

August 2019

## Examining the Youth Multi-Sport Event Environment: Implications towards athlete development and transitioning.

Eric MacIntosh

*University of Ottawa*, [Eric.macintosh@uottawa.ca](mailto:Eric.macintosh@uottawa.ca)

Keita Kinoshita

*University of Ottawa*, [kkino049@uottawa.ca](mailto:kkino049@uottawa.ca)

Michael L. Naraine

*Deakin University*, [michael.naraine@deakin.edu.au](mailto:michael.naraine@deakin.edu.au)

Shintaro Sato

*Montclair State University*, [satos@montclair.edu](mailto:satos@montclair.edu)

Follow this and additional works at: <https://scholarworks.bgsu.edu/jade>



Part of the [Sports Management Commons](#), and the [Sports Studies Commons](#)

---

### Recommended Citation

MacIntosh, Eric; Kinoshita, Keita; Naraine, Michael L.; and Sato, Shintaro (2019) "Examining the Youth Multi-Sport Event Environment: Implications towards athlete development and transitioning.," *Journal of Athlete Development and Experience*: Vol. 1 : Iss. 2 , Article 1.

DOI: <https://doi.org/10.25035/jade.01.02.01>

Available at: <https://scholarworks.bgsu.edu/jade/vol1/iss2/1>



This work is licensed under a [Creative Commons Attribution-NonCommercial 4.0 License](#)

This Article is brought to you for free and open access by the Journals at ScholarWorks@BGSU. It has been accepted for inclusion in Journal of Athlete Development and Experience by an authorized editor of ScholarWorks@BGSU.

## Examining the Youth Multi-Sport Event Environment: Implications Toward Athlete Development and Transitioning

Eric MacIntosh  
University of Ottawa

Keita Kinoshita  
University of Ottawa

Michael L. Naraine  
Deakin University

Shintaro Sato  
Waseda University

### ABSTRACT

*Many factors are associated with a person's attitude formation and intention toward a behavior. In this study, we examined the planned organizational service environment factors that helped form young athletes' attitudes regarding their future involvement in high-performance sport. Through a survey design that included quantitative and qualitative questions, data was collected from 207 young pre-elite athletes who competed during the 2017 Commonwealth Youth Games in The Bahamas. Several service environment factors contributed to young athletes' satisfaction with the event including their accommodations, nutrition, available information regarding their sport, and finally, the social and cultural activities experienced during games-time. However, satisfaction with the service environment was not predictive of young athletes' future intentions to remain in sport. Qualitative thematic coding denoted two key themes related to athlete's plans to continue in high-performance sport: level of enjoyment and learning. Further, results revealed five main impediments to continuing in high-performance sport: physiological, psychological, performance, environmental, and life concerns. This paper contributes to our understanding of the service environment factors that influence young athletes in a multi-sport international event and provides evidence of important aspects involved in athletes' attitude formation and intentions to remain in the high-performance sport system.*

*Keywords:* Experiences, intentions, satisfaction, sport events, young athlete

Participating in sport has physical, psychological and social benefits that can lead to healthy behavior development and yet, despite the well-acknowledged potential benefits that participation offers, there is an alarming rate of participation decline in sport within early adolescence and adulthood (e.g., Balish, McLaren, Rainham, & Blanchard, 2014; Canadian Heritage, 2013). Research has shown that a person's termination in sport is negatively related to mental and physical health (Vella, Cliff, Magee, & Okely, 2014; 2015). Consequently, it is a worthy pursuit to keep people engaged in competitive and high-performance sport (Green, 2005; Sotiriadou, Shilbury, & Quick, 2008).

For sporting organizations like the Commonwealth Games Federation (CGF), the pathways to their main property (Commonwealth Games), for many athletes, involve participating at youth events (e.g., Commonwealth Youth Games - CYG). Competing in high-level youth events are important stepping-stones that act as key entry points toward retention and transition in high-performance sport (see Sotiriadou et al., 2008). However, do they in fact matter when it comes to whether or not a person continues in their sport?

Sport psychology research has denoted that the positive feelings a person ascertains from their sport experience are important factors in determining their retention (Crane & Temple, 2015; Gardner, Magee, & Vella, 2017). Specifically, the level of satisfaction a person experiences in sport contributes to their attitude toward continuation (Crane & Temple, 2015; Gardner et al., 2017; Ryan & Deci, 2000). For example, a person's enjoyment in sport is influenced by their relationships with parents, coaches, and peers, key considerations in particular for those aged 15-18

where attrition rates are high (Chan, Lonsdale, & Fung, 2012; Gardner, Magee, & Vella, 2016; Rottensteiner, Kontinen, & Laakso, 2015). Factors such as overtraining, athletic burnout, overemphasis on winning, and pressures arising from the dual career of sport and education all have notably contributed to a likelihood of athlete attrition/dropout (Balish et al., 2014; Crane & Temple, 2015; Parent, Kristiansen, & MacIntosh, 2014). These intrapersonal and interpersonal factors present a myriad of psychological, physiological, and social aspects that influence a young athlete's attitude formation, a key precursor to behavior (Crane & Temple, 2015; MacIntosh & Nicol, 2012). Therefore, it is important for games' management to plan an environment that caters to the needs and wants of the central figures of the event and the athletes, to help attenuate their concerns (MacIntosh & Parent, 2017).

Within a sport event setting, young athlete experiences culminate in attitude and intention formation, providing an important assessment toward their sport continuance (Kristiansen, MacIntosh, Parent, & Houlihan, 2018). However, the ways in which competitive events like multi-sport games (e.g., Youth Olympic Games - YOG) incentivize athletes to continue competing in their sport requires further understanding and articulation (Kristiansen et al., 2018). As those researchers noted, despite competing at a Games within the Olympic property, a relatively high proportion of athletes discontinued their sporting pursuits along the high-performance pathway. This point highlights the influence of sport organizations on athlete continuance in sport. This has been the case with sport officials (e.g., Gray & Wilson, 2008) and collegiate recreation employees

(e.g., Cunningham & Mahoney, 2004) previously, and a similar sentiment can be applied to sport event organizations and youth athlete continuance. Major sport events can provide the inspiration for increased involvement in sport, facilitating a positive experience and fostering a sense of belonging (Ramchandani & Coleman, 2012). Indeed, if sport event organizations like the CGF are to attract top-level talent to participate and compete at their events, it is important to understand how the events themselves (e.g., their service environment) can impact the athlete experience and their intention to continue in elite sport as well as sport in general in a broader sense (cf. MacIntosh, Parent, & Culver, 2019; Sotiriadou et al., 2008). Furthermore, it is critical to assess the nexus between the sport event and athlete continuance from the lens of youth athletics, especially given these athletes and their continuance in sport have significant implications in the athlete development lifecycle (Kristiansen et al., 2018). We were interested in determining whether service-related features an athlete experienced would have any impact on their future decisions to remain in sport. We explored the relationship among athlete experiences, satisfaction, intention to continue in high-performance pathway, and intention to continue sport in general.

