

Mega-event volunteers, similar or different? Vancouver 2010 vs. London 2012

Abstract format (250 words):

- **Purpose:** To compare motivations of volunteers at two mega multi-sport events
- **Design/methodology/approach:** The research used a quantitative research design to survey volunteers at the Vancouver 2010 Olympic and Paralympic Winter Games ($n=2,066$) and the London 2012 Olympic and Paralympic Games ($n=11,451$) via an online questionnaire based upon the Special Event Volunteer Motivation Scale
- **Findings:** The results indicate that the volunteers, most of whom had previously volunteered, were motivated by similar variables, including the uniqueness of the event, the desire to make it a success and to give back to their community. The results of the Principal Components Analysis indicated that most items of the scale loaded onto similar components across the two research contexts.
- **Research limitations/implications:** There were methodological limitations in terms of the timing of the questionnaire administration and Likert scales used, however, these issues were controlled by gatekeepers. These limitations could have research implication for longitudinal studies of volunteers at mega events.
- **Practical implications:** Understanding volunteer motivations will enable event managers and volunteer managers to plan for legacy
- **Social implications:** Volunteer motivations include wanting to give back to their community and therefore, increases the potential for volunteer legacy.
- **Originality/value:** This is the first research that: enables comparison of winter and summer Olympic and Paralympic Games volunteers; has substantial sample sizes in relation to the variables; applies higher item loadings to strengthen the analysis and involves the use of the same instrument across events.
-

Keywords (10): volunteers, mega sport events, Principal Component Analysis, motivations, Olympics, Paralympics

Introduction

While there has been a number of research articles that have explored event volunteer motivation, satisfaction and commitment, these have tended to be small scale and ad hoc; as such, effective comparison between events has not been possible. This has also meant that there has been little opportunity to investigate whether all sport event volunteers have the same motivations and thus be able to determine the extent to which they have similar expectations regarding recruitment, training, management and ultimately the event's potential volunteer legacy as volunteers return to their community. Therefore, research that facilitates comparison between events has the potential for creating insights that are of relevance to future event management as well as host-community volunteer managers who seek to leverage the legacy potential of mega events.

To facilitate comparison between event volunteer research it would be advantageous to apply consistent methods in terms of survey instruments, data collection strategies and analysis. The research presented in this paper is the first mega multi-sport event research that has ever been conducted that applies the same instrument across successive Olympic and Paralympic Games thus enabling comparison between the two volunteer groups. Thus, the aim of this research paper is to determine the extent to which mega-event volunteers have similar motivations by comparing two mega multi-sport events: the Vancouver 2010 Olympic and Paralympic Winter Games (Vancouver 2010) and the London 2012 Olympic and Paralympic Games (London 2012).

Literature Review

Mega events

Roche defined mega events as 'large-scale cultural (including commercial and sporting) events which have a dramatic character, mass popular appeal and international significance' (Roche, 2002). These events are dependent upon two agencies for their success, the media and volunteers (Horne & Manzenreiter, 2006) with the potential for host communities to benefit from a range of legacies including 'urban renewal, infrastructure development, voluntarism, and improved marketing capability' (Getz, 2012, p. 178). As alluded to by Getz (2012), the legacy rhetoric includes the expectation that there will be a volunteer legacy for the host communities, however to date there is scant evidence to support this claim (Dickson, Benson & Blackman, 2011). In part, this may be due to the range of sport events that exist and the lack of research that considers the impact of the frequency, event size, number of sports and level of competition (Dickson, Benson, Blackman & Terwiel, 2013) and also the lack of comparisons between events (Hallmann & Harms, 2012) that may enhance a transfer of, and building of, knowledge between events (Blackman, Benson & Dickson, 2011; Jago, Dwyer, Lipman, Lill & Vorster, 2010).

From the perspective of the volunteer at a mega event, there are two things that stand out in terms of how the mega event context may differ from other events and other volunteering situations. Firstly, mega events, such as the Olympics and Paralympics, may only occur in one's home city or country, once in a lifetime, while other volunteering opportunities can include annual events as well as regular weekly commitments. Secondly, the scale of the events, often mean that the number of volunteers required often will exceed most other volunteering situations. For Vancouver 2010 there were 25,000 volunteer positions (VANOC, 2009), while London 2012 had 70,000 positions (LOCOG, 2009).

