Agenda

What is gambling?

Feature Engineering – Behavioural Markers

Example: Chasing

Challenges & Outlook

Agenda

What is gambling?

What is gambling?

Gambling, noun
1. The activity or practice of playing at a game of **chance** for money or other **stakes**.
2. the act or practice of risking the loss of something important by taking a chance or acting recklessly.

UK Gambling Act 2005:
Gambling is defined as **betting**, gaming or participating in a lottery.

Glücksspielstaatsvertrages (§ 3 Abs. 1):
*Ein **Glücksspiel** liegt vor, wenn im Rahmen eines Spiels für den Erwerb einer **Gewinnchance** ein **Entgelt** verlangt wird und die Entscheidung über den Gewinn ganz oder überwiegend vom **Zufall** abhängt.*

Online gambling, more commonly known as Internet gambling, is typically betting on casino or sports type games **over the Internet**. The temperament of gambling may vary from sports bets to casino style games, e.g.: roulette, poker, slots, lotteries, bingo and keno. It can also be called.

http://www.gamblingcommission.gov.uk

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Problem Gambling / Gambling Addiction

Problem gambling / gambling addiction is an urge to gamble continuously despite harmful negative consequences or a desire to stop.

Prevalence:
- 80-90% will loose interest quickly
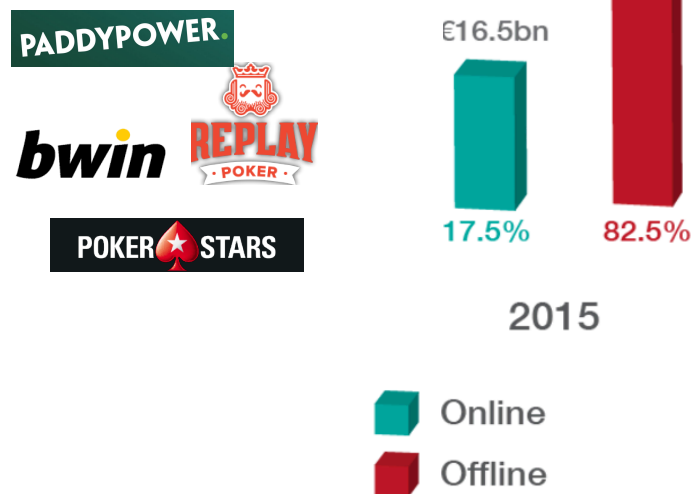- Between 5% and 15% are at risk
- Up to 5% are addicted
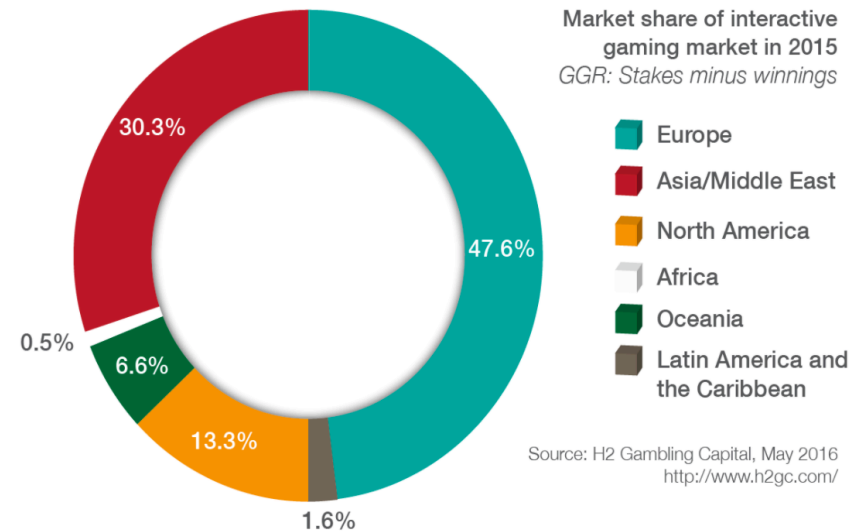
DSM-5 Diagnostic Criteria for Gambling Disorder

– Development of Tolerance

– Symptoms of withdrawal

– Unsuccessful control of play

– Preoccupation with gambling

– Gambling when feeling distressed

– Loss Chasing

– Concealment of play

– Jeopardize significant relationship, job, or educational or career opportunity
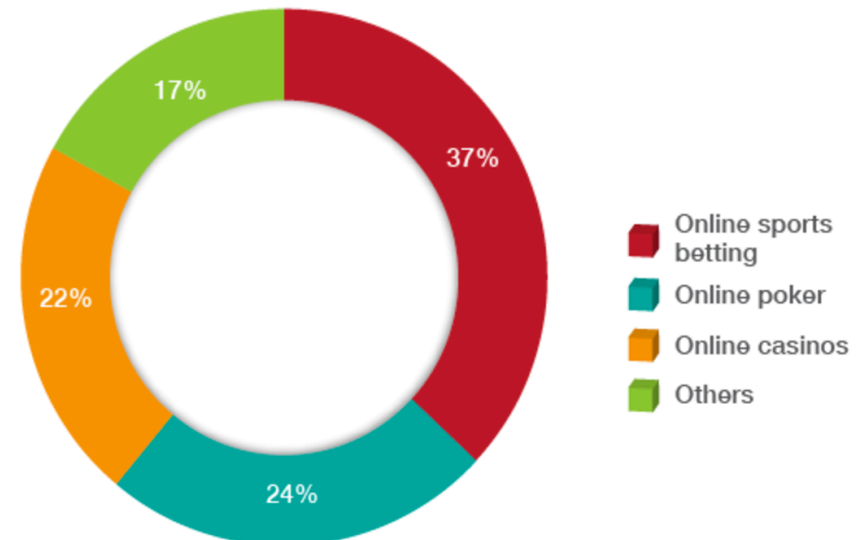
– Bailout through others

