

## ABSTRACT

Title of dissertation: COACHES, CLIMATES, “FIELD” GOALS, AND EFFICACY: A “DE-CONSTRUCTION” OF THE MASTERY-APPROACH TO COACHING AND EXAMINATION OF RELATIONSHIPS TO PSYCHOSOCIAL OUTCOMES IN A YOUTH FOOTBALL PLAYER DEVELOPMENT PROGRAM.

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In support of the achievement goal theory (AGT), empirical research has demonstrated psychosocial benefits of the mastery-oriented learning climate. In this study, we examined the effects of perceived coaching behaviors on various indicators of psychosocial well-being (competitive anxiety, self-esteem, perceived competence, enjoyment, and future intentions for participation), as mediated by perceptions of the coach-initiated motivational climate, achievement goal orientations and perceptions of sport-specific skills efficacy. Using a pre-post test design, 1,464 boys, ages 10-15 ( $M = 12.84$  years,  $SD = 1.44$ ), who participated in a series of 12 football skills clinics were surveyed from various locations across the United States. Using structural equation modeling (SEM) path analysis and hierarchical regression analysis, the cumulative direct and indirect effects of the perceived coaching behaviors on the psychosocial variables at

post-test were parsed out to determine what types of coaching behaviors are more conducive to the positive psychosocial development of youth athletes.

The study demonstrated that how coaching behaviors are perceived impacts the athletes' perceptions of the motivational climate and achievement goal orientations, as well as self-efficacy beliefs. These effects in turn affect the athletes' self-esteem, general competence, sport-specific competence, competitive anxiety, enjoyment, and intentions to remain involved in the sport. The findings also clarify how young boys internalize and interpret coaches' messages through modification of achievement goal orientations and sport-specific efficacy beliefs.

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## TABLE OF CONTENTS

LIST OF TABLES AND FIGURES.....	iv
Chapter	
1. INTRODUCTION.....	1
The Role of the Coach	
Achievement Goal Theory and Motivational Climate	
Statement of the Problem	
Theoretical Models	
Hypotheses	
2. METHODOLOGY.....	14
Participants	
Design and Variables	
Measures	
Procedures	
Statistical Analyses	
3. RESULTS.....	31
4. DISCUSSION.....	59
Implications	
Limitations and Directions for Future Research	
Conclusions	
APPENDIX A: CONSENT FORMS AND QUESTIONNAIRE.....	74
APPENDIX B: POLICIES AND PROCEDURES FOR ADMINISTERING QUESTIONNAIRES.....	88

## LIST OF TABLES AND FIGURES

	Page
Table 1: List of Variables and Abbreviations.....	95
Table 2: Zero-order correlations.....	97
Table 3: Descriptive Statistics for Study Variables.....	99
Table 4: Adjusted Descriptive Statistics for Study Variables after replacing Missing Data via Means Substitution Methodology.....	101
Table 5: Factor Loadings based on Structural Equation Modeling of Measurement Model.....	103
Table 6: Pilot Study Reliabilities.....	104
Table 7: Demographics.....	105
Table 8: Hierarchical Regression Table: Goal Orientations and Efficacy.....	106
Table 9: Hierarchical Regression Table: Self-Esteem and Anxiety.....	108
Table 10: Hierarchical Regression Table: Perceived Competence.....	109
Table 11: Hierarchical Regression Table: Enjoyment and Future Intentions to Play.....	110
Figure 1: General Conceptual Model Overview.....	111
Figure 2: Detailed Level of Model.....	112
Figure 3: Detailed Level of Composite Model.....	113
Figure 4: Hypothesis 1: Direct effects of exogenous variables at Time 1 on corresponding outcome variables at Time 2.....	114
Figure 5: Hypothesis 1: Direct effects of exogenous variables at Time 1 on non-corresponding outcome variables at Time 2.....	115
Figure 6: Hypothesis 2: Direct effects of exogenous variables at Time 1 on perceived coaching behaviors (PCB) at Time 2.....	116
Figure 7: Hypothesis 2: Direct effects of exogenous variables at Time 1 on perceived coaching behaviors (PCB) at Time 2.....	117

