



Fans' preferences: uncertainty against brand perception



Thadeu Gasparetto
Angel Barajas
Elena Shakina



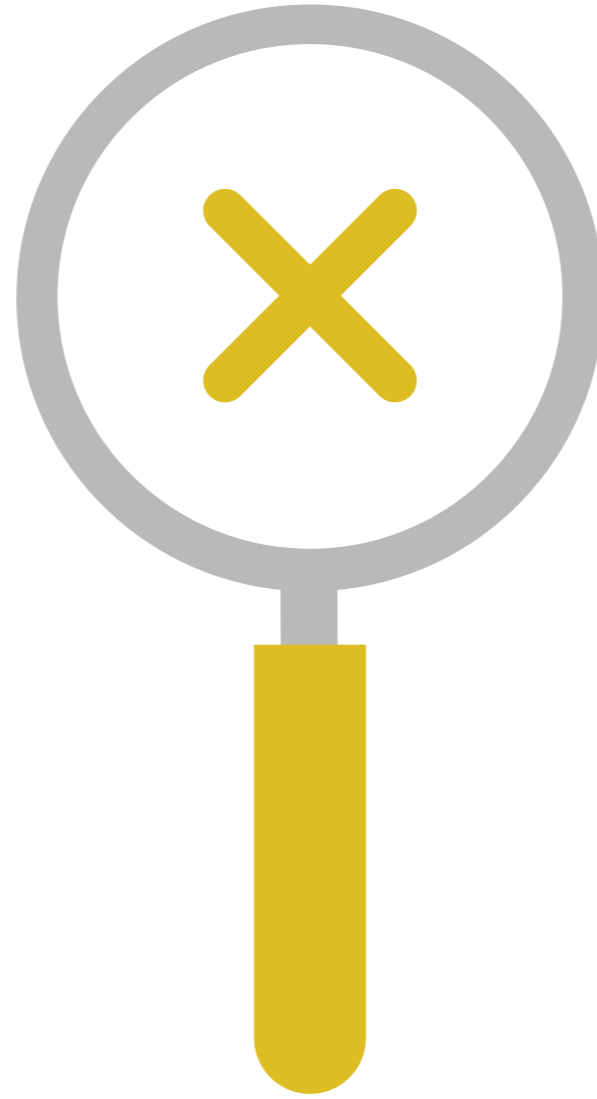
Uncertainty of sport outcomes

is the most significant driver
of match attendance



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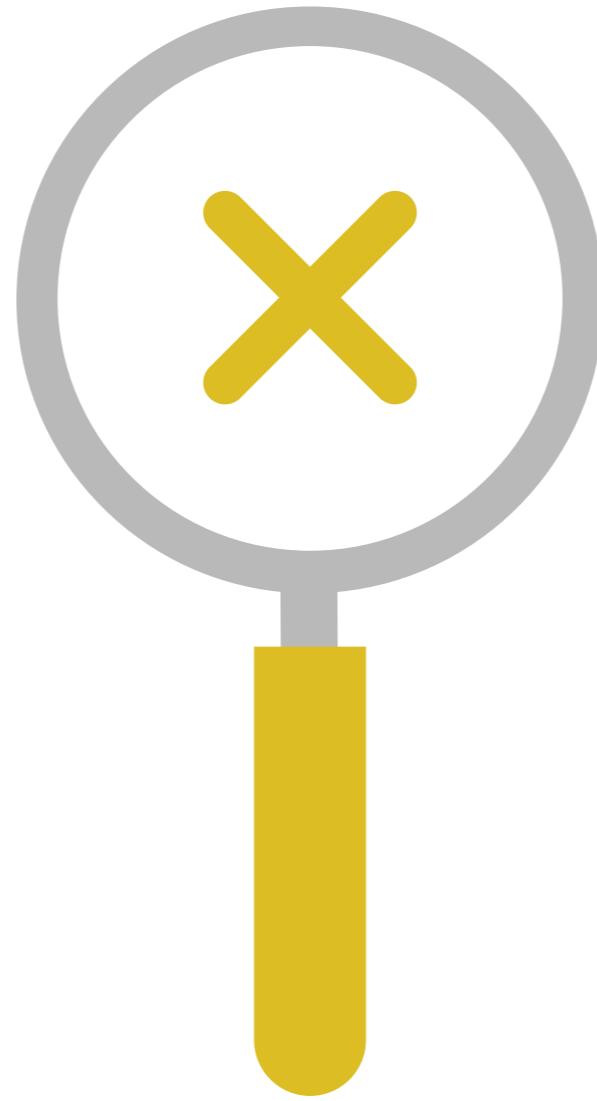
Entertainment

