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International Council for Health, Physical Education, Recreation, Sport, and Dance (ICHPER•SD)

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Fitness-Specific Epistemic Beliefs, Effort Regulation, Outcomes, and Indices of Motivation in High School Physical Education

by Ken R. Lodewyk, Brock University, Canada and Zan Gao, University of Minnesota

Abstract

Epistemic beliefs are deeply held convictions about the nature of knowledge, knowing, and learning. In this study, approximately 500 ninth and tenth-grade physical education (PE) students completed fitness-specific measures assessing their epistemic beliefs in the simplicity and stability of knowledge and the speed of its acquisition along with their effort regulation, fitness outcomes (grade, level, and frequency), and indices of fitness motivation (goal orientation, value, perceived autonomy support). Participants completed three surveys during their regular PE class. Exploratory and confirmatory factor analyses revealed two reliable epistemic belief factors similar to those previously reported in PE (the simple-integration of fitness knowledge; stable-and-useless fitness knowledge). This provided some support for the generality of epistemic beliefs across PE and fitness. As expected, epistemic beliefs related negatively to indices of motivation and effort regulation. An intrinsic goal orientation and a view for the simplicity of fitness knowledge predicted fitness outcome and a statistically significant pathway was observed from simple and stable epistemic beliefs and indices of motivation to fitness outcomes through effort regulation. The study provides particular fresh insights into the nature of epistemic beliefs, their relations to effort regulation and indices of motivation, and their potential influence on fitness outcomes in PE and beyond.

Keywords: adolescents, exercise, goal orientation, path analysis

Compared to most educational domains, physical education (PE) has a rather distinct and interrelated body of knowledge (e.g., biology, exercise physiology, fitness, psychology, dance, biomechanics) and ways of knowing that includes important knowing-related experiences like sensory-motor experiences and conceptual operations (Welk, Eisenmann, & Dollman, 2006). Such knowledge is reflective of what PE experts assert as important for students to master in order to meet the recommended knowledge, skills, and dispositions to be optimally active and healthy for life (National Association for Sport and Physical Education [NASPE], 2004). Fitness is defined as maintaining a lifestyle of capable performance in moderate-to-vigorous physical activity without experiencing unwarranted fatigue (America College of Sport Medicine [ACSM], 1998). The development of fitness knowledge, attitudes, and requisite physically active lifestyles for improved health (e.g., body composition, cardiorespiratory endurance, muscular strength and endurance, and muscular flexibility) remains a key curricular aim of most school PE programs (Harris, 2005; NASPE, 2004; Welk et al., 2006) including those in Canada (Lorusso, Francis, & Kilborne, 2013). Despite this aim, too few middle and secondary students enrolled in PE, are motivated for PE, or meet recommended physical activity levels in PE (Barr-Anderson, Young, Sallis, et al. 2008; Ridgers, Fazey, & Fairclough, 2007). This may be partially due to their negative fitness experiences during PE (Cale & Harris, 2009).

PE and classroom-based research has reported positive associations between epistemic beliefs – deeply held convictions about the nature of knowledge, knowing, and learning – and less availing motivation, strategic learning, and indices of achievement (Buehl & Alexander, 2005; Cothran & Kilulina, 2006; Hare & Graber, 2000; Lodewyk, 2009; Paulsen & Feldman, 1999). While it is clear that students need motivating fitness experiences in PE (Wallhead & Buckworth, 2004) and should learn the principles and benefits of fitness (Dodds, Griffin, & Placek, 2001; McKenzie, 2003), little is known about how students’ epistemic beliefs might align with their fitness-specific motivation, effort, and outcomes during PE and beyond. For example, how might believing that fitness knowledge is ambiguous and unrelated to health, PE, and other academic domains relate to students’ motivation, effort, and performance? Such transactional epistemic beliefs and indices of motivation-behavioral investigation of both PE and fitness in PE has lagged behind other academic content areas like science and mathematics, and is also warranted because epistemic and motivational beliefs collectively exert their positive or negative effects rather synergistically (Hofer, 2001; Solmon, 2006). Hence, this study investigates the relations between fitness-specific epistemic beliefs, effort regulation, outcomes, and indices of motivation in a high school PE setting.

Cognitive mediation theory undergirds the study (Doyle, 1997). It stems from social cognitive theory (Bandura, 1986) proposing that learners are self-regulating agents who continually respond to the reciprocal interaction of personal, social, and environmental factors on behavioural outcomes. In other words, an individual’s thoughts and behaviors are highly influenced by memory systems and methods that individuals use to exercise self-regulated control over their behaviors and environment. More specifically, cognitive mediation posits that mental learning processes such as cognitive beliefs, motivation, and use of strategies influence academic learning and mediate instruction with student achievement (Solmon & Lee, 1997). Classroom-based research has supported the cognitive mediation theory by reporting, for example, positive associations between the epistemic convictions and a non-availing motivational and achievement profile that includes lower levels of academic performance, motivation (i.e., self-efficacy, task values, intrinsic motivation), problem-solving, comprehension, conceptual change, reflective judgments, and use of learning strategies such as elaboration (e.g., Buehl & Alexander, 2005; Paulsen & Feldman, 1999). In PE, cognitive processes like self-regulation, attention-confidence, willingness to engage, and use of learning strategies, relate more to a mastery (task) goal orientation and to attributing success to motivation and effort (Solmon & Lee, 1997).

Epistemic Beliefs

Epistemic beliefs are personal convictions about the nature,
sources, and limits of knowledge (Hofer, 2001). Educational research supports four dimensions of students’ epistemic beliefs; namely, the source, simplicity, and stability of knowledge, and the speed of its acquisition (for a review, see Bendixen & Feucht, 2010). The source of knowledge reflects how much a learner believes that knowledge is self, or socially-constructed, rather than passed down from authoritative sources, such as books or experts like teachers or coaches. Individuals can believe that knowledge is more-or-less simple (made up of easily understood isolated facts) or complex (comprising ambiguous, difficult, and interrelated concepts). To illustrate, a student who believes in the simple-integration of fitness knowledge views relevant information and understanding as relatively isolated from concepts, activities, and information in other courses (e.g., math, science) or disciplines in PE (e.g., dance, games). Stable knowledge reflects the view that knowledge is rather unchanging, certain, inflexible, or absolute rather than adaptable, relative, or evidence-based. Finally, learners can believe more or less that the knowledge can be accrued quickly or not at all. Although not necessarily in a linear pattern, epistemic beliefs tend to mature with age, especially during high school (Schommer, 1993). They progress from a rather dualistic perspective (e.g., knowledge as absolute and/or simple), through a relativistic or highly individualistic phase, to what is considered a more reasoned capacity to evaluate, synthesize, and justify numerous conflicting viewpoints according to context (Hofer, 2001). For example, students’ with more advanced epistemic beliefs about fitness would understand the complexity and interrelated nature of an issue or concept, such as weight control and formulate judgments and opinions that are reasoned and justified while appropriately accounting for emotion, culture, and alternative views.

A few studies have investigated epistemic beliefs in PE. Cothran and Kulina (2006) reported that middle school students with higher beliefs in the source and stability (see the aforementioned explanations of these) of knowledge in PE were more skeptical about the worthiness of the teacher using indirect teaching strategies like peer and inquiry-based styles, and were more prone to relying on the teacher as the sole source of knowledge. Lodewyk (2009) found that a belief in simple knowledge can stifle learners’ critical outcomes with learning tasks in PE that often require them to think, move, relate to others, and apply knowledge from several domains (e.g., science, mathematics, psychology) and disciplines (e.g., fitness, dance, games). Hare and Graber (2000) also suggested that such misconceptions about the simplicity of knowledge in PE relate to students’ level of motor skill and strategic outcomes with different tasks in PE. These and other researchers (Bendixen & Feucht, 2010; Solmon, 2006) have welcomed more study into the nature of epistemic beliefs in more fine-grained PE settings such as fitness.

Despite the noted importance of knowledge in PE disciplines like fitness, the only known epistemic belief studies relative to fitness in a PE setting are by Placek et al. (2001) and Bonello (2008) who qualitatively examined the naïveté of middle-school students’ mental conceptions and models of physical changes through fitness. Placek et al. (2001) found that the fitness conceptions reflected an incomplete understanding of the types, purpose, and principles of fitness, and that students generally equated fitness with looking good and being thin. Bonello (2008) indicated that students’ fitness explanations were generally diverse, integrated, evolving, and reflective of the complexity of the fitness concept, and were highly influenced by contextual factors such as the teacher’s values and beliefs. Little is known about how epistemic beliefs relate to motivational beliefs, learning strategies like effort regulation, and outcomes like outcomes in a fitness setting.

Indices of Motivation

Since motivation is a signal of one’s motives or will to perform (Bandura, 1986), indices of motivation for this study are constructs with consistently significant positive associations to an enhanced will and successful performance of fitness outcomes in PE. The three used in this study are goal orientation, task value, and perceived autonomy support. Students with such an intrinsic goal orientation in PE are more prone to strive to demonstrate ability and the attainment of goals aligned more with mastery, learning, improvement, understanding, and effort as an end (intrinsic value) in itself. Conversely, extrinsically goal-oriented individuals in PE strive more for goals aligned with outward (performance) incentives such as grades, praise or recognition from others, appearance, and surpassing others (Ommundsen, 2004). Duncan and McKeachie (2005) reported that the extrinsic and intrinsic goal orientation corresponds closely to the ego and task oriented goal orientation (Xiang, Chen, & Bruene, 2005). Task values refer to students’ perceptions of interest, use, and importance towards a learning task (Pintrich, Smith, Garcia, & McKeachie, 1991). Finally, perceived autonomy support refers to one’s feelings of support, choice, guidance, and autonomy by significant others (e.g., teachers) in their lives (Ntoumanis, 2005). While each aligns with cognitive mediation theory (Doyle, 1997), goal orientations and task value have strong roots in social cognitive theory (Bandura, 1986) whereas perceived autonomy support originated from self-determination theory (Deci & Ryan, 2002). For example, perceived autonomy support contributes to the explanation of achievement within self-determination theory primarily through an intrinsic need to actualize personal potential and through positive experiences of competence, autonomy, and relatedness.

Each of these indices of motivation has been consistently and empirically linked to each other, positive fitness outcomes, and a host of fitness-achievement factors. To illustrate, since goals prompt students to organize their volition in order to meet those goals, goal orientation is an important determinant of successful cognitive mediation through its association to a deeper approach to studying (Ferrer-Caja & Weiss, 2000). In other words, students who tend to pursue goals that are more intrinsic tend to put forth the necessary strategic and purposeful effort to accomplish those goals (Pintrich, Marx, & Boyle, 1993). Although intrinsic goal orientation has been more highly associated with learning in PE, both intrinsic and extrinsic goal orientations can be considered availing especially if the motivational climate of the class is mastery-oriented (Chen & Ennis, 2004). In regards to task value, although related to achievement in PE (Zhang, Solmon, & Gu, 2012), task values have more strongly predicted achievement-related learning constructs such as individuals’ task choice, intentions, effort, and persistence in PE and physical activity during and out of school (Gao, Newton, & Carson, 2008). In relating task values to fitness knowledge, Chen and Chen (2012) found that high
school students lacked conceptual knowledge about health-fitness and a deep understanding of its relevance and application to their lifestyles. They attributed this in part to students’ lack of value for the knowledge and reported links between task values and in-class physical activity. Among many correlates of students’ perceived autonomy support from teachers, researchers have noted particular links to need satisfaction, value beliefs, self-efficacy, persistence/effort, concentration, autonomous motivation, and being more physically active in school and in early adulthood (Haerens et al., 2010; Ntoumanis, 2005; Zhang et al., 2012). Little is known about how adolescent students’ indices of motivation relate to their epistemic beliefs in conjunction with their effort regulation and fitness outcomes in a fitness setting.

**Effort Regulation**

Effort regulation during learning – defined as strategically managing attention, persistence, and the overcoming of obstacles such as competing distractions, disinterest, and boredom in the pursuit of particular goals – has been effectively measured using self-report survey items (Pintrich et al., 1991). Regulating effort is a critical indicator of motivation and self-regulated learning particularly through its mediation of understanding, learning, and achievement in academic settings (Duncan & McKeachie, 2005). Effort regulation has been associated with improved performance in PE (Luke & Hardy, 1999; Solmon & Lee, 1997) and fitness (Vansteenkiste, Simons, Soenens, & Lens, 2004). It has also been linked to mastery and performance-approach goals in high school PE (Agbuga & Xiang, 2008), availing learning strategies (elaboration and help seeking), and believing that ability isalterable or learned rather than inflexible (Ommundsen, 2003). More needs to be discovered about the path relations between students underlying fitness-specific epistemic beliefs, effort regulation, indices of motivation, and their performance in a fitness setting. Such understanding would help researchers and practitioners to account for such constructs when designing interventions to improve students’ outcomes in fitness.

**Objectives**

There were four specific objectives and corresponding hypotheses for this study. First, the factor structure of epistemic beliefs about fitness was determined. Underlying worldview-like epistemic beliefs tend to remain consistent across domains, whereas other epistemic beliefs, including the belief in simple and stable knowledge, differ between domains such as math, science, social studies, history, and psychology (Bendixen & Feucht, 2010; Buehl & Alexander, 2005; Buehl, Alexander, & Murphy, 2002). These domain differences may be explained in part by variant structure of these domains or the specificity of the measures being used. For example, math and physics domains tend to rely on more algorithmic or computational procedures compared to less-structured domains like history and science which may require more use of critical thinking processes (Buehl et al., 2002; Hofer, 2002). Since the structure and importance of knowledge and learning in fitness as a discipline within PE does not appear to differ dramatically from PE as a domain, we expected the epistemic belief factor structure for fitness in this study to be the similar to those found earlier in high school PE (Lodewyk, 2009). In that study

The four items representing the source of knowledge failed to load onto a factor. Since no valid and reliable quantitative assessments for the source of knowledge dimension of epistemology applicable to PE are evident; and, because developing such a measure was beyond the scope of this study, we did not assess it herein. It would be helpful if future research developed such a quantitative measure for the source of knowledge to complement some of the existing qualitative methods for assessing aspects of it in PE (Cothran & Kulmina, 2006) and fitness (Bonello, 2008; Placek et al., 2001).

The remaining objectives of this study involved the assessment of construct relations. Second, bivariate relations were explored between fitness-specific epistemic and motivational beliefs, effort regulation, and fitness outcomes in PE. Indices of motivation (intrinsic and extrinsic goal orientation, perceived autonomy support, fitness value), effort regulation, and fitness outcomes were expected to relate positively whereas relations between these constructs and epistemic beliefs were hypothesized to relate negatively. Third, the prediction of fitness outcomes by the epistemic beliefs and indices of motivation was assessed. We proposed that epistemic beliefs would predict fitness outcomes, yet not when adding the variance accounted for by the indices of motivation. Finally, path analyses procedures in classroom-based research have revealed that effort regulation is both a function of motivational and cognitive beliefs and predicts academic achievement (Pintrich 1994). This and the aforementioned relationships between this study’s constructs in PE and fitness, warrant our fourth objective and hypothesis predicting a significant pathway (Figure 1) between students’ epistemic beliefs, indices of motivation, effort regulation, and outcomes in fitness.

**Figure 1**

Notes. Simple integration of fitness knowledge=SIFK; Stable and useless fitness knowledge=SUFK; Intrinsic goal orientation-IGO; Extrinsic goal orientation=EGO; Fitness value=FV; Perceived autonomy support=PAS; Effort regulation=ER; FIT=fitness; FitnessG = z score mean of PE grade; FitnessL = z score mean of fitness level; Frequency = frequency of weekly exercise beyond PE. All paths are significant. The coefficients on the straight lines are the standardized regression weights; the coefficient right above the rectangles of dependent variable is squared multiple correlation (.22).
Epistemic Beliefs and Motivation in Fitness

Method

Participants and Procedure

The sample consisted of 513 voluntary students (261 males, 252 females; mean age = 15.25) in grade nine (n = 376 students) and ten (n = 137 students) out of a possible 731 students (70% participation rate). The sample was from seven public high schools (n = 353) and one independent high school (n = 91) in mainly south-western Ontario (Canada), and one independent high school (n = 69) in south-western British Columbia (Canada). The majority of the students were from middle-class socioeconomic status and Caucasian (85.4%). The sample completed three short questionnaires assessing their demographics (e.g., gender, estimated fitness level, exercise frequency, and fitness grade), epistemic beliefs about fitness, and motivation for fitness. Surveys were administered in each school during their regular semester-long (five-month) PE classes and from November to February, which was just past the midway point of their course. Thus, students had completed over half of the curricular fitness content of their PE course. Surveys were administered by the principal investigator using a prepared script, except for in one school where the vice-principal administered the survey, using the same script. However, those surveys (n = 69) were returned without the demographic measure attached to the survey with the other measures. Since completing the exploratory and confirmatory factor analyses to fulfill the first research question one was not dependent on this alignment, those participants were only included in the first analysis. This resulted in a final sample of 441 (221 boys, 220 girls; 73.6% Caucasian) for all other analyses.

Health fitness is emphasized in health and PE courses in the curriculum of each province and territory of Canada with an average of 7% of course level expectations attributed to it (Lorusso et al., 2013). For example, the ninth and tenth grade PE course in Ontario is titled Healthy Active Living Education (Ontario Ministry of Education and Training [OMET], 1998) and primarily houses the fitness outcomes in the active living strand of the curriculum. These include both knowledge-based outcomes (i.e., being aware of the benefits of health-related fitness and how it relates to health and well-being) and applied outcomes (i.e., the design, participation, and monitoring of daily personal health-related fitness status, plans, activities, and goals). Applied outcomes were typically integrated into lessons with other content whereas most of the knowledge-based outcomes were typically taught more discretely within classroom-based fitness theory lessons when the gymnasium or outside fields were not available and/or during inclement weather. To confirm that teachers’ practices in the ninth and/or tenth-grade PE courses in this study were generally coinciding with such curricular aims, 16 (8 males, 8 females; all Caucasian, mean age 42.7) PE teachers whose classes participated in this study voluntarily completed a survey asking (among other items) the percentage of time during the year they taught fitness, the percentage (weight) of the students’ PE grade that they allotted to fitness, and how much (on a scale from 1 = strongly disagree to 5 = strongly agree) their primary goal in those PE courses was to develop fitness in students. Results revealed that 16.75% (SD = 10.28) of the course was used to teach fitness; 11.88% (SD = 4.43) of the students’ PE grade was for fitness; and fitness was generally a noteworthy aim in PE (M= 3.31, SD=1.08).

Measures

Fitness outcomes. Similar to others using self-reported physical activity levels (Shen, McCaughtry, & Martin, 2007), fitness outcomes in this study was a composite (mean) reflection of each student’s self-reported fitness grade, fitness level, and frequency of active exercise. This data was compiled from the Demographic Questionnaire on which students were asked to report information such as their grade level, gender, ethnicity, usual grade for fitness in PE (%), level of fitness compared to others their age and gender (rated from 0 = very poor, to, 4 = very good), and frequency of active exercise at least 30 minutes per day (rated from 0 = never, to, 4 = everyday). Responses to the last two items were coded using the actual ratings (0-4). A fitness grade was included as a fitness outcome because of the noted importance of students’ mastery of the fitness knowledge, skills, and dispositions taught in physical education (OMET, 1998; see also the results of the teacher survey reported earlier) that have also been associated with active and healthy lifestyle outcomes (Harris, 2005; NASPE, 2004; Welk, et al., 2006). The other two items representing fitness outcomes (level of fitness and frequency of active exercise) reflect important fitness outcomes in PE (McKenzie, 2003) and are staple and valid self-report questions of health-related fitness on established surveys like the Healthy Physical Activity Questionnaire that is part of the most commonly used health-fitness assessment tool in Canada called the Canadian Physical Activity, Fitness, and Lifestyle Approach (Warburton, Nicol, & Bredin, 2006). The frequency of active exercise item has also been used to similarly assess physical activity level in ninth-graders (Haugen, Ommundsen, & Seiler, 2013).

Epistemic beliefs about fitness. Epistemic beliefs about fitness were assessed using the 16-item Beliefs about Epistemology in Physical Education Questionnaire developed and validated by Lodewyk (2009) in high school PE. In that study, epistemic beliefs had a suitable factor structure, confirmatory fit statistics, internal consistency reliability coefficients, and criterion validity through anticipated relations with ability conceptions and achievement in PE. That measure was re-named the Epistemic Beliefs for Fitness in PE Questionnaire for this study and each of the items was slightly altered for relevance to fitness (e.g., replacing “PE” with “fitness in PE”). A 5-point Likert scale ranging from 1 or “strongly disagree” to 5 or “strongly agree” was used. The measure assesses three epistemic scales: simple integration of fitness knowledge (“I try my best to link the different information about fitness that we are taught in PE and health.”), stable fitness knowledge (“Information learned about fitness is useless outside of school.”), and quick learning (“Knowing how to get fit and why it is important is something that can be learned quickly”). Scale scores consisted of the computed mean for the set of items comprising that scale.

Effort regulation and indices of motivation for fitness. To assess students’ perceived autonomy support for fitness in PE, the short form (six items) of the Learning Climate Questionnaire commonly used in PE research and demonstrating high internal reliability (e.g., .82 in Ntoumanis, 2005; .91 in Zhang et al., 2012), was used. A sample item is: “I feel that my PE teachers provide me choices and options in how to work on my fitness in PE.” Relevant scales from the Motivated Strategies for Learning Questionnaire (MSLQ; Pintrich et al., 1991) were used to assess fitness-specific
intrinsic goal orientation (IGO; four items), extrinsic goal orientation (EGO; four items), fitness value (six items), and effort regulation (four items). These scales of the MSLQ have sound validity reflected in their expected associations to numerous achievement and its related constructs in a host of studies across educational domains (for a review, see Duncan & McKeachie, 2005). For example, Ommundsen (2003) found that effort regulation had a positive predictive relationship to incremental ability conceptions and a negative one to entity ability conceptions in PE. Satisfactory internal reliability has also been reported for effort regulation (.83) by Ommundsen (2003), and for EGO (.80), IGO (.81) and task value (.86) by Lodewyk, Winne, and Jamieson-Noel (2009). The measures for effort regulation and indices of motivation used a 7-point Likert scale (“1 = not at all true of me” to “7 = very true of me”). Sample items include: “In a PE class like this, I like fitness material and activities that make me more curious, even if it is hard to learn.” (IGO); “I want to do well in the fitness part of PE because it is important to show my fitness ability to my family, friends, teacher, or others.” (EGO); “It is important for me to learn the fitness information taught in PE.” (Fitness Value); and, “I work hard to do well in the fitness activities in PE even if I don’t like what we are doing” (Effort Regulation).

Data Analysis
The size of the sample was sufficient (Schumacker & Lomax, 2010; Tabachnick & Fidell, 2001) for each of the following analyses. To answer the first research question, an exploratory factor analysis with oblique rotation (Delta = 0), a minimum eigenvalue of 1.0, and a factor loading cut-off of .46 was performed, followed by a confirmatory factor analysis to verify the fit of the epistemic belief data. The cut off score of .46 that we set for the factor loadings was based on Tabachnick and Fidell’s (2001) recommendation that a minimal value of .32 is required and any above .45 is considered fair. The loadings are also consistent with other loadings in educational research assessing epistemic beliefs (e.g., Braten & Stromso, 2004; Schommer, 1993). Following an analysis of multivariate outliers using Mahalanobis Distance (p < .001) as the criterion, three students were deleted from the overall sample, resulting in a final sample of 510. The sample was divided into two randomly selected groups of 255 cases, with one group for the exploratory factor analysis and the other group for the confirmatory factor analysis. Indicators of goodness of fit for the confirmatory factor analysis model were the Chi square/d.f., comparative fit index (CFI), the Goodness of Fit Index (GFI); and (d) the root mean square error of approximation (RMSEA).

To answer the remaining three research questions, data cleaning and preparation procedures were performed on the motivational and indices of fitness data. Any observations with invalid data values or missing values from these measures were removed, if they could not be verified and fixed as were cases with standard deviations greater than three (Tabachnick & Fidell, 2001), which culminated in the deletion of 47 cases and a sample of 394 for the remaining analyses. In order to place all the three items representing fitness outcomes (estimated fitness grade, level, and exercise frequency) on an equivalent scale for the eventual computation of their mean to represent fitness outcomes, each was standardized by converting it to a Z score (i.e., a mean of 0 and a standard deviation of 1).

For the second research question, Pearson product-moment correlations and internal consistency reliability coefficients were calculated. A hierarchical regression analysis was used to test the prediction of fitness outcomes by epistemic beliefs (step one) and by epistemic beliefs and indices of motivation (step two). For the fulfillment of the third research question, a path analysis was employed using Amos 5.0 (Arbuckle, 2003) to test the predictive utility of effort regulation to fitness outcomes. In this study, effort regulation and fitness outcomes were the latent variables. Specifically, SIFK, SUFK, EGO, IGO, fitness value, and PAS were indicators of effort regulation; whereas fitness grade, fitness level, and exercise frequency were indicators of fitness outcomes (see Figure 1). Maximum likelihood estimation was used to evaluate the fit of the model to the empirical data. Acceptable model fit was assessed using multiple indices. The overall fit of the model to the data was examined through the chi-square test ($\chi^2$). A non-significant $\chi^2$ indicates acceptable model fit (Tabachnick & Fidell, 2001). Root mean square error of approximation (RMSEA) represents closeness of fit, and values approximating .06 and zero demonstrate close and exact fit of the model (Schumacker, & Lomax, 2010). The comparative fit index (CFI), the Tucker-Lewis index (TLI), and the normed fit index (NFI) test the proportionate improvement in fit by comparing the hypothesized model (over identified model) with a just identified model. Acceptable model fit represents CFI, TLI, and NFI values higher or equal to .95 (Schumacker, & Lomax, 2010).

Results
To fulfill the first objective, an exploratory factor analysis extracted 11 items across three factors explaining 36.81% of the variance (see Table 1). The first factor was identified as simple-integration of fitness knowledge (SIFK), and loaded on five items accounting for 22.22% of the variance. The second factor, called stable and useless fitness knowledge (SUFK), consisted of four items and explained 10.54% of the variance. The third factor (quick learning of fitness knowledge) loaded only two items, explained 4.06% of the variance, and had a low internal consistency reliability coefficient (.48) so it was omitted from further analysis in this study. Since each SIFK item had a positive valence they were recoded to reflect the negative connotation of the SIFK title and that of the SUFK. The confirmatory factor analysis was subsequently performed with the second data set and revealed a suitable fit (Tabachnick & Fidell, 2001) for the factor model (Chi square/d.f. =2.93; p < .05; CFI = .93; GFI= .92; SRMEA = .06). Therefore the two-factor structure was retained and used for further analysis. Internal consistency reliability coefficients were .75 (SIFK) and .68 (SUFK).

The second objective of the study was to explore relations between fitness-specific epistemic beliefs, indices of motivation, and outcomes in PE. Descriptive statistics, scale internal consistency reliability coefficients, and bivariate correlations are presented in Table 2. The reliability coefficients for each scale was satisfactory for scales under 10 items (Loewenthall, 1996). The means (with standard deviations in parenthesis) for the three fitness outcome variables were 81.15 (10.42) for fitness grade, 2.76 (9.1) for fitness level, and 2.38 (1.03) for frequency of actively exercising. These values were averaged to generate an overall z-score to
Table 1. Factor Loadings Epistemic Beliefs for Fitness in PE (N = 255)

<table>
<thead>
<tr>
<th>Items and Factors (α)</th>
<th>SIFK</th>
<th>SUFK</th>
<th>QL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowing about fitness relates to day to day life.</td>
<td>.68</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. I can use what I learn about fitness in PE in other areas of my life.</td>
<td>.62</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. I try my best to link the different information about fitness that we are taught about in PE.</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. It is important for students to connect the new ideas learned about fitness to what they already know.</td>
<td>.59</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. There are connections between what we learn about fitness in PE and information that is taught in other courses.</td>
<td>.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. It is a waste of time to try to get fit if you are already out of shape.</td>
<td></td>
<td>.74</td>
<td></td>
</tr>
<tr>
<td>7. Information learned about fitness is useless outside of school.</td>
<td></td>
<td>.64</td>
<td></td>
</tr>
<tr>
<td>8. If I cannot quickly understand how to be fit, it usually means I will never understand it.</td>
<td></td>
<td>.63</td>
<td></td>
</tr>
<tr>
<td>9. The information we learn in PE about how to be physically fit mainly consists of isolated facts rather than concepts that relate to each other.</td>
<td></td>
<td>.46</td>
<td></td>
</tr>
<tr>
<td>10. Most things worth knowing about fitness are easy to understand.</td>
<td></td>
<td>.68</td>
<td></td>
</tr>
<tr>
<td>11. Knowing how to get fit and why it is important is something that can be learned quickly.</td>
<td></td>
<td>.48</td>
<td></td>
</tr>
</tbody>
</table>

Total Variance Explained (36.81%) 22.22 10.54 4.06

Notes. Based on an exploratory principal axis factor analysis with oblique rotation; SIFK = Simple Integration of Fitness Knowledge; SUFK = Stable and Useless Fitness Knowledge; QLFK = Quick Learning of Fitness Knowledge. Each SIFK item had a positive valence, which was recoded to a negative valence to match that of SUFK and QL and its title.