Figure 8: Hypothesis 2: Direct effects of exogenous variables at Time 1 on perceived coaching behaviors (PCB) at Time 2.....	118
Figure 9: Hypothesis 2: Direct effects of exogenous variables at Time 1 on perceived coaching behaviors (PCB) at Time 2 (Summary).....	119
Figure 10: Hypothesis 2: Direct effects of exogenous variables at Time 1 on perceived motivational climate (PMC) at Time 2.....	120
Figure 11: Hypothesis 2: Direct effects of exogenous variables at Time 1 on perceived coaching behaviors (PCB) at Time 2.....	121
Figure 12: Hypothesis 3: Direct effects of achievement goal orientations and football skills efficacy on psychosocial outcome variables at Time 2.....	122
Figure 13: Hypothesis 4: Direct and indirect effects of perceived motivational climate on psychosocial outcome variables at Time 2.....	123
Figure 14: Hypothesis 5: Direct effects of perceived coaching behaviors on perceived motivational climate – test of achievement goal theory.....	124
Figure 15: Hypothesis 5: Direct effects of perceived coaching behaviors on perceived motivational climate – test of achievement goal theory.....	125
Figure 16: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on achievement goal orientations (AGO2) and football skills efficacy (FSE2) at Time 2...126	
Figure 17: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2: Self-esteem.....	127
Figure 18: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2: Anxiety.....	128
Figure 19: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2: Competence (football).....	129
Figure 20: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2: Competence (general).....	130
Figure 21: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2: Enjoyment.....	131

Figure 22: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2: Future intentions to play football.....	132
Figure 23: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on achievement goal orientations (AGO2) and football skills efficacy (FSE2) at Time 2...	133
Figure 24: Hypothesis 6: Direct and indirect effects of perceived coaching behaviors on psychosocial outcomes at Time 2.....	134
REFERENCES.....	135

## **CHAPTER 1**

### **Introduction**

**“A coach is someone who can give you correction without causing resentment.”**

**– John Wooden**

As American society has evolved over the last forty years, the mass media have become a more influential factor in shaping one’s perspective of the world. One of the interesting partnerships during this period has been that of sports and television. The world of sports has become a big business, as well as a source of regional, national, and international entertainment. As society has placed great value on sports, youth participation has increased. It is estimated that between 26 and 44 million children (ages six to sixteen) participate in organized sports activities (Murphy, 1999; National Council of Youth Sports, 2008; Smith & Smoll, 2002).

Sports are, by nature, structured activities with certain rules of engagement that vary by sport. Sports can encompass either an individual or team orientation, with different sports requiring the development and performance of different skills and competencies. In general, there is a coach/instructor or someone with sport-specific knowledge that is “in charge” and responsible for the management of the players, practices, and games (Theokas, 2009). Thus, within the structure of the activity itself, there is the creation of a “natural mentor relationship” (Duda & Ntoumanis, 2005). Unfortunately, within the realm of youth sports, most of these activities are organized, managed, and implemented by adult volunteers with little or no formal educational training (Murphy, 1999). Of the estimated 6.5 million coaches in the United States, it is estimated that 33% have been trained in teaching sport skills or tactics, and that fewer

than 20% have been trained in how to effectively communicate with youth players (Aspen Institute, 2014; Sporting Goods Manufacturers Association<sup>1</sup>, 2012).

As participation in youth sports is predominately voluntary, research has shown that the necessary commitment contributes to higher levels of motivation, initiative and cognitive engagement (Chalip, Csikszentmihalyi, Kleiber & Larson, 1984; Larson, 2000; Larson, Hanson, & Moneta, 2006). Participants develop competencies through following directions, learning sport-specific skills, and training for competition. Within the framework of Lerner’s Positive Youth Development (PYD; Lerner, Almerigi, Theokas, & Lerner, 2005), sport is commonly considered a medium through which life skills are taught, such as persistence, teamwork, leadership, and character development (Baron, 2007; Theokas, 2009; Weiss & Williams, 2004).

While research on sport participation has demonstrated the potential for development across multiple domains of functioning, including physical, psychological, cognitive/academic, and social growth (Barber, Eccles, & Stone, 2001; Eccles & Barber, 1999; Fredricks & Eccles, 2006; Mahoney & Cairns, 1997; Marsh & Kleitman, 2003; Smoll & Smith, 2002), mere participation does not guarantee such benefits. For example, while most adults are cognizant that a child’s enjoyment should be the most important factor in an activity, more and more emphasis has been placed on the competitive nature of these sports activities, especially as children move from the end of early childhood into early adolescence (Goldstein & Iso-Ahola, 2008). Some parents and coaches have transferred the “professional sports model” characterized by year-round training, early

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<sup>1</sup> Note: The Sporting Goods Manufacturers Association (SGMA) is now the Sports & Fitness Industry Association (SFIA).

