

THE ROLE OF ILLUSION OF CONTROL IN GAMBLING BEHAVIOR AMONG AGING PLAYERS

Members of the *JeuVieilli* consortium:



Laboratoire
Psychopathologie
et Processus de Santé



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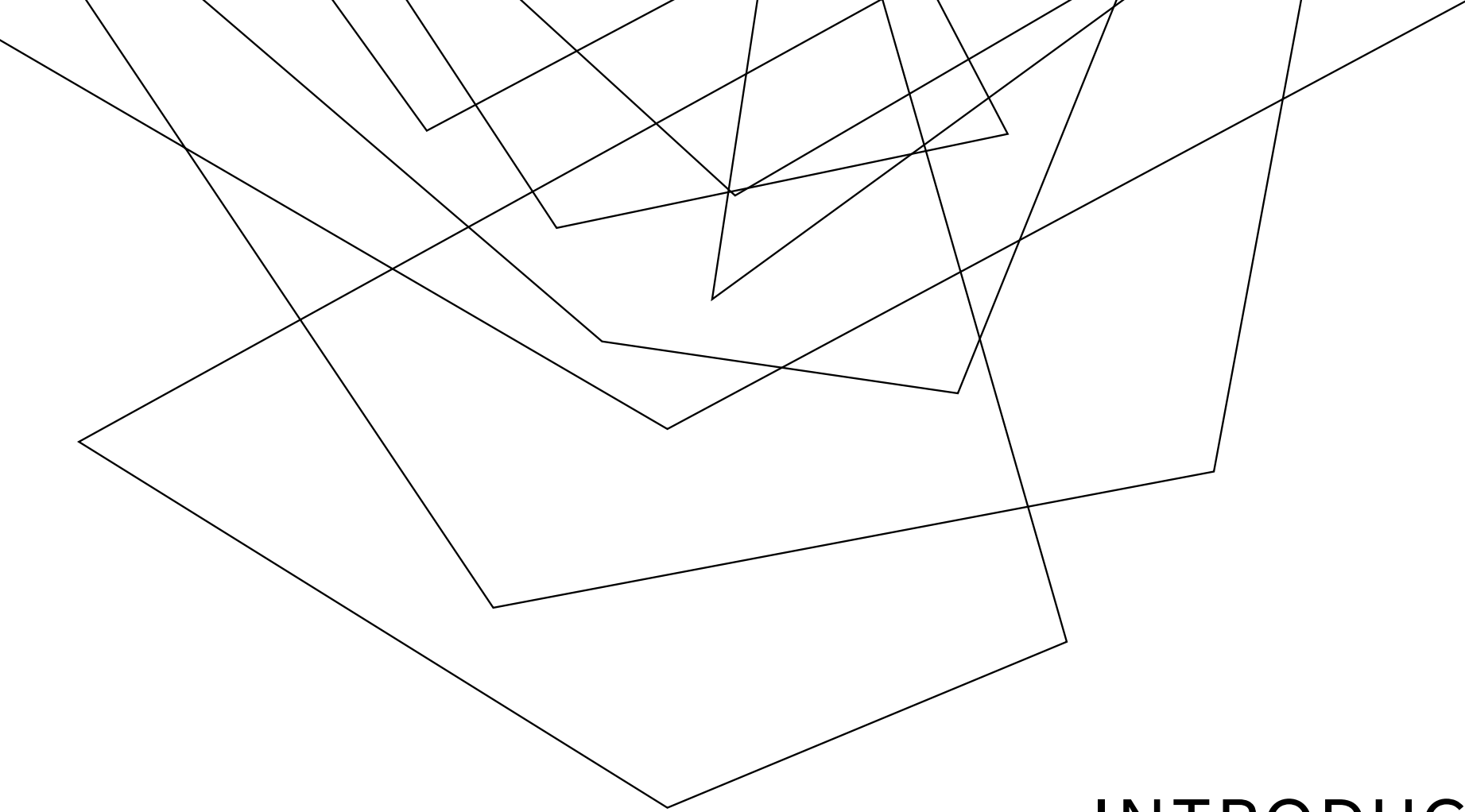
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INTRODUCTION

CONTEXT OF THE STUDY

- Increasing number of aging gamblers (Costes et al., 2019), expected 50% increase in the population over 60 by 2050 (INSEE, 2016)

CONTEXT OF THE STUDY

The illusion of control (IOC) :

