Group diversity’s influence on sport teams and organizations: a meta-analytic examination and identification of key moderators

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ABSTRACT

Research question: The purpose of this study was to examine how group diversity was associated with subsequent outcomes, and whether these associations varied by the type of diversity, setting, sport role, or type of outcome.

Research method: The authors implemented a meta-analytic technique to examine the influence of group diversity on a variety of outcomes.

Results and findings: Results showed that overall group diversity has a positive effect on group outcomes ($r_c = .05; z$-value = 4.53, $p < .001; 95\% \text{ CI} : .03, .07$). Sport role (administrator or coaches and players or exercisers), setting type (college athletics, professional sports, or non-profit sports), outcome type (organizational effectiveness, affective outcomes, or team performance) all served to moderate the relationship between team diversity and subsequent outcomes.

Implications: The study found group diversity has positive effects on group effectiveness, though the effects are small. The findings are nevertheless instructive because they provide an effect size estimated across a wide range of investigations and suggest that group diversity is positively associated with important group outcomes. The pattern of results might encourage practitioners in sport organizations and professional teams to welcome diverse individuals in their groups by demonstrating this positive link between group diversity and group outcomes.

Introduction

Because of a variety of factors, including changing national and community demographics, equal employment laws, transformations in organizational structures, and social pressures for inclusive workplaces, sport organizations have become more diverse over the past two decades (Cunningham, 2015; Cunningham & Fink, 2006). As a result, a number of scholars have endeavored to understand the influence of diversity on organizational processes and outcomes. Initial work came by way of theoretical frameworks from DeSensi (1995),...
Doherty and Chelladurai (1999), Fink and Pastore (1999), Cunningham (2004), and Chelladurai (2014). Empirical investigations also exist, though the findings are equivocal in nature. For example, Siciliano (1996) studied non-profit sport organizations and observed that gender diversity among board members was associated with social performance, though occupational diversity was positively related to external donations received. Cunningham and Sagas (2004a) also found diversity to be positively linked with performance in their study of football team coaching staffs. On the other hand, Brandes, Franck, and Theiler (2009), in a study of German Bundesliga teams, found that nationality diversity among defenders was negatively associated with performance, possibly because of the communications required among these players (see also Haas & Nüesch, 2012). Timmerman (2000), in a study of professional sport teams, observed that diversity hurt performance when the teammates had to interact with one another closely – something also predicted by Doherty and Chelladurai (1999) in their theoretical framework.

As these examples illustrate, diversity’s influence on subsequent team and organizational outcomes remain equivocal in nature, and as a result, the extant scholarship offers limited direction to practicing sport managers or to sport management scholars. One way to reconcile these seemingly contradictory results is through meta-analysis. As we outline in more detail in the following section, meta-analysis is a statistical method researches can use to combine results of different studies to provide a common metric and overall effect size (Horwitz & Horwitz, 2007; Hunter & Schmidt, 2004; Lipsey & Wilson, 2001). Unlike narrative reviews, meta-analyses are able to statistically combine effect sizes, correcting for various sources of error, to determine the relationships among variables across studies. Doing so can help researchers find relationships across studies that are obscured in other approaches (Hunter & Schmidt, 2004). Therefore, a meta-analysis can be an appropriate technique to resolve apparent contradictions in findings in this topic.

Beyond the empirical value of a meta-analysis, theoretical benefits are also present. First, a key element of theory development is specification of boundary conditions (Bacharach, 1989), or moderators (see also Colquitt & Zapata-Phelan, 2007). In line with this perspective, Cunningham, Fink, and Doherty (2016) argued that good theory moves beyond describing what constructs are relevant, but also includes articulation of why, when, how, and under what conditions the relationships materialize. Indeed, Harrison and Klein (2007) suggested that identification of moderators might also aid in explaining additional variance in outcomes manifesting from group diversity. Recognizing the value of identifying moderators, in this study, we explore diversity type (surface-level and deep-level), sport role (administrators and players), setting type (college athletics, professional sports, and non-profit sports), and outcome type (affective reactions, team performance, and organizational effectiveness). As we explain in the subsequent sections, each of these variables has the potential to influence the relationship between diversity and subsequent outcomes, and thus, serve to better explain why, how, and under what conditions the relationships occur.

Second, though a number of management and organizational psychology scholars have conducted similar analyses (Bell, Villado, Lukasik, Belau, & Briggs, 2011; Horwitz & Horwitz, 2007; Kirca, Hult, Deligonul, Perrelli, & Cavusgil, 2012; Mannix & Neale, 2005; Roth, Purvis, & Bobko, 2012), we did not identify any such analyses in sport. This omission is unfortunate given the potential empirical and theoretical extensions possible. From
an empirical standpoint, it is possible that diversity operates differently on sport and exercise teams than it does among employees working in groups to accomplish a task. We examine this possibility through a moderator analysis – an analysis not undertaken in past meta-analyses. The presence of such differences would be theoretically meaningful for sport management scholars, as they could seek explanations for why the type of team influences the diversity-to-outcomes relationship (see also Chalip, 2006; Cunningham et al., 2016).

Given (a) the need to reconcile the seemingly conflicting results, (b) the efficacy of meta-analysis in doing so, and (c) the theoretical value of better understanding how, why, and under what conditions diversity is associated with subsequent outcomes, the purpose of this study was to meta-analytically examine the influence of team and group diversity on various outcomes. In the following sections, we provide an overview of meta-analysis, the theoretical framework, and present the specific research questions.

