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“Fit Check”: Testing a Model of Perceptions of Team Level Person-Group Fit

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“FIT CHECK”: TESTING A MODEL OF PERCEPTIONS OF TEAM LEVEL PERSON-GROUP FIT

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ABSTRACT

Teams are become a mainstay in nearly every sector of business. Teams are complex and evolve to meet the demands of their unique environments. One team structure growing in popularity is a multiteam system (MTS), a system comprised of multiple teams working interdependently to achieve goals. Understanding the mechanisms by which a MTS is successful is challenging; however, the concept of fit may offer further explanation. Person-group fit has been shown to improve coworker satisfaction, job attitudes, and task performance. Most research has only explored individual-level outcomes of person-group fit, yet there are numerous calls for further exploration into team-level outcomes. This study begins to examine such outcomes by building upon a model initially proposed by Seong and Kristof-Brown (2012) and utilizing referent shifts to focus on perceptions of fit and team-level outcomes. By applying an MTS lens, this study explores how the referent can impact an individual's perception of fit; it also takes a step towards establishing a collective fit measure of person-group fit. Using a snowball sample of 133 student-athletes from the National Collegiate Athletic Association (NCAA), perceptions of team fit within MTSs were analyzed. Path analyses were conducted to confirm the models Seong and Kristof-Brown (2012) established and examine fit differences. Results revealed less-than-ideal model statistics for the MTS and component team models. However, nearly all theorized relationships existed between perceptions of team-level outcomes at both referents. Further, analyses revealed that the emergence of specific team processes and outcomes may differ between component teams and the MTS.

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CHAPTER ONE

INTRODUCTION

Since the 1980s, organizations have utilized teams at an increasing rate (Hollenbeck et al., 2004). *Teams* are a distinguishable set of two or more individuals who interact dynamically, adaptively, and interdependently, share common goals or purposes, and have specific roles or functions to perform (Salas et al.,1999). These are not simply groups working together; the formal structure, coordination of demands, tasks, and feedback help distinguish teams from work groups (Saavedra et al.,1993; Tannenbaum & Yukl, 1992). Many types of teams are complex and dynamic, evolving over time to meet the demands of their unique environments (Kozlowski & Ilgen, 2006; Sundstrom et al., 2000). The concept of multiteam systems (MTS), has emerged recently in the teams' literature to define:

> "two or more teams that interface directly and interdependently in response to environmental contingencies toward accomplishing collective goals. MTS boundaries are defined by "the virtue of the fact that all teams within the system, while pursuing different proximal goals, share at least one common distal goal and, in doing so, exhibit input, process, and outcome interdependence with at least one other team in the system." (Marks et al., 2005: 290)

The benefits of teams and MTSs have been explored throughout the literature, some of which include workplace productivity, reduced turnover, increased job performance, and increased organizational performance (Anguinus & Kraiger, 2009; Glassop, 2002). While research consistently shows teams and MTSs can be very effective

(Tannenbaum & Salas, 2021), the questions about what precisely makes a team or MTS successful or effective are endless; however, the concept of fit may offer a further explanation for success.

Do I or do I not fit in?" This is the central question behind fit theory. Fit theory, in essence, assumes people need to fit into their environments and seek out environments that match their characteristics (van Vianen, 2018). Due to this innate desire within humans, Person-Environment Fit Theory (PE fit) has been a popular topic for researchers. As such, there is a plethora amount information on the subject. Several types of fit have been born from PE fit, such as Person-Vocation (PV fit), Person-Organization (PO fit), Person-Job (PJ fit), Person-Group (PG fit), and Person-Supervisor (PS) (Edwards & Billsberry, 2010; Seong & Kristof-Brown, 2012; van Vianen, 2018). Out of all these types of fit, PG fit is the most under-researched and nascent (DeRue & Hollenbeck, 2007; Seong & Kristof-Brown, 2012, 2015; van Vianen, 2018).

Despite being less developed, research has found that predicting individual outcomes when examining PG fit is possible. Job satisfaction, organizational commitment, and contextual and task performance have all been associated with individual PG fit outcomes (Kristof-Brown et al., 2005; Werbel & Gilliland, 1999). However, more research is needed to understand whether PG fit can influence team-level outcomes (Kristof-Brown et al., 2005; Seong & Choi, 2021). Unexplored perceptions may further explain differences in team performance and group dynamics.

Moreover, one must recognize that MTSs are fundamentally team-based collectives requiring collaboration both within and between teams (Luciano et al., 2018).

A simple way of thinking about this concept is a football team. The offense and defense teams collaborate with both their own side and each other yet ultimately need each other to win a game (*see appendix A for an example figure*). When considering fit within teams, research has concluded individuals are better off when they fit into their team (Kristof-Brown, 2005; van Vianen, 2018). However, when considering MTSs, multiple teams should be under consideration simultaneously. Individuals not only should recognize how they individually fit into their own team, but also recognize the overall fit of the team itself. Furthermore, differences in fit perceptions should be explored between teams since many teams reside within an MTS.

Purpose of Present Study

The main objective of this study is to test a multidimensional adaptive model of person-group fit from Seong and Kristof-Brown (2012), integrating team and MTS perspectives to offer a more holistic view of fit within teams and take a step towards achieving a collective team level fit measurement. The original model has been altered with a referent shift to reflect an individual's perception of some higher-level structure ("My team…"). By focusing on a team-level referent, researchers have argued that the appropriate referent shift can predict same-level outcomes better (Kozlowski & Klein, 2000). While data were not compiled to find team scores, these results should provide a step forward in obtaining a collective fit measurement because results will be focused on team outcomes. Moreover, an MTS lens will showcase that fit needs to be considered on multiple dimensions and referents.

The present study thereby contributes to the literature in three key ways, namely by: (1) answering calls for exploring fit and team-level outcomes (DeCooman, 2016; Seong & Choi, 2021); (2) operationalizing fit to simultaneously include both supplementary and complementary within PG fit (Piasentin & Chapman, 2007); and (3) utilizing sports teams as the population of interest, which provides expansion of the current fit literature and allows fit to be examined within multiteam systems (Kozlowski & Klein, 2000). In the following chapters, I will examine prior work concerning PG fit, perceptions of team-level outcomes, and multidimensional fit. I will also address what needs to be answered in these areas, especially concerning essential team processes and outcomes.

CHAPTER TWO

CONCEPTUALIZING MTSs

What is a Multiteam System?

Multiteam systems, also known as MTSs, are teams of teams that work together with at least one other team at high levels of interdependence (Mathieu et al., 2001). Teams within the team are referred to as *component teams*, while the collection of all component teams is the *MTS* or *system* – these terms will be used throughout the remainder of the paper. While all component teams pursue different proximal goals, the MTS has at least one goal – the distal goal, which can only be achieved if two or more component teams work together (Bateman et al., 2002; Marks et al., 2005; Zaccaro et al., 2020). According to Marks et al. (2005), goal hierarchy between component teams is the linking mechanism for MTSs. The goal hierarchy "prescribes not only which teams compose an MTS but how their contributions must be synthesized to achieve higher level goals" (Luciano et al., 2018; Marks et al., 2005, p. 965).

Now that an MTS has been defined, it is important to distinguish what an MTS is not. While related, MTSs are not simply large teams; their component teams are distinguishable entities capable of independent actions (Arrow & McGrath 1995). While similar, subassemblies and matrix organizations are not MTSs because they do not exhibit the degree of interdependence found in MTSs (Davis & Lawrence, 1977). *Interdependence* is "a state by which entities have mutual reliance, determination, influence, and shared vested interest in processes they use to accomplish work activities" (Mathieu et al., 2001, p.293). This reiterates the necessity of multiple component teams

working together to achieve a task. MTSs can also be differentiated from task forces by their duration (Sundsdtrom, 2000). Task forces are usually limited in their tenure for a singular project, while an MTS can be long-standing (Sundstrom et al., 2000). An additional unique feature of an MTSs is that they are not limited by traditional organizational boundaries (Zaccaro et al., 2020). While MTSs can be entirely embedded within singular organizations (i.e., internal MTS), they can also be composed of teams from different partnering organizations (i.e., cross-boundary MTS; Zaccaro et al., 2020). This study utilizes a sample of student-athletes participating on a form of internal MTSs: athletic teams that are actually comprised of multiple, interdependent component teams (e.g., football basketball, soccer). Table 1. provides a comprehensive list of interdependent sports in NCAA athletics that meet this internal MTS definition.

Athletic Teams as MTSs

Athletic teams can be considered MTSs for many reasons. First, not all athletic teams can be considered an MTS, only those that are comprised of at least two interdependent component teams (see Table 1). An interdependent team is described as members working together to fulfill a goal, having defined tasks and roles, and depending on each other's efforts to achieve outcomes. Furthermore, work at specific points can require working individually, while other points can mean working collaboratively (NextlevelCoaching, 2022).

Second, in sports, component teams can be considered position groups or training groups. Consider the sport of football - different position groups such as offensive line, running backs, wide receivers, cornerbacks, and defensive are all separate component

teams. For an entire football team (MTS) to win a game, each position group (i.e., component team) must not only fulfill the duties of their position role while working together. This aligns with the distinguishing features of an MTS in that component teams need to synchronize their actions to achieve higher-order goals (Marks et al., 2005). MTSs can operate with as few as two component teams (Mathieu et al., 2001). While the sport of football includes several of component teams – it can be simplified into offense and defense. However, two is the absolute minimum number of component teams allowed because both within- and between-team processes can occur.

Additionally, each position group has its own proximal goal; for example, in football an offensive line is supposed to protect the quarterback, while the quarterbacks' job is to find the open receiver/make the play, and the receivers' job is to catch a ball. On the defensive side, the linebackers' job is to protect the middle of the field, and the cornerback's job is to stop the opponent's wide receivers from catching the ball. These are each component teams proximal goals; however, the overall MTS has the distal goal of winning the game. The goals of each respective component team not only intertwine and overlap with each other, but if one group fails to achieve its goal, it is challenging for the MTS to succeed. This distinction of goals aligns with DeChurch and Zaccaro's (2010) support for the claim that MTS are distinguished by the fact component teams are organized into goal hierarchies, where they may or may not share proximal goals, but they have the same distal goal.

Teamwork Processes and MTSs

Examining the underpinning mechanisms of team processes and outcomes can aid one in understanding MTSs. Numerous studies have highlighted factors in workgroup effectiveness such as organizational context, group composition and size, group work design, intragroup processes, and external group processes (Sandstrom et al., 2000). These factors can be categorized into the input-process-outcome (IPO) framework (Hackman & Morris, 1975; Mathieu et al., 2019). Inputs describe antecedent factors that influence members' interactions, including team member characteristics (e.g., competencies, personalities), team-level factors (e.g., task structure), and organizational and contextual factors (e.g., organizational design) (Mathieu et al., 2019). Conversely, team processes are "members' independent acts that convert inputs to outcomes through cognitive, verbal, and behavioral activities directed toward organizing task work to achieve collective goals" (Marks et al., 2000, p.2). Team outcomes are the products of team processes, such as team commitment, satisfaction, performance, rate of work, and more (Marks et al., 2000). Using the framework of team IPO within MTSs enables researchers to investigate what is happening within multiple teams simultaneously.

The present study focused on identifying: 1) what impacts the perception of team-level PG fit, 2) and what supports or hinders it by changing the referent of the team. Luciano et al. (2018) states individuals can simultaneously see themselves as part of two goal-directed groups – their component team and the MTS, indicating the relations between these groups can affect behaviors differently (Roccas & Brewer, 2002). By exploring the interactions and differences between component teams, additional insights regarding the effectiveness of the MTS are possible (Marks et al., 2005).

CHAPTER THREE

CONCEPTUALIZING FIT IN TEAMS & MULTITEAM SYSTEMS

Background

Understanding fit within teams and MTS may provide insight into the IPO process. However, to delve into these insights, fit theory must be explored. Fit theory originates with PE fit, which can be described as compatibility between individuals and their environment (van Vianen, 2018). P" refers to individual characteristics and attributes, which are demographics, values, goals, needs, personality, knowledge, skills, and abilities (KSAs). Demographics include age, gender, occupation, cultural background, and family status. Values refer to personal feelings about subjects. Goals are what an individual would like to achieve while needs refer to the missing characteristics or abilities of an individual. Personality is defined as individual differences in characteristic thinking, feeling, and behavior patterns (American Psychology Association, 2023) and KSAs refer to capabilities, more specifically, "K" = knowledge, "S" = skills, and "A" = abilities.

The "E" in PE fit can be conceptualized as fit within the overall environment or, in the case of PG fit, "E" fit is between individuals and group members, group norms, teams, or climate (Ostroff & Zhan, 2012). When "P" and "E" are combined, the focus is now on an individual's specific attributes or characteristics that type of fit within the chosen environment. One of several dimensions of PE fit is PG fit. PG fit examines the match between a person and their immediate coworkers (van Vianen, 2018). However fit theory is not as simple as finding similar people and putting them together on a team.

