

Sports at Work: Anticipated and Persistent Correlates of Participation in High School Athletics

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Kevin M. Kniffin¹, Brian Wansink¹, and Mitsuru Shimizu²

Abstract

Do former high school athletes make better employees than nonathletes? Two studies examine how participation in competitive youth sports appears to be relevant for early-career job prospects as well as late-in-life outcomes. In the short run, Study 1 shows that people expect former student-athletes to display significantly more leadership, self-confidence, and self-respect than those who were active outside of sports—such as being in the band or on the yearbook staff. In the long run, Study 2 uses biodata to discover that men who participated in varsity-level high school sports an average of 60 years earlier appeared to demonstrate higher levels of leadership and enjoyed higher-status careers. Surprisingly, these ex-athletes also exhibited more prosocial behavior than nonathletes—they more frequently volunteered time and donated to charity. These findings open a wide range of possibilities regarding how one's participation in competitive youth sports might influence the development of important skills and values beyond simply signaling the specific traits examined here. Moreover, this contributes to theoretical debates about the traits of students involved in competitive athletics, and it highlights the need for closer attention to the relevance of sports in the workplace and beyond—including late-in-life charitable giving and voluntarism.

Keywords

biodata, high school sports, leadership, prosocial behavior, student-athletes

The use of biodata for employee selection is broadly employed on the presumption that a person's prior activities reflect a pattern of behavior that will persist into the future and correlate with successful employee outcomes (e.g., Stokes, Mumford, & Owens, 1994; Zibarras & Woods, 2010). Previous research has demonstrated that biodata variables have value for employee selection that is comparable with measures such as general mental ability, conscientiousness, and traditional personality surveys (e.g., Cucina, Caputo, Thibodeaux, & Maclane, 2012; Mount, Witt, & Barrick, 2000; Mumford, Costanza, Connelly, & Johnson, 1996). With respect to the specific kinds of biodata that have value for organizations, though, Breugh (2009) laments that “relatively little attention has been given to the specific items used in biodata studies” (p. 228).

One specific biodata variable that has been surprisingly understudied is whether or not a person played competitive youth sports. In addition to the attractive methodological fact that people are less likely to mis-report verifiable activities (e.g., Harold, McFarland, & Weekley, 2006) such as playing on a varsity high school sports team, there are multiple theoretical and applied reasons why the variable warrants closer attention. First, given that 43% of contemporary high school seniors in the United States report participating

in some form of athletics (Feldman & Matjasko, 2005), it is clear that the experience of playing sports is very commonly part of students' educational experiences in the United States. Second, researchers in economics and education have demonstrated a robust pattern in which former student-athletes tend to earn significantly higher incomes than people who did not play sports (e.g., Barron, Ewing, & Waddell, 2000; Ewing, 2007; Persico, Postlewaite, & Silverman, 2004; Stevenson, 2010); however, they have not examined the mechanisms for why such a relationship exists. Third, organizational researchers have reported an array of results concerning the positive and contemporaneous influence of physical exercise on occupationally important outcomes such as job satisfaction (e.g., Daley & Parfitt, 1996), recovery from job stress (e.g., Sonnentag & Niessen, 2008), and transitions into retirement (e.g., Kloep & Hendry, 2006); however, those studies have not considered the

¹Cornell University, Ithaca, NY, USA

²Southern Illinois University Edwardsville, IL, USA

Corresponding Author:

Kevin M. Kniffin, Dyson School of Applied Economics and Management, Cornell University, Warren Hall 111, Ithaca, NY 14853, USA.
Email: kmk276@cornell.edu

specific and distinct biodata variable of past participation in youth sports. Fourth, evidence from practitioners as well as qualitative field researchers indicates that specification of past participation in competitive youth sports is important for résumé development, responses to interview questions (e.g., *USA Today*, 2001), and ultimately being hired (e.g., Rivera, 2012); however, these propositions have not been systematically examined.

While the domain of athletics has been considered a trivial item within organizational studies in the past (e.g., Frey & Eitzen, 1991), the dynamics found in sports teams are increasingly being explored for the sake of generalizable lessons that organizational researchers might be able to extrapolate (e.g., Day, Gordon, & Fink, 2012; Wolfe et al., 2005) in the same kind of way that researchers have traditionally looked to military organizations as generalizable models (e.g., Ramthun & Matkin, in press). Topics of such sports-based research have included the dynamics of cultural change within franchises (Frontiera, 2010), the nature of turnover among coaches (e.g., Hunter, Cushenberry, Thoroughgood, Johnson, & Ligon, 2011), the importance of team membership for interpersonal perceptions (Kniffin & Wilson, 2004), the presence or absence of momentum from game to game (e.g., Kniffin & Mihalek, 2014), and the effects of salary dispersion among teammates (e.g., Bloom, 1999; Kniffin, 2009). Notwithstanding limitations that result from any organizationally unique aspects of sports teams (Katz, 2001), one implication of this approach is that (a) if sports teams operate with many of the same dynamics as contemporary non-sports firms, then (b) it follows that participants—of any age—with experience as part of sports teams will implicitly have enjoyed opportunities to develop skills that have value outside of sports. Despite the broad array of biodata variables that researchers have considered as potential correlates of employee success (e.g., Carlson et al., 1999; Davis, 1984), the lack of previous focus on this variable is remarkable given the relatively high percentage of students who compete in youth sports (Feldman & Matjasko, 2005).