- « expectancy of a personal success probability inappropriately higher than the objective probability would warrant » (Langer, 1975, p.311)

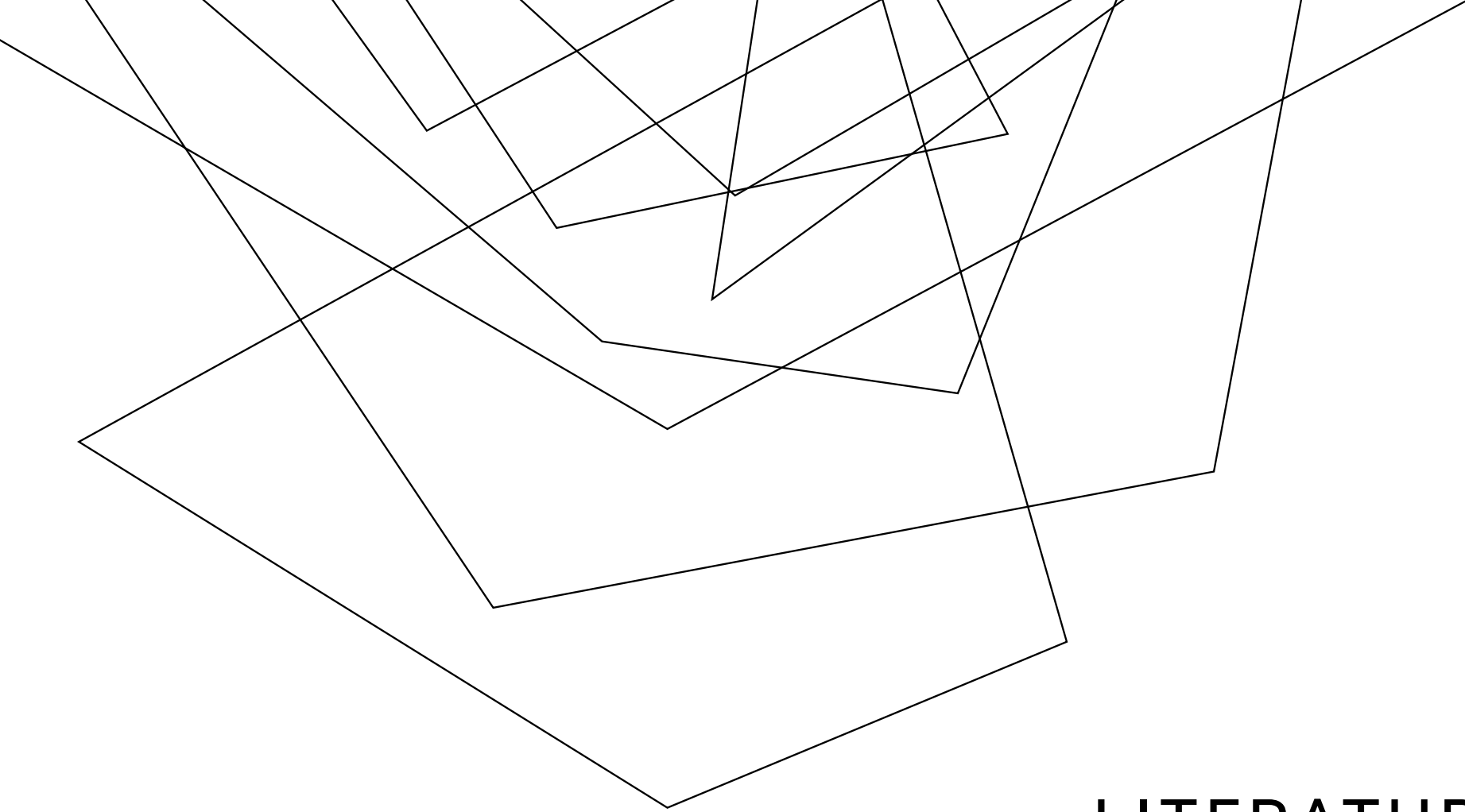
CONTEXT OF THE STUDY

The illusion of control (IOC) :

- « expectancy of a personal success probability inappropriately higher than the objective probability would warrant » (Langer, 1975, p.311)
- Key predictor of risky gambling behaviors (Goodie & Fortune, 2013)

