Social Exchange and Performance in Intercollegiate Athletics

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The purpose of this study was to explore how multiple social exchange relationships affect intercollegiate student-athletes’ fulfillment of ascribed roles on their team. Using a large, Midwestern university, questionnaires were distributed to current student-athletes. Within the instrument the quality of the exchange relationship between the coach and student-athlete (i.e., leader-member exchange), and team and student-athlete (i.e., perceived organizational support) were measured. Additionally, the emotional attachment (affective commitment), and feelings of obligation (normative commitment) of student-athletes towards their team and coach were measured, as was role fulfillment (i.e., in-role behavior and organizational citizenship behavior). A total of 149 usable questionnaires were returned. Structural equation modeling established perceived organizational support and leader-member exchange operated through commitment to affect role fulfillment. Thus, coaches wanting to insure student-athletes fulfill their ascribed roles on the team at a high level should work to establish good relationships with their players and create an environment in which teammates can establish positive relationships with each other.
Societal interactions are an important part of the world, as individuals commonly interact with each other to gain desired outcomes that could not be achieved independently (Blau, 1964). The importance of these interactions is well noted in sociology literature. Multiple theories and constructs (e.g., social identity theory, social exchange theory, etc.) have been developed and studied, resulting in a good understanding of antecedents and outcomes of interpersonal relationships. Work by Homans (1961), Blau (1964), and Emerson (1976) has charted these dyads and provided a well-constructed theory as to how social exchanges are brought about, why they occur, what they look like, and what their consequences are. Scholars in disciplines outside the field of sociology have commonly used these descriptions to help explain various interactions in their own fields. Business scholars, for example, have studied in-depth the relationships between employees and their employers (e.g., Cropanzano & Mitchell, 2005; Settoon, Bennett, & Liden, 1996; Wayne, Shore, Bommer, & Tetrick, 2002) and employees and the organization for whom they work (e.g., Rhoades, Eisenberger, & Armeli, 2001; Settoon et al., 1996; Wayne et al., 2002).

While a general understanding of social interactions may allow individuals to apply the construct to multiple fields, Blau (1964) has noted, “Exchange transactions... must be investigated in their own right... to arrive at an understanding of the dynamics of social structures” (p. 13). Scholars in the field of Sport Management (e.g., Rocha & Chelladurai, 2011; Turner & Pack, 2007; Van Breukelen, Van Der Leeden, Wesselius, & Hoes, 2010), have taken heed of such a statement and tried to apply the general principles of social exchange to multiple social structures in sport. Research has focused on the relationships between coaches and their employers (e.g., Rocha & Chelladurai, 2011; Turner & Chelladurai, 2005), athletes and their coaches (e.g., Chen, 2010; Jowett, 2003; Van Breukelen et al., 2010) and athletes and their teams (e.g., Senecal, Loughead, & Bloom, 2008). Few studies though have examined the interactions of athletes and coaches and athletes and their team at the intercollegiate level (e.g., Barnhill, Czekanski, & Turner, 2013; Turner & Pack, 2007). Furthermore, even those studies examining the interactions of intercollegiate student-athletes are limited as they tested only a few variables of exchange present within a single dyad.

Consequently, a factor that has yet to be explored is the concurrent effect of multiple relationships on the output of individual athletes. Business scholarship has established the joint study of these forms of social exchange are apt, and in fact necessary as they have been found to be distinct factors which effect social exchange, and more specifically reciprocity in different ways (Wayne, Shore, & Liden, 1997). Thus, though some scholars have examined the influence of the coach-athlete dyad on individual performance (e.g., Greenleaf, Gould, & Dieffenbach, 2001; Jowett, 2003; Jowett & Cockerill, 2003) or the effect of the team-athlete dyad on performance (e.g., Carron, Colman, Wheeler, & Steven, 2002), the failure to account both relationships concurrently has led to an incomplete depiction of the effect of social exchange relationships on the output of athletes. In order to more completely account for the outcomes brought by athletes’ social exchanges then, business scholarships’ model should be followed and athletes’ relationship with their coach and their team need be accounted for concurrently.

Additionally, the reciprocity exhibited by athletes within the relationships has lacked clear and concise measures. While literature supports the performance of assigned tasks as a means to reciprocate within exchange dyads (Blau, 1964), sport management literature has not yet clearly measured “performance”. For example, in their study of athlete-coach relationships, Case (1998) and Chen (2010) both hypothesized high quality exchange relationships may lead to...
better performance, but had no qualitative or quantitative measure of performance to support their claims. Furthermore, scholars examining the team-athlete relationship have used varying performance metrics, ranging from individual to team performance and from self-reported to behavioral (Carron et al., 2002). While these may be appropriate for the given study, the inconsistent measure of performance between studies limits the application and scope of the results.

Therefore, the goal of this piece was threefold. First, the objective was to explore how multiple social exchange relationships affect the overall performance of student-athletes. Second, the goal of the work was to add to the limited amount of literature present on intercollegiate athletic dyads by focusing specifically on student-athlete relationships. Finally, we aimed to provide practitioners with an increased understanding of exchange dynamics. Moreover, we focused specifically on various ways coaches and administrators may improve “the important exchanges that occur between sport leaders and followers” (Case, 1998, p. 387).

**Social Exchange Overview**

The social exchange theory (SET) was developed from sociological properties of “interpersonal relations and social interactions” in the mid-1900s (Blau, 1964, p. 4). It was built on the belief that “a person for whom another has done a service is expected to express gratitude and return a service when the occasion arises” (Blau, 1964, p.4). The interplay between actors has been of particular interest to scholars in multiple disciplines who view the interaction as having a possible causal pathway to individual and group output.

Inherent in the SET is the notion of relationships, either between individuals or groups. However, not all relationships govern social exchange, for as Emerson (1976) stated, in order for a relationship to be viewed within the exchange theory it must be dyadic. That is to say, it must involve individuals who are seeking to maintain a sociologically significant relationship with one another (Blau, 1964).

In addition to being dyadic, social exchange is defined by other interactional characteristics. Accordingly, relations between members participating in an exchange relationship are interdependent (Blau, 1964; Cropanzano & Mitchell, 2005), bidirectional (Cropanzano & Mitchell, 2005) and involve the exchange of intrinsic and/or extrinsic rewards (Blau, 1964; Emerson, 1976). Interdependence refers to the notion that the individuals involved are reliant upon one another for outcomes (Cropanzano & Mitchell, 2005). To justify receiving benefits from an individual within an interdependent relationship, individuals must partake in supplying their exchange partner with benefits as well. This giving and receiving of services (i.e., bidirectional interactions) brings about benefits, or rewards, that could not be attained independently (Cropanzano & Mitchell, 2005).