Table 2. Descriptive Statistics, Internal Consistency Reliability Coefficients, and Scale Correlations (N = 394)

<table>
<thead>
<tr>
<th>Scales</th>
<th>SIFK</th>
<th>SUFK</th>
<th>IGO</th>
<th>EGO</th>
<th>FV</th>
<th>ER</th>
<th>PAS</th>
<th>FITE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha</td>
<td>.75</td>
<td>.68</td>
<td>.76</td>
<td>.69</td>
<td>.84</td>
<td>.75</td>
<td>.84</td>
<td>.70</td>
</tr>
<tr>
<td>M</td>
<td>2.33</td>
<td>2.05</td>
<td>4.75</td>
<td>4.98</td>
<td>4.97</td>
<td>5.16</td>
<td>3.42</td>
<td>0</td>
</tr>
<tr>
<td>SD</td>
<td>.65</td>
<td>.70</td>
<td>1.07</td>
<td>1.13</td>
<td>1.02</td>
<td>1.12</td>
<td>.77</td>
<td>1.00</td>
</tr>
<tr>
<td>SIFK</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>SUFK</td>
<td>.31*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>IGO</td>
<td>-.59* - .20*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>EGO</td>
<td>-.45* - .18* - .52*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FV</td>
<td>-.70* - .30* -.75* -.59*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ER</td>
<td>-.43* -.43* -.53* -.36* -.53*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAS</td>
<td>-.46* -.17* -.42* -.34* -.48* -.36*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>FITE</td>
<td>-.30* -.14* -.42* -.30* -.33* -.37* -.22*</td>
<td>-</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Notes. * p < .01. Fitness outcomes (z score mean of PE grade, fitness level, and frequency of weekly exercise beyond PE = FITE; Simple integration of fitness knowledge=SIFK; Stable and useless fitness knowledge=SUFK; Intrinsic goal orientation-IGO; Extrinsic goal orientation=EGO; Fitness value=FV; Effort regulation=ER; Perceived autonomy support=PAS.

The results revealed two theoretically and statistically credible epistemic belief factors through conceptual similarities to those reported in a more general study of epistemic beliefs in PE (Lodewyk, 2009; Lodewyk & Sullivan, 2010), a confirmation of demonstrated a good fit to the data, χ² (26, N = 394) = 1.822, CFI = .983, TLI = .97, NFI = .963, RMSEA = .046. Figure 1 shows the path diagram and standardized path coefficients of the model. All path coefficients were statistically significant at p < .05. Students’ effort regulation positively predicted fitness outcomes (γ ER-fit= .46). All the indicators of effort regulation had significant effect on effort regulation (γ = -.32 to .92), and indicators of fitness outcomes had significant effect on fitness outcomes (γ = .59 to .84). The overall variance in fitness outcomes explained by the model was 22%.

Discussion

The study investigated the factor structure of epistemic beliefs about fitness along with relations and a pathway between fitness-specific epistemic beliefs, effort regulation, outcomes, and indices of motivation in a high school PE setting. Study limitations include two scales with moderate reliability (.68, .69), the reliance on only quantitative self-report data, and the obvious lack of direct transfer of implications from the setting (e.g., demographics and curriculum) of this study to other rather unique contexts. We also note with caution that fitness outcomes might be evident in other ways than the mean of three self-report items (fitness level, grade, and frequency of weekly exercise outside of PE) measured in this study and highlight the need for caution in over-generalizing the results pertaining to epistemic beliefs across cultures since these have been shown to vary in some (Benedixen & Feucht, 2010). We welcome new research in various PE setting to further enhance the epistemic measure used herein. Despite these concerns, several novel implications stem from this study about the teaching of fitness with the hope that more students will better engage in health-fitness pursuits.

Finally, a path analysis was used to test the relationships among students’ fitness specific epistemic beliefs, indices of motivation, effort regulation, and their outcomes in fitness. The model represent students’ fitness outcomes. The bivariate correlations were as hypothesized. For example, the indices of motivation related positively to each other and to effort regulation and fitness outcomes. Both SIFK and SUFK related negatively to each of the other constructs; however, except for effort regulation, relations to SIFK were notably higher than those to SUFK.

A hierarchical regression analysis was used to answer the third objective; namely, the hypothesized predictive utility of the epistemic followed by the epistemic belief and motivational variables on fitness outcomes. The results revealed that epistemic beliefs predicted fitness outcomes in the first step, F (2, 364) = 18.44, p < .001, with only SIFK (p < .001) not SUFK (p = .37) emerging as a predictor. Only intrinsic goal orientation was significant when each of the epistemic beliefs and indices of motivation were entered into the second step of this model, F (6, 360) = 14.27, p < .001 signaling that when the variance accounted for by epistemic beliefs was controlled for in the model, only an intrinsic goal orientation accounted for a statistical additional portion of the variability attributed to fitness outcomes. SUFK, extrinsic goal orientation, fitness value, and perceived autonomy support did not add significantly to the prediction.

Finally, a path analysis was used to test the relationships among students’ fitness specific epistemic beliefs, indices of motivation, effort regulation, and their outcomes in fitness. The model demonstrated a good fit to the data, χ² (26, N = 394) = 1.822, CFI = .983, TLI = .97, NFI = .963, RMSEA = .046. Figure 1 shows the path diagram and standardized path coefficients of the model. All path coefficients were statistically significant at p < .05. Students’ effort regulation positively predicted fitness outcomes (γ ER-fit= .46). All the indicators of effort regulation had significant effect on effort regulation (γ = -.32 to .92), and indicators of fitness outcomes had significant effect on fitness outcomes (γ = .59 to .84). The overall variance in fitness outcomes explained by the model was 22%.

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their fit to the factor model, and satisfactory numbers of factor items and statistical values (i.e., variance accounted for by each factor, factor loadings, and internal consistency reliability coefficients). These two factors were also logically and statistically related to indices of motivation and fitness engagement in this study. The similarity of the structure and name for these epistemic factors to those in other educational domains like history or math (Buehl & Alexander, 2005; Hofer, 2002) supports the generality of beliefs about the simplicity and stability of knowledge beyond fitness to across PE (Lodewyk, 2009) and several other educational domains (Hofer, 2001; Schommer, 1993). It appears that in each of these curricular contexts, knowledge can be viewed by students as more or less simply integrated (ambiguous, isolated, not interconnected with or relevant elsewhere), and stable or useless (unchanging or changeable and of little value). This domain-generality is noteworthy because of some evidence supporting the specificity of epistemic beliefs in domains like science. As noted earlier, epistemic beliefs may be relatively generalized or specialized, depending on the structure of the domain, task, or assessment which explains the invariant configurations of epistemic beliefs across some domains (Buehl & Alexander, 2005). The results herein validly indicate that students are often not aware of the value of fitness knowledge, its complexity and malleability relative to their overall health and well-being, or the degree of their empowerment to set and adhere to personal fitness goals through the design and monitoring of their fitness status, plans, and activities.

New evidence of statistical links between fitness-specific epistemic beliefs, outcomes, and indices of motivation has been generated from this investigation. Similar relations between effort, fitness outcomes, and indices of motivation have been reported previously in PE (e.g., Ntoumanis, 2005; Ommundsen, 2003; Solmon & Lee, 1997; Xiang et al., 2005) and within fitness (Gao et al., 2008; Cale & Harris, 2009). Another contribution of the study was the realization that students with an elevated belief in the simplicity of knowledge (relatively isolated from concepts, activities, and information in other courses or disciplines in PE) and stability of fitness knowledge in PE (unchanging, certain, inflexible, or absolute) were prone to having lower intrinsic and extrinsic goal orientation, value, perceived autonomy support, effort regulation, and outcomes relative to fitness. These associations were particularly stronger between these variables and the simplicity of knowledge than the stability of knowledge. Similar associations to epistemic beliefs have been reported in classroom-based research; for example: perceived autonomy support (Weinstock & Roth, 2011), goal orientation (Braten & Stromso, 2004), effort (Paulsen & Feldman, 1999), task values, and performance (e.g., Buehl & Alexander, 2005). Further, along with a maladaptive belief in the simplicity of fitness knowledge (SIFK), an intrinsic goal orientation predicted lower outcomes in fitness. This corroborates educational research linking simple epistemic beliefs (e.g., Schommer, 1993; see also Bendixen & Feucht, 2010) and goal orientation (e.g., Ommundsen, 2004; Xiang et al., 2005; see also Chen & Ennis, 2004) to academic achievement and a host of achievement-related factors.

The study also revealed a satisfactory fit of the data to a proposed pathway from fitness-specific epistemic beliefs and indices of motivation to fitness outcomes through effort regulation. This result reinforces the multi-dimensional and integrated nature of cognitive mediation theory of learning and achievement that epistemic beliefs and indices of motivation beliefs serve as cognitive conditions of self-regulated learning which interact with task, instructional, and social dynamics in setting the stage for strategic learning responses (e.g., regulation of effort) on the pathway to fitness outcomes (Doyle, 1977; Winne & Hadwin, 1998). For example, rather than strongly predicting achievement, it appears that epistemic beliefs and indices of motivation operate rather meta-cognitively within a personal belief system that influences their achievement and regulation of learning (Hofer, 2001; Paulsen & Feldman, 1999; Winne & Hadwin, 1998). Similar to the effect of beliefs in the simplicity of knowledge in other domains (Buehl et al., 2002), perhaps holding non-availing epistemic beliefs in the simplicity of fitness knowledge may prompt students to be less prone to understanding conceptual links and ambiguities between fitness concepts (e.g., aerobic, anaerobic, and muscular endurance), how it links to other knowledge in PE (e.g., fitness for health) and in other domains (e.g., fitness effects on physiology).

Increased fitness outcomes in PE and in life might be enhanced if physical educators also design the fitness content and tailor their instruction to foster students’ fitness-specific effort regulation and indices of motivation (value, perceived autonomy support, intrinsic and extrinsic goal orientation). In regards to the application of motivating instructional behaviours such as autonomy-support (giving students choices and opportunities for independent, cooperative, and lower anxiety tasks), this works much better than controlling styles to promote present and future effort and persistence in a youth exercise setting (Motl, Dishman, Saunders, Dowda, & Pate, 2002; Ntoumanis, 2005; Vansteenkiste et al., 2004). Finally, the noteworthy relationships of this study further reinforce the critical role of effort regulation as a learning strategy in PE (Quan, Xiang, McBride & Bruene, 2006; Ommundsen, 2004; Solmon & Lee, 1997). Positive fitness outcomes appear more likely when instructors foster in students “a valuing of effort and a commitment to effort-based strategies through the design of mastery-oriented classroom structures” that can also include some extrinsic motivators (Ames, 1992, p. 268).

Although the negative experiences of fitness in PE (Cale & Harris, 2009) might be buffered somewhat by one’s epistemic beliefs, indices of motivation, and effort regulation, it is important to recognize the role that instructors might have in propagating maladaptive beliefs in students. For example, the collective relations noted in this study signal that physical educators should consider how the fitness content they teach is simplistic when it is perceived by students to lack clear integration with other educational domains and lifestyle concepts or to be static and stale with little usefulness. Teachers might also instruct to help students understand the complex, integrated, evolving, and useful nature of fitness content and how malleable fitness can be when effortful and strategic learning is applied. Finally, another likely factor is the way that teachers’ personal beliefs about fitness align with the structure of the fitness learning tasks they design and assign in PE. For example, Harris (2005) notes that teachers tend to promote fitness to enhance students’ performance in sport rather than health and well-being. To elaborate, teachers often hold narrow interpretations of fitness as attributes to be developed through...
vigorou training and testing along with pressure to raise activity levels. Such beliefs have prompted teachers to use methods and activities that compromise objectives so critical to active living like the attainment of knowledge, skills, and dispositions through positive activity experiences. Harris (2005) adds that teachers often implement “forced fitness regimes, directed activity with minimum learning, inactive PE lessons involving excessive theory or teacher talk, and dull and uninspiring drills... or activity-based units (e.g., blocks of work on aerobics, cross-country running, circuit-training) delivered with minimal learning and limited pupil involvement” (p. 89). Pintrich et al. (1993) reports that classroom teachers too often assign tasks that lack authenticity (application), the need for critical thinking, and ambiguity in the final product or answer that “can promote misconceptions such as a false understanding that the domain is fundamentally simple and stimulate superficial outcomes with the task” (p. 181).

In conclusion, this study goes beyond recent investigations of links between motivation, effort, and physical activity performance in PE (e.g., Agbuga & Xiang, 2008; Chen & Chen, 2012; Zhang et al., 2012) by heightening awareness as to the nature of fitness-specific epistemic beliefs and their relation to effort regulation, indices of motivation, and outcomes in fitness during PE. Future research could build on this study by, for example, studying these constructs in conjunction with a trichotomous (Agbuga & Xiang, 2008) or 2 x 2 achievement goal orientation along with social goals (Guan et al., 2006). We also encourage research that uses qualitative methods (e.g., interviews) in conjunction with those used herein to explore if students’ epistemic knowledge convictions about other disciplines within PE (i.e., dance, educational gymnastics, and games) are also consistent with their epistemic beliefs about fitness.

References
Arbuckle, J. L. (2003). Amos 5.0 update to the Amos user’s guide. Chicago, IL: SPSS.
The Promotion and Perception of the Youth Olympic Games: A Korean Perspective

by Lawrence W. Judge, Ball State University; Don Lee, Ball State University; Karin Surber, Cisco Systems, Indianapolis; David Bellar, University of Louisiana Lafayette; Jeffrey Petersen, Baylor University; Emese Ivan, St. John's University & Hyeon Jung Kim, Ball State University

Abstract

The Youth Olympic Games (YOG) was launched in part to reignite interest in Olympic sports in the midst of a generation of increasingly overweight and inactive adolescents. But since the initial announcement of the YOG by the International Olympic Committee in 2007, this new third addition to the Olympic family of events has provoked response from loyal advocates and equally committed critics. The purpose of this research study was to assess how attitudes, public awareness, and access to social media impact the sports community in Korea regarding YOG engagement via television viewing or event attendance. The regression results revealed that familiarity with the YOG, public awareness and use of media for sports information were statistically significant contributors for Korean's intention to watch televised Youth Olympic Games. In contrast, social network service (SNS) accessibility, familiarity with YOG and public awareness significantly affected Korean's intention to attend the YOG. These findings are described and evaluated in order to provide further insight during the ongoing development of this relatively new international sport festival and mega-event.

Key words: Awareness, Competition, Fair Play, Sportmanship

The International Olympic Committee (IOC) seeks to reignite interest in Olympic sports amongst a generation of adolescents that are becoming increasingly overweight and inactive. The IOC's Executive Director of the Olympic Games, Gilbert Felli, stated that some schools even withdraw sports and physical education programs from the curriculum to cut costs because they place a minimal value on the significance of sport and its impact on healthy lifestyles (IOC, 2007). In order to address both marketing and health related issues, the IOC announced inauguration of the Youth Olympic Games (YOG) targeting young athletes aged from 14 to 18 (IOC, 2007). The first Summer YOG was held in Singapore in 2010. The president of IOC, Jacques Rogge, indicated that a primary objective was to reduce childhood obesity and increase participation in sport activities among youth population. Despite good intentions, since the announcement of the YOG, this new proposal has provoked mixed responses from both loyal advocates as well as equally committed critics. Critics have expressed concerns such as overtraining, risk of injuries, and psychological pressure among these adolescent competitors (Brennan, 2007).

The general purpose of the YOG has been shown to be multifaceted. The first facet is to create opportunities for young athletes to compete at international levels of sporting events and with a related facet of fostering communication with related communities about their positive experiences with the YOG event. In addition, educational programs are expected to be initiated from this type of event, such as a Cultural and Educational Program (CEP), and the Competitive Program (CP), which is a type of contest for mixed-gender and mixed-National Olympic Committee (NOCs) teams (Torres, 2010). Another purpose includes allowing for an expansion of the host sites and host benefits for Olympic related events through the Summer and Winter YOG. Before and after the inauguration of the YOG, Singapore experienced many changes in economic, political, and social development. Likewise, international sporting events such as Olympics, Paralympics, and FIFA World Cup have been recognized as a booster for sports marketers as well as tourism developers (Goh & Tong, 2010). To maximize the potential benefits of this type of marquee event, the Singapore government and Youth Olympic Games organizing committee created marketing avenues for domestic businesses in association with the YOG. Plans are moving forward to develop the Youth Olympic park and provide additional monetary support for education (Goh & Tong, 2010).

Korea has also experienced similar benefits from hosting marquee sporting events including the Seoul summer Olympics of 1988 and the 2002 FIFA Korea-Japan World Cup (Jung, Chow, & Woo, 2003). Extensive research was conducted in Korea to estimate the effectiveness of marquee sporting events, and results indicated that Korea's economy has escalated and many positive political and financial benefits have occurred as a result of hosting these events (Song, 2003). Song (2003) further noted that many aspects of Korea's economy have improved including the infrastructure, tourist industry, sport leisure, electronics and telecommunications, and trade businesses. Enhancement of the country's image across the globe was an additional benefit (Olaf & Jung, 2001). The Olympics were also used as a means to encourage diplomatic endeavors, which is consistent with one of the IOC's mission (Lee, B., 2012).

Through these sport events (Olympics and World Cup), youth sports get attention from government, sports organizations, and schools (Lee, 2011). However, as IOC President Rogge mentioned, problems still exist within today's youth population such as increasing rates of childhood obesity, the need to participate in more sports activities among the youth population and the need to build a strong sense of ethics in youth sports (IOC, 2007). As such, another YOG facet of purpose relates to improving youth fitness and combating obesity. Park, 2002, noted that although the physique index has increased within children and adolescents, they often do not have healthy body conditions because of unbalanced eating habits, overindulgence in carbohydrates and lipids, and a lack of physical activity due to sedentary life styles. An additional problem was recognized in physical activity patterns among the Korean youth population in that the general student population could not get adequate opportunities to engage in sport activities because the focus on sport activity in Korea is heavily weighted.
on elite sports. Another reason is that Korean students commonly do not have sufficient time to complete regular exercise because of their extremely competitive education system. By the same token, after-school programs do not include exercise programs and most of the students go to private educational institutes or have private tutors after school to maintain high academic standards. For these reasons, the students often are not as physically fit which results in unbalanced lifestyles (Cho, 2009).

With increasing public awareness, the Ministry of Education and Human Resources Development planned to develop more sport clubs to improve these social issues (Huh, Kim, & Jung, 2007). The sport clubs are divided into three types; Korean sport club, youth sport club, and school sport club. The Korean sport club, organized by the Ministry of Culture, Sport, and Tourism, is a pilot project focusing on local sport clubs. Since 2004, numerous demonstration projects were initiated to create more opportunities for sports participation among youth and discover athletic talent among youth populations. The school sport club, supervised by the Ministry of Education and Human Resources Development, is a part of an after-school program emphasizing an equal value of studying and exercising across the youth population (Huh et al., 2007). The aim of the school sport club was to offer chances to engage in sport activity, develop sport skills, interest, good sportsmanship, and promote healthy lifestyles among the youth population (Huh et al., 2007). In addition to the healthy lifestyle changes, Bredemeire, Weiss, Shields, and Shewchuk (1986) demonstrated that children who learn fair play, sportsmanship, and ethical development via sport and physical education settings tend to develop more mature and positive personality traits.

The media has also played important roles in promoting and changing the public’s perception on youth healthy lifestyles in Korea. The previous two marquee sporting events, especially the 2002 FIFA Korea-Japan World Cup, were prioritized by the media (Jung et al., 2003). All media including television, internet, advertisement, and radio were focused on soccer and broadcasted some matches several times (Jung et al., 2003). For example, Munhwa Broadcasting Corporation (MBC; one of the largest Korean TV broadcasting companies) initiated the Youth Football Foundation immediately after the event to promote and support youth soccer leagues (Choi, 2009; Ji-eun, 2006). According to Lee (2005), print media and electronic media have converged through computers and the internet because they contain both audio and video contents that are available on an unlimited basis online. In Korea, the rate of internet usage has dramatically increased under a government policy designed to build a more progressive information society (Kim, 2004). According to the Korea Network Information Center (2003), 59.4% of Koreans over age six use the internet, with 65.2% of users being male and 53.6% being female. With the evolution of a high-speed communication network, social network service (SNS) technology has appeared and changed social relationships between people (Lee, J, 2012). Through SNS, people foster relationships with others, have opportunities to make new personal connections (Bae, 2005), and get sport information in real time and learn sport rules (Lee, J, 2012).

The initial hosting of the YOG were made by Singapore (summer 2010) and Innsbruck (winter 2012). A very low general interest in and awareness of the YOG was demonstrated amongst various audiences including US sport coaches and administrators (Judge, Petersen, & Lydum, 2009), Greek athletes and coaches (Judge et al., 2011), and a sample of US figure skating coaches (Judge et al., 2012). As the YOG are still in their infancy, the event’s future is unclear. In many respects, the situation would be akin to asking, in the early 1900s, whether the Modern Olympic Games would survive. Given the significant potential implications of the YOG on both the youth and the international sport communities, the goal of this investigation was to further explore the YOG’s sustainability potential (taken here as survival and success). The purpose of this study was to assess how attitudes, public awareness, and access to social media impacted the South Korean sports community’s awareness of the 2012 Winter Youth Olympic Games. This study sought to determine the effect of the key variables on Koreans’ consumption of televised YOG and intention to attend the then upcoming YOG.

**Methods**

A survey methodology was employed in order to assess the awareness of and interest in the upcoming Winter YOG. The participants were surveyed approximately one month prior to the closing of the 2012 Winter YOG to assess the event’s global marketing efforts. The survey was modified from the original instrument with minor changes to the demographic elements and the addition of scaled questions related to intention to attend or view future YOG events along with six scaled questions related to media consumption. Additional demographic data was collected in the present study to measure the social networking habits and behaviors of the subjects including an indication of social networking sites used (i.e. Facebook, MySpace, and Twitter). The original survey instrument was composed of six demographic elements and five research-related questions, and was modeled upon a previously developed and tested instrument (Judge et al., 2009). In order to verify both content and face validity, the instrument was reviewed by a panel of four experts in the area of youth sport. Two of the panelists were practitioners in the field of youth sport and two of panelists were academicians with research expertise in youth sport. The demographic survey components included: gender, coaching experience, sport administration/management experience, and athletic background. A seven-point Likert-scale method was used for ranking the seven dependent variables of the study which included: perceived personal awareness of the YOG, perceived public awareness of the YOG, intention of YOG event attendance, and intention to view the YOG on television. The first two primary research questions explored event awareness of the YOG by addressing two separate perceptions: individual and public awareness. The first question asked participants to assess their own level of familiarity with the YOG and the second asked participants to evaluate perceived public awareness of the YOG. The next two questions assessed intent to engage in the games via attendance or television viewing. Additional scaled questions related to media consumption addressed the aspects of the subjects’ accessibility to social networking sites, perceptions of social media advertisement influence, use of traditional newspapers and magazines, use of traditional TV and radio, use of the internet or World Wide Web, and use of traditional communication to gain information. Both the survey and the research protocol were reviewed and approved by
The English version of the questionnaire was then translated to Korean by one of the primary authors who is a native Korean with bilingual skills, qualifications which include holding a doctorate from a US institution, and expertise in the area of sport studies. The translated version of the questionnaire was then electronically sent to a faculty member and researcher in Korea. Data were collected from multiple classes throughout the campus in a single university in Korea. Participants in this study numbered 250 individuals (22.3yrs ± 2.21) with a gender mix of 43.2% female and 56.8% male.

To analyze the data, descriptive statistics were calculated for the overall variables using PASW 18.0 version. Then, correlations among the overall variables were obtained. Two multiple regression analyses were conducted to examine the extent to which the six independent factors (familiarity with Youth Olympic Games, general public awareness, accessibility to social networking/media sites, exposure to advertisements on social media sites, perceived importance of traditional media such as newspapers and magazines, perceived importance of traditional media to sports, and use of the internet) influenced two dependent variables (the intention to watch Youth Olympic Games on television and the intention to attend Youth Olympic Games). To minimize type I error, when multiple regression analyses are conducted, the alpha level was adjusted from .05 to .025 (Hair, Black, Babin, & Anderson, 2010).

Table 1. Descriptive Statistics

<table>
<thead>
<tr>
<th>Variables</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>PersonalFamIOC</td>
<td>1.2196</td>
<td>.68064</td>
</tr>
<tr>
<td>PubAwIOC</td>
<td>1.4907</td>
<td>.89201</td>
</tr>
<tr>
<td>SocNetAccess</td>
<td>6.2523</td>
<td>1.24164</td>
</tr>
<tr>
<td>AdInfluence</td>
<td>3.3178</td>
<td>1.67050</td>
</tr>
<tr>
<td>TradNewsMag</td>
<td>4.7290</td>
<td>1.58378</td>
</tr>
<tr>
<td>TradTVRadio</td>
<td>5.7336</td>
<td>1.46927</td>
</tr>
<tr>
<td>WWWUtil</td>
<td>5.8925</td>
<td>1.33309</td>
</tr>
<tr>
<td>TradComm</td>
<td>4.9346</td>
<td>1.57009</td>
</tr>
<tr>
<td>WatchYOGtv</td>
<td>3.4206</td>
<td>1.91136</td>
</tr>
<tr>
<td>AttendYOG</td>
<td>2.5888</td>
<td>1.49461</td>
</tr>
</tbody>
</table>

R square: 24.7%. Alpha was adjusted from .05 to .025. (Hair, Black, Babin, & Anderson, 2010).

Descriptive Results

The majority of respondents indicated that they had either no coaching experience (77.2%) or youth coaching experience (20.8%). The majority of respondents had leadership backgrounds as follows: no leadership experience (89.6%), local sport official/referee (4.0%) or administrator at provincial level (2.8%). Eighty percent of the participants had no formal athletic background while nearly 17% were athletes at the high school level. Approximately 65% of the participants were actively connected with some type of social network. The most frequently visited social networking sites were Facebook (57.2%), followed by Twitter (5.2%). A little over 8% of the participants indicated “other”. Their primary use of social networking media was to keep in touch with friends (77.8%), to look up high school or college alumni (11.1%), to search sports information (11.1%), to keep in touch with family members (6.7%), to use as education materials (4.4%), and for professional networking (4.4%). A summary of the descriptive statistics for the overall variables is provided in Table 1.

Multiple Regression Results

To examine the influence of six independent variables on the intention to watch televised YOG, a multiple regression analysis was conducted. The overall results revealed that the combined set of independent variables collectively explained approximately 22% of the variance in watching YOG on television. At the univariate level, Familiarity with YOG, Public awareness and Use of media for sports information were statistically significant contributors (p = .008, .018, and .023, respectively) to the relationship between the independent factors and the intention to watch YOG on television. The beta coefficients were all positive indicating a positive influence of the selected independent variables on the dependent variable. Table 2 provides a summary of these regression analyses results.

Table 2. Multiple Regression Analysis on Intention to Watch Televised YOG

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOGFamiliar</td>
<td>.194</td>
<td>2.658</td>
<td>.008*</td>
</tr>
<tr>
<td>YOGPublicAware</td>
<td>.176</td>
<td>2.384</td>
<td>.018*</td>
</tr>
<tr>
<td>SNSAccess</td>
<td>.037</td>
<td>.529</td>
<td>.598</td>
</tr>
<tr>
<td>MediaImportance</td>
<td>.007</td>
<td>.083</td>
<td>.934</td>
</tr>
<tr>
<td>MediaSport</td>
<td>.192</td>
<td>2.294</td>
<td>.023*</td>
</tr>
<tr>
<td>Internet</td>
<td>.063</td>
<td>.893</td>
<td>.373</td>
</tr>
</tbody>
</table>

Note. R square: 21.6%. Alpha was adjusted from .05 to .025.

To achieve the second objective (i.e., predicting factors that impact the intention to attend Youth Olympic Games), a separate multiple regression analysis was conducted. The overall results indicated that the combined set of independent variables collectively explained approximately 25% of the variance in intention to attend upcoming Youth Olympic Games. At the univariate level, in contrast to the initial regression, SNS accessibility was newly discovered as a statistically significant factor (p = .009) in addition to both Familiarity with YOG (p = .004) and Public awareness (p = .004). The beta coefficients were all positive indicating a positive relationship between selected independent variables and the dependent variable. A summary of this second regression analysis is provided in Table 3.

Table 3. Multiple Regression Analysis on Intention to Attend YOG

<table>
<thead>
<tr>
<th>Independent Variables</th>
<th>Beta</th>
<th>t</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>YOGFamiliar</td>
<td>.205</td>
<td>2.871</td>
<td>.004*</td>
</tr>
<tr>
<td>YOGPublicAware</td>
<td>.209</td>
<td>2.892</td>
<td>.004*</td>
</tr>
<tr>
<td>SNSAccess</td>
<td>.183</td>
<td>2.627</td>
<td>.009*</td>
</tr>
<tr>
<td>MediaImportance</td>
<td>.003</td>
<td>.042</td>
<td>.967</td>
</tr>
<tr>
<td>MediaSport</td>
<td>.159</td>
<td>1.933</td>
<td>.054</td>
</tr>
<tr>
<td>Internet</td>
<td>-.055</td>
<td>-.785</td>
<td>.433</td>
</tr>
</tbody>
</table>

Note. R square: 24.7%. Alpha was adjusted from .05 to .025.
Discussion

This study investigated the role of the South Koreans’ level of public awareness, access to SNS and the media on their intention to watch and attend the YOG. The following results warrant more attention from professionals in the fields of physical education and sport management. It was found that the overall rate of Korean’s public awareness on the YOG was very low on the 7-point Likert scale for both personal awareness ($M = 1.22$) and for perceived public awareness ($M = 1.49$). This result was somewhat expected in that Judge, Petersen, and Lydum (2009) explained the low level of public awareness was related to a lack of publicity in the U.S. because the YOG was only announced recently and participants consisted of varying demographic backgrounds. Judge et al. (2011) indicated that Greek public awareness was also low due to the same reasons.