Much like teams, fit theory is complex, and several factors need to be considered. First, the most basic distinction in fit theory is between supplementary and complementary fit – which assumes an individual can match (supplementary) or positively differ (complementary) those in their team (Holland, 1985; Bryne et al., 1986). This distinction shows that individuals can fit into a team because they are similar and/or because their strengths fill the weaknesses of other members. Second, there are three broad categories of PG fit: values fit, abilities fit, and personality fit. Third, one must choose between three main measurement methods regarding fit: calculated, subjective, and objective. The fourth layer of fit is level of analysis. Fit can be examined across individual and team levels. Individual-level measurement examines how well a particular individual may fit into a team. In contrast, team-level measurement tests the collective score of how well the team believes they fit together – also known as collective fit (Kristof-Brown et al., 2005).

Collective fit is important to understanding teams and MTSs; however, the research and practice of exploring PG fit within teams and MTSs is extremely limited. To obtain adequate collective team results, individual level responses should be targeted to several different referents, one of which is the team. Instead of considering how “I fit into the team,” they can provide their opinion of their team; "my team fits together." When considering MTSs, this must be done within both the component team and the system. Distinguishing the referents and level of focus is important because, theoretically, an individual can feel like they do not fit into the team, but the team fits together.

Furthermore, the fit between the component team and the system could differ. The subsequent sections will provide further details into these complexities.

Person-Group Fit

Person-group fit is "the compatibility between individuals and their workgroups" (Kristof, 1996, p. 7). PG fit concerns how individual characteristics interact with those of the other group members. However, group-level outcomes and individual perceptions of these outcomes are examined less frequently. A few studies analyze the antecedents and consequences of group-level values (Kristof-Brown et al., 2014; Seong et al., 2015; Seong & Choi, 2021). Yet this gap suggests that most research needs to include an individual perception of team fit and its outcomes (Herkes et al., 2018; Kristof-Brown et al., 2005, 2014). The present research seeks to use an MTS lens to explore how individual perceptions of team characteristics interact with the perceptions of team outcomes component and systems teams.

Measuring Fit

In terms of measurement, research differentiates between subjective fit and objective fit as it exists in the environment; however, subjective fit tends to be the focus rather than objective fit when measuring fit. Perceived fit is one of two methods derived from subjective fit (Kristof-Brown & Jansen, 2007). Perceived fit assesses a direct overall impression as an individual perceives it (French et al., 1974) and is the easiest to measure (van Vianen, 2018). In the context of PG fit, perceived fit studies ask individuals to report how well their characteristics fit with their group (Edwards, 1990). Meta-analyses have found that direct measurements compared to indirect measurements of perceived fit are

most used and generally have the most substantial relationship with outcome variables (Arther et al., 2006; Kristof-Brown et al., 2005; Kristof-Brown & Jansen, 2007, p.134). To date, a wide range of characteristics has been examined in perceived fit studies, including values, goals, preferences, abilities, skills, and personality (Adkins et al., 1996; Barsade et al., 2000; Burch & Anderson, 2004; DeRue & Morgeson, 2007; Kristof-Brown & Stevens, 2001).

The second way of examining subjective fit is by using indirect measures collected from the same person. Individuals at one time report their own characteristics and simultaneously report the characteristics of their organization or team; fit is then calculated based on the degree of congruence between the individual and team/organization measures. This indirect measurement of subjective fit focuses on specific dimensions within the three broad categories of fit, such as honesty as a value. However, this method tends to capture fit only within a perceived environment rather than the overall experienced fit (Edwards et al., 2006).

Another method of measuring fit is through objective organizational characteristics. Objective fit asks respondents about their own characteristics and then has an outside party (i.e., a teammate) describe the group's characteristics. Agreement between the two answers is then assessed (Chatman, 1989). However, objective fit is often criticized for failing to examine the overall level of experienced fit. Furthermore, meta-analyses found objective fit to have lower correlations with outcomes than subjective measures (Arther et al., 2006; Kristof-Brown et al., 2005). The present study will use a direct measure of perceived fit.

Lastly, it is important to note that researchers recognize that team fit will never be perfect. The goal of fit studies is not to find a perfect fit but to better understand individual behaviors and their interactions with others and the team environment (Edwards & Cable, 2009). The extant literature notes many factors influence the fit of a member within their team (Klaic et al., 2018; Seong et al., 2012). Much of this research focuses on how a team impacts the individual members within it (Kristof-Brown et al., 2005; Vogel & Feldman, 2009); yet more research is needed to understand how everyone within a team impacts team-level outcomes such as team performance.

The existing literature on PG fit and team outcomes is generally limited despite many calls for future research to fill the gap. A few studies have examined fit's impact on team cohesion and creativity (Kristof-Brown et al., 2005; Seong & Choi, 2021), but research should also be expanded to consider other team processes. Furthermore, an MTS perspective is almost nonexistent.

Types of Fit

Historically, previous studies have used the term demand-abilities fit or needs-supply fit to describe forms of complementary fit perspective. Demands-abilities fit refers to the degree to which demands are fulfilled by the person's knowledge, skills, abilities, and other resources (French et al., 1982); while a needs-supplies fit is the degree to which supplies in the environment fulfill the person's needs (French et al., 1982). However, Holland (1979) found that demands-abilities fit, and needs-supply fit should be distinguished from supplementary fit, also commonly operationalized as values congruence or perceived similarity (Chapman, 1998; Piasentin & Chapman, 2007)

because they affect outcomes differently. Edwards and Shipp (2007) believe the operationalizations of these fit types need to be expanded – since outcomes differ. They claim there needs to be a greater specification of whether something is supplementary or complementary instead of a narrow term such as values congruence (Edwards & Shipp, 2007).

Fit can be conceptualized in two forms, either supplementary or complementary (Kristof-Brown et al., 2005). Supplementary fit refers to matching similar qualities within group members, such as beliefs and values. In other terms, supplementary fit occurs when "a person supplements, embellishes or possesses the characteristics which are similar to other individuals" (Muchinsky & Monahan, 1987, p. 269). A comparable concept to supplementary fit is the similarity-attraction theory proposed by Bryne (1971). The similarity-attraction theory suggests that individuals are typically attracted to those like them in areas such as personality, values, and goals (Chuang et al., 2015). In general, high degrees of supplementary fit develop effective interpersonal interactions among members (Werbel & Johnson, 2001). However, teams are not made of up individuals who are completely similar thus a complementary fit perspective is needed to capture differences between team members.

Complementary fit is based on how well the “person”, or the “environment” meet the needs and demands of other group members (Edwards, 1996). Complementary fit occurs when members are differentiated by distinct qualities or characteristics that support other members' attributes (Ostroff & Zhan, 2012; Werbel & Johnson, 2001). This type of fit is most seen when a "weakness or need of the environment is offset by the

strength of the individual and vice versa," complementary fit can exist (Muchinsky & Monahan, 1987, p. 271). For example, one team member may be very detail-orientated and lack the vision to see the big picture while another may be a big-picture thinker but struggle with the details of achieving their goal. When working together these two teammates complement each other, as they fill in the performance holes of the other.

Most research only studies supplementary forms of PG fit while ignoring a complementary fit perspective. Yet, research has found evidence supporting both forms of PG fit (De Cooman, 2016; van Vianen, 2018; Werbel & Johnson, 2001). Studies continuously show that when team members share values or traits (supplementary fit), it leads to positive outcomes (Van Vianen, 2018). While there have been few studies exploring complementary PG fit studies have shown it is essential for teams to have complementary fit. For example, when groups perform a task, a single team member needs possesses attributes that help the team perform its duties or compensate for other members' deficiencies (DeRue & Hollenbeck, 2007; Seong & Kristof-Brown, 2012; Seong et al., 2015). If individuals on a team cannot fill weaknesses or gaps in the other members, it will be difficult for the team to be successful. This highlights the importance of not ignoring the complementary lens because outcomes can be benefited by the differences in employees' strengths and weaknesses (Kristof-Brown et al., 2005). Yet most PG fit studies typically tend only focus on one or the other. However, a study from De Cooman (2016) found that examining both perceptions of supplementary and complementary fit simultaneously mattered when predicting outcomes such as

satisfaction, viability, and performance within individuals and teams, indicating that future studies should consider both complementary and complementary fit lenses.

Dimensions of Fit

As briefly mentioned, most PG fit studies focus on specific dimensions/categories of fit, such as values fit, personality fit, goals fit, and abilities/needs fit (Seong & Kristof-Brown, 2012). Values fit is typically conceptualized a supplementary form of fit, emphasizing matching commensurate individual and organizational characteristics (Kristof, 1996). The dimension of values fit is the most researched, as this can be achieved by matching individual and team characteristics (the team values). The congruency or values similarity leads to more attraction and higher personal liking, leading to a more significant commitment to the team (Edwards & Billsberry, 2010; Kristof-Brown et al., 2005). Personality-based fit matches team members' personalities, while the dimension of abilities-based fit reflects the abilities of an individual to meet environmental demands (Kristof, 1996). Research has generally found personality-based fit to be less predictive of attitudes than values-based fit (Kristof-Brown et al., 2005). However, compared to values, personality is more stable and observable. Personality and values both tend to be viewed from a supplementary lens.

Conversely, abilities fit is the dominant area of interest when viewing fit from a complementary perspective. This method matches the demands of the environment/team with the person's abilities, including work task demands or social expectations such as group norms (Seong & Kristof-Brown, 2012). Research has found a wide range of results when assessing abilities fit, including moderate to strong relationships with

organizational-level outcomes, such as OCBs, and job-level outcomes, such as task performance (Hoffman & Woeher, 2006; Kristof, 1996). In general, since research on PG is fit is limited, greater exploration into the values, personality, and abilities dimensions is needed to explore an accurate picture of PG Fit. One method to doing this would be examining the dimensions from a supplementary and complementary lens simultaneously. Furthermore, by using MTSs, these dimensions can be explored both within the context of the component team and the MTS since the "environment" is changing.

Multidimensionality of PG Fit

Now that the types of measurement and forms of person-group fit have been explored, one should clearly understand the conceptualization of the construct. Within the last few decades, fit researchers were divided on measuring fit (Cable & Edwards, 2004; Edwards et al., 2006; Smith et al., 1969). Researchers also argued over the multidimensionality of fit, which would subsequently alter the ways fit should be measured.

Seong and Kristof-Brown (2012) sought to answer which conceptualization best represents the cognitive construction of person-group fit. The authors aimed to determine if PG fit is the aggregate of its dimensions or a superordinate multidimensional construct. A multidimensional construct refers to several distinct but somehow related dimensions treated as a single theoretical concept (Law et al., 1998). In contrast, an aggregate construct is a composite of its dimensions. For example, job satisfaction is created by looking at the facets of pay, benefits, working conditions, etc. (Edwards, 2001).

Conversely, a superordinate multidimensional construct is manifested by its dimension. For example, the Big Five of personality has the dimensions of openness, consciousness, extraversion, agreeableness, and neuroticism, which are reflective indicators of a latent construct (Edwards, 2001; Seong & Kristof-Brown, 2012). Overall Seong and Kristof-Brown (2012) tested several models, including each type of fit as distinct dimensions (i.e., values, personality, abilities) and an aggregate and superordinate model.

Seong and Kristof-Brown (2012) also examined the dimensions of fit (values, personality, and abilities) with an outcome of interest typically associated with that dimension. They examined the relationship between team commitment and values-based PG fit due to the validity of the similarity attraction paradigm and the findings of Kristof-Brown et al. (2005), which concluded that values-based fit had a positive relationship with work attitudes and feelings of team cohesion. Personality-based PG fit was examined with voice behaviors within the team because voice is an extra-role behavior and has been found to be associated with personality (Avery, 2003). Knowledge sharing was tested as an outcome of ability-based fit because knowledge sharing between team members is a vital component to perform a task successfully. Researchers also hypothesized a positive relationship between performance and these outcomes since all the chosen attitudes and behaviors have been associated with performance (Jaramillo et al., 2005; Riketta, 2002; Wright & Bonett, 2002).

The findings of this study revealed the relationship between values fit and team commitment was both positive and significant (Seong & Kristof-Brown, 2012). Personality fit positively related to voice; however, abilities fit did not relate to

knowledge sharing. The model testing results revealed that the aggregate model was not supported, indicating that one cannot add the subdimensions (values, personality, and abilities) together and claim a PG fit score. The superordinate model produced significant results; model fit statistics improved when specific fit dimensions were reflective indicators of a superordinate PG fit perception (Seong & Kristof-Brown, 2012). Overall, there were similar results between the distinct dimensions model and the superordinate model yet post-hoc analyses revealed the superordinate model as the best-fitting model (Seong & Kristof-Brown, 2012). Overall, the results of this study show that PG fit should be measured as a superordinate construction.

A Step Towards Team-level Collective Fit

Kristof-Brown et al. (2014) define team-level collective fit as "team members' shared assessment of compatibility with each other and with the requirements of the task environment." (p. 3). Despite a precise definition, the idea of collective fit is relatively new, and similar research topics can only be found in studies of team similarity or compatibility – due to this, many calls for accepted measurements of team-level analysis have gone unanswered (Kristof-Brown, 2005; Van Vianen, 2018). Within the available literature, most research examines similarities in demographics or personality (Seong et al., 2015; van Vianan, 2018). While these components are undoubtedly embedded in collective fit, they are not the sole focus. The breadth of focus within collective fit encompasses more than personality and demographic similarities. The goal is to accurately capture many moving components of the team, which cannot solely be done by examining demographics or personality.

