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# IT'S ALL ABOUT THE GAMES! 2010 VANCOUVER OLYMPIC AND PARALYMPIC WINTER GAMES VOLUNTEERS

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Despite volunteers being essential for the success of many mega sport events, there is little known about what motivates them to volunteer at such events. This study aims to address this gap. This article commences by developing Getz's event portfolio into a new expanded sport event typology. It continues by presenting the results to three key questions: (1) Who is volunteering? (2) What are their motivations for volunteering, and (3) What variables are most likely to be related to their intention to volunteer after the event. The study used an adaptation of the Special Event Volunteer Motivation Scale on volunteers at the 2010 Vancouver Olympic and Paralympic Winter Games. A principal components analysis of the 36 motivation items identified six factors that accounted for 58.3% of the variance, with the main factor entitled "All about the Games." A regression analysis conducted to identify those variables most likely to indicate an intention to volunteer more after the Games demonstrated that those who could see an advantage in more volunteering pregames were most likely to intend to increase their level of volunteering postgames. People with previous volunteering experience in events, sport, or community groups were less likely to indicate they would volunteer more after the event. The results and recommendations have implications for mega-multisport event organizing committees not just in respect of event delivery but in terms of a post-event volunteer legacy.

Key words: Sport events; Volunteers; Motivations; Olympics; Paralympics; Legacy

## Introduction

Volunteers are essential for the successful running of most sporting events, from local competitions to Olympic Games. Mega-events are particularly dependent upon volunteers; Rogge (2001) believes that without their contribution it is doubtful that these events would proceed, as the costs that are already substantial would become unsustainable. Both bidding for and hosting these events requires

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significant investments of time and money (Andranovich, Burbank, & Heying, 2001; Burbank, Andranovich, & Heying, 2002; Gold & Gold, 2008), which are, in part, justified by economic development, infrastructure, tourism development, and, more recently, the potential legacy of skilled and trained volunteers who would be able to contribute to future events, tourism, and community activities after the Games (Associated Press, 2005; Department for Culture Media and Sport, 2008; Sochi 2014, 2009; Vancouver Organizing Committee [VANOC], 2007). For the Vancouver 2010 Olympic and Paralympic Winter Games it was suggested that the "unique experience of contributing to an international event will create an enhanced talent pool of volunteers for BC [British Columbia] and Canada and provide increased awareness about the passion for, and benefits of, volunteerism across the country" (VANOC, 2007, p. 36). Similarly, Volunteering England (2011) believed that the London 2012 Games experience will "transform the volunteering landscape in Britain," while Dmitry Chernyshenko, the CEO of Sochi 2014, suggested that they would deliver the greatest legacy of any Winter Games including "an invaluable legacy of a volunteering culture in Russia which will benefit the nation for years into the future" (Sochi 2014, 2011). However, as alluded to in this research, organizing committees interested in postevent legacies may need to consider whether they are recruiting simply to deliver an event or whether, through more strategic recruitment, orientation, and training processes, the volunteers may be developed to deliver on the promise of a post-Games volunteer legacy.

Despite the essential contribution of volunteers to the success of these events and the rhetoric that there will be a volunteer legacy for the community beyond the Games; the concept of a volunteer legacy is not part of the Olympic bid criteria nor included in the Olympic Games Impact studies (e.g., OGI-UBC Research Team, 2009; Price Waterhouse, 2005). Further, as will be demonstrated below, it has not been a key research foci in the academic literature. Little is known about what motivates the volunteers at such events or whether the event acts as a catalyst to increase postevent volunteering levels. The volunteering increase may be either as a result of more people volunteering, or existing volunteers volunteering more, thus leaving a social legacy for the community beyond the life of the event. The research to date on sport event volunteer motivations has tended to have small sample sizes and often report on single sport events. A significant gap exists in the literature around mega-multisport event volunteers such as those giving their time to Olympic and Paralympic Games.

The purpose of this study is to address this gap through conducting a large-scale survey of mega-multisport event volunteers at the Vancouver 2010 Olympic and Paralympic Winter Games. This is achieved through using an adaptation of the Special Event Volunteer Motivation Scale (SEVMS) (Farrell, Johnston, & Twynam, 1998) with additional questions exploring demographics, previous volunteering, and future volunteering intentions. Understanding volunteers' motivations and their intention to volunteer after the event will assist future event managers in the recruitment, training, task allocation, and retention of volunteers. It will also enable those developing strategies for future volunteer scenarios to enhance the potential for a greater social legacy after the event through greater insight into volunteer motivations and influences upon intentions to volunteer more. This insight can then be used to help form effective human resource and event management strategies to maximize any volunteer legacy potential.

Thus, this article initially discusses the theoretical background to the research by building upon Getz's (2005) event portfolio and presenting a new expanded sport event typology. Further, previous sport event volunteer motivations research is discussed, followed by an outline of the research design. The results section is presented by outlining the findings to the three key questions used for this research: i) Who is volunteering? ii) What are their motivations for volunteering? and iii) What variables are most likely to be related to their intention to volunteer more after the event. The final section provides further discussion and notes implications for future event managers and the potential for further research.

### *The Event Portfolio and a New Sport Event Typology*

Mega-events have been defined as those which "are typically global in their orientation and require

a competitive bid to 'win' them as a one-time event for a particular place" (Getz, 2008, p. 408). Mega-sport events include such spectacles as the Olympics, Paralympics, and FIFA and Rugby Union World Cups. Getz (2005) distinguishes mega-events from hallmark events by suggesting that the hallmark events become "inextricably linked [to the destination] such as the Mardis Gras and New Orleans" (p. 17). Examples of hallmark sport events include the Wimbledon Tennis Championships, Monaco Grand Prix, and the Melbourne Cup. Building upon Getz's (2005) event portfolio, Table 1 demonstrates how Getz's (2005) model could be expanded to include not just local/regional events, hallmark, and mega-events, but national events that currently do not fit easily within Getz's (2005) model (e.g., The Canadian Women's Curling Championships). The new sport event typology also adds a further dimension via distinguishing between those that are multi-sport events, such as the Olympics and the Masters Games, versus those that are single sport events such as golf or tennis opens, or curling or surfing events. One means of differentiating between a single sport event versus a multisport event may be to consider the number of local, national, or international sport organizations that are involved, this emphasizes the diverse nature and scale of sport events. Examples have been given in Table 1, as well as relevant volunteer research, to demonstrate the sport event typology and to highlight future research opportunities.