One of the research questions explored in the current study was related to participants’ intention to either watch or attend the YOG. The participants’ intentions were analyzed via the independent variables as follows: familiarity with Youth Olympic Games, general public awareness, accessibility to social networking/media sites, exposure to advertisements on social media sites, perceived importance of traditional media such as newspapers and magazines, perceived importance of traditional media to sports, and use of the internet. The regression analyses revealed that the intention to watch the games on television was significantly affected by familiarity with YOG, public awareness, and use of media for sports information, while the intention to attend the games as spectators was significantly affected by familiarity with YOG, public awareness, and SNS accessibility. Awareness is the initial stage, which can vary from a simple set of consumer stages (i.e. awareness, consideration, intention, purchase) to a considerably more robust purchase conduit with meticulous stages (Barry, 1987). Sport marketers cannot shape perceptions, drive engagement, or motivate sales without first establishing an awareness of their brand. Awareness is an essential metric as it can be a major barrier when trying to impact public consumption. One of the models emphasizing awareness, developed over a century ago, was Attention-Interest-Desire-Action (AIDA). This approach describes the process consumers utilize when making decisions based upon an advertising message and the concept can be applied to the YOG (Bennett, Cunningham, & Dees, 2006).

Public Awareness

The IOC’s good intentions, regarding the establishment of the YOG, were not met with the requisite effort to draw sufficient public attention to the event in Korea as reflected by the low level of public awareness in the present study. Measurements of the early stages of the customer purchase funnel are dependent on surveys of perceptions such as awareness. AIDA concisely elucidates the order in which the consumer obtains the marketing message and the impact it has on captivating the consumer to create the projected action (Bennett, Cunningham, & Dees, 2006). The low levels of public awareness limit efforts to create action to consume the YOG either at the live events or via the media. In the case of smaller, less prominent nations like South Korea hosting the Olympic Games, the event is often viewed as a vehicle to draw worldwide interest, and for the nation to be seen as a legitimate political player in the eyes of the international community. An example of this could be Pyeongchang, Korea, which will host the 2018 Winter Olympics. The Koreans wish to draw interest to their country and boost interest in winter sports among their people. Another goal for South Korea in hosting the games is to increase tourism during the winter along with connecting with people in a new market. After the marquee sports events (Seoul summer Olympics of 1988 and 2002 FIFA Korea-Japan World Cup), Korea had changed perceptions about the importance of participating in sports. After the Seoul Olympics, the government attempted to increase athletic facilities and encouraged increased participation in sports (Park & Yu, 2011). Public awareness of sport has increased as a result of an attempt to control health issues including reducing disease and stress, and improving physical fitness. An increase in participation in sports was reflected in different ways among the population depending on personal preference and economic status (Jung, 1997). Additionally, by attending sport events (watching television and attending sport games), people could indirectly experience sports. Ham’s (2009) research showed that the attention of the WBC (World Baseball Classic in 2009) and figure skating has escalated interests in leisure sports even more. The author mentioned that the increased attention paid to sport was related to increased exposure to sport media such as newspaper, television, and the internet. Through social media, people communicate and share opinions with other people, and gather information related to sport.

Personal Awareness

Personal awareness was related to intention to attend the YOG games and watch the games on television. The low level of awareness and perceived awareness in the present study may be reflective of the respondents’ knowledge and awareness of youth sport. This finding is consistent with the previous studies. For example, Lim (2004) indicated that spectators’ knowledge such as game rules and terminologies, athletes’ performance, club marketing strategies, and team power tends to increase interest in sports. Lim (2004) further found that peoples’ interest in sports could depend on their family and social culture. Yeo (2004) explored the intention of attending baseball game events and found that interest in the baseball game was related to adjacent events such as cheerleading and raffle prizes. Nearly 80 percent of the participants answered that along with watching the baseball game, provision of adjacent events further interested them in joining in the game. This finding highlights the ‘sportainment’ aspect of athletic events. Other studies explained that the intention to watch the games on television was associated with personal awareness. Kim and Lee (2003) identified the determinants of sports viewing behavior and found that awareness of sport rules and knowledge, positive behavior, and familiarity with a team were related to watching the games on television. Building personal awareness of the YOG is the first step to increased interest in the event, ultimately driving financial outcomes. The metrics used to measure the effectiveness of the brand awareness efforts indicated the goals and objectives of the YOG, one of which was to avoid over commercialism and create a different type of event, may have been met. In his description of the future YOG Jacques Rogge says, “that compared with other events, the Youth Games will have a strong emphasis on education.
instead of competition” (IOC, 2007). “The purpose of the YOG is not to create mini Games. It would have a different character.” “There is competition of course but the main goal is to give the youth education based on Olympic values,” said Rogge after the IOC executive board meeting in Beijing (IOC, 2007).

SNS and Media

The intention to attend the YOG was associated with the use of media for sports information. One of the many functions of sport media is to provide sport related information to the population. Through sport media, people receive sport related information and learn about opportunities to attend sports events (Lim, 2000; Seo, 2000). A variety of media affects the behavior of sport consumers but the most typical media source is television and the internet (Cho & Oh, 2003). College age spectators, in particular, use the internet as an important media source that also allows them to watch games (Lim, 2004). Coakley (2009) indicated that internet and wireless technology have further increased the availability of live sport experiences for viewers. Kim (2009) showed that watching sport programs was positively related to an increase in the awareness of sports, and this behavior had an impact on sporting event participation among college students. This result was somewhat comparable to Park’s (2002) study which involved watching sport programs on television and the associated increase in overall level of interest in sport and participation in sports among elementary school students. Kim (2004) also explored the impact of watching television programs among college students, indicating that watching television sport programs impacted the students’ willingness to participate in sport activities. Shin (2012) studied the cognitive behavior of the TV audience while selecting channels providing coverage of the Olympic Games and results showed that people prefer to watch televised games rather than actually participate. Primary motivations were to spend more time with their family and to have free choice of programs. Shin (2012) also mentioned that personal awareness of the sports affected interest in watching television games/events. The low personal awareness of the YOG is problematic as the YOG was initiated to rekindle attention in Olympic sports and help solve the youth obesity epidemic. If the IOC seeks to reignite interest in Olympic sports in a generation of adolescents that are becoming increasingly overweight and inactive it is important to reach this demographic.

Additionally, the result of the intention to attend the YOG was associated with SNS accessibility. This is important because through SNS, sport consumers can experience new ways of interacting with sporting events and the speed of reporting is faster than through texting (Lee, 2012). Kim et al (2009) mentioned that people use SNS to connect with their friends and share information. Lim (2006) studied the relationship between the usage of internet sport content, such as sport related statistics, games on the internet, news, information, sport products, sport advertisements, and participation in sports among college students. The study found that the usage of the internet and the related sport content affected participation in sports. The result also indicated that college students effectively used online and off-line media sources to engage in sports. While watching sport events, people could communicate with other fans and athletes through Facebook, Twitter, and other social media (Lee, 2010). Ko and Pastore, 2005, explained the interaction between a club and fans was an important element needed to increase the intention of attending sport events. Common uses of social media during sporting event include the ability to tweet messages that can be displayed on digital scoreboards, share interactive texts between fans, receive messages from retailers about special sale pricing on merchandise and concessions and even the ability to chat live with athletes and celebrities. All of these messaging options help to create a sense of community among fans which helps to build loyalty and sustained interest in the sport.

Lee (2012) studied a community of soccer supporters to explore their usage of Twitter. The study found three motivations that were related to the reasons they tweet. The three motivations were: building relationships, communicating or sharing information, and the ability to express their recent issues, emotions, and personality. On Twitter, less intimacy was experienced in conversation, and relationships with others were developed by sharing soccer information, which helped develop common interests in soccer. Additionally, when there was a popular soccer event, the Twitter usage was increased by the supporters. Jung, Cho, and Chung (2011) explored the effect of the sports teams’ SNS activity among college students and found that the sport teams’ SNS activity had a positive effect on increasing the team’s public image and on attendance of sports events. The results showed that the team’s SNS activity was important as a means to attract and connect with other spectators. The results of the present study indicate the YOG missed the mark and needs to consider an alternative approach utilizing SNS. A more interactive approach utilizing SNS before, during and after the YOG is warranted.

From a practitioner standpoint, it is clear that sport event managers wishing to create new events need to be consistent in their messaging and actions regarding a dominant institutional logic with which the event’s stakeholders can identify. The Nanjing Youth Olympic Games Organizing Committee announced that the Internet Services sponsor will be Tencent for the 2014 Youth Olympic Games (PRC, 2012). Tencent, using its already strong logic with which the event’s stakeholders can identify. The Nanjing Youth Olympic Games website such as sports program and results, culture and educational activities, and interactive games targeted at youth (PRC, 2012). For the YOG specifically, the event can survive and be sustainable, but it will depend on how the various institutional pressures are managed by the YOG, and how YOGOC managers respond to critical stakeholders’ needs and wants. Flexibility by the YOG organizers and by the IOC is needed for this to occur. Some 680 million people in China followed the 2008 Games as part of an estimated 4.7 billion viewers around the world which totaled more than any previous event (Dapeng, Ljungqvist & Troedsson, 2010). The number of Chinese viewers is an important component of the YOG’s potential popularity given that the next YOG will be held in Nanjing, China. Targeting the proper audience for the YOG will be a key to creating the awareness necessary to effectively communicate to the masses and gain approval and adoption for the YOG.

Conclusion

The International Olympic Committee launched the Youth Olympic Games (YOG) for teenagers with virtuous intentions
and goals (IOC, 2007). However, the first Summer YOG held in Singapore in 2010 had low levels of awareness by the general population in the U.S. and Greece (Judge et al., 2009; Judge et al., 2011). Media plays an important role in assisting with communication and providing information to people around the world (Coakley, 2009), and usage is related to an increase in the awareness of sport events (Kim & Lee, 2003). As an extension of media research in sport at the cross-cultural level, this study researched the awareness of the YOG and attitudes towards attending sport events based on media usage among college students in Korea. This is extremely important as the 2014 YOG are being hosted on the Asian continent in Nanjing, China. The overall results showed that awareness and the intention of attending sport events were strongly connected with media usage. Also, the information, knowledge, and popularity of sport events were related to awareness and attendance of the sport events. These findings showed the importance of the media’s role. Without the presence of media in sports, it would be difficult to inform and spread news of a new sporting event, and obtain the required attention from people. The overall results imply that when the YOG is advertised through SNS, the awareness and the rate of the YOG attendance will be increased.

References
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Residents' Perceived Social-Economic Impact of the 2008 Beijing Olympic Games

by Mark Zhang, Li Chen, Ouyang Lei, & Christopher Malone, Delaware State University, Dover, DE, USA

Abstract
This study was designed to examine whether the Olympic Games was a catalyst for changes to Beijing residents’ quality of life based on social-economic perspectives and how these changes affected their continuous support for the Games. Residents who lived in Beijing 18 months or longer were invited to participate in this survey research (N = 412) in October 2009. Based on the results, the residents’ support for the Games was still high after 2 years of hosting the Games. Factor analyses revealed five social-economic changes: Culture Enrichment, Basic Living, Entertainment Opportunities, Environment, and National Pride. Both improved Entertainment Opportunities and increased National Pride were significant reasons why Beijing residents continued to support the hosting of the Games. No direct relationship was determined between residents’ improved quality of life and their continued support for the Games.

Key Words: legacies, hosting Olympics

Introduction
To determine the overall success of an Olympic Games, an important question needs to be asked and answered. Did the Games meet the objectives that the government and people expected them to achieve? Previous researchers have concluded that mega events such as the Olympic Games can have an impact on economic, infrastructure, social, cultural, psychological and political aspects of a hosting nation or region (Mihalik & Cummings, 1995; Nixon & Frey 1996; Preuss 2000). According to Ritchie (1984) and Ritchie and Aitken (1985), the objectives of hosting Olympic Games can be divided into many economic perspectives including attracting investments and creating jobs, as well as strategic perspectives such as bringing a country or region into the world spotlight, which can leverage other intangible benefits (i.e., pride and international recognition).

The 2008 Beijing Olympics set records for being the most watched (Alavy, 2010), most participated, and most expensive Games in the history of the modern Olympics. Over 4.7 billion viewers worldwide (Nielsen Media Research, 2008) tuned in to the competition in which 205 participating regions and countries (Beijing Organizing Committee for the Games of the XXIX Olympiad Official Site, n.d.) participated, and over $40 billion dollars were either directly or indirectly invested (Sands, 2009). The huge investment during the period from 2001 to 2008 transformed the cityscape of Beijing by restoring 25 historic areas, including many of the city’s landmarks, old streets, and historical sites. Three new subway lines were opened shortly before the Opening Ceremony (BOCOG Official Site, n.d.). The performances of Chinese athletes at the Beijing Games successfully met the country’s plan (Project 119) to boost their medal standing. China placed first in the gold medal count and was second in the total medal count behind the United States, the traditional medal winners.

From an outsiders’ point of view, the Beijing Olympics and China’s coinciding social-economic model of development has been deemed as a “political spectacle with intentions to create a façade of sustainable and equal economic growth in China while creating a new world power” (Gottwald & Duggan, 2008, p. 339). Furthermore, the success of the Games has been defined as a showcase of China’s soft-power in a global platform (Horton, 2008), which signaled the emergence of a modern China with a robust economy and increasing cultural and political influences around the world (Davis, 2009), establishing China’s legitimacy as a global power (Horton, 2008).

Purpose of the Study
There are many ways to judge the success of an Olympic Games for the hosting country. One way is by counting how many new Olympic records are set and how many medals are won by a country’s athletes. . A second way is to evaluate the entertainment value of the Games in how the spectacular opening and closing ceremonies showcase the hosting country’s enormous population, resources and a powerful government to the world (Meyer, 2009). And a third way is to study the social-economic impact the Games have on the hosting country. The Olympics is a phenomenon that begins with a winning bid many years before the first competition. Then the Games are finally conducted after years of planning and preparation. But perhaps one of the most intriguing phases for a country hosting the Games is the years after the Games, when the true economic benefits and costs slowly evolve. It may be many years after the closing ceremony that a more accurate assessment of the social-economic benefits and costs of the Games can be calculated and the overall legacy of the Games for the host country may be more clearly evaluated. Therefore, the purpose of this study was to examine the social-economic changes of the Beijing Olympic Games to its residents and how these changes affected their continuous support for the Games.

Significance of the Study and Research Questions
As the first BRIC country (Brazil, Russia, India, and China not counting Moscow 1980 Games under the USSR regime) to host the Olympic Games, the overall legacy of the Beijing Olympics has been closely analyzed by Russia and Brazil, the winners of the 2014 and 2016 Olympic bids, as well as the International Olympic Committee. Five years after the Beijing Games, most related studies conducted before and during the Games studied the objectives and anticipations of the Olympics. Few researchers have focused on the perceived legacies of the Beijing Olympics by the residents. However, there is a need to conduct this type of research, because residents traded in short-term negativities in exchange for hoping for long-term benefits (Ap, 1992; Furrer, 2002; Jurowski,
Beijing Olympics Social-Economic Impact

Uysal & Williams, 1997; Ritchie & Lyons, 1990; and Tien, Lo, & Lin., 2011) Therefore, it is important to understand residents’ perceptions of hosting the Olympic Games. Results of this study could help future Olympic hosting nations establishing residents’ long-term support for the Games after the Olympic torch is extinguished. Finally, four research questions were formulated for this study: (a) What were residents’ level of continuous support for the 2008 Olympic Games one year later? (b) What were residents’ perceived social-economic changes due to hosting the Games? (c) How did these perceived changes affect residents’ quality of life? And (d) how did these changes affect residents’ long-term support for the Beijing Olympic Games?

Theoretical Foundation and Literature Review

Social exchange theory (SET) was introduced by Homans (1958) as a concept of social behavior affected by exchange of not only intangible goods but also symbolic values such as approval, pride and prestige. Participants would review both short-term and long-term benefits of the exchange. SET has been used successfully to study residents’ perceptions of the impact of tourism (Ap, 1992; Deccio & Baloglu, 2002; Jurowski et al., 1997; Perdue, Long & Allen, 1987; 1990). Based on these findings, SET may be suitable to study why residents support mega-event such as Olympic Games and residents’ perceptions of the long-term benefits of the Olympic Games, in exchange for short-term negativities brought by the event (Jurowski et al., 1997). Olympic hosting community residents paid for part of the Games through taxes and now live with all the consequences of the Games, positive and negative. Local residents endured years of construction in their city resulting in a new infrastructure and other tangible benefits that may not have been available to them without the Olympics. How the SET applies to mega-events needs to be investigated.

Cropanzano and Mitchell (2005, p.880-881) systematically reviewed the social exchange theory and concluded “that certain types of benefits are likely to be exchanged in different ways. The less particularistic and the more concrete a benefit is, the more likely it is to be exchanged in a short-term-term, quid pro quo fashion. In contrast, benefits that are highly particularistic and symbolic are exchanged in a more open-ended manner.” For monetary benefits (concrete), those residents who were economically dependent on tourism and those who participated in outdoor activities generally supported hosting the Salt Lake Olympics (Deccio & Baloglu, 2002). However, it might be a difficult case to compare the residents of Salt Lake City to the residents of Beijing due to Beijing’s population and complexity of its economy. The residents of Beijing might expect some other benefits to exchange in order to retroactively support the Games. Jurowski et al. (1997) also concluded that not only economic components, but also social and environmental factors were exchanged between the host community and its residents. Levi-Strauss (1969) explained that services, gifts, and goods that were exchanged symbolize various factors. These factors might be values that were deemed sacred, spiritual, or blessed, or they may be sentimental, symbols, influence, power, the supernatural, and economics. Jurowski et al. (1997) and Deccio and Baloglu (2002) also pointed out that there is more to the tourism exchange than money. Time, shifting values, community solidarity, power, traditions, culture, and many other elements contribute to the tourism exchange process.

The financial success of the Los Angeles Olympic Games signaled the commercialization of the modern Olympics (Hudson, 2003). However, the 1984 Games had little or no impact on GDP growth and unemployment of the nation given the overwhelming size of the U.S. economy (Tien, et al., 2011). When taking a holistic view of the pros and cons of hosting an Olympic Games, Andranovich, Burbank, and Heying, (2001, p.113) suggested that hosting the Olympics is “…a potentially high-risk strategy for stimulating local economic growth.” Thus, the hosting nations look beyond the direct indicators of macroeconomics such as GDP growth and unemployment rate. Instead, they have adopted a theme of sustainable development (Tien et al., 2011), such as the Green Games of Sydney 2000, the Games of Culture of Athens 2004, the One World, One Dream of Beijing 2008, and the One Planet Olympics of London 2012. In order to realize the sustainability, Furrer (2002) proposed that the organizing committees and the hosting nations must achieve integrated social-economic development with financial, social, ethical, and ecological balances and responsibilities.

The enhanced international awareness of a region is among the profound long-term effects conveyed by a mega event (Ritchie & Yangzhou, 1987). Specifically, the residents in Georgia perceived community pride and international recognition, which was just as, or more important than, the economic benefits of the Atlanta Olympics (Mihalik & Cummings, 1995; Mihalik & Simonetta, 1998). Similarly, residents rated international recognition for Calgary as being just as, or more important than, perceived economic benefits after the Calgary Winter Games (Ritchie & Lyons, 1990). As for the Beijing Olympics, the slogan chosen by the Beijing Organizing Committee for the Games: “One World, One Dream” illuminated China’s integration into the world and its optimism about the future. And the Games seemed to be an “ideal platform for projecting China’s image internationally and domestically” (Xing & Chalip, 2009, p. 215). The change and enhancement of the image of a city or country due to hosting an Olympic Games appears to have led to a sense of pride among its residents (Mihalik & Cummings, 1995; Mihalik & Simonetta, 1998; Ritchie & Lyons, 1990).

In order to enhance the image of Beijing and the Games, years prior to the Games, China’s only national network TV station China Central Television (CCTV), launched a series of nationwide campaigns to promote public courtesy and civility among citizens and tourists under the national theme of a “harmonious society.” CCTV also targeted the other major concern, air pollution. The network promoted several green initiatives hoping to catch the momentum of the government’s efforts to reduce air pollution in Beijing. According to Deccio and Baloglu (2002), mega events can serve as catalysts for bringing attention to environmental concerns. Different from previous investigators who have suggested that residents might consider environmental issues as concerns if not major concerns for a mega event (Deccio & Baloglu, 2002; Jurowski et al. 1997; Mihalik & Simonetta, 1998; Ritchie & Aitken, 1985), the Beijing Olympics presented an opportunity for residents to breathe cleaner air in an improved natural environment, which was hopefully sustainable. To tackle the air pollution problem, the municipal government announced an ambitious “Air Quality
Guarantee Plan for the 29th Olympics in Beijing.” The pollution control efforts showed that the overall air quality during the Beijing Olympics Games was improved dramatically when compared to the June of 2008 data (Wang, Tang, & Sui, 2003; Wang et al., 2010).

Balancing preserving cultural heritage and municipal development was vital for the “harmonious society” in the case of the Beijing Olympics as well. Cultural heritage and tourism development are other social-economic factors that can be impacted by hosting the Olympics Games. Hall and Zeppel (1990) reported that creating a strong prospective of cultural and heritage in tourism can establish an alternative and sustainable tourism development model. In this notion, the Beijing government restored 25 historical landmarks such as the Forbidden City prior to the Beijing Olympics (BOCOG Official Site, n.d.), which might have otherwise not been done. Because of the Olympics, a lasting contribution to the tourism industry of Beijing was created.

Method

Participants and Data Collection

Participants were all Chinese citizens and residents who had lived in the metropolitan areas of Beijing for 18 months or longer. These residents had experienced the effects of the Olympic Games prior to, during, and after the event. Convenience sampling was used as the method of data collecting in October 2009. A total of 600 survey questionnaires were distributed with 412 (N = 412) valid questionnaires returned (a return rate of 69%). Eight trained college students from Beijing Sports University were divided into four research teams that distributed survey questionnaires at different locations in Beijing in order to capture the diversity of the residents in the metropolitan area of Beijing. Research teams stood at the designated locations and asked people walking by to volunteer in filling out the survey questionnaire. These locations were eight college campuses, five office buildings, three residential areas, and public areas with dense human congestion, such as major subway hubs. The survey questionnaire usually took 15 to 20 minutes to finish and the students were greeting the participants by explaining the research rationale and answering any question they might have during their completion of the questionnaire.

Instrument Development

In order to measure Beijing residents’ perceived social-economic changes due to the 2008 Olympic Games, a survey instrument was developed based on Jurowski’s (1997) Social Impacts of Tourism Scale (SITS) which has been used in previous Olympic Games. The survey instrument was comprised of 16 items in which participants were asked to rate how much their lives worsened or improved for each of the items. Their ratings were based on their perceptions of the 2008 Olympics using a 5-point scale where 1 equals “worsened,” 2 equals “slightly worsened,” 3 equals “no change,” 4 equals “slightly improved” and 5 equals “improved.”

There were 12 original items from Jurowski’s et al. (1997) SITS on the survey instrument. Due to the unique nature of the Chinese social and political system, the original item “local services” was divided into “service quality from government agencies” and “service quality from businesses.” Furthermore, given the importance of the theme of a “Green Olympics” and the government’s effort to clean up the air pollution in Beijing, the original item “natural environment” was expanded into “public acceptance of green and environment conservation concepts” and “air quality and natural environment.” Finally, in order to measure resident’s perceptions concerning the effectiveness of the nationwide campaign for a “harmonious society,” the item “public courtesy and civility” was added, as well as the item “overall quality of life in Beijing.”

The importance of national pride as a non-economic impact on the Olympic hosting community has been approved by various studies at different Olympic Games (Mihalik & Cummings, 1995; Mihalik & Simonetta, 1998; Ritchie & Lyons, 1990). It could be a very important factor for residents of Beijing and even citizens of China to continuously support the 2008 Olympics. The sentiment of national pride was solicited by asking participants to rate the following statement: “After the Beijing Olympics, I feel that I am prouder of being a Chinese than before” with 1 equals strongly disagree and 5 equals strongly agree.

Deccio and Baloglu (2002) suggested that a mega-event could improve the host community’s quality of life due to its economic dependency on tourism. However, Deccio and Baloglu (2002) collected their data from the locals prior to the 2002 Winter Olympics. Their conclusion can only be considered as participants’ expectation. Therefore, this study inserted a variable to measure whether the residents perceived “overall quality of life in Beijing” worsened or improved one year after the Olympics. For the dependent variable: residents’ support for the 2008 Beijing Olympics, it was also measured by 5-point Likert Scale with 1 equals strongly oppose and 5 equals strongly support. Finally, social-demographic questions were participants’ gender, age, income, occupation, education, years and areas living in Beijing were asked in order to categorize responses for various groups.

The last step in developing the survey instrument was to translate it into Chinese. The survey instrument was initially translated by the authors of this study and then evaluated by a panel of experts who were: one management, one psychology and one sport management professor whose first language was Chinese.

The initial test for the reliability of the survey instrument was through a pilot study. Fifty undergraduate students from one of the universities in the metropolitan area of Beijing were invited to complete the survey instrument. The Cronbach’s alpha coefficient for the modified SITS was .85. This value is above .70, so this instrument was considered reliable with the sample (Pallant, 2005).

Data Analysis

Jurowski, et al. (1997) grouped SITS into three factors “economic impact”, “social impact”, and “environmental impact.” Deccio and Baloglu (2002) replicated Jurowski’s study and discovered that the reliability coefficient for one of the three factors was very low. Therefore, Deccio and Baloglu conducted an exploratory factor analysis (EFA) and identified two factors, which were named “opportunities” and “concerns.” Due to the modification of the original SITS, the present investigators also used the EFA to explore the interrelationships among the 16 SITS items. A follow up, confirmatory factor analyses (CFA) was conducted to investigate the internal factor structure of the
scale through the maximum likelihood method using Analysis of Moment Structures (Amos) 16.0. After the reliability and validity of the instrument were confirmed, a path analysis using Amos 16.0 was used to draw and illustrate the logical flow of the factors that impact on residents’ support for the Beijing Olympic Games.

Results

The four trained research teams distributed 600 survey instruments at designated locations. There were 412 survey instruments collected yielding a return rate of 69%. Since the survey instrument was designed to measure Beijing residents’ perceived impact of hosting the 2008 Olympics, the participants who reported “do not live in Beijing” and those who lived less than 18 months in Beijing were deleted from the sample data. In the end of the data collection 381 valid survey instruments remained for data analysis.

Descriptive Statistics

The survey instrument was completed by 61% males and 39% females. A large majority of the participants (78%) were between the ages of 20 to 39. More than 45% of the participants identified that they had lived in Beijing for 2 to 5 years, and 37% more than 5 years. Approximately 18% of the participants lived in Beijing for 18 months to 2 years. Individual’s annual income was almost evenly distributed among the four categories: under 5000 US Dollars, between 5000 to 10000 US Dollars, between 10001 and 16000 US Dollars, and above 16000 US Dollars.

Just one year after the 2008 Olympic Games, support for the event was still high with a mean score of 4.36 from a 5-point scale. When asked whether the overall quality of life in Beijing after the Olympics worsened or improved, participants reported a mean score of 3.66. Descriptive statistics also revealed that the biggest perceived change among all items was “opportunities for recreation and sport facilities” in other words more chances to engage in recreation and sport activities with a mean score of 3.88. The second and the third ranking items were “public accepting green and environment conservation ideas” and “public courtesy and civility” with mean scores of 3.84 and 3.83, respectively. The only perspective where support worsened was the “cost of housing and renting” with a mean score of 2.88. Other items that indicated slight positive changes were “employment opportunities”, “cost of food and living expenses”, and “traffic congestion”. The mean and standard deviation for each of these variables are listed in Table 1.

Factor Analysis

The initial exploratory factor analysis (EFA) using Oblimin with Kaiser Normalization rotation revealed four factors and explained 65.4% of the variance. Five items with double loading were deducted from the model: “employment opportunities,” “tourism industry in Beijing,” “public safety,” “service quality from government agencies,” and “service quality from private business.” After the elimination, the second EFA using the same rotation method identified four factors with a combined 76.7% explained variance. These four factors were given the following names.

Factor 1 - Culture Enrichment, comprised of three items: “public courtesy and civility;” “preservation of the culture and historical heritages;” and, the “relationship between residents and tourists.”

Factor 2 - Basic Living, which included three items: “the cost of housing and renting;” the cost of food and living expenses;” and, “traffic congestion.”

Factor 3 - Entertainment Opportunities included two items: “opportunities for shopping;” and, “opportunities for recreation and sport facilities.”

Factor 4 - Environment also comprised two items: “the air quality and natural environment;” and, “public accepting green and environmental conservation ideas.”

Confirmatory factor analyses (CFA) were completed for the 10 remaining SITS items for the purpose of investigating the internal structure fit of the proposed EFA model. The initial model indicated a close to acceptable fit indices (chi-square = 128.11, p < .001, CFI = .93, NFI = .91, RMSEA = .09), therefore a step-by-step procedure was performed to develop a prudent model by adding the error covariance which had the largest modification indices (MI) (Byrne, 2010). This analysis revealed that the largest error covariance was related to Item 14 “preservation of culture and historical heritages” and Item 15 “relationship between residents and tourists”, therefore a parameter between these two items was added. This modified model (Model 2) made a notable improvement to the initial model fit. In particular, the overall chi square value decreased to 97.32 with a degree of freedom of 28. The CFI improved to .95 and NFI improved to .93. And lastly, the RMSEA value decreased .80. Both Item 14 and Item 15 were

Table 1. Means and Standard Deviations of the Variables.