The expected return of action, also commonly referred to as the norm of reciprocity (Gouldner, 1960), stipulates a fundamentally essential aspect of social exchange. An actor gives of himself and trusts that when the appropriate time comes the favor or act will be returned. Since trust that the reciprocation of actions will occur takes time to develop, exchange relationships cultivate relatively slowly (Blau, 1964).
Social Exchange in Organizations and Sport

Having a firm foundation of the definition of the SET, scholars have employed and expanded upon the theory in a plethora of fields. Such application has led to the theory being applied as an organizational construct within business and sport management literature alike. Within organizational literature, social exchange is described as an amalgamation of all organizational interactions (Settoon et al., 1996). Scholars studying relationships in this context have found various forms of exchange exist but have placed particular importance on two exchanges titled leader-member exchange (LMX) and perceived organizational support (POS; Settoon et al., 1996). Furthermore, scholars have continually noted the importance commitment plays in both exchange processes (e.g., Meyer & Allen, 1991).

Sport management scholarship has adapted the constructs of LMX, POS, and commitment to exchange dyads within various sporting organizations. Specific to the sport teams, LMX has been studied in coach-player dyads (e.g., Case, 1998; Jowett, 2003), while POS has been examined in team-player exchanges (e.g., Woodman & Hardy, 2001). Commitment too has been studied in sport teams, as scholars have explored various forms of commitment of coaches (e.g., Raedeke, Warren, & Granzyk, 2002) and athletes (e.g., Turner & Pack, 2007).

Leader-Member Exchange

As current organizational structures are set, the initial agreement to incorporate oneself with an organization marks an implication of trust and commitment by an actor to the organization as whole. Such an alignment is punctuated by the establishment of new role identities for the actor (McCall & Simmons, 1978). More specifically, the actor takes on the role of being an employee and develops various relationships and identities with different representatives of the organization (Flynn, 2005).

The establishment of the relationship between the employee and the organization serves as the initial act through which the need for reciprocity is created. Responsibility falls upon the organization to supply the employee with valuable exchange resources in response to their initial act. To accomplish these ends, organizations employ a hierarchal power structure of leaders who hold certain power over, and guide the actions of their given employees (Blau, 1964). These leaders have the responsibility of reciprocating not only the initial act of their employee, but all subsequent actions (Blau, 1964). Scholars have termed this exchange taking place between a leader and their employee leader-member exchange (LMX; Cropanzano & Mitchell, 2005). More specifically, LMX refers to “the quality of exchange between the employee and the manager and is based on the degree of emotional support and exchange of valued resources” (Wayne et al., 2002, p. 590).

As employees at times have multiple exchange partners within an organization (e.g., managers, colleagues, employees, etc.) the potential exists for an individual to fulfill multiple roles and forms of exchange (Flynn, 2005). In this manner they may have numerous LMX relationships while serving as a leader and member concurrently. The multitude of relationships and roles become “organized within a hierarchical framework” (Miller & Kerr, 2003, p. 197) where the employee identifies certain relationships and roles as more or less salient than others (Miller & Kerr, 2003). As a result, conflict may arise between the various relationships, affecting the quality of any single LMX (Lau & Cobb, 2010).
Adapting the principles of LMX to sport teams, coaches assume the role of the leader while players are considered employees (Sage, 1973). Accordingly, scholars (e.g., Case, 1998; Chen, 2010) have used the construct of LMX to study coach-player relationships. For example, Chen (2010) used LMX to study baseball coaches and found the LMX model to be the most suitable means to examine coach-player dynamics. Additionally, Case (1998) found an athlete experiencing high quality LMX considered themselves a member of the “in” group and thus felt more obligated to perform at a high level. Case (1998) further hypothesized this level of obligation caused athletes to perform better due to the want to satisfy their coach.

Greenleaf et al. (2001), Jowett (2003), and Jowett and Cockerill (2003) further studied the link between the quality of the coach-player interaction and players’ athletic performance. Jowett (2003) found in studying a single coach-athlete relationship that the closer the player and coach the greater the overall athletic output. Jowett and Cockerill (2003) discovered through interviews with Olympic medalists that various aspects of athletes’ relationship with their coach (e.g., trust, respect, etc.) played important roles in athletic development and performance. Similarly, Greenleaf et al. (2003) interviewed Olympians and learned many factors affected their performance including the quality of the coach relationship. More specifically, poor performing athletes noted conflict with their coaches (i.e., low quality LMX relationships) negatively affected their performance, while high performing athletes stated having a good relationship with their coach (i.e., a high quality LMX relationship) marked by trust and friendship positively affected their output.

Just as the case in organizations, athletes face role conflict as well. Specific to college sport, student-athletes have been found to fulfill athletic, academic, and social roles concurrently (Miller & Kerr, 2003). As a result, a hierarchical framework develops based on the ascribed salience of each role to the student-athlete. Miller and Kerr (2003) found using qualitative means that the salience of each identity and subsequent conflict could be divided into three stages marked by the years in school of the student-athlete. Stage one ranged from the first year of college to half way through the second year and reflected a high degree of importance placed on athletics. As a result student-athletes experienced little commitment to their academic role. Furthermore, their focus on athletics resulted in limited social role identities and thus a high degree of relationships being built around athletics (e.g., relationships with teammates). Stage two encompassed the second half of year two to the end of year three, and showed a continual commitment to athletics, with increasing importance being placed on the academic role, and a withdraw from social roles. Finally, stage three, spanning the fourth year of college, was marked by a decrease in interest in sport, a significant increase in the importance of academics, and a continual withdraw from social identification. Such variances in role salience throughout college may cause student-athletes to experience levels of conflict within their exchange relationships, particularly exchanges with their coach and teammates.

**Perceived Organizational Support**

In addition to exchanges with leaders, employees also experience exchanges with the organization as a whole (Settoon et al., 1996). As with LMX, organization-employee relationships begin when an agreement is made to incorporate. Furthermore, they are founded upon trust and commitment by the employee to the organization. However, instead of a leader reciprocating, the organization offers its own valuable commodities to the employee.
This type of exchange is labeled perceived organizational support (POS; Settoon et al., 1996), and is defined as “employees’ general perception of the degree to which the organization values their contribution and cares about their well-being” (Wayne et al., 2002, p. 590).

