

Diskussionspapier des
Instituts für Organisationsökonomik

11/2016

Willingness to Pay and Accept for
Hosting Olympic Games in Germany

Linn-Brit Bakkenbüll/Alexander Dilger

Discussion Paper of the
Institute for Organisational Economics

**Diskussionspapier des
Instituts für Organisationsökonomik
11/2016**

November 2016

ISSN 2191-2475

**Willingness to Pay and Accept for
Hosting Olympic Games in Germany**

Linn-Brit Bakkenbüll/Alexander Dilger

Abstract

This empirical study investigates whether and how much individuals are willing to pay for hosting Olympic Games in Germany. Moreover, it is examined for the first time what individuals are willing to accept to host Olympic Games in their own country if they do not like that. Furthermore, this study identifies determinants that influence the willingness to pay (WTP) including the willingness to accept (WTA) for hosting Olympic Games in Germany. WTP minus WTA is positively driven by the felt national importance of the German Olympic team doing well. Socio-economic factors such as gender, age and income influence this measure in significant ways, too. The extrapolation of the individual WTP and WTA shows that, in the net aggregate, the German population is willing to pay €3.57 billion for hosting the Olympic Games in Germany.

JEL-Codes: D12, D61, D62, H41, H43, L83, Z20, Z38

Zahlungsbereitschaft und Kompensationsforderung für die Austragung von Olympischen Spielen in Deutschland

Zusammenfassung

Diese empirische Studie untersucht, ob und wie viel Individuen zur Austragung Olympischer Spiele in Deutschland zu zahlen bereit sind. Zusätzlich wird erstmals ermittelt, was Individuen dafür verlangen würden, dass Olympische Spiele im eigenen Land stattfinden, wenn sie das eigentlich nicht wollen. Außerdem identifiziert diese Studie Determinanten, die die Zahlungsbereitschaft einschließlich der Kompensationsforderungen für die Austragung Olympischer Spiele in Deutschland beeinflussen. Die positive Zahlungsbereitschaft abzüglich Forderungen wird positiv beeinflusst von der gefühlten Bedeutung von deutschen Erfolge bei Olympia. Sozioökonomische Faktoren wie Geschlecht, Alter und Einkommen beeinflussen dieses Maß ebenfalls signifikant. Die Extrapolation der individuellen Zahlungsbereitschaften und Kompensationsforderungen ergibt, dass die deutsche Bevölkerung im Aggregat über eine Zahlungsbereitschaft von netto 3.57 Mrd. Euro für die Austragung von Olympischen Spielen in Deutschland verfügt.

Im Internet unter:

http://www.wiwi.uni-muenster.de/io/forschen/downloads/DP-IO_11_2016

Westfälische Wilhelms-Universität Münster
Institut für Organisationsökonomik
Scharnhorststraße 100
D-48151 Münster

Tel: +49-251/83-24303 (Sekretariat)
E-Mail: io@uni-muenster.de
Internet: www.wiwi.uni-muenster.de/io

Willingness to Pay and Accept for Hosting Olympic Games in Germany*

1. Introduction

Hosting mega sport events like the Olympic Games primarily serves the goals to expedite regional development in one big push and/or to present the country to the rest of the world in a new light regrading openness, freedom and modernity. Typically, the achievement of these goals is associated with high costs but little success. An excellent example for this is the 2014 Winter Olympic Games in Sotschi. With approximately \$55 billion these were the most expensive Olympic Games ever in terms of cost per event. However, the benefit from the Olympic Games is limited. Extensive construction led to hotel overcapacities. Investors defaulted on state-backed loans. Additionally, there is no coherent plan for the after use of venues and some of the largest infrastructure projects. Moreover, the sport event did not improve the image of Russia in the world (Müller, 2014). The example of Sotschi shows that hosting Olympic Games does not inevitably lead to positive effects. Consequently, cities or countries should consider carefully whether candidacy to host Olympic Games in the own city or country is advantageous. For example, Germany was interested in hosting the 2022 Winter Olympic Games in Munich and in hosting the 2024 Summer Olympic Games in Hamburg. Two local referenda, where immediately affected communities had the possibility to take part in the decision, vehemently spoke out against the plans.

