A patron, a referral, and why in Macau casinos – the case of mainland Chinese gamblers

ABSTRACT

Delivering high quality service tends to improve the loyalty of valued customers. Operators should have an understanding of how customers react to the service provision. The current investigation is undertaken in Macau casinos and explores the relationship between service quality and loyalty of casino members and non-members with a focus on gamblers from the mainland China. Gamble loyalty is operationalized on the basis of attitudinal and behavioral dimensions. A quantitative method is used to explore these relationships. Casino service quality is measured by using a newly developed four dimensional scale named CASERV. The results indicate that service quality explains significant variance in gambler attitudinal loyalty but not behavioral loyalty for casino members and non-members. In particular, service delivery contributes substantially to gambler attitudinal loyalty. Surprisingly, non-members report higher level of service quality perceptions and are more likely to act as referral for the casino and to spread positive word-of-mouth communications; whereas members do appear to patronize the casino more frequently and to play longer in the casino of their first choice during their visit in Macau. Implications of these findings are provided for practitioners and researchers.

. **Key words: casino service quality, behavioral loyalty, attitudinal loyalty, Chinese gamblers, Macau casinos, loyalty program, membership**

A patron, a referral, and why in Macau casinos Introduction – the case of mainland Chinese gamblers

Casino business in Macau is booming. Numerous reports (mainly see Macau Daily Times) have shown that gaming revenues in Macau continue to increase and grow, and such increase is primarily attributed to gamblers from the Chinese mainland (hereafter the mainland) (Loi and Kim, 2010; Zeng et al., 2012). Macau was only freed up as a tourist and gambling destination to Chinese from the mainland a decade ago. Since then, Chinese gamblers from the mainland (hereafter Chinese gamblers) have dominated the Macau market and become a major source of casino revenues (see Zeng, Prentice, and King, 2012). Research on this segment is emerging, yet inadequate. Most research is focused on Chinese gambler behaviors (e.g. Lam, 2012; Tao, Wu, Cheung, and Tong, 2011; Vong, 2007). This study is approached from casino service perspective and analyses its impact on their loyalty behaviors.

Despite its short history, the current casino boom in Macau is intensifying competition among various operators. Thirty-nine casinos operating within a miniscule landmass compete aggressively for players from the mainland and Hong Kong. Casinos are compelled to undertake aggressive marketing to acquire new customers and to retain existing ones. From relationship marketing perspective, customer retention is more profitable than customer acquisition. Delivering high-quality service along with various loyalty programs, for instance, membership program, are common practices to nurture customer loyalty and retention (e.g. Bell, Auh, and Smalley, 2005; Nolton, Kannan, and Bramlet).

Service quality is evidently an antecedent of gambler loyalty (e.g. Prentice, 2013a; 2013b). Gaming researchers (e.g. McCain, Jung and Hu, 2005; Prentice, King, and Ohtsuka, 2012; Prentice, 2013) assert that service quality should be viewed as a multidimensional construct to examine its relationship with customer loyalty. These studies show that various

dimensions have different effects on gambler loyalty. Customers across contexts and industries assess service quality dimensions differently; accordingly the impact on customer loyalty varies (Cronin and Taylor, 1992; Parasuraman, Zeithaml, and Berry, 1988). Indeed, several service quality models exist in the literature, and each model is composed of different dimensions (e.g. Groorooos, 1984; Parasuraman, Zeithaml, and Berry, 1985; 1988). Although some models, for instance, Parasuraman et al.'s SERVQUAL, were developed on the basis of various industries and contexts, they are too generic and lack of accuracy in assessing service quality for a specific context (see Wong and Fong, 2012). In view of this consideration, Wong and Fong (2012) employed a sample of Chinese gamblers in Macau and developed a scale, named CASERV, to explicitly measure customers' judgments of casino service quality. CASERV consists of four dimensions: game service, service delivery, food service, and service environment. Development of this scale underwent a rigorous process and generated good reliability and validity. Hence, CASERV is opted to assess casino service quality in the current study.

Loyalty programs have been claimed to be effective in achieving customer satisfaction and loyalty (Barsky and Tzolov, 2010; Nolton, Kannan, and Bramlet, 2000). Meczka's (2010) dissertation provides a thorough review of casino loyalty programs based on casinos in Las Vegas. Although these programs may offer competitive advantage, Barsky and Tzolov (2010) indicate that degree of effectiveness varies across contexts and customer segments. Casinos in Macau do offer various loyalty programs, for instance, offering customers various membership/reward cards, to enhance customer loyalty. A cardholder, often regarded as a casino member (hereafter casino member), collects points by swiping the card at all points of consumption including gaming within the casino property. The member can redeem the points for accommodations and so on. The casino can monitor the customer's consumption behaviors including betting volume and length of playing. Casinos often base

on these behaviors to develop more appropriate customer relationship management programs and to enhance marketing strategies. Hence, membership program facilitates casino developing relationship with members and stimulates customer loyalty. However, given gambling is illegal in Mainland China, being a casino member may be perceived as a regular gambler. Such perception may affect Chinese gamblers' attitudes towards this program and subsequently their behaviors. On this basis, the study examines how casino members and non-members perceive casino service and how such perception influences their loyalty behaviors. This finding may help casinos gain insights into effectiveness of membership program.