Perceived collective fit can be differentiated from PG fit by the referent of focus and the level of analysis - precisely, the team level versus the individual level. A collective-level perspective focuses on obtaining every team member's perception of the team, while an individual-level perspective only focuses on individuals' perceptions of themselves (Kristof-Brown et al., 2014). For example, an individual-level question may ask, "I fit into my team," while a team-level question may ask, "My team fits well together."

When considering a collective fit, a debated topic is whether the scores of individual PG fit should be aggregated. Some researchers claim the aggregation of results is simply a combination of individual scores (Edwards & Billsberry, 2010), and the summation of all individual scores from group members constitutes a team score. Most current literature takes this stance and aggregates individual viewpoints to claim a "team" score (Kristof-Brown et al., 2014). However, one can argue that this is not an accurate team score because researchers are not actually measuring what they intend to measure. A collective team measure of fit cannot simply add personal perceptions of fit together and claim a collective result due to the referent of the question (DeCooman, 2016; Seong & Choi, 2021). According to Kristof-Brown and Guay (2011), the collective fit should be distinguishable from the aggregation of its lower-level counterparts in that how an individual perceives themselves to fit into a team and how they view the fit of their team are two conceptually distinct things.

This is not to state that collective level fit cannot be well-measured by aggregating individual fit scores. Instead, it reveals that the appropriateness of

aggregation is contingent upon the referent of the questions. There needs to be a referent shift in the wording of items within a measure before any aggregation (Chan,1998). Like self-efficacy being translated to collective efficacy (Chan, 1998), the individual-level of fit measure can be changed to better suit a whole or collective group. DeRue and Hollenbeck (2007) have suggested focusing the questions on team outcomes instead of personal outcomes to alleviate measurement concerns, such as team performance instead of individual performance. With regards to PG fit; this referent shift allows for individual perceptions of how the whole team fits together instead of a personal appraisal of themselves. Simply, the referent of the questions is aimed at the team instead of the individual. For example, questions need to ask both "I similar to my team" and "my teammates are similar to the team." Two distinct measurements can be formed from the individual-level referent and team-referent. Furthermore, when considering an MTS, a third question can ask, "Those in my position group are committed to the position group" to capture differences between component teams and the system.

The present study will take a step towards developing a collective fit measure by shifting the referent of the questions to focus on the team instead of the individual within both the MTS and component team context. Responses should indicate not only that perceived fit is different when considering these two teams, but it will provide insight into how their perception of team PG fit impacts the team's outcomes. To first establish fit differences within MTSs, no aggregation will be completed during team-level analysis. However, aggregating team scores should be the next step after showcasing how different referents influence different outcomes.

Summary

The extant literature outlines that some aspects of fit are complementary, and others involve supplementary fit. Therefore, a comprehensive approach to understanding PG fit may deem both types as appropriate to the specific dimensions under investigation. Most models of PG fit solely include constructs focusing on the individual; however, an individual-level model of fit may not explain perceptions of team outcomes or team fit. Thus, a deeper understanding of PG fit regarding the team is needed. Referent shifts of questions can enable PG fit to be transformed to reflect the team rather than a personal appraisal. Insights gained here will help build towards the ideas of Kristof-Brown et al.'s (2014) collective fit and take steps towards a team-level construct of person-group fit. Previous studies have shown that PG fit is multidimensional (Seong & Kristof-Brown, 2012); however, this has yet to be tested within MTSs. By using two different referent shifts, one for the MTS and one for the component team, this study will examine how fit and other team processes change within MTSs. Since an MTS is considered at least two different teams, each team should impact an individual's perceptions of PG fit differently. Lastly, sampling from sports teams for team research is a relatively common practice (Quigley et al., 2022) and has led to insights into several phenomena related to organizational psychology (Fletcher & Wagstaff, 2009b; Katz, 2001). While this study examines athletics teams, the findings related to PG fit and MTSs are expected to be generalizable to many organizational contexts (Grijalva et al., 2020; Obenauer & Langer, 2019). Thus, the anticipated results of this study will provide value to both the domains of organizational psychology and sports psychology.

CHAPTER FOUR

PROPOSED THEORETICAL MODEL & STUDY HYPOTHESES

Operationalizing Fit in the Current Study

This study will follow the operationalization of fit from Piasentin and Chapman (2007). This is because, unlike previous studies, Piasentin and Chapman (2007) measure complementary and supplementary fit within all dimensions of person-group fit. Their research states that both supplementary and complementary fit are needed to accurately find a fit within specific dimensions, as one can feel they simultaneously supplement and complement a team (Piasentin & Chapman, 2007). Many studies do not consider the combined effects of both supplementary and complementary fit on each fit dimension and instead focus only on the shared perceptions (i.e., supplementary fit) (Kristof-Brown et al., 2014; Seong et al., 2015). While shared perceptions are important, researchers cannot neglect the importance of those differences in every fit dimension. Insights gleaned from theories such as optimal distinctiveness theory (ODT) and social inclusion model (Brewer, 1991; Shore et al., 2011) support the balance of teams including both similarities and dissimilarities.

Optimal distinctiveness theory proposes that humans have two significant social needs: belonging and uniqueness (Brewer, 1991). In a team setting, the need for belonging assumes team members seek assimilation, while the need for uniqueness assumes differentiation among members (Brewer, 1991). Brewer (1991) states that individuals seek an equilibrium between both needs. When individuals feel both distinct and similar from others, they can develop a strong group identity that not only benefits

themselves but leads to positive attitudes toward the team. Conversely, the social inclusion model builds upon ODT and states that at the group level, there is an interaction between the need for belonging and the need for uniqueness, which determines the extent to which a team is inclusive (Shore et al., 2011). An inclusive team allows members to feel accepted and valued for their unique characteristics. According to the social inclusion model, a more inclusive team will outperform a non-inclusive team on outcomes such as job satisfaction and performance (Shore et al., 2011).

Both ODT and the social inclusion ideas were recently introduced into the fit literature. De Cooman et al. (2016) examined individual- and team-level fit by simultaneously measuring supplementary and complementary fit based on ODT and the social inclusion model, with the mediating role of team cohesion. The results of this study concluded first that the measures used for supplementary and complementary fit represented different factors, supporting the construct validity of the measures. Second, the interactions between both supplementary and complementary fit matter in predicting outcomes at the individual and team level of analysis. The authors concluded that when analyzing fit, combining supplementary and complementary fit is necessary to obtain high team cohesion and reach effectiveness (De Cooman et al., 2016).

The fit measures and operationalization of fit from Piasentin and Chapman (2007) will be used in this present study along with some team-level adaptions from De Cooman et al. (2016). All together the findings from De Cooman et al. (2016), Seong et al. (2015), and some underlying ideas from Kristof-Brown et al. (2014), indicate a PG fit measurement approach can be attained that shows the importance of referent shifts within

MTSs. The most unique and vital pieces from the previous studies have been selected and while each study provided meaningful findings, there are critical missing components in each. The mixture of all elements advances current theory and provides a path to a comprehensive measure of team person-group fit.

Overview of Proposed Model

The proposed model holds the same structure as Seong and Kristof-Brown (2012) but examines perceptions of team-level PG fit with the following outcome variables: perceptions of team commitment, team voice, transactive memory systems (TMS), and group performance. Both a distinct model and a superordinate multidimensional model were tested. The distinct model tested the direct relationship between a dimension of fit and hypothesized outcomes The superordinate multidimensional model tested perceptions of team PG fit and its reflexive indicator dimensions to perceptions of team outcomes. By using referent shifts on variables to focus on perceptions of team-level constructs by changing the wording of person-group fit questions to focus on the team within MTSs, it is proposed a superordinate multidimensional person-group fit team-level model can be attained at the MTS and component team levels. See Appendix A for the proposed models. Due to the proposed referent shift, fit indices should differ at the MTS and component team levels, leading the first hypothesis.

H1. Fit indices between the MTS and component team will differ.

Values Based Fit and Team Commitment

Team commitment will be assessed as the outcome associated with values-based PG fit. As stated previously, values fit has roots in the similarity-attraction paradigm

(Bryne, 1971), which states that individuals are more likely to be attracted to those with the same or similar values. *Team commitment* is defined as the psychological attachment that the members feel for their team rather than the organization at large (Singh & Gupta, 2015). While similar to organizational commitment, the focus is on the team, not the organization. Team members will respond with their perception of the overall commitment of their team rather than specifically their own commitment. In a team, a lack of commitment or effort from a few individuals can hinder the rest of the team from succeeding and affect the overall perception of commitment to the team. This is important because if the team is not similar in values or does not respect differences, the team's commitment may be impacted.

Seggewis et al. (2019) examined the relationship between value levels and value congruence with commitment for individuals, supervisors, and teams. Focusing specifically on the team results from this study, the researchers found that congruence of value levels predicted commitment to the team in all seven target areas (innovation, stability, respect for people, outcome orientation, attention to detail, team orientation, and competitiveness). Additionally, all values significantly affected the commitment to the team except for outcome orientation and competitiveness. These results support the findings of Finnegan (2000) and Abbot et al. (2005), statement that "perceived organizational values do appear to be the most consistent predictor of organizational commitment, more so than personal values or the fit between personal and organizational values" (Abbott et al., 2005, p. 554). Based on this evidence, a positive relationship

between perceptions of team values-based PG fit and perceptions of team commitment is expected.

H2a. Perceptions of MTS values-based fit will be positively related to perceptions of MTS team commitment.

H2b. Perceptions of component team values-based fit will positively relate to perceptions of component team commitment.

Personality Based Fit and Team Voice

Personality fit is more stable and observable than values fit (Kristof-Brown et al., 2005). Following the theoretical rationale by Seong et al. (2012), personality-based fit may be more predictive of discretionary behavioral outcomes. One such outcomes used in previous research has been voice behaviors. Due to previous significant findings that personality-based fit predicts voice behaviors, team voice is proposed as the outcome of personality-based fit (Seong & Kristof-Brown et al., 2012). *Voice* is "a promotive behavior that emphasizes the expression of constructive challenge intended to improve rather than merely criticize" (LePine & Van Dyne, 1998, p. 109). Voice is also considered an extra-role behavior that is not required by the organization but is often indispensable to effective functioning (Organ et al., 2006). I contend that team members will speak up when they feel supported and reinforced by other team members. However, since personality fit can have both a supplementary and complementary lens, teammates will recognize personality differences and similarities between members and accept that not all team members are talkative. Thus, team voice behaviors will be strengthened when individuals perceive a personality-based fit within their team.

H3a. Perceptions of MTS personality-based fit will be positively related to perceptions of team voice behaviors within the team.

H3b. Perceptions of component team personality-based fit will positively relate to perceptions of voice behaviors within the component team.

Abilities Based Fit and Transactive Memory Systems (TMS)

Abilities-based fit involves matching a person's capabilities to their environmental demands (Kristof, 1996). This form of fit primarily concerns individuals' knowledge, skills, and abilities (KSAs). Abilities-based fit is the only dimension in which the construct recommended by Seong and Kristof-Brown (2012) is not being used. Their study found no significant relationship between knowledge-sharing and abilities-based fit. However, Seong et al. (2015) conducted a later study on team-level outcomes of PG fit and found a relationship with transactive memory systems (TMS).

Transactive memory systems refer to a "memory that is influenced by the memory system of another person" through which "two or more people cooperatively store, retrieve, and communicate information" (Lewis, 2003, p. 588). In other words, TMS refers to a team's underlying view of possessing the requisite skills and expertise to complete a task (Kristof-Brown & Guay, 2011). TMS can be broken down to specialization, creditability, and coordination which refers to recognizing others specialized knowledge, trusting their expertise and knowing they have the ability to integrate that knowledge in an efficient fashion (Lewis, 2003; Seong et al., 2015). By definition, TMS is developed when teammates are differentiated and specialized in their

abilities, which aligns with a complementary and abilities fit lens. Thus, higher abilities-based fit should create higher levels of transactive memory in the team.

H4a: Perceptions of MTS abilities-based fit will be positively related to perceptions of TMS within the MTS.

H4b: Perceptions of component team abilities-based fit will positively relate to perceptions of TMS within the component team.

PG Fit and Team Performance

Commitment

The reviewed attitudes and behaviors (i.e., team commitment, team voice, TMS) all have been positively associated with team performance. For example, team commitment has been found to have a relationship with performance (Lui et al., 2011). Further, organizational commitment and performance also have a well-established relationship (Meyer et al., 1998; Neininger et al., 2010). Some researchers claim team and organizational commitment can go hand in hand when individuals are committed to the team and organization (Neininger et al., 2010). This connection led me to theorize that the organizational commitment literature can further support the relationship between team commitment and team performance. I suppose, generally, a team with more significant team commitment will work harder to achieve goals, thus increasing overall performance. This study will focus on group performance instead of tasks to examine the broad approach to team performance rather than one specific performance component. I argue that the stronger the perception of team commitment, the greater the bond created among teammates, which, in turn, facilitates greater communication, participation, and

acceptance of roles; all of which can lead to greater performance. Performance will be measured in terms of player perceptions rather than objective performance measures. Since perceptions of fit and commitment will be measured it makes sense to also measure perceptions of performance to hypothesize a positive relationship between commitment perceptions and performance perceptions.

H5a: Perceptions of MTS commitment will be positively related to perceptions of MTS performance.

H5b: Perceptions of position-group commitment will be positively related to perceptions of position- group performance.