<table>
<thead>
<tr>
<th>Item Name</th>
<th>Mean</th>
<th>Std. Deviation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Employment opportunities</td>
<td>3.097</td>
<td>1.011</td>
</tr>
<tr>
<td>2 Opportunities for shopping</td>
<td>3.705</td>
<td>.827</td>
</tr>
<tr>
<td>3 Opportunities for recreation and sport facilities</td>
<td>3.879</td>
<td>.777</td>
</tr>
<tr>
<td>4 Tourism industry in Beijing</td>
<td>3.730</td>
<td>.892</td>
</tr>
<tr>
<td>5 The costs of food and living expenses</td>
<td>3.161</td>
<td>1.014</td>
</tr>
<tr>
<td>6 The costs of housing and renting</td>
<td>2.838</td>
<td>1.280</td>
</tr>
<tr>
<td>7 Traffic congestion</td>
<td>3.202</td>
<td>1.147</td>
</tr>
<tr>
<td>8 The public safety</td>
<td>3.637</td>
<td>.849</td>
</tr>
<tr>
<td>9 The service quality from government agencies</td>
<td>3.565</td>
<td>.869</td>
</tr>
<tr>
<td>10 The quality from businesses</td>
<td>3.640</td>
<td>.781</td>
</tr>
<tr>
<td>11 The air quality and natural environment</td>
<td>3.730</td>
<td>.888</td>
</tr>
<tr>
<td>12 Public accepting green and environment conservation ideas</td>
<td>3.836</td>
<td>.798</td>
</tr>
<tr>
<td>13 Public courtesy and civility</td>
<td>3.831</td>
<td>.750</td>
</tr>
<tr>
<td>14 The preservation of culture and historical heritages</td>
<td>3.780</td>
<td>.776</td>
</tr>
<tr>
<td>15 The relationship between residents and tourists</td>
<td>3.740</td>
<td>.759</td>
</tr>
<tr>
<td>16 The overall quality of life in Beijing</td>
<td>3.663</td>
<td>.786</td>
</tr>
<tr>
<td>17 National pride</td>
<td>4.101</td>
<td>.737</td>
</tr>
<tr>
<td>18 Support the 2008 Beijing Olympic Games</td>
<td>4.363</td>
<td>.721</td>
</tr>
</tbody>
</table>
placed in Factor 1 - Culture Enrichment, and with this modification an acceptable model was produced.

It was further discovered that there was also error covariance related to Item 7 “traffic congestion” and Item 11 “air quality and natural environment.” When the parameter was incorporated into the model, it suggested content overlap. Based upon the literature (Wang et al., 2010), traffic congestion has an effect on air quality, and covariance can be explained (Byrne, 2010). Therefore, a decision was made to keep the regression parameter in Model 3 to demonstrate the covariance between the items. Moreover, the modification led to some improvements of the model fit (\( \chi^2 = 86.47 \) (27), \( p < .001 \), CFI = .97, NFI = .94, RMSEA = .076). The comparisons between the initial CFA Model 1 and Models 2 and 3 are illustrated in Table 2.

Factor loadings in the modified SITS modified Model 3 are provided in Figure 1. After the internal validity had been examined, the new Cronbach’s alpha reliability tests were conducted. The results indicated that four factors of the modified SITS had appropriate internal consistency (\( \alpha = .79 \) for Culture Enrichment, \( \alpha = .80 \) for Basic Living, \( \alpha = .75 \) for Environment, and \( \alpha = .76 \) for Entertainment Opportunities).

After establishing the valid factors of the modified SITS, a path analysis was conducted to discover the possible cause and effect relationship between variables. The AMOS 16.0 identified a good to acceptable fit model (\( \chi^2 = 13.25 \) (4), \( p < .05 \), CFI = .97, NFI = .96, RMSEA = .078). The significant path coefficients between the cause and effect variables in the path model are illustrated in Figure 2. The support for the 2008 Beijing Olympics was significantly and positively influenced

### Table 2. Comparisons Between the Initial CFA Model and Model 2 and Model 3.

<table>
<thead>
<tr>
<th>Fit Index</th>
<th>Value Considered</th>
<th>Good Fit</th>
<th>Value Considered</th>
<th>Model 1</th>
<th>Indication of Fit</th>
<th>Model 2</th>
<th>Indication of Fit</th>
<th>Model 3</th>
<th>Indication of Fit</th>
</tr>
</thead>
<tbody>
<tr>
<td>( \chi^2 )</td>
<td>Smaller value better fit</td>
<td></td>
<td>df 29, ( p &lt; .001 )</td>
<td>128.11</td>
<td>Acceptable</td>
<td>97.32</td>
<td>Adequate</td>
<td>86.47</td>
<td>Adequate</td>
</tr>
<tr>
<td>RMSEA</td>
<td>Value lower than .07</td>
<td></td>
<td>df 28, ( p &lt; .001 )</td>
<td>.965</td>
<td>Inadequate</td>
<td>.081</td>
<td>Acceptable</td>
<td>.076</td>
<td>Acceptable</td>
</tr>
<tr>
<td>CFI</td>
<td>Value higher than .90</td>
<td></td>
<td>df 28, ( p &lt; .001 )</td>
<td>.928</td>
<td>Adequate</td>
<td>.950</td>
<td>Adequate</td>
<td>.966</td>
<td>Adequate</td>
</tr>
<tr>
<td>TLI</td>
<td>Value higher than .90</td>
<td></td>
<td>df 28, ( p &lt; .001 )</td>
<td>.889</td>
<td>Inadequate</td>
<td>.920</td>
<td>Adequate</td>
<td>.939</td>
<td>Adequate</td>
</tr>
<tr>
<td>AGFI</td>
<td>Value higher than .90</td>
<td></td>
<td>df 28, ( p &lt; .001 )</td>
<td>.882</td>
<td>Inadequate</td>
<td>.909</td>
<td>Adequate</td>
<td>.915</td>
<td>Adequate</td>
</tr>
<tr>
<td>GFI</td>
<td>Value higher than .90</td>
<td></td>
<td>df 28, ( p &lt; .001 )</td>
<td>.938</td>
<td>Adequate</td>
<td>.954</td>
<td>Adequate</td>
<td>.958</td>
<td>Adequate</td>
</tr>
</tbody>
</table>

![Figure 1: Factor Loadings in the SITS Modified Model 3.](image1)

![Figure 2: Significant Path Coefficients Between the Cause and Effect Variables](image2)
by “improved entertainment opportunities” (.127, p < .001) and “national pride” (.238, p < .001). Meanwhile, the “quality of life” was significantly and negatively impacted by the cost of “basic living” (.233, p < .001), in the same time positively impacted by the improvement in all other areas including “culture enrichment” (.242, p < .001), “entertainment opportunities” (.078, p < .05), “environment” (.09, p < .05), and “national pride” (.10, p < .05). No significant relationships were determined between “support of the 2008 Olympics” and residents’ perceived changes in the areas of “culture enrichment,” “basic living,” and “environment.” Finally, the perceived change in “quality of life” had no significant impact on the “support for the 2008 Olympics.”

Discussion

This study supports previous research that the SET has proven to be a useful concept when studying resident’s perceptions of a mega-event, such as the Olympic Games, because it can be used to explain why and how much support residents have for the Olympic Games (Ap, 1992; Deccio & Baloglu, 2002; Jurowski et al., 1997; Perdue et al., 1987; 1990). According to the previous investigators, individuals who reside close to the Olympic Games may be willing to trade some inconveniences or shortcomings, such as price increases, tax hikes, and traffic congestion due to construction for a mega event, in return for possible long term prosperity, community solidarity, national pride, publicity, culture enrichment, and improved recreation opportunities (Deccio & Baloglu, 2002; Mihalik & Cummings, 1995; Mihalik & Simonetta, 1998; Ritchie & Yangzhou, 1987).

This study was designed to determine if the 2008 Beijing Olympic Games impacted residents’ quality of life from various perspectives, as well as, how these changes (Culture Enrichment, Basic Living, Entertainment Opportunities, and Environment) affected their long term support for the Olympics. A factor analysis indicated four dimensions of changes: “Culture Enrichment”, “Basic Living”, “Entertainment Opportunities”, and “Environment”. Furthermore, “National Pride” received a positive boost (M = 4.10) due to the Games. These findings were in line with the results from previous studies, which indicated Olympic Games had positive impact on aspects such as culture, environment, and entertainment opportunities. (Crumbaugh, 2002; Mihalik et al., 1998; Ritchie et al., 1987).

Further this study was designed to determine how changes affected the overall quality of life in Beijing. The path analyses revealed that except for the factor named “Basic Living” (.233, p < .001), all other factors made a contribution to the improvement of the quality of life, including “National Pride” (.100, p < .05). Five elements together explained about 35% of the variance. Apparently, residents focused more on the social benefits such as the “Environment” (.090, p < .05), “Entertainment Opportunities” (.080, p < .05), and “Culture Enrichment” (.242, p < .001), even though the fundamentals of basic living including traffic, housing, and cost of living stayed the same or slightly worsened. These results might explain why residents averaged 3.66 on a 5-point scale in terms of “improvement of quality of life”.

In addition, this research was designed to determine how these changes might affect residents’ continuous support for the 2008 Olympic Games, the path analyses indicated that only the “Entertainment Opportunities” (.127, p < .001) and “National Pride” (.238, p < .001) significantly impacted on the residents’ continuous support for the Games. These two factors together explained about 11% of the variance. Other factors including the improvement of quality of life were insignificant to residents’ support of the Games. Given the benefits of “National Pride” are highly particularistic and symbolic (Cropanzano & Mitchell, 2005), they address residents social and esteem needs. As Tien et al. (2011) concluded, each Olympics has its unique long-term perspectives, and the Beijing Olympics was no exception. The objective of the Chinese government was to utilize the Olympic Games for the purpose of establishing China as a world power, as well as to legitimize China’s social-political model (Gottwald & Duggan, 2008; Horton, 2008). Due to this goal, Chinese National TV emphasized national pride, solidarity and prosperity prior and during the Games. The Chinese government may have met and even exceeded its objectives given the boosted national pride among Beijing residents, and as a result was the most important factor for residents’ continuous support for the Olympic Games. Beijing residents also recognized the government’s efforts in preserving Beijing’s culture and historical heritage, as well as reducing air pollution. These improvements were seen to lead to a better quality of life in general.

Another interesting finding that this study revealed was that improved entertainment opportunities were viewed as a significant reason to support the Olympic Games. Many of the Beijing Olympic facilities were located at the city’s universities. Since a portion of the participants of this study were college students in Beijing, they had easier access to the Olympic facilities than other Beijing residents and the benefits they received due to using these facilities might be directly related to their positive view of the Olympic Games.

Just after the conclusion of the Beijing 2008 Olympic Games, the world experienced the worst economic recession since the Great Depression. However, even though there were some signs of an economic slowdown, China was still able to maintain an 8.7% GDP growth in 2009 (CNN, 2010), which was preceded by 15 years of more than 10% average GDP growth. Although Beijing residents reported that their quality of life improved due to the Olympic Games, this improvement cannot only be attributed directly to the Olympic Games. In fact, according to Tien et al. (2011), the economic benefits of the Beijing Olympic Games had almost disappeared and inflation began to affect food (Censky, 2011) and housing (Official Website of the Beijing Government, n.d.). These economic situations may explain why this investigation found that “basic living” had a negative impact on the quality of life. It may be that residents understood that no change or slightly worse basic living conditions had little to do with the Olympic Games. In other words, the cost of living was increasing prior to the Olympic Games and was going to continue to increase after the Games concluded.

In conclusion, the research model explains only 11% of residents’ continued support for the Beijing 2008 Olympic Games. Although the investigators reported that national pride was the most important factor for Beijing residents continued support for hosting the Olympic Games, there are most likely other reasons that this study did not uncover. The results did support similar
research (Deccio & Baloglu, 2002; Jurowski et al., 1997; Mihalik & Simonetta, 1998) concerning residents’ continued support for Olympic Games. This study and other research have revealed that this is a complicated phenomenon because residents support Olympic Games for a variety of reasons, and that each Olympic Games unfold their own unique perspective.

Therefore, there are number of limitations to this investigation. First, the results of this study can only apply to the sentiments of the Beijing residents related to Beijing 2008 Olympics. Second, clearly identified is the sample size. A total of 412 participants in a population of almost 20 million was considered minimal. However, the researchers developed and tested an adequate survey instrument that can be further used to measure the long-term benefits of the Beijing Olympics for years to come. Third, future researchers might analyze how social-economic changes are viewed by various demographic groups in the Chinese society, and the sustainability of the legacies of the Beijing 2008 Olympic Games.

References
Marketing Sports Facilities: Perspectives from Botswana

by Basuti Bohutsana, Tlokweng College of Education, Gaborone, Botswana & Dele Akpata, University of Botswana

Abstract

The provision of sports facilities contributes immensely to the growth of sports and leisure activities in the countries where they are provided. In some countries, as was the case in Botswana, the government had to spend millions of dollars to provide new Integrated Sports Facilities (ISF’s) as a panacea for the continued poor performance of its national teams at different sports events. Where such facilities are managed by government or public organizations (as in Botswana), operational deficiencies, for instance government bureaucracy, is replete. One of such deficiencies relate to inadequate marketing of sports facilities, leading to inadequate use by the populace, poor revenue and consequently poor maintenance and neglect of such facilities. The purpose of the current study was thus to assess the strategies that are used in marketing the ISF’s in Botswana using the variables of place, price, product and promotion, referred to as the marketing mix by different authors. With a sample of facility coordinators and users (N=593), the strategies used in marketing the facilities were examined. It was hypothesized that the strategies used to market the ISF’s were significantly effective. The specific findings of the study were that the following factors significantly influenced the level of facility use: the price attached to the use of the facility, facility location, promotional strategies used to market the facility and the product. Overall, the strategies used to market the ISF’s were found to be ineffective. It was thus recommended that strategies that can be employed to market the ISF’s for optimal use include facility proximity, marketing of the facility using integrated mediums of communication and matching the product with need and the price.

Key words: mass participation, price, product

In a parliamentary sitting in April 1997, the Government of Botswana passed a motion to investigate the poor performance of the country’s national sport teams (Government White Paper, 2002). This led to an appointment of a five-person committee to carry out the investigation. The absence or poor state of sport facilities was cited as one of the major factors contributing to poor performances of the national sport teams at local and international sporting events. One of the major recommendations of the committee was that the government should construct Integrated Sport Facilities (ISF’s) in various areas throughout the country. The government responded swiftly by constructing such facilities in the districts of the northwest (Maun), north-east (Masunga), south-east (Molepolole) and central (Serowe). The idea was that they should be accessible to all sportspersons and the general public. The facilities include: a stadium with spectator seating and a covered stand with a carrying capacity ranging from 4,000 to 6,000; warm up track; softball pitch with approximately 1000 seats; two volleyball courts, two netball courts, two tennis courts and a basketball court without seats. Also included are ticket rooms and kiosks; internal road, bus and car parks; public washrooms; a club house with a meeting room that can seat up to 30 people; cafeteria and bar and refreshment area. The main objective of setting up the ISF’s was to promote participation in recreation and sport by ensuring that they are accessible to as many citizens as possible. Making the benefits of recreation available to the public requires that individuals and community leaders are aware of and buy in on the benefits of specific programs. The job of recreation professionals therefore is not only to provide opportunities for achieving the benefits, but to get the word out about these opportunities. Unless all professionals in the leisure profession promote and articulate the benefits of leisure, the tremendous value that sports facilities adds to human welfare will not be recognized and appreciated fully. These benefits are understood by leisure professionals, academicians and students alike. However, experiencing the benefits by the public at large, as well as special populations, will not reach its full potential without techniques designed to educate and influence the public regarding available opportunities (Mowen & Baker, 2009). The Government of Botswana has intensified the need for adequate participation in sports through directives that public education awareness campaigns should be undertaken through the Directorate of Sport and Recreation (DSR) in order to sensitize the nation on the importance of sport through printed leaflets, workshops, seminars, radio programs and sport festivals (Government White Paper, 2002). However, for the efforts of government in terms of mass participation in sport to be realized, the available facilities have to be marketed well to ensure adequate usage and sustainability. They should also be visible, more available for athletes and consequently sport will be better promoted. These will enhance massive participation in sport at different levels enabling the community to use these sporting facilities for sport development, recreation and social welfare.

Access to these facilities is free and the observation is that the cost of the public facilities in most cases is subsidized which can be considered a social service type of approach to pricing. However, there is an opportunity to use the ISF’s to charge gate takings, advertising space, stadium rentals, conference room rentals and lease of tuck shops. In this study the aim was to assess strategies used to market the ISF’s using place, price, product and promotion collectively named the marketing mix and first expressed by McCarthy (1964) as quoted by Bennett (1997). The marketing mix approach ensures that when a product or service is made available to the consumer, it has been planned, designed, packaged, promoted and delivered in such a manner that the consumer is not only persuaded to buy, but also to repeat the experience as often as possible (Madhu, 2010; Malcolm & Martin, 2003). In view of the need for more sources of funding for the sustenance of the facilities, it is necessary for facility administrators to ensure that marketing strategies are put in place that will ensure that
the facility is marketed appropriately. The purpose of this study therefore was to assess the strategies used in marketing the ISF’s in Botswana. In this study, the concept of the four P’s is applied in relation to the ISF’s as put forward by the following authors: Place (Bean & Hussey, 1997; Dogra & Ghuman, 2008; Lancaster & Withey, 2006); Price (Wong, Huhman, Asbury & Heitzler, 2004); Product (Belohlavek, 2008; Dogra & Ghuman, 2008); and Promotion (Blythe, 2006; Dogra & Ghuman, 2008; Smith & Taylor, 2004).

This study was guided by the following hypotheses:
1. From the perception of coordinators, and users, the ISF’s are used effectively.
2. From the perception of coordinators, and users, the ISF location significantly influences the use of the facility.
3. In view of the coordinators, and users, the use of each component of the sport complex does not depend significantly on the price.
4. In the view of the coordinators, and users, strategies used to market the ISF’s are significantly effective.

Methodology

Sample
A purposive sampling technique was used in this study as suggested by Schutt (1996). In this study, the researchers used judgment/discretion in line with the suggestions of Coldwell and Herbst (2004) to select candidates who best met the purpose of the study. This was helpful in getting the opinions from those who are responsible for the management of the ISF’s. There are four ISF’s in Botswana and they are situated in the towns of Molepolole, Masunga, Maun and Serowe. The four facilities were investigated and the researchers purposively picked the four facility coordinators. In addition, four samples of 150 users at each ISF’s (N=600) were selected for the study due to their periodic or regular use of the facility.

Instruments
The researchers developed two questionnaires for the coordinators and the users. Based on the research variables the questionnaire for the coordinators and for users was divided into five sections; the first section dealt with background information and the second section measured the level of usage of the facility using a rating scale. The third section dealt with participants’ perceptions on the locations as it influences the use of the facility using a 4 point Likert type scale (strongly agree, agree, disagree and strongly disagree). The fourth section dealt with the respondent’s attitude towards facility charges using a 4 point Likert type scale (strongly agree, agree, disagree and strongly disagree). Section five dealt with information on the effectiveness of strategies used to market the facility using a Likert type scale. The instruments were carefully reviewed by the researchers and colleagues in facility management and marketing. The feedback from the colleagues was helpful in amending the instruments and ensuring adequate content. The instruments were also pilot tested by administering them to 50 randomly selected users of the University of Botswana stadium as well as the coordinator. The feedback from the pilot study was used to ensure that the items on the questionnaires were clear and unambiguous.

Data Analysis
The data collected were coded and entered into the Statistical Package of Social Sciences (SPSS) and percentages, bar charts, population t-test on a single mean and one way ANOVA were used to test the hypotheses. Population t-test of single mean was used to test the perception of users on the extent to which the different components of the facility are utilized and the effectiveness of the strategies used for marketing ISF’s. The other two hypotheses were tested using one way ANOVA at an alpha level of 0.05. A one-way analysis of variance (ANOVA) is suitable as a parametric test to compare the variances of means of dependent variables caused by two or three groups of independent variables (Gay et al., 2006). One-sample Kolmogorov-Smirnov statistics was used to test the same hypothesis in response to the coordinators because the cases were very few.

Results

Demographics Data
Out of 600 participants only 593 gave relevant responses. The rest of the participants (7) either did not respond or did not return the questionnaire. A total of 353 (60%) participants were male respondents, while 240 (40%) were females. These percentages might imply that the population constituted more males than females and that males were more willing to answer the questionnaire than females.

<table>
<thead>
<tr>
<th>Gender</th>
<th>Frequency</th>
<th>Percent</th>
<th>Valid Percent</th>
<th>Cumulative Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>353</td>
<td>58.8</td>
<td>58.8</td>
<td>58.8</td>
</tr>
<tr>
<td>Female</td>
<td>240</td>
<td>40</td>
<td>98.8</td>
<td></td>
</tr>
<tr>
<td>No response</td>
<td>7</td>
<td>1.17</td>
<td>1.17</td>
<td>100</td>
</tr>
<tr>
<td>Total</td>
<td>600</td>
<td>100</td>
<td>100</td>
<td></td>
</tr>
</tbody>
</table>

Table 1. Number of Participants in Relation to Gender

Questionnaire Data
A t-test of single mean was done based on user’s responses on the extent to which the different components of the facility are significantly utilized. Table 2 shows mean values lower than the expected mean of 2.50 on all items except the football pitch and the conference facility, which had a mean score of 2.71 and 2.94 respectively.

The results also showed negative values of mean difference and t-values on all items except the football pitch and conference facilities with mean differences scores .217 and .446 and ‘t’ values of 4.566 and 10.392 respectively. The test showed that all the components of the ISF were ineffectively used with mean values ranging between 1.67 and 2.40 respectively. Furthermore, the test showed significant values for conference facilities and football pitch indicating mean values above the expected mean at 2.94 and 2.71 respectively. The hypothesis tested showed that the ISF’s are not used effectively. One-sample Kolmogorov-Smirnov statistic test based on coordinators response was used on the rate in which different components of the facility were utilized. The results in Table 3 show that it is not true that the sport facilities were significantly utilized. The probability ranged between .214 and .967 higher than the significance level of p<0.05, on all items.
The findings were that in the perception of the coordinators the facilities were not significantly utilized.

The findings related to the influence of location on the use of facility are presented in Table 4. Forty-three users strongly disagreed, 97 disagreed contrary to 381 who agreed, while 61 strongly agreed that the right location for the facility influenced use and accessibility by people from outside Botswana.

In testing this hypothesis, analysis of variance on the extent to which location of the facility influenced usage and accessibility by people from outside Botswana. The results of the analysis showed significant mean differences on the extent to which location of the facility influenced usage and accessibility by people from outside Botswana with an F-value of 36.60. Given 3 and 578 degrees of freedom at the set alpha level of 0.05 this was found to be statistically significant at p<0.05. The mean differences between the different levels of agreement on the extent to which the facility was at the right location on the level of usage by people from outside Botswana was statistically significant. In other words, the location of the facility was found to significantly influence usage by people from outside Botswana. Hence the hypothesis that sports facility location does not significantly influence use of the facility by people from various districts was rejected and the alternate hypothesis was retained. This means that the perception of users on the extent to which the facility was at the right location was found to significantly influence usage and accessibility by people from outside Botswana. On the issue of the sport facility location influencing the use of the facility by current users from various districts, 43 users strongly disagreed, 97 disagreed contrary to 383 agreeing, while 70 strongly agreed that location of the facility influenced usage by people from various districts in the country. In testing this hypothesis analysis of variance (ANOVA) on the extent to which location of the facility influenced usage and accessibility by people from various districts as a result of the users perception gave an F-value of 66.07 (see Table 5) with 3 and 589 degrees of freedom.

The results of the analysis indicate significant influence of the facility location on use of the facility by people from various districts (p<0.05). Hence, the hypothesis was rejected. Thus, the location of the facility has significant influence on usage and accessibility by people from various districts in Botswana. This means the perception of users on the extent to which the facility is at the right location was found to significantly influence use and accessibility by people from various districts in Botswana. The mean difference between the levels of agreement on the extent to which the facility is at the right location as influenced by the level of access by road was

| Table 2. Users Perception on the Level of Usage of Different Components of the Facility |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Items (the level at which the) | Mean            | Std. Deviation  | Std. Error Mean | Mean Difference | t                | df              |
| Whole ISF facility is used     | 1.6796          | .94540          | .03882          | - .82040        | -21.132          | 592             |
| Football pitch is used         | 2.7179          | 1.1545          | .04773          | .21795          | 4.566           | 584             |
| Conference facility is used    | 2.9468          | 1.0382          | .04300          | .44683          | 10.392           | 582             |
| Softball pitch is used         | 2.4300          | .96855          | .03977          | -.06998         | -.176            | 592             |
| Netball pitch is used          | 2.1417          | .99670          | .04093          | -.35835         | -.8755           | 592             |
| Athletic track is used         | 2.4031          | .98640          | .04085          | -.09691         | -.2372           | 582             |
| Kiosk is used                  | 2.2075          | .98082          | .04062          | -.29245         | -.7199           | 582             |
| Volleyball courts are used     | 2.2968          | .91142          | .03743          | -.20320         | -.5429           | 592             |
| Basketball courts are used     | 2.2833          | .98159          | .04031          | -.21669         | -.5376           | 592             |
| Tennis courts are used         | 2.3103          | .93080          | .03822          | -.18971         | -.4963           | 592             |
| Cafeteria is used              | 2.0617          | .85733          | .03551          | -.43825         | -.1234           | 582             |
| Entertainment area is used      | 2.0532          | .86489          | .03582          | -.44683         | -.1247           | 582             |
| Open space is used             | 1.9826          | .89387          | .03731          | -.51742         | 1.0382           | 582             |

*Significant at 0.05 alpha level; Critical t = 1.98
Note: Std. = standard deviation

| Table 4. Users Perception of Sports Facilities Location on Use of Facilities |
|---------------------------------|-----------------|-----------------|-----------------|-----------------|-----------------|
| Level of agreement on the extent to which the facility is at the right location | Level of usage by people from outside Botswana |
| n | Mean | SD | Std. Error |
| Strongly disagree | 43 | 2.2093 | 1.45665 | .22214 |
| Disagree | 97 | 2.2887 | .74943 | .07609 |
| Agree | 381 | 2.9213 | .57041 | .02922 |
| Strongly agree | 61 | 3.1967 | .65370 | .8370 |
| Total | 582 | 2.7921 | .77376 | .3207 |

<table>
<thead>
<tr>
<th>Source of Variation</th>
<th>Sum of Squares</th>
<th>df</th>
<th>Means</th>
<th>F-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>55.533</td>
<td>3</td>
<td>18.511</td>
<td>36.602</td>
</tr>
<tr>
<td>Within Groups</td>
<td>292.311</td>
<td>578</td>
<td>.506</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>347.844</td>
<td>581</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance, p<0.05; Critical F-value = 2.62

The findings related to the influence of location on the use of facility are presented in Table 4. Forty-three users strongly disagreed, 97 disagreed contrary to 381 who agreed, while 61 strongly agreed that the right location for the facility influenced use and accessibility by people from outside Botswana.
The critical value of 2.62.

freedom and at a .05 alpha level, this was found to be lower than 
gave an F-value of 2.09 (see Table 6). Given 3 and 577 degrees of 
usage of the facility as a result of the level of perceptions of users 
it was too high. The analysis of the variability in the level of the 
84 people felt the price was satisfactory, while 75 respondents felt 
22 felt the price attached to use of the facility was too low. A further 
facility felt that it was not necessary to pay to use the facility, while 
the use of the facility was carried out. A total of 400 users of the 

of variance (ANOVA) examined the level to which price influence 
user access by road.

Table 5. Users Perception of Sports Facilities Location on Use of Facilities

<table>
<thead>
<tr>
<th>Level of agreement on the extent to which the facility is at the right location</th>
<th>Level of usage by people from various district in Botswana</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>Mean</td>
</tr>
<tr>
<td>Strongly disagree</td>
<td>43</td>
</tr>
<tr>
<td>Disagree</td>
<td>97</td>
</tr>
<tr>
<td>Agree</td>
<td>383</td>
</tr>
<tr>
<td>Strongly agree</td>
<td>70</td>
</tr>
<tr>
<td>Total</td>
<td>593</td>
</tr>
</tbody>
</table>

Source of Variation | Sum of Squares | df | Means | F-value |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Between Groups</td>
<td>68.439</td>
<td>3</td>
<td>22.813</td>
<td>66.073*</td>
</tr>
<tr>
<td>Within Groups</td>
<td>203.365</td>
<td>589</td>
<td>.345</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>271.804</td>
<td>592</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Significance, p<0.05; Critical value = 2.62

Within Groups

55.366*

3

25.729

2.091*

Table 6. Users Perception About Price of Facility Usage

Perceptions of users about the price of the facility | n | Mean | SD | Std. Error |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>It is not necessary</td>
<td>400</td>
<td>1.6925</td>
<td>.89159</td>
<td>.04458</td>
</tr>
<tr>
<td>It is too little</td>
<td>22</td>
<td>1.9091</td>
<td>.29424</td>
<td>.06273</td>
</tr>
<tr>
<td>It is satisfactory</td>
<td>84</td>
<td>1.6071</td>
<td>.67965</td>
<td>.07386</td>
</tr>
<tr>
<td>It is too much</td>
<td>75</td>
<td>1.8933</td>
<td>.79820</td>
<td>.09217</td>
</tr>
<tr>
<td>Total</td>
<td>581</td>
<td>1.7143</td>
<td>.83931</td>
<td>.03482</td>
</tr>
</tbody>
</table>

Source of variation | Sum of squares | df | Mean squares | F-value |
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Between groups</td>
<td>4.393</td>
<td>3</td>
<td>1.464</td>
<td>2.091*</td>
</tr>
<tr>
<td>Within groups</td>
<td>404.178</td>
<td>577</td>
<td>.700</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>408.571</td>
<td>580</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Not significance at 0.05 alpha levels; Critical F- value 2.62

statistically significant p<0.05. That is to say, the user perception on the location of the facility was found to significantly influence user access by road.

