2012, 2013 has shown a more remarkable growth, as evidenced by a 12.1% real growth rate (2012 to 2013). Specifically, visitors spent most of their money amounting to US\$ 46.2 billion on gaming [1]. Gaming tourism has become the biggest source of revenue in Macau, contributing approximately 50% of revenue to the economy. Most visitors are from Mainland China and Hong Kong. The two largest markets accounted for 86.6% of visitor arrivals in 2013 [1]. The success of gaming tourism in Macau is attributed to the provisions of legislation. Macau is the only legal destination for casino gaming in China. Furthermore, the liberalization of casino regulations and the visa-free entry to Macau (five days for transit) has made the place more accessible to Mainland Chinese. Ultimately, these factors contributed to the casino revenue in Macau.

Meanwhile, competitors in the emerging casino market in Asia have rapidly grown in number. Among the representative emerging casino destinations is Singapore. Since Singapore opened its casino business in 2010 [2], it has exhibited stable growth. In 2013, two casinos in Singapore (i.e., The Marina Bay Sands and the Genting Group's Resorts World Sentosa) generated US\$ 6 billion in gaming revenue [2]. This figure implies an increase of 3.8% in the gaming revenue of the casino business in Singapore compared with that in 2012 [2]. Although the casino business in Singapore is still far behind that of Macau, the figure is enough to prove Singapore's growth. Furthermore, Korea and Japan favor the establishment of a casino complex as a new source of revenue [3]. In summary, the gaming business is becoming fierce. Hence, maintaining gaming tourist arrivals and attracting new markets are necessary.

Destination marketing organizations (DMOs) have sought to capture the needs of gaming tourists by combining tourist acquisition

and retention strategies [4]. This approach includes targeting proper market segments with tailored marketing strategies [4]. Investigating the characteristics of the target segments, their interaction, and their use of other tourism products is crucial. The results of the investigation will allow DMOs and local business practitioners to tailor marketing and sales promotions to attract tourists [5]. Consequently, the length of stay and expenditures of tourists will be positively affected. In the academia, scholars have shown considerable interest in market segmentation research. Moufakkir, Singh, and Moufakkir-van der Woud [6] argued that tourists are not homogeneous; instead, they can be differentiated based on characteristics, needs, and preferences. Accordingly, various attempts have been made to classify gaming tourists by several methods, including motivation and socio-demographics [5,7,8]. However, research gaps have remained. First, segmentation studies targeting gaming tourists are scarce. The gaming tourist and the casino game visitor are different concepts in terms of scope. Gaming tourists are those whose primary purpose is gaming, whereas casino visitors include local residents and tourists with different purposes. Despite the differences in terms of scope, studies on segmentation mainly focused on developing a typology for casino visitors [5-11]. Hence, these studies provided limited implications and failed to explain the phenomenon of gaming tourists and other tourist activities. Second, research on the segmentation of gaming tourists based on their perception of the destination image is limited. Previous studies have mainly used socio-demographics and trip motivation [5,7,8] to classify gaming tourists. The effects of positive destination images have been emphasized in various studies. Chen and Tsai [12]

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highlighted the role of destination image and evaluated the favorable relationship among destination image, behavioral intent, and revisit intention. Although gaming tourists visit a destination mainly to go to the casino, they explore the destination by participating in sightseeing, shopping, dining, and watching paid or unpaid shows. The findings of MGTO [1] on the expenditures of tourists on the categories enhanced the above-mentioned argument, implying that the destination itself affects the decision-making processes of gaming tourists. Last, only limited characteristics of gaming tourists are compared among identified groups. Behavioral intentions including trip satisfaction, recommendation intent, and revisit intention have not been compared despite the relevance of such comparison to the increase in the length of stay and expenditures of tourists on gaming and non-gaming activities.

To fill the research gaps, the current study develops a typology of gaming tourists based on their perception of a destination in Macau. More specifically, three objectives are pursued: (1) to investigate the underlying perception of a destination held by gaming tourists in Macau, (2) to classify gaming tourists based on the delineated perception factors, and (3) to compare any differences regarding socio-demographics and behavioral intentions (i.e., gaming satisfaction, restaurant satisfaction, shopping satisfaction, overall trip satisfaction, recommendation intention, and revisit intention) among heterogeneous groups. The findings are expected to contribute to the effort of DMOs in establishing effective business strategies, provide a profile of gaming tourists in certain market segments, and assist DMOs and casino managers in establishing more effective marketing strategies for target markets.

## Literature Review

### Segmenting gaming tourists

Understanding the subcategories of customers enables practitioners to tailor customer needs [13]. The importance of segmentation has been highlighted by many scholars. Kim et al. [13] and Dolnicar, et al. [14] asserted that segmentation helps companies to develop proper merchandise that can fulfill customer expectations. In the research on the hospitality and tourism industry, Mumuni and Mansour [15] and Li, Meng, Uysal, and Mihalik [16] stressed that segmentation helps marketers to allocate resources to retain and attract profitable sectors. Moufakkir et al. [6] explained that the optimal marketing mix can be formulated by adhering to the idea that consumers are not homogenous in terms of market segmentation. Thus, research on the classification of gaming tourists is extremely necessary. By using research findings to determine satisfaction, recommendation intent, and revisit intent among tourist groups according to their perception of a destination, DMOs can maximize gaming tourist arrivals.

Research on the segmentation of gaming tourists or visitors has been conducted significantly in the tourism and hospitality industry. Hong and Jang [9] attempted to classify casino visitors according to the theory of planned behavior (TPB) by conducting a study in a newly established casino in South Korea. Specifically, attitudes toward behavior, subjective norm, and perceived behavioral control were investigated. Three clusters were generated, namely, visited group, intention group, and no intention group. The study has significant and practical implications because it attempted to segment respondents based on TPB. However, further analysis has not been conducted to differentiate additional behaviors of casino visitors among clusters.

Similarly, Lee et al. [5] classified casino visitors in Korea. The target was limited to local visitors. Casino motivation (i.e., socialization and

learning, challenge, and escape) was used as a segmentation variable. The cluster analysis identified four groups (i.e., challenge and winning seekers, only-winning seekers, light gambling seekers, and multipurpose seekers). The results of a chi-square test revealed significant differences with regard to length of time, preferred game, amount of betting, and other socio-demographic information among clusters. The results showed that multi-purpose seekers are skewed toward males, tend to spend more than \$8,333 on betting, and have an educational level that is relatively higher than the other groups. Compared with only-winning seekers, multi-purpose seekers spend more money on betting and are relatively young. In addition, these groups differ in terms of the main purpose of visiting the casino, indicating critical implications to practitioners. The authors ultimately proposed that DMOs should consider establishing more entertaining environments for potential casino visitors. Moufakkir et al. [6] segmented casino visitors based on the amount of non-gaming expenditures in the US. Non-gaming expenditures included lodging, food and beverage (inside the casino), food and beverage (outside the casino), gasoline, other expenses, and local transportation. Three groups (light, medium, and heavy spenders) were identified. Subsequently, a couple of chi-square tests were conducted. The findings indicated that heavy spenders stay longer and spend more money on shopping, sports events, and other activities. The authors suggested that the heavy spender group actively participates in non-gaming activities in the destination, which implies that the heavy spender group is a valuable market segment for casino resorts. More importantly, the group would enhance the prosperity of the economic contribution to the totality of a destination's recreational offerings.