Consistent with foregoing discussion, the current study examines the impact of casino service quality measured by CASERV on gambler loyalty for members and non-members among Chinese gamblers. Since CASERV is a new scale, this study has an exploratory nature. In particular, this study operationalizes gambler loyalty into attitudinal and behavioral dimensions. The behavioral dimension is indicative of customer repurchase; whereas the attitudinal element is reflective of customer positive attitudes and favourable behavioral intentions (Dick and Basu, 1994). Both dimensions are important to understand customer loyalty. The following section provides the rationale for this operationalization and a review of the relevant literature. Subsequently, the applicable methodologies are outlined. The final section presents findings and conclusions.

Literature review

Gambler loyalty

Customer loyalty, referred to as a psychological function, includes customers' biased behavioral response to one or more alternative brand out of a set of brands (Jacoby and Kyner, 1973). Customer loyalty is indicative of relationship continuance, increased scale or scope or relationship, recommendation resulting from customer's belief towards the business

(Hallowell, 1996). Achieving customer loyalty has implications of enhancing shareholders value (Sindell, 2000) and company profitability (Ganesh, Arnold, and Reynolds, 2000; Reicheld and Sasser, 1990; Reicheld, 1996). Barbalet (1996) also affirmed that loyal customers tend to be more forgiving when service fails. Loyal customers are more inclined to spread positive word of mouth and less prone to switching behavior (Buttle, 1996; Bowen and Chen, 2001; Bowen and Shoemaker, 1998).

Researchers (e.g. Dick and Basu, 1994; Oliver, 1999) generally agree that customer loyalty is multidimensional. Dick and Basu (1994) operationalize customer loyalty into four categories: no loyalty, spurious loyalty, latent loyalty and condition loyalty. Oliver (1999) takes a different approach and categorized loyalty as no loyalty, conative, affective and cognitive loyalty. Although labelled differently, the two approaches share a great deal of similarities (see Curran, Varki, and Rosen, 2010). These categories fall into two general dimensions: behavioral loyalty and attitudinal loyalty. Behavioral loyalty is directly related to repeat purchase and greater market share (Bandyopadhyay and Martell, 2007; Dewitt, Nguyen and Marshall, 2008); whereas attitudinal loyalty refers to positive attitude towards the firm, which often results in prolonged relationship between the customer and firm (Bennett and Rundle-Thiele, 2002; Dewitt, Nguyen, and Marshall, 2008). Although behavioral loyalty is manifested by some observable outcomes such as market share and sales, marketers cannot design appropriate marketing programs without understanding customer attitudes towards the products or brands, particularly in a dynamic environment where customers can be vulnerable or changeable (see Bennett and Rundle-Thiele, 2002). Capturing both types of loyalty is crucial for the firm in order to remain competitive; especially when the nature of product is identical. Customers with positive attitudes tend to return and purchase more. Attitudinal loyalty may be more reflective of customer loyalty.

This perspective is particularly true in the case of gamblers. In the casino context, gamblers' behavioral loyalty is often measured by their visiting frequency within a fixed period and the average length of play each visit. Not all returning gamblers have a positive disposition and not all gamblers with positive attitudes return. Gamblers who return may either be genuinely loyal to the casino, or spuriously loyal, because of situational factors such as positive experiences of winning. These gamblers may switch when the chance of luck is reduced or when other casinos offer better incentives. However, positively disposed customers are often genuinely loyal to the casino and choose the casino as their first choice of visit. They are less likely to switch despite more attractive offering from competing casinos. A series of losses or changed financial situations may hamper their future visits or constrain their subsequent gaming activities; nevertheless, these gamblers tend to spread positive word of mouth (WOM) communications among peer gamblers and become referral for the casino. Although behavioral indicators per se are not adequate to determine the nature of gambler loyalty (genuine or spurious), these indicators have implications of generating short-term profitability for the casino. Capturing gamblers' positive attitude and favourable behavioral intentions has long-term strategic implications for the casino. Understanding different dimensions of gambler loyalty is important for casino marketers. Consistent with this view, the current study examines both gambler attitudinal and behavioral loyalty.

Casino service and gambler loyalty

Customer loyalty is related to company profitability. The factors that affect customer loyalty have implications for profitability. Service quality is widely acknowledged as an antecedent of customer satisfaction and loyalty (e.g. Cronin, Brady, and Hult, 2000; Dewitt, Nguyen, and Marshall, 2008; Wilkins, Merrilees, and Herington, 2010; Woodside, Frey, and Daly, 1989). The quality-loyalty relationship has also been extensively discussed in the

tourism and hospitality industries including the casino settings (e.g. Curran, Varki, and Rosen; 2010; Mosahab, Mahamad, and Ramayah, 2010; Prentice, 2013a; 2013b).