specialization, rankings, and a “scoreboard” mentality into the realm of their children’s games, instead of adopting a developmental perspective (Cote’ & Hay, 2002; Dweck, 1999; Smith & Smoll, 2002; Smoll, Cumming, & Smith, 2011; Smoll & Smith, 2010). Furthermore, it is estimated that 35% of youth drop out of sports (Fullwinder, 2006), suggesting that some aspects of this context would be detrimental to a child’s healthy development. More recently, the Sports & Fitness Industry Association (SFIA), which tracks sports participation rates among preteens, reported that 40 percent of active children played team sports on a regular basis in 2013, down from 44.5 percent in 2008. While some team sports, such as lacrosse and ice hockey, have demonstrated increased participation from 2008 to 2013, the SFIA estimates that 2.6 million children have stopped participating in more mainstream sports (basketball, baseball, football, softball, soccer, and track) (Aspen Institute, 2014). These findings have led some researchers to conclude “it is the quality and implementation of sport programs that are the likely causal mechanisms of enjoyment and development.” (Theokas, 2009, pp. 304).

In accordance with this rationale, researchers and practitioners have identified a variety of contextual factors that should be incorporated into any program that seeks to enhance youth development (Benson, 2006; Eccles & Gootman, 2002; Hellison, 2000). One of these factors is the creation of a positive learning environment. Furthermore, researchers have suggested that it is important to determine the effectiveness of each contextual factor individually as well as its impact on specific developmental assets within the sport context (Petitpas, Cornelius, Van Raalte, & Jones, 2005). Hence, this study focused on how one aspect of the sport environment (i.e., perceived coaching behaviors) may be linked to positive psychosocial outcomes.

While coaches may vary in terms of qualifications, personality, communication skills and leadership style, there is no doubt of the enormous impact they have on athletes’ perceptions of physical and psychological well-being (Reinboth & Duda, 2004), motivation (Amorose & Anderseon-Butcher, 2007), involvement and enjoyment (Smith, Smoll & Barnett, 1995), competence, and self-esteem (Smoll, Smith, Barnett, & Everett, 1993).

### **The Role of the Coach**

For the last three decades, two theoretical frameworks of coaching effectiveness have dominated the literature. One is the Chelladurai’s multidimensional model of leadership (1990, 2005, 2006). The other is the cognitive-behavioral mediation model of leadership devised by Smoll and Smith (1978, 1984, 1989).

Chelladurai’s Multidimensional Model of Leadership (1990, 2007) stipulates that the outcome variables of performance and member satisfaction are a function of how closely the actual leader behaviors resemble the preferred and required leader behaviors, which, in turn, will have a reciprocal feedback effect on subsequent actual leadership behaviors. In the model, these three facets of the leader’s behavior are preceded by three factors: 1) situational characteristics (i.e., size of the group, location, task, goals, norms, etc.); 2) leader characteristics (i.e., qualities, skills, norms, codes of conduct, organizational goals, etc); and 3) member characteristics (i.e., age, ability, etc.). Chelladurai’s model and the items on Leadership Scale for Sport (LSS, Chelladurai & Saleh, 1980) were derived from leadership measures in the business domain and are based on transactional theories of leadership. The unique coaching behaviors observed in sport are more likely represented by modern transformational theories of leadership (e.g.

Bass, 2008; Bass & Riggio, 2006) that would stress coaches’ need to motivate, empower, and express confidence in their team members. Furthermore, methodological and statistical weaknesses have led to questions about some of the psychometrics of the scale (Vaughan, 2015). For the most part, there is a general belief among scholars that this model is applicable to adult sports, whereas Smoll and Smith’s mediation model is more applicable to youth sports (e.g., Duda, 1996; White & Duda, 1994).

Initially, Smoll and Smith (1978, p. 530) proposed that “players’ evaluative reactions to their coaches’ behaviors are mediated by their perceptions and recall of those behaviors.” In other words, even though a coach may create a positive learning environment that fosters development and nurturing, the players’ perceptions and recall of these behaviors will have a direct effect on the players’ evaluations of coaching effectiveness. One of the key components of the model is that it moved away from assessing coaches’ perceptions of their behavior to observing actual behaviors as they occur in the field or court utilizing the twelve (12) categories of the Coaching Behavior Assessment System (CBAS, Smith, Smoll, & Hunt, 1977). Subsequently, Smoll and Smith (1989) proposed a cognitive-mediational model according to which the coaches’ behaviors are influenced by both their own personal characteristics (e.g., coaching goals and motives, behavioral intentions) as well as by situational factors (e.g., nature of the sport, level of competition). Additionally, players’ interpretations and evaluation of the coaches’ behaviors are a function of their own personal characteristics (e.g., age, sex, perceived social norms, self-esteem), as well as some of the situational factors (e.g., nature of the sport, level of competition, practice or game situation).