Motivation and sport event volunteers

Motivation is about being inspired to do something, and has been applied across a range of contexts such as workplaces, learning, sport participation, and, as relevant here, volunteering. The most well-known authors on motivation are Maslow (Maslow, 1943) and Herzberg (Herzberg, 1966). A key distinction that merges in motivation theories is between intrinsic and extrinsic motivation. Ryan and Deci (2000) clarified the distinction between the two when they said that,

Extrinsic motivation is a construct that pertains whenever an activity is done in order to attain some separable outcome. Extrinsic motivation thus contrasts with intrinsic motivation, which refers to doing an activity simply for the enjoyment of the activity itself, rather than its instrumental value (p. 60).

People volunteer across a range of situations such as welfare groups, health, education, sport and festivals and events. This diversity is reflected in the research into volunteer motivation which includes some seminal pieces, particularly from within a North American context (e.g. Clary, Snyder, Ridge, Copeland, Stukas, Haugen & Miene, 1998; Clary, Snyder & Stukas, 1996; Smith, 1994). Clary *et al* (1996), used a functional approach, reported motivations under six functions: values, understanding, enhancement, career, social and protective, while Smith (1994) reviewed the American literature on why people participate in participation in programs and associations. However, it is the authors' contention that there is most probably a difference in volunteering in routine contexts such as community groups, sports clubs or educational settings, than volunteering in a once in a lifetime mega event such as the Olympics or Paralympics, as previously demonstrated and discussed (Dickson *et al.*, 2013). This was also pointed out by Farrell *et al* (1998) when they suggested that 'motivation for special event volunteers is different from that for other volunteers' (p. 295). Thus, the following will focus upon event literature, rather than the much broader volunteer literature.

Previous event volunteer research has included questions about motivations, commitment and satisfaction across a range of event types and scales that may have different levels of interest for event managers. For example, volunteer motivations may be important for mega event managers as they consider recruitment and reward strategies (Barron & Rihova, 2011; Monga, 2006; Wollebæk, Skirstad & Hanstad, 2012); event commitment may be important for annual events (Cuskelly, Harrington & Stebbins, 2002; Love, Sherman & Olding, 2012; Elstad, 2003); while satisfaction may be of important for those considering volunteering legacies after the event (Costa, Chalip, Green & Simes, 2006; Farrell, Johnston & Twynam, 1998; Mei, 2009; Love, Hardin, Koo & Morse, 2011; Elstad, 1996).

Dickson *et al.*, (2013) identified several problems with the previous sport event volunteer motivation research that makes simple comparisons between event types, sizes and locations problematic. The issues identified included, the variations in the instrumentation used; the relatively small sample sizes when compared to the number of items in the motivational scales; the lack of longitudinal (pre and post) and comparative research that is amplified by the changes in instrumentation between events. For example, Osborne and Costello (Osborne & Costello, 2004) recommend that an appropriate sample size is either a ratio of 10 people per item or a sample size of 400–500. Using this as a guide there are only three previous studies (summarised in table 1) with sufficient sample sizes for the analysis conducted (Dickson *et al.*, 2013; Khoo & Engelhorn, 2007; 2011).

Also, where principal component analysis (PCA) has been used there have been substantial differences in the loadings applied. Further issues when seeking to compare research across events include, the variation in timing of the research, e.g. before, during or after the event; and also the representativeness of the sample when it is a multi-sport event, e.g. are volunteers within one sport venue representative of all volunteers at the event?

Examples of the variety of instruments used in previous sport event volunteer research have been the Special Events Volunteer Motivation Scale (SEVMS) (Farrell *et al.*, 1998; Grammatikopoulos, Koustelios & Tsigilis, 2006; Khoo & Engelhorn, 2007; 2011; Twynam, Farrell & Johnston, 2002), the Volunteer Motivations Scales for International Sporting Events (Bang, Alexandris & Ross, 2009; Bang & Ross, 2009; Bang, Won & Kim, 2009) and the Olympic Volunteer Motivation Scale (Giannoulakis, Wang & Gray, 2008). The latter was an adaptation of Strigas and Newton-Jackson's adaptation of Farrell *et al.*'s SEVMS (Strigas & Newton-Jackson Jr, 2003). While research with the SEVMS has been used in a range of smaller scale events, there has been no large-scale research with the SEVMS that has compared volunteers across mega sport events.