In the casino context, McCain, Jang and Hu (2005) employed the gap model of service quality that is based on Brady and Cronin's (2001) functional and technical quality concepts, and analysed how casino service attributes affect customer loyalty. Their study show that the top three gaps are related to service encounters between casino players and employees (the functional quality). Their study offers insights into the relationship between casino service and customer loyalty. As the authors developed the service attributes based on casinos in Las Vegas, these attributes may not be generalizable to other contexts. Prentice et al. (2012) and Prentice (2013a; 2013b) adopted Parasuraman et al.'s (1991) SERVQUAL to examine the relationship between casino service quality and gambler loyalty and found that the former had a significant impact on the latter. In particular, these studies operationalized service quality as a multidimensional construct and analysed respective effect of each dimension on gambler loyalty. Although previous studies offer great insights into the quality-loyalty relationship, the findings are inconsistent due to various study contexts and service quality models. For instance, Prentice et al.'s (2012) study that was conducted in a Malaysian casino reported that employee empathy, among other dimensions, has a significant positive influence on gambler loyalty; whereas in Macau context, empathy has a negative effect for gamblers across different segments. McCain et al.'s (2005) study indicates that the interpersonal encounters – the functional quality in Brady and Cronin's model are important to achieve gambler loyalty; however, others report that other impersonal encounters shown in Parasuraman et al.'s (1991) adapted SERVQUAL (SERVPERF) also have significant impact on loyalty (see Prentice, 2013a; 2013b).

The existing service quality measures, for instance, Parasuraman, Zeithaml and Berry's (1988) SERVQUAL and Brady and Cronin's (1992) SERVPERF, though popular,

are limited by their duplicability, dimensionality, construct validity and generalizability (see Wong and Fong, 2012). SERVQUAL, the most cited scale in the literature, is not free from criticism as being too generic without taking the research context into consideration (Gilmore and McMullan, 2009). This scale also focuses on the service delivery process (functional aspects) and attends very little to the outcomes of the service encounter (technical aspects) (Butler, 1996). In contrast, Gronroos' (1984) service quality model focuses heavily on the technical aspects. Only a combination of the functional and technical aspects offers a better prospect of predicting customer choices (Buttle, 1996, Richard and Allaway 1993). Although Brady and Cronin's (2001) model includes service delivery, environment and product, a number of issues such as the construct validity have been challenged (see Wong and Fong, 2012).

To address these perceived gaps and to ensure relevance within the casino context, Wong and Fong (2012) developed a 12-item scale to measure casino service quality (CASERV). Their scale is based on the service quality model originally proposed by Rust and Oliver (1994) and assesses four facets of casino service offerings: game service, service environment, food service and service delivery. Game service represents the technical aspect of a service encounter, such as casino table and slot games, consistent with the concept of core or actual services proposed by Rust and Oliver (1994), and Gronroos' (1984) technical quality. In accordance with the concept of servicescape, service environment deals with casino atmosphere and its physical aspects (Bitner, 1992). Service delivery mainly depicts the service performance and behaviors of casino frontline employees and their interactions with customers (the functional quality in Gronroos' model, 1984), whereas food service is considered as a key facet in effective delivery of hospitality services (Ha and Jang, 2010). A rigorous scale development and validation process involving the conduct of three separate studies was adopted to generate good validity and reliability for this scale. Particularly, this

scale was developed using a sample of Chinese gamblers in Macau. In view of this consideration in conjunction with the foregoing discussion, the researchers opt for CASERV in the current study to analyse its impact on gambler loyalty.

Casino loyalty programs and gambler loyalty

Berry (1995) indicates that successful marketing must include three objectives: 1) attract new players, 2) maintain and enhance existing customer relationships, and 3) recover inactive or defecting customers. Loyalty programs are created to attract new customers as well as maintaining existing customers and stimulating customer loyalty through offering consumers discounts, free goods, cash, or special services (Berman, 2006). Customer loyalty is an important factor of company profitability (Hallowell, 1996). Loyal customers tend to be less price-sensitive, spread positive word-of-mouth communications, and are less expensive to maintain than acquiring new customers (Parasuraman, Zeithaml, and Berry, 1996).

Casinos, like any other business, do endeavour to achieve customer loyalty. In addition to offering quality service, loyalty programs are widely discussed as an effective means of retaining existing customers. Baynes (2011) provided a thorough review of casino loyalty programs and indicated that these programs facilitate casinos attracting customer loyalty. Most casinos have traditional loyalty programs, providing a membership card that can be swiped at all transactions within the casino property. The programs use this transactional data (i.e. length of play, average betting and games of preference) in conjunction with the customer's individual characteristics such as demographic and psychographic information to structure offers and rewards (Barsky and Tzolov, 2010). Casinos often base on the data to segment customers into different tiers and design a tiered reward structure. The tiered structure is designed to maximize a customer's lifetime value and to increase casino profitability (see Baynes, 2011). Those on the top tier are classified as platinum or gold members (referred to as VIP customers or high rollers). High rollers are

commonly acknowledged as the most lucrative segment in the casino industry (see Prentice and King, 2013). These customers often receive special attention from the casino and are entitled to play in the VIP gaming rooms (see Prentice, 2013a). Casinos make every endeavor, including personal service from specially trained casino hosts and designing the hotel suites based on individual gambler's idiosyncrasies, to satisfy and retain these customers (see Kale, 2005; Prentice, King and Ohtsuka, 2012). However, those at the lower tiers and those who do not possess casino membership (non-members) only receive basic services and normally play in the general gaming area. Consequently, customers of various segments with or without possessing casino membership have different service encounters and experiences which may affect their perception and assessment of casino services, in turn influences their level of loyalty to the casino.

