

## A CASINO-INDUCED SATISFACTION OF NEEDS: SCALE DEVELOPMENT AND ITS RELATIONSHIP WITH CASINO CUSTOMER LOYALTY

**ABSTRACT.** Based on Maslow's hierarchy of needs, this study develops a five-factor casino-induced satisfaction of needs scale and examines its relationship with casino customer loyalty using Macau as a study context. The findings show that the respondents' most visited casinos had only marginally met the respondents' various inner needs; there's still ample room for Macau casinos to improve the level of their customers' satisfaction regarding customers' inner needs. Among the five types of inner needs, self-actualization appears to be one need that requires more attention because it was rated as the need that was the least satisfied but contributed the second most to measuring satisfaction. Additionally, Macau casinos should continue their efforts in improving and maintaining a safe and secure casino environment, coupled with providing a variety of quality foods and beverages, for their customers. Lastly, safety and security, self-actualization and physiology needs were found to positively affect casino customer loyalty.

**KEYWORDS.** Customer satisfaction, casino, Maslow's hierarchy of needs, customer loyalty, induced needs

### ***1. INTRODUCTION***

Customer satisfaction has been viewed as being at the forefront of relational marketing that leads to customer retention (Kim, Vogt & Knutson, 2015). Satisfied customers tend to repeat their patronage as well as tell others about their favorable experiences, while dissatisfied customers may not only complain to product/service providers but also spread negative views through word-of-mouth. Given that services are intangible and that service experiences may

trigger both cognitive and emotional responses (Edvardsson, 2005), customer satisfaction is particularly vital in the service industry in enhancing customer loyalty (Wong & Fong, 2010). In view of this, the service industry has relied heavily on measuring customer satisfaction as a key indicator to monitor performance, allocate resources and benchmark customers' ratings against competitors (Bolton, 1998). The casino industry is certainly no exception.

The casino industry worldwide has seen unprecedented growth since the early 1990s starting from the Las Vegas Strip, followed by Macau's gaming liberalization in 2002 and Singapore's lift of a gambling ban in 2005. Taking Macau as an example, from 2002 to the second quarter of 2016, on the gaming supply side the number of casinos increased from 11 to 36, gaming tables from 339 to 5,998 and slot machines from 808 to 13,706, all attributed to the efforts made by the six gaming concessionaires including Sociedade de Jogos de Macau, Wynn Resorts, Galaxy Casino, Venetian, MGM Grand Paradise and Melco Crown. Besides, increasing provision of non-gaming facilities such as convention centers, entertainment arenas and shopping centers and applications of marketing tactics related to food & beverage, ferry transportation, sweepstakes, lucky draw and loyalty programs have also become prevalent among casinos that enrich Macau's integrated resort development. In terms of demand for casino gaming, Macau's casino revenue increased from MOP22.2 billion to MOP230.8 billion (USD1 = MOP8) during the period 2002 to 2015 (Gaming Inspection and Coordination Bureau, 2016). While since June 2014 Macau's casino industry has seen rapid decline of gaming revenue due to several factors such as foreseeable economic worries and the central government's anti-graft campaign (Oster, 2016), Macau's casino growth has yet come to a halt. New casinos and resorts such as Broadway and Parisian have recently opened along with many others under development, further intensifying the already competitive landscape of Macau casinos (see Table 1 for Macau's casino gaming landscape in terms of various indicators such as number of casinos operated). To maintain as key players in the ever-changing casino gaming

business, measuring and enhancing casino customer satisfaction is of critical importance to casino operators.

[Insert Table 1 here]

Casino customer satisfaction research has started to catch the attention of scholars since Mayer, Johnson, Hu and Chen (1998) first proposed a gaming satisfaction model of identifying factors that affect slot tournament players' satisfaction with the overall gaming experience. A number of subsequent casino/gaming customer satisfaction studies have mainly investigated its antecedents from the perspective of perceived performance (Wong & Dioko, 2013), servicescape (e.g., Jeon & Hyun, 2013; Johnson, Mayer & Champaner, 2004; Lam, Chan, Fong & Lo, 2011; Lucas, 2003), service quality/experience (Baker & Crompton, 2000; Shi, Prentice & He, 2014; Wong, 2013; Wong & Fong, 2010) and service climate (Kralj & Solnet, 2010). The consequences of casino/gaming customer satisfaction have also been examined in terms of re-patronage intention, desire to stay in a casino and recommendation to others (e.g., Lam et al., 2011; Lucas, 2003). While the above-mentioned research should be commended for advancing the body of knowledge related to casino/gaming customer satisfaction, the studies generally borrowed the measurement scale of customer satisfaction from the marketing field and asked customers to rate the level of satisfaction on their overall casino visiting/patronage experience. That is, the construct of customer satisfaction in previous casino/gaming research could only reflect the extent to which the casino/gaming customers were satisfied with products and services (e.g., hardware facilities, loyalty programs, etc.) that casinos had to offer; such a satisfaction measurement is dependent upon the products and services offered by the casinos (i.e., supply) but not upon the needs of customers per se (i.e., demand). The lack of a casino-induced satisfaction of needs measurement makes casino/gaming customer satisfaction research incomplete.