Table 1 provides a summary of the components that previous motivation research using variations of the SEVMS has identified. The motivation items accounted for over 45% of the variance across the different contexts, with the highest levels being achieved in three multi-sport events (Dickson *et al.*, 2013; Khoo & Engelhorn, 2007; 2011). In research on smaller events (Farrell *et al.*, 1998; Khoo & Engelhorn, 2007; 2011; Twynam *et al.*, 2002) similar components emerged (i.e. Purposive, Solidarity, External traditions and Commitments) though accounting for difference amounts of the variance. However, when research was conducted on the Olympic and Paralympic Games (Dickson *et al.*, 2013; Giannoulakis *et al.*, 2008) the centrality of the event itself accounted for a greater percentage of the variance.

Table 1 about here: Summary of motivations

This article addresses the instrument consistency, sample sizes and PCA loadings, as well as accessing a cross-section of volunteers from all event functional areas noted as limitations with the previous volunteer motivation research (Dickson *et al.*, 2013). This paper has not addressed the issue in respect of timing of the research (e.g. pre and/or post), an issue beyond the control of the researchers as noted below.

Research Methods

Research contexts

Both Canada and the United Kingdom have long traditions and wide community involvement in volunteering across many contexts. As of the Vancouver Olympic and Paralympic year, it was reported that 47% of Canadians volunteered in formal contexts (Vézina & Crompton, 2012), while for the United Kingdom, 44% indicated that they formally volunteered in 2012 (Cabinet Office, 2013).

Vancouver 2010 included 15 Olympic sports and five Paralympic sports across 11 venues for 5,500 Olympics and 1,350 Paralympics athletes (VANOC, 2010b). This required a volunteer

workforce of 19,104 for the estimated 25,000 positions over the 26-day period (VANOC, 2010a; b). London 2012 consisted of more than 40 sports that were conducted in excess of 30 venues for 14,000 athletes, with an estimated 70,000 volunteers, otherwise known as the Games Makers, supporting the delivery of the Games (LOCOG, 2012).

Researching mega sport events.

Where possible, the research team sought to replicate the research design for Vancouver 2010 when undertaking the London 2012 research. However, a number of challenges may be encountered when conducting research with volunteers at the Olympics and Paralympics that fell outside the control of the researchers. Firstly, while under the management of one organising committee, the Olympics and the Paralympics are separate and answerable to the two independent groups: the International Olympic Committee (IOC) and the International Paralympic Committee (IPC). Secondly, conducting research at these events may be appealing to researchers, but only the IPC has a process for applying to conduct research. Finally, even though the IPC may provide 'approval' for research at the Paralympics, ultimately it is the individual organising committee (OCOG) that determines, if, when and how that research will be conducted, and whether both Olympic and Paralympic volunteers are included. Thus, officially sanctioned research, as reported here, involves a journey of negotiation with multiple stakeholders that may influence the final shape of the research.

Comparing the research design

Table 2 summarises the key aspects of the methods used at the two events. As indicated, the research was approved and supported by the IPC, approved by the Ethics Committee of the host university and supported by the OCOG's who provided access to volunteers at both events by distributing the hyperlink to the survey via their email communication with the volunteers. As per the requirements of the respective OCOG's, the pre-event Vancouver 2010 survey link was sent out via the OCOG's normal email communication with the volunteers, while the London 2012 survey link as sent out two days after the Paralympics as part of the LOCOG Research Department's evaluation strategy.

Table 2 about here: Research design

The instrument used for both Vancouver 2010 (see Dickson et al, 2013) and London 2012 was developed from previous uses of the SEVMS and its various adaptations, and has been demonstrated as being effective in analysing the motivations of volunteers in a arrange of sport events (Edwards, Dickson & Darcy, 2009; Farrell *et al.*, 1998; Giannoulakis *et al.*, 2008; Khoo & Engelhorn, 2007; 2011; Twynam *et al.*, 2002). The final instrument design for London 2012 was developed in conjunction with LOCOG's Research Department to support their evaluation strategies and to build upon previous research on large and mega sport volunteers. To aid in the comparison of this research the motivation items remained substantially unchanged from the Vancouver 2010 research except for some rewording to reflect the different event location.