Meanwhile, Chen, Shoemaker, and Zemke [17] specifically classified slot machine players in the US based on motivation. Five major factors of motivation (i.e., ego-driven, learning and evaluating, relaxation, financial rewards, and excitement) were extracted from factor analysis. These factors showed similarities with those identified by the previous research of Lee et al. [5]. After factor and cluster analyses, four groups were identified, namely, utilitarian gaming seekers, excitement gambling seekers, multipurpose gambling seekers, and relaxation gambling seekers. Subsequently, the authors evaluated their differences in terms of the demographics and gaming behavior among groups. The findings revealed that only gender and income are significantly different among groups at the 5% level. With regard to gaming behavior, multipurpose gambling seekers actively participated in every slot machine game. The findings are fruitful not only because no study has specifically targeted slot machine players, but also because the results clarified that Americans enjoy slot machines as much as other recreational activities that they engage. However, the study failed to specify other tourism activities outside the casino.

In previous studies, researchers have attempted to classify casino visitors by several methods (e.g., socio-demographic information, motivation, amount of non-gaming activities, and other methods). From a business research perspective, the above-mentioned methods are undoubtedly critical in understanding the needs of the customer [18]. However, as the composition of casino visitors is diverse, the need for variations in the methods becomes apparent. Scholars have pointed out that casino visitors actively participate in other recreational activities (e.g., sightseeing, shopping, dining, and other activities); thus, they do not only focus on casino gaming in the destination. This finding implies that the perception of gaming tourists on the destination image may affect their decision-making processes. In other words, potential gaming tourists consider whether a destination has rich tourism resources. Hence, the investigation on the perception of destination image by gaming tourists should be a priority. Despite the

importance of the destination image perceived by gaming tourists, no study has been conducted to segment gaming tourists according to their perception of the destination image.

### Perception of the destination image

A destination image is the overall impression of a destination in the hospitality and tourism industry [19]. A destination image refers to “the sum of beliefs, ideas, and impressions that a person has of a destination” [20]. Gartner [21] argued that destination images are formed based on the information processed from various sources over time. The model of Baloglu and McCleary [22] demonstrates two aspects of destination images, namely, cognitive and affective. This model has been used to understand destination images in hospitality and tourism studies. According to Baloglu and McCleary [22], a cognitive image refers to the beliefs and knowledge of tourists on the destination’s attributes, and an affective image deals with emotions or feelings perceived from the destination. The effects of positive destination images have been emphasized in various studies. Chen and Tsai [12] emphasized the role of a destination image and evaluated the favorable relationship among the destination image, behavioral intent, and revisit intention. Chen and Kerstetter [23] asserted that a positive destination image perceived by potential tourists affects their decision-making processes. Prayag and Ryan [24] identified the antecedents of tourist loyalty. Specifically, they investigated the role and influence of destination image, place attachment, personal involvement, and satisfaction. Their findings revealed that destination image is a key factor that contributes to tourist loyalty. Milman and Pizam [25] indicated that tourists exhibit a tendency to revisit a destination if it matches their post-visit perceptions. Hence, the perception of tourists on the destination image is the key indicator of their loyalty to a destination. The findings of the current study on a typology of gaming tourists according to their perception of Macau provide significant implications for DMOs. Specifically, the findings may help DMOs establish effective marketing strategies for different clusters of gaming tourists.

## Methodology

### Sample

The current study aims to develop a typology of gaming tourists according to their perception of Macau. Hence, the proper target respondents must be determined. As described in existing studies, the most widely accepted definition of gaming tourists is individuals who visit destinations with the purpose of gaming [26]. Gaming tourists differ from casino visitors, who visit casinos during their trip. Casino visitors have diverse travel purposes, such as visiting tourist attractions, shopping, and visiting friends and relatives, whereas gaming tourists mainly visit a destination to play casino games. Two screening questions (in terms of age and purpose of travel) were presented in the questionnaire. The first screening question asked whether the respondents are tourists in Macau and whether they are 18 years old or above. This question can be answered by “yes” or “no.” The second question asked the respondents to indicate the primary purpose of their trip to Macau. Twelve options [i.e., gaming, touring around casinos, visiting friends and relatives, dining, shopping, attending meetings or conferences, attending exhibitions, attending to a business purpose (except meeting, conference, and exhibition), watching shows, visiting tourist attractions, and taking transit] were provided [1]. Respondents who checked “gaming” were regarded as gaming tourists.

### Instruments

The current study employed a quantitative method. The

questionnaire consisted of five parts: perception of tourists on Macau, gaming behavior, tourist activities, overall evaluation, and demographic information. Part 1 presented the perception of tourists on Macau. Eighteen measurement items for this aspect were obtained from in-depth personal and focused group interviews. Nine interviewees who are practitioners in the hospitality and tourism industries and the MGTO were invited. Later, focus group interviews were conducted on two groups of tourists from Mainland China (n=14) and Hong Kong (n=18). The items asked include the following: “Macau is a world-class tourism and leisure center,” “Macau is a unique travel destination,” “Macau has attractive casinos,” “Macau has a sufficient number of good restaurants,” “Macau does not have enough high-quality hotels,” “Macau is very cosmopolitan,” “Macau has a good mixture of Chinese and European culture,” “Macau has hospitable and friendly people,” “Macau offers a unique shopping experience,” “Macau has good nightlife and entertainment (bars, clubs, dancing),” “Macau has readily available tourist information,” “Transportation to Macau is easy,” “Finding your way around in Macau is easy,” “Macau is a travel destination that I can afford,” “Macau provides good value for my holiday budget,” and “Macau is a great short-vacation destination.” The respondents were asked to indicate their level of agreement with each item by using a five-point Likert-type scale (1=strongly disagree and 5=strongly agree).

Part 2 presents gaming behavior, including the decision maker of the trip, travel plans to other cities after the trip, participation in gaming, participation in casino tours, previous gaming experience outside Macau, membership to a casino in Macau, and gaming results. Part 3 presents tourist activities, which include restaurant dining, shopping, paid show viewing (inside a casino), free show viewing (inside a casino), and exploring tourist attractions. The items in Parts 2 and 3 were derived from a study on the profile of Las Vegas visitors [27]. The respondents were asked to indicate their opinion by selecting from three options (no, undertaken, and will undertake). In part 4, trip evaluation was implemented according to trip satisfaction, recommendation intention, and revisit intention. The items were obtained from Atlantic City’s visitor profile [28] and MGTO [29]. The respondents were asked to indicate their level of agreement with each item by using a five-point Likert-type scale (1=strongly disagree and 5=strongly agree). Demographic information was obtained at the end of the survey.