Consideration of the eight subsets of events makes it clear that to consider volunteers across these events as the same, in terms of their motivations and behaviors, would be to underestimate the complexity of the volunteer community. Research needs to differentiate in order that those managing volunteers may be sure to maximize their event contribution and potential legacy. Mega-multisport events, such as the Olympics and Paralympics, present a unique challenge in volunteer management in that, in contrast to other volunteering situations such as sporting clubs or organizations (e.g., Cuskelly, Taylor, Hoye, & Darcy, 2006; Kim, Chelladurai, & Trail, 2007), cultural institutions (e.g., Edwards, 2005), or even regional, national, or hallmark sporting events (e.g., Bang, Won, & Kim, 2009; Doherty, 2009; Twynam, Farrell, & Johnston, 2002; Williams, Dossa, & Tompkins, 1995); these events are episodic or, more usually, one-off for the host community and the volunteers alike. This means that the motivations and the legacy potential may vastly differ from other sport events or sport volunteering scenarios where events may occur more frequently or the volunteer demand is more continuous. In the absence of research it is not possible to ascertain what, if any, differences may exist between volunteers in different event situations or what event management implications flow from those differences.

Given the substantial financial, political, and social investment in mega-multisport events, the high media profile, and the importance of volunteers for their success, it is surprising that there is limited research that explores the motivations of

Table 1
Sport Event Typology (Adapted From Getz, 2005)

| | Local or Regional Events | National Events | International and/or Hallmark Events | Mega-Events |
|---|---|---|---|---|
| Multisport events | School sport event days or weeks (UK)<br>Local and regional track and field meets (Canada) | National Special Olympics and Malaysian Paralympiad (Khoo & Englehorn, 2007, 2011) | Ara Fura Games (Australia)<br>Indigenous Games (North America)<br>Highland Games (Scotland)<br>Macabean Games (Israel) | Olympics (Bang, Alexandris et al., 2009; Giannoulakis et al, 2008)<br>Paralypmics<br>World Masters Games (Edwards et al., 2009) |
| Single sport events | Capital City Marathon (Strigas & Newton, 2003)<br>Life Time Fitness triathlon (Bang, Won, et al., 2009) | Canadian Curling Championships (Farrell et al., 1998) | Melbourne Cup Horse Racing<br>Monaco Grand Prix<br>Wimbeldon Tennis Championships | FIFA World Cup (Bang & Chelladurai, 2003)<br>Rugby World Cup<br>IAAF World Championships |

volunteers at these events. The majority of the motivation research undertaken has tended to assume homogeneity of volunteers either within events or across events, ignoring the potential differences between volunteers across event types as mooted in Table 1. The timing of the data collection has often been before the Games (Bang, Alexandris, & Ross, 2009; Fairley, Kellett, & Green, 2007; Wang, 2004), with narrow data collection methods, such as within a single sport venue (Bang, Alexandris, et al., 2009; Giannoulakis, Wang, & Gray, 2008). Further, the sample sizes have often been small in contrast to the numbers of volunteers required (Table 2), and the lack of attention paid regarding the representativeness of the samples, there is ample scope to further investigate mega-sport event volunteering, particularly in relation to the legacy potential given the growth in the number of volunteers attracted to these events. As can be seen in Table 2 the number of volunteers required to conduct an Olympic and Paralympic Winter Games event has grown from under 11,000 in the 1980s and 1990s to around 25,000 in the new millennium (2002–2014) with more than 77,000 applying for the Vancouver 2010 Games alone (VANOC, 2010).

### *Sport Event Volunteer Motivation Research*

Following is a review of the sport event volunteer motivation research across local, regional, national, hallmark, and mega-sport events where factor analysis has been conducted. The research draws upon three different instruments, the Special Event Volunteer Motivation Scale (SEVMS), a questionnaire developed by Wang (2004), and the Volunteer Motivation Scales– International Sport Events (VMS-ISE). Table 3 provides a summary of the research discussed below, highlighting the Games being researched, the sample size and sampling method, the instrument used, the timing of the research (pre- and/or post-Games), and the factors identified.

Farrell et al. (1998) developed the SEVMS in research on an elite national sport event, the Canadian Women's Curling Championships, and used the 28-item scale with 137 respondents. They identified four factors with loadings down to 0.285 and some cross-loadings. The two main factors were "purposive" and "solidary," where the former factor focused upon making a "desire to do something useful and contribute to the community and the event" (p. 293), while the latter emphasizes "social interaction, group identification, and networking" (p. 293). Strigas and Newton Jackson (2003) adapted the SEVMS through a review of other literature to develop a 40-item scale to research the 85 volunteers at a local/regional event, Florida's Capital City Marathon. From the 60 responses they identified five factors, with loadings down to 0.417, which together accounted for 56.0% of the variance. "Material" and "purposive" were the primary factors, where material reflected a utilitarian or career focus, while purposive, similar to Farrell et al. (1998), related to a contribution to the "sport event and the community" (p. 119).

Table 2
Volunteers for Winter Olympic and Paralympic Games

| Year | Location | Olympics | Paralympics |
|---|---|---|---|
| 1980 | Lake Placid | 6,703 | no data |
| 1984 | Sarajevo | 10,450 | no data |
| 1988 | Calgary | 9,498 | no data |
| 1992 | Tignes | 8,647 | no data |
| 1994 | Lillehammer | 9,054 | no data |
| 1998 | Nagano | 32,000 | no data |
| 2002 | Salt Lake | 22,000 | 3,500 |
| 2006 | Torino | 18,000 | 3,300 |
| | Average prior to Vancouver 2010 | 14,544 | 3,400 |
| 2010 | Vancouver (volunteer positions) | 18,500 | 6,500 |
| 2014 | Sochi (estimate for both Olympics and Paralympics) | 25,000 | |

Sources: International Paralympic Committee (2009), Toohey and Veal (2007), VANOC (2010), personal communication with V. Ryan (2010).

