

Sport participation behaviours of spectators attending major sports events and event induced attitudinal changes towards sport

RAMCHANDANI, Girish <<http://orcid.org/0000-0001-8650-9382>>, COLEMAN, Richard <<http://orcid.org/0000-0002-2582-7499>> and BINGHAM, Jerry

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Sport participation behaviours of spectators attending major sports events and event induced attitudinal changes towards sport

Purpose: Evidence of the link between major sports events and increased participation at grassroots level is somewhat mixed. This paper examines attitudinal changes to sport participation among spectators associated with seven sports events held in Great Britain in 2014.

Approach: Primary data was gathered from 4,590 spectators aged 16 and over who attended one of the events. Both positive (inspiration) effects and negative (discouragement) effects were considered through the lens of the Transtheoretical Model (TTM).

Findings: The evidence from this research indicates that event audiences belong primarily to the latter (more active) stages of the TTM. It was also found that attending sports events can further fuel the existing desire of contemplators to increase participation, whereas the catalytic effect among pre-contemplators is arguably less potent. Virtually no discouragement effects were observed across the different TTM stages.

Research limitations: The research stops short of measuring actual changes in sport participation post-event of individuals in the different TTM stages and any attribution of such behaviour changes to events. This is both a limitation of the current research and a natural direction for future research.

Practical implications: The main implications for promoting sport participation through the medium of sports events include attracting more people in the early stages of the TTM, greater collaboration between different event stakeholders and the building of sport participation strategies into the event planning phase.

Originality: Models of behaviour change such as the TTM have seldom been applied to document the current and/or planned sport participation behaviour of individuals in a sport event context or to examine attitudinal changes towards sport as a result of attending an event. An adapted version of the TTM has been proposed to overcome the limitations of the traditional model.

Keywords: sport participation; major events; Transtheoretical Model

Introduction

Government spending to underwrite the hosting of sports events is often justified by the wider monetary and non-monetary consequences that they are assumed to deliver for different beneficiaries. This paper examines the findings from a programme of coordinated research undertaken with spectators at seven major sports events held in Great Britain in 2014. The research had two key aims. First, to understand the incumbent and planned sport participation behaviours of spectators at these events by using Prochaska *et al.*'s (1992) Transtheoretical Model (TTM) as a guide. Second, to analyse whether engagement with these events had in any way changed the attitudes of audiences in different TTM stages towards participation in sport.

The paper is structured in the following order. The next section provides an overview of the pertinent academic literature relating to the sport participation legacies of major sports events. This is followed by the theoretical framework for this research, namely consideration of the TTM and its different stages. The methods section includes details about the seven events, the data collection process and sample sizes as well as the approach used to analyse the data. The results of the investigation are subsequently presented and discussed. The paper concludes by identifying the main limitations and the direction for further research.

Sport participation legacies of major events

Sport encompasses "all forms of physical activity which, through casual or organised participation, aim at expressing or improving physical fitness and mental well-being, forming social relationships or obtaining results in competition at all levels" (Council of Europe, 1992, Article 2, para. 1). Promoting sport participation has two aspects: encouraging physically inactive people to take up sport (i.e. market development); and, enabling physically active individuals to do more sport (i.e. market penetration). There is a general sense of optimism

amongst politicians and agencies in charge of community sport development that major sporting events can contribute to greater participation at grassroots level. Indeed, one of the legacy promises of the London 2012 Olympic Games was to harness the United Kingdom's passion for sport to increase grassroots participation, particularly by young people – and to encourage the whole population to be more physically active (DCMS, 2010).

Hogan and Norton (2000) provide examples of strong political belief in favour of the inspirational value of elite performance underpinning sport development policy in Australia, New Zealand and the USA. The process by which major events are normally assumed to inspire the general population to engage in physical activity and sport is a 'trickle-down' effect. Weed *et al.* (2009, p.12) identify two types of potential effects that may occur:

- a demonstration effect, whereby an event may contribute to increasing the frequency of participation in sport of existing participants, or to rekindling interest in lapsed sport participants; and,
- a festival effect, whereby an event may contribute to stimulating the contemplation of physical activity or the most informal sport-related activities among those who have not previously contemplated participation.