### Data collection and procedure

Data were collected through the convenience sampling method. Street intercept interviews were conducted in the four major departure terminals of Macau, namely, Macau Hong Kong Ferry Terminal, Taipa Ferry Terminal, Macau International Airport, and Border Gate of Macau. The total number of questionnaires collected was 18,760. After data screening, 10,590 questionnaires were retained. Among the 10,590 responses, 1,497 satisfied the criteria of gaming tourists. Hence, the 1,497 responses were used for further data analysis.

### Data analysis

IBM SPSS Statistics 20.0 was employed for data analysis. Descriptive analysis was applied to determine the respondents’ profiles. Factor analysis was performed to reduce measurement items related to the perception of tourists on Macau. Cluster analysis was then conducted to classify gaming tourists based on the central factors identified from factor analysis. Discriminant analysis was performed to validate the previous analysis by identifying whether the clusters were classified appropriately. Chi-square test and analysis of variance (ANOVA)

were performed to compare the differences of clusters in terms of demographics and tourist intention.

## Findings

### Respondents' background information

Table 1 shows that 77.2% (n=1,155) of the 1,497 respondents are males, and the remaining 22.8% (n=342) are females. More than

	Frequency	Percentage (%)
<b>Gender</b>		
Male	1,155	77.2
Female	342	22.8
<b>Age</b>		
18-19	3	0.2
20-24	54	3.6
25-29	225	15.0
30-34	315	21.0
35-39	252	16.8
40-44	272	18.2
45-49	128	8.6
50-54	94	6.3
55-59	39	2.6
60-64	42	2.8
65-69	21	1.4
70 or above	52	3.5
<b>Highest education level completed</b>		
Pre-primary	1	0.1
Primary Education	18	1.2
2 <sup>nd</sup> Education (Junior)	145	9.7
2 <sup>nd</sup> Education (Senior)	512	34.2
Tertiary Education	772	51.6
Others	4	0.3
Refused to answer	45	3.0
<b>Marriage status</b>		
Married	1,023	68.3
Single	405	27.1
Separated/Divorced	27	1.8
Widowed	2	0.1
Refused to answer	40	2.7
<b>Nationality</b>		
Mainland China	844	56.4
Hong Kong, SAR	548	36.6
Taiwan	52	3.5
Others	53	3.5
<b>Occupation</b>		
Legislators/Senior Officials and Managers	485	32.4
Professional	146	9.8
Technicians and Associate Professionals	133	8.9
Clerks	70	4.7
Service and Sales Workers	203	13.6
Agriculture and Fishery Workers	4	0.3
Craftsmen and Similar Workers	17	1.1
Plant and Machine Operators, Drivers and Assemblers	72	4.8
Unskilled Workers	22	1.5
Student	21	1.4
Retired	64	4.3
Housewife	63	4.2
Unemployed	50	3.3
Others	147	9.8

**Table 1:** Respondents' background information (N=1,497).

80% of the respondents (81.2%, n=1,215) are above 30 years old. The numbers of respondents aged 30–39, 40–49, 50–59, 60–69, and 70 or above are 567 (37.8%), 400 (26.8%), 133 (8.9%), 63 (4.2%), and 6 (0.4%), respectively. Almost half of the respondents completed secondary education or lower (45.2%, n=676), and 772 respondents (51.6%) completed tertiary education. A total of 1,023 respondents (68.3%) are married, and the remaining respondents (31.7%, n=474) are single, separated or divorced, widowed, or refused to answer. With regard to nationality, more than half of the respondents are from Mainland China (56.4%, n=844). The second largest proportion of the respondents are from Hong Kong, SAR (36.6%, n=548). Lastly, 32.4% of the respondents (n=485) are legislators, senior officials, or managers, and 13.6% (n=203) are service and sales workers.

### Principal component analysis

Prior to cluster analysis, factor analysis was conducted to reduce the dimension of the perception of tourists on Macau. Principal component analysis (PCA) was performed on the 18 items with orthogonal rotation (varimax). As an extraction method, PCA is generally employed to identify the principal directions in which data vary [30]. The Kaise–Meyer–Olkin (KMO) measure was used to verify the sampling adequacy for the analysis. As shown in Table 2, the KMO is 0.844, which is higher than the cut-off point of 0.6 recommended by Field [31]. According to Field [31], 0.844 is regarded as “superb.” Bartlett’s test of sphericity [ $\chi^2(153)=6235.501, p<0.001$ ] revealed that the correlations among the 18 items are adequate for PCA. An initial analysis was conducted to obtain the eigenvalues for each component in the data. Five components presented eigenvalues higher than Kaiser’s criterion of 1 (i.e., 2.913, 2.095, 1.924, 1.770, and 1.308), and the total variance explained was 55.601%. The factor loadings of all relevant variables in the rotated factor matrix were related to only one factor each. Most factor loadings were higher than the cutoff point of 0.4 established by Hair, Black, Babin, Anderson, and Tatham [32]; however, three items (i.e., good nightlife, good for short vacation, and restaurant) achieved 0.390, 0.250, and 0.356, respectively. These items were deleted accordingly. The Cronbach’s  $\alpha$  for the five factors ranged from 0.427 to 0.812. Although factors 4 and 5 showed relatively low reliability, the Cronbach’s  $\alpha$  of all items was 0.747, which is higher than the cutoff point of 0.7 (Table 2).

Factor 1 exhibited the highest variance (16.181%), with a reliability coefficient of 0.751 in the data. This factor comprises five items (i.e., interesting cultural and historical attractions, cosmopolitan, good mixture of Chinese and European culture, hospitable and friendly people, and unique shopping experience). The relatively large proportion of the total variance for factor 1 leads to the conclusion that “multi-culture” is a central distinguishing theme among gaming tourists. In particular, “interesting cultural and historical attractions,” “cosmopolitan,” and “a good mixture of Chinese and European culture” presented relatively high factor loadings. Factor 1 was accordingly regarded as “multi-culture.” Factor 2 exhibited the second largest variance (11.637%), with a reliability coefficient of 0.644 in the data. Factor 2 includes three items (i.e., convenient transportation, clear direction, and readily available tourist information). These items represent “convenience” for gaming tourists, and factor 2 was accordingly called as such. Factor 3, which explains 10.686% of the variance in the data, was given the term “economy.” Factor 3 includes two items (i.e., a travel destination that I can afford and good value for money) with relatively high factor loadings (i.e., 0.870 and 0.859, respectively). These items highlight the cost-effective aspects for the perception of tourists on Macau. Therefore, factor 3 was regarded as