As such, the purpose was to explore the young pre-elite level athlete's experiences with the planned organizational service environment during a major youth multi-sport event to determine: (a) their satisfaction with the event service environment features (attitude formation) and (b) their future intentions to remain in sport and compete in high-performance sport in particular based on their experience at this event. To address this purpose, the 2017 CYG held in Nassau, Bahamas, was chosen as the study's context. Moreover, two central questions emanated from the study's purpose and context: (1) Are young athletes intending on continuing in sport because of their experience at the event? and (2) What (if any) service environment features may contribute to forming athlete intentions to continue in sport? By answering these questions, this study occupies an important space in the athlete development and experience discourse, specifically expanding our understanding of why athletes, particularly youth (aged 15-18) at an elite level, continue to participate in sport, and how that participation can be impacted by the service environment.

## Review of Literature

### *Attitude Formation and Intention*

A person's attitude toward a given phenomenon has long been known to feature heavily in their intention formation and eventual behavior, as evidenced by the Theory of Planned Behavior (TPB) (e.g., Ajzen, 1991). Consequently, what forms a person's attitude is a key management consideration to help predict their intentions. Additionally, a person's attitude is shaped in part by the value they ascribe to their experience (e.g., product or service), which is a precursor to future intentions and behavior (Roser, DeFillippi, & Samson, 2013; Vargo & Lusch, 2008). Vansteenkiste, Niemiec, and Soenen (2010) contend that the derivation of personal value is one of the most important attitudinal indicators of actual behavior.

Within a sport setting, research involving athletes' experiences has demonstrated that various perceived stressors,

including those emanating from organizational factors, influence their cognitive disposition and attitude formation including, for example, their satisfaction (Fletcher, Hanton, & Mellalieu, 2006; MacIntosh & Nicol, 2012; MacIntosh & Parent, 2017). Consequently, an athlete's attitude formation includes various positive and negative factors that originate from personal, competitive, and organizational related factors (Holt & Dunn, 2004; Kristiansen et al., 2018; MacIntosh & Nichol, 2012). For managers of sport events, factors that include physical, psychological, and sociocultural considerations are therefore important precursors to intention formation (Kristiansen et al., 2018; Parent et al., 2014). For instance, previous research has suggested that the service influencing physical factors (e.g., quality of food) is related to a person's behavioral intention (Han & Hyun, 2017).

TPB also highlights that subjective norms are an essential component of intention, and that social factors such as parents' and coaches' influences are important determinants of intention to continue sport (Gucciardi & Jackson, 2015). Various studies have found that the relationship between motivational factors and sport continuation in the youth sport context is influenced by the type of support and pressures from parents, coaches, and peers (e.g., Jöesaar, Hein, & Hagger, 2011; Wendling, Flaherty, Sagas, & Kaplanidou, 2018). Wendling et al (2018) noted that when young people view participation in sport as more autonomous, their chances of sustaining involvement in sport increase. This is in line with what Ryan and Deci (2000) advanced within Self-Determination Theory (SDT). SDT posited that autonomy, and social factors (relatedness) are key aspects that can help a person sustain involvement in physical activity. Gaudreau and his colleagues noted that the support from coaches and parents is a key determinant for young athletes' motivation (Gaudreau, Morinville, Gareau, Verner-Filion, Green-Demers, & Franche, 2016). This point also is consistent with the TPB's assumption that social support from parents and friends in particular is an important element for increased sport continuation in youth (Brustad, 1992; Darvin, Cintron, & Hancock, 2017; Hohepa, Scragg, Schofield, Kolt & Schaaf, 2007).

Research on the intention to behavior link suggests there are various mediators and moderators influencing attitude formation and behavior prediction (Rhodes & Yao, 2015), which includes a person's ability to cope with various obstacles and plan for their future (Caudroit, Boiché, & Stephan, 2014). Although a person can specify an intention (such as continuing on in their sport to the next level of performance), they also need to be able to formulate plans to enact the actual behavior and realize their intentions (Rhodes & Yao, 2015). Hence, it is important to identify obstacles that get in the way of the striving process (e.g., Carraro & Gaudreau, 2013). This may particularly be true for younger athletes learning what it takes to excel within the high-performance pathway.

### *(Youth) High-Performance Sport Pathway*

As Green argued (2005), it is important for athletes to find value in their participation if they are to continue in sport. The concept of finding value includes the ability to hone the technical skills required to play their sport via good coaching, medical support through access to nutrition and physiotherapy services,

increasing their exposure to media and private sector partners (e.g., sponsors), and even unique competition experiences (Brouwers, Sotiriadou, & De Bosscher, 2015; MacIntosh et al., 2019). However, athletes may seek additional value propositions from their continued sport participation, including social interactions and networking, for career-building post-athletic endeavors (Green, 2005).

Given athletes seek these value propositions, it is imperative that sport organizations recognize these demands and consider them as athletes travel through the development system. Sotiriadou et al. (2008) identified attraction, retention, transition, and nurturing as important components of the high-performance sport pathway. These elements work in tandem to sustain and develop athletes while simultaneously encouraging future participation. For instance, once an athlete is recruited, the sport organization can deliver services to retain the athlete for future competition, nurturing their skillset, and transitioning them to more elite levels of competition. While these tasks are challenging and require the assistance of many stakeholders (Kristiansen et al., 2018), another important facet in this high-performance model are dynamic competitions that seek to evaluate athletic prowess and coping skills (e.g., winning and losing). Sports events like world championships and international multi-sport experiences can help attract, retain, and nurture athletes, and also transition athletes from casual, elementary levels to elite forms of competition and its associated value propositions. Thus, these experiences are critical to assess given their impact on high-performance and athlete development (Brouwers et al., 2015).

In this study, the CYG provides an environment to better understand the extent to which competing in a multi-sport event environment may influence young athletes' attitude formation and future intentions to continue in sport (i.e., nurturing and retention). Similar to the Olympic model where the YOG is the young athlete iteration of the Games (e.g., Houlihan, Leopkey, & MacIntosh, 2017), the CYG is a major, international, multi-sport event designed to continue the development of young athletes from the Commonwealth. Thus, by examining the first-hand account of athletes' games-related experience, we can ascertain those characteristics that may be related to attitude formation and intentions to continue along the athlete development pathway.

## Method

The study sought to understand the athlete's "lived" perspective during the event. To do so, a survey instrument was developed before the event in conjunction with the Commonwealth Games Federation and the CYG 2017 organizing committee. This consultative process also incorporated an athlete representative, along with director and board member approval, to capture the dynamic features of the athlete experience. Both Likert scale and open-ended questions were formed based on creating a better understanding of the "lived environment" from competing athletes' points of view (cf. Creswell, 2009).