A demonstration effect can therefore be likened to market penetration whereas a festival effect is essentially concerned with market development. However, far from promoting participation, it is even possible that major sports events may have a 'discouragement' effect after reading stories about or watching athletes (Potwarka, 2015), because the standard of performance of elite athletes is seen as impossible to emulate (Vanden Heuvel and Conolly, 2001). Hindson *et al.* (1994) recognise potentially dual models of the dynamics, suggesting that, on the one hand, elite sports people can be inspirational as role models, but on the other, they may deter participation because of the perceived competence gap. This view is also re-iterated by Coalter (2007), who argues that patterns of

behaviour change are complex and the relationship of these processes to role models may partly depend on a range of factors including how role models are seen, how accessible or 'normal' their profile is, and also on individual or community self-efficacy.

Systematic reviews have returned mixed evidence on the impact of mega sports events such as the Olympic Games and the Commonwealth Games on grassroots participation among adults (McCartney *et al.*, 2010; Weed *et al.*, 2009, 2015). An overview of systematic reviews by Mahtani *et al.* (2013) concluded that there was a paucity of evidence to support the notion that the Olympics or Paralympics lead to increased participation in physical and sporting activities in the host country. A good example of this mixed evidence is given by Veal (2003), who found that in the year following the Sydney 2000 Olympic Games, seven Olympic sports experienced a small increase in participation whereas nine declined. Similarly, commenting on the findings from two studies, McCartney *et al.* (2010) report an upward trend in sports participation in association with the 1992 Olympic Games in Barcelona (Spain) but they also report that sports participation in the Manchester area of the UK declined in the aftermath of the 2002 Commonwealth Games. Focusing on children in Canada, Craig and Bauman (2014) found that the 2010 Winter Olympic Games had no measurable impact on objectively measured physical activity or the prevalence of overall sports participation among this cohort. Therefore, the jury is still out on whether changes in participation behaviour can in reality be accomplished by events of this magnitude. However, some studies have shown that engagement in mass participation events is associated with positive changes in the activity levels of participants (Bowles *et al.*, 2006; Crofts *et al.*, 2012; Lane *et al.*, 2008). Furthermore, recent research illustrates that sports events can generate a positive attitudinal change among spectators towards sport participation (Ramchandani and Coleman, 2012; Ramchandani *et al.*, 2014), albeit audiences at sports events for the most part tend to be already predisposed to sport and therefore the primary effect is one of market

penetration or 'demonstration' (i.e. people wanting to do more sport) rather than a market development or 'festival' effect (i.e. more people wanting to take up sport). A similar conclusion was drawn by Ramchandani *et al.* (2015) when looking at reported changes in sport participation behaviour following attendance at sports events; they also found that attribution of any positive changes in behaviour to specific events can be problematic. Research undertaken by Taks *et al.* (2014) and Misener *et al.* (2015) in relation to medium-sized sports events highlights the importance of 'leveraging' in order for sport participation outcomes to be realised. These studies found a distinct lack of leveraging strategies and tactics as well as a number of missed opportunities by event organisers and other key stakeholders to stimulate sport participation.

Building on previous research, this study examines the attitudinal changes to sport participation among spectators induced by events, which acts as a relevant precursor to any subsequent changes in their participation behaviour. The analysis takes into consideration any positive (inspiration) effects as well as any negative (discouragement) effects associated with exposure to sports events for both active and inactive groups of attendees.

Theoretical Framework

The TTM was one of three models of engagement with physical activity and sport identified by Weed *et al.* (2009) in their systematic review of the evidence for developing a physical activity and health legacy from the London 2012 Olympic and Paralympic Games. It is this model that the underlying research for this paper engages with.