This study examines the question how much German individuals are willing to pay or willing to accept to host the Olympic Games in their country. Considering willingness to accept in this context is new to the literature. Thus, our study is the first to simultaneously take into account both the willingness to pay (WTP) and the willingness to accept (WTA) to host the Olympic Games in Germany. Note that the WTA has to be interpreted as a negative WTP. Furthermore, this article focuses on the identification of determinants that influence the WTP. For example, it is plausible to assume that individuals with a larger interest in the Olympic Games or in sport in general may have a higher WTP than those who are less interested. Less interested individuals might rather reveal a negative WTP to host the Olympic Games in their

* This study is a revised extension of the part concerning hosting Olympic Games in Germany of the Discussion Paper of the Institute for Organisational Economics 5/2016 in German with the title "Zahlungsbereitschaften für deutsche Erfolge bei den Olympischen Winterspielen 2014 in Sotschi und die Austragung Olympischer Spiele in Deutschland" ("The Willingness to Pay for German Sporting Successes at the 2014 Winter Olympics in Sotschi and for Hosting Olympic Games in Germany"). The authors thank PD Dr. Pamela Wicker, Dr. Stephanie Kiefer and several student assistants of the Institute for Organisational Economics. Of course, the authors alone are responsible for any remaining errors.

country. In a second step, we extrapolate the individual WTP to get the aggregated WTP of the German population.

The paper is organised as follows: Section 2 reviews existing literature referring to our object of investigation. Section 3 presents methodological and theoretical basics. Section 4 describes the data set. Section 5 shows the empirical results starting with the descriptive statistics followed by the regression analysis to identify important factors influencing the WTP, and an extrapolation of the individual WTP. Section 6 discusses the results, concludes the paper and outlines directions for further research and limitations of the paper.

2. Literature Review

This sections provides an overview of existing literature with respect to hosting Olympic Games in the own country. Up to date, there are six studies that deal with the calculation of the monetary value of hosting the Summer Olympic Games. Two out of the six studies focus on the 2012 Summer Olympic Games in London. Atkinson et al. (2008) asked residents from London, Manchester and Glasgow about their individual WTP for hosting the Summer Olympic Games in London. The analysis shows that on average residents from London are willing to pay £21.95 (€24.41¹). Residents from Manchester (£12.40, €13.79) and Glasgow (£10.87, €12.09) are also willing to pay, yet less money on average. The results of this study show that residents from the city, in which the Olympic Games might take place, as well as residents from surrounding towns are willing to pay. Walton, Longo and Dawson (2008) confirm these results. They show that residents who are not living in London have a positive and not inconsiderable WTP for hosting the Summer Olympic Games in London. More precisely, residents from Bath are on average willing to pay £70.11 (€ 77.96). An extrapolation over the median of £42.20 (€46.93) shows that the residents of Bath are willing to pay £5.83 million (€6.48 million) for hosting this event in London.

Wicker et al. (2016) employed a payment card format which contains monthly tax amounts to determine the individual WTP for Summer Olympic Games in Germany over a five-year period. The study shows that respondents are on average willing to pay €51. Thereby, the WTP varied widely across regions, ranging from €31 in Hanover to €100 in the Cologne area. An aggregation of the WTP leads to a value of €46 billion.

¹ 1 British pound equals €1.1120 by now, retrieved October 12, 2016 at http://www.finanzen.net/waehrungsrechner/britische-pfund_euro.

In a very conservative scenario Preuß and Werkmann (2011) show that the average German WTP for hosting the 2018 Winter Olympic Games in Munich is €8.63. Moreover, they show that the aggregated WTP is €617 million. Heisey (2009) analyses the individual and aggregated WTP for hosting the 2016 Summer Olympic Games for three competition sites (Chicago, San Francisco, Berlin). Chicago has the highest individual (\$54.89, €49.81²) and aggregated (\$439 million, €398 million) WTP. San Francisco has a smaller individual (\$35.73, €32.42) and aggregated (\$154 million, €140 million) WTP. The residents of the metropolitan area of Berlin are willing to pay on average €16.35 only (€82 million in the aggregate) for hosting the 2016 Summer Olympic Games. Coates and Szymanski (2014) finally examine the WTP of US citizens for hosting the 2024 Summer Olympic Games in the USA. In accordance with the results, US citizens are on average willing to pay \$138.27 (€125.47). Projected to the total population above 18 years of age this corresponds to \$33.6 billion (€30.8 billion).

The literature review shows that there is a quite noteworthy WTP for hosting Olympic Games in the own country and city. Interestingly, no study analyses a negative WTP, a WTA, for hosting Olympic Games in the city. To close this research gap, the present study considers this aspect in the empirical analyses in Section 5.