**Meta-analysis**

Reviews of extant research offer a number of benefits, including an overview of the current state of the field, the identification of trends, and the uncovering of potential theoretical and empirical gaps in understanding, among others. Indeed, Schmidt and Hunter (2015) noted that understanding the current state of empirical research was key to the development of theory and advancement of science. They noted that ‘the goal in any science is the production of cumulative knowledge’ (p. 17). Meta-analysis offers one particularly effective means for aggregating that knowledge.

Lipsey and Wilson (2001) offered a number of strengths of meta-analysis. First, conducting a meta-analysis calls for systematic and transparent procedures that allow the consumer of the research to assess the scholars’ assumptions, evidence, and conclusions. Second, unlike other empirical reviews (e.g. tallying the number of significant findings), meta-analysis allows for the researcher to statistically aggregate the data across studies while also taking into account methodological artifacts and errors. Third, meta-analysis affords scholars to determine the direction and strength of associations, and thus, offers an advantage relative to narrative reviews, which ‘do not lend themselves to detailed scrutiny of the differences between studies and associated differences in their findings’ (p. 6). Finally, and related to the previous points, through meta-analysis, researchers can analyze and report on a greater number of studies than might be otherwise possible in other forms of review.

Despite the many strengths of meta-analysis, and its widespread use in organizational psychology, psychology, and biomedical sciences (Schmidt & Hunter, 2015), scholars examining sport management phenomena have used it sparingly. Exceptions include Martinez, Stinson, Kang, and Jubenville’s (2010) meta-analysis of fundraising in intercollegiate athletics, and Kim, Lee, Magnusen, and Kim’s (2015) study of sponsorship effectiveness. Noting the infrequent use of the approach, Weed (2005) commented that, although sport psychologists and exercise scientists had employed the statistical technique, ‘there are few examples of the use of meta-analysis in sport management’ (p. 83). He further suggested that the potential of the statistical technique was largely untapped. Recognizing this potential, we employed meta-analysis to examine the influence of diversity on subsequent outcomes, and we articulate our theoretical framework in the following section.
Theoretical framework

Group diversity

The primary construct in the current study is group diversity, and thus, the study follows what Tsui and Gutek (1999) refer to as a compositional approach to the study of diversity (see also Harrison & Klein, 2007). Here, the focus is on how differences among members of a group – whether a team, exercise group, or sport organization – are associated with subsequent outcomes for that social unit. As an illustrative example, Siciliano (1996) examined how diversity among board members was associated with the social performance of and donations given to sport organizations. The compositional approach varies from an emphasis on individual characteristics and how those are associated with access to positions and experiences within sport organizations. For example, a number of authors have examined how women and racial minorities are under-represented in leadership positions (e.g. Burton, 2015; Burton & Leberman, 2017; Champagne, 2017; Regan, Carter-Francique, & Feagin, 2014), but the focus of these investigations is the individual, not the group. A compositional approach also differs from analyses of diversity strategies and culture (e.g. Fink, Pastore, & Riemer, 2001, 2003), as the latter investigations have the specific strategy followed as the point of emphasis, not necessarily the characteristics of the group or organization. Given the emphasis on group diversity, in the following section, we outline specific theories that help explain the influence of differences among group members on subsequent outcomes.

Group diversity and subsequent outcomes

There are seemingly two theoretical schools of thought concerning how group differences are associated with subsequent outcomes. From one perspective, diversity is thought to result in poor group functioning and impede performance (Milliken & Martins, 1996). For instance, the similarity-attraction paradigm (Byrne, 1971) indicates that diverse teams are less productive than homogeneous teams because of the mutual interaction among team members with similar characteristics. Thanks to the mutual attraction and constructive interactions, homogenous teams could outperform heterogeneous teams (Wiersema & Bantel, 1992). Likewise, social categorization theory indicates that team members tend to categorize other members into subgroups, which can result in distinctions among in-group and out-group members, ultimately resulting in intergroup bias distinction (Tajfel & Turner, 1979; Turner, Hogg, Oakes, Reicher, & Wetherell, 1987). Hence, it is possible that homogeneous teams may cooperate more with one another and subsequently outperform heterogeneous teams (Horwitz & Horwitz, 2007).

From a different perspective, other theoretical frameworks suggest that differences among group members should be a source of learning and enrichment, ultimately resulting in improved performance (Ely & Thomas, 2001). For example, van Knippenberg, De Dreu, and Homan’s (2004) categorization-elaboration model suggests that group diversity can result in more ideas and perspectives brought to the group, and to the degree that these are elaborated upon, performance should improve. This perspective is consistent with the information-decision-making model (Williams & O’Reilly, 1998), which suggests that diversity should result in information richness and better decision-making capabilities. Finally, in their theoretical model focused on sexual orientation diversity, Cunningham
and Melton (2011) argued that diversity should improve organizational performance because of higher quality decision-making, improved marketplace understanding, and goodwill among consumers. These perspectives suggest diversity should be positively associated with important group processes and outcomes.

As this review illustrates, the theoretical models used to understand diversity’s effects on groups and organizations mirror the empirical research on the topic: some suggest negative effects, while others suggest positive ones. As a purpose of this study is to meta-analytically examine the effect of group diversity on subsequent outcomes, the following research question is offered:

**Research question 1:** What is the relationship between group diversity and subsequent outcomes for sport teams and organizations?