Recognized as 1st behavioural addiction since 2014

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The online Gambling Market

Global Market Share of online Gambling

Market share of interactive gaming market in 2015
GGR: Stakes minus winnings

- 47.6% Europe
- 30.3% Asia/Middle East
- 13.3% North America
- 0.5% Africa
- 6.6% Oceania
- 1.6% Latin America and the Caribbean

Source: H2 Gambling Capital, May 2016
http://www.h2gc.com/

GGR in billion €
GGR: Stakes minus winr

€77.7bn

€16.5bn

17.5% 82.5%

2015

- Online
- Offline

Types of Online Gambling

- 37% Online sports betting
- 24% Online poker
- 22% Online casinos
- 17% Others

http://www.egba.eu/facts-and-figures/market-reality/

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Games played and bets placed

eCasino • Lottery • Sports • Social • Bingo

BY USER
- 79.7%
- 30.0%

BY BET
- 0.9%
- 96.7%
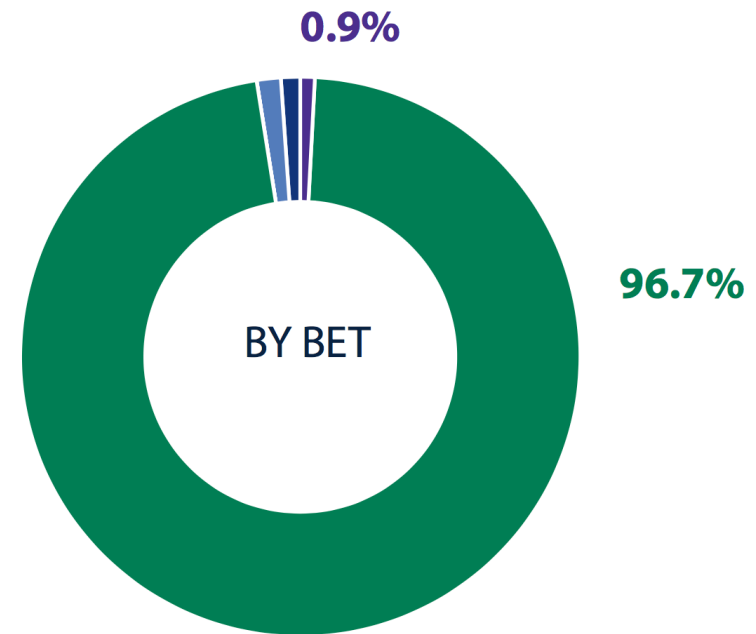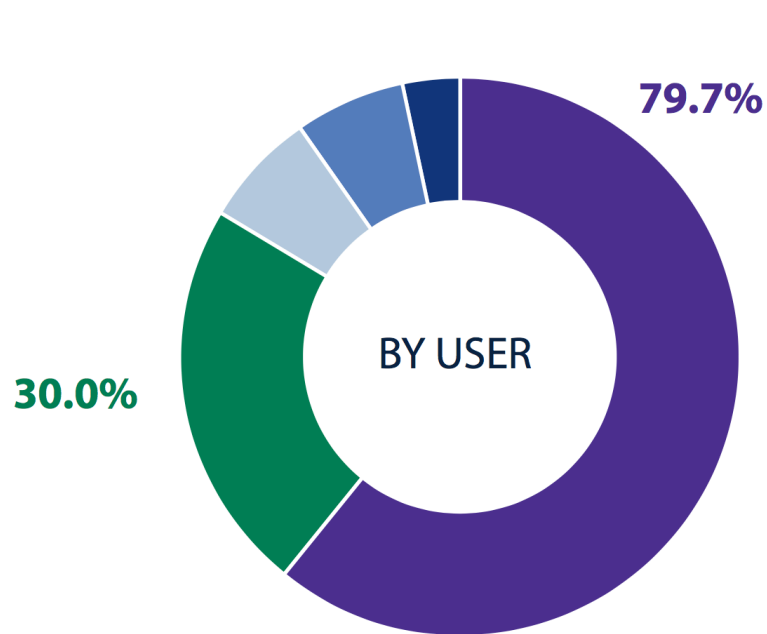
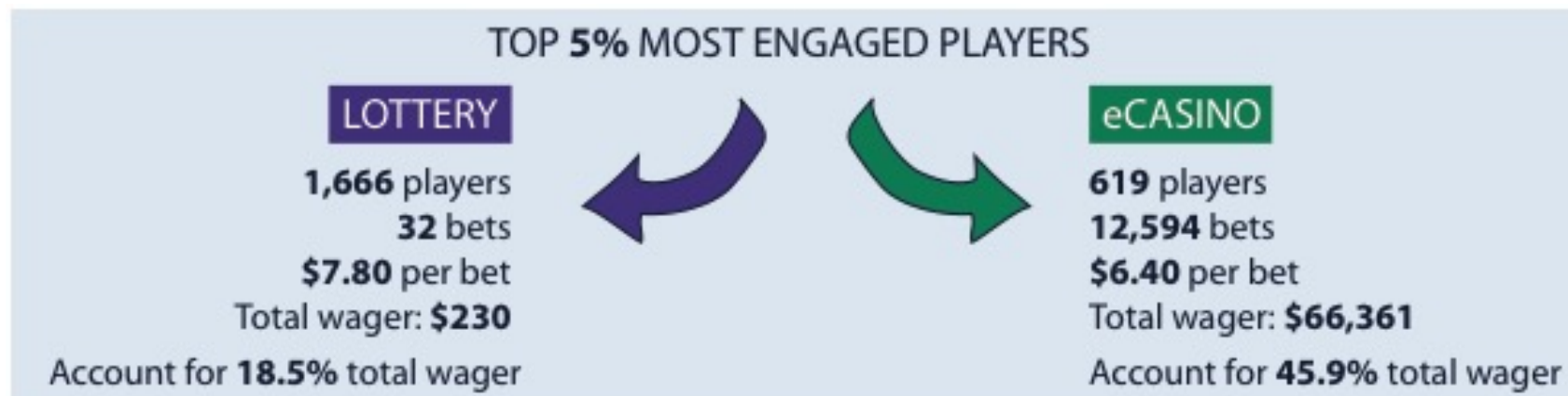ONE MONTH OF PLAY (June, 2015), 41,401 USERS,
OVER 48 MILLION BETS WITH A TOTAL WAGER OF OVER $118 MILLION

