

Resident Attitudes towards Gaming and Tourism Development in Macao: Growth Machine Theory as a Context for Identifying Supporters and Opponents

Rich Harrill^{1,*}, Muzaffer Uysal², Peter W. Cardon¹, Fanny Vong³ and Leonardo (Don) Dioko³

¹*International Tourism Research Institute, College of Hospitality, Retail and Sport Management University of South Carolina, Columbia, South Carolina USA*

²*Pamplin College of Business, Department of Hospitality and Tourism Management, Virginia Polytechnic Institute and State University, Blacksburg, Virginia, USA*

³*Institute for Tourism Studies, Macao*

ABSTRACT

Despite global recession, Macao continues to develop as an international gaming destination. However, as the intensity of development increases, the government is losing support for the gaming industry among some residents. This loss of support may be examined within the context of growth machine theory. This paper surveys residents regarding their attitudes towards gaming and development. The findings suggest residents can be divided into two groups — gaming supporters and gaming opponents. From these findings, recommendations are made for future planning, development and marketing in Macao. Copyright © 2010 John Wiley & Sons, Ltd.

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INTRODUCTION

Despite the recent global economic recession, the international casino gaming destination of Macao (550 000 residents; 29.2 km²) continues to attract visitors. In 2008, Macao attracted about 23 million visitors from Hong Kong, Taiwan, Malaysia, Japan, the Philippines, Korea, Singapore, Thailand and the USA respectively. Gambling is the primary attraction for these visitors, accounting for \$13.7 billion in gaming revenues in 2008. Acknowledging the boom-and-bust economic cycles associated with the gaming industry, the Macao government has cultivated the meetings, incentives, conventions and exhibitions industry (MICE) to diversify the destination's tourism product. Development of the MICE industry in Macao is seen as serving a twofold purpose: diversifying the economy and enhancing the city's recreational and leisure offerings. Although most residents understand the importance of gaming to the local economy (\$4.9 billion in 2008, 77% of the total government revenue), government officials recognize that the addition of non-gaming attractions and amenities can augment one of Asia's highest standards of living measured by income per capita. For Macao and similar gaming destinations, a balance must be struck between improving quality of life and fostering intensive tourism development.

A first glance, Macao represents a unique development situation: a former Portuguese

*Correspondence to: Dr. Rich Harrill, Director of the International Tourism Research Institute, College of Hospitality, Retail, and Sport Management, University of South Carolina, Columbia, SC 29340 USA.
E-mail: rharrill@hrsm.sc.edu

colonial enclave with a traditional, gaming-based economy since the 1930s (see Hing's (2005) history of casino politics in Macao), positioned in one of the world's most economically dynamic and populous regions. Because of these special circumstances, it might seem somewhat difficult to draw comparison between residents' attitudes towards gaming and tourism development in Macao and residents' attitudes elsewhere. However, in other respects, Macao presents an intriguing case study from which many destinations may learn: an emerging, relatively autonomous city-state with a highly specialized economy based on gaming and luxury. This sector is led by a loose, progrowth coalition of government, corporate gaming and some residents. In this context, Macao has achieved competitive advantage as a unique 'leisurescape' where people from all over the world come not only for gaming, but for recreation, leisure, entertainment and increasingly, business. Resident attitudes in Macao may be indicative of residents' attitudes towards tourism development in many different emerging transnational economies driven by improvements in transportation and communication, and may be highly relevant to similar urban playgrounds in Latin America (Rio/Florinopolis), Africa (Sun City), the Middle East (Dubai) and Asia.

MACAO AS A GAMING MACHINE

As first defined by Molotch (1976) in his seminal paper, 'The City as a Growth Machine: Toward a Political Economy of Place', growth machine theory differs from traditional urban sociology in viewing growth and development as a driven by invested and entrenched interests — including business factions and/or ruling elites — rather than from competitive market activity among social and cultural groups. For tourism researchers, growth machine theory offers a theoretical context for explaining local economic growth and development through political coalitions and land use allocations, rather than local support as defined through socio-psychological exchanges or attachments in return or in response to development and development plans. Hence, growth machine theory has more in common theoretically with urban political economy in

emphasizing the city as a crucible for politics, power and commerce.