On the other hand, although a number of gaming researchers (e.g. Barsky and Tzolov, 2010; Meczka, 2010) endorsed the view of effectiveness of casino loyalty programs, their studies are primarily based on the USA context. Prentice's (2013b) recent study conducted in Macau indicates that gamblers in Macau across different tiers have negative view and perception towards casino's special attention paid to them. A similar study undertaken in a Malaysian casino generated a contrasting finding that casino members sought special attention from the casino; whereas food service and other tangibles have very little influence on these members (see Prentice, 2013a). However, Zeng et al. (2012) report that one of the primary reasons that Chinese gamblers visit Macau is delicacy food. In view of such inconsistency, the current study examines how casino members in Macau perceive casino service quality and how such perception affects their loyalty.

Consistent with the above discussion, the current study proposes the following hypotheses:

H1a: Casino members and non-members perceive service quality differently

H1b: Casino members have higher level of perceptions than non-members

H2a: Casino members and non-members have different level of loyalty to the casino

H2b: Casino members have higher level of loyalty than non-members

H3a: CASERV has a significant influence on gambler loyalty

H3b: CASERV dimensions have different effects on casino members' loyalty

H3c: CASERV dimensions have different effects on casino non-members' loyalty.

H3d: The loyalty of casino members and non-members is affected by different CASERV dimensions. (Note: loyalty refers to both behavioral and attitudinal dimensions).

Method

Participants

Prospective respondents were recruited from seven large casinos in Macau, namely, Grand Lisboa, Venetian, Wynn, Star World, Galaxy, City of Dreams and MGM. The survey was undertaken with only Chinese gamblers from the mainland for the purpose of this study. The original survey was translated to Chinese by a professional translator. The survey was conducted at the non-gaming areas and questionnaires were administered to customers who were having a break from playing. 1000 surveys were distributed, and 411 usable questionnaires were generated. Of the total usable sample, 218 were male, and 193 were female. Most customers were over 25 years old, married and in full-time employment (see Table 1). A majority were either business owners or held quite senior positions (e.g. management or supervisory). Almost 20 per cent of the respondents had a college education and over 20 per cent earned in excess of \$50k per annum. The majority of the respondents were from Guangdong (the province of China is closest to Macau), indicating distance may be a factor of choice of destination. Table 1 shows the demographic information for the respondents.

---Table 1 here---

Measures

Consistent with the above discussion, the study assesses casino service quality using Wong and Fong's (2012) 12-item CASERV. One seven point likert-type scale was used to measure these items, indicating gambler perception of casino service with 1 representing strongly disagree and 7 strongly agree. Gambler loyalty was assessed by attitudinal and behavioral dimensions. The former was assessed by adapting Zeithaml, Berry, and Parasuraman's (1996) Behavioral-Intentions Battery items that indicate the respondent's likeliness of saying positive things about the casino, of recommending to other gamblers who haven't been there, and of considering the casino as their first choice of visit in the future. Higher scores are indicative of higher level of attitudinal loyalty. Gambler behavioral loyalty was measured by respondents reporting their average length of playing in the casino, and the frequency of actual annual visitation in the past three years, which are often used to predict their future patronage. Most casinos use these indicators to assess customer behavioral loyalty. This study adopted the criteria the survey casinos used to classify level of gambler visiting frequency and recoded to a seven-point Likert scale, with 1 indicating the least frequent, and 7 being the most frequent. Table 2 presents the items corresponding to the relevant variables. Additionally, problem gambling measured by Ferris and Wynne's (2001) the Problem Gambling Severity Index (PGSI) was used as a control variable to exclude its likely influence on gamblers' visiting frequency and length of play and to have a more accurate analysis of the relationship between casino service quality and gambler behavioral loyalty.

Procedure

A request for a grant to conduct the survey was sought. With assistance of the Macau government, seven casinos agreed to participate in the study. Prior to commencing the survey, the researchers informed prospective respondents about the purpose of the

investigation, and expressed a determination to find means of enhancing the provision of customer services. Respondents were asked to provide consent for their participation and were assured of anonymity. The researchers offered respondents a small gift as incentive for completing the survey.

The research assistants intercepted those who just came out from the casino gaming area. They approached the third customer following the former one. The survey was completed in two time periods per day: 10am to 12 pm and 3pm to 5 pm for five days per week in each of the seven casinos. The morning time was used first and then the afternoon period in the following weeks. High level of participation occurred in the mornings. Nevertheless, survey cooperation levels did not vary systematically among the seven casinos, and the responses showed no substantial variance.

Analyses and results

Reliability and validity

All items measuring the study constructs were factor-analysed to examine the factor structure and dimensionality. In order to gain insights into the influence of each aspect of casino service quality on gambler loyalty, this study opted for a first-order four-factor structure for CASERV. Results from undertaking confirmatory factor analyses also indicate a better model fit for the first-order factor structure (χ^2 (247) = 593.95, $p < .0005$, SRMR = .04 and RMSEA = .05, CFI = .99 and TLI = .97) than the second-order factor structure (χ^2 (209) = 500.48, $p < .0005$, SRMR = .06 and RMSEA = .05, CFI = .97 and TLI = .96). As CASERV is a newly developed scale, the overall service quality ratings across the seven casinos were regressed on its four factors to confirm the construct validity. This approach is consistent with that of Parasuraman, Zeithaml, and Berry (1991). The results shown in Table 3 indicate that the R^2 values for the seven casinos are statistically significant ($p < .0005$), and the beta

values for service environment and service delivery are consistently significant across all casinos. This finding provides strong evidence for CASERV's construct validity.