Factor	Factor loading	Eigen-value	Variance explained	Cronbach's $\alpha$	Mean	S.D.
Factor 1: Multi culture		2.913	16.181	0.751	3.556	0.592
Has interesting cultural and historical attractions	0.774				3.55	0.845
Is very cosmopolitan	0.722				3.38	0.912
Has a good mixture of Chinese and European culture	0.719				3.72	0.723
Has hospitable and friendly people	0.580				3.68	0.808
Offers unique shopping experience	0.572				3.45	0.880
Factor 2: Convenience		2.095	11.637	0.644	3.887	0.477
Transportation to Macau is easy	0.793				3.93	0.638
Is easy to find my way around Macau	0.728				3.94	0.590
Has readily available tourist information	0.560				3.79	0.643
Factor 3: Economy		1.924	10.686	0.812	3.708	0.685
Is a travel destination that I can afford	0.870				3.65	0.774
Provides good value for my holiday budget	0.859				3.76	0.717
Factor 4: Gaming		1.770	9.833	0.577	3.999	0.528
Has attractive casinos	0.719				4.35	0.660
Is a unique travel destination	0.702				3.90	0.712
Is world class tourism and leisure centre	0.564				3.75	0.775
Factor 5: Unsafety		1.308	7.264	0.427	2.143	0.658
Does not have enough high quality hotels	0.798				2.22	0.891
Is not safe as a travel destination	0.775				2.07	0.754
Total variance extracted (%)			55.601			
Cronbach's $\alpha$ of all items				0.747		

Note. 1=strongly disagree, 5=strongly agree.

Table 2: Factor analysis of Perceptions of Macau (N=1,497).

Factor	Cluster 1: Gaming lovers (n=467, 31.2%)	Cluster 2: Exotic lovers (n=509, 34.0%)	Cluster 3: Reasonable budget seekers (n=269, 18.0%)	Cluster 4: Convenience seekers (n=252, 16.8%)	F-value
Multi culture	3.32	4.84	3.23	3.12	322.074*
Convenience	3.44	2.92	3.12	3.67	96.371*
Economy	2.38	3.87	3.91	2.91	689.161*
Gaming	4.45	4.05	3.34	2.34	171.163*
Unsafety	1.52	3.01	1.20	2.92	90.671*

Note. 1=strongly disagree, 5=strongly agree, \*p<0.01.

Table 3: Cluster means based on the Perception of tourists on Macau.

“economy.” Factor 4 was identified as “gaming”; this factor focuses on attractive casinos, unique travel destinations, and world-class tourism and leisure center. Factor 4 accounts for 9.833% of the variance explained in the data. Factor 5 (7.264% of the variance explained) was referred to as “unsafety.” The items in factor 5 represent the concern of tourists about their safety in the destination and about the lack of accommodation. Accordingly, this factor was classified as “unsafety.”

### Segmenting gaming tourists

Cluster analysis was conducted to classify gaming tourists into mutually exclusive groups based on the Ward method using the K-means clustering procedure (Table 3). The results show that the four clusters are appropriate. Multivariate statistics confirmed that statistical differences exist among the four clusters at the 1% level. The result of the ANOVA verified that five factors (i.e., multi-culture, convenience, economy, gaming, and unsafety) contributed to differentiating clusters based on the perception of tourists on Macau at the 1% level. In addition, Scheffe’s post-hoc analysis confirmed that statistical differences exist among the four clusters. Hence, the clusters are reasonably classified.

Cluster 1 represents 31.2% of the gaming tourists; in this cluster, the five factors (i.e., multi-culture, convenience, economy, gaming, and unsafety) are generally high. The mean score of factor 4 (gaming) is particularly high at 0.45. This finding implies that gaming tourists in cluster 1 have a strong perception of Macau as a gaming country.

Therefore, cluster 1 was given the name “gaming lovers.” Cluster 2 represents the largest proportion (34.0%) of the gaming tourists. Factor 1 (multi-culture) features the distinguished theme and has the highest mean score (4.84) among all the factors. This result implies that gaming tourists in cluster 2 perceive Macau as a unique destination with a good mixture of Chinese and Portuguese culture. Therefore, cluster 2 was called “exotic lovers.” Cluster 3 accounts for 18.0% of the gaming tourists. In this cluster, factor 3 (economy), which represents the reasonable budget seeker, has the highest mean score (3.91). Gaming tourists in cluster 3 perceive Macau as a travel destination that they can afford. Therefore, cluster 3 was called “reasonable budget seekers.” Lastly, cluster 4 represents 16.8% of the gaming tourists; in this cluster, the five factors are generally low. Factor 2 (convenience) has the highest mean score of 0.37. Gaming tourists in cluster 4 perceive Macau as a convenient destination to travel. Therefore, Cluster 4 was identified as “convenience seekers” (Table 3).

### Cluster differences based on the characteristics of gaming tourists

Table 4 presents the results of the chi-square test. The nationality ratio is skewed toward Chinese gaming tourists among the clusters. Mainland China is assumed to be the largest source of market for Macau. The Chinese accounts for 56.4% (n=844) of the survey respondents. Chinese gaming tourists account for 61.2% in cluster 1 (gaming lovers) and 49.1% in cluster 3 (reasonable budget seekers).

The chi-square test confirmed that significant differences in nationality exist among the clusters at the 5% level. Significant differences in marital status also exist among the clusters at the 10% level. Specifically, married and single tourists account for 73.6% and 24.9% in cluster 3 (reasonable budget seekers), respectively. In cluster 2 (exotic lovers), married and single tourists account for 63.1% and 30.8%, respectively. In addition, the clusters also exhibit statistical differences in age. The largest proportion of gaming tourists in clusters 1 (gaming lovers) and 2 (exotic lovers) comprises the early 30s group (from 30 to 34), whereas in cluster 3 (reasonable budget seekers), the late 30s group (from 35 to 39) accounts for 21.2%. In cluster 4 (convenience seekers), the early 40s group was the main respondent.

Additionally, the chi-square test was performed on gaming behavior, which comprises the decision maker of a gaming tour, travel plans to other cities after this trip, participation in gaming and in casino tours, previous gaming experience outside Macau, membership to a casino in Macau, and the gaming results. First, a significant difference is found in the decision maker of a gaming trip among clusters at the 5% level. Generally, tourists themselves were inherent decision makers. Tourists in cluster 3 (reasonable budget seekers) demonstrated a relatively high ratio in “myself” than those in cluster 1 (gaming lovers). Significant differences in the travel plans to other cities after this trip also emerged among the clusters at the 1% level. Specifically, tourists in cluster 4 (convenience seekers) exhibited the highest possibility to travel to other cities after their trip (23.0%), whereas those in cluster 3 (reasonable budget seekers) revealed a travel possibility of 8.9%. With regard to the participation in gaming, most clusters displayed positive willingness because they are gaming tourists. Among tourists, those in cluster 2 (exotic lovers) showed a relatively low intention to participate in gaming compared to those in other clusters. In terms of casino tours, tourists in cluster 1 (gaming lovers) demonstrated the highest preference in participation at 60.2% compared with tourists in other clusters (cluster 2: 53.9%, cluster 3: 59.1%, and cluster 4: 53.2%). Thus, tourists in cluster 1 (gaming lovers) are generally more interested in the casino game and its environment. The difference in previous gaming experiences outside Macau were compared among clusters. In cluster 3 (reasonable budget seekers), 27.5% of the tourists had previous gaming experiences, which is more than double the ratio of tourists in cluster 1 (gaming lovers) (12.0%). A distinctive difference was also found in the membership to a casino in Macau. More than 60% of tourists in cluster 3 (reasonable budget seekers) and cluster 1 (gaming lovers) tend to join the membership program of a casino. Compared with other clusters, cluster 3 (reasonable budget seekers) shows high participation in the membership program. Finally, in terms of gaming results, tourists in cluster 1 (gaming lovers) showed a high winning rate, that is, 15.7% of them broke even, and 38.1% won the game.