The Vancouver 2010 motivations were rated on a 7-point scale, while the Likert scales for London 2012 were changed to a 5-point scale in order to be consistent with LOCOG's other research and evaluation strategies. To enable comparison between the two data sets, the

Vancouver 2010 scores were rescaled using the arithmetic formula recommended by Dawes (2008): $1/3+2/3x$ (Table 3).

Insert Table 3 about here: Rescaling responses

While the Vancouver 2010 research was conducted 1 month prior to the start of the Olympic Games as negotiated with VANOC; the requirement by LOCOG was that the survey was to be sent out two days after the completion of the Paralympics and one day after a large ‘thank you’ parade held in the streets of London, in what may be described as the ‘after glow’ of the Games. The 2012 survey was closed five days later. In both cases the research team had minimal control over when the survey was distributed.

Data Analysis

In the absence of large-scale research on mega sport events, the Vancouver 2010 analysis (Dickson *et al.*, 2013) applied a form of exploratory factor analysis known as Principal Component Analysis (PCA) to explore the underlying structure of the items. As there is no agreement about the appropriate loadings to focus on, the appropriate sample size in relation to variables, nor which components to retain given different loadings (Hair Jnr, Black, Babin & Anderson, 2010; Stevens, 2002; Tabachnick & Fidell, 2007), following a review of the literature, it was decided to, i) focus on loadings $>+/-0.50$ to ensure the results were practically significant (Hair Jnr *et al.*, 2010), and ii) to exclude components with less than three variables as they may be deemed to be weak or unstable (Costello & Osborne, 2005). To enable comparison with those previous results the London 2012 analysis was also conducted using a PCA with the same loadings and variable limits for each component.

Results and discussion

Responses

For Vancouver 2010, 2,397 responses were received (12.5% response rate), while for London 2012 there were 11,451 responses (a 16.4% response rate from the estimated 70,000 volunteers). Online surveys typically have lower response rates than other methods (Manfreda, Bosnjak, Berzelak, Haas & Vehovar, 2008; Sauermann & Roach, 2013); however, the large number of responses received in this research, the most of any recent mega sport event volunteer research, were more than sufficient to support the analysis conducted. In both cases responses were received across all functional areas. While the representativeness of the sample for Vancouver has been discussed previously (Dickson *et al.*, 2013), it was not possible to conduct similar analysis of the London data as LOCOG have not, as yet, provided a breakdown of the volunteer population to compare the sample to.

Demographics

As demonstrated in Table 4 the demographic profile of the two groups of respondents was very similar, mostly female, aged over 35 years, working fulltime or part-time and having had previous volunteer experiences with no significance difference being shown for gender, age or employment status.

Insert Table 4 about here: Volunteer profiles

Motivations

Analysis of the means shows that the top 20 variables for both games were the same, with very similar rankings (Table 5) that focused upon: the uniqueness of the event, the desire to make it a success, and to give back to their community. The top ranking for both Vancouver and London of *It was a change of a lifetime*, is significantly different from previous research where the same item was ranked eight or lower (Farrell *et al.*, 1998; Khoo & Engelhorn, 2011; Twynam *et al.*, 2002). The bottom six variables also had similar rankings across the two events. Overall, London had a higher mean (3.42) compared to Vancouver (3.31).

An independent-samples t-test was conducted to compare the motivation scores for volunteers in Vancouver and London. There was no significant difference in means for six of the 36 variables (Items 16, 17, 27, 29, 31, 36) that mostly related to the acquisition of skills and also the desire to attend events or meet elite athletes (Table 5). All others had significant differences ($p < .001$).

