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# The Social Impact of the Tour de France: Comparisons of Residents' Pre- and Post-event Perceptions

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**ABSTRACT** Social impacts of hosting major sport events have gained interest among event researchers. This study contributes to this line of inquiry by assessing the impact of the arrival of a stage of the 2007 Tour de France in Ghent. Residents' perceptions of impacts were measured by using a pre- and post design, generating 396 and 235 valid questionnaires respectively. Exploratory factor analysis revealed seven impact factors. Overall, residents' perceptions of impacts have changed over time. The most highly perceived benefits in the pre- and post- test were cultural and image benefits, whereas the most highly perceived costs were excessive spending and mobility problems. The impact factors "cultural interest and consolidation" and "excessive spending and mobility problems" were significant predictors of residents' willingness to host the event in the future. Results suggest that developing a strategy of maximizing positive and minimizing negative impacts might be beneficial for obtaining social leverage.

**KEYWORDS:** Major sport events; residents' perceptions; social impact; social leverage; Tour de France

Strong competition exists between cities and communities to host major sport events. There are many reasons why cities bid against each other to host major sport events (Kim, Gursoy, & Lee, 2006; Maennig & du Plessis, 2007). In general, it is expected that hosting a major sport event generates benefits for the community (Gratton, Shibli, & Coleman, 2005). According to the literature, the most important intended benefit is a positive economic impact that results from hosting the event (Getz, 2005; Gursoy, Kim, & Uysal, 2004). However, these economic impacts have been called into

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<sup>†</sup>In Memoriam

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question by some sport economists (e.g., Jeanrenaud, 1999; Maennig & du Plessis, 2007). Nevertheless, major sport events often generate international media attention, and the publicity of the event is an excellent means for international city recognition and for promoting touristic attractions (Jeong & Faulkner, 1996; Kang & Perdue, 1994). Moreover, the opportunity to host a major sport event is often seized for city regeneration and revalorization of the city (Hall, 2004), which should result in an improvement of the host community's quality of life (Deccio & Baloglu, 2002; Gursoy & Kendall, 2006; Jeong & Faulkner, 1996).

Aside from the expected benefits, hosting major sport events also creates negative effects such as environmental damage, excessive spending, security problems, traffic congestion, prostitution, and displacement of residents (Gursoy, Kim, & Uysal, 2004; Kim, Gursoy, & Lee, 2006; Kim & Petrick, 2005; Ohmann, Jones, & Wilkes, 2006). These possible negative impacts, however, are often neglected by local authorities in order to win public opinion for hosting the event (Kim & Petrick, 2005). This paper considers a well known sport event that has received limited attention in the literature, the Tour de France. More specifically, residents' perceptions towards the impact of the arrival of the Tour de France in Ghent were measured before ( $n = 396$ ) and after ( $n = 235$ ) the event. To date there is limited literature on social impacts of sport events. Bull and Lovell (2007) analyzed residents' views of a Tour de France stage in the run up to the event. This study goes beyond Bull and Lovell's work because here residents' perceptions are surveyed both pre- and post-event. In addition, the existing literature is broadened by identifying the social impacts that predict residents' willingness to host the Tour de France in the future.

## Literature Review

### *Social Leverage and Legacy*

It is only during the current decade that an emerging stream of literature focused on dimensions beyond the traditionally economic dimensions, such as the social impact of hosting events, has developed (Getz, 2008; Gursoy & Kendall, 2006). An understanding of social impacts and of residents' attitudes towards these impacts is a prerequisite to reducing undesirable disorder of community life caused by the event (Delamere, 2001). Moreover, the enthusiasm of the local community towards hosting major sport events influences success and sustainability of events (Getz, 1993; Gursoy, Kim, & Uysal, 2004). Support of residents is likely to convert a major sport event into an urban festival whereas resistance towards the event may lead to delays and even abandonment of the event (Gursoy & Kendall, 2006).

Chalip (2006) stated that the social impact of sport events should not be left to coincidence. Sport events should be leveraged to obtain long and lasting positive outcomes. A small but growing body of literature has begun to explore the leveraging of major sport events (e.g., Chalip, 2004; Chalip & Leyns, 2002; O'Brien, 2006). Chalip (2004, p. 228) defined leverage as "those

activities which need to be undertaken around the event itself . . . which seek to maximize the long-term benefits from events". According to Chalip (2001), a traditionally short-term focus on sport events fails to legitimize the public investments necessary to stage them. The purpose of event leverage is to identify the strategies and tactics that can be implemented prior to and during the event to optimize desired event outcomes. The objective of event leverage is not only to evaluate what was done, but to learn from the event in order to enhance future leveraging of sport events. Impact studies, however, provide useful information about which strategies and tactics have been effective. Preuss (2007) distinguished between impacts and legacies. Impacts are short-term outcomes, such as the economic boost directly related to the event, whereas legacies are the additional events that result from changes in the host cities' location factors, such as post-event tourism due to hosting the event. Preuss (2007) stated that the measurement of legacies is complex as it involves all changes caused by a major sport event over time.

Chalip (2006) also argued for the need to pay more attention to the social value of major sport events. Sport events are more than only entertainment, they are social events that allow for the addition of a social value to the event. This statement is supported by studies that point to social impacts as a core source of potential significance or as a potential source of troubles (e.g., Deccio & Baloglu, 2002; Kim, Gursoy, & Lee, 2006). The social impact of sport events should not be left to coincidence (Chalip, 2006). Its value and expected outcome depends on the preparation and planning process. Chalip offered a theoretical framework for studying the social utility of events and argued that the sport may be merely a catalyst, in the sense that something that transcends the sport is going on. This is called liminality.

It feels as if new energy has been injected into the communal atmosphere—an energy that can be shared by all. Social rules and social distinctions seem less important, and are sometimes suspended altogether. There is a heightened sense of community among those who are present (Chalip, 2006, p. 110).