Table 3
A Sample of Previous Volunteer Motivation Research at Mega-Multisport Events: Olympics, Paralympics, and Masters Games

| Authors | Event (Actual or Potential Volunteers) | Instrument Used | Items in Scale | *n* | Sampling | Timing of Data Collection | Analysis[a] | No. of Factors and Factor Labels (Variance, if Indicated) |
|---|---|---|---|---|---|---|---|---|
| Farrell et al. (1998) | Canadian Women's Curling Championships, 1996 (A) | Special Events Volunteer Motivation Scale (SEVMS) | 28 | 137 | Random | | FA | 4 (49.7% of variance)<br>Purposive (25.7%)<br>Solidary (10.3%<br>External tradition (7.5%)<br>Commitments (6.2%) |
| Wang (2004) | Sydney 2000 Summer Olympics (P) | 20 item questionnaire | 20 | 935 | Quota by age | Pre-Games | CFA | 5<br>Altruistic<br>Personal development<br>Community concern<br>Ego enhancement<br>Social adjustment |
| Giannoulakis et al. (2008) | Athens 2004 Summer Olympics (A) | Olympic Volunteer Motivation Scale | 18 | 146 | Convenience | 2 months pre-Games & during Games (August) | FA | 3<br>Olympic related (26%)<br>Egoistic (12%)<br>Purposive (8%) |
| Bang, Alexandris et al. (2009) | Soccer volunteers Athens 2004 Summer Olympics (A) | Volunteer Motivations Scales for International Sporting Events | 29 | 206 | Convenience | Pre-Games: 2 weeks prior to Games, following a training session | CFA | 7<br>Expression of values (AVE = 0.63)<br>Patriotism (AVE = 0.57)<br>Interpersonal Contacts (AVE = 0.82)<br>Career orientation (AVE = 0.55)<br>Personal growth (AVE = 0.55)<br>Extrinsic rewards (AVE = 0.58)<br>Love of sport (AVE = 0.72) |
| Edwards et. al. (2009) | Sydney World Masters Games, 2009 | Modification of Giannoulakis et al.'s (2008) and Edwards' (2005) use of the SEVMS | 41 | 786 | Convenience | Pre: 2 days prior to Games start | PCA | 7 (68.6% of variance)<br>It's all about the games! (34.7%)<br>Personal development (10.6%)<br>Please others (6.4%)<br>Variety (5.9%)<br>Contribution (4.1%)<br>Altruism/service (3.8%)<br>Engagement, self-worth (3.1%) |
| | | As above | 41 | 662 | Convenience | Post: 3 months | N/A | |

[a]Factor analysis (FA), Confirmatory factor analysis (CFA), Principal components analysis (PCA).

Wang (2004) received 935 responses from prospective volunteers for the Sydney 2000 Olympics. Items for the survey were created from previous research items, including Cnaan and Goldberg-Glen (1991) from which the SEVMS was developed, as well as undertaking interviews with previous volunteers. The 20-item scale resulted in five constructs: (1) Altruistic Value, (2) Personal Development, (3) Community Concern, (4) Ego Enhancement, and (5) Social Adjustment, all with factor loadings above 0.60. Altruistic value was defined as representing "a person's intrinsic beliefs in helping others and contributing to society" (p. 421), while Personal Development referred to a "volunteer's desire to receive self-oriented benefits pertaining to personal growth and learning of new skills" (p. 421). It was concluded that the findings "provided reasonably strong evidence in support of the five-dimension structure" for assessing sport volunteerism (p. 424). In contrast to other items in the various generations of the SEVMS, there were no items that focused upon the importance, or centrality of, the event as an important motivator for volunteers.

Giannoulakis et al. (2008) used a modified version of Strigas and Newton-Jackson's (2003) version of the SEVMS to create the 24-item Olympic Volunteer Motivation Scale. From their research of 146 volunteers, three factors with loadings over 0.45 were identified, after excluding six of the original items, accounting for 45.7% of the variance. The three factors were entitled Olympic-related, Egoistic, and Purposive, where the first was defined by Giannoulakis et al. (2008) as "the desire of volunteers to be associated with the Olympic movement, be involved in the Olympics, or meet with Olympic athletes" (p. 196), Egoistic was defined as "social interaction, interpersonal relationships, and networking" (pp. 196–197), which is similar to Farrell et al.'s (1998) "solidary" definition. Purposive was defined as "the willingness of volunteers to benefit with their actions the stated end of the organization" (p. 197), has similarities to the research of both Farrell et al. (1998) and Strigas and Newton-Jackson (2003).

Khoo and Engelhorn (2007, 2011) have conducted research at two national multisport events for people with special needs using the original 28-item SEVMS with some wording revised to reflect the individual events. At the 13th Malaysian Paralympiad five factors with loadings over 0.39 were identified, accounting for 62.4% of the variance of which "Purposive" and "Solidary" were the most important (Khoo & Engelhorn, 2007). With 289 volunteers at US National Special Olympics (Khoo & Engelhorn, 2011), they also identified five factors with loadings over 0.3 with both purposive and solidary being the most important.

Bang and colleagues (Bang, 2009; Bang, Alexandris, et al., 2009; Bang & Chelladurai, 2003; Bang & Ross, 2009; Bang,Won, et al., 2009) conducted a series of research projects across local/regional single sport events as well as mega single and multisport events. Bang and Chelladurai (2003) introduced the Volunteer Motivations Scale for International Sporting Events (VMS-ISE) with research on 2002 FIFA World Cup volunteers in Korea which identified six factors. Bang and Ross (2009) further developed the VMS-ISE and studied 254 volunteers at the Minneapolis-St. Paul 2004 Twin Cities Marathon. Seven factors were identified from this local/regional event. The first three factors were Expression of Values, Community Involvement, and Interpersonal Contacts. Bang, Won, et al. (2009) studied 163 volunteers at another local/regional single sport event, the Life Time Fitness Triathlon, with the 32-item scale and identified seven factors with item loadings all over 0.72. The first three factors, each of which included three items, were Expression of Values, Community Involvement, and Interpersonal Contacts. Finally, Bang, Alexandris, et al. (2009) surveyed 206 soccer volunteers at the Athens 2004 Summer Olympics, which resulted in seven factors with item loadings over 0.52. The first three factors were similar to Bang and Ross (2003), though items had been listed previously listed under Community Involvement had been reworded for the international context of an Olympics: Expression of Values, Patriotism, and Interpersonal Contacts.