Table 6 shows the results of the perception of users on the price and usage of the facility. To test this hypothesis, one-way analysis of variance (ANOVA) examined the level to which price influence the use of the facility was carried out. A total of 400 users of the facility felt that it was not necessary to pay to use the facility, while 22 felt the price attached to use of the facility was too low. A further 84 people felt the price was satisfactory, while 75 respondents felt it was too high. The analysis of the variability in the level of the usage of the facility as a result of the level of perceptions of users gave an F-value of 2.09 (see Table 6). Given 3 and 577 degrees of freedom and at a .05 alpha level, this was found to be lower than the critical value of 2.62.

Hence, the hypothesis that the price significantly influenced usage of the facility was retained. Thus the perception of clients about the price charged does not significantly influence usage of the facility. One-sample Kolmogorov-Smirnov statistics was used to test the view of the coordinators on the use of each component of the facility and the issue of price. Non-parametric test based on coordinators responses was done on the level to which the prices influenced the use of each component of the sport facility (see Table 7). The results showed insignificance values ranging between .214 and .967 on all items; this means the hypothesis which states that the use of each component of the sport complex depends significantly on the price was therefore rejected.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Level that the price affects use of the facility</th>
<th>Normal mean</th>
<th>Sig.</th>
<th>Decision</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whole facility</td>
<td>2.4</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Soccer pitch</td>
<td>2.4</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Conference facility</td>
<td>2.2</td>
<td>0.447</td>
<td>.214</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Softball pitch</td>
<td>2.2</td>
<td>1.304</td>
<td>.967</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Netball courts</td>
<td>2.2</td>
<td>1.095</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Athletic track</td>
<td>1.8</td>
<td>0.447</td>
<td>.214</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Kiosk</td>
<td>1.4</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Volleyball courts</td>
<td>1.4</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Basketball courts</td>
<td>1.6</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Tennis courts</td>
<td>1.8</td>
<td>1.095</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Cafeteria</td>
<td>1.6</td>
<td>0.894</td>
<td>.577</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Entertainment area</td>
<td>1.4</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
<tr>
<td>Open space</td>
<td>1.4</td>
<td>0.548</td>
<td>.510</td>
<td>Retain the null</td>
</tr>
</tbody>
</table>

Not significant at 0.05 alpha level

Results showed that the coordinators were not in agreement that the price influenced the use of the facility or that the use of the facility depended significantly on the price attached. In other words, the influence on the use of the facility was not an occurrence which could be attributed to the price. The coordinators perception about the price was found to be insignificantly influencing the use of the facility.

An independent t-test of single mean was done based on user’s views on the effectiveness of the strategies used to market the ISF. Results in Table 8 show values of means lower than the expected mean of 2.50 on all items. Furthermore, the results also show negative values of mean difference and t-values on all items. The test showed that all the strategies used to market the ISF were significantly ineffective with mean values ranging between 1.22 and 1.56 respectively, which is below the expected mean of 2.50.

This means the hypothesis which states that the strategies used to market the ISF were not significantly effective is retained. One-sample Kolmogorov-Smirnov statistics based on the coordinators response was done in order to establish if the strategies used to market the ISF was significantly effective (Table 9). Results show that the strategies were not significantly effective with values ranging between .21 and .96 higher than the significance level of .05 on all items. The coordinators were in agreement with the hypothesis that the strategies used to market the facility were not significantly effective.
The main thrust of this study was to assess the strategies used in marketing the ISF’s in Botswana using the marketing mix and how these affected the usage of the facilities. The results from this study show that the elements of place, price, product and promotion had a great influence on the marketing and use of a sport facility. This is consistent with emerging research and anecdotal evidence which suggests that proximity, price and promotion can stimulate increased utilization of sport facilities (Mowen & Baker, 2009). However, the effectiveness of independent strategies is still unclear. One of the key questions for any service provider is to identify exactly what it is that the users are ‘buying’. In marketing terms this is often referred to as the core product. The core product is the fundamental service which the ISF is offering and the augmented service is the additional benefit that the customer utilizes. From the coordinators point of view, the decision has to be reached as to what actually is the product/service provided to the users. Problems can also arise due to a mismatch occurring between services provided and the needs of users. In other words, people may be given a service but not the one which would best meet their needs. ISF’s are important because they are developed in response to the need cited in the Seepapito (Government White Paper, 2002) report and the emerging recognition that ISF’s with quick access may have a competitive advantage. So those who manage ISF’s are not only competing for users, but they are re-examining their management, their manner of justifying the budget and their existence.

The interaction of place and level of usage of the facility produced a significant relationship in this study. The hypothesis that location has a significant influence on the level of ISF’s use was tested and it was found that for both coordinators and users, locations significantly influenced usage with all the t-values yielding negative values and were way below the critical t-value. So it is clear from this study that location, place of distribution and proximity affects the use of a sport facility. These results are consistent with the findings in the literature (Hayward, 2003; Mowen & Baker, 2009). In fact, according to Mowen and Baker (2009), a majority of studies have found a positive relationship between facility proximity and physical activity level.

People who live closer and have easier access to parks, recreation, fitness and sport sector opportunities use them more frequently and are more physically active. Proximity can also be influenced by the degree of connectivity. Thus, convenient and safe routes to services promote more frequent use of, and transportation to, such amenities. The findings from this study indicate a significant influence between the mean of proximity and use, which concurs within the literature (Dogra & Ghuma, 2008) and strengthens the fact that proximity has a significant influence on the use of the facility.

The analysis of the data based on user perception indicated that there was a significant influence of the price attached to the use of the facility on the level of usage of ISF’s, while the coordinators indicated the contrary. However, based on the coordinators responses the price had no significant influence on the usage of an ISF. Therefore, the possibility that these variances were artificial cannot be ruled out. For example, the coordinators point of view on the price that it did not influence the use of the facility can be argued and can be looked at based on the perception that they were reluctant to give their true feelings of the state of affairs for fear of political reprisal. The statistics from the current study clearly shows that price had a significant effect on the use of the facilities and this is consistent with evidence from the literature (Graham & Allan, 2008; Siegfried & Zimbalist, 2000). The effect of this is that the facilities will not be used optimally as users will want free access, with subsequently no money generated and sustainability of the facilities reduced. This like Fuller (1999) stated is like “meeting our needs today... and destroying the future generations to meet theirs” (p.10). Therefore Fuller (1999) indicated that “given a finite communal resource, individuals will seek to maximize their gains given that no costs are charged. If there is no outside force to keep them in line, then eventually they will destroy the resource for all” (p.11). Moral arguments used to justify price attached to social service provisions is that if people have the right to a
service, they also have the responsibility to pay for it. The social marketer has to adopt a reasonable pricing policy in which the benefits gained by the consumer are greater than the costs of the product, while making pricing decisions (Wong, et al., 2004). The marketer must consider factors such as the purchasing power of the target approach and the quality of the product (Madhu, 2010). Too high or low prices of the products may get a lesser or no response from the consumer. The effects of price misjudgment are quickly apparent in terms of their influence on the optimal use of the sport and recreation facility. Lancaster and Reynolds (2002) indicated that whilst there is ample scope for product differentiation by the seller, price remains a vital yardstick that buyers use in reaching a purchase decision. However, the price attached to the use of sport facilities has limited quality and efficiency of improving equity for the users without effective marketing strategy in place. In general, most people hold a negative attitude towards the price. In contrast, affordability of sport facilities is relatively a more important issue than distance (Graham & Allan, 2008). This was true for this study. The government of Botswana remains nominally committed to the provision of affordable and accessible sport facilities. Access to facilities may however be restricted because facility costs are excessive relative to the income of the potential users, emphasizing the link between purchasing power and access to facility. In all, the price attached to the use of sport facilities has limited quality and efficiency of improving equity for the users without effective marketing strategies in place.

Regarding the strategies used for marketing, the findings of the study showed that the strategies used for marketing generally influenced the use of the facility. This has to do with the marketing mix of promotion which deals with activities (strategies) that “communicate the merits of the product and persuade target customers to buy it” (Kotler & Armstrong, 2004, p. 58). Promotion is a very vital aspect of the marketing mix as it encompasses the elements of price, place and product and like Mullin, Hardy and Sutton (2007, p.237) asserted “it is a critical mechanism for positioning a product and its image in the mind of the consumer”. The findings of the study have shown that all the strategies used to market the ISF were significantly ineffective. This is worrisome because as literature (Fried, 2010; Irwin, Sutton & McCarthy, 2002; Kotler & Armstrong, 2004; Mullin, et.al., 2007) has clearly indicated, there is a direct relationship between adequate use of promotional strategies and clients usage of a facility or a product. Fried (2010) further asserted that a lot of effort should be devoted to promoting or marketing a facility, for all the end users, fans and those who support the facility. The findings from the study, however, reveals otherwise and this accounts for the low usage of the ISF’s in Botswana as shown in Tables 2 and 3. The reason might be that in disseminating information, the facility owners’ expenditure will increase, so promotional activities might therefore be kept to a minimum. Restrictions on access may also occur because information regarding services is not widely available. It is very clear from the current study that this is a major problem. Promotion is a very important element in influencing the behavior of clients. Lack of awareness is often cited as a reason that people do not use park, recreation, fitness and sport sector services and the complexity, cost and pervasiveness of today’s media make it difficult for fiscally constrained park, recreation, fitness and sport sector organizations to reach targeted audiences consistently (Mowen & Baker, 2009). Literature (Blann & Armstrong, 2011; Fried, 2010; Irwin, et.al., 2002; Kotler & Armstrong, 2004; Mullin, et.al., 2007; Schwarz, Hall & Shibili, 2010;) is replete with the range of different promotional techniques that can be utilized depending on the original marketing objective. If the objective is to obtain more users, word of mouth propaganda is often seen as the most effective promotional method. However, if the objective is to raise the product profile; public and press relations may achieve better results. Thus, it is crucial for sport facilities managers to ensure that influential elements such as endorsement, billboards, directional signs, internet, electronic media, signage, facility tour, print media, direct mail, personal selling, promotional items and blimps are emphasized. Schwarz, et.al., (2010) further posits that the elements of sport promotional mix that sport facility managers use include advertising, sponsorship, public relations and atmospherics. They maintained that to coordinate the interaction between the elements of the sport promotional mix, a strategy must be developed that focus on building brand loyalty and product credibility, developing image, and positioning the brand.

**Conclusion**

The marketing mix approach suggested by Torkildsen (1993) and Kumar (2010) acknowledges the importance of assessing the local facility, using place, price, product and promotion presumed to be changed in order to change the demand for the services provided. The findings show that: the price attached to facility use, facility location, promotional strategies used to market the facility and the product significantly influenced the level of facility use. The main findings were that the strategies used for marketing an ISF were ineffective. It is thus concluded that the variables of place, price, product and promotion as well as the strategies to market the facility significantly influence clients usage of the Intergrated Sports Facilities in Botswana.

**Practical Recommendations**

This section provides recommendations, based on this study. These recommendations are intended to help the Government of Botswana and other Governments and owners of sports facilities market their sports facilities in order to have optimal utilisation by the users. Obviously some of these recommendations will serve the Government of Botswana and other countries with similar sports facilities characteristics better than others. So other countries or facility owners can decide to what extent, if any, they want to implement these recommendations.

Governments and owners of sports facilities should:

- Create better access and communication with existing sport facility settings. These efforts should overlap with ongoing community planning and transportation initiatives.
- Develop community planning guidelines and ordinances that foster the development of sport facilities within walking distance of (or close proximity to) targeted populations.
- Ensure that the ISF’s program offerings include low/no cost, particularly for those who are more at risk of being inactive. More attention must be paid to cost effective
methods for screening the very poor out of paying user charges and making sure that those who can pay do pay to align the price to the theory of intergenerational equity.

- Ensure that the strategies for marketing the sport facilities be an ongoing exercise in order to streamline the shortcomings and consolidate the strength for optimal use of the facilities.
- Ensure that marketing assumes a clear importance within the organization. Outsourcing some key marketing initiatives to a professional organization as and when required is recommended.

**Recommendations for Future Research**

In this study, the focus has been on government owned/public facilities’ marketing strategies and usage of sports facilities. Such a study could be done using private sports facilities and the outcome compared with this study. Such comparison will be useful in indicating if there are differences in the marketing strategies used and the utilization of the facilities. These will help Governments and facility owners to focus their efforts on improving their marketing strategies and consequently the utilization of the sports facilities.

**References**


An Examination of Personality Traits of Motorsports Management Students

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Abstract

For the motorsports industry, there is a strong desire to recruit individuals that have realistic expectations of the profession as well as exhibit the personality traits needed to be successful in the industry over time. The study sought to examine and compare personality traits of motorsports management students to those of practitioners currently working in the industry and non-motorsports management students drawn from the general student population. This study is the first known attempt to operationalize and validate many of the personality characteristics identified by Jenkins, Pasternak, and West (2005) to predict career success in motorsports. The study concluded that the primary difference among potential job seekers is the perceived passion they possess to underscore a strong desire to work in motorsports. We suggest students with pre-university enrollment industry work experience coupled with motorsports-related internships during and immediately after a planned program of study will continue to express “a high sense of calling to the field”. These individuals are more suited for the demands of the sport and thus better overall job candidates.

Keywords: racing industry, career preparation, passion

Over the last two decades with Formula 1 leading the way, motorsports has grown to become one of the most popular spectator sports in the world (Gifford, 2006; Graham, 2012). Motorsports is a significant global industry valued at approximately $100 billion, with the United States (U.S.) representing the largest consumer at 26 percent (Connaughton & Madsen, 2007; Henry, Angus, Jenkins, & Aylett, 2007; Klacik, 2012). NASCAR, with an estimated 75 million fans, rivals only the National Football League as the preeminent spectator sport in the U.S. (Wolfe, 2006). The NASCAR Sprint Cup Series is the second most watched regular season sport on television and NASCAR fans are the most brand loyal (72%) when buying products/services associated with the sport (O’Malley, 2002).

Motorsports represents a sizeable portion of the entertainment industry influencing other major industries such as hospitality and tourism, and is comprised of a variety of constituents such as sanctioning bodies, race teams, drivers, race track operators, race promoters, race equipment suppliers, merchandise and services vendors, broadcast and media partners, and corporate partners and sponsors (Gailey & Young, 2012; Young, 2010). The health of the U.S. motorsports industry is directly tied to the economy, arguably more so than other sports (Edwards, Alderman, & Estes, 2010), with its almost singular reliance on sponsorship dollars to fund race teams. Economic impact studies in North Carolina and Indiana document the existence and growth of thousands of motorsports industry jobs (Connaughton & Madsen, 2007; Klacik, 2012). Yet, there are only a handful of four-year universities and colleges in the U.S. that offer programs in Motorsports Management (e.g., Belmont Abbey College, Winston-Salem State University, Indiana State University, East Tennessee State University, and Indiana University Purdue University - Indianapolis). Though such programs are relatively new and have typically evolved from traditional sport management degrees, motorsports practitioners have provided substantive input into the design of each program. Given the international aspects of the motorsports industry, we also note a number of universities in England such as Oxford Brookes University and Cranfield University that offer programs of study in Motorsports Engineering.

In addition, industry insiders have provided antidotal evidence that identify certain personality characteristics that predict career success in motorsports (Jenkins et al., 2005). While much discussion and research addresses the career needs of sport management students in general (Mathner & Martin, 2012), there is an absence of academic research which focuses specifically on the characteristics of students entering the motorsports industry. In addition, prior research suggests certain segments of the sport management industry may view the importance of various job competencies differently (Cuskelley & Auld, 1991). Therefore, in an effort to begin the academic research stream, this exploratory study seeks to examine and compare personality traits of motorsports management students to those of practitioners in the industry. In addition, we examine and compare personality traits of motorsports management students to those of the general student population.

Background

Personality traits are those components of personality that are heritable, developmentally stable, and emotion-based. The traits, discovered or learned within a particular socio-cultural context, may also reflect personal goals and values (Eley, Eley, Young, & Rogers-Clark, 2010). The identification of preferred personality traits have been undertaken in most professions (Borges & Savickas, 2002); however, most empirical findings suggest there is no one “type” of person who chooses a given profession (Eley et al., 2010). Despite these findings, long term career success in the motorsports workforce may require individuals to possess specific personality traits. In their effort to develop a framework for success in Formula 1, the leading form of racing in the world, Jenkins et al. (2005) spent several years interviewing individuals experienced and familiar with the demands of the sport. As a result, the authors identified personality traits deemed vital to individual and team performance in the sport. Specifically, the authors determined these characteristics to be of particular interest: collaborative, focused, trustworthy, ethical, leadership, decision making, and passionate. We define and briefly discuss each below in the context of the motorsports industry.
An Examination of Personality Traits

Personality Traits

Collaborative. According to Sveiby and Simons (2002), an individual demonstrates collaborative behavior when he/she has a willingness to work with others and share knowledge. In racing, team roles tend to be clearly defined. Individuals know how their jobs interconnect with others in the organization and precise, orchestrated actions are planned beforehand (Jenkins et al., 2005). The pit stop is an often cited example of teamwork (Lawhorn, 2009). Individual crew members perform assigned tasks such as refueling, tire changes, and mechanical repairs concurrently. Poor performance in any aspect of the pit stop can cost a driver precious positions on the track.

Teamwork is critical to success away from the track as well. Innovations relating to racing equipment can be dependent on successful collaboration between designers and partners that provide raw materials and component parts. For instance, the first Formula 1 car fabricated from carbon fiber resulted from the collaboration between a Formula 1 team and an aerospace supplier (Delbridge & Mariotti, 2009).

And on race day, personnel from sanctioning bodies, race tracks, race teams, the media, and sponsors work together to produce a racing event. For example, sanctioning bodies enforce the rules that teams must follow. Race tracks provide medical, safety, and security workers that keep fans and teams protected as well as offer venues for sponsors to entertain invited guests. Track personnel give direction and assistance to the media in terms of assembling broadcast equipment. Each weekend demands a well-planned and implemented event with multiple parties collaborating to achieve success.

Focused. An individual that persists with a task to its completion despite bouts of frustration, fatigue, and limited reinforcement can be described as focused (Eley et al., 2010). Task-focused work behavior is critical in most aspects of the motorsports industry. For race teams, each race week routine is devoted to consistent performance improvements and higher race finishes. The difference between success and failure is measured in fractions of a second. Race weekends demand absolute focus due to the highly competitive nature of the sport and the millions of dollars changing hands among sponsors, race teams, race tracks, sanctioning bodies, and the media. The influx of money into the sport over the last two decades has resulted in elaborate contracts detailing every aspect of responsibility to be fulfilled (Quirk, 2007). Moreover, the production of a large-scale motorsports event may take a year’s worth of planning. The need to secure sponsorships, sell race tickets and merchandise, and promote events is on-going. Ultimately, event success is measured in terms of attendance and viewership numbers as well as the return on investment (ROI).

Trustworthy. Building trust requires attention to the five facets of trust: benevolence, reliability, competence, honesty, and openness (Tschannen-Moran, 2001). Jenkins et al. (2005) assert that trust is the “glue” that holds a race team together. Without trust among team members, organizational effectiveness decreases. In addition, millions of dollars regularly change hands in terms of sponsorship funds for series, tracks, and teams. Without such funding, many organizations simply cannot operate. For example, Sarah Fisher Racing entered into a contractual agreement with Gravity Entertainment, Inc. to receive primary sponsorship money that never materialized (Wells, 2008). The action endangered Fisher’s entry into the Indianapolis 500 and eventually resulted in a default judgment in her favor of $2.2 million. Unfortunately, the motorsports industry has historically attracted “more than its fair share of shady characters” (ESPN.com, 2008). Mismanagement and/or theft of funds can quickly result in failed relationships and failed ventures. A real-life example underscores the concern. A team manager was found guilty of embezzling $1.5 million from the owner by creating bogus invoices related to car parts (Novack, 2003).

Ethical. Brown, Sautter, Littvay, Sautter, & Bearnes (2010) described an ethical outlook as a heightened sense of morality or an active vigilance in regard to justice. The importance of ethical behavior in motorsports was emphasized by Jenkins et al. (2005) in their discussion of Formula 1 teams. Having personal integrity and “doing the right thing” enables an environment of open communication and collaboration among individuals within the organization. Yet, race teams continue to push the “ethical envelope.” Richard Petty recently stated “Don’t get caught…Go as far as you can without getting caught…We got caught with a couple of things…but again, look at what we didn’t get caught at” (Skretta 2013, p. 4b).

Motorsports is a global “sport” governed by The Federation Internationale de l’Automobile (FIA). Located in Paris France, the FIA administers rules and regulations for motorsports’ sanctioning bodies around the world. The Automobile Competition Committee for the United States (ACCUS) is part of the U. S. affiliate of the FIA which includes NASCAR, IndyCar, NHRA, USAC, IMSA, among others. The FIA Ethics Committee is specifically responsible for safeguarding the integrity and reputation of motorsports. Ethical behavior is critical to other participants in the motorsports industry as well. For example, the International Speedway Corporation, which owns over a dozen major racing venues in the U.S., identifies the importance of conducting business honestly and ethically as one of its core values (Young, 2010).

Leadership. Leadership is the person’s ability to induce followers to coordinate their actions in order to achieve specific goals (Van Vugt & Kurzban, 2007). Within successful race teams, there must be individuals throughout the organization who are willing and capable to accept the leadership responsibilities regardless of their formal position and corresponding authority (Jenkins et al., 2005). The motorsports industry is comprised of large and small, privately and publically owned organizations that have two primary goals: winning races and achieving an acceptable ROI. As with race teams, other motorsports constituents such as sanctioning bodies and race tracks need strong leaders to help the organizations achieve ROI goals since the sport is so dependent on sponsorship dollars. Williamson (1999), in a discussion of leadership in NASCAR, suggests that racing requires strong leaders that provide common focus for their organizations, facilitate timely feedback on individual and collective performance, provide needed resources for accomplishing responsibilities, hold individuals accountable for assigned tasks, walk the talk, commit to openness and honesty, and listen well.

making can be spontaneous or systematic in terms of how individuals gather and process information as well as internal or external depending on the degree of privacy an individual prefers when processing information. In motorsports, the capacity to make a decision is possibly the most important ability that an individual may possess. As Jenkins et al. (2005) explained, race teams have short windows of preparation for each race throughout the season. Thus, making timely decisions, learning from the results, and quickly moving on are necessary for success. Sanctioning bodies and race track owners also face important decisions. Recently, NASCAR announced it would be reviewing its decision making process for approving race title sponsorships because of the controversy related to Texas Motor Speedway’s decision to allow the National Rifle Association to sponsor a Sprint Cup race (Bernstein, 2013).

**Passionate.** Snizek and Crocker (1985) described a “sense of calling to the field” as the individual’s passion for a given profession reflected in how the person feels and behaves as a member of the profession. For individuals, sustained careers in the motorsports industry are primarily related to “an all-encompassing passion for just about everything that revolves around their participation in this sport” (Jenkins et al., 2005, p. 52). Long hours, hard work, and sacrifice are requirements of most jobs in the motorsports industry. For example, a recent job posting, for concession manager at Summit Motorsports Park in Ohio, indicated the position requires a 100-hour work week during the seven month racing season. Individuals who have a true passion for the industry will learn as much as possible about racing’s intricacies, read and research the industry including its history, attend as many professional motorsports events as possible, and network and converse with motorsports managers on a regular basis.

**Purpose**

The purpose of the exploratory study was to examine and compare personality traits of motorsports management students to those of practitioners in the industry. A secondary purpose of the study was to analyze differences in personality traits of motorsports management students and the general student population. Knowledge obtained from the study could inform curricular development and revision to better prepare students for long term careers in the motorsports industry. Thus, the study was guided by the following research questions:

1. What differences in personality traits exist among motorsports management students and practitioners in the industry?
2. What differences in personality traits exist among motorsports management students and the general student population?

**Methodology**

**Sample and Data Collection**

The context for the study was a university that offered a program in Motorsports Management. Following human subjects review, data were collected during the 2010-11 academic year using a self-administered questionnaire. Respondents were instructed to conduct a self-assessment of their perceived behavior when working on a challenging project. The usable sample (N=325) was inclusive of students enrolled in the program, motorsports industry practitioners affiliated with the program, and non-motorsports management students from the general student population. In terms of students enrolled in the program, 80% (n=40) participated in the survey. A majority of students did report having some degree of experience working in the industry at the grassroots level prior to university enrollment. The survey was distributed to the program’s industry advisory board members currently working in the sport. Each practitioner was instructed to complete the survey as well as secure additional managerial personnel to participate. Twenty-nine usable surveys were received representing 14 organizations that included multiple sanctioning bodies, race tracks, race teams, equipment vendors, and service providers. The average years of industry experience in the sample was approximately 10 years with a median of 7 years and a range from 1 to 32 years. Finally, a convenience sample (n=256) of non-motorsports management students from the general student population was obtained by administering the survey in accessible classes. The sample contained students enrolled in the university’s five colleges and a representative number of freshmen, sophomores, juniors, and seniors.

**Measurement of Variables**

While we could have utilized the well-established Five Factor Model (FFM) of personality traits survey instrument (Digman, 1990), it was too general in nature for this study. Thus, we selected scales that seemed more appropriate for the motorsport context based on success factors identified by Jenkins et al. (2005). All construct measures were obtained from scale items used in previous empirical work. Scale items that comprised six of the seven traits in the study - collaborative, focused, trustworthy, ethical, leadership, and decision making - were selected from the well-known International Personality Item Pool (IPIP), an online public domain repository (affiliated with the University of Oregon) of empirically tested scales. Survey items measuring an individual’s passion for the motorsports industry were based on Snizek and Crocker (1985).

All scale items used a seven-point Likert scale with a range of “strongly disagree” (1) to “strongly agree” (7) (see Table 1). Using all 325 respondents in the study, principle components analysis (PCA) and reliability analysis were undertaken. PCA with varimax rotation was conducted to confirm that individual scale items were loading together to comprise the identified constructs. Table 2 displays the constructs and all individual item loadings above the “good” level of .55 (Tabachnick & Fidell, 1983). Items that loaded below .55 are not shown and were deleted from further statistical analysis. As shown in Table 1, the reliability results for each construct are well above the common threshold of .70 (Hair, Anderson, Tatham, & Black, 1995). Table 3 presents the correlation results between constructs. No multicollinearity was detected.

**Data Analysis**

To assess the two research questions, multivariate analysis of variance (MANOVA) was performed for the study constructs. MANOVA is particularly useful because it simultaneously explores the relationship among several categorical independent variables and two or more interval dependent variables (Tabachnick &
Findings and Discussion

Do differences in personality traits exist among motorsports management students and practitioners in the industry? As shown in Table 4, only one of the seven personality traits depicted a statistically significant difference. Motorsports Management students reported higher levels of passionate than practitioners in the industry. For the remaining six traits, the mean scores were relatively similar in magnitude. Thus, in terms of their own self-assessment, Motorsports Management students had the same perceived behaviors as practitioners in terms of collaborative, focused, trustworthy, ethical, leadership, and decision making.

Though Motorsports Management students perceived themselves to be more passionate about the industry than practitioners, the result is not too surprising. As Mathner and Martin (2012, p. 3) suggest “the potential for incongruities between expectations and reality are especially high in sport careers, as working in sport is often viewed as glamorous while in actuality many sport jobs involve long hours, low pay, and little prestige”. Previous research findings also indicated that after completing an internship, many sport management students reported a reduced intent to work in a sport management profession (Cunningham & Sagas, 2004). Thus, Motorsports Management students who complete internships and afterward continue to express high levels of interest (i.e., passionate) in working in the industry upon graduation may be more suited for the demands of the sport and therefore better overall job candidates.

Do differences in personality traits exist among motorsports management students and the general student population? To perform the MANOVA, we appropriately undertook an artificial equalizing of the cell sizes. A smaller subset of the general...
Limitations

The study has several constraints that limit the findings and implications. The research effort is exploratory in nature and thus the results are not generalizable to the larger sport management field. While the results are certainly valid in describing the perceptions of the Motorsports Management students and the program’s industry advisory board members for this given university, the results may not be representative of those obtained from other Motorsports Management programs. In addition, the current sample of practitioners may not be representative of the industry as a whole. Thus, a larger diverse sample of practitioners would certainly be welcomed in future research efforts.

In terms of construct measurement issues, further consideration and development of motorsport specific trait constructs are needed. While the proposed measures appeared reliable and valid, they did not adequately capture differences among the groups. Differences may indeed exist and thus more sensitive measures of specific personality traits needed by the motorsports industry should be explored. In addition, the questionnaire was a self-assessment of an individual’s personality traits. Thus, respondents may not be objective or truthful in judging their own behaviors. Educators, supervisors, and team members may actually provide more accurate assessments than the individuals themselves. Therefore, methods that aim to triangulate data sources may prove insightful. We certainly encourage further research that addresses the identified weaknesses of the study.

Conclusion

For the motorsports industry, there is a strong desire to recruit individuals that have realistic expectations of the profession as well as exhibit the personality traits needed to be successful in the industry over time. This study is the first known attempt to operationalize and validate many of the personality characteristics identified by Jenkins et al. (2005) that may predict career success in motorsports. Results from this study indicate the primary difference among potential job seekers is the perceived passion they possess to underscore a strong desire to work in motorsports. We suggest that students with pre-university enrollment industry work experience coupled with motorsports-related internships during and immediately after a planned program of study will continue to express “a high sense of calling to the field”. These students are more suited for the demands of the sport and thus better overall job candidates.

Do program faculty members play a role in developing personality traits of students? Certainly some academic majors include measures of such traits in their learning outcome assessments. Yet, is it realistic to believe substantive personality development can occur within a time limited program of study? As the results in our study suggest, motorsports studies programs can recruit students with some degree of industry experience prior to university enrollment. Unknown, however, is whether these students already possess the needed personality traits (and to what degree), as well as how faculty may have influenced student development. Moreover, future research efforts are needed to determine if there is a hierarchy of traits that are more or less important to career success. Finally, scholars should continue to investigate whether personality traits and characteristics of motorsports personnel are different compared to other sport business.