Based on this model, Smoll and Smith developed an educational program known as Coach Effectiveness Training (CET; Smith, Smoll & Curtis, 1979) and, over the course of 30 years, conducted a series of experimental studies. Based on observations in practices and games, CET trained coaches generally were more reinforcing, more encouraging, gave more technical instruction, and were less punitive and controlling than were control-group coaches. The athletes reported experiencing these same differences in coaching styles. In turn, when compared to those players in the control group, players who played for CET-trained coaches indicated they liked their coach and teammates more (Smith, Smoll & Barnett, 1995), experienced increased enjoyment (Smith & Smoll, 1990), demonstrated significant increases in self-esteem, especially for children at the lower end of the spectrum (Smith & Smoll, 1990; Smith, Smoll, Barnett & Everett 1993), reported significant decreases in performance anxiety (Smith, Smoll & Barnett, 1995), and reported decreases in dropping out of the sport (Barnett, Smoll & Smith, 1992).

Interestingly, in a series of recent studies, Smoll and Smith (i.e., Cumming, Smith & Smoll, 2006; Smith & Smoll, 2007; Smith, Cumming & Smoll, 2008) modified their educational approach in terms of time and content, incorporating the tenets and measurements of Achievement Goal Theory (AGT; Dweck, 1986, 1999; Nicholls, 1984, 1989). The new training program, termed a Mastery Approach to Coaching (MAC, Smoll, Smith, & Cumming, 2007a), is predicated on teaching coaches to create an athletic learning environment that emphasizes effort, fun, and commitment to self-enhancement through skill development; additionally pressures to win and comparisons to other athletes are minimized. When compared to athletes in the control group, players who played for MAC-trained coaches adopted this mastery-based achievement

motivation (Smith, Smoll, & Cumming, 2009), indicated they liked their coach and teammates more (Cumming, Smoll, Smith, & Grossbard, 2007), experienced increased enjoyment (Cumming, Smoll, Smith, & Grossbard, 2007), and exhibited decreases in anxiety (Smith, Smoll, & Cumming, 2007b).

### **Achievement Goal Theory and Motivational Climate**

With respect to the AGT literature, much of the research in the last fifteen years has centered on the perceptions of the coach-initiated motivational climate and has been consistent with the theoretical predictions (Ames, 1992a, 1992b). Perceptions of a mastery (or task-involving) motivational climate have been associated with such outcomes as: 1) perceptions that the coach provides positive feedback, training and instruction, and social support (Balaguer, Duda, & Crespo, 1999; Balaguer, Duda, Atienza, & Mayo, 2002; Smith, Fry, Ethington, & Li, 2005); 2) greater enjoyment, satisfaction, and positive affect (e.g., Boixados, Cruz, Torregrosa, & Valiente, 2004; Bortoli, Bertollo, Filho & Robazza, 2013; Brown & Fry, 2013; Ntoumanis & Biddle, 1999; Vazou, Ntoumanis, & Duda, 2005); 3) use of adaptive coping strategies (Kim & Duda, 1998; Mi-Sook, Duda, & Gano-Overway, 2011; Trenz & Zusho, 2011); 4) decreases in dropping out of sport (Duda, Balaguer, Moreno, & Crespo, 2001); 5) higher levels of perceived competence (Halvari, Skjesol & Bagoien, 2011; Huddleston, Fry, & Brown, 2012; Isoard-Gauthier, Gulliet-Descas, & Duda, 2013; Reinboth & Duda, 2004); and 6) positive peer relationships (Jöesaar, Hein & Hagger, 2011; Ommundsen, Roberts, Lemyre, & Miller, 2005; Quested & Duda, 2010).

On the other hand, perceptions of a performance (or ego-involving) motivational climate have been associated with such outcomes as: 1) perceptions that the coach

provides less positive feedback, less social support, and more punishment-oriented feedback (Balageur, Crespo, & Duda, 1996; Smith, et al., 2005); 2) higher levels of anxiety, especially in regards to performance-related issues (Hougue, Fry, Fry & Pressman, 2013; Kuczek, 2013; Ntoumanis & Biddle, 1998; Pensgaard & Roberts, 2002); 3) dropping out of sport (Sarazin, Vallerand, Guillet, Pelletier, & Curry, 2002); and 4) greater peer conflict (Eys, Jewitt, Evans, Wolf, Bruner & Loughhead, 2013; Ommundsen, et al., 2005). In sum, the research shows that a perceived coach-initiated, mastery-oriented learning environment is linked to more adaptive achievement patterns in which athletes have more positive cognitive and emotional responses when compared to those maladaptive patterns and negative responses that are indicative of a coach-initiated, performance-oriented learning environment.