Within POS, organizations are viewed as a single actor. They are ascribed humanlike characteristics by their employees (Rhoades et al., 2001) and treated accordingly. The acts of the organization generate various perceptions amongst employees. Each organizational act is a means of indicating the overall intent of the organization (Rhoades et al., 2001) which, in turn, helps establish varying degrees of organizational commitment between the noted actors. These exchanges result in employees having various perceptions of the degree to which the organization supports them.

Following Sage’s (1973) depiction of athletes as employees and teams as organizations, scholars (e.g., Carron et al., 2002; Senecal et al., 2008; Woodman & Hardy) have applied the construct of POS to sport. Woodman and Hardy (2001) found in studying organizational stress in elite individual sport athletes, when an athlete felt the organization did not support their desire to obtain a given goal or when an athlete felt tension with their teammates, the athlete was more likely to experience increase levels of stress and decreases in their performance.

Studies of the connection between athletes and their team have also focused on the development of organizational support through team building activities. Senecal et al. (2008) for example, discovered team goal setting had a positive effect on the maintenance of cohesion within women’s high school basketball teams. Carron et al. (2002) conducted a meta-analysis and found individuals in sport who felt more cohesion and support from their team (i.e., had higher levels of POS) performed at higher levels than like athletes who did not experience the same level of support.

Organizational Commitment

Commitment has been designated in literature as being either affective or behavioral (Molm, Takahashi, & Peterson, 2000). Affective commitment (AC) is defined as “the feeling of liking for, and attachment to, a specific exchange partner” (Molm at al., 2000, p. 1406). Adapted to the organizational setting, the exchange partners are employees, leaders, and the organization itself (Meyer & Allen, 1991). In this manner, emotional factors such as an employee’s feeling of liking for the organization due to the quality of reciprocity they received may be enough to cause an actor to continue a relationship (Blau, 1964).

Behavioral commitment refers to the act of being continually involved in an exchange with the same actor regardless of the availability of alternative exchange partners (Molm at al., 2000). Within organizational literature, the construct of behavior commitment is further divided into normative commitment (NC) and continuance commitment (CC). Normative commitment is defined as “a feeling of obligation to continue employment”, while CC is defined as “an awareness of the cost associated with leaving the organization” (Meyer & Allen, 1991, p. 67). Following behavioral commitment principles, both NC and CC are established through the power structures present in organizations. The continual exchanges present between actors cause individuals to feel levels of obligation to continue their work within the organization and thus continue their employment (i.e., NC; Meyer & Allen, 1991). Individuals may also feel more inclined to stay with the organization and in their current role due to the negative costs that may result from seeking positions elsewhere (i.e., CC; Meyer & Allen, 1991).
Multiple scholars have explored the application of Meyer and Allen’s (1991) conception of commitment in intercollegiate athletics. Turner and Pack (2007) surveyed student-athletes on their degree of affective, normative, and continuance commitment towards multiple actors at a large, Division-I institution. They found a significant difference existed between males and females in regards to their level of commitment to their team, university and coach. Furthermore, student-athletes’ commitment to their team was discovered to be a significant predictor of their intent to leave, and their commitment to the university, coach, and team significantly related to their overall satisfaction.

Scholars have also explored the role of commitment in regards to coaching. Raedeke et al. (2002) studied current and former USA Swimming coaches and found job satisfaction and investment were significantly related to commitment. Additionally, they established commitment was higher in current coaches when compared to former coaches. Turner and Chelladurai (2005) added credence to these findings when they discovered affective, normative and continuance commitment were significantly related to Division I and III coaches’ job satisfaction and intention to leave the team. Their results also showed perceptions of commitment accounted for approximately 5% of the variance in team performance.

**Consequences of Social Exchange in Organizations and Sport**

Blau (1964) noted social exchange relationships are bi-directional and involve the exchange of intrinsic and/or extrinsic rewards. Within organizations, employees exchange performing well at their job for the numerous considerations received from their leaders and the organization (Blau, 1964). More specifically, scholars have studied employees’ reciprocity through the outcome variables of in-role behavior (Cropanzano & Mitchell, 2005), and organizational citizenship behavior (Wayne, Shore, & Liden, 1997).

**In-Role Behavior**

One viable method an individual may employ to repay benefits received from an organization or an employer is to perform the tasks they are given at a level equal or superior to the quality of exchange they experience (Blau, 1964). The output of an individual employee within an organization, as measured by the employee’s performance of assigned tasks, can thus be viewed as a means of reciprocating the feelings of obligation (i.e., NC) brought about by quality LMX and POS (Blau, 1964). The higher the quality of LMX and POS an employee experiences, the greater the feelings of obligation, and thus the greater the AC the employee will feel towards the organization as a whole (Cropanzano & Mitchell, 2005). The greater AC an employee feels towards the organization the more invested they will feel in the organization’s outputs. As a result, the employee will expend greater effort to accomplish the tasks assigned to them and help the organization achieve its goals (Cropanzano & Mitchell, 2005). Greater effort will accordingly result in greater levels of individual performance (Wayne et al., 1997).

**Organizational Citizenship Behavior**

Further repayment of exchanges within organizations may occur through the participation of employees in activities falling outside the scope of their job responsibilities (Konovsky & Pugh, 1994). These activities, termed organizational citizenship behaviors (OCB), are defined...
more specifically as “individual behavior that is discretionary, not directly or explicitly recognized by the formal reward system, and in the aggregate promotes the effective functioning of the organization” (Organ, 1988, p. 4). The level of OCB an employee partakes in is related directly to the emotional bond an employee feels towards their organization (Cropanzano & Mitchell, 2005). Individuals who feel higher degrees of commitment due to high quality social exchange relationships will be more likely to go beyond their required duties in an effort to help the organization achieve its goals (Wayne et al., 1997).