Given the difference in the timing of data collection (Vancouver pre-event and London post-event) and the rescaling of the Vancouver scores, it is not possible to determine whether this was an actual difference between the groups, a result of the rescaling, or even the timing of the survey. While the aim was to have consistency of data collection methods, this was not controllable by the researchers. This is something that may be explored further in future longitudinal research, e.g. pre and post event research, that measure the expectations of volunteers and the impact of the event on the espoused volunteering legacy.

Insert Table 5 about here: Motivation items

Furthermore, when examining the literature and in particular when examining the summary in table 2; it is clear that the research undertaken at Vancouver 2010 and London 2012 has the highest ratio of responses to items and the largest sample sizes of any similar research ensuring that the samples are high enough to support the analysis.

Motivations for volunteering: comparison of principal components analysis

Using loadings $> \pm 0.5$, the PCA for the two events revealed the same eight-component solution, accounting for 64.11% of the variance for Vancouver 2010 and 56.79% for London 2012. The total variance explained for each of the events is greater than all previous research summarised in Table 2, expect for Khoo and Engelhorn (2007), with the diversity of the eight components highlighting the complex mix of motivations of volunteers alluded to previously (Khoo & Engelhorn, 2011).

Of the 36 motivation items, 30 loaded onto the same components over the two events (Table 6). All component means were consistent between the games as to whether they were considered important motivators (i.e. Likert score > 3) or less important (< 3). The two most important components, is indicated by their means, were *Altruistic* (means=4.11, 4.31) and *It's all about the Games* (means=4.09, 4.37). *Altruistic* reflects some of the items seen in the *Purposive* component in previous research (e.g. Farrell *et al.*, 1998; Khoo & Engelhorn, 2011; Twynam *et al.*, 2002), where the desire is contribute to the event and/or the community. The component *It's all about the Games* reflects previous mega event research (Giannoulakis *et al.*, 2008) but differs from the other non-mega event research where

Solidary, or social interactions or networking, was important (e.g. Farrell *et al.*, 1998; Khoo & Engelhorn, 2011; Twynam *et al.*, 2002).

Insert Table 6 about here: PCA

Implications and conclusion

There is a significant gap in the literature around mega-multisport event volunteers who give their time for events such as Olympic and Paralympic Games. The purpose of this study was to address this gap through conducting large-scale surveys of mega multisport event volunteers at the both the Vancouver 2010 Olympic and Paralympic Winter Games and the London 2012 Olympic and Paralympic Games and then comparing the results. Consequently, this is the first research of volunteers at two Olympic or Paralympic Games that has used the same measure of motivation and be in able to offer such a comparison. Although, the comparison was winter to summer volunteers, and conducted at different times with respect to the events, they display similar motivations albeit with different intensities. The extent to which the difference in intensities is influenced by the fact that they are both English-speaking countries both with a history of volunteering is not answered here but may be considered in future research of mega events. Understanding the difference in motivations between mega-event volunteers and other event volunteers is important for event managers seeking to recruit and manage volunteers, and also for those aiming to gain a social legacy beyond the event.

This research also offers methodological insights building upon previous uses of SEVMS, which was the basis for the same instrument being used across two events and except for minimal rewording to ensure local contexts, the instrument remained unchanged. However, there were two main differences due to OCOG requirements these were scale differences and timing differences. To some extent the scale differences were addressed in this research, but the timing may impact upon the reported motivations, for example; do volunteers become more altruistic after the games or realise the uniqueness of the event and therefore, respond more favourably? Knowing that expressed motivations may differ depending upon the timing of the research will be important for interpreting and applying research findings in practice as well as building a body of research into the future.

What is important here, is that whilst we have moved the research agenda forward with respect to examining volunteer motivations, using the same instrument over two mega-events, it has not been without its limitations and challenges. If longitudinal comparable datasets, i.e. pre and post event that measure the impact of the events, are the ultimate goal so that the information can be used to inform future event and volunteer managers and community stakeholders to maximize volunteer legacy then it is necessary for gatekeepers and key stakeholders (e.g. Governments, IOC, IPC, FIFA, OCOGS) to consider their role in this process and to explore how they may facilitate an ongoing research program,.