As such, Harvey Molotch defines a growth machine city as follows:

A city and, more generally, any locality, is conceived as the areal expression of the interests of some land-based elite. Such an elite is seen to profit through the increasing intensification of the land use of the area in which its members hold a common interest. An elite competes with other land-based elites in an effort to have growth-inducing resources invested within its own area as opposed to that of another. Governmental authority, at the local and nonlocal level, is utilized to assist in achieving this growth at the expense of competing localities. *Conditions of community life are largely a consequence of the social, economic, and political forces embodied in this growth machine* (emphasis added).

Of all destinations that might be identified as an opportunity to examine the city as growth machine, Macao offers interesting congruencies with Molotch's thesis: both new and old elites competing (and sometimes aligning) within a limited, urban area over a rapidly intensifying industry (gaming and tourism development) with profound consequences of local quality of life, including cost of living, employment and the environment.

As opposed to social exchange theory and community attachment, only a handful of tourism researchers have employed growth machine theory (Canan and Hennessy, 1989; Madrigal, 1995; Green *et al.*, 1996; Martin *et al.*, 1998; Judd and Fainstein, 1999; Martin, 1999). However, many of these studies have profound similarities with Macao. For example, Canan and Hennessy's (1989) application of growth machine theory on the Hawaiian island of Moloka'i described economic transition from agriculture, followed by land use conflict over resort development and finally erosion of local culture. Similarly, in his study comparing Sedona, Arizona in the USA with York, England in the UK, Madrigal (1995) noted differences between internal and external destination marketing and that 'an internal

marketing strategy should, however, be conducted within a socially conscious framework that is designed to serve the needs of the community, not members of the growth machine' (p. 100). Indeed, there is a difference in Macao between external marketing as a gaming destination and internal marketing as a community with numerous leisure and entertainment opportunities. Finally, Martin *et al.* (1998) in a study of Hilton Head, South Carolina in the USA, found a relatively wealthy antigrowth coalition that may mirror Macao's rising middle class and old elites not dependent on the new gaming activity. Due to upward mobility and in-migration, consensus may be harder to reach in both destinations.

Synthesizing the work of Molotch and Richard Florida's (2002) Creative Class thesis, Nichols (2003) has taken Growth Machine Theory an additional step, suggesting that in a globalized, post-industrial society, certain cities and regions are destined to become 'entertainment machines' increasingly dependent on tourism, entertainment and events for economic survival. Macao increasingly fits these models as an 'international leisure work-space' where people from all around the world live, work and play, and as a result drives an urban growth machine increasingly detached from place.

Liabilities of Macao's gaming machine

Two important and emerging trends compel tourism planners and policy-makers to specifically address resident attitudes towards gaming with a broader context of growth machine activity. The first of these trends is the increasing comingling of business tourism, entertainment, shopping and leisure with gaming activity, pioneered and popularized by the Las Vegas model. The significance of such comingling to residents is critical to determining whether gaming is promoted, tolerated or rejected. As more destinations seek to incorporate gaming into their product offering, it is conceivable that residents' attitudes towards tourism development will be shaped by gaming industry developments and marketing. A second trend that necessitates measuring residents' attitudes specific to gaming pertains to globalization of gaming under

more open and liberal regimes focusing on economic growth. As a path of innovation (e.g. Macao) or development (e.g. Singapore) in its existing or nascent gaming industries, destinations have welcomed the involvement and investments of global gaming companies. While residents can perceive these developments as economically positive, they are also awakening to issues related to the global economy: labor relations, income distribution, cultural differences in operational management and repatriation of profits, layoffs and site relocation, among others — all of which Molotch predicted as 'liabilities of the growth machine' (p. 318). In sum, there is reason to believe that resident attitudes, where gaming-led tourism development is in question, go beyond the standard model of balancing revenue generation and socio-cultural impacts and that resident attitudes may actually focus on broad issues and economic rationale and direction of gaming-led development as policy (Gu, 2004, 2006).