**Performance in Sport Teams**

While business literature has focused on in-role behavior and OCB, measurements of outcomes of dyadic relationships in sport management have varied widely (Carron et al., 2002). For example, Jowett and Cockerill (2003) controlled for the variable of individual athletic performance by studying only Olympic athletes who medaled at previous Olympic Games. Jowett (2003) focused on a single coach-athlete relationship and measured performance through self-reported goal obtainment. Turner and Chelladurai (2005), along with Rocha and Chelladurai (2011), studied intercollegiate team performance through calculations based on teams’ conference standings over a three year period. Likewise, Carron and Ball (1977) used the measure of team winning percentage to help establish if a link existed between perceptions of team cohesion and athletic performance in intercollegiate hockey players. These studies all differ in their operational definition of performance, vary in their subject matter, and use various means to measure performance. However, Carron et al.’s (2002) meta-analysis found no statistical difference existed between actual performance measures (e.g., Carron & Ball, 1977; Jowett & Cockerill, 2003; Turner & Chelladurai, 2005) and self-reported measures (e.g., Jowett, 2003).

However, scholarship was yet to attempt to measure performance of individual athletes across multiple sports where the individual outcomes of each sport varied (e.g., the performance of a baseball pitcher versus swimmer versus lacrosse goalie, etc.). Thus, a universal means to evaluate and compare individual athletes’ performances across sports was lacking. However, looking to established business measurements that compare a multitude of individuals across various jobs under a unified theory (i.e., the SET) offered a means to overcome such a deficit (Williams & Anderson, 1991). Accordingly, asking athletes to evaluate their performance of tasks assigned to them per their role on the team (e.g., limited contributor to the team, major contributor to the team, etc.) followed past business scholarship’s measurement and depiction of individual performance (Williams & Anderson, 1991). In this manner, athletes regardless of sport type were able to quantify a component of performance through evaluating their role fulfillment. This method resulted in a means to compare athletes’ outputs across sport type.

**Application of the SET in Coach-Student Athlete Dyad**

Though the above scholarship does well to explore various aspects of the SET, they fail to account for the multiple exchange partners with whom an actor associates. Additionally, only a few have explored the intercollegiate student-athlete population. Those pieces that do focus on intercollegiate student-athletes have yet to account for the reciprocity variable of role fulfillment in their works.
Moving to address these deficiencies, past business and sport literature provides a strong framework from which to build. Beginning with an examination of the exchange relationships student-athletes partake in, organizational scholarship’s (e.g., Settoon et al., 1996) suggestion that employees have two main social exchanges (i.e., LMX and POS) can be adapted and used. Thus, in accordance with Case (1998), Greenleaf et al. (2001), Jowett (2003) and others, student-athletes can be seen as having exchange relationships between themselves and their coaches (i.e. LMX). Furthermore, following Senecal et al.’s (2008) study of the athlete-team interactions, it can be said athletes experience exchange relationships between themselves and their team (i.e. POS). The SET and organizational scholarship have found when exchanges continually occur between dyadic partners a bond is built (Molm et al., 2000). Such a bond results in partners becoming attached and committed to continually partaking in exchanges with each other (Blau, 1964). Within the coach and student-athlete and team and student-athlete dyads, commitment of student-athletes to their coaches and teams is believed to result from relationships in which student-athletes perceive the quality of the exchange to be high. Thus, it was hypothesized:

H1: The greater the quality of leader-member exchange experienced by student-athletes, the greater the commitment student-athletes will have towards their coach.

H2: The greater the quality of the perceived organizational support experienced by student-athletes the greater the commitment student-athletes will have towards their team.

Conforming to the intercollegiate coach/student-athlete and team/student-athlete dyads and social exchange ideologies, it is believed the constructs of emotional attachment (i.e., AC) and felt obligation (i.e., NC) speak well to the relationships. Conversely, the cost of ending the dyad (i.e., CC) falls outside the structure of the relationships when applied to the current application of the SET. More specifically, the application of commitment in the study is not concerned with student-athletes involvement in a relationship based on their knowledge of the costs of quitting a team and/or transferring to another institution (i.e., CC). Rather, the present work is interested in the SET’s description of reciprocal exchange relationships brought about by emotional attachment and feeling of obligations towards exchange partners (Blau, 1964). Thus, the construct of commitment, as stated in hypotheses one and two and later in hypotheses three and four, was measured through the encompassment of both affective and normative commitment and excluded continuance commitment.

Finally, the definition of the SET states all social exchange relationships must be bidirectional (Cropanzano & Mitchell, 2005) and involve the exchanging of rewards (Blau, 1964; Emerson, 1976). Applied to coach/student-athlete and team/student-athlete relationships, student-athletes who are receiving the reward of being a member on an intercollegiate athletic team (amongst other rewards associated with being on the team), must reciprocate in-kind with their exchange partners or risk losing rewards in the future. Blau (1964) notes in the workplace employees may reciprocate the rewards they receive from their employer and their organization by performing their ascribed jobs well. Cropanzano and Mitchell (2005) added, the greater the feelings of attachment and obligation brought about by employees’ exchanges with their organization (POS) and employer (LMX), the greater the effort employees will expend in their jobs.

Thus, it was hypothesized student-athletes, having received many rewards (e.g., financial scholarships, being a member on an intercollegiate athletic team, playing time, support from
teammates, etc.), will seek to repay their awards through performing the tasks assigned to them well. More specifically:

**H3:** The greater student-athletes’ commitment to their coach, the greater their role fulfillment.

**H4:** The greater student-athletes’ commitment to their team, the greater their role fulfillment.

Altogether, it was hypothesized student-athletes’ perceptions of their exchange relationships with their coaches and teams would influence the amount of commitment they felt to each which, in turn, would affect student-athletes’ role fulfillment (Figure 1).

![Proposed Structural model of intercollegiate student-athletes exchange relationships](attachment:image.png)

**Figure 1.** Proposed Structural model of intercollegiate student-athletes exchange relationships.

**Methods**

**Procedures**

Using a standardized 6-point Likert scale survey anchored at 1 (strongly disagree) and 6 (strongly agree), data was gathered from student-athletes at a large, Division I university located in the Midwest. Past difficulty found in accessing and gaining responses from the desired population led to the specific university choice as access was granted to the researchers by the athletic department. The researchers took to surveying all student-athletes by hand delivering 615 surveys at weekly team meetings. The student-athletes were given one week to complete the survey and return it to the researchers. In total, 149 (24.2%) usable surveys were returned. All procedures were in compliance with university institutional review board standards.
Participation Description

Of the student-athletes that responded, the largest percentage were female (Female = 49.7%; Male = 45.0%; No response = 4.0%), and had not received a red-shirt (i.e., they had been awarded an extra year of athletic eligibility) during their college athletic career (No redshirt = 79.5%; Redshirt = 20.5%). Additionally, most of the population identified themselves as academic freshman (35.8%), followed by sophomores (21.9%), seniors (21.2%), juniors (17.9%) and those that did not disclose their year (2.0%).