### Diversity form

As previously noted, this study included several moderators, including type of diversity. In drawing from Harrison and colleagues (Harrison, Price, & Bell, 1998; Harrison, Price, Gavin, & Florey, 2002), this study considers two broad forms of diversity: surface-level and deep-level. The former represents observable characteristics, such as age, race, sex, and the like. These have been the focus of most diversity studies within the sport management literature (for an overview, see Cunningham, 2015). For example, Timmerman (2000) investigated the influence of age and racial diversity on the team performance of professional baseball and basketball teams. Deep-level diversity, on the other hand, represents diversity forms not readily seen, such as values, sexual orientation, and personality. Comparatively few scholars have focused on this diversity form. As an illustrative example, Cunningham (2011b) observed that sexual orientation diversity was associated with performance gains among college athletic departments, particularly when the diversity culture was inclusive.

There are varying theoretical perspectives concerning the effects of different diversity forms on subsequent outcomes. Pelled (1996) suggested that some, job-related forms of diversity, such as differences in tenure or functional background, may be helpful while others, such as surface-level differences, would be hurtful to group processes and outcomes. Also, people use visible demographic characteristics for categorization processes, which could give rise to hostility, anxiety, and stereotyping (Tsui, Egan, & O’Reilly, 1992). The previous literature suggests that there would be differences between surface- and deep-level forms of diversity.

Given the possible differences between surface- and deep-level forms of diversity, this study developed the second research question:

**Research question 2:** Is the relationship between group diversity and subsequent outcomes in sport teams and organizations moderated by diversity form?

### Diversity across sport roles

Though other authors have conducted diversity-focused meta-analyses, a key extension in this study is the focus on sport. Attention on the sport context is important, as the type of team under examination can vary considerably. Whereas management and organizational psychology scholars attend to management teams or functional groups, examples of
groups in sport include exercise groups (Shapcott, Carron, Burke, Bradshaw, & Estabrooks, 2006), professional sport teams (Sakuda, 2012), coaching staffs (Cunningham & Sagas, 2004a), and sport organization employees (Kerwin & Doherty, 2012). These differences are potentially meaningful, as the nature of relationships among group members is likely to vary based on whether one is on (for example) a professional athletic team or a member of an exercise group.

Recognizing these possibilities, the current study categorized the sport roles into two theoretically distinct groups: (a) coaches or administrators and (b) players. There are several reasons why diversity’s effects might differ based on the sport role. From one perspective, Chelladurai (2014) theorized that diversity’s influence was likely to be stronger when group members’ interactions were marked by reciprocal interdependence. While group members are, by their nature, dependent upon one another, it is possible members of sport teams interact in a more interdependent manner than do members of a top management team. In this case, diversity’s relationship with subsequent outcomes would be stronger on sport teams.

From a different perspective, other authors have theorized that the diversity’s effects are likely to be strongest among groups where differences are not common (Tsui & Gutek, 1999). Within the sport context, sport teams are likely to be diverse across a range of characteristics (Cunningham, 2015), and such differences have been commonplace for a number of decades. Despite the differences on teams, coaching staffs and administrative units have traditionally been homogeneous, a pattern that is largely still observed today (Cunningham, 2015). As such, it is possible the effects of diversity on group processes and outcomes are stronger when considering diversity among coaches and administrators relative to differences on teams. Given this possibility, this study developed the following research question:

**Research question 3:** Is the relationship between group diversity and subsequent outcomes in sport teams and organizations moderated by sport role?

**Diversity across settings**

In addition to differences in sport roles (e.g. athletic team or management group), the setting might influence the relationship between diversity and subsequent outcomes. Cohen and Bailey (1997) recognized, for example, that organizational context is likely to influence the type of rewards offered, the level of supervision, and leader behaviors. Thanks to the unique characteristic of sport, a number of researchers have conducted studies in various settings. For example, Weimar and Wicker (2017) observed that age diversity was positively associated with wins among German Bundesliga teams. In addition, Cunningham and Sagas (2004a) collected data from college football coaching staffs, examining the relationship between various diversity attributes and affective outcomes. Also, other researchers looked at a non-profit organization and the impact of diversity within the organization (Siciliano, 1996; Spoor & Hoye, 2013). Acknowledging these various setting types, the influence of diversity on team and sport organization outcomes could be different based on the setting types. Therefore, it is also possible that type of setting could moderate the relationship between group diversity and group outcomes.

**Research question 4:** Is the relationship between group diversity and subsequent outcomes in sport teams and organizations moderated by setting?
Diversity and various outcomes

Researchers have examined the influences of group diversity on a variety of different outcomes, including (as some examples) conflict (Kerwin & Doherty, 2012), occupational commitment (Cunningham & Sagas, 2004a), creativity in the workplace (Cunningham, 2011a), athletic team performance (Sakuda, 2012), and intentions to remain in the organization (Spoor & Hoye, 2013). Rather than grouping all of outcomes together or considering each outcome idiosyncratically, the outcomes were classified into three broad categories: organizational effectiveness, affective outcomes, and team performance.

Scholars have traditionally considered organizational effectiveness as a form of goal attainment (Georgopoulos & Tannenbaum, 1957). However, more recently, many researchers have used the term more widely to include a variety of inputs, throughputs, and outputs (Chelladurai, 1987), and this is also reflected in the study of group diversity. Thus, we include a number of outcomes under the organizational effectiveness category, including the performance of the organization, revenues generated, and the ability to attract diverse fans.

Other outcome variables are more affective in nature, reflecting diversity’s influence on psychological processes and outcomes. Cunningham and Sagas’s (2004a) study of how coaching staff diversity was associated with occupational commitment and turnover among the coaches serves as an illustrative example. Consistent with this approach, this study included a number of outcomes under the affective outcomes heading, including commitment to diversity, in-group identity, and cohesion.