Gambling is thought to help satisfy not only people's basic needs to confirm their existence and worth but also other needs such as physical tension, emotional arousal, cognitive challenge, release from reality and sensation-seeking (Zuckerman, 1994). Vong (2007) found that Chinese gamblers had a tendency to seek stimulating sensations through gambling. Nevertheless, how casinos have performed in satisfying customers' various levels of inner needs has not been documented in the literature. Helping casino operators to devise marketing strategies to enhance customers' satisfaction of needs and the consequences of this such as loyalty has also not been examined. Our study is designed to fill the research void by taking a deeper look at customer satisfaction from a different perspective and identifying how casinos may help satisfy customers' inner needs using Macau casinos as a research context. Macau is renowned as the largest casino gaming capital in the world; its strong visitation and play records of the Chinese tourists from both Hong Kong and mainland China to casinos in Macau were mainly due to the booming economy in the past as well as Macau's proximity to these source markets. In response to the above-mentioned research gaps and the Chinese customers' past and potential contribution to the Macau economy, this study aims to develop a scale for measuring casino-induced satisfaction of needs from the Chinese gamblers' perspective based on Maslow's hierarchy of needs. Furthermore, it also examines the relationship between a casino-induced satisfaction of needs and casino customer loyalty.

## ***2. THEORETICAL BACKGROUND***

### ***2.1 Theories Underpinning Satisfaction Research***

Among the pool of satisfaction theories, the expectancy disconfirmation theory advocated by Oliver (1980) is likely the most recognized. According to Oliver (1980), customers have an expectation prior to the receipt of services or purchase of products; confirmation occurs when the performance matches the expectation. Positive disconfirmation happens when the

performance exceeds the expectation, while negative disconfirmation occurs when the performance is less than expected. Either confirmation or positive disconfirmation leads to customer satisfaction, while negative disconfirmation results in customer dissatisfaction. Although the theory has been widely acknowledged, critics of the theory argue that the product/service performance could not be objectively evaluated if prior expectations did not exist (Johnston & Lyth, 1991). In such cases, the evaluation of the expectation and performance can only be regarded as perceived performance rather than satisfaction. In addition, the lack of pre-purchase information as well as the simultaneous production and consumption of services may bring about uncertain and tentative expectations (Yüksel & Yüksel, 2001). As a result, the theory may not be applicable in settings with high uncertainty such as the casino industry.

Satisfaction can be conceptualized as an objective yet subjective process with multi-dimensional determinants. Satisfaction is objective because it relates to some basic human needs (Leroy, Anseel, Gardner & Sels, 2015; Tse, Nicosia & Wilton, 1990). Meanwhile, satisfaction is subjective as it involves emotion and attitude that varies across individuals and from time to time. As for examining human needs, Maslow's (1943) theory of human motivation has been well received and recurs in literature across disciplines with 14,307 citations shown on Google Scholar as of October 2015. A number of studies applying Maslow's theory can be found in psychology (e.g., Neher, 1991), management (e.g., Cooke, Mills & Kelley, 2005; Dye, Mills & Weatherbee, 2005), behavioral science (e.g., Heylighen, 1992), sociology (e.g., Hagerty, 1999) and medicine (e.g., Benson & Dundis, 2003; Zalenski & Raspa, 2006). Given the significant explanatory power and robust theoretical discussion, the theory is the cornerstone of the present study to investigate satisfaction on the basis of human needs.

## ***2.2 Satisfaction of Needs***

Satisfying customers' needs is a canon for casino and hotel employees (Johnston & Clark, 2005; Wan, 2010). For the purpose of clarity, the key terminology "needs" is defined in this section. In experimental psychology, two needs theories stem from the work of Hull (1943) and Deci and Ryan (1980). Hull (1943) advocated the drive theory in explaining the fundamentals of needs. When an individual is deprived of an essential element, this activates an intrinsic persistence of him/herself. Thus, needs are characterized by a lacking of something essential to a person's well-being and the drive is regarded as "an activity of the total organism resulting from a persistent disequilibrium" (Seward & Seward, 1937, p.349). Simply put, a drive reflects a need that arises from a lacking of something in particular. When a need arises, it triggers and energizes actions or certain behaviors. Thus, a behavior is the reinforcement of satisfying a need resulting in drive reduction. The relationship among needs, drives and behaviors is depicted in Figure 1.

[Insert Figure 1 here]

Another influential psychological lore is the self-determination theory advanced by Deci and Ryan (1980). The theory proposed that innate psychological needs for competence, autonomy and relatedness are requisite for human motivation. Needs are specified to be essential for continuous psychological growth, integrity and well-being. A fundamental human trajectory is assumed from vitality, integration, health and well-being, but will give way to emergence outcomes under threat or deprivation. More importantly, human needs specifying the necessary conditions for psychological health or well-being are highly associated with the individuals' satisfaction according to the proposition of the self-determination theory.