people prefer to watch
strongly competitive games



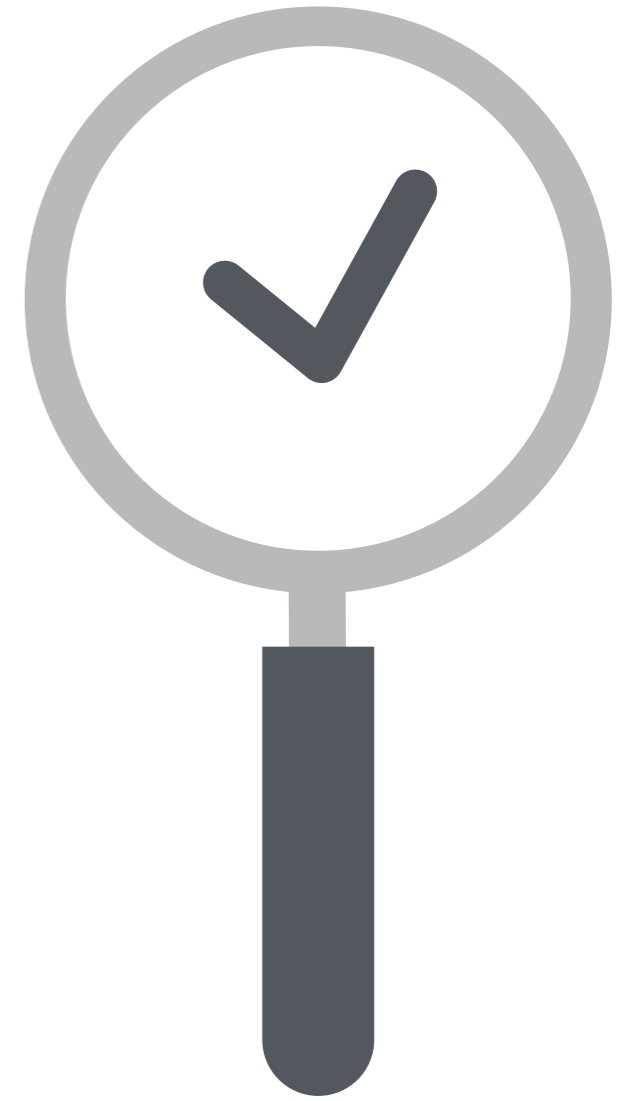
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Entertainment

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Brand-team

high demand for matches with at least one strong well-known team playing



● **Seminal papers on uncertainty of outcomes**

Rottenberg (1956)

Neale (1964)



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● **Contradictions in empirical studies**

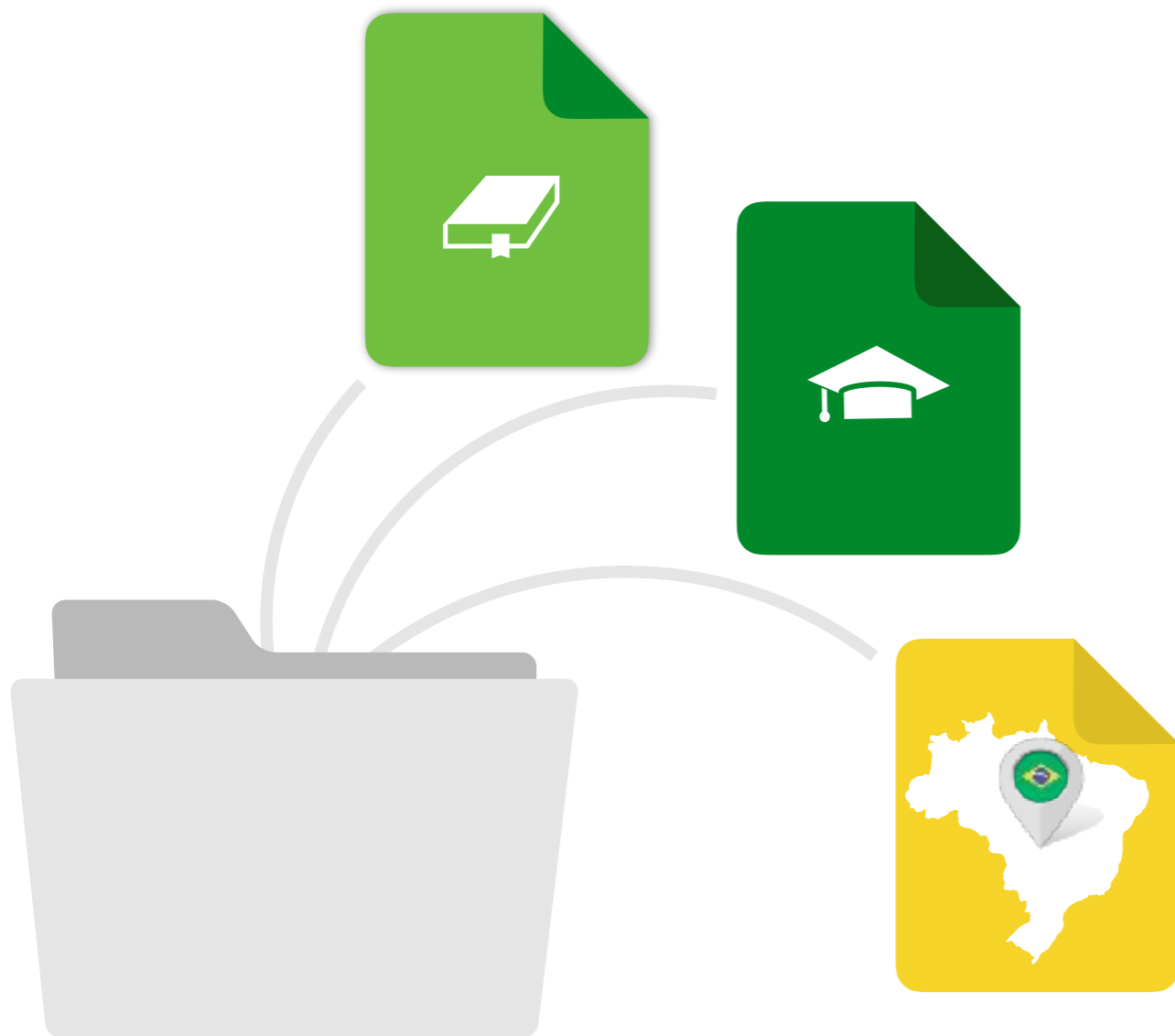
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Humphreys & Zhou
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Cox (2015)



