The First Asia Pacific Conference on Gambling & Commercial Gaming Research:

Examining the Latent Structure of Gambling Motivation Scale in Gambling-exposed Chinese Casino Employees

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Introduction

- **Gambling Motivation Scale** (GMS; Chantal et al., 1994) is one of the most popular scales used in assessing gambling motivation.
- Wu and Tang (2011) validated the Chinese Version of the scale and found out that a second-order model adequately fits with the data.
- This study tries to extend their study by utilizing a population very much exposed to gambling in almost daily basis, the **casino employees**.

Introduction

- In Macau - gambling is the biggest contributor to its economy.

- In 2009, the gaming tax generated is estimated to be more than **70 percent** of the Macao Special Administrative Region's total fiscal revenue
- Its gross gaming revenue has even **exceeded** the Las Vegas Strip occasionally, which makes it becomes **the largest gaming city in the world** (Macau Gaming and Coordination Bureau, 2012).

Introduction

- Recently, Macau casino industry employs **75,502** employees, aside from the **23,403** employees in the hotels who are very much exposed to casinos as most of them worked on the same vicinity (Macau Statistics and Census Service, 2012).

Introduction

- The vast number of individuals working in gaming venues who are exposed to gambling in daily basis
- necessary to understand impact of gambling exposure
- a "multiplier effect" to their families and to their community (Mordeno & Leong, 2012).

The Present Study

- In the present study, gambling will be looked into as a **motivational outcome**,

- asserting that **motivation leads people to become involved in gambling**, and thereby, investing more efforts, time and money in betting to games of their own liking.

Self-determination theory

- Self-determination theory (SDT; Deci & Ryan, 2002) offers a comprehensive explanation on the concept of motivation as it applies to gambling.

Types of Motivation

- SDT focuses on motivation underlying human behavior and suggests that motivation fall at different points along a continuum which reflect the degree to which it emanates from the self.

- The three types of motivation represented on the continuum are **intrinsic**, **extrinsic** and **amotivation** (Deci & Ryan, 2002).

Intrinsic motivation (IM)

- **Intrinsic motivation (IM)** represents a highly self-determined type of motivation.
- Intrinsically motivated individuals engage in an activity for the **pleasure** and **satisfaction** inherent in the activity (Deci and Ryan, 1985).
- Individuals experience intrinsic motivation when engaged in activities in which they experience **challenge**, stretch their capacity, and explore and understand their world more fully (Carruthers, Platz & Busser, 2006).

Intrinsic motivation (IM)

- Three specific types of intrinsic motivation have been suggested by Vallerand and his colleagues (Vallerand, et al., 1989; Vallerand, et al., 1992).
- ***IM toward stimulation*** is characterized by gamblers who indulge in gambling for **thrill**, **fun** and **excitement**.
- ***IM toward knowledge*** is manifested when gamblers involve themselves on gambling because they find it satisfying to **learn something new**.
- ***IM toward accomplishment***, is shown by gamblers who find pleasure and satisfaction in **surpassing themselves** in the course of their betting activities.

Extrinsic Motivation (EM)

- **Extrinsic Motivation (EM)** pertains to viewing a given activity with instrumental consequences.

- ***EM External Regulation*** lies at the non-self-determined end of the continuum. This type of regulation occurs when individuals engage an activity for **external rewards** or **to avoid the occurrence of something negative**.
  - Gamblers who play primarily in an attempt to win money or to get rich are motivated primarily by this type of motivation.

Extrinsic Motivation (EM)

- ***EM Introjected Regulation*** represents the first stage of the internalization process, where individuals **take prompts** from their environment and **bring them inside themselves** (Deci and Ryan, 2002).

- ***EM Identified regulation*** pertains when a gambler gambles because the outcomes are **personally important** to him or her, not because the activity itself is inherently interesting or fun.

Amotivation

- "**without**" motivation", a state in which the person is neither intrinsically nor extrinsically motivated.