Although the interplay between situational factors (i.e., objective and subjective environmental characteristics) and dispositional achievement goal orientations was not well specified by Nicholls (1989) or Ames (1992a, 1992b), Dweck and Leggett (1988) were the first to propose their interactive effects such that the influence of an athlete’s dispositional goal inclinations would depend on the characteristics of the climate, especially if these dispositional orientations were initially low to moderate in strength. Within the sports domain, some studies have examined this interaction effect (e.g., Newton & Duda, 1999; Treasure & Roberts, 1998; Gano-Overway, Guivernau, Magyar, Waldron, & Ewing, 2005). When significant interactive effects have emerged, they have been in accordance with the AGT literature (Dweck & Leggett, 1988). However, when significant interactions have not occurred, the researchers often point to the limited power

of the studies due to their insufficient sample sizes or limited variability on the predictor variables (Duda & Hall, 2001).

This limitation becomes even more formidable when one considers adding perceptions of ability as one of the independent variables assumed to interact with dispositional goals and perceptions of the environment (Newton, Duda & Yin, 2000). “Clearly, potential interactive effects among goal orientations, the perceived motivational climate, and perceived ability should be further explored in subsequent research” (Duda & Hall, 2001, p. 435). However, it would seem evident that this line of research would necessitate a rather large sample size<sup>2</sup>.

### **Statement of the problem**

The present study was designed to test a theoretical framework that integrates and extends previous research on the interactive effects of dispositional goal orientations, the perceived motivational climate, and perceptions of ability to further our understanding of perceived coaching behaviors within the domain of youth sports. The motivational framework was derived from the achievement goal theory (AGT) and incorporated personal and situational motivations. The theoretical basis of this study was the expanded and interactive AGT model that encompasses the context of coaching effectiveness in youth sports. The results of this research were expected to shed insight into the “mechanisms” that mediate the effects of specific types of perceived coaching behaviors on indicators of psychosocial well-being.

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<sup>2</sup> It should be noted that the size of the sample needed is dependent upon the loadings of the factors being examined and the power (usually .80) needed to detect those relations. Weaker loadings will have the power to detect larger relations, while stronger loadings will provide the power to detect smaller relations among factors. For example, in this study (N=1464), if there are two 5-indicator factors with weak loadings around .30, the current sample size will have the .80 power to detect a relation (from .20 to .25) between the factors.

The growing number of qualitative studies in this area suggests that there may be a complex, interactive, multifaceted matrix of components that contribute to the motivational atmosphere (i.e., Keegan, Harwood, Spray & Lavalle, 2010, 2014; Keegan, Spray, Harwood & Lavalle, 2010). Moreover, in their conclusion, Smith, Smoll, and Cumming (2007) called for a “dismantling” of the motivational climate in order to “clarify relations between particular intervention elements and various outcome measures” (p. 54). In their systematic review of 104 studies that examined the intra-individual correlates of motivational climate perceptions, Harwood, Keegan, Smith and Raine (2015) found that only 7.7% of the published papers examined the components of the motivational climates. Furthermore, Smith et al. (2007) suggested that a “dismantling” of the elements of their MAC program might shed light on the relative importance of the coaching behavioral guidelines in producing effects on certain psychosocial outcomes.

As a whole, the current study sought to extend the work of Smith, Smoll, and Cumming (2007) by examining the relationships between perceptions of specific coaching behaviors and perceptions of mastery and performance motivational climates, and how these perceptions are related to achievement goal orientations and skills efficacy. In addition, the study examined how these variables and their interrelationships in turn are related to various psychosocial variables (e.g., enjoyment, anxiety, self-esteem, competence), as well as future intentions to participate in football. Taken together, the findings were expected to clarify how young boys internalize and interpret coaches’ messages through modifications of their learning dispositions and sport-specific efficacy beliefs, thereby increasing our understanding of what types of coaching

behaviors are more conducive to the positive psychosocial development of youth athletes. Thus, the results could create the foundations for a cognitive-behavioral intervention designed to enhance the youth sports environment and foster continued physical activity through involvement in youth sports.