Source: Online Gambling in British Columbia, Lesch & Clark, 2017

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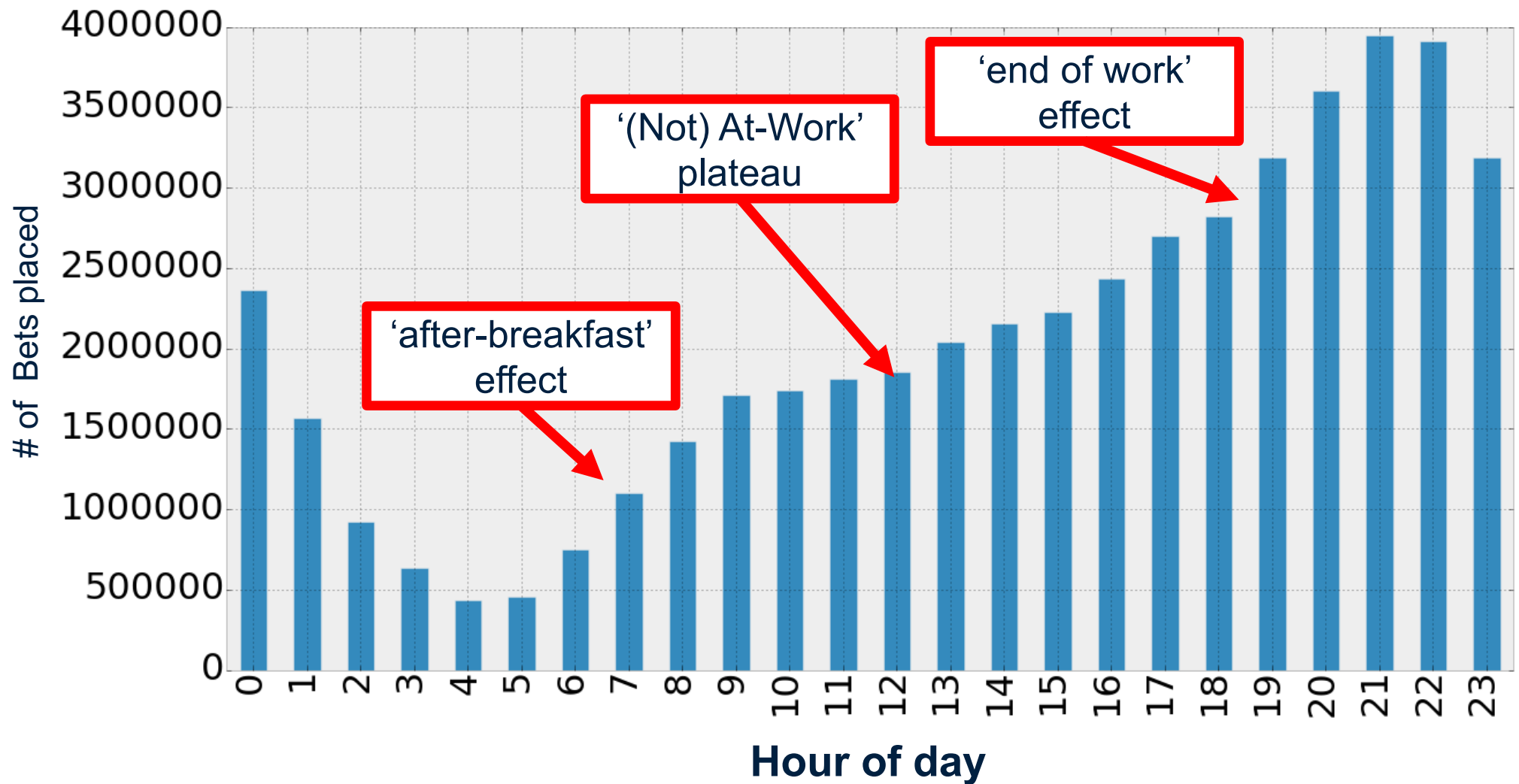CENTRE for GAMBLING RESEARCH at UBC

Lottery vs. Casino players

The average (MEDIAN) player made 17 bets of $3 over the month with a
total wager of $57.80. They played 6 sessions over 5 days, and 4 different games.
But average player behaviour varied considerably across game type:

LOTTERY
9 bets
$3.40 per bet
Total wager: **$36**
5 sessions, 4 days, 3 products

763 bets
$1.20 per bet
Total wager: **$1,048**
6 sessions, 5 days, 6 products
eCASINO

TOP **5%** MOST ENGAGED PLAYERS

LOTTERY
1,666 players
32 bets
$7.80 per bet
Total wager: **$230**
Account for **18.5%** total wager

eCASINO
619 players
12,594 bets
$6.40 per bet
Total wager: **$66,361**
Account for **45.9%** total wager

Source: Online Gambling in British Columbia, Lesch & Clark, 2017

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Bets placed by Hour of Day

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Feature Engineering - Behavioural markers

