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### Construct validity of social impact scales for sport events

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## Construct validity of social impact scales for sport events

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## **Construct validity of social impact scales for sport events**

### **Abstract**

This study tests the construct validity of two different social impact scales by comparing the perceived social impact of a non-mega sport event for the same group of respondents. To date, several theories have underpinned the development of various social impact scales, and there is a need for more robust and unified measurement tools. Data were collected from 626 residents in the context of the 2014 Ontario Summer Games (OSG). Event attendees (29%) and non-event attendees (71%) completed a questionnaire (electronically or on paper) which included 17 social impact items, reflecting two previously developed social impact scales (SIS-A consisting of 4 constructs and SIS-B consisting of 5 constructs). Principal Component Analysis showed sufficient convergent validity of theoretical constructs in both scales, but Pearson correlations between the constructs only partially supported discriminant validity. Therefore, EFA was conducted revealing two components: a “positive” and “negative” social impact factor of SIS-A (whether or not a new sport participation variable was included). EFA of SIS-B without the sport participation variable resulted in a similar set of two components. However, when the sport participation variable was added to SIS-B, three components appeared. The positive social impact was now represented by two constructs; the third factor remained the negative social impact factor. An EFA of all 17 items revealed the same three constructs: (1) “Feel-Good and Social Cohesion”, (2) “Social Capital”, and (3) “Conflict and Disorder”. Based on the findings, a scale of 13 items and three constructs is proposed.

*Keywords:* disorder and conflict, feel-good factor, social capital, social cohesion, sport participation

## **Construct validity of social impact scales for sport events**

Work related to economic and tourism impacts of sport events do not show substantial economic growth or sustainable tourism outcomes in host communities. Therefore, researchers have begun to focus their attention on the social value of events (e.g., Gibson, Walker, Thapa, Geldenhuys, & Coetzee, 2014; Inoue, Y. & Havard, 2014; Kaplanidou et al., 2013; Taks, 2013). Given that social impact is an intangible outcome and not directly observable, accurately measuring this concept is challenging. To date, several theories have underpinned the development of various social impact scales, including *Social Exchange Theory* (e.g., Karakadis & Kaplanidou, 2012), *Community Attachment Theory* (e.g., Onyx & Bullen, 2000), and *Social Identity Theory* (e.g., Heere et al., 2013). Vargas-Sanches et al. (2010) recommend using an integrated approach to measuring social impact in order to take into account the multiple dimensions of this concept. Resultantly, there is a need to further develop the scales that exist in the literature, so the research field can rely on more robust and unified measurement tools.

The purpose of this contribution is to test the construct validity of two different social impact scales, by comparing the perceived social impact of a non-mega sport event for the same group of respondents. First we briefly highlight various theoretical frameworks used that have underpinned the development of various social impact scales. Next we elaborate on the various dimensions of social impact that have been measured in previous studies. Subsequently, the method is explained. The results are discussed in light of proposing the best possible scale to measure social impacts of events. This research adds to the body of knowledge on social impacts of sport events by refining and streamlining the measurements tools for doing so.

## **Theoretical frameworks**

Several theories have supported the development of social impact scales, including *Social Exchange Theory* (e.g., Karakadis & Kaplanidou, 2012), which states that residents will willingly become involved in a social exchange if the perceived benefits outweigh the costs of involvement. *Community Attachment Theory* (e.g., Onyx & Bullen, 2000) posits that the perceptions of community residents toward hosting a sport event are largely impacted by the extent to which an individual feels connected to and involved in the community at large; trust and reciprocity are considered to be important factors. *Social Identity Theory* (e.g., Heere et al., 2013) has also impacted the development of social impact scales. Similar to *Community Attachment Theory*, the perceptions of residents regarding a community endeavour (e.g., hosting an event) are correlated with their personal connection to and involvement within the community.

Although there have been various theories used as theoretical frameworks for measuring social impacts, Vargas-Sanchez, Porrás-Bueno, and Angeles Plaza-Mejía (2010) recommend an integrated approach in order to take into account the multiple dimensions of this concept. The differing frameworks used should be thought of as compatible and interconnected, rather than separate and exclusive (Vargas-Sanchez et al., 2010). Thus, there is a need to further develop these scales, so that the research field can rely on more robust and unified measurement tools.