3. Methodological and Theoretical Framework

Hosting Olympic Games in the own city or country can be classified as a public good. A public good is characterised by non-rivalry in consumption as well as non-excludability in consumption. Non-rivalry in consumption means that the good can be consumed by different individuals at the same time without affecting the individual utility of consuming this good. Non-excludability in consumption means that it is not possible to prevent non-paying individuals from consuming the good. Hosting Olympic Games in the own country primarily generates benefits for residents of this country without affecting the consumption of other residents of this country (non-rivalry), while there is rivalry with other countries that cannot host the same event at the same time. Furthermore, residents cannot be excluded by others from “consuming” the event and its effects (non-excludability). In this case, excludability would only be possible with regard to the audience seats.

Problems resulting from public goods are mainly provoked by the characteristic of non-excludability. Caused by the non-excludability, each individual has the chance to consume the

² US-\$1 equals €0.9074 by now, retrieved October 12, 2016 at http://www.finanzen.net/waehrungsrechner/us-dollar_euro.

good without paying for it (free rider problem) such that potential producers are not able to realise sufficient profit to cover the cost of production. Consequently, private providers do not offer such goods.

To measure the monetary value of a public good like national defence, environmental protection or in this case hosting Olympic Games, the individual preferences have to be monetarised. The concept of the WTP is an economic concept to express the preferences of the individuals in monetary terms. Likewise, the concept of the WTA (negative WTP) is an economic concept that displays the minimum amount of money that an individual is willing to accept to put up with something negative. Both concepts allow to monetarise public goods and display the individual utility of the consumers. The amount of the WTP depends on the individual utility of consuming the public good and increases with it. Based on different preferences, the individual utility and thus the individual WTP differs among individuals.

The Contingent Valuation Method (CVM) is an established method to monetarise preferences of consumers regarding certain public goods. By surveys, the CVM identifies the WTP of economic entities for the provision or the withdrawal of a public good. For this purpose, hypothetical scenarios are created where public goods are directly assessable. In these scenarios respondents have to state an amount of money they are willing to pay or accept for the public good considering their individual preferences. Hence, this allows for determining the individual consumer surplus (Coates & Humphreys, 2003; Heyne & Süßmuth, 2006; Mitchell & Carson, 1989). In the past, the CVM was primarily used in the field of environmental and nature protection (Carson, 2011; Davis, 1963; Diamond & Hausman, 1994; Heyne & Süßmuth, 2006; Thayer, 1981). Over time, this method has been established in political analyses (Chambers et al., 1998; Groothuis et al., 1998). Johnson and Whitehead (2000) used this method for the first time in the field of sport economics in order to value sport teams economically. The CVM is an established and specific method to measure the WTP for public goods. In recent years, it has been used in the field of sport economics to measure, for example, the value of sporting success of teams. The present study applies the CVM to determine the WTP for hosting Olympic Games in Germany. The exact scenario created to measure the WTP is presented in Section 4.

In the following, possible determinants that might influence the WTP for hosting Olympic Games in Germany are described. One group of determinants comprises socio-demographic factors like monthly net income, graduation level, age, gender and birthplace. With regard to gender, previous studies show that males report a greater WTP than females (Coates & Szy-

manski, 2015; Walton et al., 2008). This interdependency is intuitive because, typically, men are more interested in sport than women. Thus, they might have a greater WTP for hosting Olympic Games in the own city to experience this event live and in person. Age has a negative effect in one previous study (Walton et al., 2008). Other studies show an insignificant effect of age (Atkinson et al., 2008; Coates & Szymanski, 2015; Preuß & Werkmann, 2011). Moreover, one can expect that individuals with a greater monthly net income have a greater WTP (Atkinson et al., 2008; Coates & Szymanski, 2015; Heisey, 2009; Preuß & Werkmann, 2011, Walton et al., 2008). Further, it can be assumed that the birthplace has a positive impact on the WTP for hosting Olympic Games in the own country. The impact of the graduation level on the WTP is not obvious. Individuals with a higher graduation level may have a greater WTP because individuals with a higher educational level may have better skills to assess (positive) effects for tourism or the economy at large resulting from Olympic Games in the own country.

Further determinants relate to the general interest in sport and specifically in Olympic Games. Preuß and Werkmann (2011) and Walton et al. (2008) show that a general interest in sport as well as sportive activity are positively associated with the WTP. Therefore, specifically the interest in Olympic Games should influence the individual WTP in a positive way. Further determinants that might influence the WTP are the identification with the own country and with the national team, in this case the athletes of the German team. It is to be expected that both variables influence the WTP for hosting Olympic Games in Germany in a positive way. In addition to these determinants, the present study includes the personal importance and national importance to Germany that the German team performs well. Both variables should increase the WTP because individuals who find it important for themselves and for the national reputation that the German team performs well may be willing to pay more for hosting Olympic Games in the own country.