The sense of community that is created is called *communitas*. Liminality and *communitas* foster social capital. The two key elements for the creation of liminality are celebration and social camaraderie. The sport event is not only an occasion for celebration and rejoicing, it also allows individuals to share in the celebration together. Thus, sport events are more than an entertainment, they are social events that allow for social leverage. Although there are studies that have focused on the leveraging of events (e.g., Kellett, Hede, & Chalip, 2008; O'Brien, 2006; Sparvero & Chalip, 2007), social leveraging of major sport events is only in its preliminary phase (Chalip, 2006). Impact studies provide useful information about the outcomes of hosting major sport events.

### **Definitions of Social Impact**

Economic impact is predominately used by local authorities to promote and justify the bidding and hosting of a major sport event (Bull & Lovell, 2007).

Social and cultural impacts that result from hosting the event are less common as a motive. The reason for this lack of attention is that social and cultural impacts are less tangible than economic impacts and therefore it is more difficult to measure them (Getz, 2005; Kim & Petrick, 2005). Public support of major sport events is also tied to expected economic returns. Social and cultural impacts are often linked to negative outcomes, which are detrimental to gaining public support. Similarly, there has been a predominant focus in the literature on economic impact studies of hosting major sport events (Fredline & Faulkner, 2000; Getz, 2008; Jeanrenaud, 1999; Waitt, 2003).

Definitions of social impact are often drawn from the field of tourism studies, as events are mainly perceived as touristic activities and a specific event-related definition of social impact is absent (Ohmann, Jones, & Wilkes, 2006). We refer to Hall's (1992, p. 67) definition of social impact as "the manner in which tourism and travel effect changes in the collective and individual value systems, behavior patterns, community structures, lifestyle and quality of life". Furthermore, there is often confusion about the difference between social and cultural impacts. Social impacts have an immediate effect on the quality of life of residents and must be seen as short-term consequences. In contrast, cultural impacts are long-term in nature and include changes in social relationships, norms and standards (Brunt & Courtney, 1999; Teo, 1994).

### **Social Impact Studies**

Waitt (2003) studied the temporal dynamics of the social impact of the 2000 Sydney Olympics by using telephone surveys with Sydney residents 24 months before and during the games. While feelings of enthusiasm before the event were positive, enthusiasm during the games increased as expressed in feelings of patriotism, community spirit and the desire to participate as a volunteer. There was no significant difference in levels of enthusiasm when differentiating for education, occupation or income. The level of enthusiasm was also associated with residents' willingness to make personal economic sacrifices. Residents demonstrating lower levels of enthusiasm towards the Olympics evaluated the public costs as excessive. Overall, the number of respondents who perceived increased taxation and living costs declined over time. Perceptions of positive economic impacts of hosting the Olympics also declined over time.

Kim and Petrick (2005) investigated residents' perceptions and opinions of impacts of the FIFA 2002 World Cup in Seoul. Image enhancement and consolidation was considered to be the most positive impact, while negative economic perspective, traffic problems and congestion were seen as the most negative impacts of hosting the World Cup. Younger respondents experienced more negative impacts than older respondents. Female residents perceived both positive and negative impacts more than male residents. A comparison of residents' perceptions over time showed that levels of enthusiasm decreased three months after hosting the event compared to

the fervent feelings during the event. A comparison of residents' opinions revealed that the youngest age group showed the highest level of desire to travel to the host country of the next World Cup. Positive opinions of female residents were higher compared to male residents. Over time, positive opinions surrounding feelings of patriotism and unity, and the desire to participate in future mega-events declined. These findings were similar to Waitt's (2003) conclusion that attitudes towards events are likely to change over time, as the exchange relationship is a dynamic process.

In a similar study, Kim, Gursoy and Lee (2006) focused on residents' perceptions of the 2002 World Cup impact using a pre- and post-design. The results supported previous studies (e.g., Kim & Petrick, 2005; Waitt, 2003) that perceptions of impacts drastically changed over time. Before the event, residents expected economic and cultural benefits, while acknowledging that the event would come with a cost. After the event, residents assessed benefits as lower than expected, especially the viewed economic benefits. Residents also judged negative impacts, such as social problems and price increase, less after the event than before. Although perceptions of traffic problems declined over time, this factor was the highest rated factor among the negative ones.

Ohmann, Jones and Wilkes (2006) measured perceived social impacts of the 2006 Football World Cup using face-to-face structured interviews with Munich residents. The interviews were carried out shortly after the World Cup. Overall, residents' experiences of hosting the event were positive. Sense of community, the collective sharing of the event experience, and sense of security were judged as positive social impacts. Urban regeneration, which was seen as improvements in infrastructure, was also valued as a positive result of hosting the event. Residents did not rate negative impacts such as increased crime and prostitution, bad fan behavior or displacement of local residents. An increase in noise during the event was the highest negatively viewed impact of hosting the World Cup.

Bull and Lovell (2007) examined the views and perceptions of Canterbury residents in relation to the arrival of the Tour de France. Although almost 40% of the respondents were aware of the road closures and disruption through negative media attention, the overall view of the event was very positive. The majority of the respondents indicated that they had plans to participate in the various Tour de France events. Most residents believed that the key benefits from hosting the event were the promotion of Canterbury, increased tourism and an incentive for local economy. Social goals such as promoting a community spirit, promoting sport and health, and developing cross-cultural experiences were seen as far less important. This study supported the view that residents are willing to accept negative outcomes such as disruption and inconveniences to a certain degree in exchange for positive outcomes (Bowdin et al., 2006).