The coefficients values presented in Table 2 indicate that all items have a significant loading on their corresponding constructs. The average variance extracted for each factor was over .50, indicative of adequate convergence (Fornell and Larcker, 1981). The composite reliability was acceptable for each of the factors. These findings demonstrate adequate convergent validity. The results presented in Table 4 from Pearson correlation analyses indicate that the four service quality factors are significantly related ($p < .01$). The values range from .23 to .69, indicating no redundancy or violation of multicollinearity. Additionally, the shared variance between the proposed independent and dependent variables does not exceed 30 per cent, indicating that they are empirically distinct constructs. Discriminant validity is supported. Although the items measuring loyalty did have significant loadings to its corresponding constructs, the researchers opted for treating each indicator as an independent dimension for further analyses as these analyses have practical implications for casino practitioners, following suggestion and advice from several senior casino marketing executives. For instance, gambler attitudinal loyalty is measured by WOM (say positive things about the casino to other people), referral (recommend the casino to other gamblers who haven't been there), and first choice (always consider the casino as my first choice to visit in the future). Understanding how casino service affects these indicators can be good reference for casino marketers.

Table 4 presents Pearson correlation values for all study values. The results show that problem gambling is negatively related to all service quality factors and attitudinal loyalty, but positively related to gambler visiting frequency and length of play. Among the four CASERV factors, only food service and service delivery are significantly related to gambler attitudinal loyalty indicators. Although WOM is highly correlated with referral, they are

remained as separate criterion variables for further analyses as ‘saying positive things about the casino...’ (WOM) and “recommending the casino...” (referral) indicate different degrees of loyalty.

--- Tables 2, 3, and 4 here ---

Predictive validity was assessed by examining respectively the relationship of CASERV scale with summative score of items that measure gambler loyalty for the survey casinos. This approach is consistent with that of Woodside, Fray, and Daly (1989). The findings shown in Table 5 indicate that the correlations between the CASERV and gambler loyalty across the seven casinos are consistent and significant. In particular, CASERV’s two factors – service environment and service delivery explain significant variance in gambler loyalty consistently for all study casinos.

--- Table 5 here ---

Hypotheses testing

To examine the service quality perceptions and level of loyalty for member and non-members, independent-samples T-test was used for analyses. As expected, casino members and non-members have different perceptions towards casino service quality, particularly, food service ($M = 13.58$, $SD = 2.19$ for members, $M = 15.20$, $SD = 2.45$ for non-member, $p < .05$) and service delivery ($M = 12.17$, $SD = 2.68$ for members, $M = 15.22$, $SD = 2.22$ for non-member, $p < .05$). Hence, H1a is confirmed. Surprisingly, non-members have more positive perceptions of casino service quality, which is in contrast to H1b. Non-members are more likely and willingly to spread positive WOM ($M = 3.84$, $SD = 1.26$ for members, $M = 4.57$, $SD = .95$ for non-members, $p < .005$), and to recommend the casino to their friends ($M = 3.76$, $SD = .30$ for members, $M = 4.63$, $SD = .98$ for non-members, $p < .001$). They indicate that they would consider the casino they have just visited as the first choice in the future ($M =$

3.85, SD = .36 for members, M = 4.87, SD = .96 for non-members, $p < .0005$). Nevertheless, members tend to visit the casino more frequently (M = 2.65, SD = .56 for members, M = 1.70, SD = .11 for non-members, $p < .0005$), and their average length of playing during each stay is longer than non-members (M = 1.93, SD = .79 for members, M = 1.07, SD = .26 for non-members, $p < .0005$). The findings are present in Table 6 and Figure 1a, 1b, and 1c. On the basis of these findings, H2a is confirmed; whereas H2b is partially supported.

--- Table 6 and Figures 1a, 1b, and 1c here ---

Results for testing the relationship between casino service quality and gambler loyalty separately for members and non-members indicate that CASERV only has significant influence on attitudinal loyalty indicators for both groups although casino service quality explained statistically significant variance in members' visiting frequency. As shown in Table 7, among the four CASERV factors, service delivery demonstrated substantial influence on gambler attitudinal loyalty indicators for both groups, not on behavioral loyalty. Interestingly, game service appears to have statistically significant effects on WOM ($\beta = .19$, $p < .05$) and referral ($\beta = .24$, $p < .05$) for non-members only; whereas on the first choice for members ($\beta = .23$, $p < .05$). Additionally, food service also demonstrates significant influence on gambler visiting frequency for members ($\beta = .19$, $p < .05$) and non-members ($\beta = .27$, $p < .05$). Table 8 shows the results for parsimonious models. Apparently service delivery is an outstanding factor of gambler attitudinal loyalty. Hence, H3a-3d are supported.

--- Tables 7 and 8 here ---

Discussion and conclusions

The present paper investigates the relationship between casino service quality and Chinese gambler loyalty. This relationship is analyzed separately for casino members and non-members in order to gain insights into the influence of various casino service aspects on gambler loyalty. Casino service quality is measured by a recently developed scale named CASERV which involves four casino factors: service environment, service delivery, game service and food service. Gambler loyalty is operationalized into attitudinal and behavioral dimensions. Attitudinal loyalty indicators include gamblers' likeliness to spreading positive WOM, and to recommend the casino to peer gamblers who have not been there, and to choose the casino as their first choice in the future. Behavioral loyalty is assessed by gamblers' actual visiting frequency and their length of play during each visit in the casino. The survey was conducted on gambling-focused customers from the mainland at seven large casino resorts in Macau.