4. Dataset

To measure the WTP for hosting Olympic Games in Germany, the data were collected by using an online questionnaire. The online survey had been available until February 6, 2014. One day later, on February 7, the XXII. Winter Olympic Games in Sotschi started, and ended on February 23. The online-link to access the online questionnaire was published on several social media networks as well as on web pages of the University of Münster. All in all, 367

persons have participated in the survey. In the following, the structure as well as the single variables collected are described.

At the beginning, the questionnaire informed the participants about the topic of the survey. Furthermore, participants were notified that the participation is anonymous, that every data is treated confidentially, and that the information they provide is to be used for scientific purposes only. The questionnaire comprised several questions that can be divided in sport-specific questions and Olympia-specific questions as well as socio-economic questions. Table 1 provides an overview of the variables collected.

Variables	Description
WTP_O_GER	WTP for hosting Olympic Games in Germany in €
WTA_O_GER	WTA for hosting Olympic Games in Germany in €
WTP/A_O_GER	WTP and WTA (negative WTP) for hosting Olympic Games in Germany in €
INT_SPORT	Interest in sports in general (from 0 = no interest at all to 4 = very strong)
SPORT_P	Regular sport participation (at least once per week; 1 = yes)
SPORT_HOURS	Hours of sport participation per week
ID_GER	Identification with Germany (from 0 = not at all to 4 = very strong)
ID_TEAM	Identification with German Olympic team (from 0 = not at all to 4 = very strong)
PERS_IMP	Personal importance that the Olympic team does well (from 0 = not at all to 4 = very important)
NAT_IMP	Importance to country that the Olympic team does well (from 0 = not at all to 4 = very important)
OPTION_O_inG	Are you in general in favour or against that the Olympic Games are hosted in Germany (0 = against ; 1 = indifferent ; 2 = in favour)
AGE	Age (in years)
GENDER	Gender of the respondent (1 = male)
GRAD	Educational level (from 0 = no education to 6 = university degree)
INC	Personal monthly net income (1 = up to €500; 2 = €501 € to €1,000; 3 = €1,001 to €1,500; 4 = €1,501 to €2,000; 5 = €2,001 to €2,500; 6 = €2,501 to €3,000; 7 = €3,001 € to €3,500; 8 = €3,501 to €4,000; 9 = over €4,001)
INC 1	Personal monthly net income up to €1,000
INC 2	Personal monthly net income from €1,001 to €2,000
INC 3	Personal monthly net income from €2,001 to €3,000
INC 4	Personal monthly net income from €3,001 to €4,000
INC 5	Personal monthly net income more than €4,000
BORN_GER	Born in Germany (1 = yes)

Table 1: Overview of Variables

Regarding hosting Olympic Games in Germany in general, the participants were asked whether they are in general in favour or against such an event (OPINION_O_inG). In particu-

lar, in case that participants were in favour of hosting Olympic Games in Germany they were asked:

“Hypothetically, suppose it would be possible, what is the maximum amount you would be willing to pay for hosting the Olympic Games in Germany?”

If respondents were against Olympic Games in Germany, the constructed scenario was slightly adjusted. The specific question was:

“Hypothetically, suppose it would be possible, how much money (compensation) would it take for you to accept that the Olympic Games are hosted in Germany?”

Moreover, respondents also got questions about their interest in sports in general (INT_SPORT). Furthermore, the participants were asked whether they practice any sport regularly, for example at least once a week (SPORT_P), and how many hours (SPORT_HOURS). The questionnaire also contained questions about the respondents' level of identification with Germany (ID_GER) and with the national Olympic team (ID_TEAM). In addition, respondents were asked to give information about the importance for them personally (PERS_IMP) and nationally (NAT_IMP), for the reputation of Germany, that the German Olympic team performs well.

At the end of the survey, respondents were confronted with a set of socio-economic questions about age (AGE), gender (GENDER), graduation level (GRAD), monthly net income (INC), and whether they were born in Germany (BORN_GER).

Before starting with the data evaluation, data and specifically the WTP variables were checked with respect to validity and plausibility. €1,000 were considered suitable as a plausible limit for both WTP variables. Questionnaires with greater absolute values were not included in the analyses.

5. Empirical Results

On the one hand, this section contains the descriptive statistics to determine a possible (negative) WTP, and, on the other hand, the empirical results to identify determinants that influence the WTP for hosting Olympic Games in Germany. Moreover, an extrapolation of the individual WTP leads to the aggregate WTP of the German population.