Major sport events have the potential to create a number of positive and negative impacts. Fredline (2005) suggested that the occurrence of social impacts is dependent on the historical, cultural, economic and environmental background of the host destination, while Barker (2004) maintained that the nature, scale, location and duration of events influences social

impacts. Social impacts cannot be perceived as a generic set of outcomes of any sport event. These impacts may be apparent at certain events while absent at others. Ohmann, Jones and Wilkes (2006) stated that there is a need for impact studies at a variety of events and locations to identify patterns and trends, so that these impacts can be managed before, during and after the event.

## **Method**

### *Context*

In contrast to the Olympic Games and the Football World Cup, which take place every four years, the Tour de France (TDF) is an annual cycling sport event. The contest consists of 20 separate stages, covering approximately 3500 km on closed public roads. Spectators do not have to pay to watch the contest. Twenty-one teams and 189 riders participate. Typical for this kind of major cycling event is that they move from city to city during a period of three weeks. The majority of the stages starts in one city and ends in another hosting city. Cities hosting a stage have very limited time to realize their objectives. In the 2007 TDF, more than 4500 people were involved in the organization of the event, in addition to approximately 2000 accredited journalists and 1800 technicians or drivers. Ninety-two television channels were present to broadcast the TDF, 51 of them broadcasted the event live on television. The contest was on television in 180 countries and more than 3200 hours of television were spent at the event. A peculiarity of the event is the advertising caravan, a collection of 200 decorated vehicles representing 43 brands and distributing 15 million gifts to spectators. The caravan has become part of the TDF and adds to the spectacle as the brands try to exceed each other.

There is a high competition amongst cities and towns to host a stage of the TDF. The prestige of hosting the TDF, the perceived beneficial impacts and the intense media attention are the main drivers to bid for a stage (Bull & Lovell, 2007). While the majority of the stages of the TDF take place in France, a few stages may take place in neighboring countries. The city of Ghent succeeded in hosting the arrival of the second stage of the TDF 2007. At the time of the arrival of the cyclists in Ghent, 13 million people watched the TDF on television. The historical city of Ghent with its fabulous monuments was on television for more than five minutes. Local authorities took the opportunity to organize a lot of other events that were geared to the TDF. It is estimated that 150,000 people watched the cyclists along the course at the arrival in Ghent.

### **Participants**

A total of 396 respondents participated in the pre-event survey, and of these we obtained 235 valid questionnaires in the post-event survey. The appendix presents detailed information of the socio-demographic profile of the respondents. At both time periods (pre- and post-event survey), just over

one-half of the respondents were female. The mean age of the respondents was 42.64 years ( $SD = 17.53$ ) in the pre-event survey and was 42.19 ( $SD = 17.18$ ) in the post-event survey. There was an equal distribution of respondents in the three age categories ( $\pm 32\% - 35\%$  per category). Employees and shopkeepers accounted for approximately 50% of the occupations. There was also a high percentage of respondents who were unemployed ( $\pm 13\%$ ), and who classified themselves in the category "other" ( $\pm 11\% - 14\%$ ). Almost 40% of the respondents had a degree from secondary school, and approximately 47% of the respondents had a degree of higher education.

### **Data Collection**

A questionnaire was used to collect data. The population of interest were residents of Ghent who lived along or near the TDF course. The researchers drew a plan of the course and identified the streets along or near the TDF course. The on-site survey was carried out in this area. Only residents of Ghent who lived in the selected area were allowed to participate in the study. The surveys were carried out at two time periods: one week prior and one week after the arrival of the TDF in Ghent. Potential participants were approached at their front doors, and data were collected at that point in time. Nearly all respondents willingly accepted to answer the questionnaire. Respondents were asked to participate in the follow-up study and the interviewers noted their address and name.

The survey team consisted of masters students who were well instructed as to the purpose and method of the study. A total of 421 questionnaires were obtained from the pre-event survey. One week after the arrival of the TDF, the survey team visited the respondents and they used the same method as in the pre-event survey. When the respondent of the pre-event survey was not at home, a questionnaire with cover letter was left. As a result, 259 questionnaires were collected from the post-event survey. Questionnaires with more than 10% missing values on the impact scale items were excluded for further data analyses. As a result, a total of 396 valid questionnaires from the pre-event survey were used for further analyses. For the data of the post-event survey, nine questionnaires were excluded because essential data was missing so that the questionnaire of the post-event survey could not be linked to the questionnaire of the pre-event survey. Fifteen questionnaires did not meet the 10% missing values criterion. As a result, the database of the post-event survey consisted of 235 valid questionnaires that were matched with the questionnaires of the pre-event survey.

### **Survey Instrument**

The focus of this study was to address both negative and positive impacts of hosting sport events as perceived by residents. The literature was screened for adequate measures that referred to economic, cultural, image, environmental,

tourism and infrastructure development impacts. These impacts were addressed in the literature and were considered most relevant (Delamere, 2001; Kim & Petrick, 2005; Turco, 1998). The items that addressed the impacts were screened on relevance for hosting a short-term event such as the TDF. As such, a total of 33 appropriate Likert-type items were adopted from previous studies on the impacts of events (e.g., Delamere, 2001; Kim & Petrick, 2005; Turco, 1998). The items were adjusted to residents' perceptions of the impact of the arrival of a stage of the 2007 TDF in Ghent. The 33 items included 12 negative and 21 positive impact items. Respondents were asked to evaluate the statements on a 7-point Likert scale (1 = absolutely disagree, 2 = disagree, 3 = slightly disagree, 4 = neutral, 5 = slightly agree, 6 = agree, 7 = absolutely agree). Surveys collected before the arrival of the TDF aimed to measure expected benefits and costs, whereas surveys collected after the arrival of the TDF aimed to measure perceived benefits and costs.