Motorsports practitioners must continue to collaborate with educators in an effort to develop and revise Motorsports Management programs. The programs of study should include ample work-study opportunities to maximize student engagement with practitioners in authentic settings culminating with extended experience in the field (e.g., internship). Coursework and field experiences should address entry-level skills and current trends

\[\text{Table 4. Motorsports Personality Traits: Minors versus Practitioners}\]

<table>
<thead>
<tr>
<th>Construct</th>
<th>Minors (n=40)</th>
<th>Practitioners (n=29)</th>
<th>p value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative</td>
<td>5.81 (0.66)</td>
<td>5.93 (0.62)</td>
<td>.438</td>
</tr>
<tr>
<td>Focused</td>
<td>5.54 (1.27)</td>
<td>5.74 (1.06)</td>
<td>.483</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>6.59 (0.72)</td>
<td>6.75 (0.40)</td>
<td>.298</td>
</tr>
<tr>
<td>Ethical</td>
<td>5.70 (1.08)</td>
<td>5.60 (0.95)</td>
<td>.684</td>
</tr>
<tr>
<td>Leadership</td>
<td>5.43 (1.05)</td>
<td>5.67 (0.89)</td>
<td>.306</td>
</tr>
<tr>
<td>Decision Making</td>
<td>5.46 (0.81)</td>
<td>5.57 (0.83)</td>
<td>.576</td>
</tr>
<tr>
<td>Passionate</td>
<td>6.32 (1.05)</td>
<td>5.53 (1.39)</td>
<td>.009</td>
</tr>
</tbody>
</table>

Note. *Larger values indicate higher scores (based on 7-pt scales with 1 = strongly disagree to 7 = strongly agree).

\[\text{Table 5. Motorsports Personality Traits: Minors versus Students}\]

<table>
<thead>
<tr>
<th>Construct</th>
<th>Minors (n=40)</th>
<th>Students (n=42)</th>
<th>p value*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Collaborative</td>
<td>5.81 (0.66)</td>
<td>5.88 (0.82)</td>
<td>.644</td>
</tr>
<tr>
<td>Focused</td>
<td>5.54 (1.27)</td>
<td>5.19 (1.35)</td>
<td>.234</td>
</tr>
<tr>
<td>Trustworthy</td>
<td>6.59 (0.72)</td>
<td>6.55 (0.64)</td>
<td>.770</td>
</tr>
<tr>
<td>Ethical</td>
<td>5.70 (1.08)</td>
<td>5.42 (1.27)</td>
<td>.288</td>
</tr>
<tr>
<td>Leadership</td>
<td>5.43 (1.05)</td>
<td>5.25 (1.30)</td>
<td>.506</td>
</tr>
<tr>
<td>Decision Making</td>
<td>5.46 (0.81)</td>
<td>5.54 (1.07)</td>
<td>.711</td>
</tr>
<tr>
<td>Passionate</td>
<td>6.32 (1.05)</td>
<td>3.50 (1.46)</td>
<td>.000</td>
</tr>
</tbody>
</table>

Note. *Larger values indicate higher scores (based on 7-pt scales with 1 = strongly disagree to 7 = strongly agree). Multivariate test of significance: F(36/21425 df)=1.71, p=.005, Box M=70.78.

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with a particular emphasis on discovering and developing characteristics linked with success in the motorsport workplace. If the motorsports industry is to evolve, it must meet changing consumer demands. Human resource management goals that develop a pipeline of workers with the necessary traits and skills and experience will provide the industry access to qualified people capable of staying long term.

References


Service Quality and Satisfaction Perspectives at the 2011 International Amateur Athletic Federation (IAAF) World Championships

by Min Kil Kim, Troy University; Suk-Kyu Kim, University of Georgia; Donghun Lee, Ball State University; Lawrence W. Judge, Ball State University and Haiyan Huang, Shanghai University of Sport

Abstract

The purpose of this exploratory study was to identify and analyze the factors that contribute to perceived service quality, user satisfaction, and behavioral intention in covering mega-sporting events at the Main Media Center for the International Amateur Athletic Federation (IAAF) Track and Field World Championships. The data were collected through a survey that was administered to users of the media center during the 2011 IAAF World Championship. The results suggested that various service aspects (i.e., Transportation, News press, Convenience stores, Promotions, Volunteers, and Technology service) had significant impact on the media personnel’s overall satisfaction. This study provides useful information on how to improve professionalism and service quality in media facilities at sporting events from the user satisfaction point of view.

Key Words: track and field, media center

Introduction

Sports and related media coverage captivate the attention of millions worldwide. Mass media has transformed much of the environment in which sports are played and conducted (Pedersen, Miloch, & Laucella, 2007). Rowe (2009) stated that sports and the mass media have developed an inseparable relationship in American society over last century. Sports media serves secondary roles in addition to delivering the sport experience. For example, the media reaches audiences through communicating social values, patterns, trends and fashion, lifestyles, aesthetic elements, and consumer related products (Leonard, 1980; Rowe, 2009).

Audience participation in sports tends to be indirect and confined to the channels provided by the media. The television (TV) has been and is expected to be the most popular source of media for sports. Due to the increasing importance of the media in sports, Coakley (2005) and Jhally (1989) argued that some sports have changed rules, schedules, packaging, and presentation methods in order to accommodate more TV broadcasting. In order to maintain audiences’ interest in broadcast sports, it is crucial for the media to provide lively, vivid coverage of events. Therefore, media centers are strategically important to many sport events. The coverage of mega-sporting events such as World Cup soccer and the Olympics exerts significant financial and economic influence on many different countries simultaneously through mass media (Barget & Gouguet, 2012).

Unlike conventional sports leagues and athletic events, mega-sporting events incorporate the media as an integral part of the event. From the design of the athletic arena or stadium onward, plans for press centers and other media-facilities are incorporated and implemented. The size and operation of the press center is vital to media performance and overall satisfaction, therefore. For example, the Guangzhou Asian Games Broadcasting Company (GAB) was officially built to provide required services and facilities for the authorized broadcasters and members of the media (“Guangzhou Asian Games,” 2009). Media broadcasting publicizes sports and promotes interest in game attendance; socializes people into the role of spectators, nurtures interest in game attendance, and serves as a vehicle through which people get the information needed to identify with athletes and teams and subsequently become committed fans (Coakley, 2005; Lever & Wheeler, 1984; Zhang, Pease, & Smith, 1998). The Main Media Center (MMC) at the 2011 IAAF World Championships, in particular, served an additional role of increasing interest in what has been traditionally a sport with limited popularity in non-Olympic years.

The International Amateur Athletic Federation was founded as the world governing body for the sport of track and field athletics in 1912 by 17 national athletic federations who realized the need for a governing authority. With regard to administration, the number of affiliated federations grew dramatically, from 17 in 1912 to 213 in 2008. In 2001, the IAAF changed its name to The International Association of Athletics Federations (IAAF). The IAAF World Championships in Athletics is referred to as the world’s third largest sporting event in conjunction with the World Cup and Olympics. The event was founded in 1983 and has been held every two years since 1991 (IAAF, 2012). The IAAF has successively led the worldwide sports movement in the development and application of an extensive anti-doping media campaign (IAAF, 2012).

Service Quality in the Main Media Center

As the sports industry becomes more global and competitive, the success of a sports organization depends on the degree to which they can satisfy their customers with quality service. Service quality has been defined as “the consumer’s overall impression of the relative inferiority/superiority of the organization and its service” (Bitner & Hubbert, 1994, p. 77). Service quality in the recreational sports industry is evaluated by the customer’s overall impression about the service delivery systems, the service performance, and the whole consumption experience (Ko & Pastore, 2004). To date, service quality is recognized as one of the primary topics in service management and marketing (Gronroos, 1984; Murry & Howat, 2002). With high-standard service quality, the customer would stay with an organization longer, buy additional services, and recommend the organization to other consumers (McDonald & Howland, 1998; Zeithaml, Berry, & Parasuraman, 1996). Thus, service quality is one of the most important elements that influence customer retention and the long-term profitability of a sports organization (Stum & Thiry, 1991).

Service quality has been studied in various contexts including spectator sports (e.g., Kelly & Turley, 2001; Theodorakis & Alexandris, 2008; Wakefield, Blodgett, & Sloan, 1996),
MMC Service Quality and Satisfaction

The provision of high quality services translates into customer satisfaction. Stoner and Wankel (1989) pointed out that customer satisfaction, a pleasant feeling derived from fulfilled expectation or unexpected positive surprise, is an important part of product quality. Oliver (1981) defined satisfaction as “the summary psychological state resulting when the emotion surrounding disconfirmed expectations is coupled with the consumer’s prior feelings about the consumption experience” (p. 27). The concept of customer satisfaction has been a focus of academics and practitioners in light of the fact that it is related to the primary source of most organizations’ revenue. The primary goal of most service companies today is to enhance customer satisfaction. In a broad sense, customer satisfaction has a close relationship with member loyalty. The behavioral aspect of customer loyalty is the repurchase intention of a product or service. Increasing customer satisfaction and customer retention positively impacts profits, word-of-mouth advertising, and lowers marketing expenditures (Reichheld & Sasser, 1990). Thus, previous studies often found a relationship between customer satisfaction and repurchase intention. In the current study, satisfaction is based upon customers’ previous experience and cumulative evaluations of the MMC, which is a key determinant of customer retention, positive world-of-mouth advertising, and sales (Bitner, 1990; Cronin & Taylor, 1992; Gotlieb, Grewal, & Brown, 1994). Overall, the success of a sport program depends on the extent to which it can satisfy the customers with quality service. High levels of customer satisfaction would be helpful in preventing or reducing customer attritions (Ko & Pastore, 2004).

There is a dearth of scholarly research examining the relationship between media-related facilities and service quality at media centers for mega-sporting events. The relative importance of the operational environments of media-related facilities has been neglected, therefore. The purpose of this exploratory study was to examine the relationship among service quality, user satisfaction, and behavioral intentions for word of mouth among the users at the MMC for the 2011 IAAF World Championships (see Figure 1).

This exploratory study intends to provide useful information on how media facilities are operated, and can help provide basic data for improving the overall service quality of related experiences. Since the importance of media-related services has been emphasized from diverse perspectives, the assessment of the quality of services provided by the media facilities will provide further data and assistance for concerned parties to improve the quality of their services and media contents.
Method

Participants and Procedure

The data were collected through a survey to users of the media center during the 2011 IAAF World Championships in Daegu, Korea. After approval was obtained from the institutional review board involving human subjects, the researchers contacted the media center representative to request for permission and assistance with the data collection. The participants consisted of reporters, broadcasters, broadcasting technicians, producers, and other members of the media authorized to access the MMC as members of the media of participating countries. A total of 195 surveys were collected using convenience sampling. The questionnaires were distributed within the media center during the Championships.

Instrument

The questionnaire consisted of four sections: (1) service quality, (2) satisfaction, (3) behavioral intention (word-of-mouth), and (4) demographics. To measure main media center service quality (25 items), items were derived from the SERVQUAL (Parasuraman et al., 1988). The original SERVQUAL items in Parasuraman et al.’s study had an internal consistency of .85. This study also incorporated the measuring criteria of the SERVQUAL, and modified its design to suit the characteristics of media centers based on data derived and integrated from various sources. The modified factors of service quality of Cronbach’s alpha ranged from .70 to .44 (see Table 1). To measure overall satisfaction, Oliver’s satisfaction items (1997) were modified. A sample items included was “I am satisfied with my decision to visit MMC.” Cronbach’s alpha was .71 in the current study. The overall items were anchored by a 5-point Likert scale, ranging from 1 (strongly disagree), to 5 (strongly agree). To ensure reliability and validity of the scales in the current study, several examinations were performed including assessment of Cronbach’s alpha values and factor correlation values. Additional questions in multiple choice or fill-in-the-blank format were included in a questionnaire with nine demographic items (i.e., gender, age, and home country).

Data Analysis

Descriptive statistics and internal consistency measures (Cronbach’s alpha) were computed using SPSS 19.0. Factor correlations were examined to check discriminant validity. Using two multiple regression analyses, the respondents’ overall satisfaction levels as well as their intention to recommend to others were predicted using independent variables described in the “Instrument” section. To minimize type I error when more than one regression is conducted on the same variables, we considered alpha adjustment (Hair, Black, Babin, & Anderson, 2010).

Results

Of the respondents (n = 195), 61.5% (n = 100) were male, 38.5% (n = 95) were female, and the majority were between 22 and 40-years old (59.5%). Approximately 23% of the respondents had more than 10 years of working experience. Members of the media from 24 countries participated in the survey.

The overall results revealed three key findings. First, the overall assessment of psychometric properties of scale was acceptable with room for improvement. Alpha values were close to or above .70 in seven variables out of 11. One variable had alpha value below .50, which needs to be reexamined in future studies (see Table 1). This variable, Transportation, was included in the data analysis due to its uniqueness in the topic area.

Table 1. Mean, Standard Deviation, and Cronbach’s Alphas

<table>
<thead>
<tr>
<th>Variables</th>
<th>M</th>
<th>SD</th>
<th>α</th>
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<tbody>
<tr>
<td>1. Accessibility</td>
<td>3.69</td>
<td>.66</td>
<td>.61</td>
</tr>
<tr>
<td>2. Transportation</td>
<td>3.58</td>
<td>.67</td>
<td>.44</td>
</tr>
<tr>
<td>3. News press</td>
<td>3.50</td>
<td>.65</td>
<td>.57</td>
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<tr>
<td>4. Information service</td>
<td>3.29</td>
<td>.82</td>
<td>.58</td>
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<tr>
<td>5. Convenience stores</td>
<td>3.19</td>
<td>.93</td>
<td>.69</td>
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<tr>
<td>6. Promotions</td>
<td>3.39</td>
<td>.69</td>
<td>.70</td>
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<tr>
<td>7. Volunteers</td>
<td>3.54</td>
<td>.72</td>
<td>.70</td>
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<tr>
<td>8. Facility</td>
<td>3.43</td>
<td>.80</td>
<td>.51</td>
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<tr>
<td>9. Technology service</td>
<td>3.39</td>
<td>.69</td>
<td>.52</td>
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<tr>
<td>10. Satisfaction</td>
<td>3.47</td>
<td>.61</td>
<td>.71</td>
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<tr>
<td>11. Behavioral intention</td>
<td>3.46</td>
<td>.73</td>
<td>.78</td>
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Note. All correlations are significant at the .05 level (2-tailed).

Based on Kline’s (2010) suggested criteria, discriminant validity was established among the overall factors in that all factor correlations were below .85 (see Table 2).
The second major finding was revealed in the regression analysis on the participants’ overall satisfaction. Six independent variables (i.e., Transportation, News press, Convenience stores, Promotions, Volunteers, and Technology service) were statistically significant in predicting media personnel’s overall satisfaction at the event (48% of the variance explained; see Table 3).

The second regression analysis on the participants’ behavioral intention for word of mouth revealed that two independent variables (i.e., News press, Volunteers, and Technology service) had statistically significant influence on the dependent variable, explaining 25% of the variance (see Table 4).

Examination of the univariate coefficients revealed that all statistically significant variables had varying degrees of positive impacts on the two dependent variables, except transportation (beta = -.157 in predicting the participants’ satisfaction levels).

**Discussion**

While spectator venues such as stadiums and arenas have typically been given a great deal of publicity, coverage and recognition within the sport media pertaining to the MMC used for mega-events, warrants increased attention by event organizers. Because the MMC was neither the competitive venue nor the primary practice area for most sports, it was sometimes overlooked from a facilities and operations perspective. The necessity and value of studying how media centers and related service areas are operated can be found in the potential effects that they have on inducing worldwide consumption of sporting events (Zhang & Smith, 1997). This study represents an initial exploration to identify and analyze the factors that contribute to perceived service quality, user satisfaction, and behavioral intention in covering mega-sporting events at the Main Media Center. Media-related facilities and services that ensure user satisfaction are important factors impacting coverage of mega-sporting events. Previous studies (Grönroos, 1984; Ko & Pastore, 2004; Murry & Howat, 2002; Stum & Thiry, 1991) noted that service quality in the sports industry is evaluated by the customers’ overall impressions about the service delivery systems, the service performance, and the whole consumption experience.

The overall findings of the current study are comparable to the existing literature. First, the current study revealed that six factors (i.e., Transportation, News press, Convenience stores, Promotions, Volunteers, and Technology service) had significant impact on the prediction of media personnel’s overall satisfaction at the event. The second major finding of the current study was the regression analysis of the participants’ behavioral intention for word of mouth recommendations. Three independent factors (i.e., News press, Volunteers, and Technology service) had statistically

<table>
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<th>Table 2. Factor Correlations</th>
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<td>Variables</td>
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<td>1. Accessibility</td>
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<td>3. News press</td>
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<td>10. Satisfaction</td>
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<td>11. Behavioral intention</td>
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*Note. All correlations are significant at the .05 level (2-tailed).*

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<th>Table 3. Multiple Regression on Participant’s Satisfaction</th>
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<td>Independent Variables</td>
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<td>Accessibility</td>
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<td>Transportation*</td>
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<td>News Press*</td>
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<td>Information Service</td>
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<td>Convenience Stores*</td>
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<td>Promotions*</td>
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<td>Volunteer*</td>
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<td>Technology Service*</td>
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<td>Facility</td>
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*Note. R square = .479; * indicates statistical significance at the .025 level (alpha adjusted).*

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<th>Table 4. Multiple Regression on Participant’s Behavioral Intention</th>
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<td>Independent Variables</td>
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*Note. R square = .251; * indicates statistical significance at the .025 level (alpha adjusted).*
significant influence on the media personnel’s behavioral intention for word of mouth recommendations. Transportation is deemed to be an important factor for MMC user satisfaction. This finding implies that providing convenient transportation services (e.g., shuttle bus service) from MMC to media villages should not be neglected. In the case of news press, MMC staff should consider how media information (e.g., the player information, game rules, game results, etc.) is disseminated in a timely manner to MMC users. With regard to the convenience stores, easy accessibility and availability to supporting services (e.g., bank, post office, grocery store, souvenir store, fast-food restaurant) seem to be an important factor that increases MMC user satisfaction.

This finding is consistent with previous studies (Howat et al., 1996; Kim & Kim, 1995; Parasuraman et al., 1988) that volunteers’ courtesy/attitudes is a primary concern at the MMC. In addition, this finding supports the Grönroos’s (1984) functional quality concept that explained how services such as courtesy and friendliness of employees and efficient service is delivered to consumers.

Consistent with Grönroos’s finding (1984), technical quality that involves what a customer actually receives from services is another important factor for MMC users (i.e., Transportation, News press, Convenience stores, and Technology service). Kettinger and Lee (1994) reported similar results in explaining that information services (i.e., Technology service) are one of the salient predictors of user satisfaction. This type of finding would provide MMC staff with a roadmap to help prepare for new technology such as high speed Wi-Fi, LED monitor, Helicam, etc., for MMC users.

This study is useful for sport event organizers in gaining a clear understanding of how/what service factors need to be provided to MMC users. As the financial stakes of sport events continue to increase, sport event organizers need to continue seeking opportunities to attract additional media coverage and attention. The difference between a successful MMC and an inefficient operation can be tied to the functional space within the facility and how efficiently the MMC is operated. Broadcasting is an indispensable medium of sports consumption and a channel of information. This study contributes to the field of sport media and event management by developing a better understanding of sport media users’ participatory patterns and future behavioral intentions. From a theoretical standpoint, the key variables in user behavior (i.e., Transportation, News press, Convenience stores, Promotions, and Volunteers) play an important role in quality perceptions of the MMC. It is important to efficiently identify the needs and expectations of users or customers and formulate strategies to satisfy them in order to improve work quality and productivity (Brooks, 1994; Buell, 1984; Mullin, Hardy, & Sutton, 2007; Stotlar, 1989). Therefore, there is a significant need for studies to investigate these user or customer satisfaction levels so as to improve the quality of services provided by media-related facilities. Media management at sporting events, in other words, requires a strategic marketing approach. There is an extremely limited amount of research on sport facilities and the research is even more scarce in the area of MMC, in particular. Thus, the information on how the media facilities are operated can help provide basic information for improving the overall quality of future events like the IAAF World Championships and related experiences. The data presented in this study demonstrated the importance of budgetary support for the required MMC resources.

Managerial Implications

The findings of this study support the significance of MMC at the sport event. There are several practical applications for event organizers from this study. First, this study provides some descriptive data and information about service quality and satisfaction of users at the MMC for the 2011 IAAF World Championships. Sport event organizers should identify the necessity and value of these findings indicating how media centers and related services play an important role in the operation of sporting events. Second, we believe that this type of research findings can be useful when sport event organizers have a plan to improve service qualities in MMC. Before evaluating, renovating and/or constructing a MMC, it is important that the individuals involved in making the decisions have a clear understanding of the service objectives they are trying to achieve and the factors that contribute to an effective sport event media center.

Limitations and Future Research

The present investigation contained several limitations that need to be addressed as they might have affected the results of this exploratory study. First, the sample population targeted in this study was restricted to a single event, and the small sample size decreased the statistical power in this study. Collection of a sample from a single sport event might raise a concern about limited generalizability. Future research using a broader sample of MMCs would increase the generalizability of the findings with a better chance for replication of the research in other sport event settings. Second, a systematic study investigating the service quality of MMC is absent from the literature. Future studies should identify the construct of service quality for MMCs and develop the scale of service quality associated with MMCs.

Conclusion

Mega-event organizational structure should be considered, and service quality of media center factors need to be developed that can influence current or future users and customers of events. Increase in satisfaction among the members of MMC in mega events can be successful through the incorporation of the enhanced service quality in the following areas: Transportation, News press, Convenience stores, Promotions, Volunteers, and Technology service. A high level of service quality of media centers is important in maintaining successful and profitable events. As media service providers, media members are more likely to provide essential quality coverage of the games/event when they are satisfied with the facilities and the overall services. Such satisfaction, in turn, will contribute to the success of the mega events and generate the greater integration of all participating countries.

References


Committed Sport Event Volunteers

by Keunsu Han, Towson University; Jerome Quarterman, Benedict College; Ethan Strigas, Indiana State University; Jaehyun Ha, Keimyung University and Seungbum Lee, University of Akron

Abstract

The purpose of this study was to investigate the relationships among selected demographic characteristics (income, education and age), motivation and commitment of volunteers at a sporting event. Three-hundred and five questionnaires were collected from volunteers in a marathon event and analyzed using structural equation modeling (SEM). Based on the results, the structural model illustrated that the paths of selected demographic characteristics, volunteer motivation, and volunteer commitment were statistically significant. The results of this study will contribute not only to an extension of the knowledge base of sport volunteerism, but also to practical applications for volunteer coordinators and event marketers.

Keywords: volunteerism, commitment, motivation, marathon

In the sport industry, the importance of volunteerism has been raised in economic as well as non-economic aspects. Chelladurai (2006) appraised that the economic value of volunteers in sport exceeds $50 billion. It can be surmised that about 20% of all volunteers in America were in sport and recreation. Sport volunteers are a critical part of the overall success of many major sporting events (Warner, Newland & Green, 2011) and play a key role in the provision of sport participation opportunities (Hoye & Doherty, 2011; Mihajlovic, Kommenic, Kastratovic & Cilerdzic, 2010). Several financial benefits result from the retention of volunteers: (a) organizations benefit financially from the use of well-trained volunteers in place of paid staff; (b) volunteers come from various backgrounds and possess different aptitudes, thus are able to serve in various job positions and responsibilities; (c) volunteers can be used again in future sporting events, making their financial impact even greater. Chelladurai discussed the non-economic significance of volunteers. According to him, volunteers can provide an objective evaluation because they are not tied to any financial benefits and/or incentives. This role of volunteers can help the organization stay on the right track.

Following these views about the significance of sport volunteerism, Farrell, Johnson, and Twynam (1998) suggested that managers should understand volunteer motivation along with the volunteering experience, in order to effectively respond to management needs in the areas of recruitment, retention, and daily operations of sport events. Therefore, research of volunteerism in the context of sport events has been focusing on motivation and management relating to the recruitment and the retention of volunteers.

Motivation to volunteer is instrumental in explaining the differences between volunteers and non-volunteers as well as differences between volunteers that continue serving an organization and those that abandon their activities (Omoto & Snyder, 1995). Employee motivation studies have been focused on job performance, absenteeism, tenure, and productivity, while most motivation studies for volunteers have been focused on the decision to volunteer (Cnaan & Cascio, 1999). Understanding the motives that cause volunteers to work in major sport events can help sport associations set up successful recruiting and training programs for such individuals.

Commitment has been identified as a significant variable associated with other employee outcomes in the field of Organizational Behavior (OB) and sport. From the studies by Reichheld (1996) and Pfeffer (1998), it is assumed that commitment could contribute to organizational effectiveness, although there is no empirical evidence in the field of sport management. Reichheld (1996) mentioned that loyalty to customers, employees, and investors is critical and thus an important source of growth, profits, and competitive advantage. He focused on the reasons that make loyal employees valuable to companies. In his argument, he suggested that loyal employees (a) develop higher quality relationships with customers (as a result, employees’ loyalty contribute to customer loyalty), (b) seek opportunities to learn and grow professionally, (c) increase organizational efficiency, and (d) reduce recruiting and training costs, releasing resources that can then be reinvested in other parts of the business. Reichheld (1996) asserted that loyalty of employees can create a powerful competitive advantage for the company. His view is also supported in Pfeffer’s work. Pfeffer (1998) discussed that “firms that have pursued high involvement, high performance, and high commitment management practices have produced superior economic returns over the long-term” (p. 394).

The purpose of this study was to investigate the relationship among selected demographic characteristics (income, education and age), motivation and commitment of volunteers at an amateur sporting event (see figure 1). The specific aims of this investigation were to: (a) confirm the multidimensionality of commitment (i.e., four bases of volunteer commitment) and motivation (i.e., five-factor model of volunteer motivation) among volunteers in a marathon running event, and (b) explore the relationships

![Figure 1](image)

The potential relationship between selected demographic characteristics, volunteer motivation and volunteer commitment
among the selected demographic characteristics, motivation and commitment among volunteers in a marathon running event.

Committed volunteers can be an important asset to enhance the effectiveness of sport event organizations and to recycle as human resources for future events (Chelladurai, 2006). Cuskelly, McIntyre and Boag (1998) suggested that the commitment of volunteers is critical to the effective organization and delivery of community-based sport. Why is understanding volunteer commitment important for people who may only volunteer on an annual basis? It is important for administration of such types of events to understand commitment of the volunteers for better enticing them to return the next year. If existing committed volunteers return next year, the effectiveness of event organization will be enhanced in economic and non-economic aspects. For example, event marketers and managers can monitor individual levels of volunteer commitment through surveys and use the information as a basis for volunteer retention. In spite of the need for studies of volunteer commitment, few studies have focused on volunteer commitment in sport events.

**Review of Literature**

**Volunteer Motivation in the Sport Setting**

Volunteer motivation in the sport setting has been a subject of study for several years. Several studies have occurred in the past decade, of which two have dealt with instrument development (Farrell, Johnston, & Twynam, 1998; Strigas, 2001).

In Farrell, et al., a 28-item scale instrument was adapted from the scale developed by Cnaan and Goldberg-Glen and tested by factor analysis. This study divided volunteer motivation into four dimensions: 1) purposive, 2) solidary, 3) external traditions, and 4) commitments. Purposive motivation (desire to contribute to society) ranked highest in importance and solidary factors (social interaction, group identification, networking) paralleled those described by Caldwell and Andercek (1994). Farrell et al. identified two new dimensions, which ranked lowest in importance: external traditions (extrinsic motivations) and commitments (the expectations of others when volunteering). Farrell et al. suggest that those who volunteer for special events have different motivations than that of other volunteers, citing that “Managers need to be prepared to address the variety of motivations when seeking volunteers for special events” (p. 298). This cornerstone work models how theories on volunteer motivation can be used for future human resources studies in sports organizations.

Strigas (2001) studied the development of a new and reliable scale to measure primary volunteer motives. Through exploratory and confirmatory factor analyses, he concluded that five factor models described volunteer motivations for sporting events: 1) social/leisure (need for social interaction, interpersonal relationships and need for relaxation and recreation); 2) material (pertaining to monetary value monetary or anticipated utility gain); 3) egoistic (self-actualization and esteem); 4) purposive (contribution to sport event and community); 5) external (the influence of others for volunteering).

**Research Questions 1:** Do the factors of motivation for volunteers in a marathon running event include social/leisure, material, egoistic, purposive and external influence?

**Foci and Bases of Commitment**

Recent studies on the commitment of volunteers to sport events have taken two different paths: foci of commitment (Reichers, 1985) and bases of commitment (O'Reilly & Chatman, 1986). Foci of commitment includes individuals and groups to whom employees are attached within an organization or occupation (Becker & Billings, 1993). “Employees who are relatively uncommitted to the organization might nevertheless perform effectively because of a commitment to the work group, profession, or clients” (Meyer, Allen, & Topolnytsky, 1998, p. 84). Bases of commitment are motives that result in attachment to foci of commitment (Becker & Billings, 1993), which include: affectionate commitment, normative commitment, continuance commitment-low number of alternatives (CC: LoAlt) and continuance commitment-high personal sacrifice (CC: HiSac) (Meyer & Allen, 1997; Turner, 2001).

According to Meyer and Allen: “Affective commitment refers to an employee’s attachment to, identification with, and involvement in the organization” (1997, p. 11). Meyer and Allen (1991) found that the best predictor of affective commitment was work experience, and that employees whose basic expectations and needs are met have a stronger level of affective commitment.