Edwards, Dickson, and Darcy (2009) surveyed 786 volunteers of the Sydney World Masters Games 2009 in the week before the Games commenced. The motivational items drew upon previous research into volunteers across sport events and cultural heritage (Edwards, 2005; Farrell et al., 1998; Giannoulakis et al., 2008) resulting in 41 items. The results from the survey identified seven

factors, with loadings greater than 0.35, which accounted for 68.7% of the variation (Dickson, Edwards, & Darcy, 2009; Edwards et al., 2009). The first two factors were labeled "It's all about the Games" (34.7% of the variance) and "Personal development" (10.6% of the variance). The former, similar to Giannoulakis et al.'s (2008) Olympic-related factor, included items related to being interested in the event and wanting to make the event a success. The latter factors, similar to Wang's (2004) Personal Development factor, included items related to skill development and job contacts, as well as receiving rewards.

What emerges from this collective body of research are four issues: firstly the lack of consistency of instrumentation used across the different studies. Even the work by Bang and colleagues has changed items according to context and as their research has evolved. Secondly, the sample sizes have been small given the number of items in the motivational scales. As noted by Osborne and Costello (2004) in their review of research using principal component analysis, the two main guidelines for selecting an appropriate sample size is either a ratio of 10 people per item or a sample size of 400–500. The latter relates back to Comrey and Lee's (1992) recommendation that a sample size of 50 is very poor; 100 is poor; 200 is fair; 300 is good; 500 is very good; 1,000 or more is excellent. On Comfrey and Lee's (1992) scale, methodologically, the research discussed in the previous paragraphs generally has sample sizes that might be considered very poor to fair. Using the recommendation that sample sizes should use a ratio of 10 people per item (Osborne & Costello, 2004) would mean that sample sizes of around 300 would be appropriate, only Khoo and Englehorn (2011) and Edwards et al. (2009) achieve that level. The third issue is the lack of longitudinal research using the same scale over events of similar event scale or focus. Bang and colleagues worked towards this but their research shifted between local/regional events and mega-events (single and multisport), often with quite small sample sizes relative to their item numbers. Finally, in respect of the factor analyses that have been undertaken, there are inconsistent expectations regarding the minimum loadings for each factor.

Consequently, drawing upon the scales that had been used across a number of sport event contexts for over a decade, this research sets up a theoretical framework in order to address these issues. The research methods and findings presented next do this by, 1) using a similar scale from previous research (Edwards et al., 2009), 2) having a sample size commensurate with the item numbers and also the population size, 3) building upon previous mega multisport events research (Edwards et al., 2009), and 4) using factor loadings greater than 0.5. While this research article focuses upon volunteers at the mega-multisport events of the 2010 Vancouver Olympic and Paralympic Winter Games, it is anticipated that the framework used in this study will be able to be replicated for use in other studies of multisport events.

## Research Method

This study used a quantitative approach for which an online questionnaire was developed. As indicated in the previous section, the questionnaire was developed from previous uses of the SEVMS (Edwards, 2005; Edwards et al., 2009; Farrell et al., 1998; Giannoulakis et al., 2008). In order for this research to be undertaken prior approval was obtained for the research design by the International Paralympic Committee Sports Science Committee and the University of Canberra's Committee for Ethics in Human Research.

The questionnaire was designed to address the three core research questions. The first question—Who is volunteering?—is addressed through the demographics questions. Volunteer motivations are considered through the use of items that were tested with the 2009 Sydney World Masters Games ($n$ = 793) (Edwards et al., 2009), and reworded for an Olympic and Paralympic context. The 36 items were scored on a 7-point Likert scale from 1 = strongly disagree to 7 = strongly agree. Four additional motivational items were included on behalf of a research project conducted by a Canadian university (thus avoiding survey fatigue by volunteers); these statements were not analyzed or included as part of this research. Finally, the third question looking at postevent volunteering intentions was considered via a logistic regression based upon responses to the following question: After the Games, to what extent do you think you will volunteer in any context? The questionnaire was hosted

on www.surveymethods.com. An invitation to participate in the anonymous online survey was sent out by VANOC to all 19,104 volunteers on January 13, 2010, 1 month prior the start of the Olympic Games. The survey closed on January 29, 2010. At the request of VANOC no reminder was sent in order to limit any extraneous communication with volunteers leading up to the Games' commencement. A convenience sample was gathered resulting in a total of 2,397 responses (12.5% response rate) of which 2,066 were useable. Web-based surveys generally have lower response rates than other modes (Manfreda, Bosnjak, Berzelak, Haas, & Vehovar, 2008; Sauermann & Roach, 2013), the sample size obtained here is of sufficient size to support the statistical analyses applied.

Data from the questionnaire were transferred into PASW 18.0 for Mac for analysis, including a principal components analysis (PCA). The suitability of the data for the PCA was confirmed via a Kaiser-Meyer-Olkin value of 0.916 and Bartlett's Test of Sphericity reaching statistical significance ($p < 0.001$), which support the factorability of the correlation matrix.

The dependent variable for the binary logistic regression was determined by recoding the responses about future volunteering intentions into 1 for those who indicated that they intended to increase their post-Games volunteering and 0 for those volunteering less or the same. Those who did not know were excluded from the regression analysis. The logistic regression was conducted by including independent variables from the demographics (age, gender, and previous volunteering experience), the factors identified from the motivational and items related to the volunteers' satisfaction with their pre-Games experience, such as orientation, training, and communication, where their Likert scale responses were recoded into binary responses: 1 = satisfied (5–7) and 0 = dissatisfied or neutral (1–4).