### *Instrument*

The survey asked athletes to report their sport and discipline, representative nation, and their gender; no further personal details

were asked so that we could protect participant anonymity. Athletes were then asked to assess how they performed in their competition (i.e., below expected, as expected, better than expected, personal best, and medal). The next part of the instrument asked participants to assess a variety of management-controllable items to which all athletes would have experienced ( $n = 30$ ). A five-point Likert scale was used to assess these service-related components (5 = excellent, 4 = good, 3 = satisfactory, 2 = poor, 1 = very poor, and the option to select not applicable). For example, aspects related to the physiological needs of the athlete included assessing their accommodations (e.g., your bedroom, bathroom area), food and drink quality and availability (e.g., supply of water in accommodations and sport venue), and their medical provisions if needed. Aspects related to the psychological needs of the athlete included their ability to contact their nation's team staff to answer questions, accuracy of competition information provided [e.g., Competition management (weigh-in, call room, officials)], feelings of personal security and safety in the village and venues, and ability to reach family and friends. Aspects related to their sociocultural experiences included the opportunity to meet other athletes, cultural festivities associated with and held during the Games, places to relax and socialize with others, and medal and opening ceremonies. Young athlete satisfaction was assessed with three times: overall games experience, competitive experience, and comparison to other sport events. Their intention to continue in the high-performance sport pathway was assessed with three items on a Likert Scale where "1" depicted not at all likely and "5" depicted extremely likely to continue (e.g., I plan on competing at a Commonwealth Games, World Championships, or Olympic Games). Additionally, open-ended questions to examine the role of athlete continuance in sport in general included the following: (1) "Have your experiences at the games motivated you to continue in your sport? Yes or no. Please tell us why." and (2) "If you plan on continuing in your sport, what are three major challenges you currently face."

### *Procedure*

Athletes were recruited during CYG 2017 to ascertain real-time information related to their experiences. The process to recruit was to first discuss the voluntary nature of participation with an adult associated with countries participating at the CYG (e.g., President, Chef de Mission, Coach). Once interest in participating was received, letters of information and a paper and pencil survey were provided for them to leave in the national team office with support staff who administered the survey to the athlete and collected the completed responses after competition. As part of the research ethics protocol, athletes were informed of the voluntary nature of the survey and that there were no known risks of participating or repercussions if they chose not to partake or answer any particular question. Accordingly, athletes could choose to hand the survey back to their coach, Chef de Mission, or another national team administrator in a sealed envelope when (and if) they completed the survey. Completed surveys were stored at their national team office for pick up by the athlete representative. After the event, all surveys were handed over to the research team for analyses and interpretation. Upon reviewing completed surveys, 13 responses were not included in the analysis: five surveys were removed because of straight line answers (all 1 or 5's) and eight

surveys were deemed incomplete (i.e., more than 50% of questions went unanswered).

*Data Analyses*

IBM SPSS 25 was the statistical analysis program utilized to extract meaning from the data in descriptive and frequency form. Due to a low item response rate (i.e., more than 30% of athletes did not respond to a particular question on the survey), three items were removed from further consideration. Specifically, the items pertaining to obtaining a visa to compete at the games, subjection to the anti-doping control process, and participation in the “athlete impact lab,” an experiential learning opportunity at the CYG, were isolated from the analysis. Many studies in the field of sport management tend to eliminate incomplete cases from datasets. Instead of deleting all incomplete cases, we estimated missing scores and calculated them based on responses to other questions. Specifically, after ensuring missing data were completely at random (Little, 1992), we estimated those missing data based on the established method suggested in previous literature (i.e., expectation maximization analysis; Peugh & Enders, 2004). Therefore, all missing data were replaced with estimated scores.

Next, an exploratory factor analysis (EFA) was conducted. Factors with an eigenvalue >1.0 with items loading .40 or higher on a factor and that did not correlate within .10 of any other factor were considered. Sampling adequacy for the factor analysis was examined using the Kaiser–Meyer–Olkin (KMO) test with an acceptable value set at >.60 (Tabachnick & Fidell, 2001). The psychometric properties were then examined with an acceptable Cronbach alpha above .70 to measure internal consistency of the items to the factors. In addition, we looked at whether there were problematic inter-correlations within the factors that we set an anything above .90 as indicative of issues with multicollinearity (Tabachnick & Fidell, 2001).

For the qualitative items, responses were transcribed verbatim and examined using an inductive thematic analysis technique to arrive at general themes about the athletes’ experience. The analysis involved reading the answers of open-ended questionnaire several times to develop themes and subthemes (Braun & Clarke, 2006). The open-ended responses were first analyzed independently by each researcher to arrive first, at separate codes. Next, those codes were compared and contrasted following thematic coding procedures outlined by Braun and Clarke (2006). The research team worked to collaboratively refine the themes presented in the results.

**Results**

There were 207 young athletes who responded to the survey, out of 1006 total athletes from 63 nations at CYG 2017, of which 103 were female (49.8%) and 104 were male (50.2%). In total, young athletes from 30 different nations completed the survey. Table 1 provides a breakdown of the young athletes according to their nation and associated region (according to the Commonwealth Games’ designation) indicative of the sample’s representation. A description of the items (N, M, SD) is found in Table 2.

**Table 1.**  
*Participant Nation’s and Regions*

Region	Nation	N	N	%
<b>Africa</b>	Kenya	5	28	13.5
	Lesotho	1		
	Mauritius	4		
	Mozambique	5		
	South Africa	8		
	Sri Lanka	5		
<b>Americas</b>	Bahamas	2	28	13.5
	Bermuda	12		
	Canada	2		
	Guyana	10		
	St. Helena	2		
<b>Asia</b>	Pakistan	2	2	1.0
<b>Caribbean</b>	Barbados	1	14	6.8
	Grenada	4		
	Jamaica	1		
	British VI	7		
	St. Vincent	1		
<b>Europe</b>	England	56	108	52.2
	Gibraltar	6		
	Isle of Man	5		
	Jersey	2		
	Malta	3		
	Northern	3		
	Ireland	14		
	Wales	19		
	Scotland			
<b>Oceania</b>	Australia	18	27	13.0
	Cook Islands	2		
	Kiribati	4		
	Nauru	2		
	Papua New Guinea	1		
	Guinea			

**Table 2.**  
*Descriptive Statistics of Survey Items*

Item Name	n	M	SD
Bedroom	207	4.17	0.82
Bathroom area	207	4.37	0.65
Dining facilities	207	4.40	0.70
Food quality	206	4.17	0.92
Food availability	207	4.14	0.94
Competition venue	207	4.24	0.72
Competition management	202	4.03	0.83
Training	206	4.21	0.76
Air transportation	205	4.34	0.64
Airport arrivals process	205	4.39	0.64
Accreditation process	203	4.36	0.67
Ground transportation	204	4.45	0.65
Wireless internet access	200	2.76	1.36
Availability of volunteers and staff	200	4.05	0.91
Appropriate anti-doping information	200	4.38	0.80
Medical services provided	171	4.39	0.72
Opening ceremony	194	4.53	0.65
Cultural festival	161	4.25	0.72
Opportunities to meet athlete	205	4.49	0.66
Medal ceremonies	185	4.21	0.85
Overall game experience	202	4.61	0.61
Overall competition experience	197	4.55	0.63
Overall game compared to other events	196	4.56	0.66
Plan on competing in Commonwealth Games	197	4.31	0.89
Plan on competing in World Championships	195	4.18	1.02
Plan on competing in Olympics games	194	3.96	1.25
Plan on staying involved in my sport	199	4.75	0.59

*Quantitative Measures*

In the study, three dependent variables were examined: (1) *Satisfaction* (game experience, competition experience, comparison to other events) and; (2) *Intention to continue in high-performance pathway* (plans to compete at Commonwealth Games, World Championships, Olympics), and (3) *Intention to continue in general* (I will stay involved in my sport in general). The first two variables had notably acceptable alpha reliability measures to measure internal consistency (i.e., Satisfaction = .83, Intention to Continue = .84).