## **Literature Review: Measuring Social Impacts**

Although researchers have not yet developed a unified, validated measurement tool to assess social impacts in the context of sport events, there are various dimensions

of social impacts that are commonly measured. These common dimensions have been largely built on existing social impact scales to measure perceptions of residents toward both sport and tourism generally. For example, items related *social cohesion* (e.g., Heere et al., 2013), and *social capital* (e.g., Gibson et al., 2014) are frequently used to capture feelings of trust and safety, tolerance, and relationships that may arise through hosting a local sport event. Items related to the *psychological, feel-good factor* (e.g., Maennig & Porche, 2008), *community spirit and pride* are also typically employed to capture potential feelings of celebration, joy and satisfaction that may surround a sport event (e.g., Naylor et al., 2012). Furthermore, researchers have also measured *community engagement*, which is related to collective action (social agency and proactivity) in the community (e.g., Heere et al., 2013). The dimensions of the *psychological, feel-good factor, social cohesion, community spirit and pride, and community engagement*, have been measured in multi-faceted ways, but are all designed to capture the potential positive social impacts that may beneficially affect residents of a community that hosts a sport event.

Although a sport event may positively impact the social well-being of community residents, there is also the potential of an event negatively impacting the community. To capture these possible impacts, researchers commonly measure the dimension of *disorder and conflict*. For example, Balduck et al. (2011) developed survey items to measure perceptions of disruption to everyday life, such as extra traffic, reduced parking places, extra garbage, and friction between residents and visitors. This dimension is also in line with Social Exchange Theory, which states that a resident will only support community endeavours (e.g., hosting a sport event) if the perceived benefits outweigh the costs.

Lastly, specifically in the sport event domain, some researchers have also shown interest in capturing *sport and physical activity participation* impacts as they relate to hosting an event (e.g., Karadakis & Kaplanidou, 2012). Using the recommended integrated approach (Vargas-Sanchez et al., 2010) to measure social impacts in the context of sport events allows researchers to capture multiple important dimensions related to the perceptions of impacts by community residents.

The purpose of this current study was to test the construct validity of two different social impact scales, by comparing the perceived social impact of a non-mega sport event for the same group of respondents. Both event attendees (EA) and non-attendees (NA) were included as both groups can be impacted by the hosting of events (e.g., Karadakis, K. & Kaplanidou, 2012; Kaplanidou et al. 2013). Both scales were based on the social dimensions described previously.

## **Method**

### **Sample and Data Collection**

Data were collected in the context of the 2014 Ontario Summer Games (OSG), a multi-sport event which attracted 3500 athletes between the ages 13 and 20. The event was hosted in a medium sized city in Canada. A total of 626 residents' responses were collected. Event attendees (29%) filled out the paper questionnaire on site at the time of the event. Non-event attendees (71%) were intercepted in a public space over the course of four separate days around the time of the event to fill out the questionnaire (electronically or on paper).

## Questionnaire and Measurements

The data set included 17 social impacts items, measured on a 7-point Likert scale from 1 = strongly disagree to 7 = strongly agree), and reflect two previously developed scales.

- *Social Impact Scale A (SIS-A)*: consisting of 4 constructs: (1) psychological, feel-good factor (4 items); (2) social cohesion, community pride and engagement (4 items); (3) disorder and conflict (4 items), and (4) a newly added construct: sport participation and physical activity (1 item).
- *Social Impact Scale B (SIS-B)* consists of 5 constructs: (1) social cohesion (3 items); (2) community spirit and pride (4 items); (3) disorder and conflict (4 items); (4) community engagement (1 item), and (5) sport participation and physical activity (1 item, newly added and similar to SIS-A).

## Data Analysis

EFA (Principal Component Analysis) was used to test the construct validity of the scales. The following scenarios were being tested: (1) convergent and discriminant validity of the original constructs in both scales; (2) EFA of both scales (without and with the newly added sport participation variable); and, (3) EFA for all variables in the data set (combining all items of SIS-A and SIS-B). Inter-reliability (Cronbach's Alpha scores) was tested for all constructs. Based on the analyses, the best possible alternative is proposed.