In this article, we contribute to the biodata literature by drawing on research from multiple disciplines to systematically consider the potential relevance of participation in youth sports for contemporary workplaces. As illustrated by Figure 1, we present two complementary studies that explore the relevance of participation in competitive youth sports for early-career selection processes as well as late-in-life personality and behavior. In the context of previous research that tends to look at the immediate or midlife correlates of participation in competitive youth sports, we address two important gaps by significantly expanding the scope of research on the relevance of sports for general work environments. While Study 1 focuses on the role of sports in relation to outcomes generated by selection processes, Study 2 goes beyond the temporal scope of midcareer success to examine

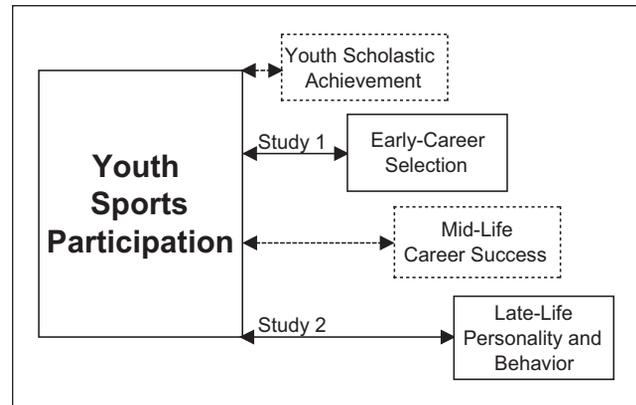


Figure 1. Outcomes examined by Studies 1 and 2 complement extant research on scholastic achievement and midcareer success.

long-term correlates for people whose working careers are mainly complete.

Theoretical Foundations and Hypothesis Development

While the value of biodata as a worthwhile aspect of employee selection processes has been well-demonstrated through numerous meta-analyses (Chamorro-Premuzic & Furnham, 2010), it is useful to consider reasons why biodata can generate value. In this respect, if an employer finds that answers to a select set of questions are most predictive of employee success, then the use of those biodata variables provides significant benefits that include cost-savings in relation to hiring as well as turnover costs. An important limiting condition that Lefkowitz, Gebbia, Balsam, & Dunn (1999) emphasize is that there are ethical and legal reasons why employers should avoid considering biographical variables such as height that typically have no reflection on an individual's choices, preferences, or skills.

Our interest in youth sports participation as an important correlate of a person's future performance is motivated partly by the fact that it is a relatively common and shared extracurricular activity for adolescents (Feldman & Matjasko, 2005). Three theoretical grounds that originate outside of biodata studies also motivate our interests. First, the notion that people learn important leadership lessons while they serve subordinate roles has been well developed and supported among studies of adults leading and following other adults (e.g., Kark & Dijk, 2007). Our conceptual model presumes that if adults can develop important leadership skills in relatively short periods, then we should expect that children can develop persistently important skills when exposed to organizational leaders. In the case of competitive youth sports, student-athletes— independent of whether or not they are captains or leaders of their teams—tend to be

exposed to leaders (i.e., adult coaches) who operate in an environment that rewards transformational leadership that is focused on prosocial traits such as respect, trust, and confidence (Dirks, 2000). With this background, our model expects that student-athletes—captains and noncaptains alike—tend to be exposed to important prosocial values through experiences that provide them with generalizable and persistent skills and lessons for life and work outside of sports (Sitkin & Hackman, 2011). This perspective is consistent with the context-specific idea that sports teams provide formative environments for people—especially children—to learn how to succeed with teammates in relation to group goals (e.g., O’Hanlon, 1982).

Second, when viewed from an abstract level, any team sports that involve balls, pucks, and/or batons tend to involve an intense amount of exchange among participants. For example, teammates on a football, basketball, baseball, or soccer team routinely exchange balls among themselves (e.g., during practices and competitions); teammates on a hockey team routinely exchange pucks; and teammates on a relay racing team routinely exchange batons. In this perspective and in light of social exchange theory (Blau, 1964), it is valuable to recognize that participants in team sports tend to engage in very intense “reciprocal trading” or “exchange” relationships with teammates and—following Organ, Podsakoff, and MacKenzie (2006)—there is reason to expect that participation in frequent exchange will correlate with an overall sense of fairness and organizationally beneficial traits that extend beyond the team.

Third, our conceptual model builds on findings from behavioral economists such as Frank (1988) who have highlighted that people often demonstrate commitment and consistency even when it makes no rational sense. A common illustration of this general proclivity is the consistent adherence to group norms that is demonstrated by the practice of tipping waitstaff in restaurants during extraordinary trips where the patrons are never likely to visit again. Given that team sports are designed to reward group-level achievements and appear to facilitate the enforcement of group-serving behavior (e.g., Kniffin & Wilson, 2005, 2010), previous research on the role of consistent commitment to group norms helps to inform our interest and approach. In effect, our model presumes that if people function as solid organizational citizens through their participation in youth sports, they will likely adhere consistently to that pattern of behavior throughout other aspects and periods of their lives.

Specific variables that we examine in relation to our model are described in the following sections, ranging from early-career selection to late-in-life personality and behavior measures. As illustrated by Figure 1, our interest in early-career selection processes is intended partly to illuminate the potential mechanisms that account for economists’ findings that midcareer salaries for former student-athletes tend to be significantly higher (e.g., Barron et al., 2000;

Ewing, 2007). Similar to Yammarino’s (2013) call for more research concerning ways in which antecedents to leadership interact over time, our interest in late-in-life measures is designed to test the degree to which past participation in youth sports might have relevance through a person’s full career. Our conceptual model specifically considers the relationship between past participation in competitive youth sports with higher levels of leadership, trust, confidence, and respect as well as a proclivity for prosocial behavior. The bidirectional arrows that we present in Figure 1 reflect the correlational nature of the two studies we present.

Early-Career Selection Preferences

While biodata is often and perhaps increasingly employed to help identify candidates for leadership positions within a firm, it has been most commonly employed as a selection process for reviewing new employee candidates. Biodata researchers often delimit their sources to biographical surveys or inventories that are distinct from other selection media such as interviews, applications, or personal statements (e.g., Zibarras & Woods, 2010); however, we adopt a more inclusive and literal approach in which biographical data constitutes biodata independent of the medium through which it is communicated. We adopt this approach since the background variable of past participation in sports is well-known to be important for résumé assessments and interviews (Rivera, 2012; *USA Today*, 2001).