In addition to gaming behavior, other relevant activities in the casino complex have been identified, such as participation in dining and shopping, watching paid and free shows (inside the casino), and exploring other tourist attractions. First, the participation in dining indicates a significant difference among clusters at the 1% level. Most tourists (94.4%) in the clusters are likely to participate in dining. With regard to participation in shopping, 65.7% of tourists in cluster 1 (gaming lovers) tend to plan to go shopping, which is a high ratio compared with those in cluster 2 (exotic lovers) at 57.6%, cluster 3 (reasonable budget seekers) at 53.6%, and cluster 4 (convenience seekers) at 50%. Interesting results emerged in several items, such as in watching paid or free shows (inside the casino). Tourists in all of the clusters displayed little interest in watching shows, whether paid or free. Although the ratio of watching paid and free shows was low,

tourists likely prefer to watch the free shows rather than the paid shows. Finally, the difference in exploring other tourist attractions was compared among clusters. Tourists in cluster 4 (convenience seekers), cluster 1 (gaming lovers), and cluster 2 (exotic lovers) are more likely to spend their time on visiting other tourist attractions, whereas those in cluster 3 (reasonable budget seekers) do not have any plan to visit (Table 4).

To compare trip satisfaction, recommendation intention, and revisit intention, a series of univariate ANOVA was conducted. The results are summarized in Table 5. Trip satisfaction, recommendation intention, and revisit intention significantly differed among the clusters at the 1% level. Scheffe’s post-hoc test revealed that clusters 2 (exotic lovers) and 1 (gaming lovers) have higher trip satisfaction than clusters 4 (convenience seekers) and 3 (reasonable budget seekers). More specifically, satisfaction has been evaluated in terms of gaming, restaurant, and shopping satisfaction. A statistically significant difference is found in gaming satisfaction among clusters at the 1% level. Clusters 1 (gaming lovers) and 2 (exotic lovers) showed a higher satisfaction than clusters 4 (convenience seekers) and 3 (reasonable budget seekers). However, tourists across clusters generally showed a relatively low gaming satisfaction as indicated in the mean values. Similar results emerged with regard to restaurant satisfaction. A significant difference in restaurant satisfaction was identified among clusters. Scheffe’s post-hoc test revealed that clusters 1 (gaming lovers) and 2 (exotic lovers) are more likely to be satisfied with a restaurant than clusters 3 (reasonable budget seekers) and 4 (convenience seekers) at the 5% level. In terms of shopping, a significant difference among clusters was found at the 1% level. According to Scheffe’s post-hoc test, tourists in cluster 1 (gaming lovers) are the most satisfied tourists in terms of shopping, whereas those in cluster 4 (convenience seekers) are the least satisfied tourists. A series of univariate ANOVA was continuously performed to compare recommendation intention and revisit intention among clusters. Clusters 2 (exotic lovers) and 1 (gaming lovers) have higher recommendation intention than clusters 3 (reasonable budget seekers) and 4 (convenience seekers). However, clusters 1 (gaming lovers) and 3 (reasonable seekers) have stronger revisit intention than clusters 4 (convenience seekers) and 2 (exotic lovers) (Table 5).

## Discussions and Conclusions

This study investigated the perception of gaming tourists toward Macau and developed a typology of gaming tourists. The results of the factor analysis revealed five distinct dimensions of the perception of tourists on Macau, namely, multi-culture, convenience, economy, gaming, and unsafety. Multi-culture accounts for the largest proportion of the total variance at 16.181%, thus making it a central notable theme in Macau, given its unique historical background. Macau was colonized by Portugal from the 16<sup>th</sup> century until late 1999 and was the last European colony in Asia. Since the return of Macau to full Chinese sovereignty as the second Special Administrative Region in 1999, it has become a fusion of mixed cultures, specifically in the aspects of dining and cultural and heritage resources. The United Nations Educational, Scientific, and Cultural Organization designated 25 historic buildings and heritage sites in Macau as World Heritage Sites. The 25 buildings, including the Ruins of St. Paul’s and St. Dominic’s Church, are the relics from the colonial period. In terms of food, Macau has created “Macanese food,” a combination of local and Portuguese food. Thus, the unique destination image of Macau—a small Europe in Asia—has appealed to tourists. The dimensions of convenience, economy, gaming, and unsafety, were subsequently extracted as the rest of the factors