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● **Brazilian state championship**

Specific case: big brand-teams play with local small teams from the same regions

a good laboratory to study specific fans' preferences and see whether the effect of uncertainty in sport outcomes might be weakened by the brand perception

Uncertainty of outcome

U-shape

moderation effect with a brand-team



Brand-team effect

Brand-team participating in a match

home

away

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$$\begin{aligned} \text{Log}(\text{attendance})_{it} = & \beta_1 + \beta_2 \cdot \text{Unc}_{it} + \beta_3 \cdot \text{Unc}_{it}^2 + \beta_4 \cdot \\ & \text{Unc}_{it} \cdot \text{BT}_{it} + \beta_5 \cdot \text{BT}_{it} + \beta_6 \cdot \text{CV}_{it} + \varepsilon_{it} \end{aligned}$$

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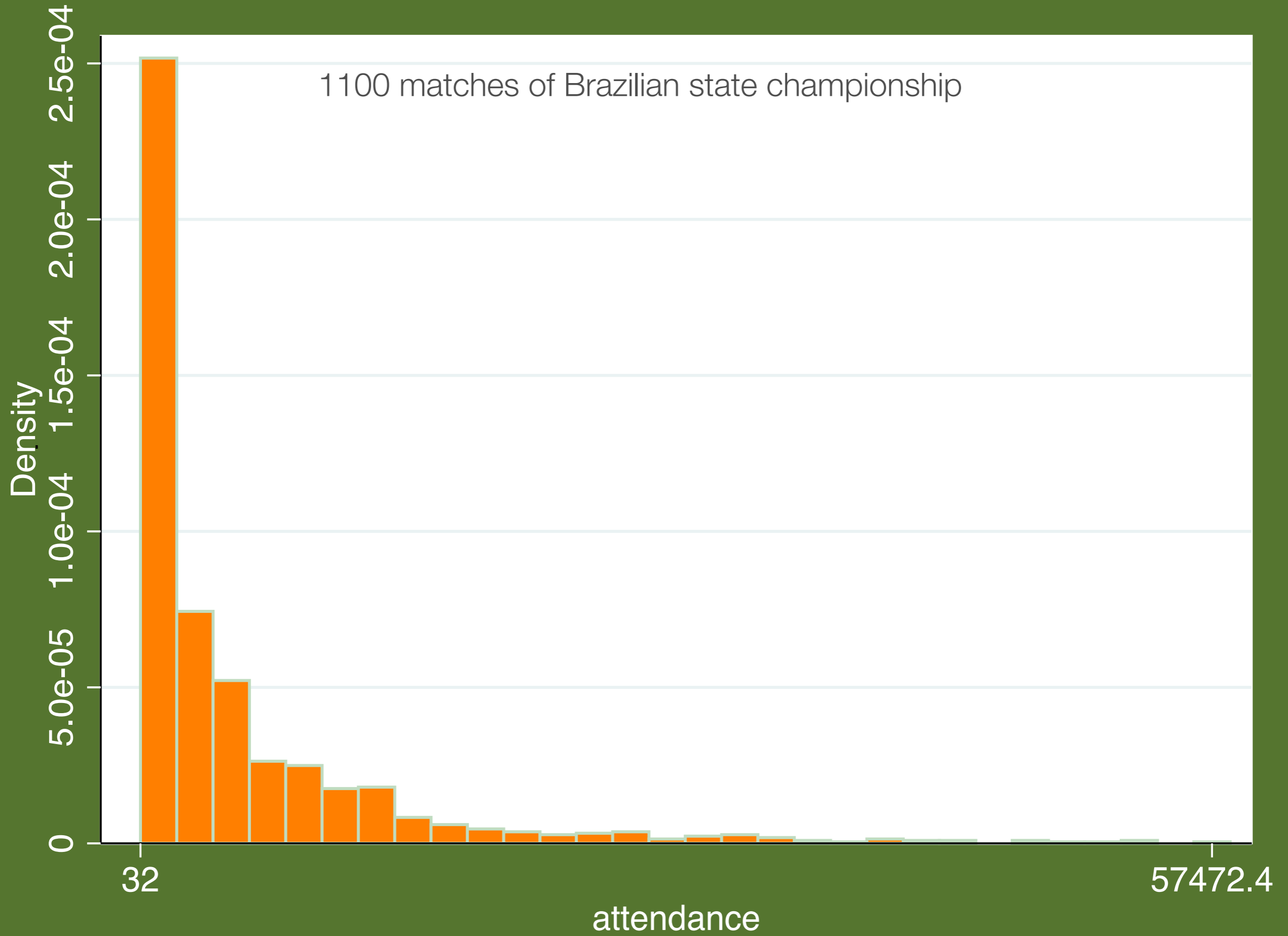
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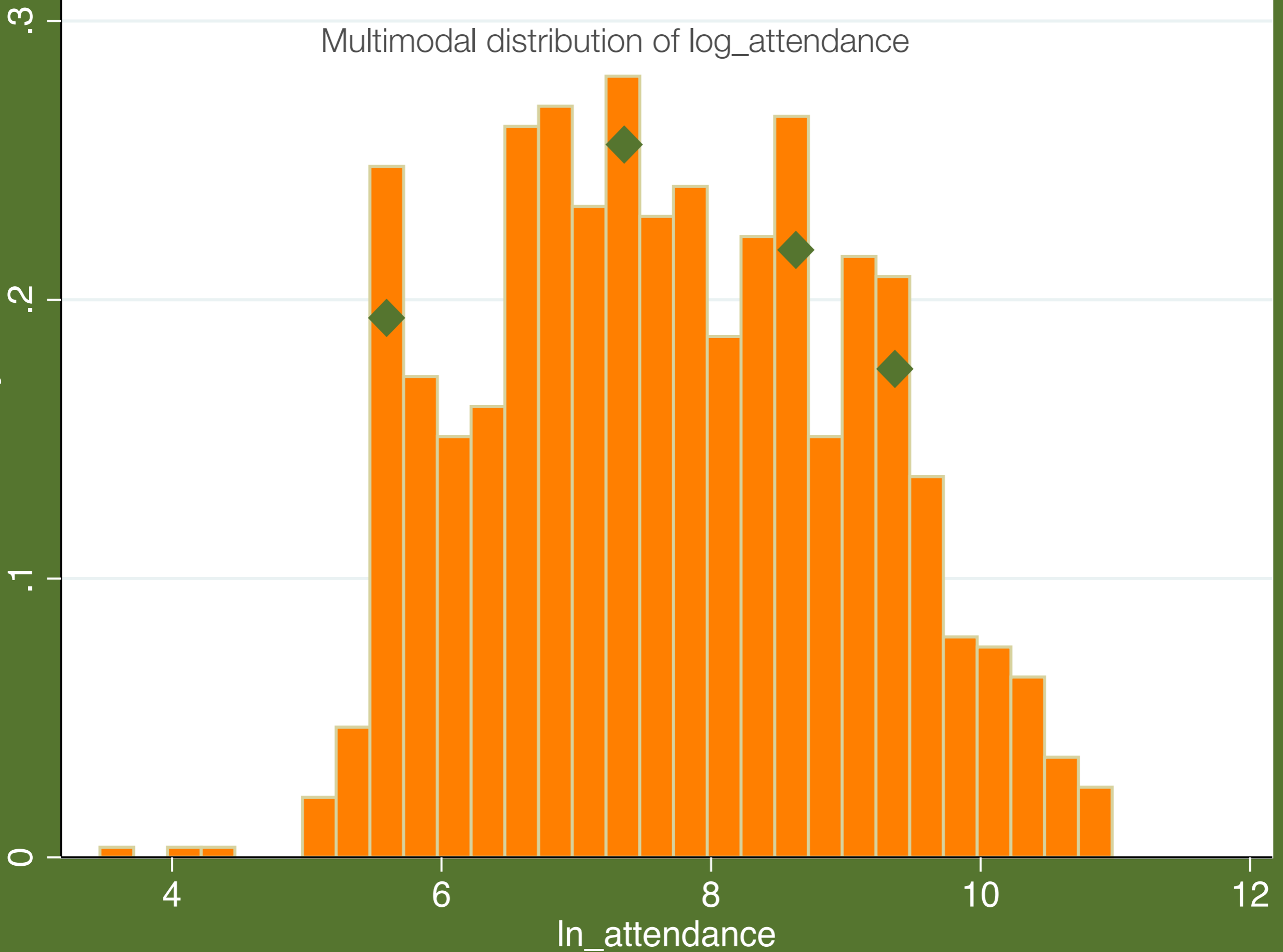
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1100 matches of Brazilian state championship