Meyer and Allen (1997) describe continuance commitment as “awareness of cost associated with leaving the organizations” (p. 11). Such employees recognize the financial detriments in leaving the organization (loss of pension plans and investment, inability to acquire other employment, loss of personal and professional relationships and standing in the company). Originally a unitary dimension, further research (McGee & Ford, 1987) has resulted in the subdivision of continuance commitment into 1) continuance commitment-low number of alternatives (CC: LoAlt), relating to commitment due to lack of other employment opportunities; and 2) continuance commitment-high personal sacrifice (CC: HiSac), relating to commitment because of personal loss incurred by separation from the organization. Strong continuance commitment to an organization implies the necessity to remain with the organization. Further research has confirmed the two-dimensionality of continuance commitment (Allen & Meyer, 1990; Dunham, Grube, & Castaneda, 1994; McGee & Ford, 1987; Meyer & Allen, 1997).

Normative commitment refers to an employee’s feeling of “obligation to continue employment” (Meyer & Allen, 1997, p. 11). The employee may feel a sense of moral obligation because of the investment the company has made in the employee.

Each of the studies on commitment of volunteers in a sports event is unique, particularly in regard to such variables as volunteer motivation and demographic characteristics. Due to the characteristics of participants in this particular study, occupational commitment refers to volunteer commitment and is only used as a variable of the foci of commitment. The ING running marathon is held annually, and no permanent volunteer organizations are attached to this event; therefore, commitment in this study is defined according to the four bases of volunteer commitment.

**Research Questions 2:** Do the bases of commitment for volunteers in a marathon running event include affective commitment, normative commitment, continuance commitment—high personal sacrifice, and continuance commitment—low number of alternatives?
Antecedents and Consequences of Commitment

Figure 2 is a model of related antecedents and consequences of organizational commitment. The proposed model has been proven empirically that organizational commitment is positively associated with job satisfaction and performance, and negatively associated with turnover intention, job stress, and burnout.

Relationship among Demographics, Motivation and Commitment

Researchers (Dunham, Grube & Castaneda, 1994; Mathieu & Hamel, 1989; Meyer & Allen, 1997) have found that factors influencing commitment are: (a) personal characteristics such as demographic characteristics and personal motivation (personality); (b) job satisfaction; (c) job involvement; (d) organizational characteristics such as organization size, structure, and climate; and (e) environmental conditions such as family responsibility, family support.

Dailey (1986) used four factors (personal characteristics, job characteristics, job involvement, and job satisfaction) to predict volunteer commitment. He measured personal characteristics by assessing only personal motivation; he did not use demographic characteristics as a variable. Daily assessed personal motivation as an important predictor for commitment of volunteers, arguing that highly motivated volunteers have high commitment, which contributes to an organization’s effectiveness.

Hsieh (2000) sought to identify the best predictors for commitment and developed the model that explains the relationships between motivation and commitment of volunteers. Among the variables of volunteer motivation, demographic characteristics, volunteer involvement, and volunteer satisfaction, results indicated that the best predictors of commitment were volunteer involvement and volunteer satisfaction. Among demographic characteristics, annual family income, age, and education level were the best predictors of commitment, with the greatest commitment coming from older volunteers of high income and education. Hsieh also found that when the six volunteer motivation factors by Clary et al. (1998) were used to replace overall volunteer motivation, career motivation was the only predictor of commitment. He concluded that knowledge of relationships between demographic profile and commitment of volunteers plays an important role in recruiting and retaining volunteers.

Research Questions 3: Are there any relationships among the selected demographic characteristics, motivation and commitment of volunteers in a marathon running event?

Methods

This study was designed as a non-experimental cross-sectional descriptive study. A cross-sectional study is defined as an examination of a phenomenon that occurs at one point in time (Depoy & Gitlin, 1994). For the current study, data were collected at one point in time from volunteers in a Georgia marathon running event. The survey method was employed in this particular study because of the economy of the design and the quick turnaround in collecting the data.

Instrumentation

From a review of literature on motivation and commitment relating to sport volunteerism, the Motivation of Sport Volunteers questionnaire and the Commitment of Sport Volunteers questionnaire was constructed. Elements of the survey instrument for this study were modified from existing scales and a panel of experts, including sport management professors (n=3), volunteer coordinators in the ING Georgia marathon running event (n=2), and researchers on sport volunteerism (n=2), examined the questionnaires for content validity.

Demographic Characteristics

Demographic characteristics were made up of: (a) basic personal information, such as gender, race, age, income, and level of education; (b) information relating to hours of service per month, years of service, volunteers’ title; and (c) employment status, whether part-time or full-time.

Volunteer Motivation

Strigas’ (2001) 5-factor and 30-item motivation scale, which included social/leisure, material, egoistic, purposive and external influences, was modified to measure volunteer motivation in a marathon running event. A panel of experts checked content validity. Respondents indicated level of agreement on a Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree).

Volunteer Commitment

Two foci (organization and occupation) and four bases (AC, NC, CC: HiSac and CC: LoAlt) of commitment concerned this study. Turner’s 12-item scale (2001), which he had adapted from a three-component 18-item scale of Meyer, Allen, and Smith (1993) to measure coaches’ commitment, was adapted to measure commitment of volunteers in a marathon running event. Turner’s scale, included four bases of commitment: (a) affective commitment (3 items), (b) normative commitment (3 items), (c) continuance commitment–high personal sacrifice (3 items), and (d) continuance commitment–low number of alternative (3 items). Respondents were asked to indicate their level of agreement with each of the 12 items on a Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree).

The author used Turner’s four bases scale of commitment for the following reasons: (a) OCQ has often loaded as a two-factor...
solution and has focused on affective commitment; (b) although the discriminant validity between affective and normative commitments has drawn criticism, many studies still support the differences between the two dimensions (Meyer & Allen; 1991; 1997), and Meyer and Allen (1997) indicated that normative commitment was a better predictor than affective commitment in different cultures; (c) two separated continuance commitments were associated independently with the other outcome variables. For example, CC: LoAlt was positively associated with the intention to leave the organization, while CC: HiSac was negatively correlated to a turnover intention (Turner & Chelladurai, 2005).

Occupational commitment refers to volunteer commitment in this study and is only used as a variable of the foci of commitment due to the characteristics of the participants in the study.

Participants
Three-hundred and five volunteers participated in an annual Georgia Marathon, an event with international participation held in Atlanta, Georgia, as part of the Health and Fitness Expo. Some 1,000 people volunteered as coordinators, runner assistants, registration and accreditation aids, medical staff, race coordinators, holding fans, set-up and cleaning crews, security staff, etc. Commitment of their time depended on the task to which they were assigned.

Sampling Method
Participants in the study were recruited based on a non-probability sampling method. A convenience sampling technique was used to select subjects for the study. Convenience sampling is a non-random sampling technique, which is typically conducted in a non-probability sampling method. The sample for the study was drawn from volunteers participating in an annual Georgia Marathon event.

Data Collection
The volunteer coordinators of the Georgia Marathon event were contacted via e-mail, providing information and an attached proposal. The volunteer coordinators agreed to participate in and permit an on-site survey.

The Georgia Marathon event continued for three days and included a Health and Fitness Expo and marathon day. There were more than 1,000 volunteers. All volunteers stopped by the volunteer office to sign in before they served as a volunteer, and the surveys were distributed in the office. Each volunteer was able to have enough time to fill out the survey because they waited for volunteer orientation in the office.

The instruments were coded to protect the anonymity of the respondents. The participants were assured that all information gathered would be held confidential, presented in group form and only used in this study.

The surveys distributed included a) a letter explaining the project and requesting the participation, b) the instrument, and c) a self-addressed stamped envelope in case participants wished to respond by mail. Finally, participants expressing an interest in the results will receive a summary of the findings and their interpretations upon their request.

Data Analysis
The data were analyzed using the Statistical Package for the Social Science (SPSSPC 14.0) and Analysis of Moment Structures (AMOS 7.0). Data received from the returned questionnaires were screened through descriptive analysis. In order to assess psychometric properties of the measures, confirmatory factor analyses (CFA) were conducted using the computer program Analysis of Moment Structures (AMOS 7.0).

Each research question is analyzed in the following way:
RQ 1) Do the factors of motivation for volunteers in a marathon running event include social/leisure, material, egoistic, purposive and external influence? Confirmatory Factor Analysis (CFA) provided the answer to the first research question.
RQ 2) Do the bases of commitment for volunteers in a marathon running event include affective commitment, normative commitment, continuance commitment–high personal sacrifice (CC: HiSac) and continuance commitment–low number of alternatives (CC: LoAlt)? Confirmatory Factor Analysis (CFA) provided the answer to the second research question.
RQ 3) Are there any relationships among the selected demographic characteristics, motivation and commitment of volunteers in a marathon running event? Structural Equation Modeling (SEM) was utilized to examine paths identified in this research question. In this design, exogenous variables are the selected demographic characteristics, including income, education and age, and motivation of volunteers while an endogenous variable is volunteer commitment.

Results
Descriptive Statistics
Preliminary analyses were conducted to identify any missing data, outliers and possible violations of the multivariate normality assumption associated with maximum likelihood estimation. The skewness and kurtosis statistics were examined to determine whether the observed variables were normally distributed. According to Kline’s guideline (2005), data with absolute values in a univariateskewness index greater than 3.0, are considered to be extremely skewed. His guidelines also indicate that absolute values of the univariate kurtosis index over 8.0 appear to be extreme kurtosis. All skewness and kurtosis values ranged from -1.585 to 2.218. Based on Kline’s guideline, it was assumed that all variables in the data set achieved multivariate normality.

Reliability
The reliability estimates (Cronbach’s alpha) for the four bases of commitment and the volunteer motivation by five dimensions are reported in Table 1. The results revealed that Cronbach’s α coefficients of volunteer motivation scales ranged from .7082 to .8726 and volunteer commitment scales ranged from .7274 to .7907. The reliability test indicates that the items are internally consistent since the items are considered to be reliable when a Cronbach’s coefficient is more than .70 (Nunnally & Bernstein, 1994).
Dimensionality of Volunteer Motivation and Commitment (RQ 1 and 2)

- RQ 1: Do the factors of motivation for volunteers in a marathon running event include social/leisure, material, egoistic, purposive and external influence?
- RQ 2: Do the bases of commitment for volunteers in a marathon running event include affective commitment, normative commitment, continuance commitment–high personal sacrifice (CC: HiSac) and continuance commitment–low number of alternatives (CC: LoAlt)?

Confirmatory factor analysis (CFA) was conducted in order to examine the adequacy of the measurement relationship of the proposed model. Three types of fit indices, absolute, comparative, and parsimonious fit index, were recommended to assess overall model fit (Kelloway, 1998). The root mean square error of approximation (RMSEA) and \( \chi^2 \) test were used to measure absolute fit; the comparative fit index (CFI) was used to measure comparative fit; and the parsimonious normed fit index (PNFI) was used to measure parsimonious fit. Browne and Cudeck (1993) suggested that an RMSEA value of .08 or less would indicate acceptable model fit. In addition, Hu and Bentler (1999) recommended that CFI values greater than .95 and PNFI values greater than .60 are threshold values for reasonable model fit. However, because of \( \chi^2 \) statistics’ sensitivity to sample size, the normed chi-square (\( \chi^2/df \)) was recommended as a measure of model fit (Kline, 2005). Bollen (1989) proposed that values of normed chi-square (NC) of 2.0, 3.0, or even as high as 5.0, have been considered as indicators of reasonable fit.

Average variance extracted (AVE) were utilized to assess the reliability of each construct. Fornell and Larcker (1981) recommended that the value exceeding .50 and AVE scores are considered acceptable levels of reliability.

Average variance extracted (AVE) was suggested by Fornell and Larcker (1981) to be an indicator of the overall convergent validity of a subscale and the value should exceed .50. Anderson and Gerbing (1988) suggested that convergent validity can be investigated by identifying whether each indicator’s loading on its posited construct was greater than twice its standard error, and whether each factor loading was over .707. Discriminant validity was evidenced based on whether the AVE for each construct was greater than the squared correlation between the construct and any other construct (Fornell & Larcker, 1981). Additional evidence of discriminant validity was that estimated correlations among factors were less than the recommended value of .85 (Kline, 2005).

### Table 1. Reliability Estimates

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Volunteer Motivation</strong></td>
<td></td>
</tr>
<tr>
<td>Social/Leisure</td>
<td>.8595</td>
</tr>
<tr>
<td>Material</td>
<td>.8726</td>
</tr>
<tr>
<td>Egoistic</td>
<td>.7127</td>
</tr>
<tr>
<td>Purposive</td>
<td>.7453</td>
</tr>
<tr>
<td>External Influence</td>
<td>.7082</td>
</tr>
<tr>
<td><strong>Volunteer Commitment</strong></td>
<td></td>
</tr>
<tr>
<td>Affective Commitment</td>
<td>.7513</td>
</tr>
<tr>
<td>Normative Commitment</td>
<td>.7431</td>
</tr>
<tr>
<td>Continuance Commitment-High Sacrifice</td>
<td>.7907</td>
</tr>
<tr>
<td>Continuance Commitment-Low Number of Alternatives</td>
<td>.7274</td>
</tr>
</tbody>
</table>

### Table 2. First-Order CFA Measurement Model of Volunteer Motivation: Item Loading (β), Standard Errors (SE), t-values (t), and Average Variance Extracted (AVE)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>β</th>
<th>SE</th>
<th>t</th>
<th>AVE</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Social/Leisure</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. I wanted to discover new interests</td>
<td>.819</td>
<td>.066</td>
<td>16.331</td>
<td>.62</td>
</tr>
<tr>
<td>2. I wanted to experience the feeling of being absorbed by what I do</td>
<td>.811</td>
<td>.058</td>
<td>16.095</td>
<td></td>
</tr>
<tr>
<td>3. Volunteering is a good escape from my daily routine</td>
<td>.786</td>
<td>.094</td>
<td>14.022</td>
<td></td>
</tr>
<tr>
<td>4. I wanted to slow down the pace of life</td>
<td>.744</td>
<td>.118</td>
<td>13.562</td>
<td></td>
</tr>
<tr>
<td>5. I have more free time than I used to have</td>
<td>.721</td>
<td>.093</td>
<td>13.174</td>
<td></td>
</tr>
<tr>
<td>6. I wanted to relieve the stress and tension of everyday life</td>
<td>.930</td>
<td>.063</td>
<td>20.354</td>
<td></td>
</tr>
<tr>
<td>7. I wanted to develop friendships with other volunteers</td>
<td>.611</td>
<td>.109</td>
<td>10.759</td>
<td></td>
</tr>
<tr>
<td>8. I wanted to interact with other volunteers</td>
<td>.585</td>
<td>.079</td>
<td>10.211</td>
<td></td>
</tr>
<tr>
<td>9. I wanted to provide me the excitement I crave</td>
<td>.802</td>
<td>.069</td>
<td>15.850</td>
<td></td>
</tr>
<tr>
<td><strong>Material</strong></td>
<td></td>
<td></td>
<td></td>
<td>.57</td>
</tr>
<tr>
<td>10. I wanted to make new contacts that might help my business or career</td>
<td>.798</td>
<td>.064</td>
<td>15.701</td>
<td></td>
</tr>
<tr>
<td>11. I wanted to be recognized for doing this volunteer work</td>
<td>.859</td>
<td>.139</td>
<td>20.458</td>
<td></td>
</tr>
<tr>
<td>12. Volunteering my services for this event is considered prestigious</td>
<td>.686</td>
<td>.085</td>
<td>12.563</td>
<td></td>
</tr>
<tr>
<td>13. Volunteering experience will look good on my resume</td>
<td>.751</td>
<td>.114</td>
<td>10.444</td>
<td></td>
</tr>
<tr>
<td>14. I wanted to gain some practical experience toward paid employment (or a new career)</td>
<td>.727</td>
<td>.091</td>
<td>10.190</td>
<td></td>
</tr>
<tr>
<td>15. My employer/school is going to give me an extra bonus/credit for volunteering</td>
<td>.725</td>
<td>.126</td>
<td>10.185</td>
<td></td>
</tr>
<tr>
<td>16. Complimentary items</td>
<td>.781</td>
<td>.084</td>
<td>14.984</td>
<td></td>
</tr>
<tr>
<td><strong>Egoistic</strong></td>
<td></td>
<td></td>
<td></td>
<td>.62</td>
</tr>
<tr>
<td>17. I wanted to improve my skills and abilities through my volunteer assignments</td>
<td>.647</td>
<td>.190</td>
<td>11.235</td>
<td></td>
</tr>
<tr>
<td>18. I wanted to challenge my abilities.</td>
<td>.909</td>
<td>.062</td>
<td>19.306</td>
<td></td>
</tr>
<tr>
<td><strong>Purposive</strong></td>
<td></td>
<td></td>
<td></td>
<td>.63</td>
</tr>
<tr>
<td>19. Volunteering makes me feel better about myself/helps my self esteem</td>
<td>.797</td>
<td>.093</td>
<td>15.240</td>
<td></td>
</tr>
<tr>
<td>20. Volunteering in this sport event is worthy of my efforts and attention</td>
<td>.809</td>
<td>.090</td>
<td>15.659</td>
<td></td>
</tr>
<tr>
<td>21. It is fun and exciting to volunteer for this sport event</td>
<td>.953</td>
<td>.120</td>
<td>24.098</td>
<td></td>
</tr>
<tr>
<td>22. Volunteer activities energize me</td>
<td>.889</td>
<td>.154</td>
<td>19.028</td>
<td></td>
</tr>
<tr>
<td><strong>External Influence</strong></td>
<td></td>
<td></td>
<td></td>
<td>.81</td>
</tr>
<tr>
<td>23. Because I was asked by others to volunteer in these games</td>
<td>.775</td>
<td>.111</td>
<td>14.340</td>
<td></td>
</tr>
<tr>
<td>28. I wanted to be appreciated by my significant other/family/community members</td>
<td>.771</td>
<td>.090</td>
<td>14.243</td>
<td></td>
</tr>
<tr>
<td>30. My friends/family/ significant other are also volunteering at these events</td>
<td>.801</td>
<td>.120</td>
<td>14.971</td>
<td></td>
</tr>
</tbody>
</table>

Committed Sport Volunteers
First-Order CFA Measurement Model of Volunteer Motivation

The five-factor (social/leisure, material, egoistic, purposive and external) CFA model for volunteer motivation had 395 degrees of freedom. The model fit results for the five-factor CFA model for volunteer motivation revealed acceptable model fit to the data ($\chi^2[395] = 931.3219; p < .05; \chi^2/df = 2.35; CFI = .98; PNFI = .68$; and RMSEA = .061). All of the model fit indices were satisfactory within recommended thresholds. Upon estimation of the model fit indices, construct validity (e.g., standardized loadings and the estimated correlations) were measured. Construct validity was supported by the results of the standardized solution for convergent validity and the results of the estimated correlation among factors for discriminant validity.

As shown in Table 2, convergent validity was assessed by examining whether each indicator’s loading on its posited construct was greater than twice its standard error, and whether each factor loading was over .707 (Anderson & Gerbing, 1988). For the five constructs, all items loaded significantly on their designated construct (t-values ranged from 10.185 to 24.098). All factor loadings were greater than twice its standard error. Factor loadings exceeded .707 except for items 7, 8, 12, and 17. The values of average variance extracted (AVE) all exceeded the recommended value of .50, ranging from .57 to .81. These results evidenced convergent validity for the hypothesized measurement model.

For discriminant validity, the estimated correlations among the five factors ranged from .431 to .687 (see Table 3) and were statistically significant ($p < .05$), less than the recommended value of .85 (Kline, 1998). The results supported the discriminant validity of the constructs in the measurement model.

<table>
<thead>
<tr>
<th>Table 3. Correlations among Five Factors</th>
<th>So/Le</th>
<th>Material</th>
<th>Egoistic</th>
<th>Purposive</th>
<th>EI</th>
</tr>
</thead>
<tbody>
<tr>
<td>So/Le</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Material</td>
<td>.488**</td>
<td>1</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Egoistic</td>
<td>.623**</td>
<td>.472**</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Purposive</td>
<td>.435*</td>
<td>.512**</td>
<td>.431*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>EI</td>
<td>.681**</td>
<td>.435*</td>
<td>.687**</td>
<td>.548**</td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation is significant at the .01 level (2-tailed)
*Correlation is significant at the .05 level (2-tailed)

First-Order CFA Measurement Model of Volunteer Commitment

The four-bases (affective, normative, continuance-high sacrifice and continuance-low number of alternatives) CFA model for volunteer commitment had 62 degrees of freedom. The results of the model fit indicated acceptable model fit ($\chi^2[62] = 155.3722; p < .05; \chi^2/df = 2.50; CFI = .98; PNFI = .63$; and RMSEA = .064). All of the model fit indices were satisfactory within recommended thresholds.

As shown in Table 4, all standardized loadings were relatively high, ranging from .722 to .905 and statistically significant, indicating convergent validity for the four bases CFA model of volunteer commitment. The value of average variance extracted (AVE) ranged from .56 to .71 and all exceeded the criteria of .50 by Fornell and Larker (1981). For discriminant validity, the estimated correlations between the four bases were from .312 to .624 (see Table 5), which is less than the recommended value of .85 (Kline, 1998).

Table 4. First-Order CFA Measurement Model of Volunteer Commitment: Item Loading (β), Standard Errors (SE), t-values (t), and Average Variance Extracted (AVE)

<table>
<thead>
<tr>
<th>Subscale</th>
<th>Affective</th>
<th>Normative</th>
<th>Co-HiSac</th>
<th>Co-LoAlt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Affective</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Normative</td>
<td>.525**</td>
<td>1</td>
<td>.312*</td>
<td>1</td>
</tr>
<tr>
<td>Co-HiSac</td>
<td>.624**</td>
<td>.312*</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Co-LoAlt</td>
<td>.415**</td>
<td>.433**</td>
<td>.422**</td>
<td>1</td>
</tr>
</tbody>
</table>

**Correlation is significant at the .01 level (2-tailed)
*Correlation is significant at the .05 level (2-tailed)

Second-Order Model of Volunteer Motivation

Based upon the acceptable results of the first-order CFA measurement model for volunteer motivation, a second-order model of volunteer motivation was tested to determine whether five first-order latent variables could be explained by a higher order structure, which is a single second-order latent variable of the global construct of volunteer motivation. The model for this study is a hierarchical factorial structure composed of first-order factors (social/leisure, material, egoistic, purposive and external) labeled as unobserved endogenous variables and one independent second-order factor (volunteer motivation) labeled as an unobserved exogenous variable.

The second-order model for the volunteer motivation was needed to test whether five first-order latent variables could be explained by the higher order structure. Based on the results of the first-order model test, four problematic items (item 7, 8, 12 and 17) for which the loading value was below .707 were discarded before conducting the test.

The results indicated that the hypothesized second-order model...
Committed Sport Volunteers
evidenced an acceptable model fit to the data ($\chi^2[278] = 722.0901; p < .05; \chi^2/df = 2.59; \text{RMSEA} = .072; \text{CFI} = .98; \text{and PNFI} = .69$). The factor loading between the five first-order latent variables and the second-order factor were .916, .823, .712, .638, and .574, respectively, which were statistically significant ($p < .05$). The values of average variance extracted (AVE) were ranged .55 to .74 and all exceeded the recommended value of .50. These results evidenced relatively high convergent validity for the measurement model.

In addition, the results indicated that the correlations between the five constructs were .372 to .671 and did not exceed the criteria of .85 by Kline (1998). All of the five constructs satisfied this test for discriminant validity. The results supported for the discriminant validity of the measurement model. Figure 3 provides the results of CFA for second-order model volunteer motivation.

Second-Order Model of Volunteer Commitment

As represented in the conceptual framework, the concept of volunteer commitment was designed, to be illustrated as a hierarchical factorial structure composed of four first-order factors (Affective, Normative, Continuance-HiSac, and LoAlt) and a single second-order factor (Volunteer Commitment).

The results showed that all model fit indices of the model exceeded their recommended thresholds ($\chi^2[55] = 119.1481; p < .05; \chi^2/df = 2.16; \text{RMSEA} = .056; \text{CFI} = .99; \text{and PNFI} = .67$). The results indicated that the second-order measurement model for the volunteer motivation construct fit to the sample data. The first-order factors loaded significantly on the second-order volunteer motivation construct. The factor loadings between the four first-order factors and the second-order factors were .931, .881, .837 and .813, respectively. The values of average variance extracted (AVE) all satisfied the recommended value of .50, which are .61, .66, .72 and .78. The measurement model indicated relatively high convergent validity. The correlations between the four constructs were .542 to .783 and below the criteria of .85 by Kline (1998). The results supported for the discriminant validity of the measurement model. Figure 4 is the results of second-order model of volunteer commitment.

Structural Model (RQ 3)

- **RQ 3**: Are there any relationships among the selected demographic characteristics, motivation and commitment of volunteers in a marathon running event?

The hypothesized structural model was tested to identify the relationships among selected demographics (income, education and age), volunteer motivation and volunteer commitment. The hypothesized structural model consisted of a single endogenous variable (volunteer commitment) and four exogenous variables (income, education, age and volunteer motivation), which implied that the hypothesized structural model illustrated the direct effects of volunteer commitment upon income, education, age and volunteer motivation.

The results indicated satisfactory model fit to the sample data ($\chi^2[637] = 1338.1816; p < .05; \chi^2/df = 2.10; \text{CFI} = .99; \text{PNFI} = .71; \text{and RMSEA} = .051$). The factor loadings indicated that the five indicators of volunteer motivation were between .771 and .952.
and the four indicators of volunteer commitment were between .825 and .942. The coefficients between the selected demographics (income, education and age) and volunteer commitment were .714, .511, .408, respectively. In addition, the path coefficient value between the volunteer motivation and volunteer commitment was .526. All results of path coefficient were statistically significant (p < .05). The sample data clearly showed that selected demographics (income, education and age) and volunteer motivation antecedes volunteer commitment (see Figure 5).

**Summary and Discussion**

The purpose of this study was to confirm the major constructs (dimensions) of volunteer motivation and commitment from previous research. The establishment of major constructs plays an important role in broadening knowledge regarding the motivation and commitment of volunteers in marathon events, as well as to make a significant contribution to future studies of volunteers at sport events. The results of CFA tests in order to examine the adequacy of the five-factor volunteer motivation scale and the four bases volunteer commitment scale indicated that measurement model satisfactorily fit the sample data and also supported the reliability and validity of the measurement model. In other words, the CFA provided an obvious support for a five-factor model of volunteer motivation and four bases model of volunteer commitment. In order to measure commitment of volunteers, most research includes only affective and normative commitment because of the assumption that volunteers are not associated with monetary or material benefits. However, this study supported a four bases measurement model, including CC: HiSac and CC: LoAlt for volunteer commitment. In spite of the similar characteristics of CC: HiSac and CC: LoAlt, the results satisfied the construct and discriminant validity. To support this result, it can be discussed that volunteers in this marathon running event had two different kinds of continuance commitment. In other words, volunteers can be both committed due to a low number of alternatives in other volunteer opportunities and high personal sacrifice in quitting the volunteer service in this marathon event.

The analysis of fit indices provided support for the second-order measurement models of volunteer motivation and volunteer commitment. The results proved that volunteer motivation is a multidimensional construct composed of five sub-dimensions, and egoistic (λ = .916) and material (λ = .823) factors were the strongest predictors of volunteer motivation. From these findings it can be explained that two factors are conceptually similar in that both factors tend to orient selfish motives for the benefit of volunteers.

The results of the second-order measurement model for volunteer commitment indicated that volunteer commitment is a multidimensional construct composed of four bases. The finding suggests different views from previous studies related to the commitment of volunteers. Most research did not insert continuance commitment to measure the commitment for volunteers because continuance commitment is related to job payment; a volunteer position is not a paid position (Hsieh, 2000). People are still involved in volunteer service because of many monetary benefits. For example, material factor (“I want to gain some practical experience toward paid employment”; “my employer/school is going to give me an extra bonus/credit for volunteering”; “complimentary items [t-shirts, goodie bags, free tickets] played a very important role in my decision to volunteer for this sport event”) and egoistic factor (“I want to challenge my ability”) of volunteer motivation are related directly to monetary benefits. These reasons to volunteer might result in continuance commitment of volunteers. Adding continuance commitment for volunteers was a major rationale, confirmed by CFA.

Another purpose of this study was to explore the relationships among the selected demographic characteristics, with motivation and commitment among volunteers at a marathon running event. The SEM results indicated that the standardized regression path between selected demographics (income, education and age), volunteer motivation and volunteer commitment were statistically significant (λ = .714, .511, .408, .526, p < .05). There was a positive association among three variables. It might be assumed that higher income, education and age influence higher volunteer commitment. Moreover, volunteer commitment increases when an individual’s volunteer motivation increases. These results were consistent with the previous studies about antecedents of commitment (Dailey, 1986; Hsieh, 2000; Meyer & Allen, 1997). These studies showed that demographics and motivation were the predictors of commitment. Even though all previous studies focused on organizational commitment, the results were consistent with this study. It might be said that commitment toward organization of volunteers is closely correlated with commitment toward volunteer work itself among volunteers. However, further
research is needed to generalize because sample of studies was still different. Most commitment studies focused on employees (i.e., paid employees in general company) or volunteers (i.e., 4-H volunteers) in a permanent organization, while the participants of this study were limited to the volunteers in a single sport event on an annual basis.

Implications

The current study contributes an integrated and detailed perspective to advance the knowledge of volunteer commitment in sport events; it confirms four bases believed to comprise the construct of volunteer commitment. While the five-factor model for volunteer motivation has been confirmed in a previous study, the four bases model for volunteer commitment has not been used in any studies.