Prior research concerning the correlation between participation in high school sports and relatively better scholastic outcomes tends to report that athletic activities help increase students’ concentration and general academic achievement (e.g., Lipscomb, 2007; Trudeau & Shephard, 2008) in addition to correlating with higher self-esteem, greater self-monitoring, and an internal locus of control (Swanson, Kowalski, Gettman, & Lee, 2012). In contrast with the idea that there are intrinsic improvements that are obtained through participation in competitive youth sports, it is worth recognizing the possibility that student-athletes enjoy advantages (e.g., higher grades) as a function of bias. Atwater and Yammarino (1992), for example, report that competitive colleges such as the U.S. Naval Academy favorably consider prior participation in athletics as part of their admissions decisions. Given that the military academies traditionally involve physical challenges as part of their curriculum (e.g., Lievens, Hoye, & Schreurs, 2005), a preference for former student-athletes in that domain would seem like a well-justified and sensible fit. For universities where physical skills are not directly relevant to the core curriculum, any preference in admissions for former student-athletes warrants closer study.

Given the model that we test in this article, whereby participation in competitive youth sports helps indicate a person’s leadership ability, personality, and behavior, we would

anticipate that former student-athletes will command a relative advantage in hiring processes, even in the context of entry-level, post-collegiate employment that has no direct relevance to sports. When considered alone, support for this hypothesis would reasonably be criticized as inappropriate favoritism. When considered in the context of a model whereby participation in youth sports is demonstrated to be a correlate of valuable character traits, then any patterns in support of the hypothesis become sensible.

Hypothesis 1: People with sports experience will be expected to demonstrate organizationally beneficial traits when compared with others.

Leadership

While there have been very few academic studies that systematically consider the influence of sports participation on leadership development, the main set of exceptions has shown that prior sports participation proved to be a strong predictor of leadership among military cadets over periods of 5 or fewer years (Atwater, Dionne, Avolio, Camobreco, & Lau, 1999; Atwater & Yammarino, 1993; Yammarino & Bass, 1990). In the context of our conceptual model, we expect that former student-athletes will tend to demonstrate relatively greater self-respect and self-confidence as well as leadership. Our expectations are consistent with popular perceptions of athletes (e.g., Borden, 2012) as well as previous research demonstrating the value of “soft skills” within professional employment contexts (Kuhn & Weinberger, 2005).

Hypothesis 2: Participation in competitive youth sports is a correlate of leadership skills as well as organizationally beneficial traits such as self-confidence and self-respect across decades.

Prosociality

In addition to the leadership skills and personality traits that we examine in Hypotheses 1 and 2, we expect that people who played high school sports will also demonstrate significantly more prosocial behaviors (e.g., volunteering, donating). Furthermore, we expect that the personality traits of former student-athletes will tend to mediate any differential patterns of prosocial behavior that exist between those who did and did not participate in competitive youth sports. In the context of our model, the basis for our expectations draws on the notion that employees who engage in organizational citizenship behavior will also tend to “spill over” their prosocial interests to extra-firm community goals (e.g., Gardberg & Fombrun, 2006).

While debates concerning ultimate and proximate reasons for why people engage in prosocial behavior are often heated

and wide-ranging (e.g., Wilson & Kniffin, 2003), our conceptual model is clear and focused on the propositions that (a) participation in youth sports helps participants to indicate that they behave in ways that serve group-level interests and (b) that such group- or team-serving behavior generally extends outside of sports. More specifically, our model presupposes that any “spill over” of group-serving or prosocial behavior that is required in most team sports will be a persistent trait that demonstrates itself across the lifespan.

Notably, our model is consistent with previous studies that have highlighted correlations between organizational citizenship behavior in the workplace and generalized orientations to help others—in and out of the workplace (e.g., Borman & Motowild, 1997). Indeed, it is interesting in the context of our studies that Organ (1997) uses the figurative label of “sportsmanship” to refer to “good soldiers” who, among other practices, do not strain their organizations with frequent complaining. Our studies permit testing of Organ’s figurative reference to “sportsmanship” as a description of community-oriented behaviors since we are uniquely considering the relationships between sports participation and organizational citizenship behavior. With respect to potential mediating factors, while Swanson et al. (2012) consider the potential relevance of self-esteem, self-monitoring, and locus of control as part of the relationship between sports participation and off-field behaviors, the current studies complement previous work by considering the potential relevance of self-respect and self-confidence.

Hypothesis 3: Participation in competitive youth sports is a correlate of prosocial, community-oriented behaviors.

Hypothesis 4: Leadership skills and organizationally beneficial traits that are specific to former student-athletes will mediate the relationship between participation in competitive youth sports and prosocial, community-oriented behaviors.

Career Success

Finally, to complement studies (e.g., Persico et al., 2004) that have shown that former student-athletes earn significantly higher salaries at age 30—approximately 12 years after high school graduation, our model proposes that participation in competitive youth sports will positively correlate with relatively greater career success across a person’s full working life. While not describing a causal relationship, our prediction with respect to career success across lifespans offers a bookend to our first hypothesis with respect to early-career expectations.

The finding from economists that former student-athletes tend to earn higher midcareer wages has elicited puzzlement from previous researchers. As Stevenson (2010) writes,

The fact that athletic participation (and only athletic participation among all extracurricular activities) is associated with higher wages suggests that sports have an especially strong correlation with a type of ability that is both an important determinant of wages and is not measured by other observable variables. (p. 286)

In the context of our model, we propose that participation in competitive youth sports signals a holistic set of leadership skills and behavioral traits that serve people well in the development of their careers.

Hypothesis 5: Participation in high school sports is a persistent correlate of career achievement.