Multimodal distribution of log_attendance

Density





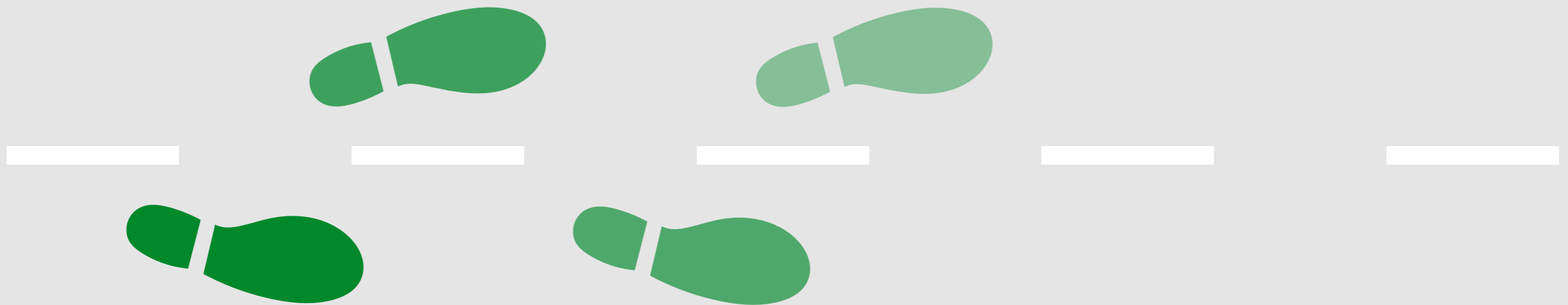
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brand-teams are selected according to the following criteria:

more than 20 State Championship Titles

at least One Brazilian League Title

more than 3.5 million fans



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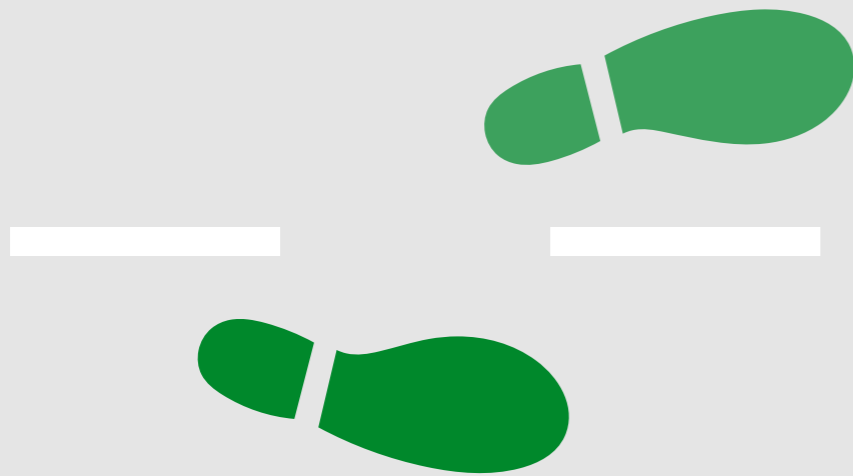
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Identification of uncertainty effect

U-shape behaviour of uncertainty-driven attendance

uncertainty measured by relative difference of leagues



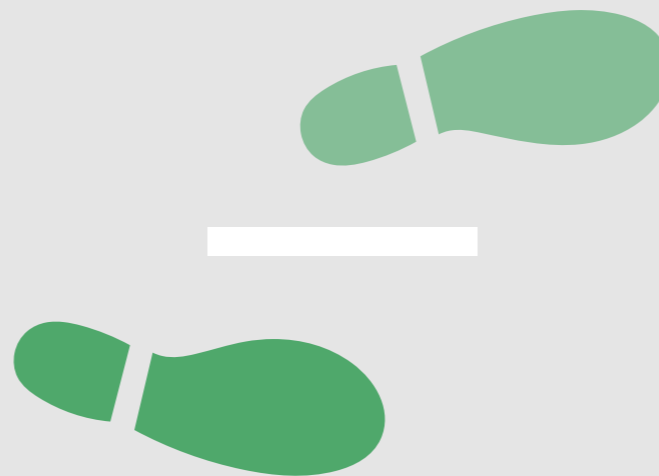
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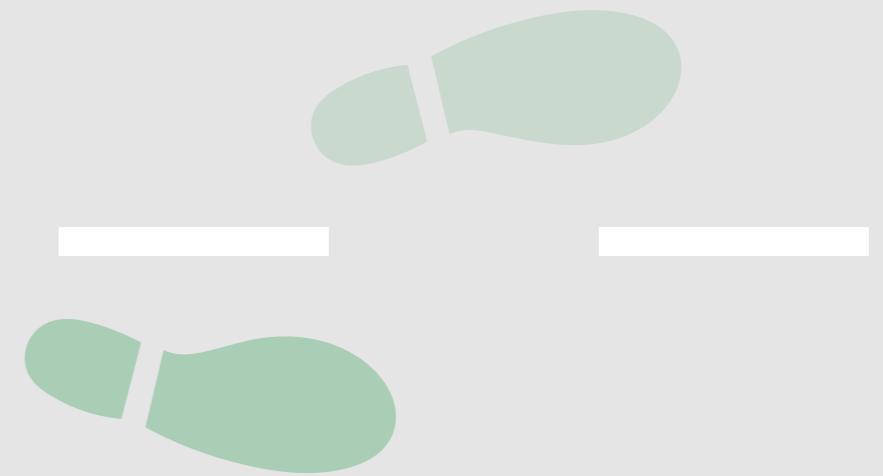
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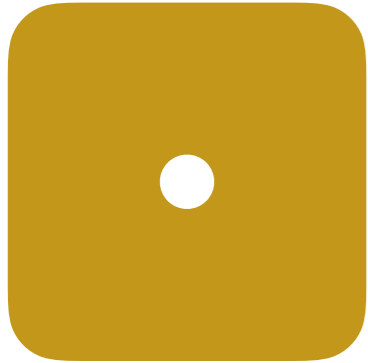
Comparison of two effects under different conditions

difference in moderation
marginal effects: uncertainty *
brand-team playing home and away