## **Results**

### **Convergent and Discriminant Validity of the Original Constructs**

All constructs in both scales showed sufficient convergent validity, with Eigenvalues higher than 2, percentages of explained variance higher than 60%, and inter-reliability scores between 0.74 and 0.87. All factor loadings for the items within each construct exceeded 0.70, and communality scores ranged between 0.51 and 0.77 (see Table 1). While these results show support for convergent validity, there is only partial support for discriminant validity as the correlations between some constructs exceed  $r=.80$  ( $p<.001$ ), reflecting high associations between some constructs (see Tables 2 & 3).

[INSERT TABLES 1, 2 and 3 ABOUT HERE]

### **Construct Validity of Both Scales**

EFA of SIS\_A resulted in two components whether or not the new sport participation variable was included (see Table 4). The original constructs “psychological, feel-good factor”(4 items) and the “social cohesion, community pride and engagement factor” (4 items) load on one factor (with Eigenvalues  $> 5.19$ , VE  $> 42\%$ , and  $\alpha=0.91$ ). The second component aligned with the original “disorder and conflict factor” (4 items; Eigenvalues  $> 2.28$ , VE  $> 17.91\%$ , and  $\alpha=0.80$ ). These two factors reflect a “positive” and “negative” social impact factor respectively. When sport participation is included, a similar picture arises, with the sport variable loading high on the positive social impact factor.

[INSERT TABLE 4 ABOUT HERE]

EFA of SIS-B without the sport participation variable resulted in a similar set of two components, with all eight positive social variables loading on component 1

(Eigenvalue=4.848, VE=40.40%, and  $\alpha=0.90$ ), and all four “disorder and conflict” items loading on component 2 (Eigenvalue=2.376, VE=19.80%, and  $\alpha=0.79$ ; see Table 5). When the sport participation variable was added to SIS-B, three components appeared. The positive social impact is now represented by two constructs: (1) Social Cohesion; and, (2) Social Capital. The “Social Cohesion” construct included the four social cohesion items and 1 feel-good item (Eigenvalue=5.247, VE=40.36%, and  $\alpha=0.88$ ). The “Social Capital” construct included the three social capital items and the new sport participation variable (Eigenvalue=2.436, VE=18.74%, and  $\alpha=0.86$ ). The third construct remained the “Disorder and Conflict” factor or the negative social impact factor (4 items; Eigenvalue=1.135, VE=8.73%, and  $\alpha=0.79$ ).

[INSERT TABLE 5 ABOUT HERE]

### **Construct Validity of All Items Combined**

An EFA of all 17 items revealed the same three constructs (See Table 6): (1) “Feel-Good and Social Cohesion” (7 items: 3 feel-good variables and 4 social cohesion items; Eigenvalue=6.709, VE=39.47%, and  $\alpha=0.91$ ), (2) Social Capital (4 items: 3 social capital items, and 1 sport participation variable; Eigenvalue=2.925, VE=17.21%, and  $\alpha=0.86$ ), and (3) “Conflict and Disorder” (5 items; Eigenvalue=1.253, VE=7.37%, and  $\alpha=0.84$ ).

[INSERT TABLE 6 ABOUT HERE]

### **Discussion**

The negative social impact factor “Disorder and Conflict” consistently appeared as a standalone factor, even if different sets of items were being used. Adding the sport

participation variables into mix added an important dimension to the initial, one-dimensional positive social impact, as two distinctive positive social impact constructs appeared: a “Feel-good factor & Social Cohesion” and a “Social Capital” dimension. Based on the findings, a scale of 13 items and three constructs is proposed. The proposed scale also captures measurement of social impact utilized in other scales such as: community excitement, community attachment, event excitement, community pride, social camaraderie (e.g., Inoue, Y. & Havard, 2014), and interconnection, interdependence, and social connectedness (e.g., Heere et al., 2013). The proposed scale needs to be tested in a variety of future events, and in different contexts and settings, to test its consistency. More robust and unified measurement tools will assist to develop event typologies that map different types of sport event and their context with their specific outcomes.

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