Table 2 shows the descriptive statistics. Accordingly, 53 percent of the participants are willing to pay for hosting Olympic Games in Germany whereas only 11 percent request a payment to accept that the Olympic Games are hosted in Germany. Regarding absolute WTP and WTA, participants are on average willing to pay €77.58 for hosting Olympic Games in Germany (WTP_O_GER). As compensation for hosting Olympic Games in Germany they demand on average €36.71 (WTA_O_GER).

Metric/ordinal variables	Obs.	Mean	S.D.	Min.	Max.
WTP_O_GER	188	77.58	229.97	0	1,000
WTA_O_GER	188	36.71	168.84	0	1,000
WTP/A_O_GER	188	40.87	295.16	-1,000	1,000
INT_SPORT	351	2.57	1.04	0	4
ID_GER	350	2.53	0.96	0	4
ID_TEAM	396	1.54	1.12	0	4
PERS_IMP	387	1.58	1.22	0	4
NAT_IMP	387	1.63	1.02	0	4
SPORT_HOURS	254	5.01	3.53	1	28
AGE	349	26.77	9.39	16	71
INC	265	2.81	2.14	1	9
GRAD	343	5.17	1.13	1	6
Dummy variables				% of respondents	
WTP_O_GER_D	188		52.66		
WTA_O_GER_D	188		10.64		
OPTION_O_inG (against)	57		15.04		
OPTION_O_inG (indiff.)	152		40.11		
OPTION_O_inG (in favour)	170		44.85		
SPORT_P	366		77.68		
GENDER (1=male)	349		52.15		
BORN_GER	349		95.42		

Table 2: Descriptive Statistics

Regarding further variables, the descriptive statistics show that 78 percent of the participants practice sport regularly with an average of 5 hours per week. On average, the respondents are moderately or strongly interested in sports in general.

Furthermore, Table 2 shows that the degree of identification with Germany is greater than with the German Olympic team. Nevertheless, both identification features are not very pronounced. In particular, the respondents stated that they neither find it important on the personal level nor on the national level that the German Olympic team performs well at Olympic Games.

Regarding the opinion variable, 15 percent of the respondents stated that they are against hosting Olympic Games in Germany. Forty percent are indifferent, and 45 percent of the participants are in favour of hosting Olympic Games in Germany.

Concerning socio-economic factors, most respondents have a higher education entrance qualification (Abitur: German equivalent of “A Levels”), and a personal monthly net income between €501 and €1,500. Respondents are on average 26.77 years old with age ranging from 16 to 71 years. According to the official statistics (Statistische Ämter des Bundes und der Länder 2016), only 30 percent of German people are 30 years old or younger. The descriptive statistics also shows that 52 percent of the respondents are males. Thus, 48 percent of the participants are females. In comparison to the gender relation in Germany at large, males are overrepresented in the present dataset. To match the present data with the real gender and age relations in the German population, weights for gender and age are used for further analyses. The weights are calculated based on information by Statistische Ämter des Bundes und der Länder (2016). Finally, descriptive statistics display that 95 percent of the respondents were born in Germany.

In the following, determinants that influence the WTP and WTA for hosting Olympic Games in Germany are presented. The regression analysis is based on a weighted Ordinary-Least-Square (OLS)³ regression. The dependent variable is the WTP including the WTA as negative WTP (WTP/A_O_GER).

Regression results in Table 3 show that the interest in sports in general and practicing sport on a regular basis have no significant impact on the WTP (always including WTA). Interestingly, the identification with the German Olympic team has a significantly negative impact on the WTP. Thus, the WTP decreases by €89.05 for individuals who identify with the team by one more unit. In contrast to this, individuals who find it nationally important that the German Olympic team performs well have a significantly greater WTP. More concretely, the WTP increases by €183.36 for individuals who find it more important by one unit that the German Olympic team performs well.

Regarding socio-economic factors, age has a significantly positive impact on the WTP whereas age squared has a significantly negative impact. Therefore, the impact of age on WTP follows an inverted U-shape with a maximum at 45 years. Consequently, both younger and older respondents are less willing to pay for hosting Olympic Games in Germany.

³ A binary-logistic regression leads to similar results. This regression is available upon request.