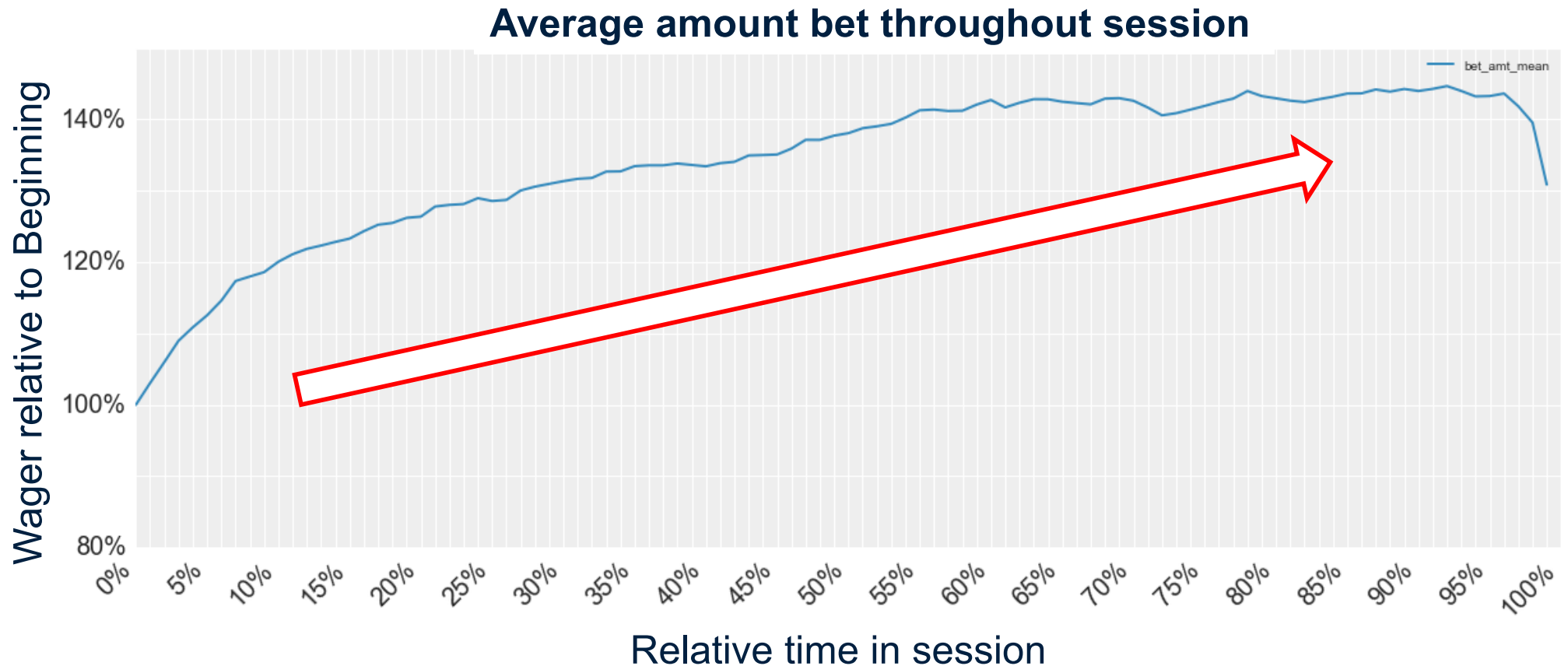# Behavioural markers of online gambling I: *Chasing*

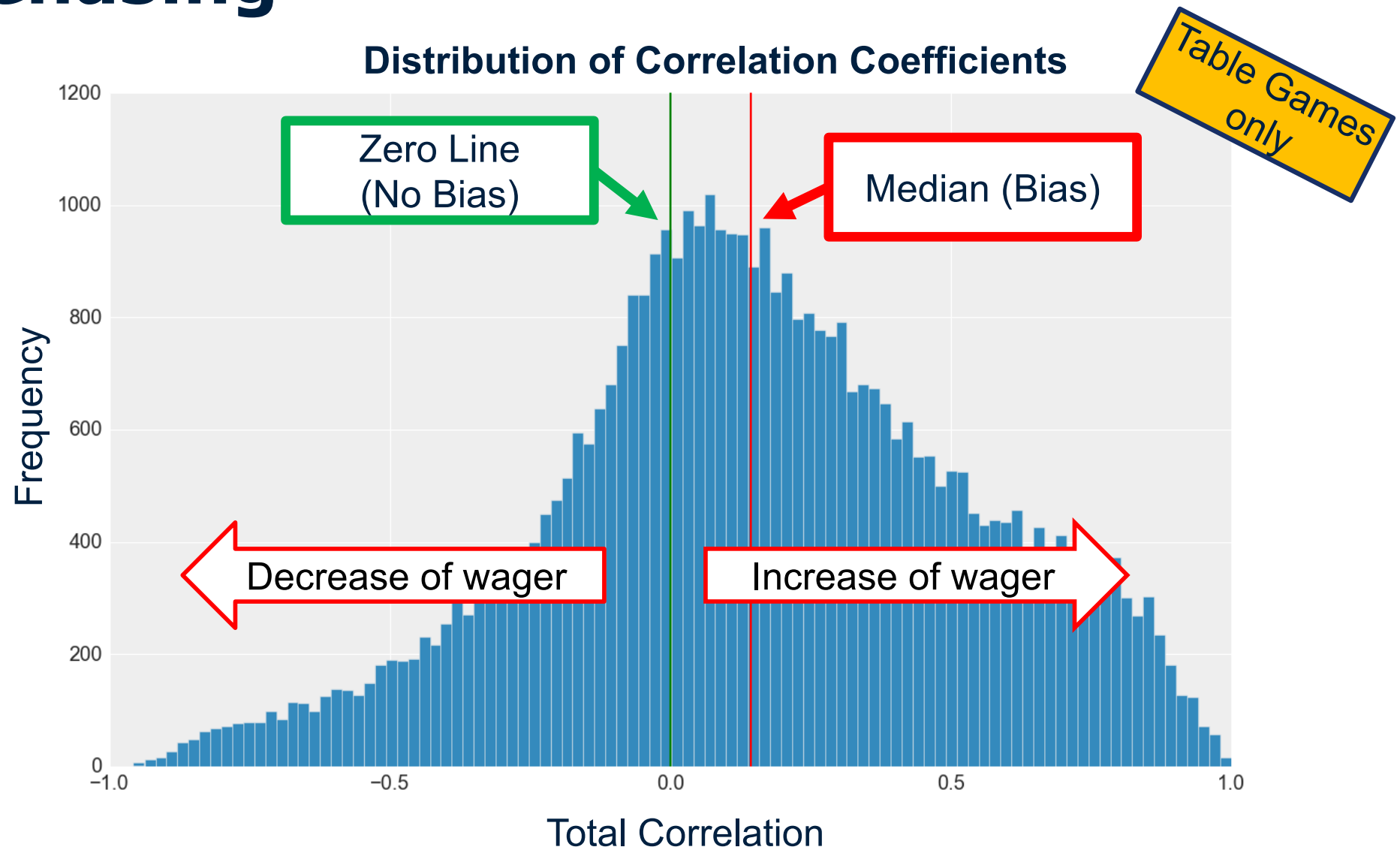**'Loss chasing':** Trying to 'win' back previously lost funds