The findings from a series of analyses indicate that casino members and non-members have different perceptions towards casino service quality, particularly, food service and service delivery. Non-members have more positive perceptions of casino service quality. They are more likely and willingly to spread positive WOM and to recommend the casino to their friend. They indicate that they would consider the casino they have just visited as the first choice in the future. Nevertheless, members tend to visit the casino more frequently, and their average length of playing during each stay is longer than non-members. These findings seem to contrast to conventional thinking (the hypothesis) that members should have higher perception of service quality and be more likely to spread positive WOM and to act as referral since they receive better service. However, the results that members have longer average length of playing in the casino may account for their lower perception of casino service offering – perhaps these gamblers pay more attention to gambling but less to non-

gaming provisions. Post-hoc analyses show that members' average length of play each time is 5 hours, whereas non-members' is 1.5 – 2 hours. The finding that members visit the casino more frequently indicates that casino membership program does attract customer patronage.

Results for testing the service quality – customer loyalty relationship show that casino service quality indeed explains significant variance in gambler loyalty. However, results of Pearson correlation show that four casino service quality factors are significantly related to gambler attitudinal loyalty (WOM, referral and first choice). Only food service and service delivery are related to gambler behavioral indicators (visiting frequency and length of play). Surprisingly, service delivery is negatively related to gambler visiting frequency. This finding is consistent with that of Prentice's (2013b) study, indicating that Chinese gamblers are cautious of special attention paid to them by the casino.

Among the service quality factors, service delivery contributes substantially to gambler attitudinal loyalty indicators for both groups. The findings indicate that gamblers, regardless members or non-members, do expect courtesy and timely service from the casino (service delivery indicators). Successful delivery of such service may generate positive WOM communication among gamblers; hence they will choose the casino as their first choice of visit. This is particularly important for Macau casino operators since there are 39 casinos in this city. Visitors' gambling fund may be exhausted in the first casino they have visited during their stay in Macau. Having the casino as gamblers' first choice has strategic implications (casino profitability) for casino marketers.

Game service also has a significant influence on WOM and referral for non-members, but on first choice for members. This finding indicates that non-members appreciate the variety of casino games. Most of them are not serious gamblers (based on their betting volume and length of playing). Some of them were in Macau on their first visit at the survey

time. They were probably surprised to see such variety of game service, comparing to what they experienced at home.

Although overall casino service quality shows no significant impact on gamblers' visiting frequency and length of play (behavioral loyalty indicators), beta coefficient results indicate that food service does affect gambler patronage to the casino for both members and non-members. This is consistent with the finding of Zeng, Prentice and King's (2012) study. The authors reported that over half of mainland visitors visit Macau for delicacy food. To attract gambler patronage, particularly, Chinese gamblers, casinos should attend to this dimension. Casinos in Las Vegas have celebrity chefs. Perhaps this concept can be incorporated into the Macau context.

Surprisingly, service environment has no influence on any of criterion variables in the current study. This finding seems to contrast to that of Lam, Chan, Fong, and Lo's (2011) research. The authors reported that casino servicescape had impact on gambler satisfaction and intention to return. Service environment is indicative of casino physical facilities and atmosphere, consistent with the concept of servicescape. The contrasting finding may be attributed to the different criterion variables. The current study is focused on WOM, referral, first choice, actual visiting frequency and length of stay; whereas Lam et al.'s study is focused on gambler satisfaction and behavioral intention. Gaming researchers (e.g. Kale and Klugsberger, 2007; Prentice et al., 2012) indicate that customer satisfaction in the gambling context is not a sufficient condition of gambler loyalty. The factor that influences gambler satisfaction (servicescape in the case of Lam et al.'s study) is not warrantable of gambler (customer) loyalty. Nevertheless, such discrepancy is suggestive of further research in this regard.

Implications

This study has implications for the literature as well as for casino practitioners. To date this is the first study to apply CASERV in an empirical study to test its relationship with customer loyalty. Although there are many service quality measures in the literature, CASERV is designed explicitly to measure casino service quality, and thus more suitable for the study context. In particular, CASERV's construct and predictive validities are confirmed by its significant variance explained in overall service quality and customer loyalty across seven casinos. This approach to testing the validity is consistent with that of Parasuraman, Zeithaml, and Berry (1991) and that of Woodside, Frey, and Daly (1989). The finding that casino service quality impacts on customer attitudinal loyalty but not on behavioral loyalty has implication for loyalty research. Service quality appears to be a better predictor of customer positive attitudes and favourable behavioral intentions. Researches need to determine which dimension of loyalty is more appropriate for the study context prior to analysing the antecedents.