**EFA.** Principle factor analyses were run as the extraction method and the criteria of eigenvalues above 1.0 was adopted (Sass & Schmitt, 2010). The KMO test was 0.85, and the Bartlett test of sphericity was statistically significant ( $p < 0.01$ ), suggesting that the data was suitable for factor analyses. Based on the criteria, eight factors had eigenvalues above 1.0, indicating an eight-factor solution. The eight factors accounted for 66% of the variance. In addition, we applied orthogonal varimax rotation to identify the dimensions of management controllable items. The result showed all items' factor loadings were above .40.

After reviewing each item for conceptual merit, we removed the item labeled relevance (accuracy and availability of sport

competition information), laundry, and two items regarding water supply, because those items were significantly loaded on the conceptually irrelevant constructs. Then, we re-ran the EFA and the result showed a six factor-solution, accounting for 63% of the variance. We further removed three items pertaining to feelings of safety, security, and housekeeping, because those items were cross-loading.

The final labels for the factors were as follows: “service” (air transportation, airport process, accreditation, and ground transportation;  $\alpha = .83$ ), “social/cultural (opening ceremonies, cultural opportunities, and medal ceremonies;  $\alpha = .73$ ), “nutrition” (dining, food quality, food availability;  $\alpha = .84$ ), “information” (availability, appropriate, and medical;  $\alpha = .76$ ), “sport venue” (venue, management, and training;  $\alpha = .65$ ), and “accommodation” (bedroom, bathroom, wireless;  $\alpha = .66$ ). For the factors of sport venue and accommodation, while both were just below the criterion of .70, we retained them since they approached significance according to Tabachnick and Fidell (2001); thus, interpretation with caution from here is warranted. Table 3 presents the inter-item correlation from the survey, while Table 4 provides further details of the EFA.

**Table 3.**  
*Descriptive Statistics and Inter-item Correlation*

	Mean	SD	1	2	3	4	5	6	7	8	9
1. Service	4.35	0.50	.83 <sup>a</sup>								
2. Social/cultural	4.36	0.53	.51 <sup>**</sup>	.73 <sup>a</sup>							
3. Nutrition	4.36	0.53	.27 <sup>**</sup>	.37 <sup>**</sup>	.84 <sup>a</sup>						
4. Information	4.16	0.60	.54 <sup>**</sup>	.52 <sup>**</sup>	.32 <sup>**</sup>	.76 <sup>a</sup>					
5. Sport venue	4.16	0.59	.46 <sup>**</sup>	.38 <sup>**</sup>	.29 <sup>**</sup>	.29 <sup>**</sup>	.65 <sup>a</sup>				
6. Accommodation	4.35	0.65	.25 <sup>**</sup>	.12	.15 <sup>*</sup>	.11	.27 <sup>**</sup>	.66 <sup>a</sup>			
7. Satisfaction	4.57	0.53	.40 <sup>**</sup>	.54 <sup>**</sup>	.40 <sup>**</sup>	.51 <sup>**</sup>	.28 <sup>**</sup>	-.07	.83 <sup>a</sup>		
8. FI (High-Performance)	4.58	0.53	.10	.05	-.01	.04	.07	.23 <sup>**</sup>	.01	.84 <sup>a</sup>	
9. FI (General)	4.15	0.92	.12	.16 <sup>*</sup>	.148 <sup>*</sup>	.08	.13	.05	.15 <sup>*</sup>	.35 <sup>**</sup>	

**Table 4.**  
*Factor Loadings and Items*

	Item	1	2	3	4	5	6
Service	Air transportation	<b>.774</b>	.129	.062	.165	.138	.151
	Airport arrival process	<b>.773</b>	.161	.089	.124	.140	.128
	Accreditation process	<b>.705</b>	.312	.204	.243	.106	.033
	Ground transportation	<b>.605</b>	.189	-.049	.318	.034	.306
Social/cultural	Opening ceremony	.110	<b>.767</b>	.133	.285	.127	.044
	Cultural festival	.234	<b>.676</b>	.159	.278	-.062	.001
	Opportunities to meet athletes	.213	<b>.664</b>	.171	.112	.040	.079
	Medal ceremonies	.099	<b>.658</b>	.034	-.055	-.006	.270
Nutrition	Dining facilities	.013	.154	<b>.883</b>	.115	.072	.072
	Food quality	.195	.075	<b>.834</b>	.083	.170	.028
	Food availability	.044	.184	<b>.788</b>	.095	-.065	.156
Accommodation	Bedroom	.168	.124	.131	<b>.771</b>	-.032	.200
	Bathroom	.324	.178	.118	<b>.723</b>	-.150	.024
	Wireless internet access	.188	.371	.136	<b>.637</b>	.300	.036
Information	Availability of volunteers and staff	-.170	.037	.050	.028	<b>.776</b>	.197
	Appropriate anti-doping information	.291	.011	.152	-.023	<b>.741</b>	.002
	Medical services provided	.240	.035	-.029	-.018	<b>.725</b>	.061
Sport venue	Competition venue	.068	.080	.128	.199	.115	<b>.774</b>
	Competition management	.204	.121	.050	.104	.096	<b>.763</b>
	Training	.372	.246	.178	-.275	.105	<b>.507</b>

Note. Factor loading of .40 or greater are indicated in bold

**Regression Analyses.** To examine which variables predicted satisfaction in the CYG and future intention to continue in competitive high-performance sport system, we conducted multiple regression models (Table 5). The results showed that social/cultural ( $\beta = .31, p < .001$ ), nutrition ( $\beta = .20, p < .01$ ), information ( $\beta = .25, p < .01$ ), and accommodation ( $\beta = -.20, p < .001$ ) were significant predictors of satisfaction, accounting for 66% of its variance. Interestingly, only accommodation ( $\beta = .23, p < .001$ ) was found to be a significant predictor of future intention to continue high-performance sport.

**Table 5.**  
*Regression Analyses*

	Satisfaction		FI (High-Performance)		FI (General)	
	$\beta$	$p$	$\beta$	$p$	$\beta$	$p$
	Service	.072	.316	.053	.567	.022
Social/cultural	.306	.000	.017	.851	.082	.379
Nutrition	.201	.001	-.071	.365	.079	.316
Information	.247	.000	-.011	.903	-.059	.519
Sport venue	.057	.369	-.009	.910	.049	.554
Accommodation	-.197	.001	.230	.002	.026	.732
Satisfaction			.032	.729	.085	.357
<i>F</i> (7,199)	25.05		1.78		1.28	
<i>R</i> <sup>2</sup>	0.66		0.24		0.21	

Note. FI = Future Intention.

*Qualitative Responses*

**Experiences and Motivations to Continue.** The qualitative insights yielded two prominent themes in relation to the young

athletes' experiences and motives to continue along the high-performance pathway: enjoyment and learning.

