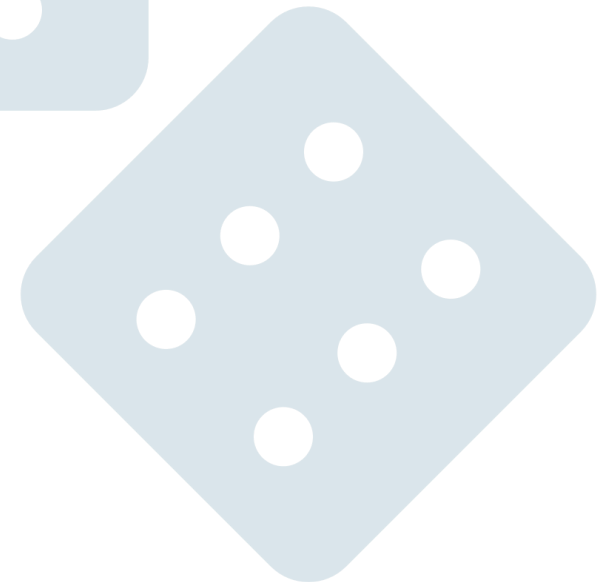
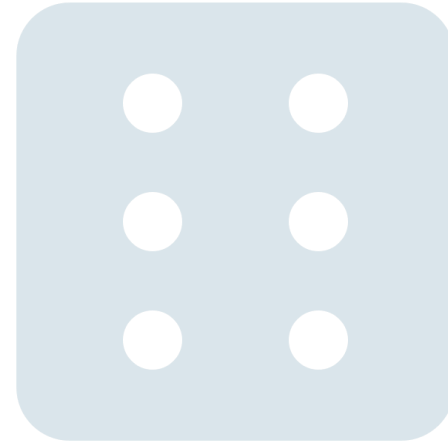


Auto-play on online slots - effect on gambling behaviour

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Disclosure of Potential Conflict of Interest

- Received research grant from Svenska Spel research council 2021
- Employed by Sustainable Interaction, a company specialized in RG and RG training
- Worked as a consultant for gambling companies, as part of my job at Sustainable Interaction
- The presented study from ATG are partially financed by ATG. Full sovereignty in design of study and conducted without any review or approval by ATG regarding any of the content presented and published
- Works as consultant for ATG



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Offering an auto-play feature likely increases
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Offering an auto-play feature likely increases total gambling activity at online slot-machines: preliminary evidence from an interrupted time series experiment at a real-life online casino

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Background I

High use among help-seeking populations

Higher use among at-risk and problem gamblers than non-problem gamblers
(When controlling for other factors, auto-play do not predict gambling problem)

A role in over consumption and loss of control

80 % of Swedish daily online slot players use auto-play

Background II



Clinical perspective

Part of the development of a gambling disorder for some

Way of gambling while taking care of the kids or at work

Increase in speed and dissociation



Behavioral analytic perspective

Softens the response-outcome contingency by a greater temporal delay between behavior and consequences

Lowering the overall frequency of the behavior (response)