Operationalisations:
- increase bet size
- accelerate betting
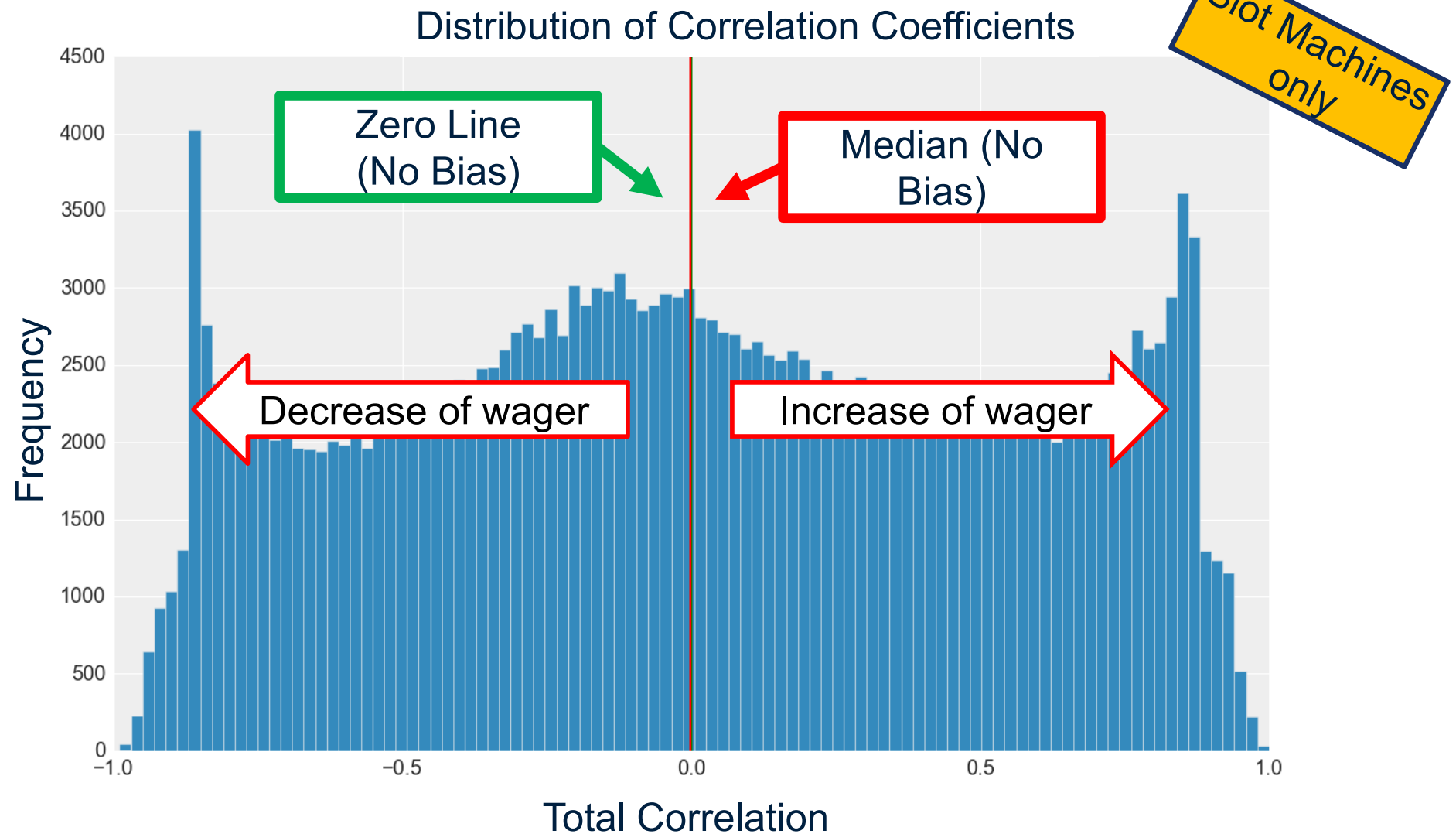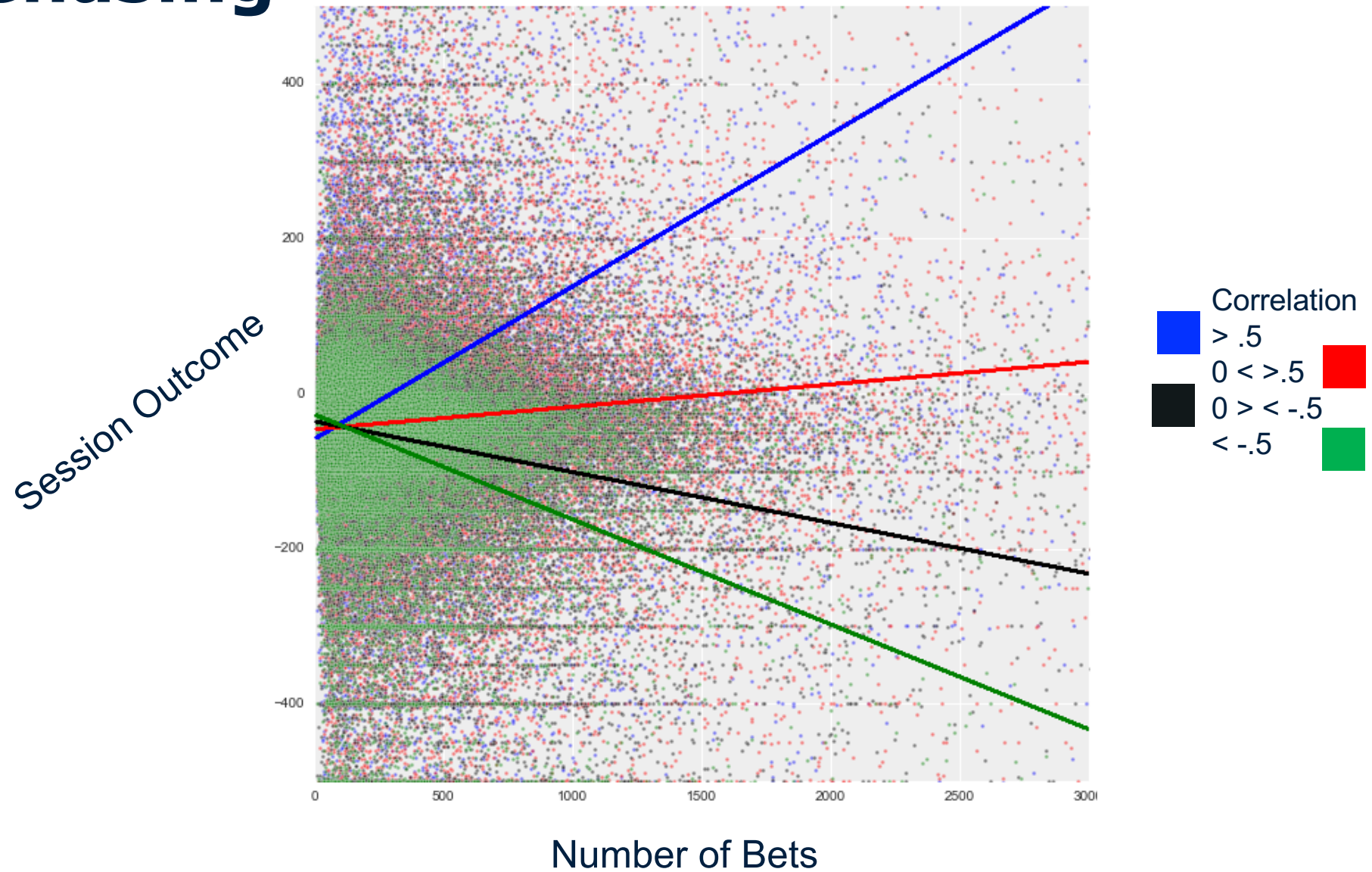- play longer
- play quicker again