	Cluster 1: Gaming lovers (n=467, 31.2%)	Cluster 2: Exotic lovers (n=509, 34.0%)	Cluster 3: Reasonable budget seekers (n=269, 18.0%)	Cluster 4: Convenience seekers (n=252, 16.8%)	Total (%)	Statistics
<i>Socio-demographic Information</i>						
<i>Nationality</i>						Chi-square=20.587, df=9, p<0.05
Mainland China	286 (61.2)	280 (55.0)	132 (49.1)	146 (57.9)	844 (56.4)	
Hong Kong, SAR	150 (32.1)	191 (37.5)	123 (45.7)	84 (33.3)	548 (36.6)	
Taiwan	11 (2.4)	20 (3.9)	8 (3.0)	13 (5.2)	52 (3.5)	
Others	20 (4.3)	18 (3.5)	6 (2.2)	9 (3.6)	53 (3.5)	
<i>Marriage Status</i>						Chi-square=21.013, df=12, p<0.10
Married	322 (69.0)	321 (63.1)	198 (73.6)	182 (72.2)	1023 (68.3)	
Single	121 (25.9)	157 (30.8)	67 (24.9)	60 (23.8)	405 (27.1)	
Separated/Divorced	11 (2.4)	10 (2.0)	1 (0.4)	5 (2.0)	27 (1.8)	
Widowed	0 (0.0)	2 (0.4)	0 (0.0)	0 (0.0)	2 (0.1)	
Refused to answer	13 (2.8)	19 (3.7)	3 (1.1)	5 (2.0)	40 (2.7)	
<i>Occupation</i>						Chi-square=72.822, df=45, p<0.01
Legislators/Senior Officials and Managers	170 (36.4)	163 (32.0)	96 (35.6)	56 (22.2)	485 (32.4)	
Professional	41 (8.8)	45 (8.8)	35 (13.0)	25 (9.9)	146 (9.8)	
Technicians and Associate Professionals	34 (7.3)	50 (9.8)	30 (11.2)	19 (7.5)	133 (8.9)	
Clerks	32 (6.9)	18 (3.5)	7 (2.6)	13 (5.2)	70 (4.7)	
Service and Sales Workers	57 (12.2)	64 (12.6)	42 (15.6)	40 (15.9)	203 (13.6)	
Agriculture and Fishery Workers	1 (0.2)	3 (0.6)	0 (0.0)	0 (0.0)	4 (0.3)	
Craftsmen and Similar Workers	7 (1.5)	5 (1.0)	0 (0.0)	5 (2.0)	17 (1.1)	
Plant and Machine Operators, Drivers and Assemblers	18 (3.9)	22 (4.3)	17 (6.3)	15 (6.0)	72 (4.8)	
Unskilled Workers	5 (1.1)	10 (2.0)	2 (0.7)	5 (2.0)	22 (1.5)	
Student	6 (1.3)	7 (1.4)	4 (1.5)	4 (1.6)	21 (1.4)	
Retired	21 (4.5)	23 (4.5)	4 (1.5)	16 (6.3)	64 (4.3)	
Housewife	15 (3.2)	26 (5.1)	13 (4.8)	9 (3.6)	63 (4.2)	
Unemployed	15 (3.2)	17 (3.3)	8 (3.0)	10 (4.0)	50 (3.3)	
Others	10 (2.1)	11 (2.2/9)	2 (0.7)	10 (4.0)	33 (2.2)	
Refused to answers	35 (7.5)	45 (8.8)	9 (3.3)	25 (9.9)	114 (7.6)	
<i>Age</i>						Chi-square=65, df=39, p<0.01
18-19	0 (0.0)	1 (0.2)	1 (0.4)	1 (0.4)	3 (0.2)	
20-24	13 (2.8)	23 (4.5)	6 (2.2)	12 (4.8)	54 (3.6)	
25-29	72 (15.4)	86 (16.9)	38 (14.1)	29 (11.5)	225 (15.0)	
30-34	122 (26.1)	98 (19.3)	51 (19.0)	44 (17.5)	315 (21.0)	
35-39	83 (17.8)	76 (14.9)	57 (21.2)	36 (14.3)	252 (16.8)	
40-44	80 (17.1)	86 (16.9)	56 (20.8)	50 (19.8)	272 (18.2)	
45-49	27 (5.8)	53 (10.4)	20 (7.4)	28 (11.1)	128 (8.6)	
50-54	28 (6.0)	26 (5.1)	24 (8.9)	16 (6.3)	94 (6.3)	
55-59	10 (2.1)	15 (2.9)	8 (3.0)	6 (2.4)	39 (2.6)	
60-64	10 (2.1)	16 (3.1)	3 (1.1)	13 (5.2)	42 (2.8)	
65-69	6 (1.3)	6 (1.2)	2 (0.7)	7 (2.8)	21 (1.4)	
70-74	1 (0.2)	3 (0.6)	0 (0.0)	1 (0.4)	5 (0.3)	
75 or above	0 (0.0)	0 (0.0)	1 (0.4)	0 (0.0)	1 (0.1)	
Refused to answer	15 (3.2)	20 (3.9)	2 (0.7)	9 (3.6)	46 (3.1)	
<i>Gaming behavior</i>						
<i>Decision maker of the trip</i>						Chi-square=23.426, df=12, p<0.05
Myself	413 (88.4)	447 (87.8)	253 (94.1)	218 (86.5)	1331 (88.9)	
Spouse	19 (4.1)	12 (2.4)	3 (1.1)	4 (1.6)	38 (2.5)	
Other family member/relative	8 (1.7)	4 (0.8)	2 (0.7)	3 (1.2)	17 (1.1)	
Friends	25 (5.4)	45 (8.8)	10 (3.7)	26 (10.3)	106 (7.1)	
Company	2 (0.4)	1 (0.2)	1 (0.4)	1 (0.4)	5 (0.3)	
<i>Travel plans to other cities after the trip</i>						Chi-square=29.187, df=6, p<0.01

Will not visit other cities	379 (81.2)	394 (77.4)	245 (91.1)	194 (77.0)	1212 (81.0)	
Not yet planned	47 (10.1)	68 (13.4)	7 (2.6)	30 (11.9)	152 (10.2)	
Yes	41 (8.8)	47 (9.2)	17 (6.3)	28 (11.1)	133 (8.9)	
<i>Participation in gaming</i>						Chi-square=31.543, df=6, p<0.01
No	6 (1.3)	16 (3.1)	3 (1.1)	3 (1.2)	28 (1.9)	
Undertaken	433 (92.7)	458 (90.0)	264 (98.1)	246 (97.6)	1401 (93.6)	
Will Undertake	28 (6.0)	35 (6.9)	2 (0.7)	3 (1.2)	68 (4.5)	
<i>Participation in casino tour</i>						Chi-square=31.007, df=6, p<0.05
No	186 (39.8)	235 (46.2)	110 (40.9)	118 (46.8)	649 (43.4)	
Undertaken	267 (57.2)	262 (51.5)	158 (58.7)	131 (52.0)	818 (54.6)	
Will Undertake	14 (3.0)	12 (2.4)	1 (0.4)	3 (1.2)	30 (2.0)	
<i>Previous gaming experience outside Macau</i>						Chi-square=37.377, df=3, p<0.01
No	411 (88.0)	445 (87.4)	195 (72.5)	214 (84.9)	1265 (84.5)	
Yes	56 (12.0)	64 (12.6)	74 (27.5)	38 (15.1)	232 (15.5)	
<i>Membership in a casino in Macau</i>						Chi-square=35.527, df=3, p<0.01
No	171 (36.6)	241 (47.3)	87 (32.3)	135 (53.6)	634 (42.4)	
Yes	296 (63.4)	268 (52.7)	182 (67.7)	117 (46.4)	863 (57.6)	
<i>Gaming results</i>						Chi-square=42.882, df=6, p<0.01
Breakeven	68 (15.7)	116 (25.3)	29 (11.0)	47 (19.1)	260 (18.6)	
Win	165 (38.1)	143 (31.2)	90 (34.1)	56 (22.8)	454 (32.4)	
Loss	200 (46.2)	199 (43.4)	145 (54.9)	143 (58.1)	687 (49.0)	
<i>Tourist activities</i>						
<i>Restaurant dining</i>						Chi-square=35.941, df=6, p<0.01
No	18 (3.9)	45 (8.8)	7 (2.6)	14 (5.6)	84 (5.6)	
Undertaken	423 (90.6)	433 (85.1)	260 (96.7)	233 (92.5)	1349 (90.1)	
Will Undertake	26 (5.6)	31 (6.1)	2 (0.7)	5 (2.0)	64 (4.3)	
<i>Shopping</i>						Chi-square=26.061, df=6, p<0.01
No	160 (34.3)	216 (42.4)	125 (46.5)	126 (50.0)	627 (41.9)	
Undertaken	291 (62.3)	279 (54.8)	143 (53.2)	122 (48.4)	835 (55.8)	
Will Undertake	16 (3.4)	14 (2.8)	1 (0.4)	4 (1.6)	35 (2.3)	
<i>Watching paid show (inside casino)</i>						Chi-square=14.139, df=6, p<0.05
No	421 (90.1)	461 (90.6)	258 (95.9)	228 (90.5)	228 (90.5)	
Undertaken	36 (7.7)	39 (7.7)	11 (4.1)	23 (9.1)	109 (7.3)	
Will Undertake	10 (2.1)	9 (1.8)	0 (0.0)	1 (0.4)	20 (1.3)	
<i>Watching free show (inside casino)</i>						Chi-square=11.732, df=6, p<0.10
No	393 (84.2)	447 (87.8)	233 (86.6)	208 (82.5)	1281 (85.6)	
Undertaken	66 (14.1)	56 (11.0)	36 (13.4)	43 (17.1)	201 (13.4)	
Will Undertake	8 (1.7)	6 (1.2)	0 (0.0)	1 (0.4)	15 (1.0)	
<i>Exploring tourist attractions</i>						Chi-square=18.596, df=6, p<0.01
No	347 (74.3)	381 (74.9)	227 (84.4)	186 (73.8)	1141 (76.2)	
Undertaken	114 (24.4)	120 (23.6)	42 (15.6)	66 (26.2)	342 (22.8)	
Will Undertake	6 (1.3)	8 (1.6)	0 (0.0)	0 (0.0)	14 (0.9)	