Dependent Variable	WTP/A_O_GER
INT_SPORT	21.71 (.49)
SPORT_P	139.91 (.78)
ID_TEAM	-89.05 ⁺ (-1.69)
NAT_IMP	183.36*** (4.37)
AGE	86.41** (2.87)
AGE ²	-0.96** (-2.84)
GENDER	149.71 ⁺ (1.67)
GRAD	30.31 (.98)
INC_1 (€1-€1,000)	409.17* (2.54)
INC_2 (€1,001-€2,000)	327.61* (2.03)
INC_3 (€2,001-€3,000)	167.41 ⁺ (1.63)
INC_4 (€3,001-€4,000)	6.84 (.05)
INC_5 (more than 4,001)	REF
BORN_GER	106.19 (.93)
CONSTANT	-5,519.66** (-3.05)
F	2.66
Significance	0.00
R ²	0.61

Note: N=129, Displayed are the unstandardised coefficients, t-values in parentheses. +p < .10; *p < .05; **p < .01; ***p < .001, weighted sample.

Table 3: Regression Results of Weighted OLS Regression

As expected, men have a significantly greater WTP than women. Specifically, men are on average willing to pay €149.71 more than women. The graduation level has no significant impact on the WTP. Thus, there are no significant differences between respondents with no university degree and those who have a graduate degree or who are going for it. Concerning the personal monthly net income, regression results show that the income classes one, two, and three have a significantly positive impact. Respondents with a personal monthly net income between €1 and €1,000 are willing to pay €409.17 more than individuals with a personal monthly net income above €4,001. In comparison to those participants with a monthly net

income of more than €4,001, the WTP of participants with a monthly net income between €1,001 and €2,000 increases by €327.61. Individuals in the personal monthly net income class of €2,001 and €3,000 are willing to pay €167.41 more than individuals of the reference category. Individuals in the income class between €3,001 and €4,000 have no significantly different WTP than individuals who earn more than €4,001 per month. Lastly, the variable of the birth place has no significant impact on the WTP.

The extrapolation of the weighted data of the individual WTP and WTA for hosting Olympic Games in Germany is shown in Table 4.

	Women	Men	Σ
WTP	€4.35 billion	€2.33 billion	€6.68 billion
WTA	€1.77 billion	€1.34 billion	€3.11 billion
WTP-WTA	€2.58 billion	€0.99 billion	€3.57 billion

Table 4: Extrapolation of the WTP and WTA Differentiated by Gender

The results show that German women are willing to pay €4.35 billion in aggregate whereas German men are willing to pay €2.33 billion. In sum, the German population is willing to pay €6.68 billion. An extrapolation of the WTA for hosting Olympic Games in Germany shows that women demand €1.77 billion while men demand €1.34 billion (in sum €3.11 billion) to accept that the Olympic Games are hosted in Germany. Subtracting WTA from WTP indicates that Germans are willing to pay €3.57 billion for hosting Olympic Games in Germany, much smaller than the estimated €7.4 billion cost of hosting the 2024 Summer Olympic Games in Hamburg.

6. Discussion and Conclusion

This study tried to answer the question how much German individuals are willing to pay or willing to accept to host the Olympic Games in Germany. Considering WTA in this context is new to the literature. The approach allows for determining both hypothetical payments to have the Olympic Games hosted in Germany and hypothetical compensations needed to accept that the Olympic Games are hosted in Germany. The used data set, generated with an online questionnaire, shows that 53 percent of the respondents have a positive WTP whereas 11 percent of the participants request compensation to accept that Olympic Games are hosted in Germany. On average, participants stated that they are willing to pay €77.58 for hosting Olympic Games in Germany. In contrast to this, participants who are against Olympic Games in the own country stated that they demand on average €36.71 as a compensation for hosting

Olympic Games in Germany. The extrapolation of the individual WTP and WTA leads to an aggregated WTP of €6.68 billion, and to an aggregated WTA of €3.11 billion. Put together, this leads to a positive net balance of €3.57 billion. This figure can be interpreted as the amount needed to realise hosting Olympic Games in Germany. Certainly, the cost for hosting Olympic Games should not be imposed on the residents of the hosting city or county alone. This would cause residents to vote against hosting Olympic Games in the own city or county. This has been the case in cities like Hamburg or Munich, even though 45 percent of the respondents in the survey stated that they are in favour of hosting Olympic Games.