**Enjoyment.** Many young athletes expressed the idea of enjoying the games environment as a reason for continuing to pursue sport. One athlete from Team England suggested the CYG was memorable “because it was really fun and very proud moment [sic] and I want to have more experiences like this one.” A Team Nauru athlete claimed, “I enjoyed meeting other athletes from other countries. It has enabled me to form friendships with them as well as with my own teammates.” One Team British Virgin Island athlete suggested the CYG was a way to “get more people involved so that they can enjoy and experience the cultures of the different countries.” Indeed, these quotes are indicative of the feelings many athletes in the sample expressed regarding CYG 2017; the event was fun, it was an opportunity to travel to a new and exciting destination, athletes were able to express their nationalism vis-à-vis representing their country, and enjoyed participating in higher levels of competition in their sport discipline.

**Learning.** The second major theme emerged from the athletes' indication of how much they learned about themselves and about an elite sport event environment. Hence, the second theme was denoted as *learning*. One athlete from Team South Africa claimed, “[CYG 2017] has opened my eyes to what the sport is actually really all about. I have learned so much at this competition.” Additionally, a Team Guyana athlete said, “Participation in the games motivated me to continue in sports because the competition that I've received build my confidence [sic] to work hard and pursue my dreams.” A Team Bermuda athlete indicated that CYG 2017 “has shown me my weakness and strengths and encourage me to fight harder,” while a Team Malta athlete concurred, stating that the opportunity has “encouraged me to train harder and be more motivated.” Another Team Guyana

athlete indicated, “My experience gives me the exposure to know where I am at, and it give me the drive and motivation to continue working toward my goal.”

Other respondents noted that they were able to learn about “other athletes,” alluding to the process of benchmarking and comparing abilities for future competitions. Furthermore, athletes expressed the importance of interactions with other athletes from different countries that made the experience positive and that influenced their intention to stay within high-performance sport. As a Team England athlete said, CYG “allowed me to experience international competition with athletes from all around the world and learning to compete in a completely new place far away from home.” Athletes also were aware that this experience in an elite competition was a necessary step for future athletic achievement: “The experience to compete against better athletes from different countries which prepare me to a future commonwealth game [sic]” (Team Malta athlete); “Help me to be more aware of the talent worldwide this will now enable me to train harder along with new tactics to improve myself” (Team Jamaica athlete).

**Challenges for Future Continuation.** While we found that a majority of athletes in CYG 2017 perceived the sport event as a positive experience, and that nearly 4 out of 5 athletes expressed interest in continuing along the high-performance pathway, we also were able to understand the impediments to their future sport involvement. The survey item that asked, “*If you plan on continuing in your sport, what are three major challenges you currently face?*”, was answered by 172 participants in the study. The result of this item revealed five dominant themes as challenges to future continuation: (1) psychological concern, (2) physiological concern, (3) performance concern, (4) environmental concern, and (5) life concern (see Table 6).

**Table 6.**  
*Major challenges for continuation in sport*

Macro (N)	Meso	Micro	n
Psychological concern (36)	Concentration		6
	Belief		5
	Mental strength		3
	Confidence		9
	Coping		2
	Motivation		11
Physiological concern (50)	Injuries		23
	Physical condition (fitness)		18
	Recovery	sleep	1
		nutrition	5
		physical fatigue	2
	Age		1
Performance concern (55)	Quality of performance		25
	Quality of training		26
	Overcome performance obstacle (plateau)		4
Environmental concern (104)	Quality of support	family	5
		coach	9
		federation	5
	Opportunity and quality of competition		30
	Training environment	facilities	21
		equipment	5
	Financial support (funding)		26
	Access to training place		3
Life concern (43)	Balancing sport and training		31
	Social connection (friend and family)		8
	Career concern		4

**Psychological concern.** Athletes expressed a psychological concern with future elite level sport continuation predicated on *motivation, confidence, concentration, belief, mental strength, and coping*. One Team England athlete described this concern as being “mentally all over the place...distracted by bad thoughts creating performance resulted [sic].” Indeed, the mental state of an athlete vis-à-vis a lack of self-determination and self-belief is an important concern that can negatively impact sport continuance.



**Physiological concern.** A second concern referred to the physical state of the athlete such as their *injuries, physical condition, and recovery (sleep, nutrition, and physical fatigue)*. Twenty-three athletes mentioned their concern for injuries, including trying to “reduce the amount of injuries and I try to stay injury free” (Team England athlete) for their long-term development. Some athletes also identified that gaming their physical stature such as “dropping weight to stay in weight division [sic]” (Team Australian athlete) was a barrier for sport continuance. A Team Canada athlete described how athlete recovery (or lack thereof) was a threat, too: A “major challenge I currently face is getting enough sleep.”

**Performance concern.** In this concern, athletes noted challenges related to the *quality of the competitive performance, quality of training, and performance obstacles*. This concern is in regard to being able to compete adequately at the next (or senior) level because it will be more competitive. Twenty-five athletes described the quality of performance as a performance concern, such as a qualification time to participate a big competition. In addition, 26 athletes reported the quality of training as their performance concern. Examples of responses were: “high level training” (Team Guyana athlete); “training more frequently” (another Team Guyana athlete), “qualifying for [Commonwealth Games] Gold Coast 2018” (Team Gibraltar athlete), and hitting a “swimmer plateau...not improving too much” (Team Australia athlete).

**Environmental concern.** Athletes described the *opportunity or quality of competition, financial support, training environment (facilities and equipment), and quality of support (in general, from coach, and from national sport federation)* could prevent future sport participation. Opportunity or quality of competition were most commonly described by 30 athletes. This especially was the case for athletes from smaller countries (in athletic team size and success) who felt they did not have the opportunity to compete with athletes from well-developed sport systems. An athlete from Team Grenada cited a “lack of local competition,” while another athlete from Team Mauritius indicated their team needed “more international competition.” Moreover, financial concern was revealed as a barrier for young athlete sport continuance. Twenty-six athletes reported funding required to compete was a top concern. A Team Scotland athlete noted, “When I leave home, it will be more difficult to support myself financially while training and studying at university.” The training environment also was reported as a major challenge. For example, there are “not enough training facilities” as one Team Grenada athlete suggested, while a Team Malta athlete asked, “how to improve our limited equipment at the track back home and still being at school [sic]?” Nine athletes denoted the concern for quality coaches, including a Team Kenya athlete who said the goal is “to look for a good coach.” Evidently, the concept of training was connected with high-performance pathway development, a particular concern within many of the smaller nations and countries.

**Life concern.** The final concern reported was related to balancing life outside of sport. The subthemes for this major challenge were *balancing school and training, social connection (friends and family), and career concern*. Thirty-one athletes reported that balancing school and training is a significant concern. This subtheme was the most frequently reported theme in the

present research. For one Team Australia athlete, “achieving a high level in my schooling while balancing swimming” is important. Other athletes concurred with this “school-sport balance,” including a Team Wales athlete who mentioned “balancing training with school,” and a Team Mozambique athlete who identified the challenge “to reconcile swimming and school.” Additional life concerns built upon the school-sport balance sentiment, namely considerations for the athlete’s social life and career orientation, the latter if sport became too consuming for them.