OBJECTIVES OF THE STUDY

1. Developing a reliable tool to measure the IOC in gambling
2. Investigating the relationship between aging, IOC, gambling practices, and risky gambling behaviors



LITERATURE REVIEW

IOC IN GAMBLING

- High IOC is linked to persistent gambling and financial losses (Delfabbro & Winefield, 2000 ; Ladouceur et al., 1987 ; Yarritu et al., 2015)

IOC IN GAMBLING

- IOC is a multifaceted concept (e.g. Wood & Clapham, 2005 ; Mercier et al., 2018 ; Raylu & Olei, 2004):
 - Beliefs about skills and strategies
 - Superstitious behaviors to influence the outcomes

IOC IN GAMBLING

- IOC is a multifaceted concept, with various measurements:
 - Beliefs about skills and strategies
 - Superstitious behaviors to influence the outcomes



The *Multi-Dimensional Rating Scale for Illusion of Control in Gambling* (EEMDIC ; Fontaine et al., 2021) integrate these different facets into a comprehensive measurement tool

AGING AND GAMBLING

- Increased risk-taking in uncertain contexts among older adults (60+years), particularly in situations involving potential losses (Mather et al., 2012; Pachur et al., 2017)
- Singular vulnerability due to fixed income, isolation, or cognitive decline (Subramaniam et al., 2014)
- Paucity of research on gambling and IOC among older adults (Skinner & Turner, 2018)
 - With aging IOC decrease, while risk-taking increases (Fontaine et al., 2018)

AGING AND GAMBLING

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 - With aging IOC decrease, while risk-taking increases (Fontaine et al., 2018)

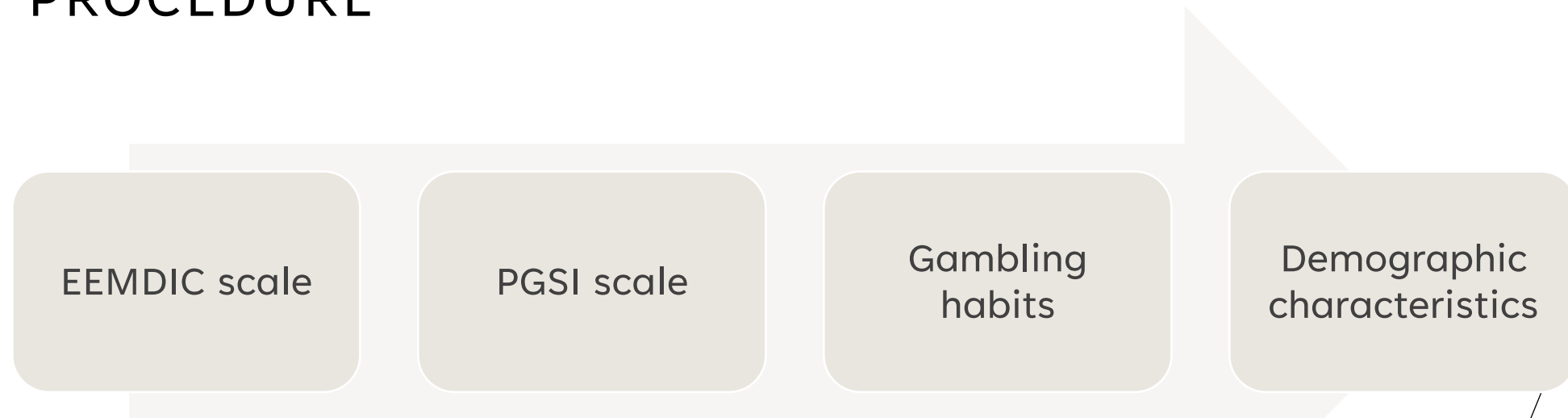


Aging is a crucial variable to consider
A reevaluation is needed of the
relationship between IOC and risk-taking
as a function of age