Instrument and Operational Definitions

Role Fulfillment. Due to the lack of congruent measures in past sport scholarship, and the lack of a uniform measure across numerous sport types, reciprocity was measured through role fulfillment rather than individual athletic performance. Accordingly, instead of measuring athletic performance directly, for which past literature provides conflicting methods and instrumentation as noted above, both student-athletes’ perceptions of their performance of their assigned duties per their role on the team (i.e. their in-role behavior) and their performance of extra duties (i.e., their OCB) were used to gauge the reciprocal actions (i.e., role fulfillment) of student-athletes.

Accordingly, Williams and Andersons’s (1991) instrument designed to measure organizational citizenship behavior (OCB) and in-role behavior, was adapted and used. With a reliability between .75 and .88 and established content validity (Organ, Podsakoff, & MacKenzie, 2005), the instrument provided a strong foundation from which to work. Seven items used to measure in-role behavior were adapted and used to measure student-athletes’ perceptions of their own performance per their role on the team. For the purpose of the current study the term “in-role behavior” was changed to “individual performance”. Additional changes in the wording were made so the verbiage was consistent across all measured items, both within individual performance measures and the instrument as a whole. As such, the term “role on team” was employed in many items.

In measuring OCB, Williams and Andersons (1991) distinguished between two forms of OCB in their instrument: OCBI (organizational citizenship behavior that benefits the individual) and OCBO (organizational citizenship behavior that benefits the organization). The current instrument made no such distinction, as each component of OCB offered only minimal questions applicable within the current study’s context. As such, three items deemed relevant to the studied population within OCBI measures and two items within the OCBO measures were chosen for use and combined to form a single OCB measure. A change in the wording of each item was undertaken as needed so each item addressed specifically student-athlete actions. As such, the term “supervisor” was changed to “coach”, the term “co-worker” was changed to “teammate”, and the term “work” was changed to “practice”.

Perceived Organizational Support. To measure student-athletes’ perceptions of the quality of support received from their team, items from Eisenberger, Huntington, Hutchison, and Sowa’s (1986) Survey of Perceived Organizational Support (SPOS) were used. According to Rhoades and Eisenberger (2002), “Because the original scale is unidimensional and has high internal reliability (α = .97), the use of shorter versions does not appear problematic” (p. 699). As such, eight items found to be high loading (i.e., β > .70) by Eisenberger et al. (1986), and deemed appropriate for the given context were taken from the original survey for use.
Within the context of the current study, the organization from which the participants were asked to make judgments of perceived support was defined as being the team on which they were a member. Subsequently the term “organization” was modified to “team” in each of the associated questions. Additional changes were also made to the wording of questions as needed to allow the questions to better fit the framework of the study.

**Leader-Member Exchange.** To measure the quality of the relationship between the student-athlete and their coach, Scandura and Graen (1984) LMX 7 was employed. Holding strong internal reliability ($\alpha = .92$; Hersen, 2004) the LMX 7 has been used previously in sport management literature (e.g., Case, 1998). For the purpose of the present study, changes were made to the wording of the LMX 7 as the term “coach” was substituted for “immediate supervisors”. Finally, two double-barreled statements in the original scale were divided to allow for greater understanding of the statements by the participants.

**Affective Commitment.** To fully encompass the degrees of emotional attachment student-athletes felt in relation to the two measured exchanges (i.e., leader-member exchange and perceived organizational support), the construct of affective commitment was divided into two distinct variables: affective commitment to the team (ACT) and affective commitment to coach (ACC). To measure the emotional attachment of student-athletes to their team, Barnhill et al.’s (2013) adapted version of Meyer, Allen, and Smith’s (1993) affective commitment scale was used. The four items had well established content validity and strong internal reliability ($\alpha = .84$).

To measure student-athletes’ emotional commitment to their coaches, Barnhill et al.’s (2013) athlete affective commitment scale, adapted from Meyer et al. (1993), was modified and used. In this respect the term “team” was replaced with “coach” and items were reworded to be more comprehensive.

**Normative Commitment.** As with affective commitment, the variable of normative commitment was split to better address the two forms of social exchange studied. The result was the formation of two distinct variables: normative commitment to team (NCT) and normative commitment to coach (NCC). In addressing student-athletes’ feeling of obligation to their team (i.e., NCT), six items were taken from Meyer et al.’s (1993) instrument. To make the items fit the context of the study, modifications were made to the wording of the items (i.e., the terms “team”, “with”, and “my teammates” replaced “organization”, “in”, and “the people on it” respectfully).

The same six items from Meyer et al.’s (1993) instrument were also used to measure student-athletes’ feeling of obligation to their coach (i.e., NCC). Again modifications were made so the items better fit the context of the study. Accordingly, the terms “organization” and “the people on it”, were replaced with “coach”, the word “this” was changed to “my” and the phrase “remain with” was changed to “play for”.

**Validity and Reliability**

After the instrument was created it was sent to a panel of six experts (four in the field of sport management and two with experience working with target population) for review. An overall evaluation of the instrument including suggestions for changes was received from the experts as a means to establish content validity and face validity. After all suggestions and recommendations were received, the appropriate changes to the survey were made.
Following the collection of the surveys, a confirmatory factor analysis (CFA) was run in SPSS Statistics software. Using Hair, Anderson, Tatham, and Black’s (1998) definition of an acceptable factor loading for an exploratory study, an evaluation of the loading of each factor onto its prescribed construct was undertaken. In this regard, any item with a factor loading greater than .60 was deemed acceptable, while all items falling below .60 were deemed to not adequately measure the construct and were thus removed. Table A.1 shows the CFA for the measured constructs.

With all items that did not load appropriately removed, the Cronbach’s alpha for each construct was calculated. Again Hair et al. (1998) definition was used. As such, a Cronbach’s alpha greater than .70 showed the construct was reliable while an alpha less than .70 showed the construct was unreliable. Table 1 shows all constructs were deemed reliable.