### Data Analysis

Exploratory factor analysis was used to delineate the underlying factors. The purpose of factor analysis is to reduce the set of observed variables into a much smaller and simpler structure by discovering the pattern of relationships among the variables. Factor analysis was performed by using the data of the entire pre-event survey. Principal component analysis with varimax rotation was used to reveal the underlying dimensions. The cut-off criterion to determine the factors was the Kaiser criterion (1974) or eigenvalue greater than one. Only items with communalities higher than .40 and factor loadings higher than .40 were retained and were included in the final factor structure. Our sample size was adequate as a minimum of five, preferably ten, observations per variable is recommended for factor analysis (Hair et al., 1995). Reliability analysis by applying Cronbach's alpha was used to confirm the internal consistency of the resulting factors.

Chi-square statistics and independent sample *t*-tests were conducted to reveal whether there are differences in socio-demographic variables and perceptions of impacts between respondents who participated in the pre-event survey but not in the post-event survey (drop-out group) and respondents who participated in both surveys. A repeated measures MANOVA was performed to examine significant changes in residents' perceptions of impacts before and after the arrival of a stage of the TDF in Ghent. The dependent variables were the perceptions of impacts. The within-subjects factor was time, and represented the time period of the pre-event and post-event survey. In addition, one sample *t*-tests were performed to test the means of the impact factor dimensions relative to the point of indifference (i.e., four).

Logistic regression was used to assess the relationship between residents' willingness to host the TDF next year, the impact factor dimensions and socio-demographic variables. Odds ratios ( $EXP(B)$ ) were calculated, as well as *p*-values. The goodness-of-fit of the final model was determined by using the Hosmer-Lemeshow test. The Nagelkerke R-squared statistic was used to identify the amount of variance accounted for by the predictor variables.



## Results

From Table 1, we observe that there was a similar number of respondents who were sports active and sports inactive ( $\pm 50\%$ ). There were also a similar percentage of respondents who informed themselves of sports results through media. One week prior to the arrival of the TDF in Ghent, 31.63% of the respondents indicated that they would watch the contest along the course. After the arrival of the TDF, 46.49% of the respondents indicated that they had watched the contest along the course. Almost half of the respondents considered the arrival of the TDF as a social event. The majority of the respondents, 69.64% in the pre-event survey and 78.02% in the post-event survey, supported the idea that the TDF may return next year in Ghent.

**Table 1.** Additional information of the sample.

Pre-event survey (N = 396)		Post-event survey (N = 235)	
Variables		Variables	
Sport participation	Percent (%)	Sport participation	Percent (%)
Yes	49.87	Yes	48.44
No	50.13	No	51.66
Informs him/herself weekly of sports through media		Informs him/herself weekly of sports through media	
Yes	52.39	Yes	52.47
No	47.61	No	47.53
What are you going to do on July 9th?		What did you do on July 9th?	
Working	29.85	Working	29.39
Vacation	11.73	Vacation	7.02
Watching the TDF on TV	9.18	Watching the TDF on TV	6.58
Watching the TDF on street	31.63	Watching the TDF on street	46.49
Others	9.44	Others	10.53
I don't know	8.20	I don't know	0.00
The arrival of the TDF was like a social event to me		The arrival of the TDF was like a social event to me	
Yes	48.54	Yes	54.13
No	51.46	No	45.87
The arrival of the TDF urges me to cycle more		The arrival of the TDF urges me to cycle more	
Yes	2.80	Yes	2.66
No	97.20	No	97.44
The arrival of the TDF may return next year		The arrival of the TDF may return next year	
Yes	69.64	Yes	78.02
No	30.36	No	21.98

### Factor Analysis

A principal component factor analysis with varimax rotation was conducted to examine the underlying dimensions. The 33 impact items yielded eight factors with eigenvalues greater than one. These factors explained 58.81% of the variance. However, two items did not meet the factor loading criteria, and one item did not load highly on any one factor. Therefore, these items were excluded for further analyses. After these adjustments, factor analysis revealed seven factors, representing 30 items that explained 58.42% of the variance. Results of the exploratory factor analysis and reliability analysis are presented in Table 2. The final seven factors were labeled: *economic and tourism development* (8 items), *cultural interest and consolidation* (5 items), *external image enhancement* (3 items), *disorder and conflicts* (5 items), *price increase* (3 items), *excessive spending and mobility problems* (3 items), and *interest in foreign cultures* (3 items). Cronbach alphas ranged from  $\alpha = .61$  to  $\alpha = .84$  and were considered to be satisfactory (Mueller, 1986; Nunnally, 1970).

### Drop-out Analysis

The purpose of this study was to compare residents' perceptions of impacts before and after the arrival of a stage of the TDF in Ghent. All respondents who participated in the pre-event survey were invited to participate in the post-event survey. We obtained a valid post-response rate from 235 residents. This resulted in a drop-out of 40.00%. Before we compare pre- and post-data, it is recommendable to test whether there are differences between the drop-out group and the group of respondents who also participated in the post-event survey. Chi-square statistics revealed no significant differences between both groups for age [ $\chi^2$  (2,  $N = 394$ ) = 1.39,  $p = .50$ ], for gender [ $\chi^2$  (1,  $N = 396$ ) = 0.003,  $p = .95$ ], for occupation [ $\chi^2$  (7,  $N = 395$ ) = 7.08,  $p = .42$ ] and for educational level [ $\chi^2$  (7,  $N = 394$ ) = 13.32,  $p = .07$ ]. Independent sample  $t$ -tests revealed no significant differences between both groups on the seven impact dimensions. Therefore, we concluded that the drop-out group and the group of respondents who also participated in the post-event survey have a similar socio-demographic profile. Moreover, as we found no significant differences between both groups on the seven impact dimensions, we concluded that there is no selection bias that might influence our conclusions.