Plan of the Research

We conducted two complementary studies that permit us to fill the important gaps that are illustrated through Figure 1 with respect to the potential relevance of prior participation in competitive youth sports for (a) early-career selection processes as well as (b) late-in-life leadership, personality, and behavior. In Study 1, we examine the existence of early-career selection preferences that might exist for former student-athletes. Specifically, Study 1 assesses the degree to which people expect former student-athletes to demonstrate greater leadership and organizationally beneficial personality traits. Consequently, Study 1 permits us to test Hypotheses 1 with respect to possible selection biases.

In Study 2, we draw on a data set of World War II veterans that permits us to look at the long-term correlates of participation in high school sports. With the benefit of data provided by people who completed high school 55 or more years prior to being surveyed, Study 2 permits us to test Hypotheses 2, 3, 4, and 5 to investigate the various kinds of “spill over” that our model expects as a correlate of participation in competitive youth sports. While Study 1 directly explores the potential for selection preferences in relation to past athletic performance, Study 2 has close relevance for the degree to which any biases in favor of former student-athletes might be justified.

Study 1: Method

Sample and Procedures

Sixty-six adults (41 women) recruited from a validated online sample (e.g., Buhrmester, Kwang, & Gosling, 2011) participated in exchange for monetary compensation and responded to questions about leadership abilities and character traits. To help ensure that participants had working experience, participants were eligible for Study 1 only if they were at least 25 years old and were not presently a full-time student. The average age of participants was 39 years old—living exclusively in the United States—and 21

respondents reported experience playing on a competitive sports team when they were high school students.

To avoid any potential priming effects, we asked participants for demographic information after they completed the main body of questions. As the main set of questions, participants were asked to use a 9-point scale to indicate their level of disagreement (1) and agreement (9) with a set of 4 statements that varied according to whether a person participated in one of four different extracurricular activities. More specifically, participants were asked to indicate the degree to which they thought “A person who [played Varsity Basketball in high school; or, played Varsity Cross Country in high school; or, played trombone in the high school Band; or, participated in the high school Yearbook club] is likely to display more” Self-Confidence, Leadership, Time-Management Skills, Volunteerism, Charitable Behavior, and Self-Respect. The four extracurricular variants, which reflect traditional sports and non-sports extracurricular activities, were presented to participants in randomized order.

Study 1: Results and Discussion

As illustrated by the descriptive statistics reported in Table 1, the findings from Study 1 are consistent with Hypothesis 1—people with sports experience are expected to display significantly higher levels of Leadership, Self-Confidence, and Self-Respect. More specifically, when ratings for Basketball and Cross-Country are pooled (i.e., Sports) in comparison with ratings for Yearbook and Band (i.e., Non-Sports), the within-subject analysis of variance (ANOVA) shows that Sports were rated higher than Non-Sports for Leadership ($F = 39.08, p < .001$), for Self-Confidence ($F = 67.95, p < .001$), and for Self-Respect ($F = 18.67, p < .001$).

In closer detail, when we tested for the potential moderating role of raters’ past experience in sports (e.g., in case former student-athletes were driving the preferences) and raters’ gender (e.g., in case men might have been driving the preferences), neither of those variables were significant, $ps > .46$. Notably, comparisons of the ratings for Sports and Non-Sports for Time Management Skills yielded no significant difference whereas raters tended to expect former student-athletes to be significantly less charitable with respect to Volunteering ($F = 16.75, p < .001$) and Donating ($F = 15.96, p < .001$).

Most generally, we can infer from these findings that people tend to expect former student-athletes to demonstrate greater leadership ability as well as organizationally beneficial personality traits; however, former student-athletes are not expected to be altruistic with respect to others. While Study 1 establishes a baseline for understanding biases that are reasonably expected to influence early-career selection processes, the reliance on estimates requires complementary investigation, which we describe below, with

Table 1. Study 1 Means and Standard Deviations.

	Former basketball player	Former cross-country runner	Former band member	Former yearbook member	Pooled comparison of sports and non-sports (F)
Leadership	7.42 (1.02)	6.73 (1.30)	5.17 (1.64)	6.62 (1.78)	39.08**
Self-Confidence	7.65 (1.00)	7.42 (1.11)	5.72 (1.62)	6.14 (1.94)	67.95**
Self-Respect	6.94 (1.21)	6.97 (1.23)	5.80 (1.73)	6.20 (1.72)	18.67**
Time Management	6.66 (1.31)	7.12 (1.10)	6.44 (1.61)	7.02 (1.69)	0.39
Volunteer	5.12 (1.75)	5.73 (1.44)	6.11 (1.70)	6.71 (1.63)	16.75**
Charity	4.98 (1.58)	5.50 (1.36)	6.03 (1.60)	6.44 (1.58)	15.96**

Note. Former student-athletes are expected to display greater leadership, self-confidence, and self-respect while donating less time and money.

* $p < .05$. ** $p < .01$.

respect to whether the expected behavior of former student-athletes matches with field evidence.

Study 2: Method

Sample and Procedures

We used data from the 2000 University of Illinois Veterans Survey (Bogan, Just, & Wansink, 2013; Wansink, 2002; Wansink, Payne, & van Ittersum, 2008; Wansink, van Ittersum, & Werle, 2009) that permitted us to study responses provided by a sample of 931 World War II veterans, whose ages at the time of the Survey varied from 73 to 91 years (with an average of 77.8 years).

As reported by Wansink et al. (2008), 66.7% of deliverable questionnaires were completed by the original sample. For our analysis, which considers variables that have not been examined by previous studies (Kirkman & Chen, 2011), we discarded the responses of 29 respondents who did not indicate their age or gender, 239 who were age 17 years or younger in 1945, since they would not have completed high school before the end of World War II, and 326 respondents who were women (e.g., widows of the questionnaire's intended recipients). Given the Survey's administration in 2000 and our focus on people who were at least 18 years old and could have completed high school when World War II ended in 1945, we can reasonably estimate that it had been at least 55 years since each of our respondents graduated from high school while the average respondent had completed high school approximately 60 years earlier.