Team Voice

Team voice refers to the extent to which team members share their concerns, ideas, opinions, and suggestions about work-related issues (Frazier & Bowler, 2015; Morrison et al., 2011). This encompasses implementing ideas and suggestions from employees to aid the basic work processes of the team. Team voice is associated with team productivity, team performance, and innovation performance (Li et al., 2017; Liang et al., 2018). Research has also suggested that the performance level of a subordinate is related to his or her willingness to speak up (voice) (Ashford et al.,1998). This leads to the hypothesis that a greater perception of team voice will lead to a greater perception of performance.

H6a: Perceptions of MTS voice will be positively related to perceptions of MTS performance.

H6b: Perceptions of component team voice will be positively related to perceptions of component team performance.

Transactive Memory System

Research has shown that TMS positively impacts team performance (Hsu et al., Lewis & Herndon, 2011; 2012; Yoo & Kanawattanachai, 2001; Zhang et al., 2007). According to Lewis and Herndon (2011), "TMSs are thought to improve performance in workgroups because they facilitate quick and coordinated access to specialized expertise, ensuring a greater amount of high-quality and task-relevant knowledge is brought to bear on collective tasks." (p. 1254). A team demonstrating stronger TMS can share knowledge and coordinate actions, leading to higher performance. This increase in teamwork processes should lead to an increase in team performance.

H7a: Perceptions of MTS TMS will be positively related to MTS performance.

H7b: Perceptions of component team TMS will be positively related to perceptions of component team performance.

CHAPTER FIVE

METHODS

Participants

The sample for this study includes 133 athletes (28 male; 85 female) from 18 different sports and 14 universities across all three National Collegiate Athletic Association (NCAA) divisions (I, II, III). See Table 3 for greater breakdown of participation. Athletes from Junior Colleges and the National Association of Intercollegiate Athletics (NAIA) were not eligible for participation due to vast differences in contextual factors when compared to the NCAA. By taking an MTS perspective only, sports with at least two component teams were eligible; Table 2 provides a full list of eligible sports along with example component teams.

Procedure

Participants in this study were recruited through snowball sampling procedure. The researcher contacted players via social media, word of mouth, and university athletic administrators. Interested participants could access a link to an online survey via Qualtrics. Participants could take the survey after reading through the study details and providing informed consent. Participants were notified that responses will remain anonymous, and they were allowed to end the survey at any time. The survey included person-group fit, team commitment, team voice, TMS, and performance. All these constructs were used to capture team dynamics and processes at the component team and system levels of analysis by utilizing referent shifts. Since the scales at each level were the same, aside from the referent shift, a primer was used to ensure participants correctly

understood the focus of each measure. The survey ends with an open-ended question section and option to enter a $100 gift card raffle. After completion of all items, participants were be thanked and directed to an exit page.

Measures

Measurements either used a 7-point Likert scale or a 5-point Likert scale, based on their previously validated scales. Participants were asked to rate responses ranging from strongly disagree (1) to strongly agree (7) for the measures of perceptions of values-based fit, personality-based fit, abilities-based fit, team commitment, team voice and team performance (Morrison, 2011; Piasentin & Chapman, 2007; Vegt & Bunderson, 2005; Zellmer-Bruhn & Gibson, 2006). TMS questions range from strongly disagree (1) to strongly agree (5) (Lewis 2003). Questions either focused on the MTS or component team referent. Items targeting the component team had the words changed to "those in my position group" rather than "my teammates" to help further differentiate referent levels.

Person-Group Fit

Fit was measured using a modified measurement from Piasentin and Chapman (2007). Like the procedures of De Cooman et al. (2016), this measurement was adapted to a PG fit context rather than PO fit. Further, in this present study utilized a referent shift to focus on team members (i.e., my teammates fit into the team) rather than individuals' statements (e.g., I fit into the team) and replaced words like employees/coworkers with either "my teammates*"* or "every team member" to highlight the sports context. A total of 12 questions were used to assess fit. Three questions assess each value and personality

fit, while four questions address abilities fit. Of the 11 total questions, seven questions referred to supplementary fit, while five referred to perceived complimentary fit.

The original measure contained 17 items (9 supplementary and 8 complimentary). However, I removed two items due to lack of clarity within a team fit dimension (abilities, personality, values). Four additional items were also removed as they did make sense with a team-level referent. De Cooman (2016) followed a similar procedure and found that the internal reliability of the supplementary ($\alpha = .75$) and complementary ($\alpha = .86$) fit scales was good. The original measurement with no referent shifts and a PO context provided ($\alpha = .80$) for supplementary fit and ($\alpha = .79$) for complementary measures (Piasentin & Chapman, 2007).

Unlike previous studies, this study did not classify items as solely supplementary fit and complementary fit but rather classified items as separate dimensions (values, abilities, personality) which could contain both supplementary and complementary items. From here an overall PG fit item was created. Cronbach's alphas revealed the reliabilities of overall PG fit to be ($\alpha = .82$) at the MTS referent and ($\alpha = .86$) at the component team referent. Alphas were also calculated for each dimension of fit at both the MTS and component team referents. See Appendix E and J for full measures used.

Values Fit

Three-items from Piasentin and Chapman's (2007) original measure assessed perceived values-based fit. All items refer to supplementary fit, since addressing a complementary fit lens is not common practice with the values dimension (Cable, 2004). When using both a referent shift and PG fit context, items include "The underlying

philosophy of this team reflects what my teammates value," "The personal values of my teammates are different from each other," and "My teammates do not have the same values as each other." Two of these items were reversed scored. The Cronbach's alphas for the values dimension were ($\alpha = .39$) with the MTS referent and ($\alpha = .47$) at the component team referent. Although these estimated alphas are indicative of low internal consistency reliability, the values fit items were kept due to the strong reliability of the overall PG Fit latent construct.

Personality Fit

Three items by Piasentin and Chapman (2007) were used to measure personality fit. Two items reflect supplementary fit while one item targets complementary fit. Items were once again modified to be directed toward the team. Items included "my teammates personalities are similar to one another," "the personalities of my teammates are well suited for the personality or image of this team." and "while my teammates personalities differ, it as though their personalities complement each other." The internal consistencies were good for both the MTS ($\alpha = .73$) and component team ($\alpha = .71$) team referents.

Abilities-Fit

Six items by Piasentin and Chapman (2007) reflect abilities fit. Two items reflect supplementary fit, while four items measure complementary fit. Items included "every team member is important to this team because every member has such different skills and abilities," "the ability level of my teammates are comparable to one another," and "my teammates rely on each other because other members have expertise they do not

have." The Cronbach's alpha for the MTS referent of abilities fit was (α = .79) while the alpha for the component team referent was (α = .82), both indicating good reliability.

Team Commitment

Team commitment was assessed using a four-item survey from Vegt and Bunderson (2005). The original Cronbach's alpha for this scale was (α = .92). Sample items utilizing referents shifts are "My teammates feel emotionally attached to this team." and "My teammates feel like part of the family in this team.". The adapted measures Cronbach's alphas for the MTS referent were (α = .75), and the component team's referent was (α = .75).

Team Voice

Team voice was calculated by obtaining a mean score from all team members. Questions will be an adapted three-item scale from Morrison (2011). Previous reliabilities found from this scale is .90 (Knoll et al., 2020). A sample item includes "In this team people feel free to express their views." The internal consistency for the MTS referent was (α = .77) while the component team referent had an alpha of (α = .82).

TMS

TMS was measured using the 15-item scale developed and validated by Lewis (2003). Because TMS already has a team referent, questions only had to be slightly modified to fit more into the sports realm when necessary. For example, in some instances the word "sport" was used rather than word "task." This change was made after several current student athletes reviewed the measure and thought further clarification was necessary. Sample items include "Our team worked together in a well-coordinated

fashion," "My team works together in a well-coordinated fashion," and "Each team member has specialized knowledge of some aspect of our sport." All the questions asked target three specific areas, specialization, coordination, and credibility. Four items in scale are reverse coded (see Appendix J and O for more details). The alpha reliabilities for the specialization, credibility, and coordination subscales were 0.80, 0.83, and 0.78, respectively, at the member-level and 0.84, 0.81, and 0.83, respectively, at the team-level (Lewis, 2003). Cronbach's alpha for the overall TMS construct for the MTS referent and the component referent were .71 and .78, respectively.

Team Performance

Perceptions of team performance were measured using five items from Zellmer-Bruhn and Gibson (2006). The original scale had an internal consistency reliability of .95. However, the adapted scale used in this study had an internal consistency reliability of .90 and .92, respectively, for the MTS referent questions and the component team referent questions. Example questions include "my team achieves its goals" and "my team meets the requirements set for its."

Data Analysis

The data were downloaded from Qualtrics and imported to MS Excel. The data were cleaned by removing any participants who: 1) were identified as bots; 2) had missing data; and 3) were not a part of an interdependent sports team. To remove bots, I first looked for any bot language within the short response questions and email domains. If bot language was present, they were deleted from the sample. Next, I crossed referenced the institution listed with the NCAA division; if the school and the division

did not match up, participants were removed. I then ensured the sport listed was present at the institution; if the institution did not offer that sport, that participant was removed. Once all bots were removed, any participant with missing data was removed. A participant was removed if they had any missing data other than some optional demographic questions. Lastly, participants not from interdependent sports team were removed. The initial sample consisted of 389 participants; but after data cleaning the total sample was 133.

Once all data was cleaned, it was imported to RStudio, and a subset of the data was created using all relevant variables from the model after reverse scoring the necessary items and removing all demographic variables. Separate subsets of each scale were then created to create the proper variables for future modeling. Aggregates variables were created using the appropriate items from each respective scale. The following variables were created: perceptions of component team PG fit, perceptions of component team values-based fit, perceptions of component team personality-based fit; perceptions of component team abilities-based fit, perceptions of component team commitment, perceptions of component team voice, perceptions of component team TMS and perceptions of component team performance. Aggregate variables were then created for perceptions of MTS PG fit, perceptions of MTS values-based fit, perceptions of MTS personality-based fit; perceptions of MTS abilities-based fit, perceptions of MTS commitment, perceptions of MTS team voice, perceptions of MTS TMS and perceptions of MTS performance.

Prior to testing my hypotheses, I calculated Cronbach's alpha values for all study variables. After all scales were deemed acceptable for internal reliability, a correlation and covariance matrices were created for both the perceived MTS and component team data. See Table 5 and Table 6 for correlation tables. Path models were then created for each predicted model using the *lavaan* package in R. In total, four models were created. First, the superordinate multidimensional model for MTS PG fit, then the superordinate multidimensional model for component team PG fit. The distinct dimension models were then also created for both the MTS and the component team. All variables within each model were observed with the exception of the PG Fit variable within each superordinate model; that variable alone is a latent variable represented by three manifest variables.

Path analyses were used for primary data analysis. Both the superordinate MTS and component team models were tested along with a distinct dimension model. The overall model was examined using fit indices, including the root-mean-square error of approximation (RMSEA), Tucker-Lewis's index (TLI), incremental fit index (IFI), comparative fit index (CFI), and the standardized root mean square residual (SRMR). The cutoff standards from Hu and Bentler (1999) were used when examining indices. The Chi-square statistics should be $p > .05$. Ideally, an RMSEA < .05 suggests good fit while an RMSEA < 0.08 suggests acceptable fit. An SRMR < 0.05 suggests good fit while < .08 suggests acceptable fit. CFI and TFI should be > .95 or > .90 (Hu & Bentler, 1999).

In terms of model comparisons, *t*-tests were used to examine differences between component team and MTS variables. Furthermore, multigroup CFA would have been used to explore agreement for clusters/groups in the factor structures.

CHAPTER SIX

RESULTS

The following section will be split into two main parts: the MTS section and the component team section. Each of these sections will be comprised of the superordinate multidimensional results and the distinct dimensions results. Hypotheses will be found in the distinct dimension sections (the second paragraph of each part). Reminder the superordinate model tests PG as variable with the reflexive indicators of specific fit dimensions (e.g., values, personality, ability). While the distinct dimension model tests the specific fit dimensions with their hypothesized outcome and eliminates the overall PG fit variable. Hypothesized models can be found in Appendix C and E.

MTS Fit Indices

The Confirmatory Factor Analysis (CFA) results for the MTS data show mixed results ($X^2(df = 12) = 65.53$; $p < .001$; CFI = .913; TLI = .847; RMSEA = .183; SRMR = .062). The Chi-Square result indicates a significant value ($p < .001$), suggesting a large discrepancy between the sample covariance matrix and the predicted covariance matrix based on the model. However, when examining fit indices, the CFI was within Hu and Bentler's recommended range, while the TLI was below the standard cutoff. The SRMR results show a good fit, but the RMSEA was high. These results show a moderate fit of the overall model. Regressions on the latent variables indicate a significant effect on two of the three loading conditions; more specifically, perceptions of MTS values fit did not have a significant relationship. The standardized path coefficients from this model show

that the relationship between perceived MTS team voice and perceived MTS PG Fit is positive and significant (B = .79, p < .001). Perceived MTS team commitment and perceived MTS PG Fit (B = .83, p < .001), along with perceived MTS TMS and perceived MTS PG Fit (B = .78, p < .001) were positively and significantly related. Further, the perceptions of MTS team voice and MTS TMS predicted perceptions of MTS performance (B = 438, p < .001; B = .36, p < .001) but perceptions of MTS commitment did not (B = .052, p = .528).