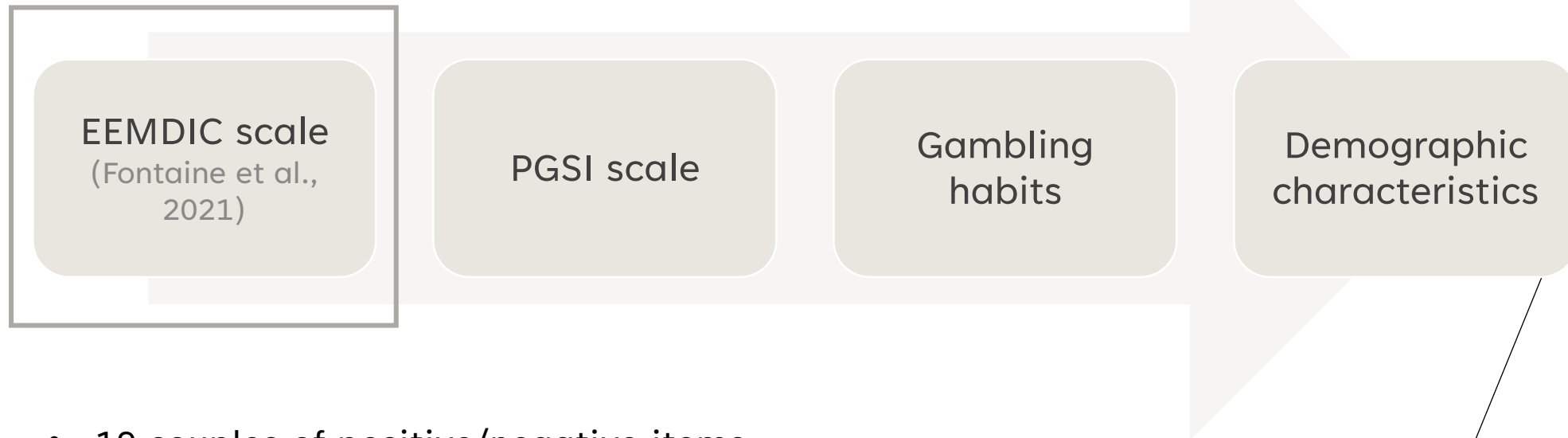
METHODOLOGY

PROCEDURE



- Online survey
- Participants are **aged between 40 and 75** and have all **gambled at least once in the past 12 months.**

PROCEDURE



- 19 couples of positive/negative items
- After completion : *games you thought of while completing the scale?*

THE MATRIX FORMAT OF THE EEMDIC

- Differences in IOC depending on the emotional tone of the situation
- Older adults are more prone to risk-taking in loss situations



The matrix format (Bonnell, 2016; Bonnell & Py, 2014), offers the possibility to capture the gap in IOC depending on the positive or negative emotional response triggered by the situation

THE MATRIX FORMAT OF THE EEMDIC

Same statements, with a dual framing :

- **positive framing** (i.e. gains, luck),
- **negative framing** (losses, unluck)

		Some gamblers are just born lucky					
		Absolutely disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Absolutely agree
Some gamblers are just born unlucky	Absolutely disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Somewhat disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Somewhat agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Absolutely agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

THE MATRIX FORMAT OF THE EEMDIC

- The participant read the statement in blue and choose the response that suits them best.
- They do the same with the statement in green and check the box at the intersection of the two responses.

		Some gamblers are just born lucky					
		Absolutely disagree	Disagree	Somewhat disagree	Somewhat agree	Agree	Absolutely agree
Some gamblers are just born unlucky	Absolutely disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	Disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Somewhat disagree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Somewhat agree					<input checked="" type="radio"/>	
	Agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
	Absolutely agree	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

PROCEDURE



- 9 items
- Statements related to problem gambling:
Have you bet more than you could really afford to lose ?