Designed as a broad set of measures for understanding attitudes and behaviors of people who were part of the U.S. military during World War II, the 2000 University of Illinois Veterans Survey was comprised by 16 pages of questions on topics such as coupon usage, car purchasing histories, and investment strategies (Bogan et al., 2013). Participants were incentivized to complete and return the survey in exchange for a contribution that was made to the World War II Memorial in Washington, D.C. on behalf of

each respondent. With respect to the Survey's response rate, it is noteworthy that our interest on individual outcomes of people who played (or did not play) high school sports minimizes the importance that any sampling bias might present. For example, even if our sample is biased in favor of respondents who played high school sports (e.g., if they demonstrate traits that make them more likely to participate in a study whose incentive is a charitable contribution), that kind of bias should not adversely impact our analyses of any distinctions between people who did—and did not—play high school sports.

In addition to the basic fact that the Survey included a measure of whether respondents played high school sports 55 or more years prior to their participation in the study, additional strengths of our sample include the facts that our respondents share an important common experience (i.e., membership in the U.S. military during World War II) and a set of minimum physical standards for which any analysis of a more heterogeneous sample would need to control. For example, given the physical fitness requirements that are necessary to fit into the military (e.g., Cawley & Maclean, 2011), our sample focuses on people who were physically capable of participating in sports and consequently helps to control for variation in health within the full population of high school students. Likewise, our sample is consistent with previous studies of sports and leadership (e.g., Atwater & Yammarino, 1993; Atwater et al., 1999; Yammarino & Bass, 1990) that coincidentally are limited to (a) members of the military and (b) male respondents. For purposes of analyzing the relevance of sports participation from approximately 60 years since they completed high school, the focus on male respondents is especially important and necessary since gender equality in the domain of sports did not exist at that point nearly as much as today.

Measures

Demographic Traits. Among the relevant questions that are part of the Veterans database, respondents reported (a) whether or not they played at least one Varsity sport in high

school, (b) the size (i.e., population) of the town where they were raised, and (c) their age.

Prosocial Behavior. The Veterans Survey included measures of prosocial behavior: “Do you volunteer for any organizations” and “Where do you like to donate money?” For our analysis of volunteering, we were able to analyze the results as a simple dichotomous variable. For our analysis of donating, respondents were able to check yes or no for an array of 12 possible options (e.g., Girl Scouts, United Way, and Red Cross) and since responses to these options were internally coherent ($\alpha = .61$), we consequently summed the number of charities to which each participant donated and divided by 12. Measures of skewness and kurtosis for the summed donation variable (.729 and .369, respectively) indicate that it is acceptable with regard to criteria for normality.

Leadership. Our measure of Leadership is established on the basis of responses that Survey participants provided concerning the “type of person” they perceive themselves to be. Specifically, respondents were asked to provide scores on a 9-point Likert-type scale (1 = *strongly disagree* and 9 = *strongly agree*) for a set of 10 statements. An exploratory principal components analysis (PCA) to consider possible factor structures for this measure revealed that 2 factors with eigenvalues greater than 1 explained 57% of the total variance. While the first factor accounted for 40% of explained variance and consisted of 5 items measuring stimulus-seeking behavior (e.g., “I like excitement”), the second factor accounted for 17% of explained variance and consisted of 3 items that describe leader-related behaviors: “I consider myself a strong leader,” “People often ask me for advice,” and “I give more advice than the average person.” Consistent with the findings that influential people within an organization (i.e., leaders) tend to be people who provide (solicited) advice to their peers (e.g., Mehra, Dixon, Brass, & Robertson, 2006), a composite index was created of these 3 items ($\alpha = .81$) to serve as a measure of Leadership.

Self-Confidence. Our measure of Self-Confidence is based on responses to a set of 23 similarly structured statements that sought to assess participants’ “values and behaviors.” A PCA revealed that the first factor accounted for 31% of explained variance and consisted of a set of 15 statements such as “was self-confident,” “had high self-worth,” “was open to new ideas,” and “more social than most.” Given the nature of these questions, a composite index was created to serve as a measure of Self-Confidence ($\alpha = .90$).

Self-Respect. We established a measure of Self-Respect on the grounds of participants’ agreement with an independent set of 9 statements that were presented in the same fashion

and intended to understand “what’s important to you?” In this case, a PCA revealed that the first factor accounted for 53% of explained variance and consisted of 8 statements such as “self-respect,” “security,” “sense of belonging,” “warm relationship with others,” and “a sense of accomplishment.” Given the theme of these items, a composite index was created to serve as a measure of Self-Respect ($\alpha = .89$).

Career Outcome. To assess the primary career path that respondents followed over the course of their working lives, the Survey asked “Which describes your career since 1946?” and provided the options “Owned own business,” “Part-time jobs,” “Trades,” “Factory Worker,” “Manager,” “Professional,” and “Upper Management.”

Study 2: Results and Discussion

Table 2 reports the descriptive statistics and correlations for each of the measures that are part of Study 2. Across our sample, we can highlight that 43% of the participants reported past participation on a varsity high school sports team, 44% reported volunteering, 13% reported having a career in upper management, and 9% reported having a career in the trades.

As reported in Table 3, ANOVA tests as well as logistic regressions show the general, robust pattern whereby former high school student-athletes tend to demonstrate significantly higher scores than those who did not participate in high school sports for Leadership, Self-Confidence, and Self-Respect. Former student-athletes also disproportionately report volunteering and donating more than 55 years since their high school graduation in addition to having had careers that were disproportionately in “upper management.”

Based on these results, we show that there appears to be long-term correlates of participation in competitive youth sports that persist for more than 55 years. More specifically, our results show a positive relationship between participation in competitive youth sports and several measures of long-term personal success and prosociality.