Note. 96 missing values were detected for gaming results.

Table 4: Chi-square test results.

of the perception of tourists on Macau. The findings are consistent with those of previous research. McCartney, Butler, and Bennett [33] regarded the central perception of tourists on Macau as “gambling opportunities,” “good night/adult oriented,” “exotic atmosphere,” and “rich cultural heritage.” In their study, their target respondents were visitors from Beijing.

Segmenting gaming tourists based on their perception of Macau can be an effective method that enables practitioners to establish

appropriate business strategies. Accordingly, a cluster analysis by the delineated factors (perception of tourists on Macau) was performed. Four heterogonous groups were generated, namely, gaming lovers (n=467, 31.2%), exotic lovers (n=509, 34.0%), reasonable budget seekers (n=269, 18.0%), and convenience seekers (n=252, 16.8%). Based on the mean value, gaming lovers perceived Macau as a gaming destination but less perceived it as a multi-cultural destination and a destination that offers convenience to travelers. The second cluster,



	Cluster 1: Gaming lover (n=467, 31.2%)	Cluster 2: Exotic lover (n=509, 34.0%)	Cluster 3: Reasonable budget seeker (n=269, 18.0%)	Cluster 4: Convenience seeker (n=252, 16.8%)	Findings
Gaming satisfaction	3.75	3.71	3.29	3.41	Cluster 3, Cluster 4 < Cluster 2, Cluster 1**
Restaurant satisfaction	4.23	3.95	3.72	3.62	Cluster 4, Cluster 3 < Cluster 2, Cluster 1*
Shopping satisfaction	4.10	3.95	3.90	3.77	Cluster 4, Cluster 3 < Cluster 3, Cluster 2 < Cluster 2, Cluster 1**
Overall trip satisfaction	4.03	3.89	3.67	3.52	Cluster 4, Cluster 3 < Cluster 2, Cluster 1**
Recommendation	4.31	4.14	3.53	3.69	Cluster 3, Cluster 4 < Cluster 2, Cluster 1**
Revisit	4.60	4.44	4.60	4.29	Cluster 4, Cluster2 < Cluster 1, Cluster 3**

Notes: \*Two-tailed significance at 5% level; \*\*Two-tailed significance at 1% level.

Table 5: ANOVA test results.

exotic lovers, regarded Macau as multi-cultural destination, but other factors (i.e., convenience, economy, gaming, and unsafety) were not distinctively perceived. Compared with that of multi-culture, the other mean values were relatively low. The third cluster, reasonable budget seekers, perceived Macau as an affordable travel destination. The mean value of economy was relatively high compared with those of multi-culture, convenience, gambling, and unsafety. The final cluster, convenience seekers, considered that Macau provides accessible tourist information and transportation. However, the mean values of cluster 4 were generally low.

The results of cluster analysis are not similar to those of previous research on the segmentation of casino visitors. A common method of classifying casino visitors and gaming tourists is by trip motivation. Previous research indicated that casino visitors are highly motivated by psychological factors, including winning, excitement, socialization, learning, novelty-seeking, and escape from ordinary life [5,8]. Accordingly, the groups segmented by trip motivation demonstrated similar results. For instance, Wong and Rosenbaum [34] identified two clusters, namely, sightseeing for escape seekers and entertainment for socialization seekers. They determined these clusters based on five factors, namely, entertainment and novelty seeking, leisure activity, escape from pressure, socialization, and casino sightseeing. Lee et al. [5] revealed similar results and identified four clusters, namely, challenge and winning seekers, only-winning seekers, light gambling seekers, and multi-purpose seekers. The variable factors were segmented into socialization and learning, challenge, and escape. These differences are attributed to the approach adopted by this research toward the gaming tourists based on their general perception of Macau. Scholars have agreed that the various hedonic leisure offerings affect the decision-making processes of casino visitors and gaming tourists. Thus, casino visitors and gaming tourists consider whether the shopping environments are conveniently created, entertainment programs (i.e., casino shows) are offered, and casino complexes provide attractive dining facilities [35]. These factors are related to the hedonic aspects of visitors. Accordingly, gaming tourists could be classified based on their perceptions of Macau because doing so may enable us to thoroughly investigate their needs.

To identify the profile of the four clusters, each of them was cross-tabulated with socio-demographic variables. The results of the chi-square test revealed significant differences in terms of nationality, marital status, occupation, age, and decision maker of the gaming trip among the segmented groups. Specifically, cluster 1 (gaming lovers) consists of Mainland Chinese tourists (61.2%) and Hong Kong tourists (32.1%). Given that the two markets account for the majority of the tourists, the result might be predictable. However, this finding implies that the highest proportion of Chinese tourists is found in cluster 1 (gaming lovers). Tourists from cluster 1 are mostly married (69.0%) and are legislators, senior officials, or managers (36.4%). Similar to

the other clusters, cluster 1 has tourists who are in their 30s (43.9%). Finally, the decision maker of this gaming travel was the respondent himself or herself. Therefore, the major targets have long been limited to Mainland Chinese and Hong Kong tourists, accounting for 93.3%. The two major sources of the tourism market are Mainland China and Hong Kong. According to the top 10 visitor arrivals in 2014, these countries account for 87.5% [1] of the tourists. In other words, other markets exist (i.e., Taiwan, Republic of Korea, Japan, the Philippines, Indonesia, Malaysia, US, and Thailand). As the Chinese market reaches a mature stage, practitioners should consider broadening to a new market. The characteristics and history should be thoroughly investigated. Several countries negatively view casino gaming because they are more likely to regard it as gambling behavior. For example, the Republic of Korea does not have a long history of casino gaming for local people. Despite the presence of 17 casino centers, local people are allowed to access only one. The casino for local people opened in 2000, which implies that the Korean government strictly prohibits casino gaming. Therefore, improving the negative image of casino gaming and attracting a new market are strongly recommended by the current study.