### Residents' Expected and Perceived Impacts of Hosting the Arrival of the TDF

Table 3 presents the means and standard deviations of the seven impact factors before and after hosting the arrival of the TDF. Overall, the means of the impact factors of the pre-event survey are slightly higher compared to the means of the impact factors of the post-event survey. The most highly expected benefit prior to the TDF was *external image enhancement*, and the most highly expected problem was *excessive spending and mobility problems*. Prior to the arrival of the TDF, residents did not perceive *interest*

Table 2. Principal component factor analysis with varimax rotation and reliability analysis.

Factors	Factor loadings							Communalities	Eigenvalues	% of variance	Cronbach's Alpha
	1	2	3	4	5	6	7				
1. Economic and tourism development									4.35	14.51	.84
Improved the economic conditions	.72	.02	.24	.06	.04	-.09	.15	.61			
Increased investment in Ghent	.70	.06	.23	.06	-.04	.10	.17	.60			
Enhancement of cycling road in and around Ghent	.69	.15	-.01	.05	.18	-.03	.05	.53			
Enhancement of tourism infrastructure	.67	.27	.03	.02	-.07	.20	.17	.60			
Accelerated the economic growth of Ghent	.60	.09	.36	-.03	.19	-.08	.09	.54			
Increased employment	.60	.12	.10	.00	-.03	-.07	.29	.47			
Enhancement of preserving heritage tourism resources	.55	.40	.01	.06	.34	-.06	-.04	.58			
Increased leisure facilities with accentuation of Ghent as a cycling city	.45	.29	.23	-.18	.15	.02	-.10	.41			
2. Cultural interest and consolidation									2.59	8.62	.77
Increased number of cultural events	.20	.72	.13	-.14	.06	-.07	.18	.64			
Enhanced pride of Ghent residents due to being hosts	.33	.62	.31	.10	-.08	-.20	.02	.65			
Increased interest in international cycling events	.01	.60	.25	-.05	.10	-.04	.41	.61			
Reinforced community spirit	.33	.53	.31	.00	-.06	-.20	.02	.53			

**Table 2** (*Continued*)

Factors	Factor loadings							Communalities	Eigenvalues	% of variance	Cronbach's Alpha
	1	2	3	4	5	6	7				
Enhanced embellishment of Ghent	.47	.50	.04	-.14	.06	.29	.00	.57			
3. External image enhancement									2.42	8.06	.80
Improved image of Ghent internationally	.22	.22	.82	.00	.07	.00	.01	.76			
Increased opportunity to inform Ghent to the world	.16	.09	.81	-.02	.03	.07	.09	.71			
Enhanced recognition of Ghent internationally	.26	.36	.66	.08	-.10	.10	.09	.66			
4. Disorder and conflicts									2.39	7.98	.72
Increased noise	-.01	-.10	-.05	.80	.12	.02	.02	.67			
Brought disturbance and disorder by visitors	.07	.00	.01	.73	.13	.23	.01	.60			
Increased garbage on the streets	-.02	.02	.17	.68	-.24	.25	-.02	.61			
Lack of parking places	.16	.08	-.14	.46	-.13	.41	-.30	.54			
Brought conflicts and antagonism between visitors and residents	-.01	-.24	-.03	.46	.34	.12	.15	.42			
5. Price increase									2.32	7.72	.71
Increased speculation of real estate	.08	.02	.06	-.02	.84	.00	.03	.71			
Increased price of houses	.23	.08	-.03	.12	.75	-.06	.14	.67			
Increased price of daily products	-.01	.01	.01	.00	.66	.09	.01	.45			

Table 2 (Continued)

Factors	Factor loadings							Communalities	Eigenvalues	% of variance	Cronbach's Alpha
	1	2	3	4	5	6	7				
6. Excessive spending and mobility problems									1.83	6.11	.61
Excessive spending of government of Ghent for hosting the TDF	-.11	-.14	.04	.14	.16	.73	.17	.64			
Increased inaccessibility of houses	.08	-.13	.09	.20	.04	.66	-.05	.51			
Increased congestion	-.03	.07	-.01	.36	-.12	.53	-.16	.46			
7. Interest in foreign cultures									1.63	5.43	.67
Increased interest in foreign languages	.35	.13	.05	-.03	.17	-.01	.65	.59			
Increased tourist information facilities	.44	.09	.10	.16	-.09	-.05	.55	.56			
Increased interest in foreign cultures	.40	.32	.03	-.09	.23	.04	.55	.63			

Note: N = 396.

**Table 3.** Repeated measures MANOVA for comparison of residents' perceptions on the impact dimensions before and after the TDF.

Factors	Mean (SD)		F-test	df	p-value
	Before (pre-event survey)	After (post-event survey)			
Positive impact factors (benefits)					
1. Economic and tourism development	4.05 (1.02)	3.89 (1.04)	9.65**	1	<.01
2. Cultural interest and consolidation	4.55 (1.15)	4.58 (1.07)	0.31	1	.58
3. External image enhancement	5.31 (1.11)	5.12 (1.27)	5.80*	1	.02
4. Interest in foreign cultures	3.53 (1.06)	3.57 (1.14)	0.29	1	.59
Negative impact factors (problems)					
1. Disorder and conflicts	4.90 (0.97)	4.11 (1.12)	105.68**	1	<.01
2. Price increase	2.75 (1.12)	2.83 (1.17)	1.57	1	.21
3. Excessive spending and mobility problems	5.64 (0.99)	5.12 (1.10)	53.22**	1	<.01

Notes: N = 235; \* $p < .05$ ; \*\* $p < .01$ .