In consideration of the above, the purpose of this paper is to explore resident attitudes towards gaming and tourism development in Macao within the context of growth machine theory. By surveying resident attitudes on both gaming and tourism development, this paper will investigate how resident satisfaction with the gaming industry matters as a component of the destination's overall tourism development. Based on this information, segments or typologies of residents' attitudes can be developed to identify groups of people concerned about, or opposed to, the Macao growth machine featuring gaming and tourism development. With this information, government officials and developers may continue to gauge and respond to the precarious balance between quality of life, gaming and tourism development in Macao.

Resident attitudes towards gaming-led tourism development

Although the academic literature on resident attitudes towards tourism development is plentiful and growing, gaming is relatively under-represented. Further, some academics see a need to explore resident attitudes within international contexts (Harrill, 2004).

Recent studies on residents' attitudes towards the gaming industry found residents mostly exhibit mixed emotions towards the industry (Pizam and Pokela, 1985; Eadington, 1986; Caneday and Zeiger, 1991; Carmichael *et al.*, 1996; Hsu, 1998; Kang *et al.*, 1996; Long, 1996; Perdue *et al.*, 1999; Nichols *et al.*, 2002; Spears and Boger, 2002; Vong, 2004, 2009; Stitt *et al.*, 2005; Vong and McCartney, 2005; Lee and Back, 2006). These studies found residents perceived both positive benefits (e.g. jobs) and negative impacts (e.g. crime) associated with the gaming industries. In addition, these studies found that there are often differences among community groups on the positive benefits and negative impacts associated with the gaming industry based on socio-economic variables such as gender and occupation (Chhabra and Andereck, 2009).

Recent studies on Macao have found some discrepancies between how visitors view the destination and the image that the destination would like to project internationally and locally. For example, Choi *et al.* (2007) found that the official government website projected a city image that is international and accessible, with parks, gardens and cultural amenities. The authors noted that the official website emphasized a more wholesome or well-rounded city image in keeping with the government's desire to become MICE- and leisure-oriented. Conversely, travel trade websites tended to depict Macao primarily as a gaming destination. Although the official brand image may help product diversification and placate residents, it may also send confusing market signals to potential gaming visitors. Further, the differences may signal emerging conflicts within Macao's growth machine.

In the most comprehensive study to date of resident attitudes towards gaming in Macao, Vong (2004) found that respondents had a mixed — but not negative — attitude towards gambling. Vong learned that most respondents were morally against gambling (48.7% against and 8% very much against), but still felt comfortable with it. The author theorized that these residents had become accustomed to this way of life in Macao and had come to terms with gambling as an important component of tourism development. Vong found that in terms of socio-demographic characteristics,

female respondents agreed significantly more than males with the statement, 'I am morally against gambling.' In addition, respondents who had completed high school or university education felt more strongly than those with primary education that gambling had no use. Finally, professionals did not agree that gambling was a way of getting rich, and this significantly differed from the view of those who were self-employed. In sum, Vong found that around 43% of the respondents expressed satisfaction with Macao's reliance on gambling, while 40% expressed neutrality.

In a follow-up study, Vong (2009) found the situation to be reversed — 64% of the respondents said they were morally against gambling and only 53% felt comfortable with it. In addition, differences were noted between surveys in the statements 'gaming is leisure' and 'gambling is fun', with the respondents agreeing much less with these aspects of gambling in the 2004 study. Vong also reported that another difference was that the former respondents felt much less comfortable with gambling. Although the statement 'gambling destroys the family' was not included in the previous study and therefore was not comparable, it was observed that the 2009 study felt strongly about it, with a mean of 4.11. Finally, Vong found that players have more positive attitudes towards gambling as than non-players in either survey. However, both players and non-players had developed more conservative attitudes over time.

Resident and community classifications have proven useful in identifying resident groups for and against tourism development. Beginning with Doxey's Irridex (1975), this general model defined attitudes resulting from social impacts in a destination community as *euphoric*, *apathetic*, *annoyed* and *antagonistic*. Subsequent, more sophisticated classifications have been developed by Rothman, 1978; Davis *et al.*, 1988; Dogan, 1989; Ap and Crompton, 1993; Ryan and Montgomery, 1994; Smith and Krannich, 1998; Williams and Lawson, 2001; Choi and Sirakaya, 2005.