Model 1: General factor model

- Five models were tested in this study.
- The first model is the **general factor model** where it assumes that all the items were all indicators of the strength of motivation. The implication of having a general factor is the **possibility of using a single score that would measure motivation**.

Model 2: Three-factor model

Model 3:
First order seven-factor model (Chantal, et al., 1994)

IM toward stimulation

IM *toward knowledge*

IM toward accomplishment

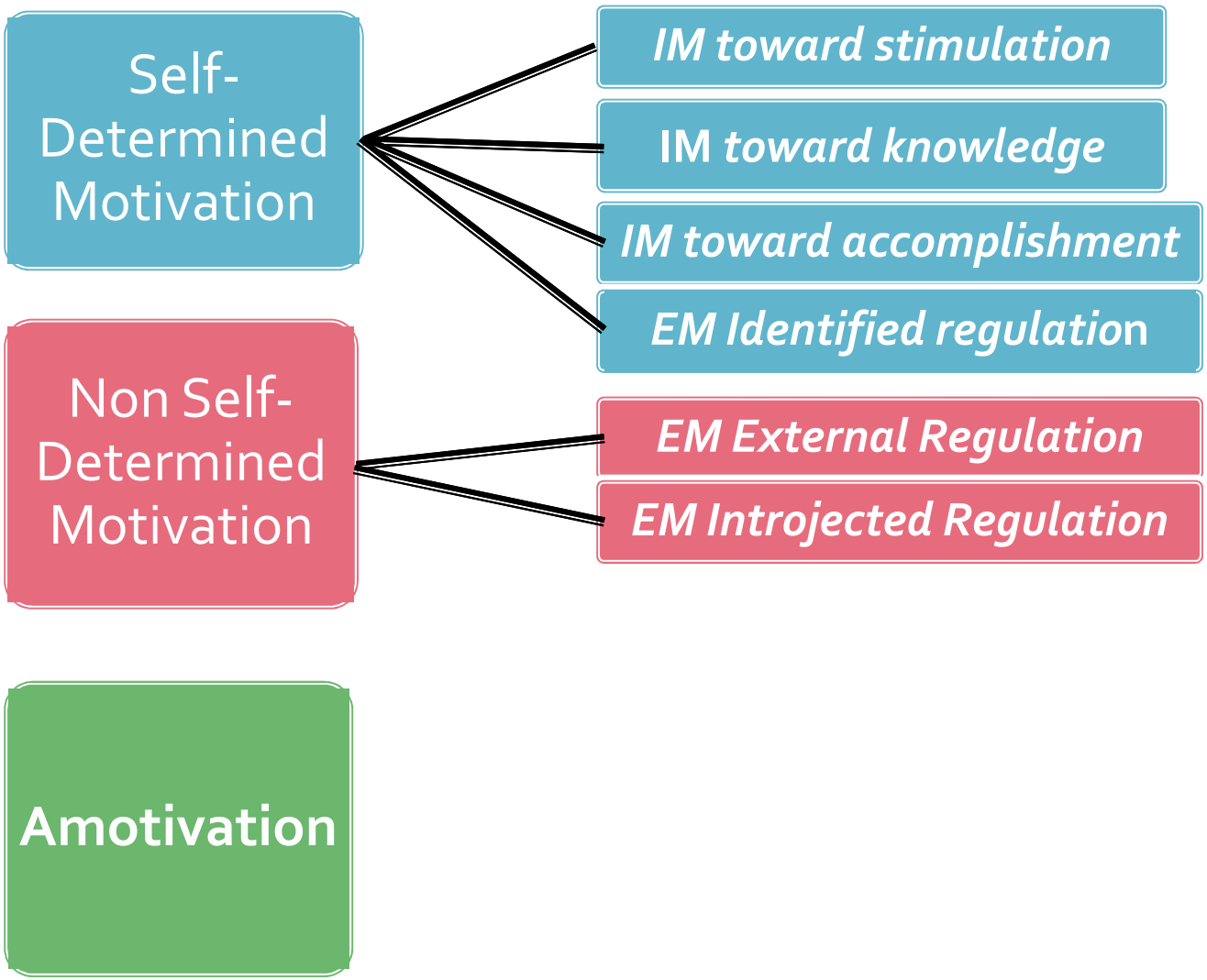
EM External Regulation

EM Introjected Regulation

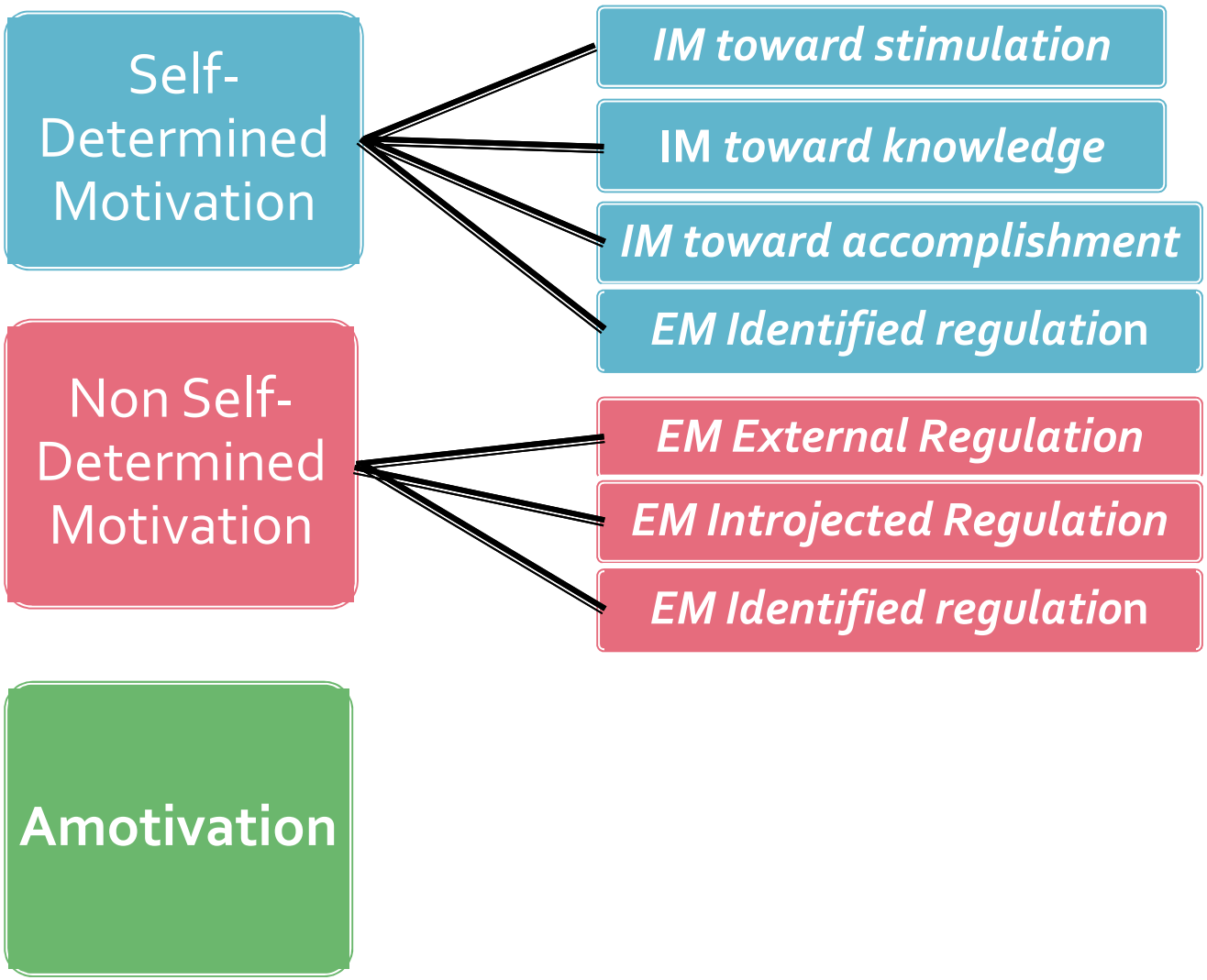
EM Identified regulation

Amotivation

Model 4:
Second-order factor structure (Wu & Tang, 2011)