Originally developed within the psychology discipline to understand addictive behaviours, the TTM suggests that individuals attempting to change their physical activity behaviour move through a series of five distinct stages that differ according to an individual's intention and behaviour. Figure 1 provides an overview of these stages based on previous

classifications suggested by Ramchandani and Coleman (2012) and Ramchandani *et al.* (2015). Individuals in the pre-contemplation stage are not thinking about changing their incumbent behaviour. Those in contemplation stage are already motivated to change their behaviour. The preparation stage is where an individual is taking steps to make the desired change possible. Finally, those in the action and maintenance stages are already undertaking the desired behaviour. In the context of promoting sport participation, the first two stages of the TTM correspond to individuals who are not physically active and are either planning or not planning to become physically active (i.e. pre-contemplation and contemplation), whereas the last three stages include individuals who undertake at least some physical activity (i.e. preparation, action and maintenance).

<FIGURE 1 HERE>

The TTM is a dynamic framework “where individuals progress and regress through stages in an effort to create a lasting change” (Marshall and Biddle, 2001, p. 229) although “most relapsers do not regress all the way back to where they began” (Prochaska *et al.*, 1992, p. 1105). In other words, once people have progressed from pre-contemplation to contemplation, a return to the pre-contemplation stage is unlikely. Further discussion about the TTM and its application to events is available in Mair and Liang (2014) and Ramchandani *et al.* (2015). The former applied the TTM to examine the role of a sustainability-focused event in Australia in promoting pro-environmental behaviour change amongst attendees. The latter specifically advocated the use of the TTM to enhance our understanding of the extent to which sports events might motivate people to become more active themselves.

To date, the TTM has not been applied formally to document the current and/or planned sport participation behaviour of individuals in a sport event context or to examine attitudinal changes towards sport as a result of attending an event - a genuine gap in the knowledge that this paper attempts to address. The research sought to investigate the following key issues through the lens of the TTM:

- The level of audience engagement with sport (frequency of participation) and their perceived importance of doing sport.
- Whether (prior to their event attendance) spectators had planned to increase their participation in sport in the following twelve months.
- The extent to which spectators felt inspired or discouraged by their event experience to make changes to their incumbent participation behaviour.

Methods

Data collection and sample sizes

The research covered seven sports events of World or European level held in Great Britain in 2014. The events were chosen for independent evaluation by UK Sport, the agency in charge of elite sport and co-ordinating the bidding for and staging of major international sporting events in the UK, who financially supported the events. Many of the previous attempts to demonstrate that physical activity, sport or health outcomes have been leveraged from major sports events were conceived retrospectively post event to try to show a particular effect (see Weed *et al.*, 2009). Relying on analysis of secondary data such as national surveys of sport participation to measure the trickle-down effect of major events is of limited value for two reasons. First, this type of data is collected for far more general purposes than assessing the impact of a particular sport event. This means that it becomes difficult to be certain about the extent to which any changes in participation are a direct consequence of staging an event.

Second, even if it was possible to isolate changes to an event, macro level data is rarely sensitive enough to pick up changes (Preuss, 2007). Consequently, researchers should consider "turning their attention to the level of the individual when attempting to understand the extent to which sport events might inspire participation" (Potwarka, 2015, p. 74). For example, an event might only inspire attitudinal and/or behaviour change depending on an individual's incumbent and planned behaviour. Hence a bespoke programme of primary research was undertaken with spectators who attended one of the events in order to understand any attitudinal changes experienced by them.