However, none of these models has attempted to classify residents' attitudes towards tourism development with specific reference to gaming until Vong and McCartney's (2005) Gaming Impact Perception Matrix

(GIPM) was tested in Macao. This matrix is a perception typology based on cost–benefit perceptions of gaming development in different time periods. Three separate cluster analyses were used to segment the respondents based on the personal, social and environmental perception dichotomies. The clusters were then located on a GIPM for each perception dichotomy. The matrix classifies four types of perceptions based on perceived costs and benefits (p. 186). The authors found that for the personal dimension, two clusters were found — *reserved optimists* and *optimists*. For the social dimension, two *reserved optimist* clusters were found. For the environmental dimension, one cluster each was found for *skeptics*, *neutrals* and *optimists*.

By focusing on residents' attitudes towards gaming-led tourism development in Macao, this paper also seeks to predict the greater changes that are likely to occur in the Asia-Pacific region as more destinations, some straddling several gaming jurisdictions, commit a greater part of their tourism development plan in allowing — or at least opening up the possibility — for gaming activities to flourish. In addition to Macao, other destinations in the region are unveiling development plans involving gaming (Hsu, 2005). For example, Singapore's recent radical shift to offer gaming is nearly complete, with the first casino to open in 2010. Elsewhere, plans are afoot to develop gaming in Japan and Thailand as well as the offshore islands of Taiwan. Meanwhile, existing casinos and gaming operators in Australia, Malaysia, the Philippines, South Korea and Cambodia are rapidly expanding and enhancing their current products. In the future, the Asia-Pacific region may host numerous gaming machine cities, each with a profound influence on regional tourism, economic development and resident attitudes.

METHODOLOGY

The survey consisted of three sections: (i) resident attitudes towards tourism; (ii) resident attitudes towards gaming; and (iii) respondent socio-demographic characteristics. The three sections included specific questions focusing on demographic characteristics of Macao resi-

dents (gender, age, marital status, income in Macao Patacas, occupation), attitudes of Macao residents about tourism development and its activities and their perceptions of gaming activities in terms of development, competitiveness and economic and social impacts in Macao. Residents were asked to rate the items of an adapted scale of tourism impact (Ap and Crompton, 1998) and a gaming attitude scale adapted mostly from Kang, *et al.* (1996). The scale of tourism impact was measured on two aspects — belief component and evaluative component. The belief component was ascertained by asking residents to rate the level of change associated with each item of the scale, and the evaluate component was measured by asking residents to rate their level of like or dislike with each item of the scale. A 5-point Likert scale was used, where 1 = dislike, 2 = slightly dislike, 3 = do not care, 4 = slightly like and 5 = like. The gaming attitude scale was measured on a 7-point scale ranging from 1 = strongly disagree to 7 = strongly agree.

DATA ANALYSIS

The analysis of this study consisted of four steps. First, a general descriptive analysis of all variables was performed to check for normality, skewness and outliers. Second, the 21 gaming attitude items were factor-analyzed utilizing a principal components analysis with varimax rotation procedure to identify the underlying dimensions of gaming attitudes. Third, the delineated factors were then used to cluster residents based on their attitudes towards gaming. Finally, the identified clusters/typologies of residents were described using discriminant analysis and profiled with respect to general tourism attitudes on the delineated factor groupings of the evaluation component of the scale and demographic variables. A *t*-test for continuous and Chi-square test for categorical variables were used to compare the two groups of residents that emerged from the study's factor and cluster analysis.

The scale was translated into Cantonese and then back translated to ensure accuracy. The survey was conducted via telephone by a professional research group in Macao with telephone survey expertise. The sample consisted

of Macao adult residents (over 18 years old), and telephone numbers were generated by a computer algorithm to ensure a random sample. Calls were made between 7 a.m. and 10 p.m. on weekdays when residents were most likely to be at home. The minimum target number of telephone interviews was originally set at 400. To increase representativeness, 600 random telephone numbers were selected, and each number was called at least three times on successive evenings if no one answered the telephone on the first or second calls. Ultimately, a total of 479 responses were collected and analyzed for the study.