## Results

For the Vancouver 2010 Games, more than 77,000 people applied for the 25,000 volunteer positions across both games (VANOC, 2010; personal communication with V. Ryan, 2010). It was estimated that the Vancouver volunteers accounted for nearly 50% of the projected 55,000 of the Games' time workforce (VANOC, 2007). In some cases people volunteered for both the Olympics and Paralympics, resulting in 19,104 volunteers being appointed for the 25,000 positions (VANOC, 2010). The positions were across 24 functional areas including sport, event services, transport, medical services, and accommodation (VANOC, 2009). A greater understanding of these volunteers is provided below by addressing the findings for the three research questions: i) Who is volunteering? ii) What are their motivations for volunteering? and iii) What variables are most likely to be related to their intention to volunteer more after the event?

### *Who Is Volunteering?*

Of the 2,066 volunteer responses, 64.6% volunteered for the Olympics only, 29.5% for both Games, and 5.9% for the Paralympics only. More respondents were females (54.5%), 58.1% were between 45 and 64 years, and 55.3% were working full-time (either employed or self-employed). When compared to the actual data on volunteers by age group (Table 4), this sample is not representative by age distribution; unexpectedly more older people completed the online survey than younger volunteers. However, the gender distribution does reflect the Games' volunteer population. Comparison of weighted and unweighted data (by age group) did not reveal any statistical differences; thus, unweighted data are used in this analysis.

Table 4
Online Survey Sample Versus VANOC Population

| | Sample ($n$ = 2,066) | Population (% as Supplied by VANOC)[a] | Paired Samples $t$-Test |
|---|---|---|---|
| Age group | | | <0.001 |
| 19–24 years | 4.9% | 13% | |
| 25–34 years | 10.4% | 15% | |
| 35–44 years | 13.7% | 17% | |
| 45–54 years | 26.8% | 22% | |
| 55–64 years | 31.3% | 24% | |
| 65 years+ | 12.9% | 9% | |
| Gender | | | 0.064 |
| Female | 54.5% | 55% | |
| Male | 45.5% | 45% | |

[a]Source: VANOC (2010).

When considered from the perspective of which Game or Games people were going to volunteer for, there was a significant difference in the gender split across the three groups ($p = 0.015$) with the proportion of men volunteering increasing from a low of 33.6% for the Paralympics to a high of 43.9% for both games (Table 5). There was also a significant difference in the age distribution of volunteers ($p = 0.000$), with 67.4% of people being over the age of 44 years for the Olympics-only group, 64.6% for the Paralympics, and 80.3% for both Games. The increasing demand upon time to volunteer for both games is reflected in the employment situation of volunteers where 18.3% of Olympic-only volunteers were retired or pensioners, compared to 37.5% for volunteers for both Games. With respondents being predominantly Canadian born (76.7%), it is not unexpected that the dominant language spoken at home by the volunteers was English (91.0%), followed by Chinese (2.5%), and those who spoke French (2.4%).

### *Previous Volunteering Experience*

To explore if any relationship might exist between previous volunteering and Games' time

Table 5
Sociodemographics of Respondents ($n = 2,066$)

| | Olympics Only | Paralympics Only | Both Games | Total | *p*-Value[a] |
|---|---|---|---|---|---|
| Gender | | | | | |
| Female | 737 (61.1%) | 75 (66.4%) | 315 (55.0%) | 1127 (59.6%) | |
| Male | 469 (38.9%) | 38 (33.6%) | 258 (45.0%) | 765 (40.4%) | *0.015* |
| Missing data | | | | 174 | |
| Age | | | | | |
| 18–24 years | 66 (5.5%) | 9 (8.0%) | 17 (3.0%) | 92 (4.9%) | |
| 25–34 years | 144 (11.9%) | 11 (9.7%) | 41 (7.2%) | 196 (10.4%) | |
| 35–44 years | 184 (15.3%) | 20 (17.7%) | 55 (9.6%) | 259 (13.7%) | |
| 45–54 years | 347 (28.8%) | 32 (28.3%) | 128 (22.3%) | 507 (26.8%) | |
| 55–64 years | 341 (28.3%) | 31 (27.4%) | 221 (38.6%) | 593 (31.3%) | |
| >64 years | 124 (10.3%) | 10 (8.8%) | 111 (19.4%) | 245 (12.9%) | *0.000* |
| Missing data | | | | 174 | |
| Employment situation | | | | | |
| Employed full time | 731 (61.1%) | 68 (61.3%) | 218 (39.6%) | 1017 (55.3%) | |
| Employed part time | 127 (10.8%) | 15 (13.5%) | 64 (11.6%) | 206 (11.2%) | |
| Employed casually | 17 (1.4%) | 3 (2.7%) | 18 (3.3%) | 38 (2.1%) | |
| Retired or pensioner | 221 (18.8%) | 17 (15.3%) | 215 (39.0%) | 453 (24.6%) | |
| Full-time student | 50 (4.2%) | 6 (5.4%) | 9 (1.6%) | 65 (3.5%) | |
| Full-time carer or parent | 14 (1.2%) | 2 (1.8%) | 9 (1.6%) | 25 (1.4%) | |
| Unemployed &/or looking for work | 18 (1.5%) | 0 (0.0%) | 18 (3.3%) | 36 (2.0%) | N/A |
| Missing data | | | | 226 | |
| Country/region of birth | | | | | |
| Canada | 929 (77.1%) | 85 (75.2%) | 436 (76.1%) | 1,450 (76.7%) | |
| UK | 60 (5.0%) | 8 (7.1%) | 40 (7.0%) | 108 (5.7%) | |
| Asia and subcontinent | 56 (4.6%) | 5 (4.4%) | 28 (4.9%) | 89 (4.7%) | |
| Western Europe | 53 (4.4%) | 4 (3.5%) | 30 (5.2%) | 87 (4.6%) | |
| USA | 48 (4.0%) | 4 (3.5%) | 20 (3.5%) | 72 (3.8%) | |
| Eastern Europe | 20 (1.7%) | 3 (2.7%) | 3 (0.5%) | 26 (1.4%) | |
| Other incl. South Pacific and Africa | 39 (3.2%) | 4 (3.5%) | 16 (2.7%) | 59 (3.2%) | 0.682 |
| Missing data | | | | 175 | |
| Language spoken at home | | | | | |
| English | 1,096 (90.9%) | 103 (91.2%) | 522 (91.1%) | 1,721 (91.0%) | |
| Chinese | 28 (2.3%) | 5 (4.4%) | 14 (2.4%) | 47 (2.5%) | |
| French | 32 (2.7%) | 0 (0.0%) | 14 (2.3%) | 45 (2.4%) | |
| German | 8 (0.7%) | 0 (0.0%) | 4 (0.7%) | 12 (0.6%) | |
| Spanish | 6 (0.5%) | 1 (0.9%) | 1 (0.2%) | 8 (0.4%) | |
| Other | 36 (3.0% | 4 (3.5%) | 19 (3.3%) | 59 (3.1%) | N/A |
| Missing data | | | | 174 | |