Table 1. Mean (μ), standard deviation (S.D), factor loadings (β) and Cronbach alphas (α) for observed variables

<table>
<thead>
<tr>
<th>Factor and Item</th>
<th>μ (S.D.)</th>
<th>β</th>
<th>α</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leader Member Exchange</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I know where I stand with my coach.</td>
<td>4.29 (1.48)</td>
<td>.760</td>
<td>.864</td>
</tr>
<tr>
<td>My coach understands my needs.</td>
<td>3.78 (1.56)</td>
<td>.785</td>
<td></td>
</tr>
<tr>
<td>I know how satisfied my coach is with what I do.</td>
<td>4.07 (1.50)</td>
<td>.765</td>
<td></td>
</tr>
<tr>
<td>I would defend my coach’s decisions if he/she were not present to do so.</td>
<td>4.28 (1.34)</td>
<td>.673</td>
<td></td>
</tr>
<tr>
<td>My coach understands my problems.</td>
<td>3.62 (1.55)</td>
<td>.809</td>
<td></td>
</tr>
<tr>
<td>My coach would use his/her power to help me solve a problem.</td>
<td>4.55 (1.29)</td>
<td>.739</td>
<td></td>
</tr>
<tr>
<td>My coach recognizes my potential.</td>
<td>4.75 (1.42)</td>
<td>.658</td>
<td></td>
</tr>
<tr>
<td>Perceived Organizational Support</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>My team values my contributions.</td>
<td>4.51 (1.39)</td>
<td>.719</td>
<td>.884</td>
</tr>
<tr>
<td>Help is available from my team if I have a problem.</td>
<td>4.67 (1.47)</td>
<td>.749</td>
<td></td>
</tr>
<tr>
<td>My team fails to appreciate any extra effort from me.</td>
<td>4.32 (1.44)</td>
<td>.630</td>
<td></td>
</tr>
<tr>
<td>My team is willing to help me when I need a favor.</td>
<td>4.71 (1.30)</td>
<td>.742</td>
<td></td>
</tr>
<tr>
<td>My team shows very little concern for me.</td>
<td>4.83 (1.41)</td>
<td>.660</td>
<td></td>
</tr>
<tr>
<td>My team takes pride in my athletic accomplishments.</td>
<td>4.44 (1.42)</td>
<td>.813</td>
<td></td>
</tr>
<tr>
<td>Affective Commitment Coach</td>
<td>Affective Commitment Team</td>
<td>Normative Commitment Coach</td>
<td>Normative Commitment Team</td>
</tr>
<tr>
<td>---------------------------</td>
<td>---------------------------</td>
<td>----------------------------</td>
<td>----------------------------</td>
</tr>
<tr>
<td>My team really cares about my well-being.</td>
<td>4.68 (1.30)</td>
<td>.806</td>
<td></td>
</tr>
<tr>
<td>My team cares about my opinions.</td>
<td>4.30 (1.37)</td>
<td>8.29</td>
<td></td>
</tr>
<tr>
<td><strong>Affective Commitment Coach</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not feel like part my coaches “family”.</td>
<td>4.21 (1.56)</td>
<td>.750</td>
<td></td>
</tr>
<tr>
<td>I would be happy to play the rest of my career for my coach.</td>
<td>4.25 (1.68)</td>
<td>.725</td>
<td></td>
</tr>
<tr>
<td>I do not feel emotionally attached to my coach.</td>
<td>4.23 (1.54)</td>
<td>.833</td>
<td></td>
</tr>
<tr>
<td>I do not feel that I have a strong bond with my coach.</td>
<td>3.97 (1.67)</td>
<td>.821</td>
<td></td>
</tr>
<tr>
<td>Playing for my coach has a great deal of personal meaning to me.</td>
<td>4.30 (1.48)</td>
<td>.714</td>
<td></td>
</tr>
<tr>
<td><strong>Normative Commitment Coach</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Even if it were to my advantage, I do not feel it would be right to leave my coach now.</td>
<td>4.53 (1.53)</td>
<td>.730</td>
<td></td>
</tr>
<tr>
<td>My coach deserves my loyalty.</td>
<td>4.60 (1.40)</td>
<td>.806</td>
<td></td>
</tr>
<tr>
<td>I owe a great deal to my coach.</td>
<td>4.15 (1.49)</td>
<td>.823</td>
<td></td>
</tr>
<tr>
<td>I would feel guilty if I left my coach.</td>
<td>4.40 (1.52)</td>
<td>.834</td>
<td></td>
</tr>
<tr>
<td>I do not feel any obligation to play for my current coach.</td>
<td>4.62 (1.47)</td>
<td>.587*</td>
<td></td>
</tr>
<tr>
<td>I would not leave my team right now because I have a sense of obligation to the coach.</td>
<td>4.23 (1.56)</td>
<td>.764</td>
<td></td>
</tr>
<tr>
<td><strong>Affective Commitment Team</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I do not feel emotionally attached to this team.</td>
<td>4.79 (1.44)</td>
<td>.779</td>
<td></td>
</tr>
<tr>
<td>I do not feel like “part of the family” with this team.</td>
<td>4.84 (1.43)</td>
<td>.768</td>
<td></td>
</tr>
<tr>
<td>I do not feel a strong sense of belonging to the team.</td>
<td>4.81 (1.52)</td>
<td>.836</td>
<td></td>
</tr>
<tr>
<td>Being part of this team has a great deal of personal meaning to me.</td>
<td>5.07 (1.26)</td>
<td>.707</td>
<td></td>
</tr>
<tr>
<td><strong>Normative Commitment Team</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I owe a great deal to my team.</td>
<td>4.26 (1.48)</td>
<td>.732</td>
<td></td>
</tr>
<tr>
<td>Even if it were to my advantage, I do not feel it would</td>
<td>4.95 (1.39)</td>
<td>.786</td>
<td></td>
</tr>
</tbody>
</table>

Note: The values in parentheses represent the standard deviation.
be right to leave my team now.