To summarize from these two theories, satisfaction is linked to basic needs. The growth of plants was exemplified by Deci and Ryan (2000) to illustrate the concept. Plants need water to flourish and the deprivation of water impoverishes growth. The optimal level in relation to the satisfaction of needs is under facilitating conditions without thwarting the basic needs, and

consequentially craving for the enhancement of well-being. Needs satisfaction is not only a process of replenishing deficiencies but also the purpose of a behavior (Deci & Ryan, 2000). Some seek out companionship when feeling lonely, while others fight for autonomy when feeling controlled. Along the same vein, the satisfaction of needs is found to be an organismic function resulting from the presence of vitality, psychological flexibility and well-being. The relation between the satisfaction of needs and well-being varies across different settings. For example, Eryılmaz (2012) revealed that the satisfaction of adolescents' needs in high school are in parallel with the increase in their subjective well-being, reporting having optimistic thinking and improving extravert personality traits. Trépanier, Fernet and Austin (2013) identified that employees' satisfaction of needs in the workplace relates to individual functioning and mental health. More investigation is therefore necessary of different levels in the satisfaction of needs in various contexts.

### ***2.3 Maslow's Hierarchy of Needs***

Maslow's hierarchy of needs (Maslow, 1943; 1970) is a widely recognized framework borrowing from the psychology field in depicting human needs. The philosophical thinking in the aforementioned satisfaction of needs shares similarities with Maslow's hierarchy of needs to a certain extent. The needs theories (Deci & Ryan, 1980; Hull, 1943) attempt to pinpoint internal factors that energize a behavior. Needs as defined previously are physiological or psychological deficiencies that arouse behavior. These needs can be strong or weak and are influenced by environmental factors. Thus, human needs vary over time and place. Need emergence, in Maslow's view, is not a sudden phenomenon but rather a gradual emergence. Human needs are arranged in hierarchies of prepotency. Needs cannot be treated as discrete while every drive is connected to the state of satisfaction of other needs.

According to Maslow (1943, 1970), the five categories of needs are physiological, safety and security, belonging, esteem and self-actualization. The starting point of human motivation is the physiological drive, referring to all physical necessity such as food, water and air. When the physiological needs are well gratified, a higher level of needs emerge. The safety and security needs represent the desire to be free of danger. Protection of orders and law (Lepp & Gibson, 2003) as well as health are examples of needs at this level. The subsequent needs, the belonging needs, arise due to the human need for belonging and love. Stephens (2000) illustrated that individuals require needs from affiliation such as love of spouses, friendship and group membership. The belonging needs are desires of affection and a relationship with members in close referent groups. Following belonging needs are esteem needs and self-actualization. Esteem needs describe a craving for respect and a high evaluation from others, while self-actualization is about reaching the full potential of what a person is capable of (Maslow, 1943).

Although Maslow's theory has been recognized as the canon for understanding human needs, it has received criticism for ignoring cultural inputs and for placing too much emphasis on the hierarchical nature. Neher (1991) proposed that humans develop humanness through being socialized into the norms in a particular culture, and adapt to other cultures in a flexible manner. Responding to Maslow's (1970) claim that achieving higher needs is innate, scholars (K'Obonyo, Odadi, & Medina, 2015; Neher, 1991) disagreed and stated that this claim downgrades the role of culture and the environment in forming the human psyche. Naturally, humans mature and are increasingly able to make rational best-fit decisions, yet the decision is a product of a unique mix of genes and culture. The higher needs are to a great extent shaped by cultural experiences. Maslow's theory was thus accused of binding humans socially and ignoring the cultural traits that create humanness. Furthermore, the lower needs such as hunger and the need for intimacy are innate. The higher needs however may not necessarily be



achieved succeeding the lower needs in explaining human behavior (Weiner, 1992). For instance, people may choose to tolerate strong hunger when facing a tight deadline. They may not stop and eat primarily because the desire of completing a more significant task outweighs the basic physiological need. People are not in a continuously high drive state while pursuing their goals as they experience varying levels of motivations.

Capitalizing on the robustness and explanatory power of Maslow's hierarchy of needs and considering the corresponding criticisms, this study adopts the philosophical canons of the five needs as the theoretical foundation yet detaches the hierarchical associations of moving up the ladder while gratifying the lower needs and emerging higher needs. In the tourism industry, Pearce and Lee's (2005) travel motivation theory labeled as the travel career ladder describes tourist motivation as consisting of five different levels also based on Maslow's hierarchy of needs theory. Thus, this research employs Maslow's hierarchy of needs (1943) as a grounding theoretical concept to define the needs and develop viable measures, with the development of the satisfaction of needs measures in a casino setting as the central aim.

#### ***2.4 Operationalizing Casino-induced Satisfaction of Needs***

Hull (1951) advocated in the drive theory that a human being seeks the continuation of their well-being. An individual's behavior is triggered by his or her awareness of needs. Thus, the line of inquiry of the present study uses a back-to-basic principle of delineating the human needs in the context of casino gaming. A reconstruction of Maslow's hierarchy of needs theory is delineated below to advance the understanding on the casino-induced satisfaction of needs.

A sound social science theory must satisfy the four features of replicability, precision, falsifiability and parsimony (Bhattacharjee, 2012). A scientific approach in developing a set of valid and reliable measures is essential in fulfilling the four features. Therefore, each of the needs is operationally and clearly defined for scale development. Subsequently, the new scales

are empirically tested for reliability and validity. The research of Taormina and Gao (2013) in modifying Maslow's theory to measure an individual's well-being serves as a formative benchmark for the present study.