## Discussion

This study sought to determine whether or not athletes form intentions to continue in their sport and in the higher performance pathway based on youth games experiences. The study also sought to understand factors that may contribute to these intentions. Overall, several service environment features were shown to influence athlete satisfaction with the experience. However, satisfaction was not significantly associated with intention formation. This is an interesting finding because typically, attitudes are thought to predict future intentions and satisfaction has been shown to be a key attitudinal construct that explains future behavior (Ajzen, 1991; Gucciardi & Jackson, 2015). This was not the case in this study.

Specifically, the findings demonstrated that social/cultural, nutrition, information, and accommodation were significantly associated with the event satisfaction of youth athletes. Descriptive statistics also showed that overall satisfaction was relatively high. To further understand why this may be, we turned to the qualitative portion of the work which highlighted the importance of enjoyment and learning.

The first theme, *Enjoyment*, is in line with past research that has shown ones’ positive satisfaction is a key motivational resource for retention in sport participation (Crane & Temple, 2015; Gardner et al., 2017). Also, according to the results of qualitative data, a majority of athletes highlighted meeting new people from different countries as a positive experience in CYG. This is in line with the SDT explaining the importance of satisfying the basic psychological needs of relatedness (Ryan & Deci, 2002). Moreover, previous research has shown that making a good relationship with others is an essential component for satisfaction and continuation in sport (Gardner et al., 2016; Rottensteiner et al, 2015). Hence, the social aspect of CYG should positively influence athletes’ perception of intention for continuation in the sport and their satisfaction of the experience by satisfying their needs of relatedness.

The second theme for athlete experiences at the CYG was the *Learning* element. From the qualitative data analysis, youth athletes identified what they should do in the future to develop their talent. According to Ryan & Deci (2000), this identification of what to do would cause an increase in the internalization of motivation continuum. Competing with other high-performance athletes provided participants with some insights to improve their own talents, a key educational aspect of learning in social learning theory. This also would include information gained pertaining to nutrition, proper biomechanics for the sport, and other aspects

learned within high performance youth sport (cf. MacIntosh et al., 2019). Further, diverse interactions with others, such as the ones CYG participants reported, are associated with promotion of personal value (Vargo, Maglio, & Akaka, 2008).

As mentioned, while the young athletes were satisfied with the experience overall, and four out of five intended on remaining in sport, there are barriers that athletes reported that can deter and prevent their continuance in sport. It is plausible that events like the CYG are the ceiling of sport competition for many of the young athletes and that there is the potential for “burnout.” While it cannot be expected that all young athletes remain in their respective sports for the next five, 10, or 15 years, events like the CYG need to consider the value proposition to athletes beyond hosting sport competition, such as nurturing and transition (see Sotiriadou 2008). Certainly, some of the issues reported by athletes will persist and are indicative of larger, systemic sport issues (e.g., quality coaches, good facilities) in the athletes’ home countries. However, this does not prevent enhancing the athlete experience with additional educational and engaging touchpoints to help nurture these youth and/or transition them for life as a long-term athlete or their life outside sport. For instance, athletes expressed psychological concerns related to mental health and well-being that could be addressed. There also is potential for the organizing committee and the CGF to initiate programs related to athlete and non-athlete career services, particularly how skills from sport and competition can be transferred to the general workforce, as well as forums with elite adult athletes discussing their experiences with competition-work-life balance. Moreover, this does not preclude the organizers from focusing on the basic needs of youth athletes, specifically in providing opportunities to learn about sport nutrition and injury maintenance.

Findings also suggest that young athletes may benefit from educational programming to help them overcome some of the stress and anxiety they feel around performing and staying in sport. Programming that can help them cope with the competitive and social environment may assist in decreasing burnout (e.g., Raedeke & Smith, 2004). Such skills are considered an essential part of self-regulation (e.g., Compas, Connor-Smith, Saltzman, Thomsen, & Wadsworth, 2001). Therefore, creating programs that help teach positive coping skills and reducing the stigma around mental health may play a critical role in helping young athletes overcome the stresses of high-performance sport.

Not surprisingly, our findings demonstrated the young athletes’ physiological concerns as a major challenge for future sport participation. In addition, we see evidence that a person’s physical exhaustion (e.g., muscle cramps/fatigue) is a big concern for many of the athletes. This feeling of physical exertion may predict or be related to an athletes’ dropout; subsequently, a subcomponent of burnout symptoms (Raedeke, 1997; Raedeke & Smith, 2001). It is important that event organizers also need to pay attention to provision of optimal environments for youth athletes to physically recover.

The findings also show that young athletes feel pressure due to inadequate training and competition. Concerns for the quality of performance and training is in line with Ryan and Deci’s (2000) suggestions regarding the importance of meeting the psychological need of competence. Further investigation is

warranted regarding if the athlete’s actual performance in the Games has an influence on their future involvement in sport.

Lastly, life concern also is frequently described by youth athletes in our study, which demonstrates there are considerations beyond competitive sport that may or may not pull athletes out of the high-performance pathway. This is in line with recent dual career research (e.g., Stambulova & Wylleman, 2014) that considers the school-sport balance and, ultimately, an indication of well-being. As our study showed, young athletes have substantial stress and important decisions to make regarding their future orientation to continue sport. We argue that stakeholders that support youth athletes, like the CYG, play a critical role in this regard.

### *Implications*

From a practical standpoint, the findings of this study denote there are additional elements to long-term athlete development anchors such as international multi-sport events (e.g., CYG) that managers need to consider. These events are now much more than simply a global athletic competition; they are hubs for education and socialization, in addition to physiological development. As such, practitioners need to consider characteristics like the challenge of school-sport balance and consider implementing tutoring or classroom-type experiences so that the event does not interrupt their educational pursuits, akin to the study halls that take place for intercollegiate athletics in the United States. For example, courses that teach about work-life balance and general wellness, such as the one offered to intercollegiate athletes at the University of Wisconsin, can help an athlete enhance their self-awareness and life skills to cope with the demands of school and sport (University of Wisconsin, 2018). In addition, online career development programs for student-athletes, which have been found beneficial to help young people deal with life concerns (see Van Raalte, Andrews, Cornelius, Brewer, & Petitpas, 2017) can provide additional support to enhance sport, school, and life balance. Hence, sport development authorities should consider designing and implementing education programs for youth athletes to deal with some of the concerns expressed in this study.

Furthermore, practitioners may wish to make use of valuable digital media (e.g., virtual reality) to assist athletes with future scenario planning in both sport-based (e.g., media interviews) and non-sport-based (e.g., job interviews) circumstances. As athletes participating in events of a CYG nature come from varied backgrounds, including those with underdeveloped sport resources, it is imperative to harness various technologies to facilitate and enhance the training and planning that all youth athletes can receive. New technologies can help promote learning and socialization and also can be gamified vis-à-vis points and scores for correct answers or positive behaviors exhibited in the scenario. Virtual reality tools also are useful in renewing the focus on athlete mental health, coaching, and therapy. Finally, it also is worthwhile to explore the idea of “masterclass” coaching, bringing in elite, senior level coaches to these events to help athletes in particular disciplines work on a skill; the value proposition of learning from a world-class coach is incredibly high for youth athletes, especially when we consider attitude and

continuation (Cheval, Chalabaev, Queded, Courvoisier, & Sarrazin, 2017).