This team deserves my loyalty. 4.89 (1.31) .804

I do not feel any obligation to remain on my current team. 4.99 (1.38) .726

I would not leave my team right now because I have a sense of obligation to my teammates. 4.96 (1.37) .758

I would feel guilty if I left this team. 4.87 (1.35) .840

### Individual Performance

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean (SD)</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I adequately complete all aspects of my role on the team.</td>
<td>4.87 (1.09)</td>
<td>.756</td>
</tr>
<tr>
<td>I fulfill all responsibilities specified by my role on the team.</td>
<td>4.78 (1.19)</td>
<td>.800</td>
</tr>
<tr>
<td>I neglect aspects of my team role.</td>
<td>5.13 (1.26)</td>
<td>.500*</td>
</tr>
<tr>
<td>I meet the performance requirements specified by my role on the team.</td>
<td>4.73 (1.23)</td>
<td>.673</td>
</tr>
<tr>
<td>I engage in activities that will directly affect my performance evaluations.</td>
<td>4.23 (1.39)</td>
<td>.316*</td>
</tr>
<tr>
<td>I fail to perform duties required of me.</td>
<td>5.06 (1.16)</td>
<td>.576*</td>
</tr>
<tr>
<td>I perform all tasks that are expected of me.</td>
<td>4.95 (1.06)</td>
<td>.800</td>
</tr>
</tbody>
</table>

### Organizational Citizenship Behavior

<table>
<thead>
<tr>
<th>Description</th>
<th>Mean (SD)</th>
<th>Correlation</th>
</tr>
</thead>
<tbody>
<tr>
<td>I protect team property.</td>
<td>5.30 (.883)</td>
<td>.770</td>
</tr>
<tr>
<td>I assist my team with tasks without being asked.</td>
<td>4.85 (1.22)</td>
<td>.818</td>
</tr>
<tr>
<td>I go out of my way to help new teammates.</td>
<td>4.66 (1.14)</td>
<td>.647</td>
</tr>
<tr>
<td>I adhere to my team’s informal rules.</td>
<td>4.85 (1.23)</td>
<td>.795</td>
</tr>
<tr>
<td>I take time to listen to teammate’s problems.</td>
<td>4.79 (1.05)</td>
<td>.778</td>
</tr>
</tbody>
</table>

* Item fell below the .60 threshold and was removed.
Data Analysis

Using SPSS Statistics software, a correlation matrix was first produced. Within the production of the matrix listwise deletion was used for data “missing completely at random (MCAR)” (Schumacker & Lomax, 2004, p. 43). The correlation matrix was then input into LISREAL 9.1 software so the proposed hypotheses and model could be tested. Using structural equation modeling (SEM) each individual hypothesis was first examined through the comparison of observed t-values to a critical t-value at an alpha of .05. In performing the analysis, any relationship found to be non-significant (i.e., \( t_{\text{observed}} < t_{\text{critical}} \)) was removed from the overall model. This method of hypothesis testing follows Schumacker and Lomax’s (2004) prescribed approach for SEM.

After individual hypotheses were examined, the fit of the model as a whole was evaluated. Due to the bias nature of fit indices, multiple measures commonly cited in literature (e.g., Iacobucci, 2010; Schumacker & Lomax, 2004) were used. In this respect if a majority of the indices indicate a good fitting model it can be said the overall fit is good (Schumacker & Lomax, 2004). Accordingly, \( \chi^2/df \), goodness-of-fit (GFI), comparative fit index (CFI), standardized root mean square residual (SRMR) and root mean square error of approximation (RMSEA) were used to evaluate the overall model.

Finally, the suggested changes proposed in the LISREAL 9.1 software output were evaluated in regards to their conceptual relevance to the study. Only suggested modifications to the model that could be theoretically supported were made. The process of evaluating the output and making appropriate changes was undertaken until no further modifications were deemed to be conceptually just.

Results

Statistical Analysis

In relation to the effect of the quality of the coach/student-athlete relationship on student-athletes’ commitment to their coaches, Hypothesis 1 was validated (\( t = 11.26, p < .001 \)). Additional analysis found the quality of the relationship between the coach and student-athlete accounted for 86.9% of the variance in student-athletes’ commitment to their coaches. The same effect was found in relation to the social exchange relationships between teams and student-athletes, as Hypothesis 2 was also confirmed (\( t = 4.35, p < .001 \)). The quality of the relationship between the team and the student-athlete was responsible for 13.4% of the variance in student-athletes’ commitment to their teams. Hypotheses 3 (\( t = 4.63, p < .001 \)) and 4 (\( t = 2.31, p = .021 \)) were also confirmed, thus establishing the greater the student-athletes commitment to their coach and team the greater their perception of overall fulfillment of their ascribed roles on the team. Combined, commitment to coach and team accounted for 18.9% of the variance in student-athlete role fulfillment.

After assessing the individual hypotheses the model as a whole was examined. Evaluation of the fit indices resulted in three of the five (i.e., \( \chi^2/df = 2.10, \text{SRMR} = .077, \text{and CFI} = .95 \)) meeting the standards set by Iacobucci (2010) and Schumacker and Lomax (2004). Though the RMSEA value (.086; CI .074: .098) did not meet the widely accepted .08 or less mark for a good fitting model, the fact that it was less than .10 indicates the model fit is acceptable (Schumacker & Lomax, 2004). Thus, given only one of the five fit indices (i.e., GFI
showed a poor fitting model, while three (i.e., $\chi^2$/df, SRMR, and CFI) indicate a good fit, and one (i.e., RMSEA) showed an acceptable fit, the model as a whole can be said to be a good fitting model (Figure 2).

An evaluation of the LISREL 9.1 output suggested no modifications to the model that were theoretically justifiable. As a result the proposed and tested model was determined to be the best fitting model per the data and the application of the SET.

![Figure 2. Model of intercollegiate student-athletes exchange relationships with maximum likelihood estimates (* $p < .05$, ** $p < .01$, ***$p < .001$).](image)

**Discussion**

The goal of this study was to explore how multiple social exchange relationships previously not studied together affect the overall role fulfillment of intercollegiate student-athletes. To achieve this goal, we applied exchange constructs well studied in sociology and business to both the coach and student-athlete and the team and student-athlete dyads. Through the adaptations of instruments employed to measure LMX, POS, AC, NC, in-role behavior and OCB, a survey was constructed and distributed to a population of student-athletes at a large, Division I university located in the Midwestern United States. Results from the survey showed the items adequately measured the given constructs.

Further analysis of the data revealed the greater the quality of the exchange experienced by student-athletes (i.e., LMX and POS) the greater the commitment student-athletes had to both their coaches and their teams. Additionally, it was established the greater the feelings of commitment to the coach and the team, the greater the student-athlete fulfillment of their
ascribed roles on the team. Through combining each of these positive relationships into a single model (Figure 2), a pathway beginning with student-athletes’ perceptions of their relationships and ending with their individual role fulfillment was validated using SEM.