Finally, a number of authors have examined the influence of diversity on the team’s performance. For example, Prinz and Wicker (2016) examined the influence of various diversity dimensions – tenure, ability, age, nationality, language, and experience – on team performance in the Tour de France. Thus, this study included all outcomes focusing on the athletic teams or groups, such as winning percentage of a team, playoff attendance, and average points, as types of team performance.

Recognizing the differences between outcome variables, this study developed the following research question:

**Research question 5:** Is the relationship between group diversity and subsequent outcomes in sport teams and organizations moderated by the type of outcome?

**Method**

**Literature search**

This study implemented a meta-analytic technique to examine and integrate peer-reviewed articles focusing on group diversity and its relationship with subsequent outcomes. The first step in the data collection process was to collect all potential studies to include in the analysis. Following the procedures outlined by meta-analysts (Cooper, 2010; Lipsey & Wilson, 2001), the following steps were followed:

1. A computerized search for relevant articles in the following databases: ABInform, EBSCO, JSTOR, Sport Discuss, Expanded Academic Index, PsychInfo, Business Source Complete, Google Scholar, and Science Direct. A variety of keyword combinations were used, including ‘diversity’, ‘diversity in sport’, ‘team diversity and
sport’, ‘group diversity and group effectiveness’, ‘organizational diversity and sport’,
‘group and diversity and sport’, ‘diversity and performance’, ‘sport diversity and
team performance’, ‘diversity and organizational performance in sport’, and ‘diversity
in sport and team performance’.

2. A search of ProQuest Dissertation and Theses to retrieve any theses or dissertations
that had not otherwise been published;

3. A manual search of several leading academic journals, including European Sport Man-
agement Quarterly, Journal of Sport Management, Sport Management Review, Interna-
Applied Social Psychology, and Journal of Intercollegiate Sport. This was done to retrieve
articles potentially missed in the initial analyses;

4. The use of ‘ancestry methods’, including a review of the reference lists of the retrieved
studies for additional studies; and

5. An analysis of well-established diversity researchers’ (e.g. Sagas, Kerwin, Spoor, and
Singer) CVs to obtain their working papers and forthcoming articles.

After collecting all potential articles, theses, and dissertations, the following criteria
were used when designating studies for inclusion. First, the studies have to quantify one
or more associations between antecedents and outcomes in the research model; thus,
qualitative studies focusing on diversity were excluded from the analysis. Second, as this
was a sport-focused meta-analysis, only studies that are related to sport teams, physical
activity groups, or sport organizations were included in the study. Third, the study system-
atically screened for overt and covert duplicate studies to remove bias due to duplicate
study effects (Wood, 2008). Both published and unpublished studies (e.g. dissertation,
theses, conference papers, and working papers) were included to diminish potential
effects of publication bias (Rothstein, Sutton, & Borenstein, 2005). Finally, the meta-analy-
sis included studies where the authors published the zero-order correlations ($r$) and
sample size. As Lipsey and Wilson (2001) have shown, researchers can use other data
to calculate the correlation – including means and standard deviations from experimental
groups, data from a $2 \times 2$ chi-square, and frequency tables – to calculate a correlation, but
these data were not included in the studies examined. These criteria served to eliminate
several earlier studies from inclusion, as authors did not include the needed information
to calculate effect sizes. Because several decades of studies were searched (the earliest was
1996), this study did not reach out to individual authors for missing information. Doing so
would have potentially biased the data toward inclusion of more recent studies relative to
latter ones, and previous researchers have shown poor success in gathering the needed
information (Gibson et al., 2006).

**Coding procedures**

A coding form (see Lipsey & Wilson, 2001), as an information-gathering instrument, was
prepared for two coders who recorded the extracted data on the variables of interest,
including outcome statistics (i.e. coefficient correlation $r$, reliability of outcome variables,
and number of samples). In coding the data, this study reverse coded negatively focused
outcomes, so as to create consistency across outcomes. For example, job satisfaction and
negative affect are both in the affective domain, but have different foci: job satisfaction is
positive, while negative affect is negative. Thus, in this example, the negative affect score was reverse scored. In all of the coding decisions, disagreements between coders were discussed and the coders eventually reached consensus on such issues.

The meta-analysis also included examination of a number of moderators, including type of diversity, sport role, setting, and type of outcome. Type of diversity included surface-level diversity (sex, racial, age, ethnicity, culture, and nationality) and deep-level diversity (value, sexual orientation, and tenure and work). Sport role was coded as (a) administrators and coaches and (b) players and exercisers. Study setting was coded as college athletics, professional sports, and non-profit sports (most of which were set within communities). Consistent with the previously articulated framework, type of outcome was coded as team performance (e.g. team total points, Sagerin ratings, winning percentage), organizational effectiveness (e.g. NACDA points earned, revenues generated, social performance), and affective outcomes (e.g. job satisfaction, turnover intentions).

**Analyses**

In this study, the primary effect size index was the correlation coefficient ($r$), as there was interest in the relationship between diversity and subsequent outcomes; thus, a meta-analysis of correlations was conducted, following procedures recommended by Cooper (2010). In order to minimize a potential bias, the correlation coefficient was first transformed via the Fisher’s $r$ to $z$ transformation (Fisher, 1970; Johnson & Eagly, 2000).