PROCEDURE

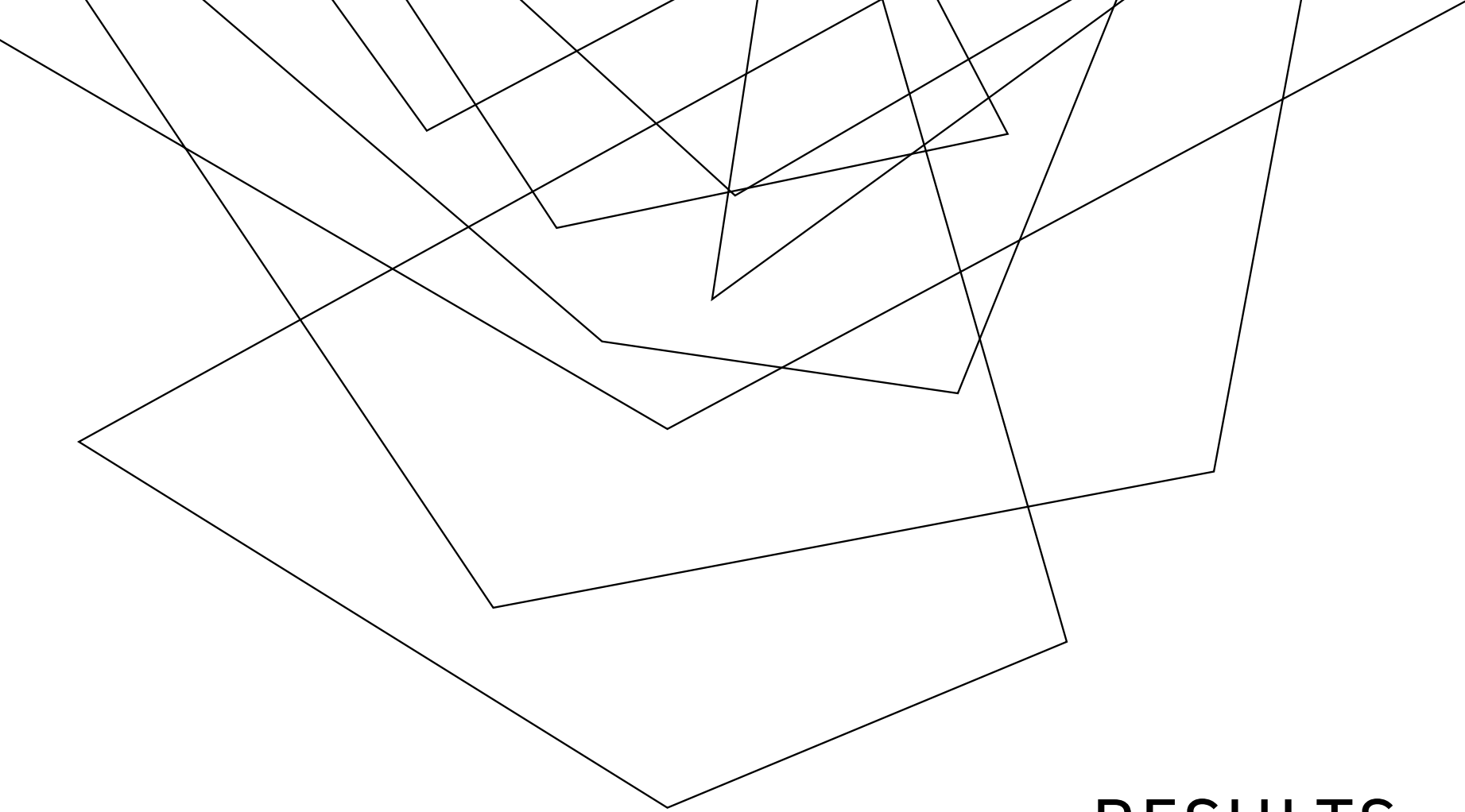


- Gambling frequency & average bet per session

PROCEDURE



- Sociodemographic profile (e.g. age, gender, professional activity)



RESULTS

FACTOR ANALYSIS OF THE EEMDIC

Exploratory Factor Analysis (EFA)

- N = 649
- 14/19 items
- Four factors: 57.1% of the variance
- High internal consistency:
 - Luck ($\alpha = .85$)
 - Skill ($\alpha = .82$)
 - Superstition ($\alpha = .79$)
 - Strategy ($\alpha = .76$)

Confirmatory Factor Analysis (CFA)

- N = 662
- Good fit indices
(e.g. RMSEA = .07, CFI = .94)

FACTOR ANALYSIS OF THE EEMDIC

Regardless of the positive/negative framing of the items, 4 factors of IOC in gambling:

- **Beliefs in good luck / bad luck**
- **Superstitious behaviors**
- **Usefulness of employing strategies in gambling**
- **Usefulness of skills in gambling**

FACTOR ANALYSIS OF THE EEMDIC

Regardless of the positive/negative framing of the items, 4 factors of IOC in gambling:

- **Beliefs in good luck / bad luck**
 - e.g. *“I believe that fate is on my side when I win”, “some gamblers are just born unlucky”*
- **Superstitious behaviors**
- **Usefulness of employing strategies in gambling**
- **Usefulness of skills in gambling**

FACTOR ANALYSIS OF THE EEMDIC

Regardless of the positive/negative framing of the items, 4 factors of IOC in gambling:

- **Beliefs in good luck / bad luck**
- **Superstitious behaviors**
 - e.g. *"If I have positive thoughts, it contributes to my luck and my winnings."*, *"If I use special rituals, I can avoid bad luck."*
- **Usefulness of employing strategies in gambling**
- **Usefulness of skills in gambling**

FACTOR ANALYSIS OF THE EEMDIC

Regardless of the positive/negative framing of the items, 4 factors of IOC in gambling:

- **Beliefs in good luck / bad luck**
- **Superstitious behaviors**
- **Usefulness of employing strategies in gambling**
 - e.g. *"I should keep track of my previous winning combinations so I can determine how I should play in the future."*, *"I can analyze my losses to develop strategies that will help me become a better player."*
- **Usefulness of skills in gambling**

FACTOR ANALYSIS OF THE EEMDIC

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- **Beliefs in good luck / bad luck**
- **Superstitious behaviors**
- **Usefulness of employing strategies in gambling**
- **Usefulness of skills in gambling**
 - *e.g. "The more familiar I am with a game, the more likely I am to win.", "If I lose, it's because I played poorly."*

FACTOR ANALYSIS OF THE EEMDIC

Regardless of the positive/negative framing of the items, 4 factors of IOC in gambling:

- **Beliefs in good luck / bad luck**
 - **Superstitious behaviors**
 - **Usefulness of employing strategies in gambling**
 - **Usefulness of skills in gambling**
- 
- Secondary control**
(Rothbaum et al., 1982; Ejova et al., 2015)

FACTOR ANALYSIS OF THE EEMDIC

Regardless of the positive/negative framing of the items, 4 factors of IOC in gambling:

- **Beliefs in good luck / bad luck**
- **Superstitious behaviors**

- **Usefulness of employing strategies in gambling**
- **Usefulness of skills in gambling**



Primary control

(Rothbaum et al., 1982; Ejova et al., 2015)

GAMBLING PROFILES, IOC AND PROBLEM GAMBLING

K-means cluster analysis:

- Self-reported frequency of gambling activities
- Seven categories (e.g. sport bet, slot machine)

- **Profiles of Gamblers:**
 - **Occasional Gamblers** (N = 538): Less frequent gamblers
 - Low risk ($M_{PGSI} = 1.69$)
 - **Draw Game Players** (N = 492): Regular gamblers, particularly in lotteries
 - Low risk ($M_{PGSI} = 2.08$)
 - **Betting Game Players** (N = 281): Frequent gamblers in sports and horse betting
 - moderate risk ($M_{PGSI} = 3.52$)