*in foreign culture* as an expected benefit as the mean was below average. Conversely, residents also rated the factor *price increase* below average, indicating that they did not perceive this factor as an expected problem of hosting the arrival of the TDF. From the post-event survey, we observed that residents perceived *external image enhancement* as the highest positive impact of hosting the arrival of the TDF, whereas they perceived *excessive spending and mobility problems* as the highest negative impact. After the TDF, residents did not perceive *economic and tourism development*, and *interest in foreign cultures* as benefits, and they agreed that *price increase* was not a cost.

Repeated measures MANOVA revealed a significant change in residents' perceptions over time (Wilks' Lambda = 0.62,  $F(7, 235) = 19.74$ ,  $p < .01$ ). Follow-up univariate tests were performed to analyze which dimensions were significantly different over time. There was a significant difference ( $p < .01$ ) between the mean of the pre-event survey and the post-event survey for the dimension *economic and tourism development*. However, the one sample *t*-test (Table 4) indicated that the means of this impact factor were not significantly different from the point of indifference. There was also a significant difference ( $p < .05$ ) between the mean before and after hosting the TDF for the positive impact dimension *external image enhancement*. Moreover, there were also significant differences for two negative impact dimensions. There was a significant difference ( $p < .01$ ) for *disorder and conflicts* before and after hosting the TDF, and for *excessive spending and mobility problems* ( $p < .01$ ) before and after hosting the TDF. The one sample *t*-tests (Table 4) indicated that the means of most positive and

**Table 4.** One sample t-test for the impact dimensions before and after the TDF and the point of indifference.

Factors	Before (pre-event survey, N = 396)			After (post-event survey, N = 235)		
	t-test	p-value	Mean difference	t-test	p-value	Mean difference
Positive impact factors (benefits)						
1. Economic and tourism development	0.45	.66	0.02	-1.56	.12	-.106
2. Cultural interest and consolidation	8.79**	<.01	0.52	8.29**	<.01	0.58
3. External image enhancement	21.97**	<.01	1.28	13.50**	<.01	1.12
4. Interest in foreign cultures	-8.14**	<.01	-0.46	-5.82**	<.01	-0.43
Negative impact factors (problems)						
1. Disorder and conflicts	17.94**	<.01	0.89	1.53	.13	0.11
2. Price increase	-21.39**	<.01	-1.20	-15.25**	<.01	-1.17
3. Excessive spending and mobility problems	30.59**	<.01	1.63	15.56**	<.01	1.12

Notes: Point of indifference = 4; \* $p < .05$ ; \*\* $p < .01$ .

negative impact factors were significantly different from the point of indifference, indicating that respondents had a distinct opinion about the impacts of hosting the TDF.

### Residents' Expected and Perceived Impacts of Hosting the Arrival of the TDF as Predictors of Residents' Willingness to Host the TDF Next Year

Two logistic regression models were conducted to assess the relationship between residents' willingness to host the TDF next year, the seven expected and perceived impacts of hosting the arrival of the TDF, and socio-demographic variables. The seven impact factors and the socio-demographic variables were the predictors and residents' willingness to host the TDF next year was the criterion variable. The Hosmer-Lemeshow statistic for goodness-of-fit showed that the data fit the model well for both the pre-event survey ( $\chi^2 = 11.91$ ,  $p = .16$ ) and the post-event survey ( $\chi^2 = 7.87$ ,  $p = .45$ ). In addition, the Nagelkerke R-squared statistic showed that the predictor variables explained 43.8% of the variance for residents' willingness to host the TDF next year for the data of the pre-event survey, and 33.2% of the variance for the data of the post-event survey.

As shown in Table 5, the dimension *cultural interest and consolidation* and the dimension *excessive spending and mobility problems* were significantly associated with the willingness to host the TDF in the future. For

**Table 5.** Logistic regression results relating residents' willingness to host the TDF next year and the expected (pre-event survey) and perceived (post-event survey) impacts of hosting the TDF.

Impact factors	Before (pre-event survey, $N = 396$ )				After (post-event survey, $N = 235$ )			
	B	SE B	EXP(B)	$p$ -value	B	SE B	EXP(B)	$p$ -value
Positive impact factors								
1. Economic and tourism development	-.02	.20	.98	.90	-.64*	.310	.53	<.05
2. Cultural interest and consolidation	.96**	.18	2.61	<.01	.81**	.29	2.26	<.01
3. External image enhancement	.19	.15	1.21	.18	.16	.19	1.17	.42
4. Interest in foreign cultures	-.01	.17	.99	.94	-.01	.17	.99	.94
Negative impact factors								
1. Disorder and conflicts	-.31	.17	.73	.06	-.05	.21	.95	.81
2. Price increase	-.29*	.13	.75	<.05	-.17	.20	.85	.40
3. Excessive spending and mobility problems	-.59**	.17	.56	<.01	-.83**	.24	.44	<.01
Socio-demographic variables								
Gender (male)	-.18	.28	.84	.53	.06	.38	1.06	.88
Age	-.04**	.01	.96	<.01	-.04**	.01	.96	<.01
Educational level	-.22*	.11	.80	<.05	-.49**	.16	.61	<.01

Notes: \* $p < .05$ ; \*\* $p < .01$ .



every one unit increase in the dimension *cultural interest and consolidation*, the odds of willingness to host the TDF (versus non-willingness) increased 2.61 in the pre-event survey and 2.26 in the post-event survey. However, for every one unit increase in the dimension *excessive spending and mobility problems*, the odds of willingness to host the TDF decreased by 0.56 and 0.44 in the pre-event survey and the post-event survey, respectively. Before the arrival of the TDF, the negative impact factors *disorder and conflicts* and *price increase* were also significant predictors of the willingness to host the TDF in the future. The higher residents scored these factors, the less likely they were willing to host the TDF in the following year. The socio-demographic variables of age and educational level were significantly associated with the willingness to host the TDF in the future. For every one unit increase in age, the odds of willingness to host the TDF (versus non-willingness) decreased by 0.96 in the pre-event survey, and by 0.96 in the post-event survey. For every one unit increase in educational level, the willingness to host the TDF (versus non-willingness) decreased by .80 in the pre-event survey and .61 in the post-event survey.