Regarding the determinants that influence the WTP, regression results show that in particular the socio-demographic factors influence the WTP in a significant way. As expected, the gender variable has a significantly positive impact. This means that males stated a greater WTP for hosting Olympic Games in Germany. This is hardly surprising as men are typically more interested in sport than women. The keener interest translates into greater WTP for hosting Olympic Games in the own country to see this event live and in person. Similar results can be found in Coates and Szymanski (2015), Walton et al. (2008), and Wicker et al. (2016). Regarding the age, WTP follows an inverted U-shape with a maximum at 45 years. Thus, both younger and older people are less willing to pay for hosting Olympic Games in Germany. One possible explanation might be that younger people may not be able to assess the value of hosting Olympic Games for lack of experience. This means that they cannot evaluate whether hosting Olympic Games cause positive or negative effects for the home country. Due to this fact, they are less inclined to pay for hosting Olympic Games. As one result of bad publicity regarding hosting mega sport events – for example reports on Sotschi before and after the Winter Olympic Games – the WTP for hosting Olympic Games in the own country might decrease. Middle-aged people appear to be rather optimistic with respect to the opportunities resulting from hosting Olympic Games in the own country. Considering the income variables, the regression results show that the three lower income classes have a significantly positive impact on the WTP. This means that individuals with a personal monthly net income between €1 and €3,000 have a greater WTP than individuals with a personal monthly net income of more than €4,000. Regarding the absolute value, respondents with a personal monthly net income between €1 and €1,000 have the greatest WTP. One conclusion may be that with an increase of the personal monthly net income other areas of interest predominate the interest in hosting Olympic Games in the own country. The graduation level and the birthplace both have a positive influence on the WTP. However, these effects are not significant and thus need no further explanation.

In need of explanation is the significantly negative impact of the identification with the German Olympic team. The negative effect of the identification variable suggests that the identification with the German Olympic team is a substitute for the WTP. This suggests that as individuals already identify with the German Olympic team they do not feel obliged to pay for having the team compete in Olympic Games in the own country. The level of national importance influences the WTP in a significantly positive way. This means that individuals who find it on a national level important that the German Olympic team performs well have a greater WTP for hosting Olympic Games in Germany. In other words, the WTP increases with national pride. Therefore, individuals with greater national pride have keener interest in hosting Olympic Games in the own country to present the country and its strengths in sports to the world.

In terms of methodology, it would be interesting to examine in more detail which respondents may have misunderstood the WTP as a kind of bribery instead of as an equivalent for the subjective utility. Therefore, it is not clear whether the CVM overestimates or underestimates the real value of sport events. The overestimation arises from statements of high amounts because they are free of real costs. The underestimation arises because some individuals state no WTP even though they value this event. In any case, to complement the question concerning the WTP with the question of a potential WTA is very important for determining the real value because the positive WTP alone is clearly an overestimation. Furthermore, it would be interesting to study differences between the WTP for hosting Olympic Games in the own country and in the own city. The outcomes of the referenda in Hamburg and Munich are relevant for future votes for hosting Olympic Games in other cities.

Literature

Atkinson, Giles/Mourato, Susana/Szymanski, Stefan/Ozdemiroglu, Ece (2008): "Are we willing to pay enough to 'back the bird'? Valuing the intangible impacts of London's bid to host the 2012 Summer Olympic Games", *Urban Studies*, 45 (2), 419-444.

Carson, Richard T. (2011): "Contingent valuation: A comprehensive history and bibliography", Edward Elgar, Cheltenham.

Chambers, Catherine M./Chambers, Paul E./Whitehead, John C. (1998): "Contingent valuation of quasi-public goods: A validity and reliability assessment", *Public Finance Review*, 26 (2), 137-154.

Coates, Dennis/Humphreys, Brad R. (2003): "Professional sport facilities: Franchise and urban economic development", *Public Finance and Management*, 3 (3), 335-357.

