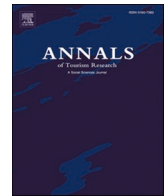




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Research note

## Overtourism and support for sports mega events

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## Introduction

In recent years, ambitions for Olympic bids have almost always been rejected in public referenda. There has been extensive research on this issue, ranging from studies on the determinants of residents' opposition to Olympic bids (e.g., Coates & Wicker, 2015; Wicker & Frick, 2020) to contributions analyzing the personal motives behind residents' event support (e.g., Gursoy & Kendall, 2006). While the latter strand of research has primarily applied questionnaires to gain data, the former has relied on aggregate data at the community level to explain voters' behavior in potential host areas.

One of the factors affecting support for the Olympic Games is a region's exposure to tourism. For example, Coates and Wicker (2015) have shown that regions with higher tourism capacities tended to reject the Munich bid for the 2022 Olympic Winter Games (OWG), while Wicker and Frick (2020) provided evidence in the opposite direction for the Innsbruck bid for the 2026 OWG. This article contributes to this previous research, but elaborates in more detail on the role of tourism intensity in the support for sports mega events. In particular, we ask whether a population's event acceptance gets lost when a certain level of tourism exposure is exceeded. We refer to this effect as overtourism and illustrate its existence reconsidering the Innsbruck bid for the 2026 OWG.

## Conceptual framework, context and data

The World Tourism Organization describes overtourism as "*the impact of tourism on a destination [...] that excessively influences perceived quality of life of citizens and/or quality of visitor experiences in a negative way*" (UNWTO, 2018, p. 4). Accordingly, excessive tourism intensity is blamed for a range of economic, environmental and social problems, including air and noise pollution, crowded traffic routes, steeping housing prices and the related displacement of residents or anti-social behavior. Numerous studies have shown that these developments have led to growing resistance against tourism among the local population (e.g., Colomb & Novy, 2017). Sports mega events such as the Olympic Games can reinforce this effect when they are to be held in regions with an already strong

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tourism demand (Fourie & Santana-Gallego, 2011).

Innsbruck has already hosted the Olympics twice (in 1964 and 1976), and Tyrol may be considered one of the most touristic regions in the Alps, especially in the winter season. Hence, it seems like a natural candidate for studying the role of (over-)tourism in the support for sports mega events—in our case, the bid for the 2026 OWG. As tourism is very important for the region's economy (accounting for around 15% to 20% of the local gross domestic product), we might generally expect the population to have a positive attitude towards the event. However, if the region suffered from overtourism we would predict diminishing acceptance. Altogether, and in contrast to previous research, these expectations translate into a non-linear relationship between tourism intensity and event support.

Examining the special case of Tyrol, we measured tourism intensity along five dimensions (Fig. 1): tourism density (measured by tourism capacity, overnight stays and arrivals per capita in the winter season), traffic load (number of daily commuters per capita), growth of the tourism sector over the last 20 years, resources for ski tourism (number of ski lifts) and dependence on the winter season (share of winter stays in total stays).

To detect the effects of overtourism on event support, we looked at the referendum on the Innsbruck bid for the 2026 OWG, which took place on October 15, 2017. We used data on the referendum turnout and results for the 279 Tyrolean municipalities and combined them with detailed information on demographic and socio-economic characteristics at the community level. The corresponding data from 2017 and are available from the Department for Statistics of the State of Tyrol (Amt der Tiroler Landesregierung, 2017).

### Empirical analysis and results

To analyze the impact of overtourism on the outcome of the referendum in Tyrol, we estimated a linear regression model with a community's share of votes in favor of hosting the OWG as the dependent variable. This share ranged between 32.6% and 85.1% of all votes with a (weighted) mean of 46.8%. To measure the region's exposure to winter tourism, we followed our line of reasoning and used five alternative dimensions, as outlined in Fig. 1. To capture a possible non-linear effect on the share of votes in favor, we also included the squared term of the corresponding variables. In case of overtourism, we could expect a negative sign on the quadratic term, while the main effect should exert a positive parameter estimate.

In line with previous research (Wicker & Frick, 2020), we included the following control variables: (log of) a community's population, share of females, share of three age cohorts (ages 0–15, 16–26 and > 65 years; i.e., the cohort of 26–65 is the reference group),



Fig. 1. Dimensions of tourism intensity.

share of tertiary education and migrants per capita. Further, we used information on whether a community was planned to host at least one competition of the 2026 OWG as well as the voter turnout. Finally, fixed district effects were added to control for district-specific variables affecting the voting outcome (e.g., general opposition to the Olympics within a district).

In a first approach (Table 1), we took winter bed capacity per capita to measure tourism density and reported the estimation results for three different specifications: In Model 1, we applied ordinary least squares (OLS); in Model 2, we used weighted least squares (WLS) estimation with the number of people entitled to vote as weighting scheme; and in Model 3, we considered that the dependent variable is bounded between 0% and 100% and therefore log-odds-transformed this variable (Wooldridge, 2010). Turning to the results, we firstly found an overall fit of the regressions of well above 66%. Second, there were no substantial differences among the three models, suggesting a robust relationship across the different specifications. Third, the control variables turned out as expected and were almost in line with the previous empirical research (i.e., Coates & Wicker, 2015; Wicker & Frick, 2020). In particular, we found significant age and education effects on the voters' support for the Olympic bid. Interestingly, the host dummy was insignificant, suggesting that support for the Olympic bid was not affected by whether a community was chosen as a venue for the 2026 Olympics.