The findings have special implications for casinos that are seeking to gain competitive advantage and to maintain their profitability in an increasingly competitive market environment. This study provides guidance to practitioners or marketers on what aspects of service casinos should be focused on in order to attract customer loyalty, particularly gamblers' positive attitudes and favourable intentions. From service quality perspective, the study has proposed guidelines for enhancing casino service provision and has identified where such improvements are most needed. In particular, this study operationalizes customer loyalty into attitudinal and behavioral dimensions and examines their relationships with other variables. Discussion presented above indicates that this operationalization has practical implications. Since service quality shows very little effect on gambler patronage and length of play, casinos should seek for other alternatives/strategies to improve customer behavioral

loyalty. However, as the study shows that gambler patronage is highly related to problem gambling, casinos should be cautious when developing the relevant strategies. Finally, since the finding indicates that non-members are more agreeable to quality of casino service and show more favourable behavioral intentions, casinos should look into the difference in service that is provided to members and non-members and offer more appropriate service to the right market. The finding may also caution the casino to examine effectiveness of loyalty programs.

Limitations and future research

Although important findings are generated in the study, the conclusions raise some limitations. Among several service quality measures in the literature, this research only used one context specific scale. Including other scales in the testing may offer new prospects and insights into customer loyalty. Although the study provides CASERV's predictive validity, the sample size generated from each casino is fairly small. Interpretation of such findings should be discreet. Membership generally has a few categories, such as platinum, gold and silver (names vary across casinos). The study should compare loyalty of various groups. Previous research indicates that attitudinal loyalty often precedes behavioral loyalty. The present study did not test this relationship due to its exploratory nature. Additionally, the main purpose of this research was to explore various effects of casino service quality dimensions (measured by a new scale) on gambler loyalty. Future research should deploy structural equation modelling to analyse the relationships among casino service quality, customer behavioral and attitudinal loyalty. Finally, the participants of this study are gamblers from the Chinese mainland. The findings may be more generalizable by extending the sample frame. These limitations offer insights for future research.

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Table 1:
Demographic information

Variables	N	Percentage
<u>Education</u>		
below high school	161	39.20%
high school	163	39.70%
university and above	84	20.40%
<u>Income</u>		
\$3k and below	123	29.90%
3k - 6k	159	38.70%
6k - 10 k	30	7.30%
10k above	55	13.30%
<u>Profession</u>		
business owner	25	6.10%
FT employees	187	45.50%
PT employees	2	0.50%
others		
<u>Position</u>		
management	40	9.70%
professional	53	12.90%
others		
<u>Residence</u>		
Guangdong	240	58.40%
non-Guangdong	169	41.60%

Table 2
Results of factor analysis for the study variables

Service dimensions	Casino service items	FL	α	CR	AVE
service environment	The casino's physical facilities are clean and appealing	.78	.87	.87	.70
	The casino's ambience is comfortable	.83			
	The casino's décor and layout are stylish	.89			
service delivery	Casino employees give me personal attention	.84	.83	.84	.63
	Casino employees strive consistently to be courteous with me	.70			
	Casino employees give prompt service to me	.84			
game service	The casino provides a variety of games	.85	.89	.90	.74
	The casino has sufficient number of table games available	.92			
	The casino has sufficient number of slot machines available	.82			
food service	The price of food and beverage is reasonable	.79	.83	.83	.62
	The quality of food and beverage is excellent	.79			
	The casino offers a variety of food and beverage	.77			
Gambler attitudinal loyalty	I say positive things about the casino to other people	.95	.91	.92	.78
	I recommend the casino to other gamers who haven't been here	.97			
	I always consider this casino as my first choice to play	.70			
Gambler behavioral loyalty	How frequent do you visit the casino annually	.81	.72	.74	.51
	How long do you play at the casino each visit	.81			

Note: FL=factor loading, α = Cronbach alpha values, CR = composite reliability, AVE = average variance. χ^2 (104) = 307.23, $p < .0005$, SRMR = .04 and RMSEA = .05, CFI = .99 and TLI = .97

Table 3
Regression Analysis of OSQ vs CASERV scores for the four dimensions

Independent variables	Grand Lisboa	Wynn	Star World	Galaxy	Venetian	City of Dream	MGM
SE	.34**	.41**	.39**	.36*	.27*	.26*	.50***
GS	.11	.01	.01	.15	.15	.13	.15
FS	.06	.28*	.26*	.22	.22	.49**	.07
SD	.39**	.02	.25*	.35*	.35*	.11	.37**
Adj. R ²	.52***	.48***	.61***	.67***	.46***	.54***	.56***

Note: * $p < .05$, ** $p < .01$, *** $p < .0005$

OSQ= overall service quality, SE = service environment, GS = game service, FS = food service, SD = service delivery

Table 4
Pearson correlation values for all study variables

Variables	PG	SE	GS	FS	SD	WOM	Referral	FC	VF	LOP
PG										
SE	-.05									
GS	.01	.69**								
FS	-.18	.53**	.39**							
SD	-.26*	.37**	.23*	.68**						
WOM	-.11	.26*	.10	.45**	.60**					
Referral	-.10	.21*	.06	.44**	.61**	.92**				
FC	-.13	.16	.01	.42**	.60**	.65**	.68**			
VF	.48**	.03	.08	.17*	-.28*	.26*	.29*	.28*		
LOP	.26*	.19*	.13	.34**	.42**	.27*	.31**	.34**	.21*	
OSQ	-.12	.61**	.47**	.58**	.52**	.39**	.34**	.31**	.09	.22*

Note: * $p < .05$, ** $p < .01$, *** $p < .0005$

PG = problem gambling, SE = service environment, GS = game service, FS = food service, SD = service delivery, WOM = word of mouth, FC = first choice, VF = visiting frequency, LOP = length of play, OSQ= overall service quality