[a]Pearson chi-square; italic indicates significant difference.

volunteering respondents were asked to indicate their previous volunteering experience. Most had previously volunteered in some other capacity (93.6%), indicating that less than 7% were first-time volunteers. As might be expected, the three most common areas of previous volunteering were sports clubs or associations (62%), schools or educational settings (57%), and festivals or events (59%). Details can be found in Table 6.

With the dominance of sport volunteers it might be expected that the Olympics and Paralympics could be the pinnacle of sporting volunteering experience and, for some, may even be their sport volunteering swan song; however, only 15.3% of those with previous sport volunteering experience were working in a sport functional area for the Games; with 49 having previously volunteered for an Olympic Games dating back to 1996, and 10 for previous Paralympics.

### *Motivations for Volunteering*

Following are results from the 36 motivational items indicating reasons for volunteering for the Vancouver 2010 Games. The top five and bottom five means for the motivational items are presented in Table 7. The top ranked items point to the centrality of the Games as the key motivator for volunteers. In contrast, the least important items for all respondents were those related to skill development and job enhancement.

Further interrogation on the motivational items was undertaken to determine patterns and structures using principal components analysis with oblimin rotation. Factors with eigenvalues greater than 1 and with item loadings greater than 0.50 were retained (Costello & Osborne, 2005; Ticehurst & Veal, 2000). The analysis yielded an eight-factor solution that accounted for 64.1% of the variance (Table 8). The pattern matrix gives the unique contribution of an item to a factor. Further, factors with less than three items were excluded as these may be considered unstable or weak (Costello & Osborne, 2005). The remaining six factors, each with three or more items with loadings greater than 0.50, accounted for 58.3% of the variance, internal consistency for each of the scales was examined using Cronbach's alpha. Factors 2 and 6 were good (i.e., above 0.8), factors 1, 3, and 4 were acceptable (0.7–0.8), and factor 5 was poor (0.5–0.6). No improvement in reliability was achieved by reducing the items (see Table 8). The intercomponent correlations are less than 0.3 for the six factors that are retained (1–6), thus it can be assumed that the six factors are not related which suggests that either Varimax or Oblimin is appropriate (Pallant, 2011).

The first factor identified, "It's all about the Games," emphasizes the centrality of the Games to the volunteers' motivation, while the second factor "Transactional" indicates a transaction, or exchange, occurring in the sense that "I give my time and I will receive something in return that is of benefit or worth to me," be that an intrinsic or extrinsic reward. The third factor, entitled "Variety," contains items that reflect a desire for new experiences and relationships. The fourth factor, entitled "Application," has some similarities to Transactional (factor 2) in the sense that there is a focus upon

Table 6
Previous Volunteering Contexts (Multiple Responses Possible)

| Volunteering Contexts | Olympics Only ($n$ = 1,335) | Paralympics Only ($n$ = 121) | Both Games ($n$ = 610) | Total ($n$ = 2,066) |
|---|---|---|---|---|
| Sporting clubs or associations | 812 | 70 | 402 | 1,284 (62.1%) |
| Schools or educational settings | 764 | 66 | 351 | 1,181 (57.2%) |
| Festival or events | 639 | 66 | 318 | 1,023 (59.5%) |
| Nonprofits (e.g., Oxfam) | 423 | 35 | 207 | 665 (32.2%) |
| Community association (e.g., Lions or Rotary) | 350 | 34 | 188 | 572 (27.7%) |
| Church or religious group | 333 | 24 | 146 | 503 (24.3%) |
| Hospital or medical services | 164 | 17 | 73 | 254 (12.3%) |
| Environmental activities | 164 | 17 | 73 | 254 (12.3%) |
| Welfare organizations | 106 | 6 | 50 | 162 (7.8%) |
| Museums or galleries | 88 | 6 | 44 | 138 (6.7%) |

Table 7
Top Five and Bottom Five Motivational Item Means: 7-Point Likert Scale

| Top Five Item Means | Mean | Bottom Five Item Means | Mean |
|---|---|---|---|
| 5. SEVMS: it was a change of a lifetime | 6.48 | 21. SEVMS I did not have anything else to do with my time | 1.72 |
| 30. SEVMS: I wanted to make the Games a success | 6.06 | 12. I was asked by a family/friend who is a Games volunteers | 1.91 |
| 20. I am interested in the Games | 6.01 | 32. I wanted to make job contacts | 2.37 |
| 4. SEVMS: I wanted to do something worthwhile | 5.91 | 33. I wanted to gain experience which might lead to employment | 2.42 |
| 3. I am proud of BC, Vancouver and Whistler | 5.88 | 34. I wanted to make contacts with experts in the same field | 2.59 |

their skills, but in this case it is the use or application of the skills, without the sense of a receiving a reward or return. Factor 5, "Availability," draws together items expressing an increase in the amount of available and/or free time. The final factor, "Altruistic," demonstrates a community or nationalistic motivation.

*Intention to Volunteer in the Future*

Respondents were asked about how they expected their volunteering commitment to change after the Games as a result of their Games' time volunteering experience. Almost two thirds (61.6%) indicated that they did not expect their volunteering to change from their pre-Games level, while 23.7% intended to increase their volunteering, and 3.1% to decrease, with a further 11.1% undecided. The difference between those who planned to increase their volunteering and those planning to decrease their volunteering, resulted in a net increase of 20.6%. Therefore, a question for future bid committees to consider is whether a net of 20% indicating an intention to increase their volunteering meets the committee's expectations and their volunteer legacy rhetoric and whether that is actually achieved after the event.

