A Cohort Effect on Sport Participation: A Case of the Tokyo 1964 Olympic Games

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Participating in sport as physical activity is associated with substantial health benefits (Berg, Warner, & Das, 2015). A number of developed countries adopted policies or established guidelines to promote sport participation (World Health Organization, 2010). However, the rate of sport and physical activity participation has been flat or has even decreased in many countries (e.g., The European Commission, 2014; World Health Organization, 2010). For example, the weekly sport participation rate of Europeans is 41% in 2013 and has not increased since 2009 (The European Commission, 2014). In the United States, more than 80% of adults and adolescents do not take enough aerobic physical activity to meet the guidelines (U.S. Department of Health and Human Services, 2010). An exception to this trend is Japan, where the twice-weekly sport participation rate of adults increased from 16% in 1992 to 48% in 2014 (Sasakawa Sports Foundation, 2014). This increase can be attributed mainly to sport participation among the elderly whose participation rate increased by 20% over the past decade. Active sport participation among Japanese elderly is noteworthy, as it deviates from existing evidence indicating that aging has a negative impact on sport participation (e.g., Breuer & Wicker, 2008; Chung et al., 2009).

This study examines the impact of a cohort as a key determinant of the recent increase in the elderly sport participation rate in Japan. A cohort refers to “individuals…who experienced a particular event during a specified period of time” (Glenn, 2005, p.2). Specifically, based on studies suggesting the potential effect of a mega-sport event on people’s attitude towards and participation in sport (e.g., Eime et al., 2015), we seek to investigate if the shared experience of the Tokyo 1964 Olympic Games during adolescence may explain the increased sport participation of Japanese elderly. We focus on the Tokyo 1964 Olympic Games because it is the largest multi-sport event in the history of Japan and had a great impact on the development of the country after World War II.

Although understanding the determinants of sport participation is necessary to promote sport participation, little is known about the potential influence of the cohort. Moreover, no research has examined the long-term effect of the Olympic Games on sport participation. This study would extend the literature by demonstrating how the cohort effect, especially the shared experience of a mega-sport event during adolescence, determines sport participation.

Theoretical Background

The existing literature has identified various determinants of sport participation, including demographics (e.g., age, gender, marital status; Breuer & Wicker, 2008; He & Baker, 2005), economic factors (Breuer & Wicker, 2008; Humphreys & Ruseski, 2010), and occupation (Chung et al., 2009; Wu & Porell, 2000). The potential effects of mega-sport events have also been explored (Eime et al., 2015), but evidence is mixed and limited to short term effects. Weed et al. (2015) found the Olympic Games do not bring new participants into sport. On the other hand, Veal, Toohey, and Frawley (2012) concluded the Olympic Games are effective to inspire young people. This latter evidence is consistent with the research showing that some specific experiences during youth have an impact on shaping people’s behavior over the life cycles. For example, physical activity participation in adolescence strongly predicted participation in adulthood (Perkins et al., 2004), and the emotional experience such as feeling of enjoyment or anxiety through sport in youth affected attitudes toward sport in subsequent years (Crocker et al., 2004; Weiss, Kimmel, & Smith, 2001). Thus, mega-sport events may affect the sport participation rate of specific cohorts, especially those who experience the events during adolescence.

A cohort effect, which means each cohort shows a unique pattern, is frequently investigated in the medical and sociological literature to explain the phenomena that cannot be understood only from cross-sectional analysis (Chen, Kie, & Hong, 2001). This body of literature has sought to identify the effects of cohort and those of age and period separately, using statistical models such as the constrained regression model (Mason et al., 1973) and the mixed model approach (Yang & Land, 2006). In sport management, Breuer and Wicker (2009) conducted a cohort
sequence analysis to examine sport participation in Germany and found the cohort to be an important determinant of sport participation.

Based on the previous studies, our hypothesis is that those who were adolescents during the Tokyo 1964 Olympic Games would have a higher rate of sport participation than other generations. We regarded this phenomenon as a cohort effect of the Olympics Games and termed it the “Olympic Cohort” effect. In this study, the Olympic Cohort refers to those who were aged 10 to 24 years in 1964 based on the literature of the experience in young people and the definition of adolescent from United Nations (2013) and UNICEF (2012).

Method

Data were drawn from the Japanese National Sport-Life Survey (Sasakawa Sports Foundation, 2014) from 2000 to 2014. This survey is conducted every two years with a nationally representative sample of adults in Japan. The respondents, who are Japanese adults aged 20 years and over, were selected with a two-stage quota sampling method with approximately 2,000 samples for each year. The final sample of this study is 16,594 respondents (99.7% of the original respondents) who answered all study variables. The level of sport participation was assessed by the total number of times respondents reported participating in sport during the last year. Based on the definition, the Olympic Cohort was constructed as a dummy variable as follows: respondents aged 46-60 in 2000, 48-62 in 2002, 50-64 in 2004, 52-66 in 2006, 54-68 in 2008, 56-70 in 2010, 58-72 in 2012, and 60-74 in 2014 (1 = Olympic Cohort; 0 = otherwise). A random intercept model was used for a main analysis. We divided respondents into subgroups based on geographical areas (i.e., prefectures) in which they lived and estimated the model for each subgroup. The dependent variable is the level of sport participation and the hypothesized independent variables is the dummy variable of the Olympic Cohort. Control variables included the dummy variable of survey year and the following demographic variables shown to influence sport participation in the previous literature: age, gender, unemployment, marital status, and existence of children (e.g. Breuer & Wicker, 2008; Chung et al., 2009; Humphreys & Ruseski, 2010).

Results

Two random intercept models were performed to analyze the effect of the Olympic Cohort on the level of sport participation. Model 1 included only control variables, while Model 2 included Olympic Cohort as an additional independent variable. Model 1 yielded significant results for gender (B = 13.02; t = 3.62 p < .001), age (B = 2.78; t = 3.76; p < .001), age squared (B = -0.02; t = -2.80; p < .01), unemployment (B = 38.46; t = 6.53; p < .001), marital status (B = 29.24; t = 6.13; p < .001), and having children (B = -26.91; t = -6.65; p < .001). When the Olympic Cohort was entered in Model 2, the significance of age and age squared disappeared, but the effects of the other control variables remained significant. Moreover, the Olympic Cohort had a significant positive effect on sport participation (B = 41.01; t = 8.67; p < .001). According to the AIC test, Model 2 (AIC = 162,071.60) had a better fit than Model 1 (AIC = 162,151.46). As hypothesized, the results indicate participants who were adolescents during the 1964 Tokyo Olympic Games had a higher rate of sport participation after controlling for the other determinants of sport participation.

Discussion

This study provided empirical evidence that being in the Olympic Cohort had a positive effect on people’s sport participation in subsequent years. These results imply that exposure to the Olympic Games in youth may influence sport participation in adulthood. In addition, the Olympic Cohort effect was a better predictor of sport participation than age, as the effects of age and age squared identified in Model 1 disappeared when the Olympic Cohort was included in Model 2. Findings from our study provide scholars with new knowledge about the relationships between sport participation, cohort effect, and mega-sport events.