This may theoretically reduce the potential for learning

Background III

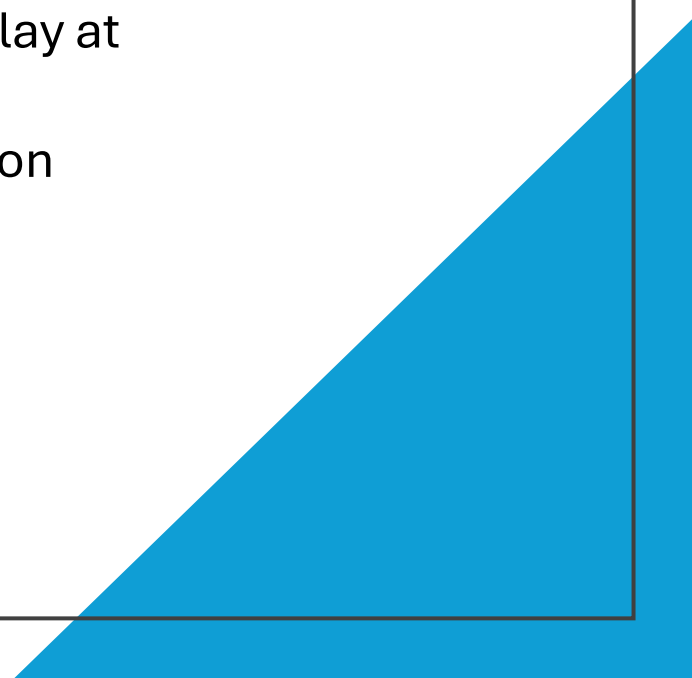
- Industry perspective
 - Seen as some kind of pre-commitment, thus protecting players
 - Probably profitable...
 - Competitive aspect
 - Regulatory perspective
 - Banned or restricted in some jurisdictions
- To sum it up:
 - A complex association between the use of auto-play features and problem gambling.
 - A striking lack of research on the causal effect of offering auto-play per se



Aim

- *The aim is to estimate the population level causal impact of offering an auto-play feature on slot machines on immediate gambling behaviors and outcomes.*

Method

- An interrupted (structured) time series experiment, conducted at a real-life online casino
 - ATG one of few Swedish gambling providers NOT offering auto-play at their online casino
 - One collection (40+) of online slots enabled the autoplay function (intervention arm)
 - One similar collection (40+) did not (control arm)
 - (allocation on level of slot machine, not on individual gamblers)
 - Bayesian structural time series design
- 

Bayesian structural time series design

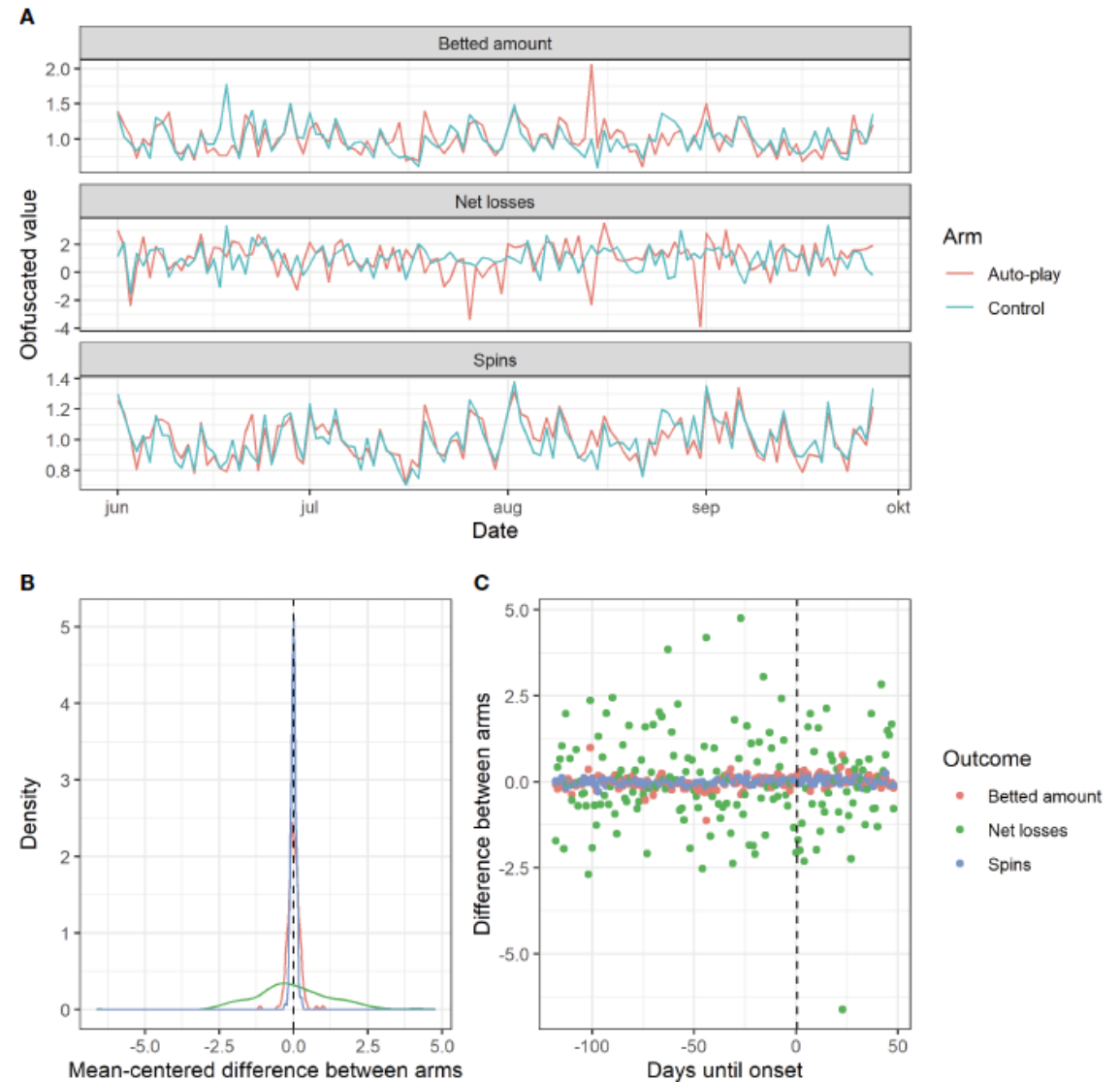
	Pre	Peri
Intervention arm	No auto play	Auto play enabled
Control arm	No auto play	No auto play