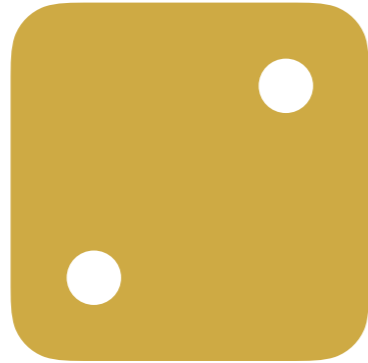


Metrics

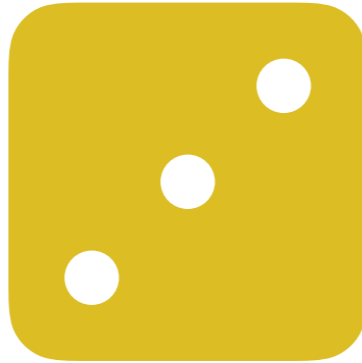
related to matches



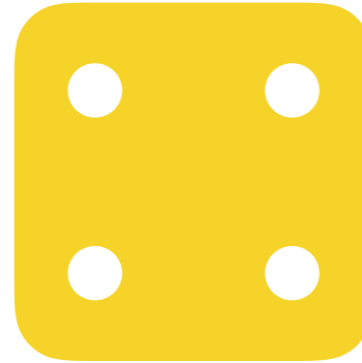
**match
attendance**



ticket price



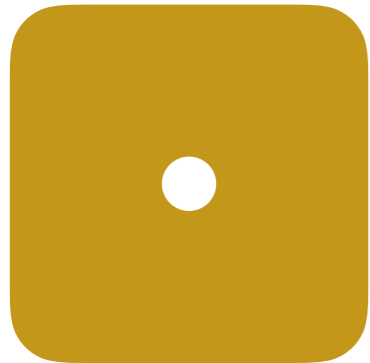
scores



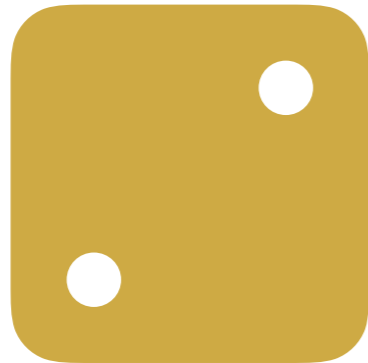
**venue and
day of the
matches**

Metrics

related to matches



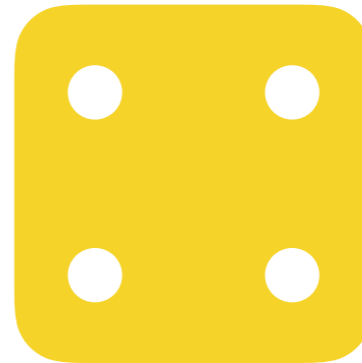
**match
attendance**



ticket price



**stage:
groups/play-
off**

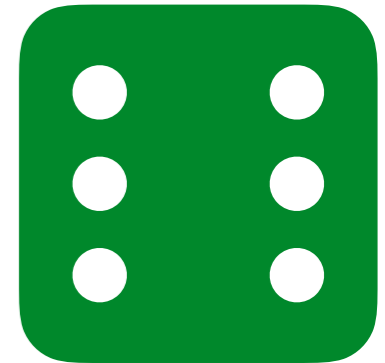


**venue and
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matches**

related to teams

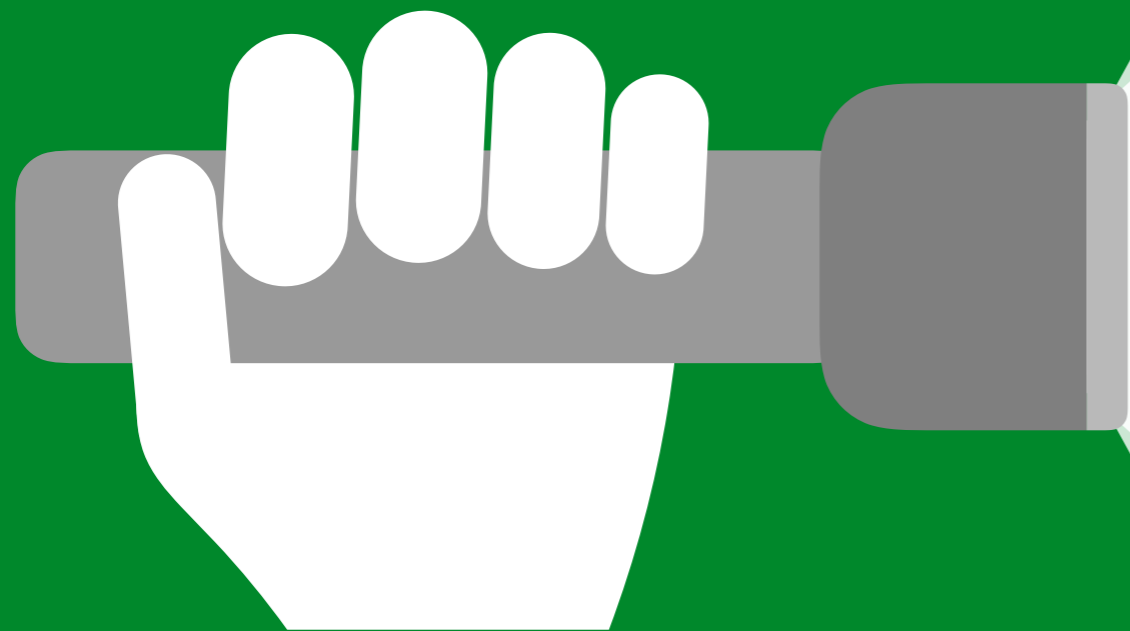


**level of
division in
Brazilian
league**



**titles and
brand
power**



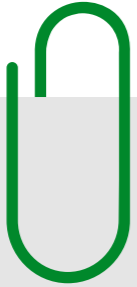


RESULTS

VARIABLES	(1)	(2)	(3)	(4)
	ATTENDANCE_In	ATTENDANCE_In	ATTENDANCE_In	ATTENDANCE_In
PRICE_In	-0.0129 (0.0573)	-0.0235 (0.0558)	0.00498 (0.0570)	-0.0562 (0.0553)
UNCERTAINTY	-1.581*** (0.604)	-1.118** (0.529)	-0.831 (0.532)	-0.846 (0.528)
UNCERTAINTY ^ 2	1.242*** (0.426)	0.911** (0.386)	0.740* (0.390)	0.770** (0.382)
MODERATION _uncertainty*brand	1.113*** (0.213)			
MODERATION _uncertainty*brand_h		1.015*** (0.200)		-0.217 (0.267)
MODERATION _uncertainty*brand_a			1.285*** (0.205)	-0.770*** (0.266)
BRAND	1.414*** (0.149)	1.491*** (0.0964)	1.967*** (0.0957)	
BRAND_h		0.231** (0.104)		2.077*** (0.145)
BRAND_a			-0.705*** (0.109)	1.783*** (0.148)
Constant	7.740*** (0.252)	7.641*** (0.229)	7.450*** (0.229)	7.650*** (0.227)
Observations	1112	1112	1112	1112
R-squared	0.696	0.714	0.701	0.723