The overall approach to data collection was consistent with previous research by Ramchandani and Coleman (2012) and Ramchandani *et al.* (2014). Data was captured from spectators aged 16 and over using a standard self completion questionnaire at each event. In order to achieve as representative a sample as reasonably possible within the window of opportunity available to survey at each event and the resources available for the research, the data collection was undertaken on all or most event days and at various times throughout the day. However, care was taken not to survey spectators too early in the day to ensure that they had watched at least some part of an event, informing their judgement about their experience. The research incorporated a diverse range of sports events as well as a mix of mainstream and disability events. Nonetheless, these factors did not affect the overall approach to data collection.

Overall, 4,590 responses were achieved across the seven events. As shown in Table 1, the size of the sample at event-specific level varied between 312 (wheelchair tennis) to 789 (track cycling), and was influenced by the number of spectators attending each event. More importantly, the size of the aggregate sample achieved provides a sound basis for investigating the profile of respondents relative to the TTM and their experience of the event that they attended.

<TABLE 1 HERE>

TTM classifications

Existing research on the trickle-down effect is rarely underpinned by any explanatory theory or model of behaviour change (Murphy and Bauman, 2007; Boardley, 2013). As noted by Potwarka (2015, p.74), "advancing knowledge and understanding of the participation impacts of sporting events requires a movement toward the application of relevant theoretically grounded approaches to understanding the phenomenon", which provides a sound rationale for the use of the TTM in this research. Of direct relevance to this research, the TTM has recently been adopted by Sport England - responsible for promoting regular sport participation and developing sporting talent in England - to guide its investment decisions for grassroots sport and behaviour change principles have been explicitly embedded within its strategy for the period 2016-2021 (see Sport England, 2016a). This is a happy coincidence but further vindicates the use of the TTM in this research to explain the inspirational impacts of events.

Because the TTM has not been applied in this specific context previously, there is no prescribed approach to 'pigeonhole' people to specific stages of the TTM based on their existing engagement with sport and their planned participation behaviour. Hence categorising respondents is a matter of judgement. The TTM stage that survey respondents had reached was judged based on their answers to two questions. The first question asked respondents about their frequency of participation in sport in the four weeks prior to attending an event. 'Sport' in this context was defined to include traditional team sports including (but not limited to) football, cricket or hockey as well as activities such as swimming, cycling, running/jogging and going to the gym. The second question asked respondents whether, prior to attending an event, they had planned to increase their sport participation frequency

over the next twelve months. The precise approach used to classify respondents is explained below.

- Respondents who had not done any sport in the previous four weeks and who had not previously planned to increase their participation in sport in the following twelve months were considered to be in the *pre-contemplation* stage.
- Those who had done no sport in the previous four weeks but who reported having previously planned to increase their participation in sport in the following twelve months were in the *contemplation* stage.
- The *preparation* stage included respondents who had done between one and three days of sport in the previous four weeks (i.e. less than once per week on average). Respondents in this stage were active but not regularly.
- Those who had done between four and eleven days of sport in the previous four weeks were in the *action* stage. Individuals in this category met the criterion of undertaking sport on average at least once a week (a key measure of sport participation in England) but less than three days per week.
- Finally, those who had done twelve or more days of sport in the previous four weeks (i.e. on average at least three days per week) were deemed to be in the *maintenance* stage. It is reasonable to assume that individuals undertaking sport at this frequency would have been regular or very regular participants for a sustained period of time because people are unlikely to make a direct switch from being non-participants to regular participants.

The authors deemed that the groupings above were equally relevant across the seven sports events included in the research. Using the same approach to classification ensured comparability of results between events and also enabled the data from different events to be

amalgamated for aggregate analysis. As a way to test the reliability of these groupings, respondents were also asked to indicate how important taking part in sport was to them. In theory, one would expect that those for whom sport participation is an important issue are the most likely to be undertaking sport on a regular basis already. Conversely, those for whom being active in sport is of little or no importance are likely to be disengaged with sport.