From a scholarly perspective, this study adds to the emerging literature on youth athlete development (e.g., Kristiansen et al., 2018). Specifically, it is critical that scholarship continue to understand the youth high-performance sport pathway both in terms of intention and barriers to continuance. Indeed, this study expands upon Sotiriadou et al.'s (2008) ideals of sport continuance, by focusing (a) on youth athletes at international multi-sport competitions and (b) by identifying concerns.

### Limitations

Alongside the study's findings are some limitations to note. The study measured intention to continuation as a dependent variable. It is possible that an athlete would discontinue their sport of choice at the youth level for taking up another different sport. Furthermore, intention to continue is not a true measure of behavior although it is thought to be the next best thing. This research focused on the high-performance youth athletes, indicating the results from the study may not be applicable to general youth population since they would not have access to participating in an event of this nature. Moreover, we did not include gender as a variable in the data analysis process because it was unrelated to our research questions and interests. However, previous research suggests that gender is an influential variable on youth sport motivation and social motivation. Future research could include gender to further understand motivation and socialization within the context of the high-performance pathway. Finally, this study did not assess motivational resources even though the qualitative data analysis revealed satisfaction was a significant factor in the event that motivated athletes to continue their sports.

However, the findings and the present limitations reveal possible research ventures for future study. The most obvious would be extending this design to include multiple events (e.g., CYG, YOG). Further, implementing a longitudinal design to investigate whether the effects of experiencing a youth multi-sport event environment at the elite level has any bearing on continuing in sport is warranted; a longitudinal design could help track if a person stays in their sport, changes sport, or drops out of sport altogether. Future research also may directly assess those motivational factors in the young athlete population to ascertain a more complete understanding of the continuance phenomenon in high-performance sport. Finally, given the findings allude to socialization with teammates, friends, and family, examining contemporary issues such as social networking via digital means also may warrant further investigation.

### Conclusion

In this study, we used an exploratory survey to help assess young athletes' intentions to continue in sport. While the qualitative assessment clarified the importance for organizations that stage sport events to create an enjoyable environment that fosters learning for the athletes and produces satisfaction with the event, future research needs to consider further, the psychological

components of a young athletes' developmental needs that can be met during the event itself. In addition, as research has shown, it is essential to determine the motivational aspects involved in sport continuation; for example, the degree of intrinsic motivation. This study did not include the motivational measurement to explain the relationship with future intention of sport continuation. Hence, future research should combine both management and psychological aspects to predict future youth athletes' intention to continue sport and clarify the role of the organization itself in producing a transformative service environment.

### References

- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, *50*, 179-211.
- Balish, S. M., McLaren, C., Rainham, D., & Blanchard, C. (2014). Correlates of youth sport attrition: A review and future directions. *Psychology of Sport and Exercise*, *15*, 429-439.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology*, *3*, 77-101.
- Brouwers, J., Sotiriadou, P., & De Bosscher, V. (2015). Sport-specific policies and factors that influence international success: The case of tennis. *Sport Management Review*, *18*, 343-358. doi:10.1016/j.smr.2014.10.003
- Brustad, R. (1992). Integrating socialization influences into the study of children's motivation in sport. *Journal of Sport and Exercise Psychology*, *14*, 59-77.
- Canadian Heritage. (2013). Sport participation 2010: Research paper. Retrieved from [http://publications.gc.ca/collections/collection\\_2013/pc-ch/CH24-1-2012-eng.pdf](http://publications.gc.ca/collections/collection_2013/pc-ch/CH24-1-2012-eng.pdf)
- Carraro, N., & Gaudreau, P. (2013). Spontaneous and experimentally induced action planning and coping planning for physical activity: A meta-analysis. *Psychology of Sport and Exercise*, *14*, 228-248.
- Caudroit, J., Boiché, J., & Stephan, Y. (2014). The role of action and coping planning in the relationship between intention and physical activity: A moderated mediation analysis. *Psychology & Health*, *29*, 768-780.
- Chan, D. K., Lonsdale, C., & Fung, H. H. (2012). Influences of coaches, parents, and peers on the motivational patterns of child and adolescent athletes. *Scandinavian Journal of Medicine & Science in Sports*, *22*, 558-568. doi:10.1111/j.1600-0838.2010.01277.x

- Cheval, B., Chalabaev, A., Quested, E., Courvoisier, D. S., & Sarrazin, P. (2017). How perceived autonomy support and controlling coach behaviors are related to well-and ill-being in elite soccer players: A within-person changes and between-person differences analysis. *Psychology of Sport and Exercise, 28*, 68-77.
- Compas, B. E., Connor-Smith, J. K., Saltzman, H., Thomsen, A. H., & Wadsworth, M. E. (2001). Coping with stress during childhood and adolescence: problems, progress, and potential in theory and research. *Psychological Bulletin, 127*, 87-127.
- Crane, J., & Temple, V. (2015). A systematic review of dropout from organized sport among children and youth. *European Physical Education Review, 21*, 114-131.
- Creswell, J.W. (2009). *Research design: Qualitative, quantitative, and mixed methods approaches* (3<sup>rd</sup> ed.). Thousand Oaks, CA: SAGE.
- Cunningham, G., & Mahoney, K. (2004). Self-efficacy of part-time employees in university athletics: The influence of organizational commitment, valence of training, and training motivation. *Journal of Sport Management, 18*, 59-73. doi:10.1123/jsm.18.1.59
- Darvin, L., Cintron, A., & Hancock, M. (2017). ¿ Por qué jugar? Sport socialization among Hispanic/Latina female NCAA division I student-athletes. *Journal of Amateur Sport, 3*, 27- 54.
- Fletcher, D., Hanton, S., & Mellalieu, S. D. (2006). An organizational stress review: Conceptual and theoretical issues in competitive sport. In Hanton, S., & Mellalieu, Stephen D. (Eds). *Literature reviews in sport psychology*. (pp. 321-373). New York: Nova Science
- Gardner, L. A., Magee, C. A., & Vella, S. A. (2016). Social climate profiles in adolescent sports: Associations with enjoyment and intention to continue. *Journal of Adolescence, 52*, 112-123. doi:10.1016/j.adolescence.2016.08.003
- Gardner, L. A., Magee, C. A., & Vella, S. A. (2017). Enjoyment and behavioral intention predict organized youth sport participation and dropout. *Journal of Physical Activity and Health, 14*, 861-865.
- Gaudreau, P., Morinville, A., Gareau, A., Verner-Filion, J., Green-Demers, I., & Franche, V. (2016). Autonomy support from parents and coaches: Synergistic or compensatory effects on sport-related outcomes of adolescent-athletes? *Psychology of Sport and Exercise, 25*, 89-99.
- Gray, C. E., & Wilson, P. M. (2008). The relationship between organizational commitment, perceived relatedness, and intentions to continue in Canadian Track and Field officials. *Journal of Sport Behavior, 30*, 44-63.
- Green, M. (2005). Integrating macro- and meso-level approaches: A comparative analysis of elite sport development in Australia, Canada and the United Kingdom. *European Sport Management Quarterly, 5*, 143-166.
- Gucciardi, D. F., & Jackson, B. (2015). Understanding sport continuation: An integration of the theories of planned behaviour and basic psychological needs. *Journal of Science and Medicine in Sport, 18*, 31-36.
- Han, H., & Hyun, S. S. (2017). Impact of hotel-restaurant image and quality of physical-environment, service, and food on satisfaction and intention. *International Journal of Hospitality Management, 63*, 82-92.
- Hohepa, M., Scragg, R., Schofield, G., Kolt, G. S., & Schaaf, D. (2007). Social support for youth physical activity: Importance of siblings, parents, friends and school support across a segmented school day. *International Journal of Behavioral Nutrition and Physical Activity, 4*(1), 54.
- Holt, N. L., & Dunn, J. G. (2004). Toward a grounded theory of the psychosocial competencies and environmental conditions associated with soccer success. *Journal of Applied Sport Psychology, 16*, 199-219.
- Houlihan, B., Leopkey, B., & MacIntosh, E. (2017). Introduction: Youth, sport and the Youth Olympic Games. *International Journal of Sport Management and Marketing, 17*, 237-241.
- Jõesaar, H., Hein, V., & Hagger, M. S. (2011). Peer influence on young athletes' need satisfaction, intrinsic motivation and persistence in sport: A 12-month prospective study. *Psychology of Sport and Exercise, 12*(5), 500-508.
- Kristiansen, E., MacIntosh, E. W., Parent, M. M., & Houlihan, B. (2018). The Youth Olympic Games: A facilitator or barrier of the high-performance sport development pathway? *European Sport Management Quarterly, 18*, 73-92. <https://doi.org/10.1080/16184742.2017.1383499>
- Little, R. J. (1992). Regression with missing X's: a review. *Journal of the American Statistical Association, 87*, 1227-1237.