This research demonstrated the similarity between volunteers at two mega sport events in the Vancouver 2010 Olympic and Paralympic Winter Games and the London 2012 Olympic and Paralympic Games. This is the first research that has used the same instrument at two mega sport events and a similar data collection method. The research also supports the use of the SEVMS (and it's adaptations) as an instrument for investigating volunteers' motivations at mega sporting events. While every effort was made to replicate the research, the fact that this

type of research is dependent upon the support and direction of the organising committees means that it is not always possible to replicate in real life.

This research and, the questions that follow, then lead to a broader dialogue in that typically, mega events, such as the Olympic and Paralympic Games and FIFA World Cups, are one-off experiences for host communities and volunteers alike. Thus, the legacy focus was upon whether other volunteer contexts may benefit from the mega event, however, more recently there are examples where countries have successfully bid for two mega sport events that are conducted in similar venues and host communities. Current examples are Brazil with the FIFA World in 2014 and the Rio 2016 Olympic and Paralympic Games, and Russia who will host the FIFA World Cup in 2018 after conducting the Sochi 2014 Olympic and Paralympic Winter Games. In each case, there is the potential to compare and contrast across: multisport and single sport events; able-bodied and para-sport competitions; three different auspicing bodies (IOC, IPC and FIFA); and two different organising committees. The United Kingdom also has a sequence of multisport mega events including two Commonwealth Games (2002 and 2014) and the Olympic and Paralympic Games (2012). Consequently, the research needs to move beyond one-off measures of motivation, commitment and satisfaction to research that compares events from which current and future event managers and host-communities may learn from.

Future Research

Future research of mega-events will need to consider how the social context and the volunteering traditions within those countries influences volunteer motivations, and ultimately satisfaction and legacy. To build upon the growing body of mega-sport event research, future research may explore:

- (a) Is this a Western, English-speaking phenomenon? Will Sochi 2014 have similar results?
- (b) To what extent will there be stronger correlations between winter-to-winter Games and summer-to-summer Games?
- (c) To what extent will the results be different in countries where volunteering is less traditional, i.e. future Olympic and Paralympic host communities such as Russia, Brazil and South Korea?
- (d) How does the timing of the research, with respect to the event, impact measures of motivations?
- (e) What insights may be gained from longitudinal research that explores and pre and post event motivations and volunteering behaviours?

References

- Bang, H., Alexandris, K. and Ross, S.D. (2009), "Validation of the revised Volunteer Motivations Scale for International Sporting Events (VMS-ISE) at the Athens 2004 Olympic Games", *Event Management*, Vol. 12 No. 3-4, pp. 119-31.
- Bang, H. and Ross, S.D. (2009), "Volunteer motivation and satisfaction", *Journal of Venue and Event Management*, Vol. 1 No. 1, pp. 61-77.
- Bang, H., Won, D. and Kim, Y. (2009), "Motivations, commitment, and intentions to continue volunteering for sporting events", *Event Management*, Vol. 13 No. 2, pp. 69-81.
- Barron, P. and Rihova, I. (2011), "Motivation to volunteer: a case study of the Edinburgh International Magic Festival", *International Journal of Event and Festival Management*, Vol. 2 No. 3, pp. 202-17.