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uncertainty is a
discreet variable:

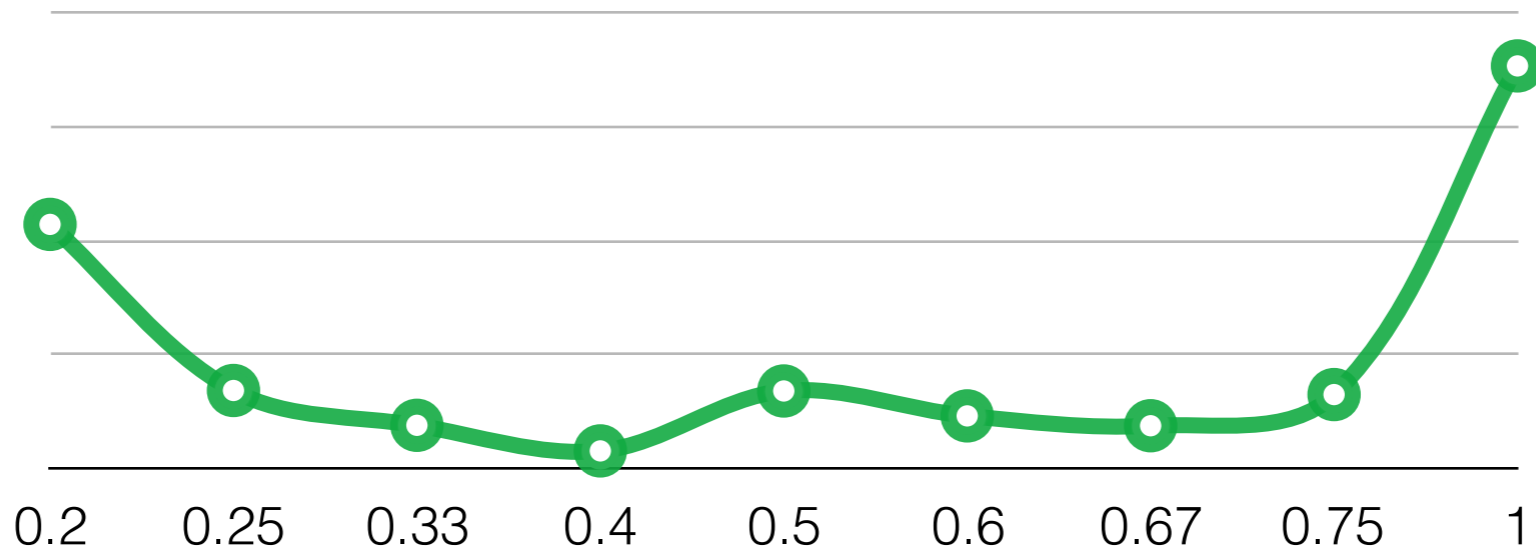
0.2 0.25 0.33 0.4
0.5 0.6 0.67 0.75 1



min uncertainty =
0.39 (only 0.2 0.25
and 0.33 is on the
left part of the
parabola)



min attendance is
close to 2500



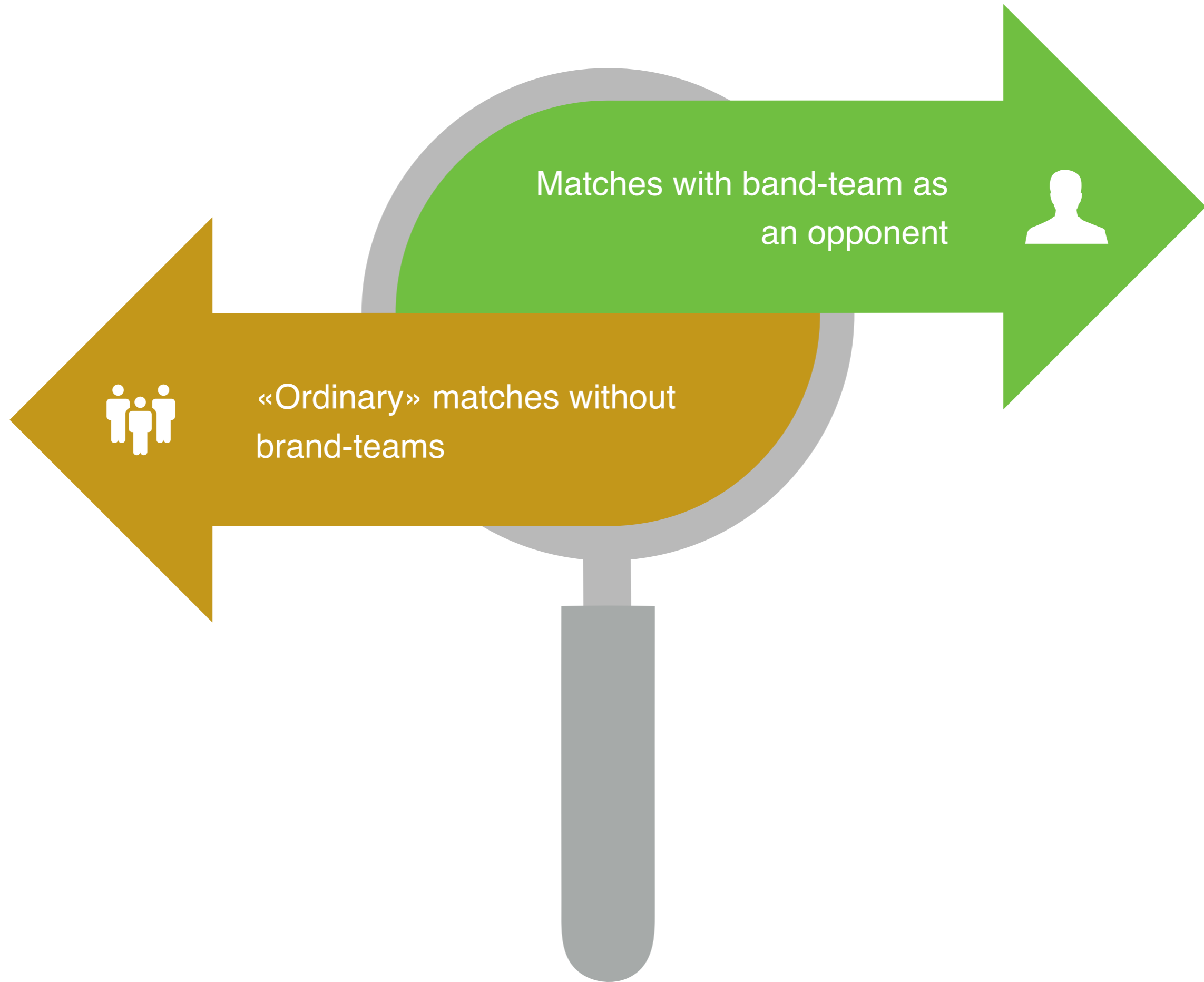
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	ATTENDANCE_In	ATTENDANCE_In
PRICE_In	-0.299*** (0.0704)	0.578*** (0.104)
UNCERTAINTY	-2.527*** (0.742)	1.118* (0.645)
MODERATION _uncertainty*brand_a	-	-1.336** (0.604)
MODERATION _uncertainty*brand_h	-	-0.000326 (0.613)
UNCERTAINTY^2	2.044*** (0.538)	-0.287 (0.766)
CV	Included	
Constant	8.213*** (0.325)	6.652*** (0.384)
Observations	644	403
R-squared	0.447	0.561