#### *Casino-induced Physiological Needs*

Physiological needs are the basic needs for survival. Deficiencies in physiological needs motivate the organism to gratify them (Maslow, 1943). The need for food, water and some substances such as salt and oxygen are examples of physiological needs. Maslow also described the environmental conditions necessary for the human body to survive. Not fulfilling the physiological needs could lead to stress and probably death. Nevertheless, meeting the basic physiological needs is seemingly irrelevant in a developed contemporary society. In a casino setting, it is nearly impossible for gamblers to experience extreme physiological deficiencies, for example sheer life-and-death hunger, freezing to death or dying from overheating. The present study thus redefines the casino-induced physiological needs of satisfaction as having pleasant physical conditions allowing a satisfying experience in a casino, which has been termed as casino servicescape. Ambient temperature, air quality, quality and variety of foods and beverages served are potential measurement items.

#### *Casino-induced Safety and Security Needs*

A human being is a safety-seeking organism (Maslow, 1943). As exemplified by Maslow, infants express an overt reaction (e.g., crying) to danger; children develop fear, nightmares and a need for protection when stable things become unstable; and adults inhibit threat or danger at all costs. All these reactions are considered to be instinctive in that individuals perform these reactions without conscious design or intentional adaptation to facilitate survival. In peaceful times, Maslow (1943) suggested that satisfying the safety and security needs is about having

protection through an ethical legal system, a trustworthy government and having stability and structure in one's life. With regard to a casino context, safety and security needs generally refer to the protection from physical and financial harm. The measures imposed by the casino management in sheltering players from physical and financial harm, such as gaming rules and security measures, are examples of viable measurements of the safety and security needs.

### *Casino-induced Belonging Needs*

The belonging needs, also known as the need for love, are about a hunger for affectionate relations with people (Maslow, 1943). Psychopathology theorists pointed out that the thwarting of these needs results in maladjustment. Interpersonal attachment is fundamental and innate to a human being (Konok, Gigler, Bereczky & Miklósi, 2016). Baumeister and Leary (1995) commented that social exclusion accompanies social rejection, loneliness and depression. Mellor, Stokes, Firth, Hayashi and Cummins (2008) echoed this and contended that a failure to have belonging needs met may lead to social isolation, alienation and loneliness. A definition of the belonging needs derived from Maslow's (1943) theoretical conceptualization refers to a close and emotionally pleasant interaction with other people or in groups. When applying the belonging needs in a casino setting, potential measurement items are related to emotional and relationship aspects between casinos and players.

### *Casino-induced Esteem Needs*

Every individual longs for a high evaluation from other people (Maslow, 1943). Satisfaction of the esteem needs constitutes a feeling of confidence, capability and necessity in the world. Taormina and Gao (2013, p.159) defined it as "what a person receives, that is, the attitudinal evaluation and respect a person received from people regarding that person's nature or character and their related feelings about that person's worthiness, merit or value as a person".

The social interaction with and appreciation of others is of central importance. The measurement items related to casino-induced esteem needs could include players' feeling good about having respect, recognition and appreciation from others.

#### *Casino-induced Self-actualization Needs*

First coined by Goldstein (1940), self-actualization refers to reaching the full potential of oneself in his/her living world. Maslow (1943, p.382) further described self-actualization as "what a man can be, he must be". It is the desire for self-fulfillment, for one to actualize what s/he is potentially. Self-actualization is the progression of growth, development and unfolding potential (Moghadam, Khosravi, Egbali, Khah & Sadatizadeh, 2015). Therefore, it can be understood as a basic drive instead of a form of motivation. In relation to casino-induced satisfaction of self-actualization needs, the present study defines self-actualization as what a casino bestows a person to help realize his/her ambitions, wants and values in casino gaming.

#### ***2.5 Relationship between Casino Satisfaction and Casino Customer Loyalty***

While Kotler (1994) contended that customer satisfaction leads to customer retention, Shoemaker and Lewis (1999) argued that "satisfaction is a necessary but not a sufficient condition for loyalty" (p.353). Casino studies on the relationship between satisfaction and loyalty have produced mixed results. On the one hand, customer satisfaction has been found to positively affect loyalty in terms of re-patronage intention, desire to stay in a casino and recommendation to others (e.g., Lam et al., 2011; Lucas, 2003). On the other hand, Kale (2005) and Prentice (2013a; 2013b) argued that gambler satisfaction is not a precondition of customer loyalty as their satisfaction may be simply attributed to gambling results. Inconsistency in the literature to empirically provide a strong linkage between satisfaction and loyalty (Homburg & Giering, 2001; Pan, Sheng & Xie, 2012), especially in a service-oriented industry, motivates

us to test the relationship between a casino-induced satisfaction of needs and casino loyalty.

We thus hypothesize that:

H<sub>0</sub>: A casino-induced satisfaction of needs positively affects casino loyalty.