- Blackman, D., Benson, A.M. and Dickson, T.J. (2011), "Why human capital legacy will not be sustained: A knowledge management perspective", in *25th Annual ANZAM Conference*, Wellington, NZ.
- Cabinet Office. (2013), "Community Life Survey: August 2012 – April 2013 Statistical Bulletin", in, Cabinet Office, London, UK.
- Clary, E.G., Snyder, M., Ridge, R.D., Copeland, J., Stukas, A.A., Haugen, J. and Miene, P. (1998), "Understanding and assessing the motivations of volunteers: A functional approach", *Journal of Personality and Social Psychology*, Vol. 74 No. 6, pp. 1516-30.
- Clary, E.G., Snyder, M. and Stukas, A.A. (1996), "Volunteers' Motivations: Findings from a National Survey", *Nonprofit and Voluntary Sector Quarterly*, Vol. 25 No. 4, pp. 485-505.
- Costa, C.A., Chalip, L., Green, B.C. and Simes, C. (2006), "Reconsidering the role of training in event volunteers' satisfaction", *Sport Management Review*, Vol. 9 No. 2, pp. 165-82.
- Costello, A.B. and Osborne, J.W. (2005), "Best practices in exploratory factor analysis: Four recommendations for getting the most from your analysis", in *Practical assessment, research and evaluation*.
- Cuskelly, G., Harrington, M. and Stebbins, R.A. (2002), "Changing levels of organizational commitment amongst sport volunteers: a serious leisure approach", *Leisure/Loisir: Journal of the Canadian Association for Leisure Studies*, Vol. 27 No. 3/4, pp. 191-212.
- Dawes, J. (2008), "Do data characteristics change according to the number of scale points used?", *International Journal of Market Research*, Vol. 50 No. 1, pp. 61-77.
- Dickson, T.J., Benson, A.M. and Blackman, D.A. (2011), "Developing a framework for evaluating Olympic and Paralympic legacies", *Journal of Sport and Tourism*, Vol. 16 No. 4, pp. 285-302.
- Dickson, T.J., Benson, A.M., Blackman, D.A. and Terwiel, F.A. (2013), "It's All About the Games! 2010 Vancouver Olympic and Paralympic Winter Games Volunteers", *Event Management*, Vol. 17 No. 1, pp. 77-92.
- Edwards, D., Dickson, T.J. and Darcy, S. (2009), "Working Paper No. 22: Sydney World Masters Games: Volunteer Legacy Outcomes", in, University of Technology Sydney, Sydney, NSW.
- Elstad, B. (1996), "Volunteer Perception of Learning and Satisfaction in a Mega-Event: The Case of the XVII Olympic Winter Games in Lillehammer", *Festival Management and Event Tourism*, Vol. 4 No. 3, pp. 75-83.
- Elstad, B. (2003), "Continuance commitment and reasons to quit: a study of volunteers at a jazz festival", *Event Management*, Vol. 8, pp. 99-108.
- Farrell, J.M., Johnston, M.E. and Twynam, G.D. (1998), "Volunteer motivation, satisfaction, and management at an elite sporting competition", *Journal of Sport Management*, Vol. 12 No. 4, pp. 288-300.
- Getz, D. (2012), "Event Studies: Discourses and Future Directions", *Event Management*, Vol. 16 No. 2, pp. 171-87.
- Giannoulakis, C., Wang, C.-H. and Gray, D. (2008), "Measuring volunteer motivation in mega-sporting events", *Event Management*, Vol. 11, pp. 191-200.
- Grammatikopoulos, V., Koustelios, A. and Tsigilis, N. (2006), "Construct validity of the Special Event Volunteer Motivation Scale for Greek volunteers", *Leisure/Loisir: Journal of the Canadian Association for Leisure Studies*, Vol. 30 No. 1, pp. 287-305.
- Hair Jr, J.F., Black, W.C., Babin, B.J. and Anderson, R.E. (2010), *Multivariate data analysis, 7th edition*, Prentice Hall.
- Hallmann, K. and Harms, G. (2012), "Determinants of volunteer motivation and their impact on future voluntary engagement: A comparison of volunteer's motivation at sport events in equestrian and handball", *International Journal of Event and Festival Management*, Vol. 3 No. 3, pp. 272-91.
- Herzberg, F.I. (1966), *Work and the nature of man*, World, Oxford, UK.
- Horne, J. and Manzenreiter, W. (2006), "An introduction to the sociology of sports mega-events", *Sociological Review*, Vol. 54 No. s2, pp. 1-24.
- Jago, L., Dwyer, L., Lipman, G., Lill, D.v. and Vorster, S. (2010), "Optimising the potential of mega-events: an overview", *International Journal of Event and Festival Management*, Vol. 1 No. 3, pp. 220-37.