Further analysis into the distinct dimensions of the MTS model revealed a poor fitting model as only the CFI is within an accepted range ($X^2(df = 6) = 33.821$; p < .001; CFI = .945; TLI = .834; RMSEA = .187; SRMR = .045). However, despite poor fit, the standardized path coefficients from this model support most hypotheses. Appendix C shows that the relationship between perceived MTS team voice and MTS personality PG fit was positive and significant (B= .214, p < .05), thus supporting H2a. Hypotheses 3a and 4a were also supported as perceptions of MTS values fit positively and significantly related to perceptions of MTS commitment (B = .127, p < .05), and perceptions of MTS abilities fit positively and significantly related to perceptions of MTS TMS (B = .569, p < .001). Perceptions of MTS voice and MTS TMS also positively and significantly related to perceptions of MTS performance (B = .444, p < .001; B = .375, p < .001), supporting H6a and H7a. However, no significant relationship was found to support hypothesis 5a; perceptions of MTS commitment did not positively and significantly relate to perceptions of MTS performance. (B = .053, p =.475)

Component Team Fit Indices

The results of the component team CFA indicate a poor fit, much like the MTS. (X^2(df = 12) = 55.04; p < .001; CFI = .922; TLI = .863; RMSEA = .164; SRMR = .059). Unlike the MTS model of fit, all three latent variables of component team fit were significant. Perceptions of component PG fit significantly related to perceptions of component team values (B = .356, p < .001), component team abilities fit (B = .866, p < .001), and component team personality (B = .838, p < .001). The standardized path coefficients from this model show that the relationship between perceived component team fit and perceived component team TMS is positive and significant (B = .783, p < .001). Perceived component team voice and perceived component team PG Fit (B = .836, p < .001) are positively and significantly related in addition to component team commitment and perceived component values (B = .773, p < .001). However, only perceptions of component team TMS were positively and significantly related to perceptions of component team performance (B = .399, p < .001).

The distinct dimensions models once again showcase a fairly poor fit (X^2 (df = 6) = 30.115; p < .001; CFI = .944; TLI = .831; RMSEA = .174; SRMR = .046). Nevertheless, many of the hypothesized relationships were supported. Positive and significant relationships were found between perceptions of component team personality and component team voice (B = .325, p < .001); perceptions of component team abilities fit and TMS (B = .286, p < .000); and perceptions of component team values and component team commitment (B = .107, p = .090) indicating hypotheses 2b, 3b, and 4b were all supported Component team performance was also positively and significantly related to component team commitment (B = .221, p = .007) and component team TMS

(B = .418, $p < .000$); thus, supporting hypotheses 5b and 7b. However, perceptions of component team voice and component team performance had no significant relationship (B = .118, $p = .178$) which failed to support hypothesis 6b. A summary of the results by hypotheses is presented below.

Model Comparison

I originally proposed that the fit indices between the MTS model and the component team model would differ. Although the fit indices between the two referents are not the same, due to the lack of good fit between the MTS predicted model and component team predicted model, a multigroup CFA was not relevant to explore. Indicating H1 is not supported.

H1. Fit indices between the MTS and component team will differ. – Not Supported

H2a. Perceptions of MTS values-based fit will be positively related to perceptions of MTS team commitment. – Supported

H2b. Perceptions of component team values-based fit will positively relate to perceptions of component team commitment. – Supported

H3a. Perceptions of MTS personality-based fit will be positively related to perceptions of team voice behaviors within the team. – Supported

H3b. Perceptions of component team personality-based fit will positively relate to perceptions of voice behaviors within the component team. – Supported

H4a: Perceptions of MTS abilities-based fit will be positively related to perceptions of TMS within the MTS. – Supported

H4b: Perceptions of component team abilities-based fit will positively relate to perceptions of TMS within the component team. – Supported

H5a: Perceptions of MTS commitment will be positively related to perceptions of MTS performance. – Not Supported

H5b: Perceptions of component commitment will be positively related to perceptions of component team performance. – Supported

H6a: Perceptions of MTS voice will be positively related to perceptions of MTS performance. – Supported

H6b: Perceptions of component team voice will be positively related to perceptions of component team performance. –Not Supported

H7a: Perceptions of MTS TMS will be positively related to MTS performance. – Supported

H7b: Perceptions of component team TMS will be positively related to perceptions of component team performance. – Supported

Additional Analyses

Results up to this point results have produced some significant results, and the paths of the coefficients is in correct direction. To further explore the significant results between the MTS and component referents, t-tests between the variables at each referent were conducted.

T-Tests

Two sample T-tests were used to examine any statistical difference between perceptions of variables at the MTS and component team referent. Overall perceptions of MTS PG fit, and perceptions of component team PG fit were compared, and there was no statistically significant difference between the referent levels (t (132) =.556, p = .722). There was also no difference between the perceptions of MTS and component team abilities (t (132) =.202, p = .84), personality (t (132) =1.167, p = .245), and values fit (t (132) =-1.105, p = .271). Perceptions of MTS commitment and perceptions of component team commitment revealed a statistical difference (t (132) =2.332, p = .012). Voice was also found to be statistically different between the MTS and component team (t (132) = -4.189, p < .001). Perceptions of TMS and performance did not yield statistically significant differences between the MTS and component referents. The one sample t-test on TMS revealed (t (132) = - 0.606, p = .546) while the performance showed (t (132) = -1.15, p = .252).

Modification Indices

Modification indices were examined to explore any modification to improve fit. Most of the modification indices provided suggested adding covariances between the variables. Three variations were attempted, and model results did not improve notably improve model fit. Therefore, the original proposed model was retained.

Of interesting note, the initial analyses and testing had a sample size of (N = 77), and the results of the models drastically differed from the current findings. The original MTS model had good fit indices, with the RMSEA being the only parameter outside the

cutoff ranges. All the relationships between predictor and outcome variables remained positive. However, the component models resulted in a worse fit; none of the parameters were within acceptable ranges, and the relationship between variables was significant yet negative. By increasing the sample size, fit improved for the component team models while the MTS model's fit declined.

Exploratory Factor Analysis

Given the poor fit of the confirmatory factor analysis (CFA), an exploratory factor analysis (EFA) was used to further explore the factor structure. Focusing on the Perceptions of PG Fit measure, I used the *factanal* function which uses maximum likelihood estimation (Bartlett, 1937). The eigenvalues and scree plots revealed there was a minimum of two factors but there is potential for a third. To improve the interpretation of the extracted factors, I used both an orthogonal rotation (varimax) and an oblique rotation (promax) with either two or three factors. After testing a two-factor model and three factor model with both types of rotations, an oblique rotation with three factors produced the most interpretable results.

At the MTS referent, nearly all variables sufficiently load onto a factor utilizing a cutoff of 0.40. However, one item does fall below this standard. Of note, this item also had a cross loading within 0.05 of each other which many indicate the item should have been removed. In general, while the remaining variables cleanly load onto a factor, a few variables did not load onto the factors as originally expected. More specifically, the results revealed that a few of the estimated personality variables load better on the abilities factor and some abilities variables load better on the personality factor. Two of

the three values items properly load onto the same factor. The results were similar at the component team referent as well. The only difference between referents was that all variables cleanly loaded onto a factor and exceed 0.40. See Table 7 and 8 for EFA results. Overall, the results of the EFA did not clarify the reasons for the CFA results but suggests additional validation research is needed for the PG fit measure.

CHAPTER SEVEN

DISCUSSION

This study explored the impact of perceptions of team-level PG fit within the context of a multiteam system by examining the impact of the team referent. I utilized a superordinate multidimensional and distinct dimension model from Seong et al. (2012) to explore perceptions of team-level outcomes within the MTS and the component team. A referent shift was used to distinguish the framing between MTS perceptions and component team perceptions. The model results for the MTS and component teams produced less-than-ideal results. The results of the MTS superordinate model revealed a moderate fit, as only the CFI and SRMR were within acceptable cutoff ranges, while the other indices were not. Indices like the TLI were close but ultimately fell below the accepted ranges. While the overall fit was not ideal, there is no reason to believe the dimensions of fit are not reflexive indicators of a superordinate MTS PG perception. Significant relationships were found between almost all the latent and outcome variables indicating that the theorized relationship of these variables is in the proper direction despite the model not being accepted. The MTS distinct dimension model produced worse fit statistics than the superordinate model, which aligns with the findings of Seong et al. (2012).

The multidimensional component team model's results produced a poor fitting model, similar results to those of the MTS. Fit indices indicated a moderate to poor fit within the superordinate model – only the CFI and SRMR were within accepted cut-off

ranges. The distinct dimension model also produced a poor fit. Despite poor fit, this component referent model supported nearly all the hypothesized relationships. This was also the case regarding the MTS referent model. However, the fit indices and relationships between MTS and component team variables varied, indicating individuals view component teams and the MTS differently. Further, since perceptions of theorized relationships exist within both components and the MTS, there is evidence that team-level results of PG fit also likely exist. Thus, a step towards a collective PG measurement was achieved.

Additional analyses into the perceptions of MTS vs component team referents provided evidence that not all team processes emerge the same with internal MTSs. For example, the relationships' directions were opposite of the two outcome variables that produced statistically significant mean difference results. Perceptions of MTS and component team commitment statistically differed, and a mean difference score (M = .233) indicates that perceptions of commitment were higher at the MTS referent. However, perceptions of MTS voice and component team voice had a negative mean difference (M = -.351), indicating scores were higher within the component team than the MTS. These results suggest an empirical difference in how individuals view specific team processes within the MTS and their component teams. Further supporting this claim, is the fit between models; in the perceptions of the MTS model, MTS commitment and performance had no significant relationship, while there was one within the component team. The component team models showed a nonsignificant relationship with voice and performance; however, this was significant in the MTS model.

Implications

This study has several implications in multiple streams of literature, including fit, teams, and multiteam systems and sports. Regarding fit, this study began to answer for exploring fit and team-level outcomes (Seong et al., 2012). This study ultimately took steps toward collective fit measurement of PG fit by changing the individual-level question of "I fit into my team" to a team-level question of "My team fits together." While this study assessed perceptions of team-level outcomes, significant results allude to being able to answer the question of whether PG fit can influence team-level outcomes (Seong & Choi, 2021). Both findings support Kristof-Brown et al.'s (2014) retracted paper on collective fit and take it a step further by exploring team-level outcomes. This study also operationalized fit to simultaneously include supplementary and complementary fit within a singular PG fit measurement (Piasentin & Chapman, 2007). Unlike most previous fit studies, complementary fit was explored within PG fit on dimensions other than abilities, which provides a more accurate picture of realistic team dynamics.

There are also numerous implications relating to teams and MTSs. First, this study utilizes referent shifts to explore multiteam systems. This method allowed for further study of the complexities of team processes and outcomes between the MTS and component teams. Statistically significant results on some but not all the variables indicate 1) processes can manifest differently between the MTS and component team levels and 2) the referent of the question matters when exploring multiteam systems. Moreover, this study utilized athletic teams as an MTS, which allows for the

development of MTS literature by examining phenomena in varying MTS configurations (Luciano et al., 2018). Thus, also answers calls for future research to explore measurement methods that capture the complexity of team processes in MTSs (Luciano et al., 2018).

As for the sports implications, this study is one of the first studies to take an MTS approach to examining sports team dynamics. This MTS lens provides insight into how component teams within sports most likely need to be treated as their own teams. Only some things can be focused on the entire system; each component may need special attention, specifically regarding team processes and outcomes such as commitment and voice. For coaches, this implies while team processes may look strong within a either a component team or MTS that may not be the case and there may need to be further exploration into both teams simultaneously. Understanding component teams and MTS are important because for a team to be efficient all pieces of the team must work together and well, and if one piece of the system is under performing the rest of the system could be hindered. Thus, this study highlights the importance of exploring both teams. Furthermore, the degree of interdependence between component teams most likely matters; however, this was not explored within these internal MTSs. There were many sports not strongly represented in this study (i.e., baseball, softball, rowing), and these sports have varying degrees of interdependence compared to other sports (i.e., football, soccer, volleyball). This means the component teams either functions together more or less which in theory change how individuals view their component teams and MTS. Future research should explore how the degree of interdependence impacts fit outcomes

within teams and, more specifically, multiteam systems. Comparing teams with high interdependence like soccer to teams with medium interdependence like football to low interdependence like rowing is a possible avenue to do this.

Limitations and Future Research

There are several important limitations of this study to acknowledge. First, snowball sampling was the primary method of data collection. Initial calculations estimate that bots represent 5/6ths of the initial sample; over 250 bots were removed from the initial sample. While the proper cleaning methods were utilized, future research should utilize attention checks and compile data from specific teams. Moreover, there needed to be more full teams to aggregate the data to the team level. Thus, I had to use the proxy of perceptions of team-level outcomes rather than actual team-level measurements. This could explain the lack of good fit between the models. Future research should only use entire teams to obtain more accurate results of team-level outcomes. Since the data was not aggregated to the team level, a limitation of this study is potentially nested data. As seen in Table 4, there were several sports where at least two or more individuals were from the same team indicating results could be confounded by nested data because teammates very the processes their team the same way as others.