### **3. METHODOLOGY**

#### **3.1 Item Development and Data Collection**

As the key purpose of the study is to construct a casino-induced satisfaction of needs scale, the research design was guided by the systematic instrument development approach suggested by Churchill (1979). The present study adopted a sequential exploratory design with the emphasis on early learning and feedforward (Creswell & Plano Clark, 2011). An initial pool of 46 measurement items was developed to measure the level of satisfaction of casino customers' needs based on a literature review, in-depth interviews, expert panel reviews and a pre-test. First, a review of the literature related to satisfaction and needs in the fields of psychology and casino gaming was performed to give the research a theoretical foundation. Specifically, the needs attributes categorized on the basis of Maslow's hierarchy of needs were mainly adopted from the study of Taormina and Gao (2013) and modified to fit the context of casino gaming. In addition, six items were put forward by the authors based on their own industry experience and conversations with industry professionals. For example, "my need for appropriate room temperature" was included as a physiological need and "my need for basing my gambling actions on my own values" was placed under the self-actualization needs category.

Second, in-depth interviews with Chinese casino players aiming to gain some extra input from the Chinese perspective were conducted given the fact that the measurement items identified from the literature were derived from a westerner's perspective. The in-depth interviews started with snowball sampling and quota sampling in order to assemble representative data from the population. According to the Macau Government Tourism Office

(2014), Hong Kong and mainland Chinese tourist arrivals altogether accounted for 84.6% of the overall inbound visitors in 2013. The proportion of Hong Kong Chinese and mainland Chinese visitors was roughly three to seven. Ten telephone interviewees including three Hong Kong Chinese and seven mainland Chinese casino players were thus invited via snowball sampling. The sample size was deemed appropriate as no significant new information was obtained towards the end of the ten interviews; hence, data saturation was reached. Examples of interview questions included: Did you visit one particular casino when visiting Macau? If yes, why did you choose that particular casino? What did you like or dislike about that casino? Follow-up probing questions were also asked to identify interviewees' perceptions of their needs being satisfied. The interviewees provided a number of new items for inclusion. For example, "my need for caring service" was included in the esteem needs category and "my need for learning a variety of games in casinos" was grouped under the self-actualization needs.

Third, a list of measurement items compiled from the literature review and findings of the interviews was generated. In purifying measurement items, Zaichkiwsky (1985) recommended conducting an expert panel assessment for professional advice to assess their content validity. Eight academics with an expertise in casino and marketing research and scale development were consulted to examine the content and face validity of the compiled measurement items. With the amendments and approval from the expert panel, a questionnaire with a pool of 46 measurement items was developed (see Appendix). In order to test the hypothesized relationship between a casino-induced satisfaction of needs and casino customer loyalty, we also included a loyalty construct consisting of three items adopted from Tsai, Lee and Pan (2015) in the questionnaire. The items above were operationalized on a seven-point Likert-type scale with an anchor of 1 representing strongly disagree and 7 strongly agree. In addition, two screening questions were added to the questionnaire to identify only those who had paid at least two visits to and played at the same Macau casinos during the past 12 months at the time of the

survey. This ensured that the respondents would have a fresh memory of their visitation experiences. The respondents were also asked to name their most-visited casino. In the case of Macau, while VIP players generate more revenue, the profit margin from the VIP market is lower than that from the mass market due to junket commission. The marketing to the VIP market is mostly done by the junkets rather than directly by the casinos. Therefore, in our study our target population are mass market players to Macau casinos.

Fourth, the developed questionnaire was pre-tested with five Chinese research assistants who thoroughly went through the questionnaire items. Minor revisions were performed to clarify any unclear wording in the questions. The questionnaire was then finalized. As the questionnaire was originally prepared in English, it underwent a translation/back-translation procedure for translating it into traditional and simplified Chinese for Hong Kong and mainland Chinese individuals, respectively.

The survey questionnaires were distributed at the entrances of major casinos belonging to the six gaming concessionaires in Macau with the help of 11 trained student helpers during a two-week period in March 2015. Convenience sampling was used based on the willingness of players to participate in the study. A total of 493 completed questionnaires were collected. After data screening, 483 valid samples were retained for subsequent data analysis.

### ***3.2 Data Analysis***

Descriptive statistics were calculated to show the demographic profile of respondents. An exploratory factor analysis (EFA) was performed to identify the underlying dimensions of casino-induced needs, followed by a confirmatory factor analysis (CFA) to confirm the identified dimensions. Cronbach's alpha and average variance extracted (AVE) were used to assess reliability and construct validity, respectively. Common method bias was checked by performing the Harman's single-factor test. Finally, a multiple regression analysis was

conducted to assess the relationship between a casino-induced satisfaction of needs and casino loyalty.

## **4. RESULTS**

### **4.1 Demographic Statistics**

Among the 483 respondents, females accounted for 55.5% and males 44.5%. Over four-tenths (41.6%) of the respondents were in the age group 31-40, followed by the 21-30 age group (38.1%), the 41-50 age group (14.1%) and the 51 or above age group (6.2%). Hong Kong Chinese respondents accounted for 29.4% and mainland Chinese respondents 70.6%. Among the 341 mainland Chinese respondents, 201 came from the Guangdong Province, which is likely due to the geographical proximity to Macau. More than four in ten (41.6%) of the respondents were single, 55.7% were married and 2.7% were of other marital status. As for monthly household income, most Hong Kong Chinese respondents reported an income between HKD20,000 and 29,999 (33.1%), followed by between HKD10,000 and 19,999 (26.1%) and between HKD30,000 and 39,999 (22.5%); most mainland Chinese respondents reported between RMB10,000 and 19,999 (32.8%), followed by below RMB10,000 (27.9%) and between RMB20,000 and 29,999 (17%).