Demographic characteristics of Macao residents were investigated regarding to their age, gender, marital status, education, income and profession. Missing values, outliers and distribution of all measured variables were examined to purify the data and reduce systematic errors.

Socio-demographic characteristics

A demographic profile of the sampled residents in Macao appears in Table 1. Male and female respondents accounted for 39.1% and 60.1% of the sample respectively. The sampled resident were mainly younger (47% were less than 36 years old, and 23.4% were 47 years old or over) and married (61.4%). Only 25.4% had a college or higher degree, and 11.1% earned a monthly income of more than 15000 Macao Patacas (about US\$1880), which falls into the category of high-income earners. More than 40% of the sampled residents did not report their household earnings. Industry workers (25.1%), teachers and professionals (16.2%), service/sales (11.9%), and students (19.6%) made up the majority of respondents. Business professionals as a part of the occupation variable accounted for only 1.5% of the sampled residents (Table 1).

To identify the underlying dimension of the gaming attitude scale and the tourism resident attitude scale, and for the purpose of reducing the number of items in the aforementioned scales, the researchers performed two factor analyses utilizing principal components analysis with varimax rotation. Five factors of 21 gaming attributes were derived to represent the data and were retained for further analysis.

These five factors were labeled as Evaluation, Benefits, Economic Impacts, Competitiveness and Social Impacts. Two items — 'Without gambling, this city would have no future' and 'Gambling has made this city a better place to live' — had a factor loading of less than 0.45, and thus were removed from subsequent analysis. The remaining 19 items had factor loadings of 0.50 or higher, with the exception of one item, 'Because of gambling, traditional tourists no longer come to this city.' This particular item had an acceptable level of 0.45 factor loading. The reliability coefficients (Cronbach's alpha) ranged from 0.470 (Benefits) to 0.821 (Evaluation) (Table 2). The factor of Evaluation of gaming and tourism development explained the highest percentage of the total variance (21.41%), followed by Benefits (8.04%), Economic Impacts (7.91%), Competitiveness (6.01%), and Social Impacts (5.88%).

Cluster analysis

Two different types of cluster analysis techniques were performed to identify groups of residents based on similarities in gaming on the delineated factors. The five factors extracted in factor analysis were used as clustering variables. First, a hierarchical cluster analysis was employed, which helped to determine the number of clusters and identify outliers. Second, a non-hierarchical method, K-Mean clustering technique, was applied with cluster centers from the hierarchical results as the initial seed points.

Evaluating agglomeration coefficients and utilizing a K-Mean cluster analysis, the researchers determined a two-cluster solution to be best in grouping sampled respondents. Due to missing values, 15 cases were excluded from the analysis. A total of 175 (37.7%) respondents were grouped into the first cluster and 289 (62.3%) into the second cluster (Table 3).

The results of the *F*-test revealed that with the exception of one factor (Benefits), the factors had significant differences between the clusters ($p < 0.00$). To delineate the differences in attitudes about gaming in Macao between the two groups of Macao residents, raw mean scores for each gaming factor were also generated. An examination of the mean scores of each factor for Cluster 1 revealed that members

Table 1. Demographic characteristics of sampled Macao residents

Demographic variable	Frequency	Percentage
Gender		
Male	185	39.9
Female	279	60.1
Age		
18–25 years old	136	28.4
26–35 years old	89	18.6
36–47 years old	127	26.5
47 years old and older	112	23.4
Missing	15	3.1
Marital status		
Single	170	35.5
Married	294	61.4
Missing	16	3.1
Education		
Primary school or less	74	15.9
High school or pre-university	272	58.6
College or postgraduate	118	25.4
Salary in Macao Patacas		
5000–10000 (Low income)	135	28.2
10000–15000 (Medium income)	92	19.2
15001 and more (High income)	53	11.1
Not reported	199	41.5
Occupation		
Business professional	7	1.5
Teacher–professor	75	15.7
Technology–industry worker	120	25.1
Service–sales staff	55	11.5
Student	91	19.0
Other	116	24.2

of this resident cluster seem to have more positive perceptions of and higher support for gambling than did the members of Cluster 2, implying that residents in Cluster 2 are less supportive and have more negative perceptions of the impacts of gaming in Macao. Therefore, Cluster 1 was named ‘Gaming Supporters’ and Cluster 2 was named ‘Gaming Opponents’. This two-cluster solution is consistent with a destination in which gaming is a traditional industry, although recent intensive development might have instigated the emergence of an anti-gaming coalition predicted in Molotch’s (1976) original growth machine conditions.