This study also tested for outliers due to sample size. Grubbs test revealed three such outliers ($p < .05$): Timmerman’s (2000) sample of baseball teams ($n = 1082$), Timmerman’s (2000) sample of basketball teams ($n = 871$), and Shappcott et al.’s study of exercise groups ($n = 1392$). Following Cooper (2010), these sample sizes were adjusted to the next largest ($n = 239$) so as to avoid biasing the findings.

It was also necessary to take into account issues of independence, as data points are not independent if they are computed from data collected from a single sample. As Arthur, Bennett, and Huffcutt (2001) note, data management decisions related to independence need to take into account whether the effect sizes represent unique variables and constructs (see also Arthur, Bennett, Edens, & Bell, 2003). Because outcome type was a potential moderating variable, when a study contained multiple outcomes (affective, team performance, or organizational effectiveness), the effects were considered independent even if they came from a single sample. On the other hand, when effect sizes are based on the same construct, the data should be averaged to represent a single data point. Thus, data based on the same outcome (e.g. affective) were averaged to represent a single score (see Arthur et al., 2003).

In conducting the analysis, correction for sample size (Hedges & Olkin, 1985) and the reliability of the measures was undertaken (Hunter & Schmidt, 2004), as doing so provides more precise estimates. This study also calculated effect size, the 95% confidence interval around the corrected correlations, and $z$-values for significance (Cooper, 2010). These values offer information as to how the particular diversity form is associated with the outcome of interest. This study also reports the practical significance of the effect following Cohen’s (1988) guidelines: an association of .10 is small, .30 is moderate, and .50 is large.
Finally, research questions 2–5 were concerned with the effects of potential moderators. The tests for moderators were performed following Hedges and Olkin’s approach (1985), such that the Q statistic was computed for each potential moderating variable. This statistic demonstrates whether the average effect from various groups are homogeneous (Cooper, 2010); thus, a statistically significant Q statistic demonstrates that the effect sizes in the comparison groups are significantly different from one another.

**Results**

The literature search process, coupled with the winnowing process for study inclusion, resulted in the inclusion of 19 studies, and each of these is listed in the Reference section, denoted by asterisks, with an overview in Table 1. From these studies, this study was able to analyze 65 unique effects from 16,107 participants. After correcting for sample size outliers using Grubbs correction, the adjusted sample size is 8769.

The main purpose of this study was to meta-analytically examine the effect of group diversity on subsequent outcomes. Table 2 shows results of the analyses testing on the research questions on the relationship between group diversity and subsequent outcomes.

**Tests for moderators**

This study also tested for the effects of four moderators: diversity type (RQ2), sport role (RQ3), setting (RQ4), and outcome type (RQ5).

**Diversity type**

As seen in Table 2, the $Q_b$ value was not significant for diversity type ($Q_b = .03, df = 1, p = .86$), indicating the relationship surface-level diversity ($r_c = .05; z-value = 3.77, p < .001; 95\% CI: .02, .07$) and deep-level diversity ($r_c = .06; z-value = 2.52, p < .05; 95\% CI: .01, .10$) did not differ.

In addition, this study examined the influence of specific surface-level and deep-level diversity forms. Results indicate that the specific surface-level diversity form served as a moderator ($Q_b = 11.98, df = 3, p = .007$). Though age diversity did not hold a significant effect, racial and ethnic diversity ($r_c = .06; z-value = 3.29, p = .001; 95\% CI: .03, .11$) and sex diversity ($r_c = .06; z-value = 2.67, p = .007; 95\% CI: .02, .11$) were positively significantly related to subsequent outcomes, and national diversity ($r_c = -.22; z-value = -2.64, p = .008; 95\% CI: -.38, -.06$) was negatively associated with the overall group outcomes. Although all values were statistically significant, the effects of racial team diversity and sex team diversity were small, and the effects of nationality team diversity were small to moderate (Cohen, 1988).

The type of deep-level diversity was not significant: ($Q_b = 5.14, df = 2, p = .08$). Thus, although the effects of tenure and work diversity were significant ($r_c = .11; z-value = 3.11, p = .002; 95\% CI: .04, .17$), they did not statistically differ from those of value diversity ($r_c = -.01; z-value = 0.02, p = .98; 95\% CI: -.09, .07$) and sexual orientation diversity ($r_c = .05; z-value = 1.13, p = .13; 95\% CI: -.03, .13$).
Table 1. Overview of studies included in the meta-analysis.