Table 5

Predictive validities of CASERV: correlations (r's) of predicted and actual scores using individual models for each casino

Casinos	Grand Lisboa	Wynn	Star World	Galaxy	Venetian	City of Dreams	MGM
Sample size	70	67	60	53	60	40	60
Grand Lisboa	PL = 1.03 + (.34 * SE) + (.39 * SD), Adj. R ² = .52***, d.f. = 4/65						
r =	.43	.41	.29	.32	.43	.39	.45
Wynn	PL = 2.50 + (.41 * SE) + (.28 * FS), Adj. R ² = .38***, d.f. = 4/62						
r =	.39	.45	.37	.41	.48	.42	.41
Star World	PL = 1.62 + (.39 * SE) + (.26 * FS) + (.25 * SD), Adj. R ² = .61***, d.f. = 4/55						
r =	.51	.50	.45	.42	.49	.34	.45
Galaxy	PL = -2.33 + (.35 * SE) + (.35 * SD), Adj. R ² = .67***, d.f. = 4/47						
r =	.35	.40	.56	.41	.49	.42	.39
Venetian	PL = 1.61 + (.48 * GS), Adj. R ² = .37***, d.f. = 4/55						
r =	.44	.41	.40	.51	.43	.48	.43
City of Dreams	PL = (.49 * FS), Adj. R ² = .54***, d.f. = 4/35						
r =	.40	.50	.49	.43	.42	.33	.40
MGM	PL = .40 + (.50 * SE) + (.37 * SD), Adj. R ² = .59***, d.f. = 4/55						
r =	.51	.42	.45	.49	.42	.40	.49

Note: * p < .05, ** p < .01, *** p < .0005

SE = service environment, GS = game service, FS = food service, SD = service delivery

Table 6
Results of comparing means between members and non-members

Variables	Membership	mean	SD	F(df)	Sig.
SE	M	20.12	3.37	3.15	.07
	NM	20.49	3.03		
GS	M	15.65	2.83	.50	.13
	NM	15.61	2.45		
FS	M	13.58	2.19	4.64*	.02
	NM	15.20	2.45		
SD	M	12.17	2.68	5.45*	.02
	NM	15.22	2.22		
OSQ	M	4.70	.80	.25	.61
	NM	4.95	.92		
WOM	M	3.84	1.26	8.25**	.004
	NM	4.57	.95		
Referral	M	3.76	.30	11.36**	.001
	NM	4.63	.98		
FC	M	3.85	.36	13.46***	.00
	NM	4.87	.96		
VF	M	2.65	.56	19.97***	.00
	NM	1.70	.11		
LOP	M	1.93	.79	28.32***	.00
	NM	1.07	.26		

Note: * $p < .05$, ** $p < .01$, *** $p < .0005$

SE = service environment, GS = game service, FS = food service, SD = service delivery, OSQ = overall service quality, WOM = word of mouth, FC = first choice, VF = visiting frequency, LOP = length of playing

Note: SE = service environment, GS = game service, FS = food service, SD = service delivery, OSQ = overall service quality, FC = first choice, VF = visiting frequency, LOP = length of playing

Figure 1a

Perceptions of casino service quality and gambler loyalty for casino members and non-members.

Figure 1b

Perceptions of casino service quality for casino members and non-members

Figure 1c

Gambler loyalty for casino members and non-members

Table 7
The relationships between casino service quality and gambler loyalty for members and non-members

Variables	Word of mouth		Referral		First choice		Visiting frequency		Length of playing	
Membership	M	NM	M	NM	M	NM	M	NM	M	NM
Problem gambling	.05	-.02	.09	.00	.09	.02	.45***	.10	.01	.32**
Service environment	.11	.05	.08	.07	.07	.01	.11	-.07	-.07	.13
Game service	.10	.19*	.12	.24**	.23**	.09	.15	-.01	-.03	.12
Food service	.04	.12	0.07	.04	.11	.07	.19*	.27*	.15	.12
Service delivery	.49***	.57***	.51***	.60***	.49***	.45***	-.12	-.18	.02	.17
R ²	.29***	.37***	.31***	.31***	.33***	.21***	.08***	.03	.05	.08
F(df)	F(4,228), 22.67	F(4,163), 23.49	F(4,228), 25.81	F(4,163), 18.66	F(4,228), 27.65	F(4,163), 11.11	F(4,196), 5.40	F(4,130), .92	F(4,157), 2.01	F(4,89), 2.03

Note: * $p < .05$, ** $p < .01$, *** $p < .0005$

M = members, NM = non-members

Table 8
Parsimonious model for the relationship between casino service quality and gambler loyalty for members and non-members

Variables	Word of mouth		Referral		First choice		Visiting frequency
Membership	M	NM	M	NM	M	NM	M
Game service		.16*		.21*	.14*		
Food service							.17*
Service delivery	.52***	.68***	.55***	.66***	.56***	.44***	
R ²	.27***	.35***	.30***	.31***	.31***	.20***	.03*
F(df)	F(1,232), 87.74	F(2,167), 45.72	F(1,232), 95.73	F(2,167), 37.33	F(2,231), 52.40	F(1,169), 41.23	F(1,200), 6.10

Note: * $p < .05$, ** $p < .01$, *** $p < .0005$

M = members, NM = non-members