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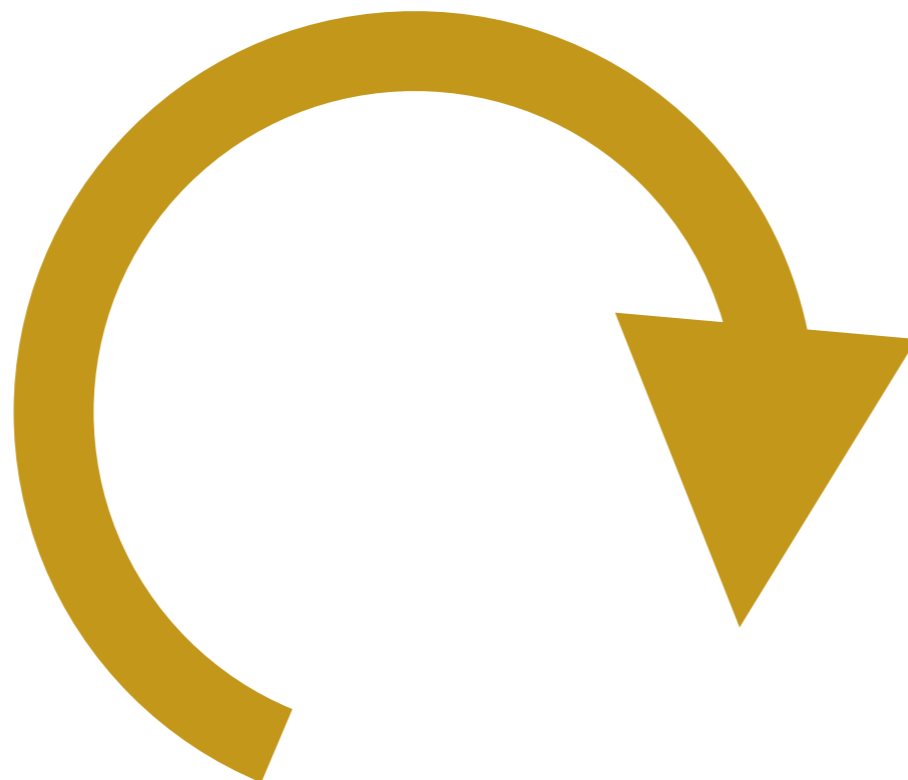
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Price is particularly endogenous when it comes to brand-team participation



PRICE

reflects all
observable and
unobservable



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PRICE

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unobservable



PRICE

reflects expected
demand

By matching games of three seasons of BSCh with the same combination of home- and away-team playing PRICE is instrumented by ATTENDANCE in the previous season

VARIABLES	with brand-teams	IV
	(1)	(2)
	ATTENDANCE_In	PRICE_In
PRICE_In_hat	0.613 (0.707)	
UNCERTAINTY	0.0364 (1.947)	
MODERATION _uncertainty*brand_a	-2.553*** (0.899)	
MODERATION _uncertainty*brand_h	-0.450 (0.883)	
UNCERTAINTY^2	1.234 (1.978)	
CV	Included	
ATTENDANCE_In_lagged		0.204*** (0.0267)
Constant	6.912** (2.767)	1.419*** (0.201)
Observations	71	180
R-squared	0.566	0.247

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CONCLUSION



**price for tickets is
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match attendance
if brand-team
plays**

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U-shape effect of
uncertainty of
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the phenomenon of highly
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effect of brand-
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