- Coates, Dennis/Szymanski, Stefan (2014): "Willingness to pay to host the Summer Olympic Games", Working Paper, University of Maryland Baltimore County, Baltimore, MD.
- Davis, Robert K. (1963): "The value of outdoor recreation: An economic study of the Maine Woods", Ph.D. Dissertation, Harvard University, Cambridge, MA.
- Diamond, Peter A./Hausman, Jerry A. (1994): "Contingent valuation: Is some number better than no number?", *Journal of Economic Perspectives*, 8 (4), 45-64.
- Groothuis, Peter A./Van Houtven, George/Whitehead, John C. (1998): "Using contingent valuation to measure the compensation required to gain community acceptance of a LU-LU: The case of a hazardous waste disposal facility", *Public Finance Review*, 26 (2), 231-249.
- Heisey, Kevin (2009): "Estimating the intangible benefits of hosting the 2016 Olympic and Paralympic Games for potential bid cities: Berlin, Chicago, and San Francisco", Dissertation, Deutsche Sporthochschule, Cologne.
- Heyne, Malte/Süssmuth, Bernd (2007): "Wie viel ist den Deutschen die Ausrichtung der FIFA WM 2006 wert und warum?", in Klein M.-L., & Kurscheidt, M. (eds.): "Neue Perspektiven ökonomischer Sportforschung", Schorndorf, Hofmann.
- Johnson, Bruce K./Whitehead, John C. (2000): "Value of public goods from sports stadiums: The CVM approach", *Contemporary Economic Policy*, 18 (1), 48-58.
- Mitchell, Robert C./Carson, Richard T. (1989): "Using surveys to value public goods: The contingent valuation method", *Resources for the Future*, Washington, D. C.
- Müller, Martin (2014): "After Sochi 2014: Costs and impacts of Russia's Olympic Games", *Eurasian Geography and Economics*, 55 (6), 628-655.
- Preuß, Holger/Werkmann, Katrin (2011): "Erlebniswert Olympische Winterspiele in München 2018", *Sport und Gesellschaft*, 8 (2), 97-123.
- Statistische Ämter des Bundes und der Länder (2016): "Bevölkerungsstand: Bevölkerung nach Geschlecht und Altersgruppen: Stichtag 31.12.2013", Statistische Ämter des Bundes und der Länder, Düsseldorf, on the internet at <https://www.regionalstatistik.de/genesis/online;jsessionid=7F00B2B981D254F764863CAE48F1AE6C?sequenz=tabelleErgebnis&selectionname=173-21-4>, last retrieved at March 24, 2016.
- Thayer, Mark A. (1981): "Contingent valuation techniques for assessing environmental impacts: Further evidence", *Journal of Environmental Economics and Management*, 8 (1), 27-44.
- Walton, Harry/Longo, Alberto/Dawson, Peter (2008): "A contingent valuation of the 2012 London Olympic Games", *Journal of Sports Economics*, 9 (3), 304-317.
- Wicker, Pamela/Whitehead, John C./Mason, Daniel S./Johnson, Bruce K. (2016): "Public support for hosting the Olympic Summer Games in Germany: The CVM approach", online first in *Urban Studies*.

Diskussionspapiere des Instituts für Organisationsökonomik

Seit Institutsgründung im Oktober 2010 ist monatlich ein Diskussionspapier erschienen. Im Folgenden werden die letzten zwölf aufgeführt. Eine vollständige Liste mit Downloadmöglichkeit findet sich unter <http://www.wiwi.uni-muenster.de/io/de/forschen/diskussionspapiere.html>

- DP-IO 11/2016** Willingness to Pay and Accept for Hosting Olympic Games in Germany
Linn-Brit Bakkenbüll/Alexander Dilger
November 2016
- DP-IO 10/2016** 6. Jahresbericht des Instituts für Organisationsökonomik
Linn-Brit Bakkenbüll/Alexander Dilger
Oktober 2016
- DP-IO 9/2016** Herausforderungen der Flüchtlingskrise für Hochschulen
Alexander Dilger
September 2016
- DP-IO 8/2016** Bedingte Aktiengeschäfte
Alexander Dilger
August 2016
- DP-IO 7/2016** The Weakest Link in a Strong Team?
Performance of Players With and Without Outside Options in Relegated Football Clubs
Michael Müller
Juli 2016
- DP-IO 6/2016** Abfindungen für Vorstandsmitglieder
Empirische Untersuchung der Entsprechenserklärungen von CDAX-Unternehmen
Ute Schottmüller-Einwag
Juni 2016
- DP-IO 5/2016** Zahlungsbereitschaften für deutsche Erfolge bei den Olympischen Winterspiele 2014 in Sotschi und die Austragung Olympischer Spiele in Deutschland
Linn-Brit Bakkenbüll/Alexander Dilger
Mai 2016
- DP-IO 4/2016** Aktuelle Probleme der EU
Alexander Dilger
April 2016
- DP-IO 3/2016** Implikationen des Wissenschaftszeitvertragsgesetzes für Hochschulen und Mitarbeiter
Alexander Dilger
März 2016
- DP-IO 2/2016** Fördert sportliche Aktivität den beruflichen Aufstieg?
Michael Müller
Februar 2016
- DP-IO 1/2016** Does Attractiveness Win?
On the Gender-Specific Impact of Attractiveness on Athletic Performance in Tennis
Linn-Brit Bakkenbüll
Januar 2016
- DP-IO 12/2015** Drittmittelorientierung als Risiko für Hochschulen
Alexander Dilger
Dezember 2014



Herausgeber:
Prof. Dr. Alexander Dilger
Westfälische Wilhelms-Universität Münster
Institut für Organisationsökonomik
Scharnhorststr. 100
D-48151 Münster

Tel: +49-251/83-24303
Fax: +49-251/83-28429

www.wiwi.uni-muenster.de/io