Regarding winter bed capacities, we observed a significantly positive parameter estimate for the main effect, but the quadratic term was significantly negative in all models. Both coefficients suggest that, up to a certain level (lying around 5 beds per capita), tourism density induces a positive outcome in the Olympic referendum, but above these capacities, its impact turns negative.

In a second step (Table 2), we replicated our regressions depicted in Table 1, but focused on alternative measures of tourism intensity, as described in Fig. 1. For the sake of brevity, we relied only on Model 1 (OLS results) and reported only the coefficients for the linear and quadratic effects of tourism intensity. We presented standardized beta coefficients to make the results comparable among the different specifications. Again, we observed a significantly positive main effect and a significantly negative squared term for all measures of tourism intensity. The exception is the growth in winter stays, which, by definition, represents a change and was therefore estimated without the quadratic term; here, we found a significantly negative parameter estimate, as expected. However, a strong correlation was found only for winter bed capacity, winter stays and winter arrivals (around 0.9); the correlations for the other variables were below 0.5, again indicating a robust relationship between tourism intensity and event support.

Taken together, our evidence shown in Tables 1 and 2 suggests that tourism intensity has a systematic effect on the support for the Olympic bid of Innsbruck; moreover, the estimated coefficients are clearly in line with the notion of overtourism.

## Conclusion

Taking the case of the Innsbruck bid for the 2026 Olympics, we showed that the population's missing support for (sports) mega events can be crucially explained by overtourism. This finding underpins the explanations of Fourie and Santana-Gallego (2011) stating that especially Winter Olympics hosted in already saturated tourism markets with a short season do rather contribute to tourist displacement than lead to an increase in tourism. Overtourism might be another "mega event syndrome" like the overpromising of benefits and underestimation of costs (Müller, 2015), and thus an additional piece in the puzzle of explaining residents' opposition to mega events.

From a practical perspective, it can be recommended that over-crowded tourism destinations should abstain from organizing mega events. That would be too far-reaching in our view. Instead, potential organizers should take the possible resistance of residents resulting from overtourism seriously and should adapt appropriate measures at an early stage (e.g., via information campaigns clarifying the benefits for the population). The current Covid-19 pandemic, which has led to a dramatic downturn in worldwide tourism, may change the attitude against mega events substantially. Of course, such predictions are speculative and remain an agenda for future research.

**Table 1**  
Estimation results.

	Model 1: OLS			Model 2: WLS			Model 3: Log-odds transformed		
	Coef.	SE	Sig.	Coef.	SE	Sig.	Coef.	SE	Sig.
Winter bed capacity	0.080	0.011	***	0.101	0.011	***	0.324	0.048	***
W. bed capacity squared	-0.008	0.002	***	-0.011	0.002	***	-0.028	0.010	***
Host	0.016	0.094		0.040	0.088		0.083	0.396	
Voter turnout	0.082	0.067		0.039	0.058		0.441	0.307	
Population (log)	-0.004	0.005		-0.013	0.005	***	-0.016	0.020	
Female share	-0.213	0.213		-0.397	0.307		-0.892	0.892	
Age group 0–15	0.825	0.285	***	1.022	0.363	***	3.382	1.204	***
Age group 16–25	0.448	0.315		0.919	0.323	***	1.752	1.340	
Age group >65	0.627	0.216	***	0.799	0.261	***	2.552	0.902	***
Share of tertiary education	-0.246	0.083	***	-0.223	0.099	**	-1.032	0.362	***
Migrants per capita	0.071	0.060		0.147	0.075	*	0.263	0.259	
R <sup>2</sup>	0.656			0.830			0.663		
	279			279			279		

Note. Constant and district effects are not reported. Standard errors (SE) are White-robust. \*\*\*, \*\*, \* indicate significance at 1%, 5% and 10%.

**Table 2**  
Alternative measures of overtourism from Fig. 1 (standardized beta coefficients).

	Main effect			Squared term			R <sup>2</sup>
	Coef.	SE	Sig.	Coef.	SE	Sig.	
Tourism density							
Winter bed capacity	0.851	0.011	***	-0.421	0.002	***	0.656
Winter stays per capita	0.857	0.000	***	-0.475	0.000	***	0.643
Winter arrivals per capita	0.764	0.001	***	-0.378	0.000	***	0.639
Traffic load							
Commuters per capita	0.112	0.031	*	-0.074	0.033	**	0.508
Tourism growth							
Growth in winter stays 2000–2017	-0.072	0.000	**				0.732
Ski tourism							
Number of ski lifts	0.592	0.001	***	-0.270	0.000	***	0.612
Seasonality							
Share of winter stays in total stays	0.816	0.000	***	-0.600	0.000	***	0.588

Note. Each specification is based on Model 1 in Table 1, control variables and constant are suppressed.  $N = 279$  in all specifications. Standard errors are White-robust. \*\*\*, \*\*, \* indicate significance at 1%, 5% and 10%.

### Declaration of competing interest

The author(s) declared no potential conflicts of interest with respect to the research, authorship and/or publication of this article.

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