### **4.2 EFA**

We adopted a split-half validation procedure to initially identify and subsequently confirm the casino-induced needs structure. That is, the whole data set was randomly split into two subsamples: one ( $n=241$ ) for identification of the underlying dimensions by the EFA and the other ( $n=242$ ) as a hold-out sample for the CFA. The EFA was performed by applying a maximum likelihood with an oblique (promax) rotation to identify the underlying dimensions and items for the final factor solution. Considering the five needs dimensions specified *a priori* in



Maslow's hierarchy of needs, coupled with a visual review of a scree plot, the EFA was performed with a specified five-factor structure. Factorability of the underlying covariance matrix was evident with a Kaiser-Meyer-Olkin measure of sampling adequacy statistics of 0.897 (Kaiser, 1974) and a significant Bartlett's (1950) test of sphericity ( $\chi^2(210) = 3213.635$ ,  $p < 0.001$ ). Items with factor loadings below 0.4 and communalities less than 0.5 were deleted. A total of 21 measurement items was retained and resembled well in accordance with the pre-specified needs categories, thus possessing face validity. The five-factor structure explained 65.005% of variance in the data and all the dimensions exhibited an acceptable level of reliability as shown in Table 2.

[Insert Table 2 here]

Convergent validity of the factorial structure is evident by the high factor loadings within factors. Hair, Black, Babin and Anderson (2010) noted that a factor loading of 0.4 or above is deemed significant for a sample size of 200. Discriminant validity is achieved with no cross-loadings between factors, in addition to factor correlations less than 0.7.

### **4.3 CFA**

The CFA was conducted on the hold-out sample to test the fit of a correlated five-factor structure. The five-factor solution with 21 items was confirmed with all significant factor loadings as shown in Table 3. The proposed measurement model fits the data well with acceptable goodness-of-fit indices [ $\chi^2 (df = 177) = 324.838$ ,  $p < 0.000$ , RMSEA = 0.059, CFI = 0.954, NNFI = 0.945 (Hair et al., 2010)]. While the chi-square value is statistically significant, it is likely due to the chi-square's sensitivity to a large sample (Hair et al., 2010; Lacey, Suh & Morgan, 2007). Alternatively, a ratio of the minimum value of the discrepancy – C to the degrees of freedom was calculated (i.e., CMIN/df = 1.835) and it indicates an acceptable overall model fit (Byrne, 1989).

[Insert Table 3 here]

As shown in Table 4, reliability measures of all the factors from the CFA exceeded 0.7, demonstrating an acceptable level of construct reliability (Nunnally, 1978). The convergent validity of the factors is evident by not only all the AVE values above 0.5 but also all factor loadings significant at the  $p < 0.000$  level. Additionally, the discriminant validity of the factors is established by AVE values higher than the maximum shared variance (MSV), the average shared variance (ASV) values and the square root of AVE values greater than inter-construct correlation coefficients (Hair et al., 2010).

[Insert Table 4 here]

As suggested by Anderson and Gerbing (1998), the following four nested models were developed to test the relative adequacy of the competing measurement models:

*Model 1 (study model):* Five correlated factors of casino-induced needs

*Model 2:* Five uncorrelated factors of casino-induced needs

*Model 3:* Single factor structure of casino-induced needs

*Model 4 (null model):* 21-item structure of casino-induced needs

As shown in Table 5, Model 1 showed better goodness-of-fit indices than the other three competing models. The significant chi-square differences between Model 1 and other models also demonstrate Model 1's superiority over the other models, further confirming its discriminant validity (Segars, 1997).

[Insert Table 5 here]

Finally, a test of common method bias was performed to assess whether any bias caused by nuisance during the process of data collection might have influenced the responses given (Podsakoff, MacKenzie, Lee & Podsakoff, 2003). A study that has significant common method bias refers to one where more than 50% of the variance in the model can be explained by a single factor (Lings & Greenley, 2005). A Harman's single factor test was performed by

constraining the number of factors extracted to be one and the result showed that common method bias is not an issue in our study as the single factor structure accounted for only 32.9% of the variance in the model.

#### ***4.4 Multiple-regression Analysis***

With the confirmed factorial structure of casino-induced needs, scores of the five needs factors and a casino loyalty factor were imputed using the regression method with the whole sample (i.e., 483 cases). A multiple-regression was then conducted with casino loyalty as the dependent variable and the five needs factors as independent variables to understand how the casino-induced satisfaction of needs may have impacted the level of casino loyalty. As shown in Table 6, the overall model is significant at the  $p < 0.000$  level with an  $F$ -statistic of 47.477. The adjusted R-square statistic of 0.325 indicates that 32.5% of the variance in casino loyalty can be explained by the model. In particular, among the five needs factors, the satisfaction of the needs for self-actualization ( $\beta = 0.327$ ;  $t = 6.340$ ), safety and security ( $\beta = 0.319$ ;  $t = 5.555$ ) and physiology ( $\beta = 0.184$ ;  $t = 4.017$ ) was found to significantly and positively affect the respondents' loyalty to the casinos. However, the satisfaction of the needs for belonging and esteem was not a significant determinant of casino loyalty. Thus, our hypothesis that a casino-induced satisfaction of needs positively affects casino loyalty is partially supported as only three out of the five needs factors were found to significantly affect casino loyalty. The VIF values of the independent variables were all below ten, indicating that serious multicollinearity is not present.

