EXPOSURE OR ADAPTATION? THE CASE OF MACAO

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OUTLINE

- What is the question?
- Exposure hypothesis
- Adaptation hypothesis
- The possible reasons for the change in Macao problem gambling prevalence
- Conclusions
### What is the question?

<table>
<thead>
<tr>
<th></th>
<th>2011</th>
<th>2010</th>
<th>2007</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants</strong></td>
<td>18 or above</td>
<td>15-64 yrs</td>
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<td><strong>Sample Size</strong></td>
<td>2289</td>
<td>2011</td>
<td>1963</td>
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<td>Oct-Dec</td>
<td>Apr-Aug</td>
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<td>Mar-Apr</td>
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<tr>
<td><strong>Gaming Participation Rate</strong></td>
<td>32.80%</td>
<td>55.90%</td>
<td>59.20%</td>
<td>67.90%</td>
</tr>
<tr>
<td><strong>Problem Gambling Prevalence (3 or 4)</strong></td>
<td>1.02%</td>
<td>2.80%</td>
<td>3.41%</td>
<td>2.50%</td>
</tr>
<tr>
<td><strong>Pathological Gambling Prevalence (5+)</strong></td>
<td>1.12%</td>
<td>2.80%</td>
<td>2.60%</td>
<td>1.78%</td>
</tr>
<tr>
<td><strong>PrG+PaG (3+)</strong></td>
<td>2.14%</td>
<td>5.60%</td>
<td>6.01%</td>
<td>4.28%</td>
</tr>
</tbody>
</table>

*2011, 2010, 2007 study were supported by Social Welfare Bureau, Macao SAR Government*
**Non-sampling error**

- Non-sampling error is all other errors in the estimate. Some examples of causes of non-sampling error are non-response, a badly designed questionnaire, respondent bias and processing errors.
  - More residents have switched from wired telephones to mobile.
  - Respondent Bias: 36 out of 42 (86%) probable problem gamblers denied “ever having a gambling problem” in a follow-up survey four months later (Hodgins et al., 1999)
SAMPLE DIFFERENCE

Study 2011

- 15-17 years-old group: not included. Many studies show youth gambling is more prevalent.
- 65 years old or above: no problem or pathological cases found.
Sampling Error

Upper Limit (99%)
PrG+PaG

Lower Limit (99%)
Polinómica (PrG+PaG)
EXPOSURE HYPOTHESIS

- Increased gambling availability leads to rise in problem gambling.
- “While causation is hard to prove beyond all doubt, there is sufficient evidence from many different sources to suggest a significant connection between greater accessibility – particularly to gaming machines – and the greater prevalence of problem gambling.” (Productivity Commission, 1999)
ADAPTATION HYPOTHESIS

- Following initial increases in number and type of adverse reactions to new environmental events such as new casinos, online gaming, individuals will adapt and become resistant to those events and the number of associated adverse reactions in society will decline.
- Problem gambling prevalence rates fall over time.
EXPOSURE OR ADAPTION?

- Exposure hypothesis had been widely believed.
- More recently, both exposure and adaption are believed to work.
  - Williams, R. J., A. Volberg R., & Stevens, R. M. G. (2012)
WILLIAMS, VOLBERG & STEVENS (2012)

- 202 studies extracted
  - 68 national
  - 27 Australian states/territories
  - 40 Canadian provinces
  - 67 U.S. states

- Standardized prevalence rates to facilitate comparison of rates between jurisdictions & within same jurisdiction over time
WILLIAMS, VOLBERG & STEVENS (2012)

Standardized PG Prevalence Rates Over Time (5 Year Smoothed)
Results support both exposure & adaptation
Increased gambling availability is related to increased PG
Populations appear to adapt over time
Likely mechanisms include:
- Increased population awareness of potential harms
- Decreased population participation
- Removal of PGs from pool due to severe adverse consequences (bankruptcy, imprisonment, suicide)
- Increased industry and/or gov’t efforts to provide gambling more safely, enact prevention programs, provide treatment
- Increasing age of population
GAMING HAS BECOME MORE ACCESSIBLE

- Competition was introduced into gaming industry after 40 years of monopoly in 2002.
- The first non-SJM casino was opened in 2004.
- International casino giants like Las Vegas Sands, Wynn Resorts, MGM, etc. have changed Macao gaming industry dramatically.
- As of September 2012, 35 casinos and 13 slot lounges were operating in Macao.
- Horse Racing, Greyhound Racing, Football, Basketball Betting, and Lottery are also legalized.
Gaming has become more accessible

<table>
<thead>
<tr>
<th></th>
<th>1st Quarter, 2005</th>
<th>3rd Quarter, 2012</th>
<th>Change</th>
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<tbody>
<tr>
<td>Casinos</td>
<td>15</td>
<td>35</td>
<td>2.33</td>
</tr>
<tr>
<td>Gaming Tables</td>
<td>1,226</td>
<td>5,497</td>
<td>4.48</td>
</tr>
<tr>
<td>Slot Machines</td>
<td>2,777</td>
<td>17,029</td>
<td>6.13</td>
</tr>
<tr>
<td>Slot Machines Per Casino</td>
<td>185.1</td>
<td>486.5</td>
<td>2.6</td>
</tr>
<tr>
<td>Gaming Tables Per Casino</td>
<td>82</td>
<td>157</td>
<td>1.92</td>
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</table>
Waning of novelty effects

- Historically, Macao residents have secured “immunity” to as gambling has been here since the birth of Macao as a city.
- The introduction of “modern” casinos make it more acceptable (novelty effects).
- A study found that the respondents in 2007 had developed a more conservative attitude toward gambling in general than in 2003 (Vong, 2009).
# Decreasing Gaming Participation

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Vong (2004) estimation: 41.9% (157 out of 375 permanent residents)
RESPONSIBLE GAMBLING: GOVERNMENT

- Keep gambling away from minors (18 to 21)
- The Resilience Center
- Centralized problem gambling reporting network
- Self-exclusion Program
- The responsible gambling guideline has been introduced November 2012.
- Work together/support NGOs in prevention and treatment.
RESPONSIBLE GAMBLING: CASINO OPERATORS

- Staff training
- Responsible Gambling brochures
- Removal from marketing mailing list at patron’s request
- Prevent underage persons from entering gaming area.
- New RG guideline will lead the casino operators to provide gaming more responsibly.
RESPONSIBLE GAMBLING: NGOs

Three not-for-profit organizations have been offering free gambling counseling service

- Sheng Kung Hui Macau
- Industrial Evangelistic Fellowship of Macau
- Yat On Centre

......
More have initiated different programs for prevention and awareness

- Responsible Gambling Awareness Program (2009-)
- Macao New Chinese Youth Association
- Young Men’s Christian Association of Macau (YMCA)
- Macao Association of Youth Volunteers
- Bosco Youth Service Network
- Macao General Labor Union
But Orford (2005, 2010) disregard adaption

“Complex and multifactorial though causation is, the more the product is supplied in an accessible form, the greater the consumption and the greater the incidence and prevalence of harm”

- Availability of gambling products means more gambling-related harm.
- New gambling products, gambling via internet means more gambling-related harm.
CONCLUSIONS

- Adaption works in Macao. The PG prevalence rate has decreased.
- The 2.14% problem gambling rate is a serious public health issue.
- Casino operators should be encouraged to take more proactive role in responsible gambling.
- A dedicated responsible gambling fund is highly needed.
- More resource needs to be employed to educate tourist gamblers.
- More research needs to be done: Baccarat
REFERENCES

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