<table>
<thead>
<tr>
<th>Study</th>
<th>Author(s)</th>
<th>Year</th>
<th>Overview of findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>C. T. Bogar</td>
<td>2010</td>
<td>Collected data from 48 basketball teams (players and coaches); observed that racial diversity among coaches was positively related with team performance, while racial diversity among players was not</td>
</tr>
<tr>
<td>2</td>
<td>M. M. Campion</td>
<td>2011</td>
<td>Collected data from 30 baseball teams (players); found that racial, country, age, and tenure diversities were positively related with team performance and affective outcomes</td>
</tr>
<tr>
<td>3</td>
<td>G. B. Cunningham</td>
<td>2007</td>
<td>Data were collected from 45 track-and-field teams (coaches); observed that although age diversity was positively associated with performance, gender, racial, perceived age, perceived gender, and perceived racial were negatively correlated with performance</td>
</tr>
<tr>
<td>4</td>
<td>G. B. Cunningham</td>
<td>2008a</td>
<td>Collected data from 258 NCAA Division I athletic departments (administrators); revealed that gender diversity was positively associated with performance, while racial diversity was not</td>
</tr>
<tr>
<td>5</td>
<td>G. B. Cunningham</td>
<td>2009a</td>
<td>Data were collected from 71 coaching staffs (coaches); observed that racial, age, and tenure diversities were negatively related with affective outcomes</td>
</tr>
<tr>
<td>6</td>
<td>G. B. Cunningham</td>
<td>2009b</td>
<td>Data were gathered from 75 NCAA athletic departments (administrators); found that racial diversity was positively associated with team performance</td>
</tr>
<tr>
<td>7</td>
<td>G. B. Cunningham</td>
<td>2011a</td>
<td>Collected data from 199 athletic departments (administrators); observed that racial, gender, and sexual orientation diversities were positively associated with affective outcomes</td>
</tr>
<tr>
<td>8</td>
<td>G. B. Cunningham</td>
<td>2011b</td>
<td>Data were collected from 239 athletic departments (administrators); found that gender, racial, and sexual orientation diversities were positively correlated with performance</td>
</tr>
<tr>
<td>9</td>
<td>G. B. Cunningham and M. Sagas</td>
<td>2004a</td>
<td>Data were gathered from coaches in 48 NCAA Division IA football coaching staffs; observed that although age diversity was positively related with performance, age, tenure, and ethnic diversities were not</td>
</tr>
<tr>
<td>10</td>
<td>G. B. Cunningham and M. Sagas</td>
<td>2004b</td>
<td>Collected data from 77 NCAA Division I athletic coaching staffs (coaches); observed that racial diversity was negatively associated with team performance</td>
</tr>
<tr>
<td>11</td>
<td>G. B. Cunningham and J. N. Singer</td>
<td>2011</td>
<td>Data were gathered from 258 NCAA Division I athletic departments (administrators); found that racial, gender, and deep-level diversities were positively related with team performance</td>
</tr>
<tr>
<td>12</td>
<td>S. Kerwin and A. Doherty</td>
<td>2012</td>
<td>Collected data from 119 Canadian athletic departments (administrators); observed that age and gender diversity were negatively associated with negative outcomes</td>
</tr>
<tr>
<td>13</td>
<td>K. H. Sakuda</td>
<td>2012</td>
<td>Data were collected from 96 Japanese Baseball teams (players); found that national and age diversities were negatively associated with team performance</td>
</tr>
<tr>
<td>14</td>
<td>K. M. Shapcott, A. V. Carron, S. M. Burke, M. H. Bradshaw, and P. A. Estabrooks</td>
<td>2006</td>
<td>Collected data from 1392 Walking groups (walkers); observed that gender and ethnic diversities were positively related with performance</td>
</tr>
<tr>
<td>15</td>
<td>J. I. Siciliano</td>
<td>1996</td>
<td>Data were gathered from 240 YMCA organizations (board members); found that gender and age diversities were positively associated with performance</td>
</tr>
<tr>
<td>16</td>
<td>J. R. Spoor and R. Hoye</td>
<td>2013</td>
<td>Data were collected from 216 sport organizations (employees); indicated that gender diversity was positively associated with performance</td>
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<td>17</td>
<td>T. A. Timmerman</td>
<td>2000</td>
<td>Collected data from 1082 Major League Baseball (MLB) teams and 871 National Basketball Association (NBA) teams from 1969 to 1992 (players); observed that racial diversity was positively related with team performance</td>
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(Continued)
The third research question focused on the potential moderating effects of sport role. The analyses indicated that sport role did moderate the relationship between group diversity and subsequent outcomes: $Q_b = 6.89$, $df = 1$, $p = .008$. When the sport role included coaches or administrators, group diversity was positively associated with subsequent outcomes ($r_c = .07$; $z$-value $= 5.06$, $p < .01$; 95% CI: .02, .11), though group diversity among players or exercisers was not associated with group outcomes ($r_c = .02$; $z$-value $= 0.39$, $p = .70$; 95% CI: $-.02$, .05).

Setting

With the fourth research question, this study examined whether setting type influenced the relationship between group diversity and group outcomes. Results indicate this was
the case: $Q_b = 9.69$, $df = 2$, $p = .01$. Group diversity was positively associated with subsequent group outcomes when set in the context of college athletics ($r_c = .07$; $z$-value = 4.27, $p < .001$; 95% CI: .04, .10) and non-profit sport ($r_c = .05$; $z$-value = 2.07, $p = .04$; 95% CI: .01, .10), though both values have small practical effects (Cohen, 1988). On the other hand, group diversity in the professional sport setting was not related to subsequent outcomes ($r_c = .02$; $z$-value = 1.06, $p = .29$; 95% CI: −.02, .06).

**Outcome type**

In the final research question, this study considered whether the type of outcome – affective, team performance, or organizational effectiveness – moderated the relationship between group diversity and group outcomes. Results indicate outcome type did moderate the relationship: $Q_b = 6.02$, $df = 2$, $p = .05$. Although the magnitude of the effects was small (Cohen, 1988), group diversity was positively associated with measures of organizational effectiveness ($r_c = .07$; $z$-value = 3.96, $p < .001$; 95% CI: .04, .11) and affective outcomes ($r_c = .08$; $z$-value = 3.14, $p = .002$; 95% CI: .03, .12). However, group diversity was not related with team performance outcomes ($r_c = .02$; $z$-value = 0.33, $ns$; 95% CI: −.02, .05).