- MacIntosh, E., Parent, M., & Culver, D. (2019). Understanding young athletes' learning at the Youth Olympic Games: A sport development perspective. *Journal of Global Sport Management*. doi:10.1080/24704067.2018.1561206
- MacIntosh, E. W., & Law, B. (2015). Should I stay or should I go? Exploring the decision to join, maintain, or cancel a fitness membership. *Managing Sport and Leisure*, 20, 191-210. doi:10.1080/23750472.2015.1025093
- MacIntosh, E. W., & Nicol, L. (2012). Athletes' event experiences of the XIX Commonwealth Games in Delhi, India. *International Journal of Event and Festival Management*, 3, 12-29.
- MacIntosh, E., & Parent, M. (2017). Athlete satisfaction with a major multi-sport event: The importance of social and cultural aspects. *International Journal of Event and Festival Management*, 8, 136-150.
- Parent, M. M., Kristiansen, E., & MacIntosh, E. W. (2014). Athletes' experiences at the Youth Olympic Games: Perceptions, stressors, and discourse paradox. *Event Management*, 18, 303-324.
- Peugh, J. L., & Enders, C. K. (2004). Missing data in educational research: A review of reporting practices and suggestions for improvement. *Review of Educational Research*, 74, 525-556.
- Raedeke, T. D. (1997). Is athlete burnout more than just stress? A sport commitment perspective. *Journal of Sport and Exercise Psychology*, 19, 396-417.
- Raedeke, T. D., & Smith, A. L. (2001). Development and preliminary validation of an athlete burnout measure. *Journal of Sport and Exercise Psychology*, 23, 281-306.
- Raedeke, T. D., & Smith, A. L. (2004). Coping resources and athlete burnout: An examination of stress mediated and moderation hypotheses. *Journal of Sport and Exercise Psychology*, 26, 525-541.
- Ramchandani, G. M., & Coleman, R. J. (2012). The inspirational effects of three major sport events. *International Journal of Event and Festival Management*, 3, 257-271.
- Rhodes, R. E., & Yao, C. A. (2015). Models accounting for intention-behavior discordance in the physical activity domain: a user's guide, content overview, and review of current evidence. *International Journal of Behavioral Nutrition and Physical Activity*, 12, 9.
- Rottensteiner, C., Konttinen, N., & Laakso, L. (2015). Sustained participation in youth sports related to coach-athlete relationship and coach-created motivational climate. *International Sport Coaching Journal*, 2, 29-38.
- Roser, T., DeFillippi, R. & Samson, A. (2013), "Managing your co-creation mix: co-creation ventures in distinctive contexts", *European Business Review*, 25, 20-41.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist*, 55, 68-78. <http://dx.doi.org/10.1037/0003-066X.55.1.68>
- Ryan, R. M., & Deci, E. L. (2002). Overview of self-determination theory: An organismic dialectical perspective. In: E. L. Deci & R. M. Ryan (Eds), *Handbook of self-determination research* (pp. 3-33). Rochester, NY: Rochester University Press.
- Sass, D. A., & Schmitt, T. A. (2010). A comparative investigation of rotation criteria within exploratory factor analysis. *Multivariate Behavioral Research*, 45, 73-103.
- Sotiriadou, K., Shilbury, D., & Quick, S. (2008). The attraction, retention/transition, and nurturing process of sport development: Some Australian evidence. *Journal of Sport Management*, 22, 247-272.
- Stambulova, N., & Wylleman, P. (2014). Athletes' career development and transitions. In A. Papaioannou, & D. Hackfort (Eds.), *Routledge companion to sport and exercise psychology* (pp. 605-621). London/New York: Routledge
- Tabachnick, B., Fidell, L. (2001). *Using multivariate statistics*. Boston, MA: Allyn and Bacon.
- University of Wisconsin. (2018). Office of student-athlete development annual report 2017-2018. Retrieved from [https://issuu.com/uwathletics/docs/2018\\_osad\\_annualreport\\_pages](https://issuu.com/uwathletics/docs/2018_osad_annualreport_pages).
- Van Raalte, J. L., Andrews, S. R., Cornelius, A. E., Brewer, B. W., & Petitpas, A. J. (2017). Student-athlete career self-efficacy: Workshop development and evaluation. *Journal of Clinical Sport Psychology*, 11, 1-13.
- Vansteenkiste, M., Niemiec, C. P., & Soenens, B. (2010). The development of the five mini-theories of self-determination theory: An historical overview, emerging trends, and future directions. In *The decade ahead: Theoretical perspectives on motivation and achievement* (pp. 105-165). Emerald Group Publishing Limited.

- Vargo, S. L., & Lusch, R. F. (2008). Service-dominant logic: continuing the evolution. *Journal of the Academy of Marketing Science*, 36, 1-10.
- Vargo, S.L., Maglio, P.P. and Akaka, M.A. (2008). On value and value co-creation: a service system and service logic perspective. *European Management Journal*, 26, 145-152.
- Vella, S. A., Cliff, D. P., Magee, C. A., & Okely, A. D. (2014). Sports participation and parent-reported health-related quality of life in children: longitudinal associations. *The Journal of Pediatrics*, 164, 1469-1474.
- Vella, S. A., Cliff, D. P., Magee, C. A., & Okely, A. D. (2015). Associations between sports participation and psychological difficulties during childhood: a two-year follow up. *Journal of Science and Medicine in Sport*, 18, 304-309.
- Wendling, E., Flaherty, M., Sagas, M., & Kaplanidou, K. (2018). Youth athletes' sustained involvement in elite sport: An exploratory examination of elements affecting their athletic participation. *International Journal of Sports Science & Coaching*, 13, 658-673.