IOC BY GAMBLING TYPE

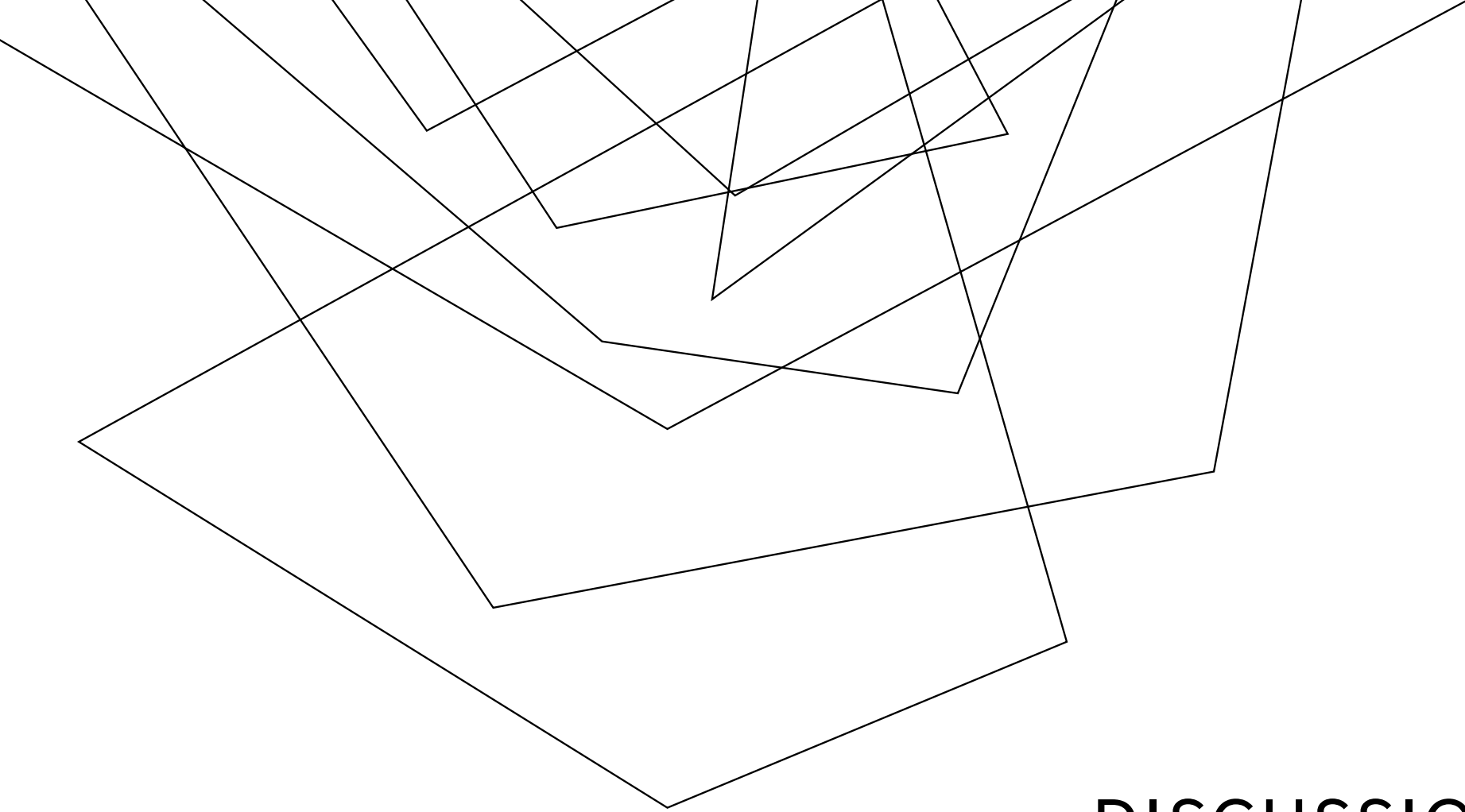
- **Sports Betting:**
 - Higher overall IOC.
 - Strong beliefs in *Strategy* ($r = 0.17$) and *Skill* ($r = 0.22$)
- **Horse Betting:**
 - High IOC, particularly in *Luck* and *Skill*
- **Lottery Players:**
 - Lower IOC, especially in *Strategy* and *Skill*

AGING, IOC AND PROBLEM GAMBLING

- Significant decrease of IOC with age
 - Weak effect size, $R^2 = .02$
- Significant decrease of problem gambling with age
 - Weak effect size, $R^2 = .02$

Table 1.
Mean EEMDIC and PGSI score for each age class

Age class	N	EEMDIC score	PGSI score
< 50	477	83.4 (24.8)	2.84 (4.1)
50-60	472	77.4 (24.1)	2.14 (3.2)
> 60	362	75.5 (24.0)	1.53 (2.4)



DISCUSSION

VALIDATION OF THE EEMDIC

- Factors are consistent across EFA and CFA (**luck, superstition, strategy, skills**) demonstrating the robustness of the scale



The EEMDIC scale provides a valuable tool to assess IOC across different dimensions, aiding in early detection of at-risk individuals and informing tailored prevention strategies

IMPLICATIONS FOR AGING POPULATIONS

- Decreased IOC and problem gambling (despite higher risk-taking previously observed):
 - Lower IOC might prevent risk-taking from becoming problematic
 - **Motivations in older adults:** pleasure & socialization may be less linked to problematic gambling than tension relief (e.g. Fontaine et al., 2023)
 - **Pathway model** (Blaszczynski & Nower, 2002): possibility of **age-specific distortions** influencing gambling behaviors

REEVALUATION OF THE IOC-PG RELATION

- Association between **primary control factors** (i.e. skills & strategy), sports bet, and problem gambling
 - Possible association between primary control and arousal-seeking in (seemingly) high skill games (*augmenters* ; Blaszczynski 1988)
- **Secondary control factors** (luck & superstition), are not linked to problem gambling

FUTURE DIRECTIONS

- Measure cognitive abilities with the MMSE (Cockrell & Folstein, 2002), to explore cognitive changes in aging and gambling
- Investigate the **age of gambling onset together with motivations**: older adults who start later may have higher risks of problem gambling

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