**Relationship Between Student-Athletes, their Coach, and their Team**

Combining the multiple significant pathways found in the current study, we were able to show student-athletes’ perceived quality of their relationships with, and commitment to their coach and teammates explained 18.9% of the variance in their role fulfillment. More specifically, the findings show college athletes’ relationships with their coaches explained a greater percentage of variance in role fulfillment than the relationship with their team. It is hypothesized here coaches were found to have a greater influence on student-athlete role fulfillment due to the nature of the relationship. That is, the coach-athlete relationship is built off a general belief that if the athlete listens to and follows along with the coach’s instruction they will have a greater chance to play and be athletically successfully. Conversely, the team-athlete relationship is suggested to be based more on the social relations and thus benefits that may be brought socially to the athlete. Though social benefits (e.g., team cohesion) have some degree of influence on an athlete’s want to reciprocate, the reciprocation they cause may be seen more off the field and thus not affect athletic role fulfillment as much.

Furthermore, the fact that the coach-athlete relationship was found to explain a greater percentage of the variance than the team-athlete relationship may be linked to past scholarship on role conflict. Miller and Kerr (2003) found student-athletes from freshman to senior year identified more with their athletic role than their social. As a result, those relationships making up the athletic identification would be hypothesized to be more salient than those relationships making up an athlete’s social identification. The coach-athlete dyad being critical to athletic identification would thus take precedent over a team-athlete dyad which is part athletic and part social. Therefore, athletes may note a higher connection between their relationship with their coach and their athletic output. However, all hypothesized reasons for the noted variance fall outside the scope of the current study and thus further examination is needed by future scholars.

As sport research has yet to examine the effect of multiple relationships on an individual’s role fulfillment or examine such relationships in the context of intercollegiate athletics, the findings contribute significantly to the literature. Primarily, the results showed multiple interpersonal relationships hold significant importance in how student-athletes perceive the fulfillment of their ascribed role on the team. Future scholars should thus note both coaches and teams need to be examined when trying to fully account for performance variables in college student-athletes.

Additionally, the findings validate the use of the SET in studying multiple dyadic relationships in sport, a construct previously unexplored. More specifically, the acceptance of the proposed model demonstrates the application of athletic role fulfillment as reciprocity for favorable exchange relationships in sport is viable. This finding follows previous literature on social exchange outcomes in business (e.g., Cropanzano & Mitchell, 2005; Wayne et al., 1997) and sociology (e.g., Blau, 1964), and provides evidence scholars should use the SET to examine dyads in the sporting context in the future.

The study of interpersonal relationships of student-athletes should thus continue by exploring other relationships that lead to the attainment of outcomes. For example, scholars should also examine the relationships student-athletes have with the athletic department due to
role the athletic department plays in supplying student-athletes with valuable athletic resources. In this manner the current study provides a basis for such work through its findings of the application of the SET.

Practical Application

Practically speaking, the results in the current study demonstrated the importance of the coach and the team in individual athletic success. While coaches often focus on teaching skills and game strategy, the current study suggests they should also focus on building strong relationships with and between their athletes. Examining the items used to measure the exchange relationships, it can be suggested coaches should work to build strong relationships with their athletes through open and honest communication. They should discuss with their athletes their role on the team, and explain to them why they make the decisions they do. Additionally, they should strive to understand the needs and problems of their athletes. The commitment measures also suggest if a coach wants to establish a high level of emotional attachment and feelings of obligation, they should try to make their student-athletes feel like part of their family. Thus, treating student-athletes as more than “employees” is important.

These suggestions for interpersonal interactions may be done in multiple ways. Coaches might seek to interact with their student-athletes away from the playing arena (e.g., team meals, team building activities, etc.), or may want to take an interest in activities falling outside the attainment of athletic success (e.g., academic success, career goals, family well-being, etc.). Such an investment by coaches into the relationship, would serve a means to increase the personal meaning athletes attach to the dyad, and in turn, increase their emotional attachment and feelings of obligation towards their coach. Additionally, when discussing matters related to the team or specific athlete roles on the team or their athletic abilities, coaches should be honest and upfront and the discussion should be in a professional and constructive manner. The current study proposes that following these suggestions should result in athletes developing a high quality exchange relationship with their coach. However, these activities, and the effect they have on commitment need to be studied more in-depth as a means to further validate the findings of the current study.

An examination of the items also reveals the importance of team dynamics. That is, when teammates value each other’s contribution to the team, care about each other’s well-being, and take pride in each other’s accomplishments a family like environment is created. This environment causes athletes to be more emotionally invested in the team and have a greater drive to return the positive treatment they receive. As a result, athletes perform their given role on the team at a higher level and also seek to perform additional tasks that fall outside their role.

Thus, the quality of interaction between teammates is a vital part of athletes performing their roles at their highest possible level. Coaches and administrators should work to foster an environment in which team dynamics and relationships may grow in a positive way. This might be done through activities such as team goal setting (Senecal et al., 2002), captains practices, team social outings, or any other activity done to promote positive interactions between teammates. Specific activities to promote positive team-athlete interactions however fall outside the scope of the present study. Accordingly, future scholars should embark on studies of team building activities to gain a greater understanding of how to build high quality POS.
Limitations

While the findings in the current study are valid, the results are limited in a few ways. First, the population of student-athletes drawn from consisted of individuals from a single institution. As a result, the findings lack external validity. Additionally, due to IRB protocol the participants were not allowed to identify the sport they played, thus not allowing for analysis across sport to be done. Future work is thus needed to test whether the findings hold true in other intercollegiate settings and to test whether there is any variance across sport type.

Secondly, the low number of respondents can cause the findings to be bias. Though Ding, Velicer, and Harlow’s (1995) suggestion of 100 to 150 respondents for SEM was met, other scholars (e.g., Schumacker & Lomax, 2004) propose far greater numbers are needed to produce unbiased results. Accordingly, future studies of social exchange in sport should draw from large populations so a greater number of responses can be obtained.

Finally, though three of the five fit indices indicated a good fit, thus meeting the accepted parameters of an overall good fitting model (Iacobucci, 2010), the fact that RMSEA only showed an acceptable fit and GFI showed a poor fit must be taken into consideration when reviewing the results. More specifically, it must be noted that each index has its own biases which might have influenced the fit. The GFI is affected by the “means of the sampling distributions” and thus “assessments of fit in small samples may be overly pessimistic” (Bollen, 1990, p. 258). The RMSEA also has been noted to be affected by sample size as it “over-rejects true models for ‘small’ N (N < 250)” (Iacobucci, 2010, p. 96). Thus, future scholars should take these biases into consideration when evaluating the overall fit of their models and when comparing their results to these findings.
References