[Insert Table 6 here]

### ***5. IMPLICATIONS***

#### ***5.1 Theoretical Implications***

Paralleling the growth of the casino industry, research related to casino customers has been on the rise. In particular, studies on the antecedents to and consequences of casino customer satisfaction have caught the attention of scholars in the last two decades. Many scholars have dedicated their efforts to finding ways to help enhance casino customer satisfaction (e.g., Wong, 2013); others have debated and examined how casino customer satisfaction may have affected customers' behavioral intentions (e.g., Lam et al., 2011). While those studies have produced valuable insights, they have mainly borrowed a rather generic construct of customer satisfaction and applied it to the context of casino gaming in assessing customers' general perception of the products/services offered by casinos. Nevertheless, such construct adoption is based on the assumption that customer satisfaction can be universally assessed with some generic questions, which may only be able to catch customers' seeming perception of casinos' offerings. Wilson (2002) noted the difficulty of developing a reliable and valid measure to capture satisfaction in all industries. Customer satisfaction research in the context of casinos appears incomplete without research on developing an industry-specific customer satisfaction measurement scale, not to mention such a scale from the perspective of customers' inner needs; our research results can certainly fill this void.

Based on Maslow's hierarchy of needs (Maslow, 1943; 1970), following Churchill's (1979) suggestion on scale development and studying both Hong Kong and mainland Chinese customers visiting Macau casinos in our research, we rigorously developed a five-factor casino-induced satisfaction of needs scale to help casinos understand how they may satisfy their customers in terms of their inner needs. While the naming of the factors mimicked Maslow's hierarchy of needs, the measurement items were empirically developed specific to the casino context.

The need for safety and security emerged as the factor accounting for most of the variance (i.e., 39.975%) in casino-induced customer satisfaction and it was viewed as the second most

satisfied need based on the mean score. Due to the intensive and large numbers of monetary transactions, casinos can be regarded as financial institutions (Internal Revenue Service, 2015) and are highly regulated as to how their operations can be run (Kilby, Fox & Lucas, 2005). Therefore, it is logical that casino customers have high expectations for casino safety and security in terms of a safe and protected casino environment and a sense of financial and physical security.

The self-actualization need, which is theoretically atop Maslow's needs pyramid, was the least satisfied need among respondents in terms of its mean score (i.e., 4.058); however, this need accounted for the second most of the variance (i.e., 11.525%) in casino-induced customer satisfaction. As noted by Goldstein (1940), self-actualization refers to reaching the full potential of oneself in his/her living world. Casino customers are more likely to gain satisfaction because of the possibility of being oneself when playing at the casino and realizing his/her desire to gamble. Nevertheless, what the respondents' most-visited Macau casinos have offered was not helping them meet their self-actualization needs.

The physiological need, which theoretically precedes all other needs in Maslow's needs pyramid, was ranked third both in accounting for the variance in casino-induced customer satisfaction (i.e., 10.293%) and in perceiving the level of need satisfaction with a factor mean score of 4.672. While we redefined the physiological need in our study as having pleasant physical conditions allowing a satisfying experience in a casino, what respondents cared more for were food/beverage variety and quality while ignoring other facility provisions.

The belonging need was ranked fourth both in accounting for the variance in casino-induced customer satisfaction (i.e., 5.69%) and in perceiving the level of need satisfaction with a factor mean score of 4.395. The belonging need is satisfied when customers feel personally attached to the casino (Baumeister & Leary, 1995), in terms of feeling welcomed by and receiving hospitality from the casino management. Additionally, being cared for by the casino and

receiving special treatment as a loyalty program member also helped enhance the satisfaction of the belonging needs.

The esteem need is satisfied when casino customers' needs for genuine, caring and friendly services are met. It is noted that the seemingly measurement items of esteem on respect, recognition and prestige included in the initial item pool were not retained after factor analysis. It is possible that our surveyed respondents were (1) mass market customers and (2) of Chinese culture, who likely viewed quality service delivery as reflection of esteem perceived. Or, these respondents may have different perceptions on what constitutes the need for esteem. When consumers are becoming more sophisticated, fulfilling casino customers' esteem needs is equivalent to meeting basic service expectations that each casino should simply and consistently deliver (Petrillose & Brewer, 2000). This is evident in our finding that the esteem need was rated the most satisfied with a highest factor mean score of 4.838 but contributed minimally (i.e., 5.553%) to the variations of the casino-induced satisfaction of needs.

In summary, our study results show that Maslow's theory could plausibly be applied to the casino context in assessing customers' inner need satisfaction. Moreover, the relationship between our developed scale and customer loyalty was empirically evident to a certain extent, not only partially supporting our hypothesis but also echoing previous studies (e.g., Wong & Fong, 2010).