**Discussion**

Sport organizations and teams have become more diverse over the past two decades (Cunningham, 2015; Cunningham & Fink, 2006). As a result, a number of scholars have examined the influence of diversity on organizational processes and its subsequent outcomes. However, the influence of group diversity on team and organizational outcomes remains mixed, and as a result, the available research has provided limited direction to practicing sport managers or to sport management scholars. In order to resolve these equivocal results, this study employed a meta-analysis to integrate extant work on group diversity in sports and provide estimates of the relationship between group diversity and subsequent outcomes. Importantly, this study extended the findings from previous meta-analyses and offered new theoretical insights by considering the influence of four potential moderators: diversity type, sport role, setting, and outcome type.

This study found group diversity has positive effects on subsequent outcomes for sport teams and organizations, though the effects are small. These findings are nevertheless instructive because (a) small effects can have a meaningful cumulative effect over time (Tsui & Gutek, 1999) and (b) they provide an effect size estimated across a wide range of investigations, suggesting that group diversity is positively associated with important group outcomes. To illustrate, consider the influence of group diversity on organizational effectiveness ($r_c = .07$), of which revenue generation is a part. The average athletic department in the US generates US$42.23 million annually (NCAA Finances, n.d.). Results from our analyses suggest diversity is associated with $211,129 annually. Over a 10-year span, these differences accumulate to US$2.22 million. Similar principles can be applied to other outcomes, all of which illustrate that even associations with small practical significance can, over time, results in meaningful differences (Tsui & Gutek, 1999).

In addition, due to the inconsistent previous results of a meta-analysis study (Horwitz & Horwitz, 2007), the results of this study may help scholars in the field of sport management understand sport-related effects of group diversity. Previously, Horwitz and Horwitz (2007) supported that homogeneous teams may cooperate more with one another and
outperform heterogeneous teams. However, the results presented here illustrate that, within the sport context, group diversity is associated with desirable group outcomes. That is, sport offers a unique context where differences among group members are positively associated with a bevy of group outcomes.

**Moderators of the relationship between diversity and outcomes**

One of the primary contributions of our study was the inclusion of a number of moderators. Such analyses are important because they help to extend theory (Colquitt & Zapata-Phelan, 2007), as good theory helps explain when, how, where, and under what conditions various relationships might occur (Cunningham et al., 2016). Furthermore, Harrison and Klein (2007) suggested that identification of moderators might also assist in explaining additional variance in outcomes manifesting from group diversity. In line with this position, we found value in including a number of theoretically and practically relevant moderators: type of diversity, sport role, setting, and type of outcome.

This study observed that surface- and deep-level diversity forms, broadly defined, had a similar influence on subsequent outcomes; additionally, subsequent analyses show that the types of surface-level differences varied in their relationship with group outcomes. Whereas Pelled (1996) theorized that surface-level differences might impede performance, such a position lacks empirical support in the sport setting. Instead, both sex and race diversity were positively associated with subsequent outcomes. van Knippenberg et al. (2004) and Ely and Thomas (2001) suggested these diversity forms might be a source of competitive advantage because they are associated with unique experiences and perspectives. As a result, the breadth and quality of decision-making are enhanced. Cunningham (2009b) advanced similar arguments and observed that racially diverse sport organizations outperformed their counterparts, especially when the organization followed an inclusive strategy. These studies, when coupled with the findings from this meta-analysis, suggest that within the sport context, Pelled’s (1996) argument is not supported, and instead, sex and gender diversity can benefit the group.

Although sex and gender diversity were positively associated with subsequent outcomes, this study observed that another surface-level characteristic, nationality, held a negative association. The negative effects might be due to substantive underlying differences based on national origin. Consistent with this perspective, Sakuda (2012) suggested these effects might materialize because of the cultural differences among people from different countries. Communication and language barriers might also impede performance among groups with high nationality diversity (Prinz & Wicker, 2016), especially when such communications are essential to the success of the unit (Brandes et al., 2009).

This study also observed that deep-level differences were, as a whole, positively associated with group outcomes. Though some of the deep-level diversity characteristics held significant effect sizes (tenure and work) and others did not (sexual orientation and values), the magnitude of the effect sizes did not statistically vary, as illustrated by the non-significant $Q_b$ value. Horwitz and Horwitz (2007) also observed that deep-level differences were positively associated with a number of outcomes, including the quality and quantity of team performance. The benefits are likely to accrue because of the varied perspectives, viewpoints, and work experiences that diverse group members bring to the unit.
Next, one of the key benefits of studying diversity in the sport context is the ability to examine differences in the effects of diversity across different types of groups, including those that work in an organizational context (e.g. administrators and coaches) and those who interact on teams (e.g. players). This is not possible in meta-analyses set in other business contexts. Results show that sport role (i.e. administrators/coaches or players/employees) moderated the relationship between group diversity and subsequent outcomes. These findings are consistent with Tsui and Gutek’s (1999) argument that the effects of diversity are prone to be strongest among groups where differences are scarce. Though athletic teams are frequently diverse, coaching staffs and administrative groups are usually more homogeneous (Cunningham, 2015). Therefore, our findings can support these previous studies and suggest that the benefits of group diversity are most likely to be realized when differences are otherwise not observed in that context.

Along with the differences in sport roles (e.g. athletic team or management group), the setting type has been considered as a crucial moderator of the relationship between group diversity and subsequent outcomes (Cohen & Bailey, 1997). Findings suggest that group diversity was positively associated with subsequent group outcomes when set in the context of college athletics and non-profit sport, though group diversity in the professional sport setting had no effect on subsequent outcomes. Cunningham’s (2008b) qualitative study of college athletic directors sheds light on why diversity is associated with positive outcomes in that context. The participants in his study noted that diversity was associated with better ideas, greater inclusion, and the ability to learn from others. They also noted that diversity benefited student-athletes in that setting, and that diverse leaders served as role models for the athletes. Finally, the participants noted a direct relationship between department diversity and the effectiveness of the unit. Of course, many of these benefits might be evident at the professional sport setting. We suggest, however, that the effects of diversity on the student-athletes – the prime beneficiaries of the organizations (Chelladurai & Riemer, 1997; Fields, 2012) – is unique and might differentiate this context from the professional ranks, where profit maximization and shareholder value might be more valued. Future researchers will likely benefit from exploring these dynamics further.