- Khoo, S. and Engelhorn, R. (2007), "Volunteer motivations for the Malaysian Paralympiad", *Tourism and Hospitality Planning & Development*, Vol. 4 No. 3, pp. 159 - 67.
- Khoo, S. and Engelhorn, R. (2011), "Volunteer motivations at a national Special Olympics event", *Adapted physical activity quarterly*, Vol. 28 No. 1, pp. 27-39.
- LOCOG. (2009), "Get involved: The Volunteer Programme - London 2012", available at: <http://www.london2012.com/get-involved/volunteering/the-volunteer-programme.php> (accessed 20 January 2009).
- LOCOG. (2012), "LOCOG Fact pack: May 2012", in, London 2012 Olympic and Paralympic Games Organising Committee, London.
- Love, A., Hardin, R.L., Koo, G.-Y. and Morse, A. (2011), "Effects of motives on satisfaction and behavioral intentions of volunteers at a PGA tour event", *International Journal of Sport Management*, Vol. 12 No. 1, pp. 86-101.
- Love, G.W., Sherman, K. and Olding, R. (2012), "Will They Stay or Will They Go? A Study of Volunteer Retention at Film/Music Festivals in the Southwest United States", *Event Management*, Vol. 16 No. 4, pp. 269-81.
- Manfreda, K.L., Bosnjak, M., Berzelak, J., Haas, I. and Vehovar, V. (2008), "Web surveys versus other survey modes", *International Journal of Market Research*, Vol. 50 No. 1, pp. 79-104.
- Maslow, A.H. (1943), "A theory of human motivation", *Psychological Review*, Vol. 50 No. 4, pp. 370-96.
- Mei, D. (2009), "Job Satisfaction among Volunteers of the 2007 Special Olympics World Summer Games", *Asian Journal of Physical Education & Recreation*, Vol. 15 No. 2, pp. 29-34.
- Monga, M. (2006), "Measuring Motivation to Volunteer for Special Events", *Event Management*, Vol. 10, pp. 47-61.
- Osborne, J.W. and Costello, A.B. (2004), "Sample size and subject to item ratio in principal components analysis", in *Practical Assessment, Research & Evaluation*.
- Roche, M. (2002), *Megaevents and Modernity: Olympics and Expos in the Growth of Global Culture*, Taylor & Francis.
- Ryan, R.M. and Deci, E.L. (2000), "Intrinsic and Extrinsic Motivations: Classic Definitions and New Directions", *Contemporary Educational Psychology*, Vol. 25 No. 1, pp. 54-67.
- Sauermann, H. and Roach, M. (2013), "Increasing web survey response rates in innovation research: An experimental study of static and dynamic contact design features", *Research Policy*, Vol. 42 No. 1, pp. 273-86.
- Smith, D.H. (1994), "Determinants of Voluntary Association Participation and Volunteering: A Literature Review", *Nonprofit and Voluntary Sector Quarterly*, Vol. 23 No. 3, pp. 243-63.
- Stevens, J.P. (2002), *Applied Multivariate Statistics for the Social Sciences, Fourth Edition*, Lawrence Erlbaum, New Jersey.
- Strigas, A.D. and Newton-Jackson Jr, E. (2003), "Motivating volunteers to serve and succeed: design and results of a pilot study that explores demographics and motivational factors in sport volunteering", *International Sports Journal*, Vol. 7 No. 1, pp. 111-23.
- Tabachnick, B.G. and Fidell, L.S. (2007), *Using Multivariate Statistics, 5th edition*, Pearson, Boston.
- Twynam, G.D., Farrell, J.M. and Johnston, M.E. (2002), "Leisure and volunteer motivation at a special sporting event", *Leisure/Loisir: Journal of the Canadian Association for Leisure Studies*, Vol. 27 No. 3/4, pp. 363-77.
- VANOC. (2009), "Volunteer Opportunities", available at: <http://www.vancouver2010.com/en/work-and-volunteer/volunteer-opportunities/-/33922/w6niz7/index.html> (accessed 23 January 2009).
- VANOC. (2010a), "Media Fact Sheet: Volunteers at the 2010 Olympic and Paralympic Winter Games", in, Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games, Vancouver.
- VANOC. (2010b), "Staging the Olympic Winter Games Knowledge Report", in, The Vancouver Organizing Committee for the 2010 Olympic and Paralympic Winter Games, Vancouver.
- Vézina, M. and Crompton, S. (2012), "Volunteering in Canada", in, Statistics Canada.

Wollebæk, D., Skirstad, B. and Hanstad, D.V. (2012), "Between two volunteer cultures: Social composition and motivation among volunteers at the 2010 test event for the FIS Nordic World Ski Championships", *International Review for the Sociology of Sport*.