To examine more closely whether participation in high school sports relates positively and significantly with variation in Leadership, we conducted a simultaneous multiple regression and report the results in Table 4. The main finding of our regression analysis is that high school sports participation explains a significant portion of the variation in Leadership even when we control for (a) the size of the town or city where participants were raised and (b) the respondents’ age. Given the relatively high correlations between Self-Confidence and Self-Respect, we calculated the variance inflation factors (VIFs) for each independent variable in the regression and each VIF value was below 1.5, indicating that multicollinearity does not pose a serious

Table 2. Study 2: Descriptive Statistics and Correlations.

Variable (scale)	M	SD	1	2	3	4	5	6	7	8	9
1. High School Sports (0, 1)	0.43	0.50									
2. Leadership (1-9)	5.61	1.71	.10**								
3. Self-Confidence (1-9)	6.78	1.13	.09*	.48**							
4. Self-Respect (1-9)	7.57	1.15	.07	.28**	.60**						
5. Volunteer (0, 1)	.44	.50	.09*	.13**	.07*	.05					
6. Donation (0-1)	.25	.17	.08*	.17**	.16**	.08*	.17**				
7. Trades (0, 1)	.09	.29	-.07*	-.14**	-.03*	.05	.01	.07*			
8. Upper-Management (0, 1)	.13	.34	.07*	.20**	.11**	.08*	.06	.06	-.12**		
9. Size of Home Town	1153590.60	15555035.83	.05	-.02	-.02	.02	-.01	.00	-.01	-.01	
10. Age (years)	77.76	2.38	-.02	0.06	-.02	.05	-.09*	.02	.05	-.05	.03

* $p < .05$. ** $p < .01$.

Table 3. Study 2: Means, Standard Deviations, and Tests of Difference.

	Did not play high school sports	Played high school sports 55 years prior	F value
Personal values (1-9)			
Leadership	5.45 (1.76)	5.80 (1.63)	9.11**
Self-Confidence	6.71 (1.18)	6.90 (1.04)	5.55*
Self-Respect	7.51 (1.21)	7.67 (1.08)	3.74*
Prosocial behaviors (0-1)			
Volunteer	.41 (.49)	.50 (.50)	6.07* (χ^2)
Donations	.24 (.17)	.26 (.16)	5.70* (F)
Career types (0-1)			χ^2 value
Trades (e.g., Construction)	.11 (.32)	.07 (.25)	4.92*
Upper-Management	.11 (.31)	.16 (.37)	4.63*

Note. Leadership, Self-Confidence, and Self-Respect as well as Donations of Time and Money are significantly higher among former high school athletes.

* $p < .05$. ** $p < .01$.

problem for our analysis. While it is clear and unsurprising that Self-Confidence is closely related with Leadership, the importance of sports participation in the regression is noteworthy in light of our controls since (a) previous researchers (e.g., MacDonald, Cheung, Cote, & Abemethy, 2009) have shown the size of one’s hometown to significantly influence participation in sports and (b) the respondents’ age helps guard against the possibility that trends across time might spuriously account for the relationship between participation in high school sports and Leadership.

As indicated in Table 3, we find apparent evidence in support of Hypothesis 3, whereby there appears to be a significant difference in the prosocial behaviors of volunteering and donating when comparing people who played and

Table 4. Study 2: Regression for Leadership Values ($R^2 = .23$).

	B	SE B	β	t
Varsity Sport Participation	.25	.12	.07	2.10*
Self-Confidence	.74	.07	.48	11.12**
Self-Respect	-.04	.07	-.02	-.56
Size of Hometown	.00	.00	-.02	-.56
Age	.01	.03	.01	.39

* $p < .05$. ** $p < .01$.

did not play high school sports. When we conducted regression tests for this relationship while controlling for size of hometown and age, the pattern retained significance ($p = .01$ for volunteering and $p = .03$ for the likelihood of donating).

As tests of Hypothesis 4 concerning the potential mediating role of leadership skills and personality traits on prosocial behavior, we find that Leadership—and neither Self-Confidence nor Self-Respect—mediates the relationship between participation in sports and (a) volunteering and (b) the likelihood to donate. Specifically, although sports participation was significantly associated with Leadership, $B = .10$, $p = .006$, there were significant associations between sports participation and (a) volunteering, $B = .09$, $p = .01$, and (b) the likelihood to donate, $B = .08$, $p = .03$; however, those associations were not significant after controlling for Leadership, $p = .06$ and $p = .08$, respectively. Sobel tests indicated that the meditational role of Leadership in those associations were both significant, $Z = 2.14$, $p = .03$, and $Z = 2.36$, $p = .02$, respectively. The results of bootstrapping (Preacher & Hayes, 2004) also revealed significant indirect effects of Leadership for both Volunteering and Donation, with a 95% confidence interval excluding zero (.001 to .011 and .020 to .145, respectively). In other words, as illustrated in Figure 2, people who demonstrated higher levels of Leadership were more likely to have participated in youth sports and they were more likely

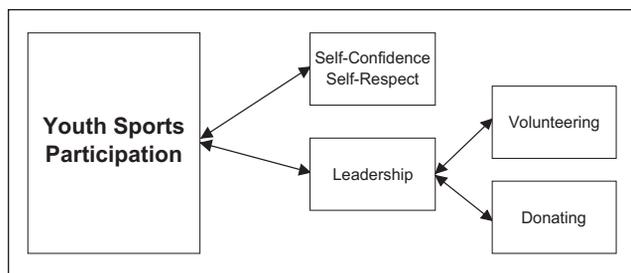


Figure 2. Model of sports' relevance based on findings of Study 2.

to report volunteering time as well as donating money to various organizations.

For similar reasons, we conducted comparable regression analyses for the two career types that showed a consistent pattern of difference in Table 3. More specifically, to control for any trends across age or size of hometown, we conducted regressions for our finding(s) regarding the two significantly different career types, and we found that participation in high school sports retained its significance ($p = .03$ for upper management and $p = .03$ for trades). This pattern of results supports Hypothesis 5 given that upper management is typically considered to be a high achievement in contemporary society when compared with occupations in the trades.