Finally, we classified the outcomes into three broad categories: organizational effectiveness, affective outcomes, and team performance. Then, we considered whether the type of outcome moderated the relationship between group diversity and group outcomes. Results suggest that outcome type moderated the relationship. Specifically, group diversity was positively related to organizational effectiveness, which included the performance of the organization, revenues generated, and the ability to attract diverse fans. These findings are consistent with pro-diversity theory (van Knippenberg & Schippers, 2007) and empirical extensions of that work into the sport context (Cunningham, 2009, 2011a, 2011b), in that diverse groups and inclusive mindsets are associated with organizational effectiveness. Also, group diversity was positively associated with affective outcomes, such as commitment to diversity, in-group identity, and cohesion. These findings are consistent with Fink and colleagues’ theorizing (Fink & Pastore, 1999) and subsequent empirical work (Fink et al., 2001, 2003), such that people are attracted to and want to work in diverse and inclusive organizations (see also Cunningham & Melton, 2014). However, team performance was not significantly associated with group diversity. Team performance included all outcomes focusing on the athletic teams or group, such as winning percentage of a team, playoff attendance, and average points. These results suggest that other factors,
such as team talent, strategy used, strength of schedule, or other non-diversity factors, are more directly relevant to team success than the diversity of the players.

**Contributions, limitations, and future directions**

This study makes several important contributions. Noting the equivocal results of previous empirical analyses, the meta-analysis helps clarify the relationship between diversity and subsequent outcomes. Importantly, this study extends previous meta-analyses by specifically considering important moderators: diversity type, sport role, setting, and outcome type. Inclusion of moderators is important for theory building (Colquitt & Zapata-Phelan, 2007) and provides insights as to when, how, and under what conditions diversity is likely to hold an association with group outcomes.

Results of the meta-analysis are also of interest to practicing sport managers. Specifically, the findings arm managers with empirical evidence as to the influence of group diversity in their organizations and on their teams. Such information is especially useful when persuading key stakeholders – whether internal or external to the organization – as to the benefits of diversity (Fink & Pastore, 1999). To be sure, persuasion involves more than just throwing facts at the audience. Instead, Baldoni (2011) found that stories are often the most effective means of influencing others. Importantly, he also notes that, in addition to staying on message, using the appropriate examples, and effectively narrating, storytelling must be supported by empirical evidence. Our meta-analysis provides such evidence.

The last point also highlights a limitation of this study, as well as the empirical work related to diversity in sport teams and organizations. Specifically, this focused on organizational outcomes, such as effectiveness, affective outcomes, and team performance – all of which are important and relevant outcomes. Missing from this dialogue, however, is a focus on engaging members of the community in sport and physical activity, especially among historically marginalized groups. Spaaij et al. (2014) astutely captured this disconnect in their qualitative analysis of sport clubs in Australia. They observed:

> The findings suggest that there is a discrepancy between the policy objectives of government and sport organizations and the way in which diversity is understood and responded to in practice. The idea of a moral imperative to cater to people with diverse backgrounds and abilities is largely absent; rather, the dominant discourse is underpinned by a business rationale which interprets diversity in terms of benefits and costs to the organization. This business driven approach is often detrimental to the social policy objective of ensuring equitable outcomes in sport. A fundamental reconsideration of the rationale and practice of managing diversity in sport is therefore necessary. (p. 346)

Related to this point is a second limitation of the study. Meta-analysis allows researchers to aggregate data from empirical examinations. Though useful, it means that qualitative studies are not included. Given the impressive number of qualitative studies examining the influence of diversity in sport organizations (e.g. Knoppers, Claringbould, & Dortants, 2013; Shaw & Hoeber, 2003; Singer, 2008), meta-ethnographies are needed to integrate this literature (Noblit & Hare, 1988). Given the importance of diversity in sport and sport organizations, all investigations aimed at better understanding diversity’s effects are needed.

Finally, the findings from this study, coupled with the limitations, give rise to areas for additional inquiry. First, this study examined how personal characteristics, whether
surface- or deep-level, among group members are associated with group outcomes. The study notes, however, that other forms of group differences might emerge, and these are largely based on managerial decisions. How, for example, do cross-functional teams consisting of members from various organizational units (e.g. marketing, operations, sales) perform relative to more homogeneous groups (Cunningham & Chelladurai, 2004)? How does wage diversity (Coates, Frick, & Jewell, 2016; Franck & Nüesch, 2011) influence team process and performance? Additional inquiry is needed in these areas, as understanding how these forms of difference might aid managers in their decision-making. In addition, this study has observed that sport offers a unique setting in which to examine the effects of diversity. The study has drawn from past theorizing, which is largely based in the psychological and sociological literatures, as well as previous empirical studies based in sport, to help explain these findings. But, additional theorizing is needed to better explain these patterns. Given the value of theory building (Cunningham et al., 2016) and theorizing about the unique nature of sport (Chalip, 2006), future scholars will like profit from such endeavors.

Disclosure statement

No potential conflict of interest was reported by the authors.

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