Chasing

Average amount bet throughout session

Chasing

Distribution of Correlation Coefficients

Table Games only

Chasing

Distribution of Correlation Coefficients

Slot Machines only

Zero Line (No Bias)

Median (No Bias)

Decrease of wager

Increase of wager

Frequency

Total Correlation

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Chasing

Chasing

Number of Chasing session per USer tables

Frequency

Number of Users

Number of Chasing Session by user

Table Games only

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Chasing

Distribution of Chasing Session by Individual

Table Games only

Number of users

Number of User

Percentage of chasing sessions by user

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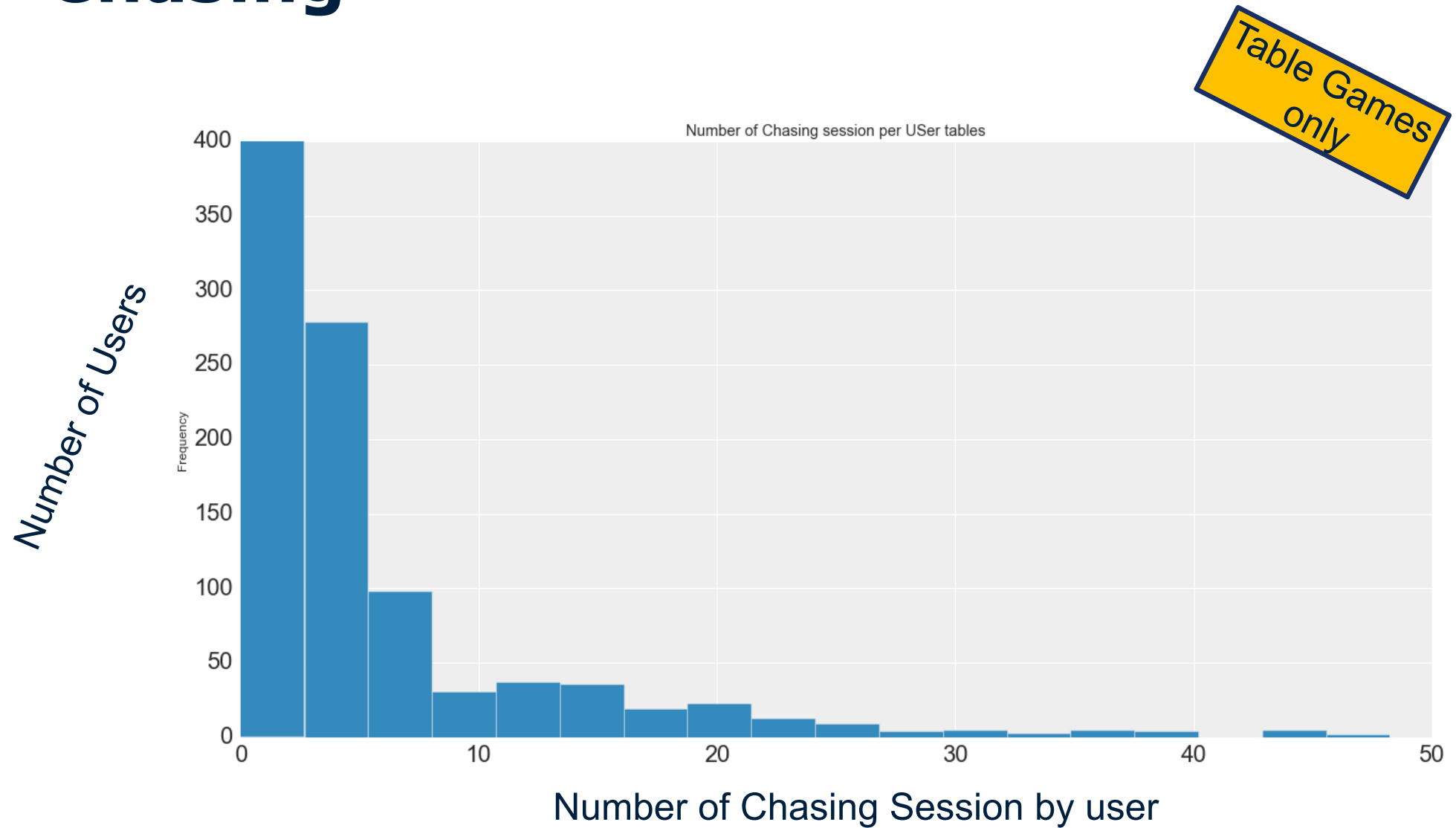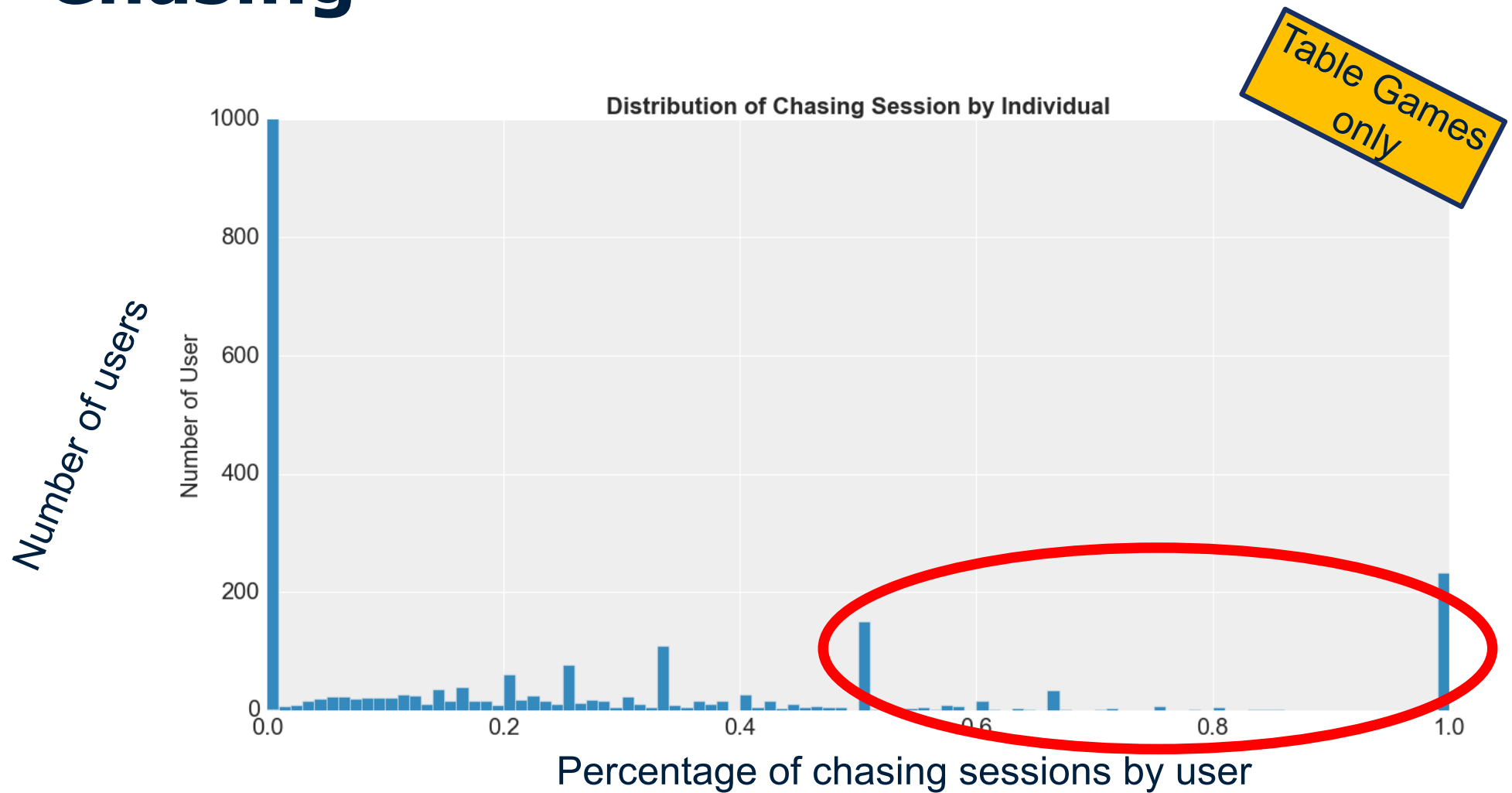
Outlook and Challenges

- *Dilemma of clustering vs. classifying*

    - What are the 'right' measures/markers for problematic gambling

    - What what do any method's results have to say about real behaviour?

- *The Learning Dilemma*

    - What is 'the' addicted gambler?

    - Where is their data?

- *The People Dilemma*

    - *Getting the getting people with the right skills.*

- *Commercialization.*

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Thank you for your attention!