By conducting an empirical analysis, the results of this study demonstrated that these four constructs fit data fairly well, indicating that the measurements are psychometrically sound and appropriate for representing the concepts. Although the four bases volunteer commitment model was acceptable for a marathon event, it is expected that other researchers may express a variety of quite different views about the sub-dimensions and primary dimensions of the volunteer commitment. Since no study has examined volunteers’ commitment with regard to the four bases used in this study, no direct comparison with previous studies can be made. In many previous studies of commitment for volunteers, continuance commitment has not been used due to its attribution that it focuses on monetary aspects; volunteer commitment is not a paid position. Therefore, it can be said that some researchers may disagree with the findings in this study regarding the four dimensions of volunteer commitment. However, many volunteers are still concerned about their egoistic benefits, especially sport volunteers, and it is connected to continuance commitment. This study has confirmed the conceptual validity of four bases volunteer commitment model, including continuance commitment. It is believed that the current study has contributed important implications in the academic area.

The hypothesized structural model was tested to explore the relationships among selected demographics (income, education and age), volunteer motivation and volunteer commitment. The model implied that the hypothesized structural model illustrated the direct effects of volunteer commitment upon income, education, age and volunteer motivation. In the test result, there was a significant relationship between the selected demographics (income, education and age) and volunteer commitment and between volunteer motivation and volunteer commitment. The sample data in this study indicated that selected demographics (income, education and age) and volunteer motivation antecedes volunteer commitment. It is believed that the findings from concepts of both motivation and commitment for volunteers in the current study represent a starting point for researchers to deeply investigate these two significant variables that are believed to affect volunteers’ participation and affiliation with sport events.

Useful implications important in relation to administrators, managers, marketers and volunteer coordinators in the sport event emerge from the results of this study. As it is widely known, volunteers are significant assets for economic and non-economic aspects of sport event management. Understanding the broad and diverse spectrum of volunteers and what will motivate them to be involved will be critical to ensure financial stability in event management. Recruiting and retaining volunteers are primary issues: (a) event management companies or sport organizations could use the information from this study to design their marketing efforts in a way that could appeal persuasively to this free labor during recruitment time; (b) when volunteer opportunities for involvement appeal to the individual’s motives, then that volunteer tends to be more effective at his/her assigned tasks, more committed to volunteer work, and more satisfied with the whole experience; (c) different kinds of motivation sets have proven to be strong predictive factors of volunteer retention; and (d) if the advantages taken from the experience match their initial motivation, volunteers tend to offer their services again in the future.

First, the reliable and valid scale developed for the study will prove useful in determining levels, among volunteers, of volunteer participation in sport events. For example, the scale of volunteer motivation may serve as a valuable tool in understanding volunteers, which will provide administrators and managers with a basis for segmentation of the existing motivation base. In addition, a clear understanding of the dynamics of volunteer commitment to a sport event is a critical component in both managing and increasing the potential revenues of a sport event. With this knowledge, marketers and managers can more effectively develop strategies and programs to both maintain and expand the motivation base.

Secondly, sport event marketers and managers can monitor levels of volunteer commitment through surveys and use the information as a basis for volunteer retention. Information relating to individual levels of volunteer commitment to a sport event can be electronically stored for use in developing and maintaining a large motivation base through individualized marketing; such information would provide an essential basis for developing programs customized for the volunteer commitment levels of spectator groups. In order to maintain high psychological-commitment levels in the volunteer base, marketers and managers should use reinforcement strategies that include reinforcing volunteer commitment through personalized encouragement, such as sending newsletters focused on reinforcing existing cognitions to avoid the possibility of losing committed volunteers, asking volunteer clubs to actively maintain the identification between a sport event and such volunteers, and treating such volunteers as significant because they may decrease their commitment level slowly over time if they are ignored by sport team marketers and managers.

Limitations and Recommendations for Future Study

This study focuses on volunteerism in a marathon event, and major variables used in this study include the selected demographics, motivation and commitment for volunteers. The generalizability of the results in the current study is limited to volunteers merely from the sample of one marathon event. The current study is a first attempt to conduct empirical tests in developing the measurement of the four bases of volunteer commitment. Some questions need to be answered regarding the findings of the study by using the same measures. Can the current findings be generalized to the population of sport volunteers? Does the scale demonstrate reliability and validity when employing the sample from different marathon
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events, sport events and countries? Due to the complexities of volunteer behavior, it is recommended that future research should be undertaken with more diverse samples of sport volunteers.

This study was designed to examine the relationships between motivation and commitment of volunteers. A future study might test various models associated with different variables, including satisfaction, involvement and future intention of volunteers, as well as motivation and commitment of volunteers. These diverse models will suggest ideas for volunteer coordinators, event managers and marketers to retain qualified volunteers.

It would also be useful for future studies to polish the written instrument by delineating among altruism, egoism, external influence, leisure and social obligation motivation in order to more clearly elicit the true reasons to volunteer. In other words, future research may employ a qualitative approach to acquire ideas suggested by managers and volunteers to develop items so that the validity and reliability of the scale are improved.

References
Female Secondary School Adolescents' Sexual Behavior and School Based HIV/AIDS Education Program

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Abstract

Most adolescents engage in indiscriminate sexual experimentation. This practice exposes them to the risk of contracting sexually transmitted infections including HIV/AIDS. Human immunodeficiency virus (HIV) and acquired immune deficiency syndromes (AIDS) are among the deadly diseases that exist globally. Twice as many girls, compared to boys engage in sexual activity before the age of 15 years (Federal Republic of Nigeria (FRON), (2012). The knowledge of HIV prevention is significantly less among girls aged (15-19 years) compared to boys of the same age range. HIV/AIDS keeps increasing in Nigeria and fewer schools provide life skills-based HIV/AIDS education. Schools are considered the primary centers for impartation and acquisition of knowledge and skills. This study investigated the sexual behavior of female secondary school adolescents and school-based HIV/AIDS education. Descriptive survey was the data collection method used. Female secondary school students (n=2010) completed the questionnaire forms on sexual behavior. Teachers (n=50) participated in in-depth interviews on school based HIV/AIDS education. Quantitative data were analyzed with descriptive statistics. Qualitative data were transcribed and analyzed. Validity of the qualitative data was established through the use of member checks. One thousand five hundred and seventy-two participants were sexually active (78.5%). Four hundred and thirty participants never had sexual intercourse (21.5%). Sexually active adolescents who used preventive measures of different types totaled 911(58.0%). Six hundred and sixty one participants (42.0%) did not use any preventive measure. Findings revealed sexually active participants were at increased risk of HIV/AIDS infections. In-depth interviews determined no significant HIV/AIDS education in the schools. A high number of sexually active adolescents suggests the need for more intervention programs on life skills-based HIV/AIDS and sexuality education.

Introduction

Adolescents are at increasing risk of contracting the deadly disease of Human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS). HIV/AIDS is a major global health problem (World Health Organization, (WHO), 2013). According to WHO (2013), sub-Saharan Africa is the most affected region. School-based HIV/AIDS education programs might assist in preventing the spread of this deadly disease among adolescents. Concerns related to this study include the fact that the birth rate among Nigerian adolescents is one of the highest in the world (The Joint United Nations Program on HIV/AIDS (UNAIDS) & WHO, 2000). Also, HIV/AIDS infections have no known cure (WHO, 2013). Additionally, the prevalence rate of sexually transmitted infections including HIV/AIDS among female Nigerian adolescents is on the rise (UNAIDS & WHO, 2000).

In the year, 2000, a national reproductive health policy was formulated to check risky sexual behavior during adolescence but it failed (WHO, 2001). Obsolete and incomplete information on sexual knowledge, attitudes, and behaviors of adolescents in Nigeria contributed to the failure (WHO, 2001). The picture of the future of any nation might be painted from the prevailing lifestyles of her adolescents. In Nigeria, generally, open discussion of sex is seriously frowned upon and not encouraged. Ironically, discussing sex with adolescents is disapproved even though they are sexually active. Sexual education that would have helped in reducing the vulnerability of adolescents is also opposed by some religious and cultural settings (Odutolu, Mafeni, Okonkwo, & Fajemisin, 2006).

The situation is further made worse by many Nigerian parents and adults who believe that sexual health education will expose the adolescents to sexual activity.

On the contrary, Nayar (2011) posited that sexual health education to adolescents helps in preventing HIV infection. Studies globally reported by the WHO reveal that sexual health education helps in delaying initiation of sexual activity and reduces the rate of risky sexual behavior (Kirby, Laris & Rolleri, 2007). They added further that sexual health education offered at the right age and time might reduce the vulnerability of adolescents to HIV infection through the reduction in risky sexual behavior. The ignorance and unwillingness of parents and teachers to address adolescent sexual health issues including HIV and AIDS education increases the tendencies of adolescents to risky sexual behavior (Sofo, Ali-Akpajia & Pike, 2003).

Globally, people from 15-29 years of age constitute half of the new HIV infection cases (Nayar, 2011). This is due, in part, to the failure to provide sexual and HIV education, which is part of the proven strategy for the prevention of HIV (Nayar, 2011). There is a need to provide sexual health education in schools, homes and communities. Schools stand out as an important setting because of the large collection of adolescents present (Nayar, 2011). The right information will help in arming and sensitizing adolescents against risky sexual behavior. Failure to provide this sexual health information therefore predisposes adolescents to psycho-social health problems, satisfying their curiosities based on the wrong information from wrong sources and wrong interpretations of sexual anatomy and physiology (Nayar, 2011).

The main purpose of this study was to determine the sexual behavior of female secondary school adolescents, and the place of HIV/AIDS-based school education programs in meeting their sexual health needs. The outcome of this study will provide practical information for policy makers in designing informed intervention programs that will meet the sexual health needs of female secondary school adolescents.

Secondary School Adolescents’ Sexual Behavior

According to the Federal Republic of Nigeria (FRON), (2012), twice as many girls than boys engage in sexual activity before the
Adolescents are exposed to high risk of HIV/AIDS infections (Ergene, Cok, Tumer & Unal 2000). The situation becomes worse in a country like Nigeria where the concept of sex cannot be openly discussed even while the young people are clearly sexually active. This situation in Nigeria is in line with researchers who attributed the rise in HIV infection to lack of preventive knowledge (Wu, Liu, Wang, Wu & Wang, 2010). It is important to educate adolescents on wholesome attitudes and behaviors that are capable of preventing sexually transmitted infections (Liao, Jiang, Yang, Zeng & Liao, 2010). Wholesome attitudes, behavior, and opinions of adolescents on sexual issues are capable of contributing to the transformation of any social environment (Cheng, et al., 2008).

Adolescents are the future of any nation, thus, guiding them against experimentations with certain life style practices capable of ruining their lives such as premarital sex is very important. Whatever affects the adolescents is capable of extending to adult life. The period of adolescence is one of the most intriguing and difficult transitions in the life span of a mankind (Adegoke, 2003). Adolescence is defined as a period characterized by an array of challenges and confusion both to the adolescents and the adults who are supposed to show understanding (Moronkola, 2003). This affirms the assertion of Fakunle (1996) and Falaye (1998) that adolescence is a critical period that signals the end of tranquility of childhood and heralds the onset of frustration of early adulthood.

According to Krost, Forrest and Harlap (2001), the period of adolescence is the most controversial of all the three developmental stages due to experimental risky behaviors associated with it. Most people begin their sexual relationship during adolescence and some get involved in risky life threatening behaviors such as unwanted pregnancies, abortions, and sexually transmitted infections (Action Health Incorporated [AHI], 2003). This can be attributed to ignorance in interpreting and managing self in response to the upsurge of hormones during this period. Contributory factors also include lack of information on sexual health and HIV, low levels of condom use, and high levels of sexually transmitted infections (United Nations General Assembly Special Session [UNGASS], 2010).

Female adolescents form a very important numerical component of a rapidly growing number of adolescents in Africa (Adegoke, 2003). The growth rate of female secondary school adolescents keep increasing rapidly and this has serious social implications for Africa and the entire world (Adegoke, 2003). Women are particularly affected by HIV and in the year 2009, women accounted for 56% of all adults aged 15 years and above living with the virus (UNGASS, 2010). According to the Staying Alive Foundation (2011), 76% of people infected with HIV/AIDS are females within the age range of 15-19 years old. Adolescence is a difficult period for girls and even for those with a strong safety net of support at home and school. The physical changes of puberty coincide with enormous emotional and psychological challenges (Brooks-Gunn & Reiter, 1990). Female adolescents have sexual and reproductive health needs that remain poorly understood or adequately attended to worldwide (WHO, 2004). It can be seen from the foregoing that neglecting this population has serious implications on the future of any nation.

Sexual activities of female adolescents predispose them to adverse effects including unwanted pregnancies, unsafe abortions, and sexually transmitted diseases including HIV/AIDS. In Nigeria, both the brothel and non-brothel female sex workers rank first on the most at risk to HIV infections group (Federal Republic of Nigeria, 2012). According to Wellings, et al. (2006), the use of condoms has increased among adolescents but levels of use are still not sufficient to substantially reduce the spread of HIV (Central Intelligence Agency [CIA] World Fact book, 2010). According to the CIA World Fact book (2010), the prevalence rate of HIV/AIDS in 2008 was 5.4% of people within the age range of 15-49 years old. Young females have been more at risk than their male counterparts (Country Profile, 2008).

There is a need to acknowledge the sexual activity of adolescents in Nigeria as evidenced in other developed countries. It is also important to provide for their sexual health needs with targeted education and preventive care services to help in reducing risky sexual behavior and the negative consequences (Allan Guttmacher Institute 2001; Kirby, 2001).

**HIV/AIDS Epidemic in Nigeria**

Nigeria is one of the countries with the highest burden of HIV infections in the world, next only to India and South Africa (UNAIDS, 2012). Approximately 3.5 million people were living with HIV in Nigeria in 2011 (UNAIDS Global Report 2012). Nigeria has the third largest number of people living with HIV (Country Profile, 2008). The HIV epidemic in Nigeria is complex and varies widely by region. It concentrates more in some states than others. The epidemic can be attributed to high-risk behaviors such as having multiple sexual partners (Country Profile, 2008).

The vulnerable groups to HIV in Nigeria are the youth and young adults. UNAIDS report indicates that Nigeria has the second highest number of new HIV infections in the world and lacks the necessary HIV related investments to combat the disease (Diamond, Kirk-Greene, & Oyediran, 2011). According to statistics of the National Agency for the Control of AIDS (NACA), in 2008, the annual death rate in Nigeria was 192,000, but has risen to 217,148 deaths which may not be unconnected with the lack of access to treatment. Out of 3.5 million Nigerians confirmed to be HIV positive, only 300,000 have access to antiretroviral drugs, which is key to managing the disease (NACA, 2012).

**Secondary School Based HIV/AIDS Education**

Sexually transmitted and HIV infections are common among young people within the age range of 15-24 years old (Urmil, Dutt, Sharma & Ganguly, 1999). In a study conducted by Gao, et al. (2012) in China, it was found that most of the study participants who were students lacked the basic knowledge of HIV/AIDS and the mode of transmission. Significant improvement in knowledge and attitude only followed after intervention. Obviously, this ignorance might be responsible for the rapid proliferation of this deadly infection among secondary school students. This needs to be addressed through well-designed, intervention programs.

Schools are seen by program and policy makers as strong centers for dissemination of HIV/AIDS information and education.
This is because schools have a large collection of young people and their mandate is to educate. This is why school-based HIV education is seen as a ‘social vaccine’ that can serve as an effective preventive tool (Lal, Nath, Badhath & Ingle, 2008). Unfortunately in Nigeria, only 23% of schools were providing life skills-based HIV education. Only about 25% of men and women between the ages of 15 and 24 years could correctly identify ways to prevent sexual transmission of HIV and rejected major misconceptions about HIV transmission (UNGASS, 2010; Federal Republic of Nigeria (FRON), 2012). According to FRON (2012), twice as many girls than boys engage in sexual activity before the age of 15 years old. Data from the Nigerian government revealed that about 10% of the global population of people with HIV live in Nigeria (UNAIDS, 2010).

The importance of clarifying needs before intervention can never be over-emphasized. The Niger-Delta area where the research took place still lacks adequate research data on this subject matter (Inyang, 2009). Okpani (2000) earlier noted the paucity of data on aspects of adolescents’ sexual activity in Rivers State. In other nations like China, schools are the basic arena for the introduction of HIV/AIDS education (Liao, et al., 2010). School- based HIV/ AIDS education can be likened to the community control of disease approach, which has to do with a change in behavior. This can be primarily achieved through increasing awareness and knowledge (WHO & Family and Reproductive Health, 1996).

Methods

Participants

The research participants totaled 2,010 female secondary school adolescents from public schools of the Niger Delta Region of Nigeria. Senior Secondary 1 (SS1) to Senior Secondary 3 (SS3) students participated in the study. Participants were only female adolescents within the age range of 10 to 19 years old. A multistage sampling technique (3 stages) was used in selecting the participants for the study. In the first stage, a purposive sampling technique was used in selecting 20 public schools from the total number of schools in the study area. Secondly, a proportional sampling technique was used to determine the number of participants to be selected from each school. In the third stage, a simple random sampling technique was used in selecting the earlier determined number of participants from each school. The demographic characteristics of the participants are represented in Table 1.

Research Design

A mixed methods research design was used for the study. Descriptive survey research (quantitative research) involved the use of a questionnaire, which was administered on students who were the research participants. The title of the questionnaire was Questionnaire on Female Secondary School Adolescents’ Sexual Behavior (QFSSASB). The questions were partially self-structured and partially adapted from a questionnaire on young people’s sexual behavior. In-depth interviews were conducted on the teachers of the schools that participated in the study to find out the place of HIV/AIDS school-based education programs in their schools.

Procedure

Informed consent and assent were obtained accordingly from the heads of schools and the study participants. The study participants were assured of confidentiality and anonymity. They were given the right to withdraw at any point. While completing the questionnaire they were encouraged to stay apart from their peers to further assure confidentiality, thus enhancing accuracy of responses. They were made to complete the questionnaires on the spot to also enhance a high return rate. The study started with the collection of data on sexual behavior of female secondary school adolescents. Due to the sensitive nature of the study additional steps were taken further to enhance anonymity and confidentiality. Study participants were spaced out to enhance privacy. Participants were also encouraged to submit their questionnaire forms by themselves in to a basket provided when they were through with the completion. This were necessary to elicit correct and unbiased responses.

The in-depth interview is a type of qualitative research and was carried out on 50 teachers on the provision of HIV-based education programs in their schools. It was not as rigidly structured as the survey questions. It involved asking open-ended questions orally by the researcher while the participants’ responses were recorded. The participants did most of the talking while the researcher listened, took notes and guided the conversation through the use of a question guide.

Instrumentation

Sexual behavior. The questionnaire on sexual behavior was divided into two sections, A and B respectively. Section A was on demographic characteristics of the study participants. Section B was on sexual activity. Questionnaire items were extracted from those previously used in a similar study on female secondary school adolescents’ sexual behavior (Adamchak, et al., 2000). Sample items on the questionnaire were: (a) Do you have a boyfriend? (b) Have you ever had sex with your boyfriend? (c) Did sex take place willingly or was it pressurized? (d) Are you having sex for the first time? In a previous study (Inyang 2009), the reliability of the instrument was (r=0.89) and the validity was acceptable. To ensure that the research measured what it intended to measure, the questionnaire instrument was subjected to face validity for judgment at face value. Content validity was done to ensure the coverage of the necessary areas addressed by the study. Construct validation was done to ensure the instrument aligned with all the concepts. These were carried out by the consulted experts in the field and related fields. Corrections and suggestions made were effected accordingly.

School-based HIV education program. In-depth interviews were conducted on the research participants who were teachers from secondary schools. A ten-question interview guide was used. All the participants were interviewed in their schools.

The purpose of qualitative research is to describe the phenomena of interest through the eyes of the research participants. Participants being the only ones to judge legitimatly the credibility of the results were used to establish internal validity. Transferability assessed the extent the results could be generalized. This was done to establish the external validity and it was the sole duty of the researcher. Sample questions on the interview guide included (a)

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HIV/AIDS is taught in this school as a separate subject including the transmission and non-transmission modes, preventive and self-protective measures. (b) HIV/AIDS is only mentioned in passing without much deliberation when teaching other subjects like biology or integrated science. (c) This school has once witnessed a training program on HIV awareness and teaching techniques for teachers. (d) Teachers have supplementary HIV/AIDS promotional materials such as visual aids, videos, posters and pamphlets to help in teaching the topic. (e) High risk behaviors are clearly explained to the students and this school has a HIV/AIDS club. The tape recordings were transcribed for data analyses at the end of the interview.

Data Analyses

Descriptive statistical analysis was done on the quantitative data to describe the characteristics of the sample and participants’ sexual behavior. Qualitative data were transcribed. Analysis of the transcribed text was done with a framework for qualitative data analysis (Miles & Huberman, 1994). Conclusions were drawn from deductions made from participant’s responses.

Results

Descriptive statistics. Descriptive statistics on demographic characteristics of research participants revealed that most of the research participants were within the age bracket of 14-17 years old. The next largest sample resided in the 10-13 years old bracket. Those within the age bracket of 18-19 years contributed the least to the total number of participants. Christians totaled the highest number of participants when it came to religious affiliation.

Descriptive statistics were done on the variables used in determining the sexual behavior of research participants. The majority of research participants had boyfriends, and were sexually active and experienced. Lesser numbers had boyfriends, but did not engage in sexual intercourse. Very few research participants were without a boyfriend. Some research participants did not respond to this item (Table 2). Considering the participants that experienced sexual intercourse as at the time of data collection, the majority had sex willingly, while fewer participants were persuaded in different ways into having sex (Table 2).

<table>
<thead>
<tr>
<th>Table 2. Descriptive Statistics on Sexual Behavior of Research Participants</th>
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<tbody>
<tr>
<td>Sexual Behaviour</td>
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<tr>
<td>Participants’ boyfriend/sexual experience</td>
</tr>
<tr>
<td>Had boyfriends and sexually experienced</td>
</tr>
<tr>
<td>Had boyfriend without sexual experience</td>
</tr>
<tr>
<td>Had no boyfriend at all</td>
</tr>
<tr>
<td>No response</td>
</tr>
<tr>
<td>Total</td>
</tr>
<tr>
<td>Experienced sexual intercourse willingly</td>
</tr>
<tr>
<td>Sexual experience took place willingly</td>
</tr>
<tr>
<td>Sexual experience did not happen willingly</td>
</tr>
<tr>
<td>No response</td>
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<tr>
<td>Total</td>
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</table>

Statistical analysis on the age of sexual debut showed that some participants had sexual intercourse as early as the age of 10. Most of the participants had sex by the age of 16 years old (Table 3).

<table>
<thead>
<tr>
<th>Table 3. Ages of Sexual Debut of Research Participants</th>
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<tbody>
<tr>
<td>Ages (yrs)</td>
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<td>16</td>
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<td>17</td>
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<tr>
<td>18</td>
</tr>
<tr>
<td>No sex</td>
</tr>
<tr>
<td>No response</td>
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<tr>
<td>Total</td>
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</tbody>
</table>

Data analysis determined that condoms were the contraceptive method used the most by participants. Most of the participants reported not using any form of contraception, however (Table 4). Generally, the choice and use of contraception varied among schools. The same observation was made on the different age groups.

Qualitative Data Analysis

Qualitative research participants were made up of 50 male and female teachers purposively selected. Ten public secondary schools in Niger Delta Region of Nigeria participated in the study and five teachers were selected from each school. Teachers of
different subjects were preferred as participants to rule out bias. In-depth interviews with all the teachers revealed that HIV/AIDS was not taught in detail as a separate topic. Teaching did not delve into transmission and modes of transmission of HIV/AIDS. The teaching of HIV/AIDS only came up in passing during the teaching of subjects such as biology and integrated sciences. This situation was attributed to the absence of qualified health educators in the secondary schools. The responses were similar from the teachers in the various schools.

The method of word repetition was used in establishing the emerging themes from the data. In-depth interview data review revealed that participants repeatedly referred to ideas associated with a lack of specialists and professionals, inadequate information on HIV/AIDS, non-specialists, students not well informed, no health education in the curriculum, health education, not an independent subject, poorly understood, secondary school students and HIV/AIDS only mentioned in passing. A typical teacher response was:

The unfortunate situation might be attributed to non-existence of Health Education as a separate subject in our schools. Those that attempt to handle this topic of HIV/AIDS cannot handle it with passion since it is not exclusively their responsibility. Those that also attempt to provide HIV/AIDS education lack adequate knowledge to do so effectively (male teacher).

On the use of promotional materials to teach HIV/AIDS, a typical response was:

It is not possible to use promotional materials when the topic is not handled by those qualified to do so. It is only when qualified health educators are handling the topic that they can apply other innovations to enhance students’ understanding. That is only when the promotional videos, posters and pamphlets could be introduced. Qualified health educators would be able to address it adequately since it is their area of specialty. We only mention it in passing in our schools. We do not see the teaching of HIV/AIDS as a priority (female teacher).

There was no HIV/AIDS club in existence in any of the schools. Any form of HIV/AIDS education that existed in all of the schools was very shallow. Most of the teachers did not demonstrate a good understanding of the subject of HIV/AIDS and high-risk behaviors.

### Discussion

The study focused on establishing the sexual behavior of female secondary school adolescents in Nigeria. The study also sought to find out if school-based HIV/AIDS health education programs were in place to cater to the sexual health needs of female adolescents. The descriptive analyses revealed that most of the respondents were sexually active. The high number of sexually active respondents affirmed the position of (UNGASS 2010) that 80-95 percent of HIV infection in Nigeria is due to heterosexual sex. There were those that started their premarital sexual activity as early as the age of 10 (Table 4). This finding corroborates the position of FRON (2012) that twice as many girls as boys engage in sexual activity before the age of 15 years old. This early sexual debut can be attributed to absence of age-appropriate sexual health education.

According to studies as reported by (WHO, 2001; 2004), sexual health education helps in delaying initiation of sexual activity and reduces risky sexual behavior. The highest number of research participants started their sexual activity at the age of 16. These findings can be attributed to the fact that open sexual discussion and age appropriate sexual health education for adolescents are seriously frowned upon in Nigeria. This is the situation even when the adolescents are sexually active.

Early sexual debut revealed by this study might be attributed to the attitude of Nigerian parents towards sexual health education. Parents should be the first age appropriate sexual health educators as they are the primary contacts of the children. The findings can also be attributed to parental encouragement (Inyang, 2009). In a focus group discussion on sexual behavior conducted by (Inyang, 2005) in Niger Delta Region of Nigeria, most participants submitted that some parents encouraged the children into premarital sexual activity as a money-making avenue. Most of those that were sexually active were not also using contraceptives. Measures. This finding aligned with the position of UNGASS (2010) concerning low levels of condom use among the adolescents due to lack of information on sexual health and HIV. The high number of sexually active participants in this study also attests to the height of ignorance among female adolescents. The unwillingness of parents and teachers to address adolescent sexual health issues including HIV/AIDS education increases the tendencies of adolescents to risky sexual behavior (Sofo, et al., 2003).

Qualitative analysis revealed the absence of any significant form of HIV/AIDS health education programs in the schools. This finding aligns with the 2009 situation in Nigeria where, only 23 percent of schools were providing life skills-based HIV education, and just 25 percent of men and women between the ages of 15 and 24 years correctly identified ways to prevent sexual transmission of HIV and rejected major misconceptions about HIV transmission (Federal Republic of Nigeria (FRON), 2012; UNGASS, 2010). These current findings revealed no remarkable improvement. This situation might be responsible for the high number of sexually active students and the lack of contraception use.

In summary, female secondary school adolescents in this study were highly sexually active. Most of them indulged in unprotected premarital sexual practices. Their sexual health needs were not

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**Table 4. Descriptive Statistics on Use of Contraception by Research Participants**

<table>
<thead>
<tr>
<th>Contraception</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Used contraception during sexual intercourse</td>
<td>436</td>
<td>24.4</td>
</tr>
<tr>
<td>Did not use any contraception</td>
<td>1256</td>
<td>70.2</td>
</tr>
<tr>
<td>No answer</td>
<td>97</td>
<td>5.4</td>
</tr>
<tr>
<td>Total</td>
<td>1789</td>
<td>100</td>
</tr>
</tbody>
</table>

**Types of Contraception Used**

- Condoms: 201 (46.1%)
- Withdrawal method: 78 (17.9%)
- Pills: 52 (11.9%)
- Safe period: 63 (14.5%)
- Others: 42 (9.6%)
- Total: 436 (100%)

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*HIV/AIDS Education Program*
provided for as revealed by the study through the absence of any significant school-based HIV/AIDS health education programs in schools. Lack of providing for their sexual health needs increased their vulnerability to risky sexual behavior and HIV/AIDS infection through ignorance. This was deduced from the number of those who were sexually active.

The study revealed an obvious need for sexual and HIV/AIDS health education intervention programs. Significant improvement in knowledge and attitude will only follow after intervention. Obviously, ignorance is responsible for the rapid proliferation of this deadly infection among secondary school students. This needs to be addressed through well-designed, intervention programs. Schools are seen by program and policy-makers as a strong center for the dissemination of HIV/AIDS information and education. This is so because schools have a large number of young people. This is why school based HIV education is seen as a 'social vaccine' that can serve as an effective preventive tool (Lal, et al., 2008).

Qualified health educators with confidence should be posted to secondary schools for effective handling of issues in their area of specialization. Age-appropriate sexual health and HIV/AIDS education, which is tailored towards teaching the students how to prevent the onward transmission of HIV/AIDS infection should be made available in Nigerian secondary schools. Policy-makers as well as school teachers should take advantage of the unique position of schools to reach every young person with the education that will proffer an effective solution in preventing the spread of HIV/AIDS epidemic. Teachers, school administrators, parents, other caregivers and community partners should be well equipped with the right knowledge for effective education and promotion of healthy sexual practices.

References


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