Model 5:
Second-order factor structure
(Chantal & Vallerand, 1996)



Objectives of this Study

- Although GMS has been validated with Chinese respondents

- this study would like to assess if this is true to **casino workers** who are exposed to gambling in daily basis.

Objectives of this Study

- Moreover, this study would contribute to the call of determining the validity of a scale especially if this has been developed and validated in **another culture**.

Participants

Demographic Profile N= 817		f	%
Gender	Male	410	50.2
	Female	407	49.8
Age (mean = 29.03, SD=7.46)	18-26	399	48.8
	27-68	418	51.2
Level of Education	Junior High School	223	27.3
	Senior High School	372	45.5
	Higher Diploma	59	7.2
	Bachelor Degree	134	16.4
	Others	29	3.5
Marital Status	Single	440	53.8
	Married	267	32.7
	Engaged	16	2
	Living with someone/Cohabiting	61	7.5
	Not currently in a relationship	27	3.3
	Widow	6	0.7

Data Screening and Analysis

- All analyses were performed utilizing EQS (6.1; Bentler, 2004) and followed the procedures outlined by Byrne (2006).

- A series of confirmatory factor analysis (CFA) was conducted.

Data Screening and Analysis

- Multiple fit indices

- R-NNFI & R-CFI values of >.90 (adequate fit)
- R-NNFI & R-CFI values of >.95 (excellent fit)

- R-RMSEA cutoff value of <.08 (adequate fit)
- R-RMSEA cutoff value of <.06 (excellent fit)

Data Screening and Analysis

- The total number of respondents was split equally and randomly.

- After determining the best-fitting model in the 1st group
- Post modification was done based on item content analysis and Langrange Multiplier Test (LM test).

Results & Discussion

- Three items were deleted: 26, 28, 10

Item 26

Because when I win, I feel like someone important.

Item 2

Because it makes me feel like somebody important.

Results & Discussion

Item 28

For the thrill or the strong sensations it gives me.

Item 14: For the strong sensations I feel when I play my favorite game.

Results & Discussion

Item 10

For the pleasure I get at improving my knowledge of the game.

Results & Discussion

- With the 2nd group, the new modified model underwent CFA.
- The same fit indices were used.
- After removal of these items, fit indices improved significantly and achieved adequate fit.

Model goodness-of fit indices.

Model	df	X^2	Scaled x^2	AIC	CFI	NNFI	RMSEA	RMSEA 90% CI
Model 1	350	4502.806	1896.8376	6834.692	.786	.768	.074	.070- .077
Model 2	347	3159.275	1362.8663	6834.692	.859	.847	.060	.057- .063
Model 3	329	2539.223	1120.4996	6834.692	.890	.874	.054	.051- .058
Model 4	341	2757.629	1201.7664	6834.692	.881	.868	.056	.052- .059
Model 5	341	2802.964	1221.3861	6834.692	.878	.865	.056	.053- .060
Model 6 (Modified Model 3)	254	1793.125	772.6984	6195.646	.920	.906	.050	.046- .054

Note. N=817. Model 1 = One-factor model; Model 2 = Three-factor Model; Model 3 = 7-factor model (Chantal, et al., 1994); Model 4 = Three-factor Second-order model (Wu, A. M. S., & Tang, C. S., 2011); Model 5 = Three-factor Second-order model (Chantal & Vallerand, 1996); Model 6 = Modified 7-factor model (Chantal, et al., 1994). AIC = Akaike information criterion; CFI = comparative fit index; TLI = Tucker-Lewis index; RMSEA = root-mean square error of approximation; CI = confidence interval.