In order to assist in the identification of a profile of who might be targeted at future Games (and other mega-events) a Pearson chi-square test was undertaken. This indicated that there was a significant difference between males and females ($p = 0.031$) with 25.5% of females planning to increase their volunteering in the future as a result of their Games experience compared to 21.2% of males. To further explore what variables may suggest a greater propensity to volunteer, a direct logistic regression was conducted including independent variables, such as demographic data, previous volunteering experiences, satisfaction with the Games experiences to date, and factor analysis outcomes (see Table 9). Significance levels greater than 0.05 in the Hosmer and Lemeshow Goodness of Fit test supports that the model is a good fit. A chi-square value of 13.49 and a significance level of 0.096 indicated that the model was able to distinguish between respondents who intended to volunteer more after the Games and those who intended to decrease or maintain their level of volunteering. The model as a whole explained that between 9.6% (Cox and Snell $R^2$) and 14.5% (Nagelkerke $R^2$) of the variance and correctly classified 76.6% of cases.

From the regression analysis (Table 9), those variables that were the strongest predictors of an intention to volunteer more after the Games were (where the 95% confidence interval did not cross 1): (1) expecting the Games to impact upon future volunteering (OR = 7.27); (2) satisfaction with pre-Games orientation (OR = 1.54), and (3) Factor 3: Variety (OR = 1.28). Those variables that may have the greatest negative impact on the intention to volunteer more after the Games are: (1) satisfaction with pre-Games training (OR = 0.61), (2) previous experience volunteering in community groups (OR = 0.73), and (3) previous experience volunteering in sports (OR = 0.74).

## Discussion

For mega-multisport event organizers the recent experience of Vancouver 2010 and London 2012 would suggest that there is no problem in getting people to volunteer for the event. For both Vancouver and London there were over three times

Table 8
Pattern and Structure Matrix for PCA With Oblimin Rotation

| Component, Label (Cronbach's Alpha, Eigenvalue, % of Variance) | Loading |
|---|---|
| **1. It's all about the Games (0.770, 9.37, 26.03%)** | |
| 28. I have a passion for the Games | 0.811 |
| 25. *I have an interest in sport | 0.777 |
| 20. I am interested in the Games | 0.640 |
| 27. *It was an opportunity to meet elite athletes | 0.564 |
| 29. *I would be able to attend a Games event | 0.558 |
| *1. I believe in the principles & values of the Games* | |
| *30. *I wanted to make the Games a success* | |
| **2. Transactional (0.879, 4.68, 12.99%)** | |
| 33. I wanted to gain experience which might lead to employment | 0.893 |
| 32. I wanted to make job contacts | 0.861 |
| 34. I wanted to make contact with experts in the same field | 0.766 |
| 16. I wanted to gain skills to use in future employment | 0.716 |
| *36. I wanted to gain skills I can use in future volunteer situations* | |
| **3. Variety (0.759, 2.27, 6.31%)** | |
| 23. *I wanted to broaden my horizons | 0.773 |
| 22. *I wanted to vary my regular activities | 0.688 |
| 11. *I wanted to interact with others | 0.582 |
| 26. *I wanted to make new friends | 0.550 |
| *31. I wanted to gain knowledge of different languages & cultures* | |
| *10. *I wanted to feel part of the community* | |
| **4. Application (0.747, 1.81, 5.01%)** | |
| 17. *My skills were needed | 0.835 |
| 15. I wanted to use my skills | 0.769 |
| 14. *I have past experience proving similar services | 0.741 |
| *13. The Games needed lots of volunteers* | |
| **5. Availability (0.504, 1.56, 4.33%)** | |
| 21. *I did not have anything else to do with my time | 0.716 |
| 12. I was asked by family/friend who is a Games volunteer | 0.658 |
| 9. *I have more free time than I use to have | 0.505 |
| *5. *It was a chance of a lifetime* | |
| **6. Altruistic (0.844, 1.30, 3.61%)** | |
| 2. I want to give back to BC, Vancouver & Whistler | 0.998 |
| 3. I am proud of BC, Vancouver & Whistler | 0.916 |
| 24. *I wanted to put something back into the community | 0.680 |
| 4. *I wanted to do something worthwhile | |
| **7. (3.02% variance)** | |
| 7. *Most people in my community volunteer | −0.866 |
| 6. Volunteering is common in my family | −0.830 |
| **8. (2.81% variance)** | |
| 19. *Being a volunteer at the Games is considered prestigious | −0.665 |
| 35. I wanted to gain official Games rewards | −0.611 |
| *18. I wanted to be associated with the Games* | |
| *8. *Volunteering at the Games would make me feel better about myself* | |

Extraction method: Principal Component Analysis. Rotation Method: Oblimin with Kaiser Normalization.
Rotation converged in 27 iterations. Italicized items have loadings below 0.5 and have been suppressed; *indicates an item drawn from the SEVMS.

as many people applying to volunteer for the event than the positions available; thus it may be asked whether the organizing committees could be more selective and strategic with respect to their potential volunteer legacy. Rather than recruiting, orienting, and training just for the event, which is obviously their prime concern as event organizers, how can they be more legacy-minded in these human resource strategies to increase the probability of leaving a volunteer legacy for the community, as indicated as being desired by those planning and developing the bids?

The volunteers represented in this pre-Games research indicate that volunteers for the Vancouver

2010 Olympic and Paralympic Winter Games were predominantly female, older, employed, and had diverse previous volunteering experiences. Further, from this research it may be seen that the major motivation for volunteering for Vancouver 2010, whether viewed through the lens of the means of the motivational items or the identified factors, is the event itself, not a desire to do good in the community or volunteer more as may be important for those interested in a volunteer legacy.

For the future event manager who is interested in their event's volunteer legacy may ask whether people who are already working and involved in other volunteer roles, such as who has previous volunteering experience in community groups or sports, would have more time, opportunity, and/or interest in volunteering more. When considering who may increase their volunteering after the event, three things stand out from the results of the regression analysis: i) those who expected the Games to impact upon their postevent volunteering were more likely to indicate that they would volunteer more post-Games, ii) people whose motivations were linked to variety and availability indicated they expected to volunteer more, and iii) people who have previous experience in sports, events, or community groups were not likely to increase their postevent volunteering.