Discriminant analysis

Stepwise discriminant analysis was performed to identify and delineate which gaming factors discriminate between the two clusters of residents (Table 4). According to the scores derived from the Wilks’ lambda method, one discriminant function was derived with an eigenvalue of 2.108, a *p* value of 0.00 and a canonical *R* of 0.824. The ‘Competitiveness’ factor was the highest discriminator between the clusters, followed by ‘Evaluation’ of tourism development and its activities. Both factors are highly associated with growth machine theory in that destination competitiveness may be seen as

Table 2. Exploratory factor analysis of gaming scale items

Factors	Loadings	Eigenvalue	Variance explained	Reliability
Evaluation		4.497	21.416	0.82
2. It is hard for me to accept gambling here.	-0.687			
1. I do not care if we have gambling in this city.	0.570			
5. Gambling is not appropriate for Macau.	-0.553			
7. I am embarrassed that I live in a gambling city.	-0.547			
19. The development of gambling in this city has helped Macao preserve its historical legacy.	-0.534			
9. This city made the right choice to develop gambling.	0.501			
12. If we had it to do over again, I would support approval of gambling in this city.	0.495			
Benefits		1.689	8.041	0.476
10. I personally receive economic benefits from gambling (income, employment, lower property taxes).	0.885			
4. I personally receive social benefits from gambling (improved quality of life, meeting interesting people and personal satisfaction).	0.785			
11. I benefit from gambling in this city.	0.761			
Economic impacts		1.689	7.916	0.621
3. I boast about living in a gambling city.	0.682			
6. Most of the money from gambling in this city goes to outsiders.	-0.637			
8. Having gambling in this city is a pleasure.	0.552			
Competitiveness		1.262	6.011	0.569
21. Las Vegas is a competitor of Macao.	0.695			
20. Local casinos are better than foreign-owned casinos.	0.620			
18. The development of gambling in this city has helped Macao preserve its historical legacy.	0.512			
Social benefits		1.132	5.388	0.480
15. Many people have moved away from this city because of gambling.	0.707			
17. The development of gambling in this city has decreased safety and security.	0.548			
16. Because of gambling, traditional tourists no longer come to this city.	0.467			

Items that did not load: 13, Without gambling, this city would have no future; and 14, Gambling has made this city a better place to live.

Table 3. Cluster analysis results of residents of Macao with gaming factors

Factors	Gaming supporters (N = 175)	Gaming opponents (N = 289)
Evaluation	3.89	4.05
Benefits	3.66	3.73
Economic impacts	3.55	3.77
Competitiveness	4.16	3.84
Social benefits	3.80	3.84

Note: Mean values are computed on the basis of 7-Likert scale (1 = strongly disagree, 7 = strongly agree); and 98.5% of original grouped cases were correctly classified.

Table 4. Discriminant analysis results of residents of Macao with gaming factors

Factors	Coefficients	F-ratio	Sig. Level	Discriminant ranking
Evaluation	0.879	63.628	0.000*	2
Benefits	0.466	529.57	0.000*	4
Economic impacts	1.000	0.025	0.875*	5
Competitiveness	0.986	6.632	0.010*	1
Social benefits	0.691	4.153	0.042	3

*p = 0.00.

Note: Eigenvalue = 2.108; Canonical correlation = 0.824; Wilks' lambda = 0.322; df = 5.

driving growth machine politics while evaluation is specific to competing groups and communities within the growth machine. In individual item comparisons based on mean scores of the scale, gaming supporters tend to evaluate tourism activities and resultant benefits more positively than do gaming opponents. Given the increasingly competitive rhetoric between Macao and Las Vegas, it is interesting to note that gaming supporters do not see Las Vegas as a competitor for Macao and tend to think that local casinos are even better than foreign-owned casinos. Given a chance again, gaming opponents would not support gaming in Macao, and they also show a stronger disagreement on the benefits of tourism.