3 x 2 time series: betted amount, net losses and number of spins

The Bayesian structural time series design allows causal inferences about the impact of introducing an intervention by analyzing the difference between the expected data and the observed data during the intervention period, the former calculated by using both the pre-period time series as well as the continued time series of the control arm.

Result

- A shows similar periodicity and within-arm variance
- B revealed symmetrical between-arm differences in mean-centred values across arms
- C shows (when plotting differences) no pattern regarding on-set date = choice of onset date quasi random



Result

- No significant difference net loss
- 6.9-9.1 % increase betted amount
- 3 % increase number of spins

TABLE 1 Estimated relative effects of introducing auto-play.

	Relative effect (95% CI) and Bayesian posterior tail probability			
	<i>Weekly seasonality included</i>		<i>Monthly seasonality included</i>	
	Standard prior	Robust prior	Standard prior	Robust prior
Betted amount	+6.9% (0.62—14%), $p_{\text{Bayes}}=.0149$	+6.9% (-0.88—16%), $p_{\text{Bayes}}=.0424^\dagger$	+8.7% (2.2—16%), $p_{\text{Bayes}}=.0044$	+9.1% (0.92—18%), $p_{\text{Bayes}}=.0146$
Net losses	-8.9% (-30—22%), $p_{\text{Bayes}}=.2199$	-8% (-33—33%), $p_{\text{Bayes}}=.2627$	-8.6% (-29—23%), $p_{\text{Bayes}}=.2211$	-7.9% (-33—34%), $p_{\text{Bayes}}=.261$
Spins	+3.2% (0.15—6.4%), $p_{\text{Bayes}}=.0202$	+1.9% (-2.1—6.2%), $p_{\text{Bayes}}=.1762$	+3.4% (0.34—6.6%), $p_{\text{Bayes}}=.01547$	+2.2% (-1.8—6.5%), $p_{\text{Bayes}}=.14795$

[†]Note that probability estimates and credibility intervals may not always agree when probabilities are calculated from randomly drawn, asymmetric distributions. Standard priors were package-default 0.01, while robust were 0.02.

Discussion

Non -significant result on net losses expected

Congruent with observational studies

Underestimation due to soft launch?

Implication for regulation

Lack information on individual level

Need of more research

Thanks for your
attention!

Questions?

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