For small event managers, this research provides some insight into the legacy potential following a mega-event. Based on the regression analysis, those who had previously volunteered at community groups or in sports were least likely to increase their volunteering. Thus, the small event manager may alternatively aim to influence the expectation of the Games' time volunteers to increase their postevent volunteering, while those motivated by variety are potential future volunteers.

While this research goes some way to furthering the discourse on volunteers at mega-events, it is recognized that there is still much to do. With this thought in mind we see a number of questions emerging for mega-multisport event organizing committees, and future researchers interested in a volunteer legacy,

Is it possible to recruit people who have a higher propensity to volunteer more after the event and still run an effective event? These people may include retirees, people not already highly involved in volunteer organizations, new volunteers, or those who have "lapsed" in their volunteering. These are interesting questions bearing in mind the focus on youth for the London Games who want "to galvanize young people to get involved in volunteering using the inspiration of the 2012 Games" (Cabinet Office: Office of the Third Sector, 2009).

Is it possible to influence people's expectations about their future volunteering through the recruitment, orientation, and training phases? This could occur by providing information about and connections to future volunteering opportunities.

After the Games, do volunteers actually volunteer in a way that reflects their pre-Games intentions and how is this impacted by their experiences of the Games?

Future research of mega-sport event volunteers may also need to consider response rates and sample sizes. In an ideal world response rates may be

Table 9
Logistic Regression Analysis Predicting Likelihood to Increase Volunteering After the Games

| | B | SE | Wald | *df* | *p* | Odds Ratio | 95% CI for Odds ratio |
|---|---|---|---|---|---|---|---|
| Expecting Games to impact on postevent volunteering (0 = no, 1 = yes) | 1.98 | 0.33 | 35.33 | 1 | 0.00 | 7.27 | 3.78–13.98 |
| Satisfied with pre-Games orientation (0 = dissatisfied, 1 = satisfied) | 0.43 | 0.18 | 5.55 | 1 | 0.02 | 1.54 | 1.08– 2.20 |
| Factor 3: Variety | 0.24 | 0.07 | 13.96 | 1 | 0.00 | 1.28 | 1.12– 1.45 |
| Factor 6: Altruistic | 0.22 | 0.07 | 10.23 | 1 | 0.00 | 1.24 | 1.09– 1.42 |
| Age (0 = over 24 years, 1 = <25 years) | 0.40 | 0.24 | 2.84 | 1 | 0.09 | 1.49 | 0.94– 2.38 |
| Satisfied with rewards/recognition (0 = dissatisfied, 1 = satisfied) | 0.31 | 0.16 | 3.72 | 1 | 0.05 | 1.36 | 1.00– 1.85 |
| Previous experience as an event volunteer (0 = no, 1 = yes) | −0.26 | 0.12 | 4.94 | 1 | 0.03 | 0.77 | 0.61– 0.97 |
| Previous experience as a sport volunteer (0 = no, 1 = yes) | −0.30 | 0.12 | 6.56 | 1 | 0.01 | 0.74 | 0.59– 0.93 |
| Previous experience as a community volunteer (0 = no, 1 = yes) | −0.31 | 0.14 | 5.19 | 1 | 0.02 | 0.73 | 0.56– 0.96 |
| Satisfied with pre-Games training (0 = dissatisfied, 1 = satisfied) | −0.50 | 0.17 | 8.63 | 1 | 0.00 | 0.61 | 0.44– 0.85 |
| Constant | −2.87 | 0.35 | 67.58 | 1 | 0.00 | 0.057 | |

increased by more personalization of communication with respondents, follow-up communications, and offering of incentives (Sauermann & Roach, 2013). In the real world of researching the Olympics and Paralympics, researchers are constrained by the decisions of the organizing committees about access to volunteers and sampling of volunteers, while offering of financial incentives to populations that may reach 70,000 is outside the realms of most University-based research. Thus, while the response rate is lower here than may be desired, the sample size exceeds most previous mega-sport event volunteer research and with the insight of VANOC it is clear how this sample compares to the population as a whole.

## Conclusion

This article makes its contribution in three areas. Firstly, there is a theoretical contribution through the development of the sport event typology. This will enable researchers to reflect upon their populations and be more conscious about how different research applies to their context.

Secondly, there are several unique operational aspects of this research: i) only loadings over 0.5 have been included in the factor analysis; ii) it is the first time that such a large sample size has been used; iii) it is the first time that representativeness of the sample can and has been calculated, and iv) it is the first time that motivations of Olympic and Paralympic volunteers can be linked to their intentions to volunteer more. The SEVMS has been a useful framework, as noted in the theoretical background. The wide variation of the items included and excluded across previous research, the changes in terminology and the addition of items to reflect individual research specifics means that the body of work on motivations of mega-multisport event volunteers is typically difficult to learn from and build upon. There is a need to conduct a meta-analysis of the research to date to identify if there may be a core of items relevant to this unique volunteering scenario upon which future research could be based and tested further and to explore what differences may exist between volunteers in the each aspect of the sport event typology.

This research has extended previous research through the increased sample size and by using the combination of both factor analysis and regression analysis to investigate respondents' intentions to volunteer in the future. The implications for legacy have been explored. There is a caveat to these conclusions: each mega-multisport event is a new event with a new organizing committee set in a new host community with unique political, social, and cultural situations, so lessons learned with each event must be considered within that broader geographical and sociopolitical context.

Thirdly, this research offers insights into the motivations of a particular set of volunteers—those who volunteered for a mega-event. The results indicate that volunteers were generally older employed people who were motivated by the experience of being part of such a significant sport event. For these volunteers, truly it is all about the Games. Moreover, it was identified that where there was clarity as to how volunteering could be of benefit, intention to volunteer again was higher. When considering the potential for leaving a volunteer legacy after the event we use these findings to suggest that organizing committees may be able to improve the opportunities for legacy in two key ways: being more strategic in their recruitment, orientation, and training by targeting those people who may have the interest and time to volunteer more after the event, and using training and recruitment practices prior to the event to raise the volunteers' expectations about volunteering after the event.

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