Among the limitations of Study 2, we are not able to control for variation that might explain why some people participate in high school sports and others do not. For example, socioeconomic status (Covay & Carbonaro, 2010), birth order (Rees, Lopez, Averett, & Argys, 2008), and relative age among classmates (Dhuey & Lipscomb, 2008) have each been considered as variables that influence whether a person participates in high school leadership activities. Likewise, Denault and Poulin (2009) highlight the finding that children who participate in high school sports had typically already participated in sports prior to high school. Given this constraint, which applies as well to previous research concerning high school sports and leadership (e.g., Atwater & Yammarino, 1993), we should recognize that participation in youth sports might function as a marker for other background traits such as family stability (e.g., Oliver et al., 2011) or general mental ability (e.g., Li, Arvey, & Song, 2011) as much as it might function as an independent indicator of leadership skills.

Due to the nature of the Veterans database, our current study and its composite measure of Leadership do not permit us to distinguish among types of leadership (e.g., Delbecq, House, de Luque, & Quigley, 2013; Yammarino, 2013). Just as it would have been ideal if the Survey included one or more validated scales of leadership styles along with additional personality traits, if we were to consider this subject in other countries where sports and schooling are less related, we would be able to explore

more of the mechanisms through which high school sports appears to contribute to individual development. For example, a recent study among Germans suggests that the relationship between schools and sports might be unnecessary since Lechner (2009) reports a significantly positive relationship between adult earnings and youth sports participation irrespective of any affiliation between sports and schools.

Finally, our survey of high school sports participation does not distinguish among specific types of sports even though some require more coordination and teamwork than others (e.g., Doty, 2006). Although it would have been ideal if the Survey asked participants which sports they played, it is reasonable to assume that most played on some kind of "team" since even interscholastic competitions for "individual" sports such as tennis or wrestling feature important team-level competitions and rewards. In other words, we view the distinction among team and individual sports at the high school level to be a difference of degree rather than a difference of kind.

Most generally, valuable benefits are gained by examining the long-term persistence of relationships between participation in competitive youth sports and late-in-life leadership, personality, and behavior within a sample of people who would have been physically able to participate in sports. Through use of the extraordinary Veterans data set, Study 2 expands significantly on previous studies that tend to stop examining the relevance of participation in youth sports when respondents reach the age of 30 years. Our findings from a sample of people whose average age was 77.8 years of a persistent relationship yield the strong recommendation that ongoing longitudinal studies as well as biodata scales should incorporate measures of youth sports participation in their designs.

General Discussion

Despite the pervasiveness of sports in myriad aspects of contemporary societies and the frequency with which the topic is discussed in workplace settings such as job interviews (e.g., *USA Today*, 2001), it is surprising that relatively little attention has been paid to (a) the potential for discussion of prior athletic participation to influence early-career selection processes and (b) the question of whether there are long-term correlates of such participation. Our complementary studies fill important gaps and present tests of the model that participation in competitive youth sports correlates persistently with prosocial, team-oriented values. Our novel focus on the relevance of past participation in youth sports as a specific kind of biodata variable highlights the need for closer attention. Although our studies consider the correlates of past participation in sports, future research can examine the degree to which the variable might have predictive or causal power.

Contributions

Our primary contribution highlights the relevance that sports-specific biodata appears to have for early-career selection processes as well as late-in-life personality and behavior. Our findings build on previous research that has validated the use of biodata as a predictor of employee performance (e.g., Zibarras & Woods, 2010) and the conceptual model that we present highlights reasons why sports-related biodata warrants closer study. With the exception of Study 1's finding that former student-athletes are expected to be less charitable to others—perhaps due to perceptions that student-athletes are relatively more aggressive, our findings are generally consistent with the expectation that student-athletes demonstrate and retain prosocial, team-oriented values through participation in sports teams.

Although more systematic attention on the individual and collective benefits of participation in youth sports is necessary, the findings that we present in this article build on prior research and suggest the notion that sports can serve important and positive developmental functions. As a novel focus in relation to biodata studies, our investigations are not able to generate the kind of predictive validity measures for employee performance that meta-analyses have generated for broader biodata scales and variables such as GPA (Chamorro-Premuzic & Furnham, 2010); instead, our studies shed light on an important item that biodata studies have not previously highlighted.

As topical contributions, our studies provide evidence for the relevance of sports with respect to two career stages that previous studies have not addressed (i.e., selection processes and late-in-life leadership, personality, and behavior). Our review of multidisciplinary perspectives on the relevance of sports also allows us to integrate our consideration of sports as a biodata variable alongside economists' studies of wage patterns (e.g., Stevenson, 2007) and educational researchers' investigations of scholastic achievement (e.g., Lipscomb, 2007).

Limitations

As standalone investigations, Studies 1 and 2 each have limitations such as a common reliance on self-reported dependent variables that require acknowledgment and attention. In the case of Study 1, it is also possible that we would have found different patterns if our examples for sports and non-sports extracurricular activities were different. We selected two relatively different examples of each category to guard against this possibility and our analyses pool responses within the categories of Sports and Non-Sports; however, future research could examine whether other sports and non-sports activities yield different results. For example, it is notable in this light that Yearbook participants were expected to have Time Management skills that

were comparable with the student-athletes. Additionally, we can highlight that due to the structuring of the Veterans Survey questions, our measures of donating and volunteering in Study 2 were not fine-grained enough to consider potentially important heterogeneity with respect to the amounts of money and time that participants committed.

Study 2's limited focus on men is partly an artifact of the deep historical reach of the Survey to a period when gender equity in competitive youth sports did not exist. In a similar vein, in Study 1, we opted to keep our stimuli genderless; however, we expect that sports provides differential advantages and expectations as a function of whether the student-athlete is male or female (e.g., it is plausible that men who played competitive sports tend to accrue more benefits than women). An encouraging background fact that should help future research, though, that compares gender differences is Lautenschlager and Shaffer's (1987) finding of robustness with respect to measuring athletic interest and participation among men and women. Independent from gender but analogous with respect to our studies' limitations, it is plausible that if we varied the ethnicity of potential candidates then we might have found an additional layer of implicit biases.