The TTM in its traditional form does not capture the contemplation levels of individuals in the middle or latter stages (i.e. preparation, action and maintenance). In other words, the orthodox stages of the TTM do not consider whether individuals who are already active in sport to some extent are thinking about increasing their level of activity. To this end, the TTM was subsequently modified and extended based on survey responses in order to examine the concentration of 'pre-contemplators' and 'contemplators' within the stages of preparation, action and maintenance - see Figure 2. The five original stages were condensed into four with each stage now having two sub-stages (pre-contemplators and contemplators), which gives a total of eight sub-stages. Pre-contemplators in each stage had not planned to do more sport in the twelve months following their event attendance, whereas contemplators reported an intent to increase their sport participation frequency in the same time period. It is envisaged that people can move forward and backward between the stages (as per the original TTM), but also between the sub-stages within each stage.

<FIGURE 2 HERE>

Survey design and data analysis

The survey tool asked respondents whether, as a result of attending a particular event, they felt either: inspired to do more sport than they did normally; discouraged from doing more sport than they did normally; or, neither inspired nor discouraged from doing more sport than

they did normally. The wording of this question was designed to capture responses from respondents across the different TTM stages including existing sport participants as well as non-participants. The importance that respondents attached to doing sport was measured on a four point scale - very important (4), important (3), not particularly important (2), not at all important (1). The survey also included additional questions concerned with demographic information of the spectator sample (gender and age), which was used to analyse the profile of respondents in each stage of the TTM. The z-test for independent samples was used to determine whether any differences in proportions of 'inspired' and 'discouraged' respondents between the different TTM stages were statistically significant.

Results

Stages of change of event attendees

Overall, across the aggregate spectator sample, 8.9% had not participated in any sport in the four weeks pre-event, (comprising pre-contemplators and contemplators), whereas 91.1% had undertaken some sport in the same time frame (consisting of respondents in the preparation, action and maintenance stages). Maintenance (46.5%) and action (35.2%) were by far the most common stages to which respondents belonged. By contrast, only 9.4% of the overall sample was in the preparation stage, 6.6% was in the contemplation stage and 2.3% was in the pre-contemplation stage.

To put the overall proportions of respondents in the maintenance and action stages into some context, Sport England's Active People Survey for 2014/15 shows that 17.6% and 18.2% of adults aged 16 and over in England fall within these stages respectively (Sport England, 2016b). Conversely, more than half of the adult population in England (53.8%) are either pre-contemplators or contemplators compared with less than one in ten in our aggregate sample (8.9%).

The data in Table 2 illustrates that the high concentration of respondents in the latter stages of the TTM was evident at each of the seven events. This finding highlights the limited pulling power of sports events and raises some serious questions about whether (and how) hosting major sports events can lead to any meaningful increase in sport participation among the sedentary population. In order for this to happen, there needs to be in the first instance more effective promotion to inactive / less active individuals of opportunities to engage with these events.

<TABLE 2 HERE>

For respondents in each TTM stage, Figure 3 shows the average scores (out of four) for the importance they attached to taking part in sport. A distinct pattern emerges – the more active individuals are, the higher they rate the importance of sport. This finding validates the overall approach used to allocate respondents to the different stages of the TTM.

<FIGURE 3 HERE>

The gender and age profile of the aggregate spectator sample based on the TTM stages is presented in Table 3. The proportion of females was high relative to males in the pre-contemplation, contemplation and action stages; whereas males were more likely to feature in the preparation and maintenance stages. There are some interesting differences between the age compositions of the different groups. Notably, younger adults (16-34 year olds) appear to have a greater presence in the action and maintenance stages, middle-aged adults (35-54 year olds) are typically placed between the contemplation and preparation stages and older adults (aged 55+) feature primarily in the pre-contemplation stage. In terms

of encouraging inactive individuals to move along the TTM continuum, it is then (by and large) the middle-aged and older adults that sports events can potentially influence.

<TABLE 3 HERE>

Inspiration and discouragement effects

Table 4 shows the proportion of respondents in each TTM stage who said they felt inspired by their event attendance to increase their participation in sport. Also shown in Table 4 are the corresponding statistics for those who reported being discouraged from doing more sport than they did normally.