Furthermore, the adapted PG fit measure could be better. There is no widely accepted PG fit measure, and the measure used by Piasentin and Chapman (2007) left room for error. More specifically, the values dimension provided unacceptable reliability while the other dimensions of abilities and personality had good reliability. This was also the case for De Cooman's (2016) measure, as they had no values dimension items in their

final measure. The EFA however also produced concerning results regarding PG fit measure used. Future research should either eliminate the values items from the scale used in this in study or create and validate a person-group fit measure with items that accurately load onto all dimensions. This study also used subjective measures of performance rather than objective measurements; a self-report measurement could hinder results or drastically differ from objective measurements. Future research should simultaneously consider both objective and subjective measurements of fit and explore if the overall fit of the model changes.

Conclusion

To my knowledge, this is one of the first studies to explore sports within an MTS lens and focus on establishing a collective fit measurement of fit. By utilizing referent shifts within an MTS and component team context, insights could be gleaned into PG fit and different team processes and outcomes. The results of this study highlight that while the hypothesized models were not accepted, the theoretical relationship between variables exists. Thus, providing more support for progress toward a collective person-group fit measurement and that PG fit impacts team-level outcomes. Furthermore, this thesis reveals that team processes and outcomes may manifest differently between MTS and component teams and that utilizing a referent within questions allows researchers to examine them.

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APPENDICES

Appendix A

Simplest form of an MTS

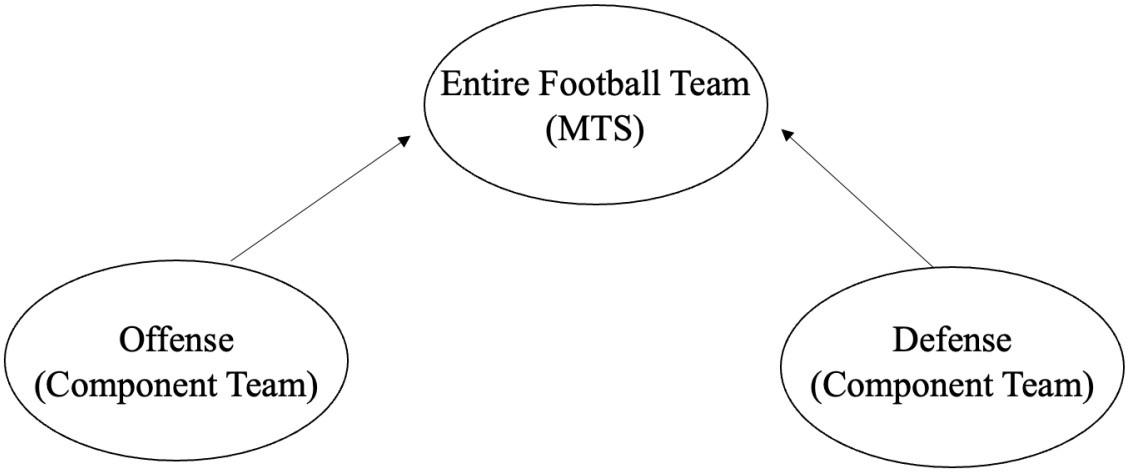

Figure A-1: Simplest form of an MTS.