GMS correlates with frequency of and amount spent for gambling

	1	2	3	4	5	6	7	8	9
1. GMS_Know (New)	1								
2. GMS_Accomp.	.827**	1							
3. GMS_ Stimu. (New)	.732**	.799**	1						
4. GMS_Iden.Reg.	.755**	.803**	.757**	1					
5. GMS_ IntroReg (New)	.707**	.726**	.617**	.628**	1				
6. GMS_Exte.Reg.	.522**	.577**	.520**	.430**	.528**	1			
7. GMS_Amot.	.532**	.613**	.588**	.457**	.408**	.541**	1		
8 SOGS_Fre.	.278**	.315**	.393**	.279**	.244**	.300**	.311**	1	
9 SOGS_Amount	.175**	.216**	.279**	.203**	.113**	.227**	.274**	.478**	1

Notes. GMS_Know (New)= New motivation for knowledge; GMS_Accomp.= Motivation for accomplishment; GMS_Stimu. (New)= New motivation for stimulation; GMS_Iden.Reg.= motivation due to identified regulation; GMS_Intro.Reg. (New)= New motivation due to introjected regulation; GMS_Exte.Reg.= Motivation due to external regulation; GMS_Amot= Amotivation; SOGS_Fre= Gambling Frequency; SOGS_Amount= amount of money spent in gambling.

**. Correlation is significant at the 0.01 level (2-tailed).

GMS correlates with SOGS and VGS

	1	2	3	4	5	6	7	8	9	10	11
1. GMS_Know (New)	1										
2. GMS_Accomp.	.827**	1									
3. GMS_ Stimu. (New)	.732**	.799**	1								
4. GMS_Iden.Reg.	.755**	.803**	.757**	1							
5. GMS_ IntroReg (New)	.707**	.726**	.617**	.628**	1						
6. GMS_Exte.Reg.	.522**	.577**	.520**	.430**	.528**	1					
7. GMS_Amot.	.532**	.613**	.588**	.457**	.408**	.541**	1				
8. SOGS_Total	.347**	.415**	.453**	.397**	.302**	.374**	.473**	1			
9. VGS_EG	.467**	.527**	.566**	.466**	.435**	.372**	.370**	.426**	1		
10. VGS_HO	.054	.119**	.124**	.124**	.073*	.054	.125**	.137**	.067	1	
11. VGS_HS	.455**	.534**	.538**	.490**	.486**	.439**	.487**	.581**	.627**	.155**	1

Notes. SOGS_Total= SOGS total scores; VGS_Total = VGS total scores; VGS_EG= VGS enjoyment of gambling subscale; VGS_HO= VGS harm to others subscale; VGS_HS= VGS harm to self subscale.
**. Correlation is significant at the 0.01 level (2-tailed).

Results & Discussion

- It is significant to note that **amotivation** correlated positively with gambling behaviors (same as Wu & Tang, 2011).

- A number of problem gamblers are amotivated – "they wondered what they got out of gambling" (Ladouceur, 1997).

Results & Discussion

Inability to determine → Sense of uncertainty → Gambling involvement

Until they find a semblance of "meaning"

Limitations

- **Casino workers**: lower the generalizability of the findings
- The cross-sectional nature of data does not allow determination of direct causal direction.
- **Self-report measures** are always subjective to social desirability and recall biases. It is better to include social desirability scales.

Insights

- The **modified GMS** can be utilized among **Chinese casino workers**.
- The perspective motivation in problem gambling had important implication both to **treatment** and **policy formulation**.

Insights

- **Treatment intervention**: in addressing the seven factors of motivation.

- **Policy**: prevent problem gambling among casino workers by using the concept of motivation to intervene and lessen the risk for them to involve in harmful gambling practices.