<TABLE 4 HERE>

Overall, the inspiration effect was broadly similar for spectators in the preparation, action and maintenance stages (between 60.9% and 64.3%) and peaked among contemplators (76.9%). By contrast, less than a quarter of pre-contemplators reported being inspired to take up sport (23.1%), suggesting that the events under consideration did not stimulate this group of attendees sufficiently to facilitate movement along the TTM continuum. Thus, the evidence indicates that inspiration patterns are quite diverse among inactive spectators and that (inactive) contemplators are over three times more likely to be inspired than (inactive) pre-contemplators. Statistical analysis of the aggregate data revealed that the differences in the inspiration scores between groups are by and large significant ($p < 0.05$) - with the exception of the differences between the preparation and action stages and the preparation and maintenance stages. None of the respondents in the pre-contemplation and contemplation stages reported being discouraged from taking part in sport. There were

negligible traces of discouragement among respondents between the preparation and maintenance stages (0.5% - 1.1%) - these differences were statistically insignificant ($p > 0.05$).

When looking at the event-specific data for inspiration and discouragement effects in Table 4, it is evident that contemplators demonstrated the highest inspiration effect at six of the seven events. In the case of the diving event, contemplators had the second highest inspiration effect. In line with the overall picture, the inspiration effect on contemplators at each event is consistently higher than the inspiration effect on those in the pre-contemplation stage. Moreover, the inspiration effect scores for contemplators compare favourably with the corresponding scores for those in the action and maintenance stages at all seven events and for those in the preparation stage at six of the seven events.

An adaptation of the TTM

As discussed previously, a limitation of the TTM in the context of this research is that it does not document the planned behaviours of those in the preparation, action and maintenance stages. To overcome this limitation, Table 5 provides an adapted version of the TTM that shows the split between pre-contemplators and contemplators within each of these stages alongside the corresponding breakdown for non-participants. The 'pre-preparation' stage encompasses non-participants who were pre-contemplators and contemplators. Contemplators within the preparation, action and maintenance stages refer to those who had planned to increase the frequency of their participation in the following year anyway.

<TABLE 5 HERE>

Overall 43.4% of respondents across all stages were 'pre-contemplators' and 56.6% were 'contemplators'. The vast majority of the sub-samples of pre-contemplators and contemplators were composed of individuals within the 'maintenance' and 'action' stages. It is also evident from Table 5 that the ratio of contemplators to pre-contemplators progressively reduces as we move from the initial to the latter stages (from 2.9 for the pre-preparation stage to 0.9 for the maintenance stage). This makes intuitive sense because those in the latter stages are already undertaking sport on a regular or very regular basis and hence the scope to increase their participation levels further is somewhat limited. On the other hand, those in the 'pre-preparation' and 'preparation' stages demonstrate relatively high concentrations of contemplators who plan to increase their frequency of participation because they did very little or no sport at the time.

Figure 4 illustrates the proportion of the aggregate spectator sample that was inspired by their event experience to increase their sport participation frequency in relation to the revised TTM and the gaps between the scores for pre-contemplators and contemplators within each stage. Given the negligible discouragement effects reported by respondents in the original TTM stages, this particular aspect was not investigated further using the revised TTM.

<FIGURE 4 HERE>

There are several noteworthy observations from Figure 4. First, the inspiration effect among pre-contemplators in the pre-preparation stage (i.e. non-participants) is considerably lower (23.1%) in comparison with pre-contemplators in the other stages (between 45.2% and 49.4%) - and this difference is also statistically significant ($p < 0.05$). Second, contemplators across the different stages exhibit broadly comparable levels of inspiration (between 70.9%

and 79.9%), although contemplators in the maintenance stage were significantly more inspired than those in the preparation and action stages ($p < 0.05$). Third, the scores for contemplators within each stage are consistently, and statistically significantly ($p < 0.05$), greater than those for pre-contemplators. Finally, the gap between the scores for contemplators and pre-contemplators is at its highest point among non-participants (53.8%).