Appendix B

Hypothesized MTS Models

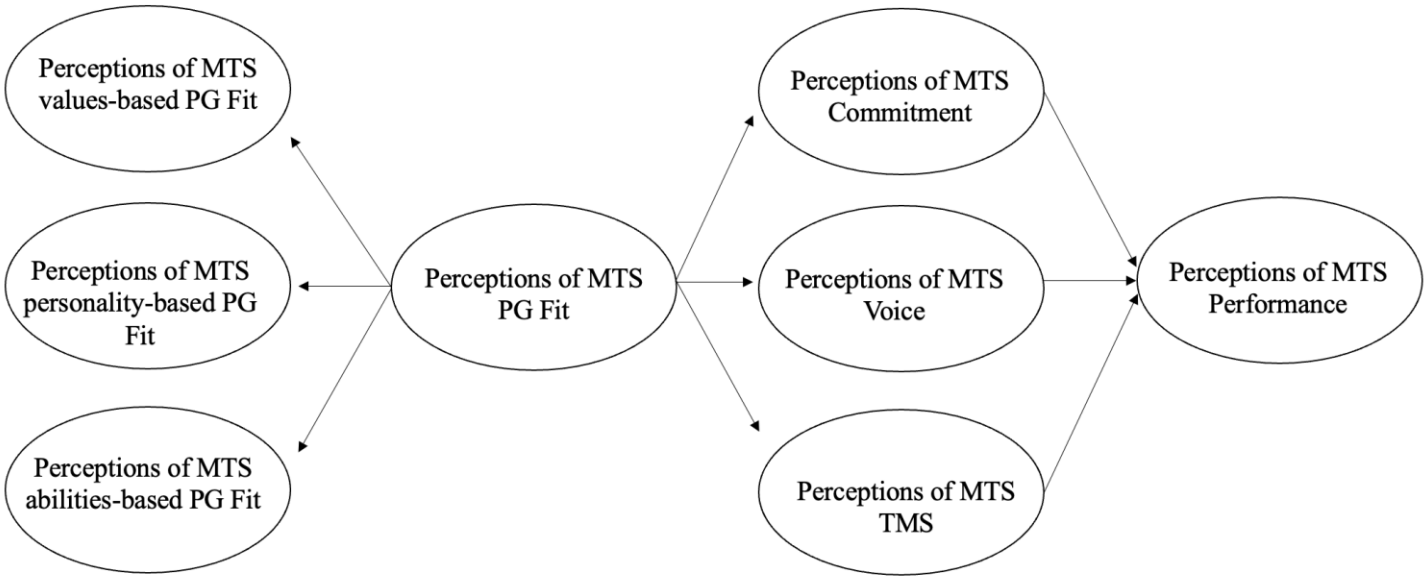

Figure B-1: Hypothesized Superordinate MTS Model

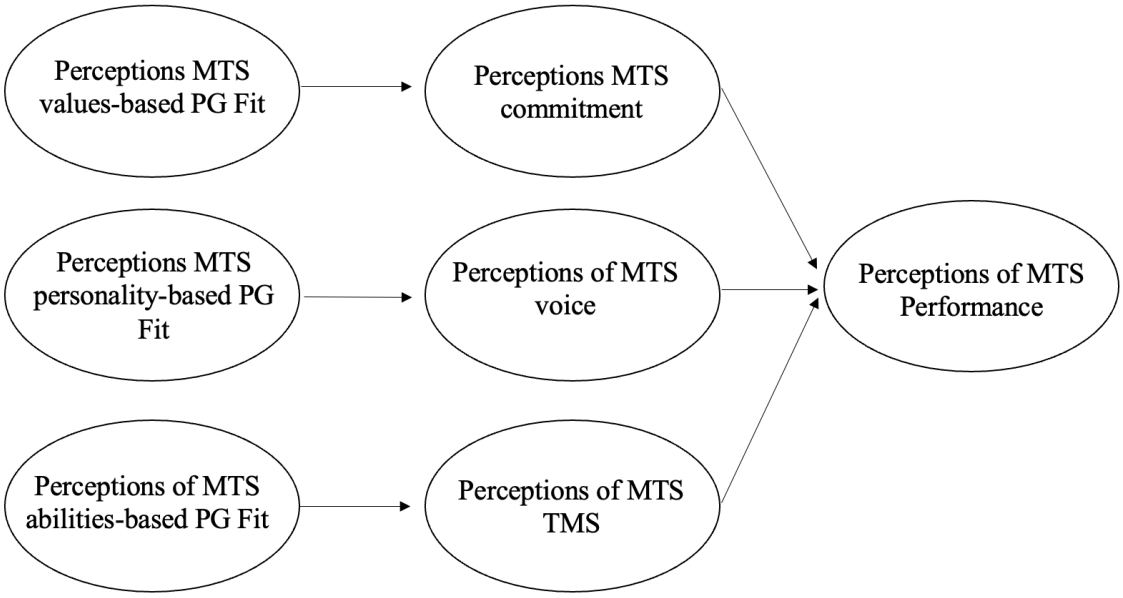

Figure B-2: Hypothesized Distinct Dimension MTS Model

Appendix C

Hypothesized Component Team Models

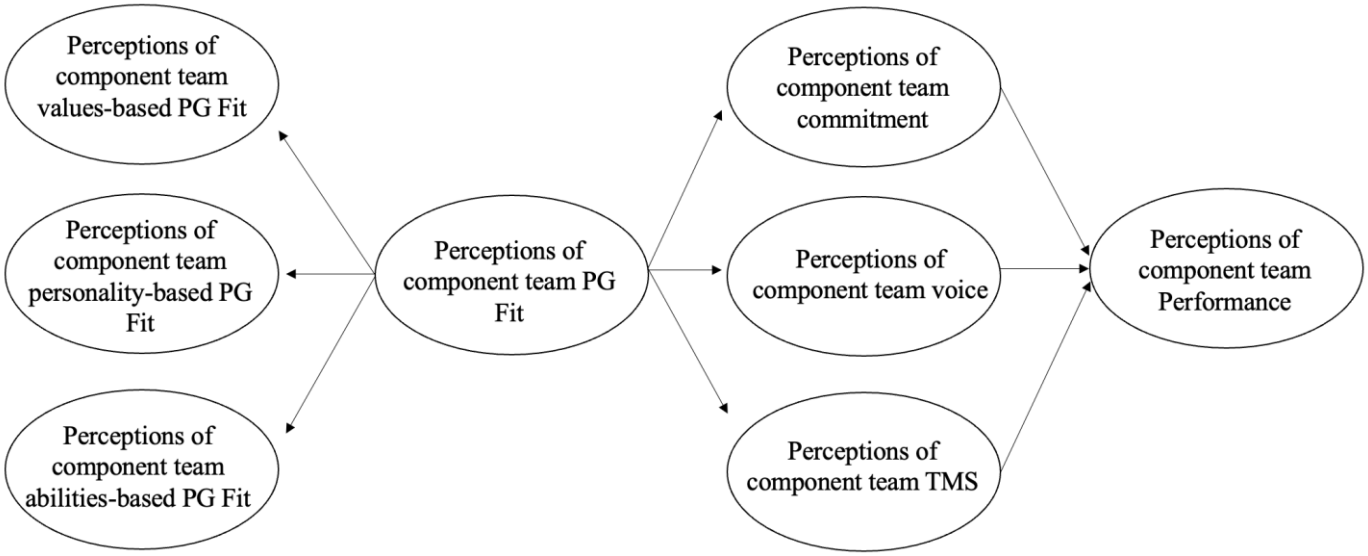

Figure C-1: Hypothesized Superordinate Component Team Model

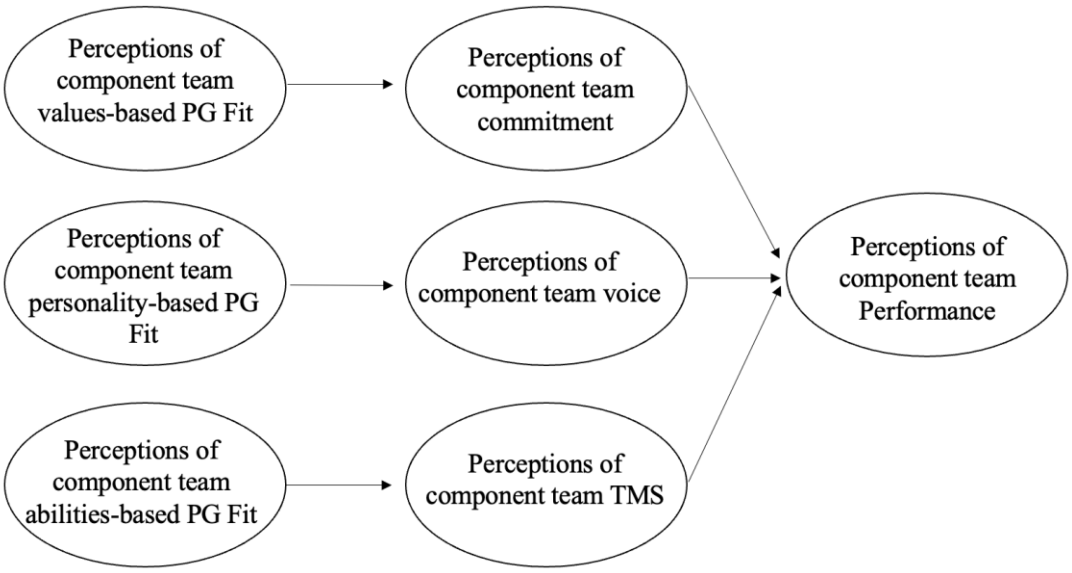

Figure C-2: Hypothesized Distinct Dimension Component Team Model

Appendix D

Path Coefficients for MTS Models

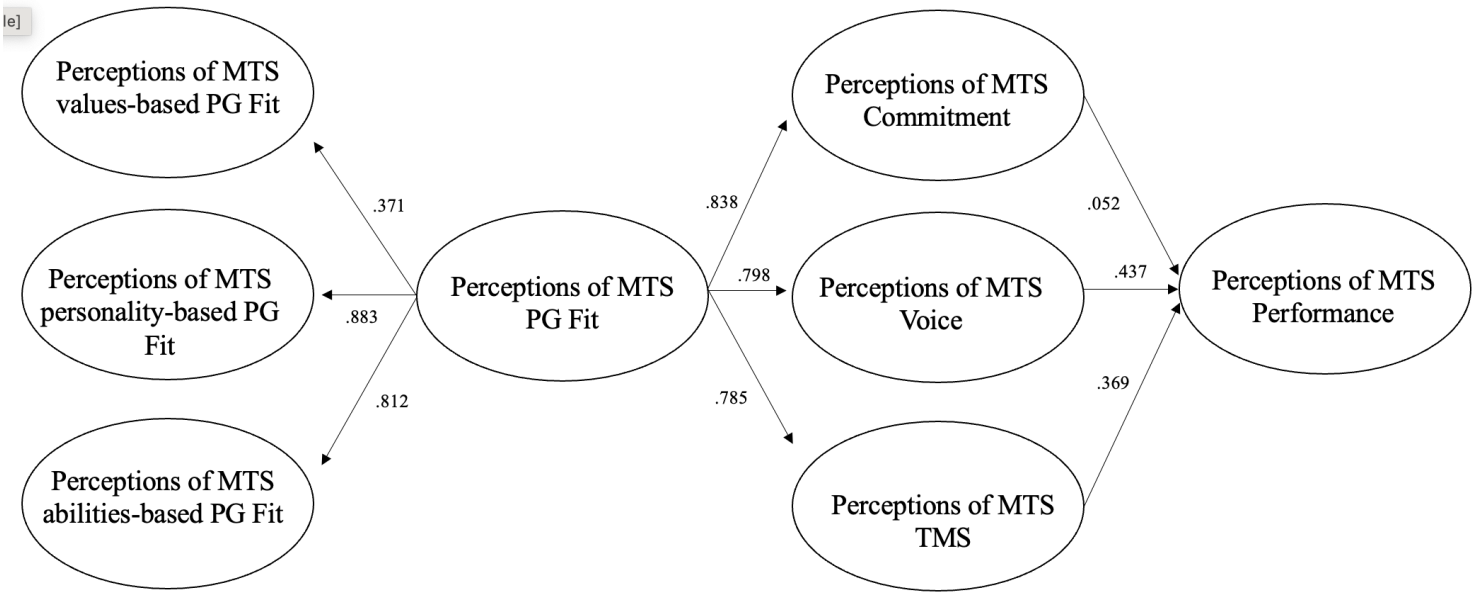

Figure D-1: Standardized Path Coefficients for Superordinate MTS model

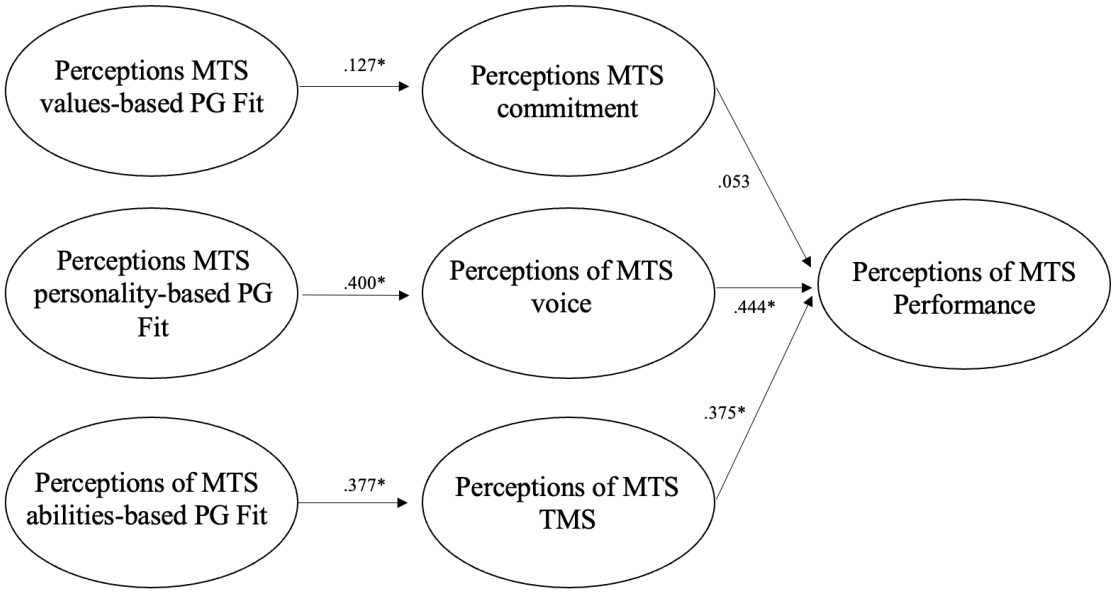

Figure D-2: Standardized Path Coefficients for the MTS Distinct Dimension Model. * Denotes an accepted hypothesis

Appendix E

Path Coefficients for MTS Models

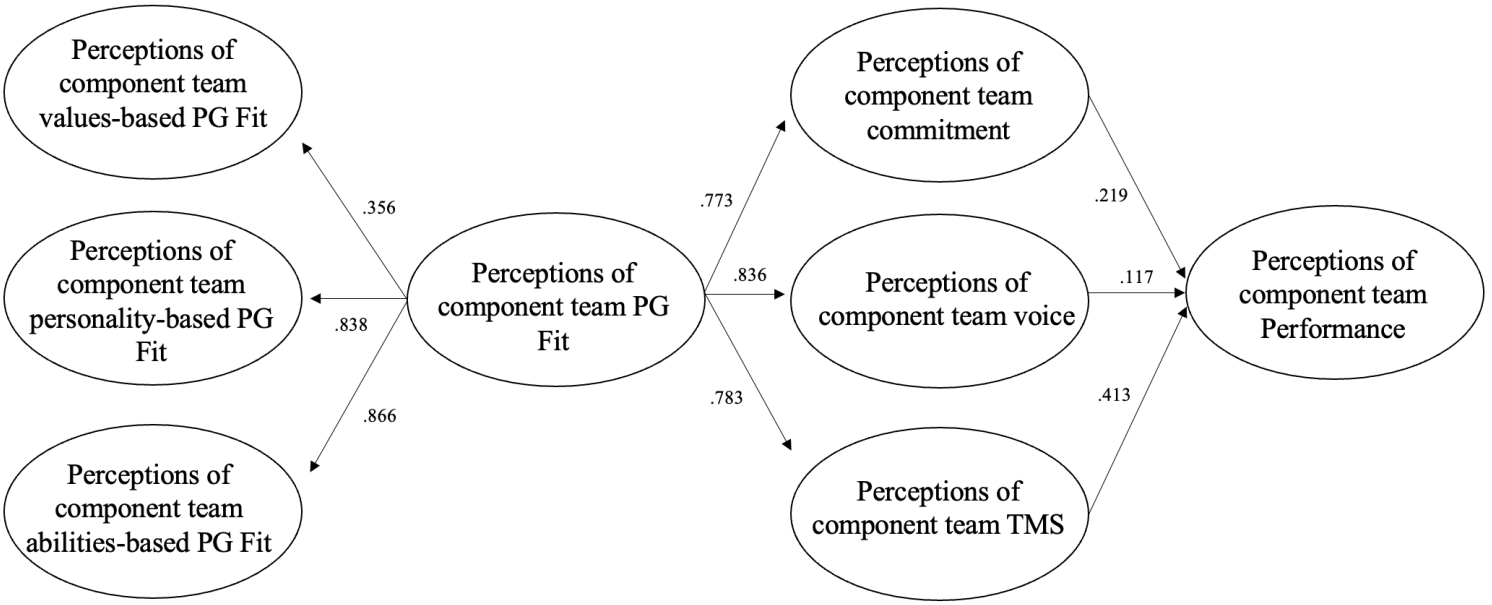

Figure E-1: Standardized Path Coefficients for Superordinate MTS model

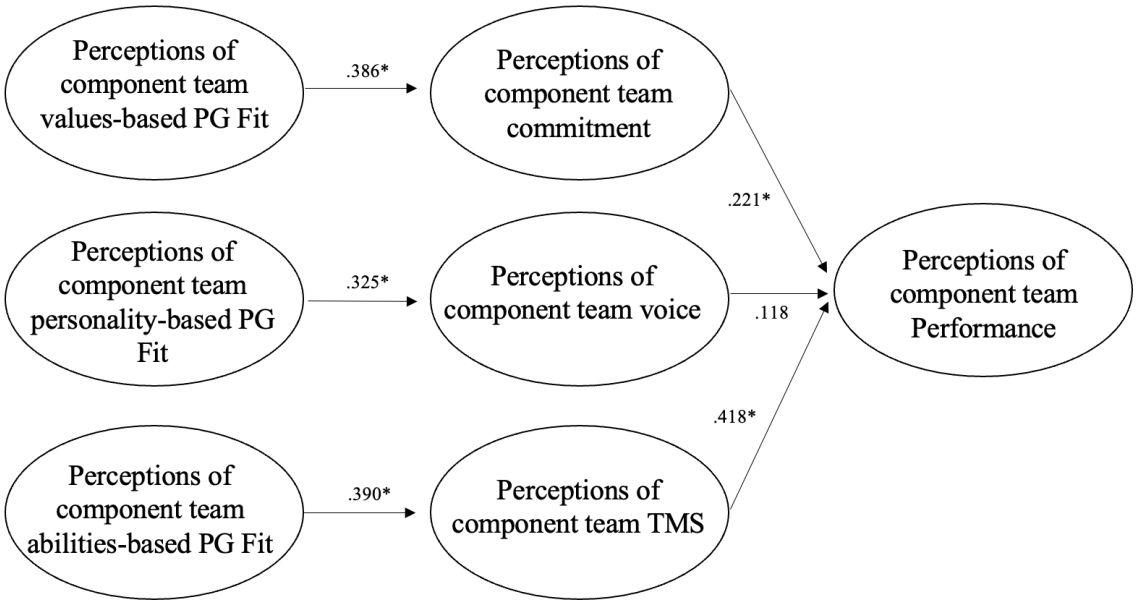

Figure E-2: Standardized Path Coefficients for the Component team Distinct Dimension Model. * Denotes an accepted hypothesis

Appendix F

Perceptions of MTS PG Fit Measure

Instructions: Consider the past 3 months. Please rate your agreement to each of the following items on a scale of 1 (Strongly Disagree) to 7 (Strongly Agree). V = values fit, P = personality fit, A = abilities fit. S = supplementary, C = complementary, r = reverse coded.

1= Strongly Disagree
2= Disagree
3= Slightly Disagree
4= Neither Agree nor Disagree
5= Slightly Agree
6= Agree
7= Strongly Agree

1. The underlying philosophy of this team reflects what my teammates value. (V, S)
2. My teammates personalities are similar to one another. (P, S)
3.
4. The personal values of my teammates are different from each other. (V, S, r)
5. The personalities of my teammates are well suited for the personality or image of this team. (P, S)
6. The skills and abilities of my teammates match the skills and abilities this team looks for in its members. (A, S)
7. My teammates do not have the same values as each other. (V, S, r)
8. The ability level of my teammates is comparable to one another. (A, S)
9. Every team member is important to this team because every member has such different skills and abilities. (A, C)
10. My teammates rely on each other because other members have competencies they do not have. (A, C)
11. When key decisions are made, my teammates consult each other because they have different perspectives. (A, S)
12. Each team member offers the team knowledge, skills, and abilities that other teammates do not have. (A, C)
13.
14. While my teammates personalities differ, it as though their personalities complement each other. (P, C)

Appendix G

Perceptions of MTS Commitment Measure

Please indicate the extent to which you agree or disagree with the following statements about your team's commitment.

1= Strongly Disagree
2= Disagree
3= Slightly Disagree
4= Neither Agree nor Disagree
5= Slightly Agree
6= Agree
7= Strongly Agree

1. My teammates feel emotionally attached to this team.
2. My teammates feel a strong sense of belonging to this team.
3. My teammates feel as if the team's problems are their own.
4. My teammates feel like part of the family in this team.

Appendix H

Perceptions of MTS Voice Measure

Instructions: Rate you opinion of the following questions regarding team voice

1= Strongly Disagree
2= Disagree
3= Slightly Disagree
4= Neither Agree nor Disagree
5= Slightly Agree
6= Agree
7= Strongly Agree

1. In this team people feel free to express their views.
2. In this team people are open to new ideas and suggestions.
3. In this team, players' opinions seem to count.

Appendix I

Perceptions of MTS TMS Measure

Instructions: Think of your team and score based on transactive memory within your team. r = reverse coded items

1 = strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

1. Each team member has specialized knowledge of some aspect of our sport.
2. I have knowledge about an aspect of our sport that no other teammate has.
3. Different team members are responsible for expertise in different areas of our sport.
4. The specialized knowledge of several different teammates is needed to perform.
5. I know which team members have expertise in specific areas.
6. I am comfortable accepting suggestions from other team members about how to perform my role.
7. I trust that my teammates knowledge about our sport is credible.
8. I am confident relying on the information that other teammates bring to the table.
9. When other members give information, I want to double check it myself. (r)
10. I don't have much faith in other's "expertise." (r)
11. My team works together in a well-coordinated fashion.
12. My team has very few misunderstandings about what to do.
13. My team needs to backtrack and start over a lot. (r)
14. My team performs smoothly and efficiently.
15. There is much confusion about how the team accomplishes a task. (r)

Appendix J

Perceptions of MTS Performance Measure

Instructions: Think of your team and score your teams performance using the following metric.