Please do talk to me if you:

- are an expert in postgres databases
- have experience in time series analysis
- have experience in logistic analysis
- have similar data
- or… just want to chat.

Acknowledgements

Dr Tilman Lesch
Tilman.Lesch@psych.ubc.ca

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www.cgr.psych.ubc.ca
@CGR_UBC

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Cognitive Biases in Gambling

" A cognitive bias is a pattern of deviation in judgment and decision-making, whereby inferences about situations and other people may be drawn in an illogical fashion."

Hot Hand Fallacy:
fallacious belief that a person who has experienced success with a random event has a greater chance of further success in additional attempts.

Illusion of Control:
tendency for people to overestimate their ability to control events.

Sequential/ Streak Effects:
("Gambler's Fallacy": mistaken belief that, if something happens more (less) frequently than normal during some period, it will happen less (more) frequently in the future - balancing).
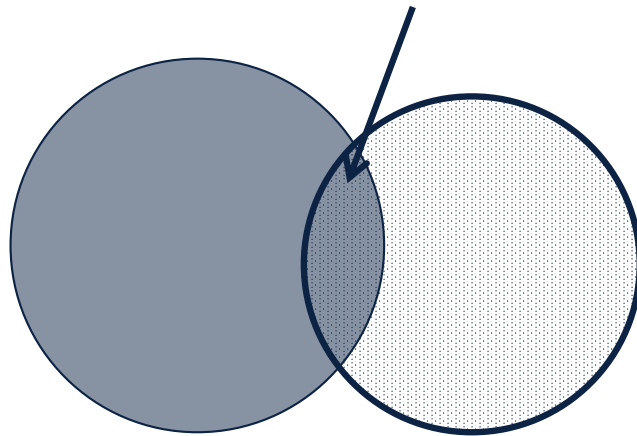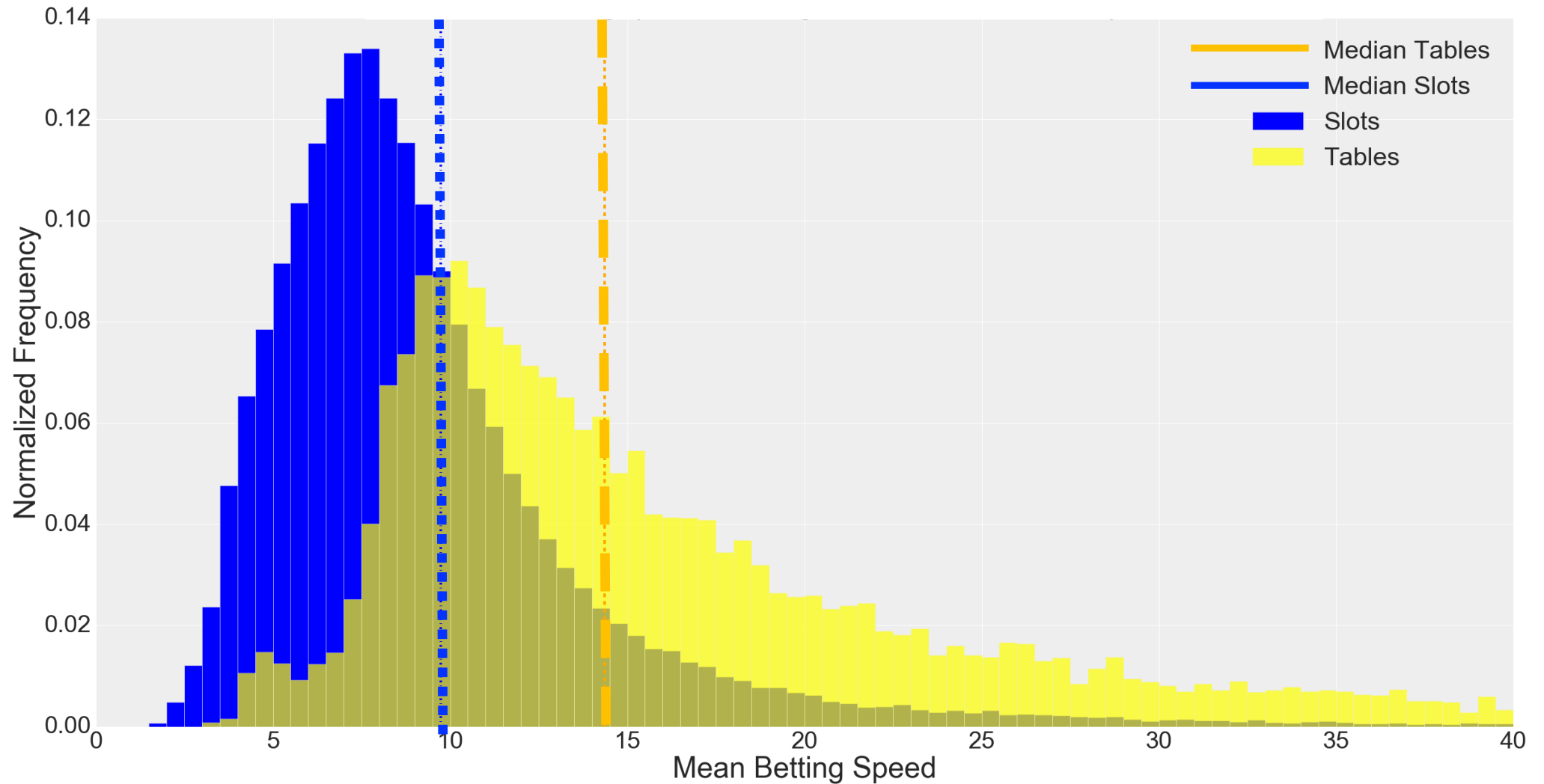
▶ Cognitive distortions play an important role in the development and maintenance of pathological gambling.

Behavioural markers of online gambling II: *Betting Speed*

Translation for online gambling:

Time between one bet and the next bet within the same session.

Mean *Betting Speed* difference between winning and losing by individual