The next section discusses the main learning points together with the practical implications of the research. The limitations of this study and direction for future research are identified thereafter.

Discussion

The buzz surrounding major sports events make them suitable vehicles to promote and market sport as a 'product'. The findings from this research emphasise the nature of the challenge faced by event organisers to stimulate increases in participation among audiences. On the one hand, there is evidence to suggest that events can have a positive influence on the attitudes of spectators towards participation in sport, regardless of the TTM stage to which they belong (see Table 4). Moreover, virtually no discouragement effects were observed across the different TTM stages (see Table 4), which contests the perceived notion that watching elite athletes could deter participation as hinted by some commentators (e.g. Hindson *et al.*, 1994; Vanden Heuvel and Conolly, 2001).

However, the bottom line is that spectators attending sports events tend to be more 'sporty' than the general population and belong primarily to the latter stages of the TTM (i.e. action and maintenance - see Table 2). While this is a new finding in terms of uncovering the predisposition to sport of event attendees through the lens of the TTM, it resonates with the work of Mair and Liang (2013) in the context of a sustainability-focussed event, who using the TTM framework found that the event attracted individuals who were already committed

to sustainable behaviour. Hence, the perceived notion that events can stimulate any meaningful market development or festival effects among inactive audiences by osmosis is flawed. Until events are able to draw substantially more individuals belonging to the early (pre-preparation) and middle (preparation) stages of the TTM, there is not much scope for them to act as a stimulant for getting inactive or less active people to increase their participation.

According to previous research that has examined attitudinal changes towards sport participation caused by events, more active individuals are significantly more likely to report a sense of inspiration compared with less active or inactive individuals (Ramchandani and Coleman, 2012; Ramchandani *et al.* 2014). To this end, the added contribution of this study is two-fold as evidenced by the data presented in Table 4. First, it illustrates that the inspiration effect among inactive spectators can vary considerably depending on whether such individuals are pre-contemplators or contemplators. Second, at six of the seven events inspiration among contemplators was found to be notably higher in comparison with individuals in all the other TTM stages. Moreover, by adapting the TTM (see Figure 2), this research has provided an original insight into the planned participation behaviours of individuals in the middle (preparation) and latter (action and maintenance) stages (see Table 5) as well as the extent to which attending sports events can potentially contribute to their intended behaviour (see Figure 4). The evidence from this research indicates that events can further fuel the existing desire of contemplators within each of the TTM stages to increase participation, whereas the catalytic effect among pre-contemplators within each stage is arguably less potent (see Figure 4). This assertion is given further credence by recent research conducted by Potwarka (2015), who applied the theory of planned behaviour to examine individuals' intention to become more physically active in response to the 2010

Winter Olympic Games in Vancouver, and found that those who intended to become more active also expressed a positive attitude toward that behaviour.

Even though the seven events in this research were held in the UK, they are of international sporting significance. All of the events are of World or European level. Ultimately the findings from this research are of interest and value to an international audience of practitioners and researchers, because reducing physical inactivity is a desired outcome of investment that resonates with policy makers worldwide given its negative health effect on various diseases and life expectancy (see Lee *et al.*, 2012). Indeed, a recent report by the European Commission (2016) on grassroots sport recognises "the undeniable and important health benefits of sport and physical activity and their crucial role in tackling obesity and other non-communicable diseases" (p. 13), and calls for public authorities in the member states "to encourage the prescription of physical activity by medical professionals, in place of, or in addition to, prescription medication when appropriate" (p. 14). Scientific evidence cited by Sport England (2016a) illustrates that the health benefits experienced by a sedentary person who takes up even a small amount of activity are far greater than those associated with increasing the amount of activity of an already active person. Moreover, it is understood that older adults who participate in any form of physical activity gain some health benefits, including maintenance of good physical and cognitive function (Public Health England, 2014). The results highlight that older people attending sports events are most likely to feature in the pre-contemplation stage and that their presence in the action and maintenance stages of the TTM is modest relative to younger age groups (see Table 3). Older people are also more susceptible to chronic health conditions, which participation in physical activity (including sport) can contribute to prevent or treat. Encouraging this particular demographic to move along the TTM continuum is therefore of even more value from a public health perspective.