## ***5.2 Practical Implications***

When using the developed scale of the casino-induced satisfaction of needs, some practical implications could be devised for casinos to better understand their customers and meet their needs to enhance customer satisfaction.

According to Table 4, respondents generally felt positive about their most visited casinos in Macau in satisfying their various types of needs, evident with above-four factor mean scores

out of a seven-point scale. That is, the respondents' most visited casinos had only marginally met their various inner needs; there's still ample room for casinos to improve in enhancing customers' satisfaction of needs. In particular, casinos in Macau could most satisfy customers' esteem needs ( $\mu = 4.838$ ,  $\rho = 1.052$ ), followed by safety and security needs ( $\mu = 4.694$ ,  $\rho = 0.995$ ), physiological needs ( $\mu = 4.672$ ,  $\rho = 0.936$ ), belonging needs ( $\mu = 4.395$ ,  $\rho = 1.150$ ) and self-actualization needs ( $\mu = 4.058$ ,  $\rho = 1.221$ ). Nevertheless, when examining the percentage of the variance of the casino-induced satisfaction of needs explained by the five factors in Table 2, the esteem needs turned out to account for the least (5.553%); the safety and security needs accounted for 39.975%, self-actualization 11.525%, physiological 10.293% and belonging 5.69%. Among the five types of inner needs, self-actualization appears to be one that requires higher attention, as it was rated the least satisfied but accounted for the second most in measuring satisfaction. In particular, casinos should work on creating an environment, design programs and gaming activities that would allow players to become someone that they want to be and achieve self-fulfillment. Furthermore, the environment, programs and activities should also be able to match players' own values and help realize their innermost gambling desires. In achieving the above, casinos could conduct focus group interviews or in-depth interviews with their customers to uncover who they want to be, what makes them feel self-fulfilled, what their own values may be and what their innermost gambling desires are. Loyalty programs, for example, could be utilized and structured in a way that offer rewards, whether tangible or intangible, in enhancing the satisfaction of casino customers' inner needs.

On the other hand, casinos should continue their efforts in improving and maintaining a safe and secure casino environment, coupled with the provision of a variety of quality foods and beverages, for their customers. In particular, to ensure an environment that is safe and secured, it is critical that casinos strictly obey and enforce casino gaming regulations, such as currency reporting, clear gaming rules and closed-circuit television monitoring, so that players feel a

sense of safety and security both physically and psychologically when playing at a casino. As far as physiological needs are concerned, to our surprise the results indicate that the respondents care about food and beverage variety and quality, even though the casinos had made tremendous efforts in providing enticing gaming environments for players. Casinos could conduct surveys to find out customers' preferences and expectations of the variety and quality of their food and beverage offerings and respond accordingly. Focusing on the above-mentioned needs of self-actualization, safety and security and physiology not only enhances casino-induced satisfaction of needs but also increases casino customer loyalty as evident from the results of the multiple regression analysis. In meeting customers' belonging need, casino operators should strategically plan its floor layout and game types to show their care and welcome to not only 70 percent of the mass market players who sit/stand in crowds particularly at baccarat tables (Chiou, 2016) but also those who sit alone by slot and electronic table machines.

Last but not least, instead of asking customers to evaluate their general perceptions of the products and services offered by the casinos, in-depth investigations could be carried out by each casino using the scale developed by this study to track the casino's performance in satisfying customers' inner needs over time. A longitudinal study can generate evidence of the effectiveness of their product and service offerings.

## ***6. CONCLUSION, LIMITATIONS AND FUTURE RESEARCH DIRECTIONS***

This study was based on the theory of Maslow's hierarchy of needs (1943; 1970) and we empirically developed a casino-induced satisfaction of needs scale that aimed to fill the void of casino customer satisfaction research. Nevertheless, the research results should be interpreted with the following limitations in mind. First, as our study surveyed Hong Kong and mainland Chinese visitors to Macau casinos, the study results may not be generalized to other



jurisdictions or cultures. Second, the study results could be subject to a social desirability bias that results from respondents presenting themselves in a favorable way regardless of their true view on the survey questions asked (Podsakoff et al., 2003).

Future research directions are provided. First, our study could be replicated and validated using samples from other gaming jurisdictions or cultures and see whether our developed five-factor casino-induced need satisfaction scale will still hold. Second, whether or not our developed casino-induced need satisfaction scale can serve as a better predictor of casino customer loyalty than the commonly used generic customer satisfaction measures remains unanswered. Future research can compare the impact of our developed scale with those borrowed generic satisfaction measures on casino customer loyalty. Furthermore, as loyalty programs (or reward programs) have been deemed as a useful tool for enhancing customer satisfaction (Bridson, Evans & Kickman, 2008) and loyalty (Baloglu, Zhong & Tanford, 2014), it will be interesting to factor player loyalty programs in our model of casino-induced satisfaction of needs and casino customer loyalty to see how the three constructs would interact among themselves. Finally, as there is distinction between mass (including premium mass) and VIP casino customers and the integrated resorts are of different concepts and product/service provisions, it will be of value to investigate how the heterogeneity of casinos (e.g., style, luxury, gaming vs. non-gaming provision) may have catered to and satisfied the needs of customers of different calibers so that their loyalty towards casinos could be enhanced with different tactics.

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