Socio-demographic differences

Table 5 presents a demographic profile of the two clusters of Macao residents. A descriptive analysis revealed that members of the gaming supporters cluster are mainly middle and old aged (59.0%), married (69.1%) and 77.4% of the members had pre-college or less than pre-college (high school or less education). However, there were statistically significant differences between supporters and opponents with respect

to gender status ($\chi^2 = 12.67, p < 0.00$), occupation income ($\chi^2 = 13.69, p < 0.01$), age ($\chi^2 = 12.80, p < 0.05$) and marital status ($\chi^2 = 7.55, p < 0.06$). In the study sample, a large portion of the supporters were married (69.1%), while only 56.7% of the opponents were married.

INTERPRETATION

A potentially useful finding of this analysis relates to destination image and branding. The results show that gaming supporters had a significantly different destination image than gaming opponents, viewing the gaming industry in Macao as having few international competitors and believing that Macao's local casinos are even better than foreign-owned casinos (Table 6). These findings suggest that at least for some Macanese residents, there is an element of pride and even ownership in the gaming industry. Support of the Macao gaming machine may be based on more than benefits derived through exchanges or social and communal attachments, but also some deep-seated cultural identification with the gaming machine. However, these findings also indicate that with the increase in foreign-owned casinos this stalwart support may diminish, similar to Madrigal's (1995) finding of erosion

Table 5. Demographic characteristics of resident typology: gaming supporters versus gaming opponents

Demographic variable	Gaming supporters (%)	Gaming opponents (%)	Chi-square test value	Sig. level
Gender			12.67	0.00
Male	63.8	36.2		
Female	47.0	53.0		
Age			12.80	0.05
18–25 years old	23.7	35.8		
26–35 years old	17.3	21.4		
36–47 years old	30.9	23.3		
47 years old and older	28.1	19.5		
Marital status			7.55	0.06
Single	30.9	43.3		
Married	69.1	56.7		
Education			4.715	0.09
Primary school or less	18.9	12.6		
High school or pre-university	58.6	58.6		
College or post graduate	22.5	28.8		
Salary in Macao Patacas			1.81	0.61
Not reported	36.9	42.8		
5000–10000 (low income)	30.9	27.0		
10001–15000 (medium income)	20.1	19.5		
15001 and more (high income)	12.0	10.7		
Occupation			13.69	0.01
Business professional	1.6	1.4		
Teacher–professor	11.6	21.4		
Technology–industry worker	28.5	22.8		
Service–sales staff	14.1	25.9		
Student	16.9	22.8		
Other	27.3	22.3		

identity on Moloka'i as a result of increased resort development.

Two developments in Macao's recent history suggest why. First, Macao is not embarking on gaming as a new form of tourism development, unlike the case of Singapore. It was already known as a gambling mecca prior to the liberalization of its casino industry in 2002, and for years up to the present it has remained the only territory under Chinese sovereignty where gaming is allowed. Second, few economic sectors other than those related to or spawned by the gaming machine have evolved in Macao's overall economic development. Although they were once healthy, but not sizeable, export sectors involved in electronics, textiles and toys have now largely migrated to

China. Government-led efforts in the 1990s to diversify Macao's economy by offering industrial land and space proved largely ineffectual. Although no evidence suggests other economic sectors were pushed out by the gaming machine, the expectation is that further liberalization should spur the development of secondary or gaming-related sectors or subsectors. To date, however, this does not seem to be the case in Macao, and broadening of the visitor base to include events and business tourism has yet to be undertaken. It seems that the findings reflect Macao residents' attitudes towards gambling as a means of broader economic diversity and competitiveness. In sum, the data suggest that the gaming is not an end for Macao residents but rather a means to an end.