There are two obvious practical implications of this research. The first of these relates to influencing more inactive people to engage with sports events. This would necessitate the event offer and environment to be made inclusive and accessible to everyone, and alleviating any practical and emotional barriers that prevent less active people from attending events, in order to benefit from that experience. Practical barriers may include not knowing what events are on or how to get tickets, whereas emotional barriers may include the perception of exclusion or an intolerant atmosphere. The new UK government strategy for sport - *Sporting Future* - stresses the importance for event stakeholders to consider how the use of active travel and public transport can be promoted when hosting sporting events (see HM Government, 2016).

The second practical implication of the research relates to harnessing any inspiration effect post event. Watching a sports event might inspire someone to take up sport or increase their frequency of participation at a given point in time. However, how that feeling of inspiration (attitudinal change) is subsequently harnessed (e.g. through signposting and the provision of appropriate exit routes) will determine whether or not it eventually converts into sustainable behaviour change. There is therefore a need for greater cohesive working between the various event stakeholders (e.g. organisers, event funders, sport development agencies and national governing bodies) and to build sport participation strategies well in advance of hosting an event. This view is also supported by Taks *et al.* (2014) and Misener *et al.* (2015), who argue the case for formulating and implementing strategies and tactics in order to leverage sport participation outcomes. Through proper leveraging, events may deliver increases in sport participation frequency of existing participants and re-engage lapsed participants through a demonstration effect and may stimulate contemplation among pre-contemplators through a festival effect (Weed *et al.*, 2009, 2015). Where it is the intention to use events as a stimulus for demand, event stakeholders need to be clear on how

precisely this will be achieved and develop appropriate marketing activities and programme initiatives aimed at the target audience. In general, promotional messages should highlight the positive outcomes associated with making the desired behaviour change (e.g. improved health and well-being) and, more specifically, attempt to convince young people that becoming more active in response to an event is socially normative behaviour (Craig and Bauman, 2014; Potwarka, 2015). Early exposure to sports events may influence potential participation of children and young people to a greater extent (Wicker and Sotiriadou, 2013).

Conclusion

This paper utilised used the TTM as a framework to examine the impact of attending an event on potential increases in participation among event audiences. The findings provide a reality check for those who consider hosting events as a magic bullet to raise participation in sport and encourage positive health behaviours. However, the study has some limitations which in turn represent directions for future research. First, the study is focussed on people who attend events and does not consider people who consume them via television and other media platforms, and therefore the findings cannot be extrapolated to the wider population of event consumers. Second, the findings apply to adults rather than children, and any potential nuances across different demographic groups have not been investigated. Third, future research should examine the factors that affect attitudinal change among people in the different TTM stages. For example, are certain aspects of an event (such as the quality of the competition, the skill and ability of the athletes, ancillary event activities etc.) more or less inspirational for individuals in specific stages? Fourth, from a methodological viewpoint, the approach used to analyse the data in this research was guided by the nature of the sample in the sense that the event-specific sample sizes relating to individuals in the early stages of the TTM were relatively small. Where the sample permits, future research should consider the

application of more rigorous statistical techniques to account for data coming from different events. Finally, this study stops short of measuring actual changes in sport participation post-event of individuals in the different TTM stages and any attribution of such changes to events. Undertaking this exercise will facilitate a better understanding of movement (progression and regression) both between and within stages of the TTM.

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