Further analysis was performed to investigate any differences in gaming behavior. The difference in previous gaming experiences outside Macau was compared among clusters. Interestingly, 27.5% of the tourists in cluster 3 (reasonable budget seekers) had previous gaming experiences, which is more than double the ratio of those in cluster 1 (gaming lovers) (12.0%). A distinctive difference was also found in the membership to a casino in Macau. More than 60% of tourists in clusters 3 (reasonable budget seekers) and 1 (gaming lovers) are likely to join the membership program of a casino. Compared with other clusters, cluster 3 (reasonable budget seekers) shows high participation in membership programs. Finally, in terms of gaming results, tourists in cluster 1 (gaming lovers) showed a high winning rate, that is, 15.7% broke even, and 38.1% won the game. Given the preceding results, practitioners should focus on tourists in clusters 3 (reasonable budget seekers) and 1 (gaming lovers). Tourists in cluster 3 perceive Macau as an affordable travel destination and believe that the place provides good value for their holiday budget. However, this result does not suggest that tourists in this cluster (reasonable budget seekers) have a lower household income compared with those in other clusters. Instead, tourists in cluster 3 are more concerned with a reasonable budget plan for their trip. Casino managers should focus on their gaming behavior. Among the clusters, the tourists in cluster 3 showed the highest ratio of previous gaming experience outside Macau. The figure is more than double compared with that of tourists in cluster 1 (gaming lovers). Moreover, tourists in cluster 3 actively participate in the membership programs of casinos in Macau. Finally, gaming results are as good as tourists in cluster 1 (gaming lovers), thus indicating a high possibility that they are experienced and repeat-gaming tourists.

In addition to gaming behavior, other tourist activities (e.g., participation in shopping and watching paid or free shows) have been compared. Unfortunately, the results indicated that tourists across clusters are not very interested in watching shows, whether paid or free. The findings imply strong potentials for profit. Based on the preceding results, gaming tourists are willing to play casino games, and the decision makers of the gaming trip are they themselves. Accordingly, 15.5% of the gaming tourists (n=232) have prior experience in playing casino games. Moreover, 56.6% of the gaming tourists (n=848) are willing to join the casino tour, whereas only 23.7% of the tourists plan to explore other tourist attractions. These results support the observation that gaming tourists are highly focused on gaming and have a favorable response to gaming-related activities. Therefore, presenting casino-related paid shows is recommended. The content of free shows for the public should be acceptable for all ages.

Meanwhile, satisfaction in terms of gaming, restaurant, shopping, and overall trip was compared among clusters. The results of Scheffe's post-hoc test suggest that tourists in clusters 1 (gaming lovers) and 2 (exotic lovers) are crucial markets. Similar results were found in recommendation intention and revisit intention. Clusters 1 (gaming lovers) and 2 (exotic lovers) have higher recommendation intention than clusters 3 (reasonable budget seekers) and 4 (convenience seekers). In terms of revisit intention, clusters 1 (gaming lovers) and 3 (reasonable seekers) have indicated a stronger potential than clusters 4 (convenience seekers) and 2 (exotic lovers). Tourists in cluster 1 (gaming lovers) are the most important market for casino managers. These tourists appeared to be the most satisfied with gaming, shopping, restaurant dining, and the overall trip. In addition, their recommendation intention was the highest among the clusters. Previous studies indicated that a well-facilitated service environment (e.g., restaurants, retail shops) induces visitor satisfaction in a casino complex [36,37]. Rosenbaum [38] supported the proposition of Johnson et al. [36] and Wakefield [37] that a well-operated physical environment favorably influences the overall satisfaction of tourists. In particular, Rosenbaum [38] argued that the environment is vital in fulfilling the internal needs of tourists.

Thus, casino marketers should concentrate their efforts on cluster 1 (gaming lovers) to maintain arrivals. Similarly, attention must be paid to tourists in cluster 3 (reasonable budget seekers). They exhibited the lowest level of gaming satisfaction and recommendation intention. Furthermore, they showed a relatively low level of satisfaction in terms of restaurant dining, shopping, and the overall trip. However, the revisit intention of cluster 3 (reasonable budget seekers) was as high as that of cluster 1 (gaming lovers). Given the previous results of the chi-square test, tourists in cluster 3 (reasonable budget seekers) are assumed to be experienced and returning tourists. Although their revisit intention was the highest, they appeared to be the least satisfied with the other factors. Practitioners are urged to retain the returning tourist group and increase their satisfaction level.

## Limitations and Future Research

The current study developed a typology of gaming tourists based on their perception of Macau. The academic contributions of the current research can be summarized into four items. First, the current study targeted gaming tourists. Previous segmentation studies targeted casino visitors, which include gaming tourists (i.e., tourists who mainly visit the destination with the major purpose of casino gaming), tourists, and local residents [5-11]. The target respondents were selected by using two strict screening questions. The findings of the current study are

expected to provide better understanding of the perceptions of gaming tourists of Macau. Second, the perception of tourists on the destination image was selected as a segmenting variable. Previous research on the segmentation of gaming tourists mainly employed trip motivation and socio-demographics as segmenting variables [5,8]. Trip motivation as a segmenting variable enables practitioners to identify the specific motivation (i.e., socialization and learning, challenge, and escape) and classify heterogeneous groups (challenge and winning seekers, only-winning seekers, light-winning gambling seekers, and multi-purpose seekers). However, trip motivation focuses on the internal psychological aspects of gaming tourists and fails to link casino gaming behavior to local destinations. In the research of Chen and Tsai [12], a favorable destination image was found to positively influence the behavioral intent and revisit intention of tourists. The current study identified the central theme in the perception of Macau by gaming tourists: multi-culture, convenience, economy, gaming, and security. The groups segmented based on the extracted factors can be fruitful sources in exploring the behavior of gaming tourists. By employing a new segmenting variable, the current study is expected to broaden the scope of segmentation study.

Third, gaming behavior and tourist activities among clusters were explored. A series of chi-square tests was conducted to investigate in-depth gaming-related behaviors. Specific gaming behaviors (i.e., decision maker of the trip, travel plans to other cities after the trip, participation in gaming, participation in casino tours, previous gaming experience outside Macau, membership to a casino in Macau, and gaming results) and tourist activities (restaurant dining, shopping, paid show viewing, free show viewing, and exploring other tourist attractions) helped determine the distinctive differences among clusters. Lastly, the current study conducted a series of ANOVA tests for satisfaction, recommendation intention, and revisit intention among clusters. Specific areas of satisfaction (i.e., gaming satisfaction, restaurant dining satisfaction, and shopping satisfaction) among clusters, which were rarely investigated in previous research, were also compared in the current study. The findings shed light on key tourist groups. Nevertheless, this study has its limitation because of the convenience sampling method employed. The generalizability of the study is limited despite the 1,497 usable responses. Future research may investigate more specific gaming behaviors and gaming tourists' budget (e.g., travel expenses, betting budget, and other aspects) for improved research outcomes.

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