Table 6. Differences in attitudes towards gaming between two typologies of residents

Factor	Gaming supporters	Gaming opponents	t-value	Sig. level
Evaluation			-1.278	0.20
Raw mean scores	3.99	4.05		
Factor mean scores	0.341	-0.395		
Benefits			-0.901	0.36
Raw mean scores	3.66	3.73		
Factor mean scores	0.126	-0.145		
Economic benefits			-1.958	0.05
Raw mean scores	3.55	3.77		
Factor mean score	0.329	-0.376		
Competitiveness			3.421	0.00
Raw mean score	4.16	3.84		
Factor score mean	0.435	-0.504		
Social benefits			0.511	0.61
Raw mean score	3.84	3.80		
Factor mean score	0.071	-0.083		

One important aspect — the gaming supporters and opponents also appear to evaluate the gaming industry differently, with supporters perceiving more social and economic benefits than do opponents. This finding is highly significant to the growth machine thesis in that previous gaming studies have found that while local populations can identify both positive benefits and negative impacts, this study suggests that perceptions of positive benefits and negative impacts may be located within very specific progrowth and antigrowth population segments. Finally, this research shows that gaming opponents may be very difficult to persuade due to the relatively intractable core moral or religious values: they did not support gaming and showed strong disagreement over the benefits of tourism. Under growth machine conditions, these residents may be inclined to see most forms of economic growth and development as unnecessary or bad for the community.

A very detailed socio-demographic profile emerged in this study of gaming supporters. For the most part, these people were middle aged, married males and typically without advanced education. Following Vong (2004), these results showed that women, educated persons and professionals may form the core of gaming opponents and thus the core of any

nascent antigrowth coalition. However, it is interesting that a large portion of the supporters were married, suggesting that attitudes towards gaming may not be related to whether one is single or married, but that attitudes towards the gaming machine may be shared to some extent within a family and that a significant number of families make up the gaming supporter cluster. While Vong (2004) theorized that some residents have become accustomed to gaming as a way of life in Macao and believe it to be an important component of tourism, this study identifies these supporters as blue collar, perhaps view the gaming machine as a means of becoming upwardly mobile, either through direct participation or indirect benefits. Government efforts to gain support for the gaming machine might target women about safety concerns and educated professionals regarding economic benefits of tourism and how these revenues might be used to strengthen Macao’s knowledge economy and non-gaming business climate.

CONCLUSIONS

In this study, growth machine theory has demonstrated the capacity to inform both supply-side and demand-side perspectives on tourism development.

From a supply-side perspective, this study suggests that public support for the gaming machine in Macao may be limited and that as education and standards of living improve, discontent with the gaming machine may grow. Thus, there should be a planning and design agenda for Macao wherein government must continue to provide non-gaming leisure and recreational opportunities to keep pace with a growing middle class and changing demographic profile (Vong, 2005, 2009, p. 395). Revenues from gaming must be used to develop Macao's knowledge infrastructure as well as other forms of economic development including technology and health care. As other such urban enclaves have done, Macao should begin to view the gaming machine as a catalyst for other types of economic development and not an end in itself. However, while economic diversification is evident in Las Vegas, sustainable land use and growth management associated with higher quality of life and standards of living have become important to residents there.

A demand-side perspective suggests that residents play an important role in destination branding and marketing. The development of better leisure and recreational opportunities for residents, as well as development of a more balanced internal business climate, will allow the Macao government to brand and market the destination tailored to the dreams of many visitors — an exciting gaming destination with one-of-a-kind events and entertainment. For tourism researchers, the Macao case study demonstrates the need to look below the surface at those political economy issues that help shape supporters and opponents in a given community.

Although relevant to economically specialized enclaves and emerging Asian destinations, the results of this research may be limited to destinations with relatively unique historical and geographical attributes. Future research in resident attitudes towards tourism development should include new locations and theoretical perspectives, and as this study has done, attempt to identify clusters or groups of residents that can be identified and targeted for education and outreach. The results of these efforts should be the creation of a viable gaming industry involved in community reinvestment

and concerned about quality of life. Ultimately, however, researchers should also offer practical recommendations for industries such as gaming that exist increasingly within borders and within a broader context of tourism and economic development. Finally, this work should inform future studies addressing specialized growth machine economies focused on tourism, entertainment, events and gaming.

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