## Discussion

This study analyzed residents' perceptions of impacts of hosting a stage of the 2007 TDF in Ghent. Results revealed that residents' perceptions of the impact of hosting the TDF have changed over time. Before the arrival of the TDF, residents expected that the event was an excellent means for city marketing and for obtaining cultural benefits, while they recognized that hosting the event would come with a cost. After the TDF, residents still perceived the cultural and image benefits as positive but they indicated that the negative impacts were less than they had expected. The positive impact factor *cultural interest and consolidation* and the negative impact factor *excessive spending and mobility problems* were significant predictors of residents' willingness to host the TDF in the future. Our results partially correspond with Bull and Lovell (2007). Bull and Lovell found that Canterbury residents believed that the arrival of the TDF would result in increased tourism and boost the local economy, whereas Ghent residents did not perceive that the TDF would affect economic and tourism development. Ghent residents perceived far more cultural benefits than Canterbury residents. Both Canterbury and Ghent residents, however, believed that the TDF is an excellent vehicle to promote the city.

In contrast to most other major sport events, the TDF is not exclusively linked with one host city. Each of the 20 stages of the contest starts and finishes in another host city. Therefore, as the TDF organization has only a limited time effect on the daily operations of the host city, one might assume that the impact on its residents is minimal. Our study suggests that residents also form opinions about the impact of events held for a short period of time, in addition to events that are held for longer periods of time. One explanation might be that Ghent took the opportunity to transform the contest into a social event. A lot of social activities were organized as a result

of the arrival of the TDF in Ghent. It might be that the preparation and the organization of these social and cultural activities, along with the organization of the contest, had a higher impact on residents. Moreover, the TDF received a lot of local, national and international media attention. It is possible that extreme media attention also influenced and strengthened residents' perceptions of impacts of hosting this major sport event.

Local authorities are often unaware of, or choose to ignore, possible negative impacts that might result from hosting an event. They often only stress the positive impacts, such as economic benefits, to justify the hosting of the event. Negative impacts, however, may be the cause of residents taking a hostile attitude towards the hosting of the sport event. Social and cultural impact studies are excellent means to reveal perceptions of residents towards hosting major sport events and the results should be used as a means to enhance social leverage. Overall, perceived benefits and costs of hosting the arrival of the TDF were significantly lower than expected benefits and costs. However, if we consider the practical significance of the results, residents' perceptions did not change drastically over time. If residents rated an expected impact factor as positive, the perceived impact factor remained positive but not quite as high. Further research might focus on the reasons why perceptions of residents did not change drastically over time. If residents indicate that they have been informed well in advance about the several impacts of the TDF, these strategies used to do so might be a first step in the process of leveraging the event.

Residents were most likely to consider *external image enhancement* to be the most positive impact as a result of hosting the arrival of the TDF. They considered *excessive spending and mobility problems* as the most negative impact of hosting the event. Although residents are aware of the opportunity for the city of Ghent to promote itself to the world, residents are often not willing to accept the negative impacts that affect their personal life, such as noise, disturbance, traffic problems and a lack of parking places. Some of these impacts, such as traffic problems, may be unavoidable to a certain degree. It is important that local authorities develop a master plan where all aspects related to the hosting of the event are mapped. This will help local authorities to develop a strategy that enhances positive impacts and diminishes negative impacts associated with hosting the event. For example, local authorities should not only alert residents in advance about traffic restrictions, but they could also offer alternatives to residents directly affected. The possibility for residents to use free public transport during the event or offering free or alternative parking places for residents who live along the course of the TDF might be excellent means to diminish the perceptions of negative impacts of hosting the event. Noise pollution is also to some extent inevitable during the event. Local authorities can inform residents in advance about the extent of noise during the day and night so that residents are aware of the possible nuisance.

Besides the analysis of residents' perceptions on the impact of hosting the TDF, the regression analysis reveals interesting information about the determinant factors of being willing to host the TDF in the future.

The positive impact factor *cultural interest and consolidation* and the negative impact factor *excessive spending and mobility problems* were significant predictors of residents' willingness to host the TDF in the future. Thus, if the cultural benefits do not exceed the costs of hosting the TDF and traffic problems, the social exchange will be perceived as negative. In this situation, it is more likely that residents will be unwilling to host the event in the future. The fact that the *cultural interest and consolidation* factor is a significant predictor of willingness to host the TDF in the future, is an interesting finding. Although residents scored this factor only as moderately high in the repeated measures MANOVA, the means were significantly different from the point of indifference. Thus, although residents' perceptions of this factor did not change significantly over time, residents had a distinct opinion about the impact of this factor. Ghent residents perceived that there was no increase in the number of events, nor that there was an increase in community spirit or embellishment of the city. Thus, if local authorities do not pay enough attention to the contents of this factor, they run the risk of negative public support to host the TDF in the future. The same is true for the *excessive spending and mobility problems* factor. If they do not succeed in decreasing perceptions that the event generates mobility problems and has an excessive hosting cost, local authorities run the risk of losing public support to host the TDF in the future.

Another remarkable finding is the negative prediction of the *economic and tourism development* factor. The results indicate that the more residents believe the TDF generates economic and tourism development, the less willing they are to host the TDF next year. This result is significant for the data of the post-event survey. This finding contrasts assumptions in the literature that the expected economic impact of hosting a major sport event is a benefit for the community (Getz, 2005; Gursoy, Kim, & Uysal, 2004). Our findings suggest that Ghent residents do not perceive that an economic boost is a positive impact. However, the means of this impact factor are not significantly different from the point of indifference, indicating that residents have no clear opinion about this impact factor. An explanation for this remarkable finding might be that residents perceive the possible negative impacts on their lives associated with economic growth and tourism development. More economic development implicates more noise and traffic pollution, growth of industrial sites, perhaps in or around district neighborhoods. Tourism development might be unconsciously associated with inconveniences of city embellishments and inconveniences that tourists may cause. More research is needed to reveal the reasons why this factor might be a negative predictor of willingness to host the TDF in the future.