1 = Very Inaccurate
2 = Inaccurate
3 = Moderately Inaccurate
4 = Neither Inaccurate not Accurate
5 = Moderately Accurate
6 = Accurate
7 = Very Accurate

1. My team achieves its goals.
2. My team accomplishes its objectives.
3. My team meets the requirements set for it.
4. My team fulfills its mission.
5. My team serves the purpose it is intended to serve.

Appendix K

Perceptions of Component team PG Fit Measure

For the following questions, consider how you view your ***POSITION GROUP.*** ** Ex: If you are a quarterback, think of every other quarterback you work with.

Instructions: Consider the past 3 months. Please rate your agreement to each of the following items on a scale of 1 (Strongly Disagree) to 7 (Strongly Agree). V = values fit, P = personality fit, A = abilities fit. S = supplementary, C = complementary, r = reverse coded.

1= Strongly Disagree
2= Disagree
3= Slightly Disagree
4= Neither Agree nor Disagree
5= Slightly Agree
6= Agree
7= Strongly Agree

1. The underlying philosophy of this position group reflects what those who play my position value. (V, S)
2. The personalities of those who play my same position are similar to one another. (P, S)
3. The personal values of those that play my same position are different from each other. (V, S, r)
4. The personalities of those who play my same position are well suited for the personality or image of this position. (P, S)
5. The skills and abilities of those that play my same position match the skills and abilities this team looks for in my position. (A, S)
6. Those who play my same position do not have the same values as each other. (V, S, r)
7. The ability level of those in my position group are comparable to one another. (A, S)
8. Every member that plays my same position is important to this position group because every member has such different skills and abilities. (A, C)
9. Those that play my same position rely on each other because others who play the same position have competencies they do not have. (A, C)

10. When key decisions are made, those that play my same position talk to other players in the position because they have different perspectives from each other. (A, S)
11. Each member of my position group offers knowledge, skills, and abilities that others in the group do not have. (A, C)
12. While the personalities of those who play my same position differ, it is as though their personalities complement each other. (P, C)

Appendix L

Perceptions of Component Team Commitment Measure

Please indicate the extent to which you agree or disagree with the following statements about your position groups' commitment.

1= Strongly Disagree
2= Disagree
3= Slightly Disagree
4= Neither Agree nor Disagree
5= Slightly Agree
6= Agree
7= Strongly Agree

1. Those who play my same position feel emotionally attached to this position group.
2. Those who play my same position feel a strong sense of belonging to this position group.
3. Those who play my same position feel as if the position group's problems are their own.
4. Those who play my same position feel like part of the family in this position group.

Appendix M

Perceptions of Component Team Voice Measure

Instructions: Rate you opinion of the following questions regarding team voice

1= Strongly Disagree
2= Disagree
3= Slightly Disagree
4= Neither Agree nor Disagree
5= Slightly Agree
6= Agree
7= Strongly Agree

1. Those in my position-group feel free to express their views.
2. Those in my position-group are open to new ideas and suggestions.
3. The players in my position- groups opinions seem to count.

Appendix N

Perceptions of Component Team TMS Measure

Instructions: Think of your team and score based on transactive memory within your position group. r = reverse scored items

1 = Strongly Disagree
2 = Disagree
3 = Neutral
4 = Agree
5 = Strongly Agree

1. Each member of my position has specialized knowledge of some aspect of our position.
2. I have knowledge about an aspect of our sport that no other member of my position has.
3. Different members of my position are responsible for expertise in different areas of our sport.
4. The specialized knowledge of several different members of my position is needed to perform.
5. I know which members of my position have expertise in specific areas.
6. I am comfortable accepting suggestions about how to perform my role from other members of my position group.
7. I trust the members of my position knowledge about our position is credible.
8. I am confident relying on the information that other members of my position bring to the table.
9. When other members of my position give information, I want to double check if myself. (r)
10. I don't have much faith in other members of my position "expertise." (r)
11. The members of my position work together in a well-coordinated fashion
12. The members of my position have very few misunderstandings about what to do.
13. The members of my position need to backtrack and start over a lot. (r)

14. The members of my position perform smoothly and efficiently.
15. There is much confused about how members of my position accomplish a task. (r)

Appendix O

Perceptions of Component Team Performance Measure

Instructions: Think of your team and score your teams performance using the following metric.

1 = Very Inaccurate
2 = Inaccurate
3 = Moderately Inaccurate
4 = Neither Inaccurate not Accurate
5 = Moderately Accurate
6 = Accurate
7 = Very Accurate

1. My position group achieves its goals.
2. My position group accomplishes its objectives.
3. My position group meets the requirements set for it.
4. My position group fulfills its mission.
5. My position group serves the purpose it is intended to serve.

Tables

Table 1. *Interdependent Sport Teams in the NCAA*

Sports
Field Hockey
Football
Men's Soccer
Women's Soccer
Men's Volleyball
Women's Volleyball
Men's Water Polo
Women's Water Polo
Men's Basketball
Women's Basketball
Men's Ice Hockey
Women's Ice Hockey
Baseball
Softball
Women's Lacrosse
Men's Lacrosse
Rowing
Wrestling

Table 2. *Interdependent Teams and Example Component Teams*

Sport	Example Component Teams
Field Hockey	Attackers, Midfielders, Defenders, Goalkeepers
Football	Quarterback, Defensive line, Running back,
Men's Soccer	Defenders, Midfielders, Forwards
Women's Soccer	Defenders, Midfielders, Forwards
Men's Volleyball	Outside Hitter, Middle Blocker, Libero/DS
Women's Volleyball	Outside Hitter, Middle Blocker, Libero/DS
Men's Water Polo	Goalkeeper, Leftwing, Left diver, Center forward
Women's Water Polo	Goalkeeper, Leftwing, Left diver, Center forward
Men's Basketball	Guards, Posts, Wings
Women's Basketball	Guards, Posts, Wings
Men's Ice Hockey	Wingers, Defenders, Goalies
Women's Ice Hockey	Wingers, Defenders, Goalies
Baseball	Pitchers, Outfielders, Catchers, Infielders
Softball	Pitchers, Outfielders, Catchers, Infielders
Women's Lacrosse	Defense, Attack, Midfielders
Men's Lacrosse	Defense, Attack, Midfielders
Rowing	Rower, Coxswain, or boat type
Wrestling	Weight Class (125, 140, 165)

Table 3. *Percentage of Participants by Sport*

Sport	%
* Women's Volleyball	51%
Men's Basketball	13.50%
Men's Soccer	4%
* Football	3%
Women's Soccer	3%
Field Hockey	2%
* Men's Lacrosse	2%
Men's Water Polo	2%
Baseball	1.50%
Women's Basketball	1.50%
Men's Volleyball	1%
Men's Ice Hockey	< 1%
Rowing	< 1%
Women's Lacrosse	< 1%

*Note: Total Sample Size N=133; * represents sports that have more than one athlete representing the same team. There were five teams represented for women's volleyball, one team for football, and one team for men's lacrosse.*

Table 4. *Teams with two or more members who participated*

Sport	Team	number of team members in the sample
Womens Volleyball	1	23
	2	16
	3	19
	4	3
	5	2
Foobtall	1	2
Men's Lacrosse	1	3

Note: 49% of the sample was made of members from the same team

TABLE 5. *MTS Referent Correlation Table*

Means, standard deviations, and correlations with confidence intervals.

Variable	*M*	*SD*	1	2	3	4	5	6	7	
1.MTS PG Fit	5.12	0.84	**0.81**							
2. MTS values fit	4.31	1.08	.55** [.41, .66]	**0.39**						
3. MTS personality fit	5.35	1.18	.85** [.80, .89]	.25** [.08, .40]	**0.73**					
4. MTS abilities fit	5.33	0.98	.91** [.88, .94]	.25** [.08, .40]	.74** [.65, .81]	**0.79**				
5. MTS team voice	5.31	1.13	.72** [.63, .79]	.25** [.08, .40]	.64** [.52, .73]	.73** [.63, .80]	**0.77**			
6. MTS TMS	3.7	0.45	.79** [.72, .85]	.55** [.42, .66]	.58** [.46, .68]	.71** [.62, .79]	.58** [.45, .68]	**0.71**		
7. MTS comittment	5.6	1.01	.75** [.67, .82]	.32** [.16, .46]	.71** [.61, .78]	.70** [.61, .78]	.69** [.59, .77]	.67** [.56,	**0.75**	
8. MTS performance	5.25	1.19	.70** [.62, .79]	.27** [.10, .42]	.61** [.49, .71]	.72** [.63, .79]	.69** [.59, .77]	.66** [.55,	.60** [.48, .70]	**0.89**

Note. M and *SD* are used to represent mean and standard deviation, respectively. *Values in square brackets indicate the 95%* confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.
Cronbach's Alphas are presented in boldface along the diagonal.

TABLE 6. *Component Team Referent Correlation Table*
Means, standard deviations, and correlations with confidence intervals.

1.Component team PG Fit	5.07	0.91	**0.86**							
2. Component team values fit	4.41	1.14	.50** [.31, .58]	**0.47**						
3. Component team personality fit	5.26	1.23	.85** [.81, .90]	0.17 [-.00, .33]	**0.71**					
4. Component team abilities fit	5.32	1.09	.93** [.91, .95]	.22* [.05, .38]	.77** [.69, .83]	**0.82**				
5. Component team commitment	5.66	1.21	.69** [.70, .84]	.25** [.08, .40]	.66** [.55, .74]	.65** [.54, .74]	**0.85**			
6. Component team voice	3.72	0.52	.78** [.70, .84]	.42** [.27, .60]	.67** [.55, .75]	.70** [.60, .78]	.70** [.60, .77]	**0.82**		
7. Component team TMS	5.36	1.33	.77** [.70,.84]	.47* [.33, .60]	.64** [.53, .73]	.68** [.58, .77]	.56** [.43, .67]	.66** [.55, .75]	**0.79**	
8. Component team performance	5.37	1.23	.60** [.48, .70]	.19* [.02, .35]	.52** [.38, .63]	.61** [.49, .71]	.53** [.40, .64]	.54** [.41, .65]	.61** [.50, .71]	**0.92**

Note. M and SD are used to represent mean and standard deviation, respectively. *Values in square brackets indicate the 95%* confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation (Cumming, 2014). * indicates $p < .05$. ** indicates $p < .01$.
Cronbach's Alphas are presented in boldface along the diagonal.

Table 7. *MTS Factor Loadings*

Item No.	Items	Factor 1	2	3
5	The personalities of my teammates are well suited for the personality or image of this team	**0.79**	0.12	0.1
1	The underlying philosophy of this team reflects what my teammates value	**0.69**	0.15	0.15
6	The skills and abilities of my teammates match the skills and abilities this team looks for in its members.	**0.67**	0.09	0.11
2	My teammates personalities are similar to one another.	**0.65**	-0.08	-0.01
9	Every team member is important to this team because every member has such different skills and abilities.	**0.57**	0.25	0.05
8	The ability level of my teammates is comparable to one another	**0.48**	-0.06	-0.22
10	My teammates rely on each other because other members have competencies they do not have	0.32	0.29	-0.03
12	Each team member offers the team knowledge, skills, and abilities that other teammates do not have	0.04	**0.72**	0.01
14	While my teammates personalities differ, it as though their personalities complement each other	0.14	**0.62**	-0.11
11	When key decisions are made, my teammates consult each other because they have different perspectives.	0.15	**0.55**	-0.14
7	My teammates do not have the same values as each other	0.35	-0.15	**0.8**
4	The personal values of my teammates are different from each other	-0.17	0.16	**0.58**
	Eigenvalues	4.94	1.53	0.97
	% of variance	24%	12%	9%

Note. Factor loadings are in boldface. Extraction Method: Maximum Likelihood.
Rotation Method: Varimax Rotation.

Table 8. *Component Team Factor Loadings*

Item No.	Items	Factor 1	2	3
5	The personalities of those who play my same position are well suited for the personality or image of this position	**0.82**	-0.01	-0.1
1	The underlying philosophy of this position group reflects what those who play my position value.	**0.75**	0.22	0.11
11	When key decisions are made, those that play my same position talk to other players in the position because they have different perspectives from each other	**0.7**	-0.04	0.11
2	The personalities of those who play my same position are similar to one another	**0.68**	0.01	-0.11
6	The skills and abilities of those that play my same position match the skills and abilities this team looks for in my position	**0.68**	0.11	-0.07
12	Each member of my position group offers knowledge, skills, and abilities that others in the group do not have.	**0.66**	-0.14	-0.12
14	While the personalities of those who play my same position differ, it is as though their personalities complement each other.	**0.66**	-0.1	0.04
8	ı my position group are comparable to one another	**0.44**	0.08	0.23
7	Those who play my same position do not have the same values as each other	0.21	**0.8**	0.16
4	The personal values of those that play my same position are different from each other	-0.2	**0.66**	0.11
10	Those that play my same position rely on each other because others who play the same position have competencies they do not have	0.1	-0.09	**0.93**
	Eigenvalues	5.22	1.59	0.9
	% of variance	35%	10%	9%

Note. Factor loadings are in boldface. Extraction Method: Maximum Likelihood.
Rotation Method: Varimax Rotation.