The historical context of Study 2 is also important to note since students' individual motives for participating in sports at the time when our respondents were in high school are likely different than motives underlying current students' behaviors. The lure of potential fortune that is now available to top-performing athletes—from across the world—is an example of the potential motivations for contemporary student-athletes that did not exist decades ago. Consequently, it is plausible that if the motivation for joining sports teams tends to be more extrinsically oriented among today's student-athletes, then the patterns that we report might no longer be found. In addition, although the verifiable nature of past participation on a varsity sports team minimizes the risk of mis-reporting (e.g., Harold et al., 2006), the significant time period between Study 2's Survey administration and the participants' enrollment in high school does generate a concern that memory-related factors (e.g., Eich, Macaulay, & Ryan, 1994) could have generated some degree of mis-reporting.

Future Directions

Future laboratory and field studies will be able to address the limitations of our studies. Most especially, we are hopeful that our findings provide encouragement for longitudinal researchers to track the role of participation in competitive youth sports since Study 2, at least, shows distinct correlations with prosocial traits more than five decades later. With the benefit of greater longitudinal data that tracks participation in youth athletics, lacks the methodological concerns of our cross-sectional survey data, and controls for preexisting differences in health as well as

other traits such as academic grades, future researchers will be able to assess the degree to which the expectations that Study 1 uncovered might properly be recognized as relatively accurate and justified or dysfunctional and discriminatory. With research designs that permit causality to be considered, future studies can also assess whether or not participation in sports functions as an important and independent influence or predictor whereas our studies are limited to correlational findings.

Additional questions that future research can address include whether people who participate in higher levels of competition display similar or more pronounced differences in behavior decades after their peak playing days. For example, Simon and Docherty (2014) show that NCAA Division 1 varsity athletes have relatively inferior midlife health-related Quality of Life partly as a result of injuries sustained while playing in college when compared with (a) the general U.S. population as well as, interestingly, (b) the subpopulation of those who played Varsity high school sports but did not play Division 1 intercollegiate athletics. Although Simon and Docherty's findings might surprise some observers given the athleticism and fitness that is required to participate in NCAA Division 1 sports, it would be valuable to consider whether participation in sports at such an elite level has positive correlates with the kinds of non-medical variables that we considered in this article (e.g., leadership). Similarly, future research could profitably focus on the high school and/or intercollegiate levels to examine the degree to which team captains might demonstrate unique profiles of traits when compared with competitive athletes who did not serve as team captains.

Practical Implications

One clear implication for managers is that the findings from Study 2 support the common practice of asking job candidates (e.g., during interviews) whether they played competitive youth sports. In fact, our findings indicate that this question could have importance for responses from older job applicants who are relatively far removed from high school just as much as the variable might have meaning for 30-year-old applicants. With equal clarity, though, findings from Study 1 urge caution that candidates with prior athletics participation might be preferred for reasons that have no relationship to the skills that a given job requires. More specifically, Study 1 shows that people tend to prejudge former student-athletes in generally favorable ways with respect to leadership skills and organizationally beneficial traits of self-confidence and self-respect.

For a broader community interest involving the development of prosocial behavior, each of our studies commonly suggest support for the view that youth education curricula appear to create value when sports participation is available.

In this context, regular policy debates about the fiscal costs and rewards of extracurricular programs (e.g., Barron et al., 2000) would benefit from research that explores the long-term consequences that are created by the extension—or elimination—of student opportunities. In one review that focuses on the value created by high school sports, Stevenson (2007) concludes that “the estimates on the returns to sports suggests that sports may be as important as more traditional educational policy questions such as class size or other aspects of curriculum” (p. 504). Although the liabilities of participation in sports such as injury risk (e.g., Garrick & Requa, 1978) and the cultivation of excessive aggression (e.g., Tucker et al., 2010) or recklessness (Hartmann & Massoglia, 2007) are often considered in the consideration of sports' net benefit to individuals and society, our studies complement research by economists and education specialists to shed new lights on potential relationships between youth sports programs and individuals' postcollegiate workplaces.

Conclusion

Our novel focus on the specific biodata variable of past participation in youth sports invites further debate for researchers and practitioners. Notwithstanding our studies' limitations, we find that former student-athletes are expected to possess relatively greater leadership ability as well as more self-confidence and self-respect than others (Study 1) and tend to demonstrate similar characteristics in addition to reporting greater prosocial behavior late in life (Study 2). In effect, we find that participation in competitive youth sports appears to correspond with a set of occupationally advantageous traits that tend to persist across a person's life. Our studies address a surprising dearth of systematic study on the relevance of participation in youth sports for early-career selection preferences as well as late-in-life leadership, personality, and behavior. Given the popular importance of sports in many people's lives, closer attention is overdue for understanding sports' roles in the workplace and beyond—including late-in-life charitable giving and voluntarism.

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Author Biographies

Kevin M. Kniffin is a postdoctoral researcher at Cornell University in the Dyson School of Applied Economics and Management. He has contributed articles to *Group & Organization Management, Evolution & Human Behavior*, and *Human Nature*. Kniffin played little league baseball, football, and soccer as a child and coached in the National Junior Tennis League.

Brian Wansink is Professor and Director of the Cornell Food and Brand Lab in the Dyson School of Applied Economics and Management. He is author of the books *Slim by Design, Mindless Eating, Marketing Nutrition*, and *Asking Questions*. He played four high school sports a little and watched from the bench a lot.

Mitsuru Shimizu is an assistant professor of psychology at Southern Illinois University Edwardsville. He received the PhD in social/personality psychology from the University at Buffalo. His research focuses on implicit/explicit self-esteem, health behavior, and physical health.