Results also reveal that the negative impact factors *disorder and conflicts* and *price increase* were significant predictors in the pre-event survey data, but not in the post-event survey data. First, this finding suggests that negative outcomes of hosting a major sport event are particularly important in the prediction of residents' willingness to host the event in the future. Secondly, residents perceived less disorder and conflicts after the TDF than before and they rated the factor *price increase* similar over time. Therefore, it might be that

these factors were no longer predictors after the arrival of the TDF due to the decreased perception of negative impacts. Considering the socio-demographic variables, age and educational level were significant predictors of the willingness to host the TDF in the future. Younger residents are more willing to host the TDF in the future compared to older residents. An explanation might be that older residents are more aware of and perceive more the negative outcomes of hosting a major sport event compared to younger residents. Higher educated residents are also less willing to host the TDF next year. Less educated people may have problems to imagine the real outcomes and impacts of hosting a major sport event compared to higher educated people.

Overall, these results suggest that residents adopt an attitude of “what’s in it for me?” Moreover, it seemed that residents believe a short-term event such as the TDF allows for the realization of cultural benefits rather than economic benefits. Residents are, however, only to some extent willing to accept the costs related to the hosting of the event. As mobility is a daily concern in cities, additional traffic problems are only accepted to some extent. Overall, three-quarters of the residents answered positively on the question whether the arrival of the TDF may return next year. This suggests that most residents evaluated the social exchange as beneficial.

### Limitations and Conclusions

The implications of this study need to be considered along with an understanding of its limitations. First, the nature of the sample limits generalization of the findings. Since only residents of Ghent who lived in the selected survey area were allowed to participate, we may not generalize the findings to all residents of Ghent. Secondly, since we used a quantitative approach, we were not able to obtain a richer and in-depth dataset that could be obtained by using a qualitative approach. A qualitative approach might provide an understanding of other perceived benefits and costs that were not taken up into our survey. Thirdly, since there are few studies that have focused on major sport events that have a very limited physical hosting impact, the conclusions of this study should be treated with caution. More research is needed on the impact of these types of events before overall conclusions can be drawn.

Fourthly, the factor matrix reveals multidimensionality of some items. If the goal of our research had been scale development, we would have had to apply a more rigorous method, and for instance, not include items in scales that also load on other scales. In particular, *brought conflicts and antagonism between visitors and residents*, *increased tourism information facilities*, and *increased interest in foreign culture* loaded only weakly on the dimension to which they were assigned, and loaded at nearly the same level on another dimension. Since the items were summed for each subscale, a systematic error is added to the summed scale score. As a result, we cannot assert that our scales are uncorrelated. In a certain sense we have made the choice for relevance over rigor. Although some items might also load relatively high on another factor, the items contribute to the relevance and content of the factor to which they

were assigned. This choice is reflected in the rather high correlations between the scales (e.g., the correlation of factor 1 and factor 7 is .62).

Residents are concerned with the impact that hosting major sport events has on their personal lives. The results of this study indicate that residents have clear opinions about some short-term impacts of hosting the TDF. Especially the impact factors related to internal and external city marketing are perceived as positive outcomes or predictors. Impact factors related to disorder of daily life and excessive cost of the event are perceived as negative outcomes or predictors. Although there has been a predominant focus on the economic impact of hosting major sport events, the perceived success of an event is often determined by the enthusiasm of the local community (Getz, 1993; Gursoy, Kim, & Uysal, 2004). Therefore, our results suggest that local authorities should establish strategies to maximize positive and minimize negative social impacts. By doing so, it is more likely that residents will support the bidding and hosting of the event, and that the event might create liminality and *communitas* among residents and spectators. Developing a general strategy will also allow for the transformation of the sport event into an urban festival in which all residents are involved. Such strategies facilitate social leverage. As the hosting of major sports events offers opportunities that go far beyond the sports themselves, local authorities should not leave the hosting of the event to merely chance. Major sports events should be leveraged to obtain long lasting positive outcomes.

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**Appendix***Socio-demographic Profile of the Sample*

Pre-event survey (N = 396)		Post-event survey (N = 235)	
Socio-demographic variables		Socio-demographic variables	
	Percent (%)		Percent (%)
Gender		Gender	
Male	49.24	Male	49.15
Female	50.76	Female	50.85
Age		Age	
0–30	34.52	0–30	34.89
31–50	31.73	31–50	33.19
51 and above	33.76	51 and above	31.91
Occupation		Occupation	
Blue-collar worker	7.34	Blue-collar worker	7.69
Employee	34.18	Employee	33.76
Shopkeeper	19.49	Shopkeeper	20.51
Top/senior management	4.30	Top/senior management	4.70
Housewife/man	3.04	Housewife/man	4.70
Student	4.05	Student	4.70
Unemployed	13.42	Unemployed	13.25
Others	14.18	Others	10.68
Educational level		Educational level	
None	2.79	None	2.16
Primary school	6.35	Primary school	3.02
Secondary school		Secondary school	
Lower secondary school	10.91	Lower secondary school	11.64
Higher secondary school	27.66	Higher secondary school	28.02
Higher education		Higher education	
Bachelor	24.11	Bachelor	23.28
Master	23.10	Master	25.00
Postgraduate/doctorate	3.55	Postgraduate/doctorate	4.31
Others	1.52	Others	2.59

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