### **Hypotheses**

The central research question was: Are young athletes’ perceptions of coaching behaviors related to their perceptions of the motivational climate, dispositional achievement goal orientations, and skills efficacy, and do these, in turn, predict psychosocial well-being? This central research question was the basis for the six specific hypotheses that were tested in this study. The main focus of the study was the hypotheses three through six, after controlling statistically the temporal effects expressed in the hypotheses one and two.

#### **Hypothesis 1: Direct Temporal Effects of Exogenous Variables at Time 1 on Outcome Variables at Time 2.**

It was hypothesized that the three (3) latent factors of the achievement goal orientations at Time 1 would have direct effects on the three (3) latent factors of the achievement goal orientations at Time 2. In addition, it was hypothesized that Football Skills Efficacy at Time 1 would have direct effects on Football Skills Efficacy at Time 2. Similarly, it was hypothesized that the eight (8) latent factors that comprise the psychosocial variables at Time 1 would have direct effects on their corresponding eight (8) latent factors that comprise the psychosocial variables at Time 2.

Furthermore, it was hypothesized that these twelve exogenous latent factors at Time 1 would have weaker direct effects on the twelve (12) non-corresponding latent factors at Time 2.

**Hypothesis 2: Direct and Indirect Effects of Exogenous Variables on Perceived Coaching Behaviors and Perceived Motivational Climate).**

It was hypothesized that the eight (8) latent factors that comprise the psychosocial variables at Time 1 would have direct effects on the six (6) latent factors of the perceived coaching behaviors at Time 2, as well as direct and indirect effects (via those same six factors) on the four (4) latent factors that comprise the perceived motivational climate at Time 2.

**Hypothesis 3: Direct effects of Achievement Goal Orientations and Football Skills Efficacy at Time 2 on Psychosocial Outcome Variables at Time 2.**

It was hypothesized that the three (3) latent factors of the achievement goal orientations and football skills efficacy at Time 2 would have direct effects on the eight (8) latent factors that comprise the psychosocial variables at Time 2.

**Hypothesis 4: Direct and Indirect effects of Perceived Motivational Climate on Psychosocial Outcome Variables at Time 2.**

It was hypothesized that the four (4) latent factors that comprise the Perceived Motivational Climate would have direct effects on the three (3) latent factors of the achievement goal orientations and football skills efficacy at Time 2, as well as direct and indirect effects (via those same factors) on the eight (8) latent factors that comprise the psychosocial variables at Time 2.

**Hypothesis 5: Direct Effects of Perceived Coaching Behaviors on Perceived**

**Motivational Climate.**

It was hypothesized that the six (6) latent factors that encompass the Perceived Coaching Behaviors would have direct effects on the four (4) latent factors that comprise the Perceived Motivational Climate.

**Hypothesis 6: Direct and Indirect effects of Perceived Coaching Behaviors on Psychosocial Outcome Variables at Time 2.**

In combining the components of Hypotheses 3 through 5, it was hypothesized that the six (6) latent factors that encompass the Perceived Coaching Behaviors would have direct effects on the four (4) latent factors that comprise the Perceived Motivational Climate, as well as direct and indirect effects on the three (3) latent factors of the achievement goal orientations, football skills efficacy, and, in turn, on the eight (8) latent factors that comprise the psychosocial variables at Time 2.

## **CHAPTER 2**

### **Methodology**

#### **Design and Variables**

The present field study was based on a pretest-posttest design that examined the effects of perceived coaching behaviors, perceived motivational climate, dispositional goal orientations and sport-specific skills efficacy on various psychosocial variables (e.g., enjoyment, anxiety, self-esteem, competence, and future intentions for participation).

#### **Theoretical Models**

Based upon the AGT literature, the present study tested a theoretical model that postulates the effects of perceptions of coaching behaviors, perceptions of the motivational climate, dispositional achievement goal orientations, and skills efficacy on various indicators of psychosocial well-being (see Figures 1 and 2 on pages 131 and 132) via Structural Equation Modeling (SEM).

#### **Model I (General Conceptual Model)**

The first model (Figure 1) represents the conceptual overview, in which three factors (two latent – Achievement Goal Orientations and Psychosocial Well-being - and one composite – Football Skills Efficacy) are assessed at two different points in time (T1 and T2, respectively). Furthermore, two additional latent variables (Perceived Coaching Behaviors and Perceived Motivational Climate) are also assessed at Time 2.

The black arrows (Hypothesis 1 and Hypothesis 2) represent the relationships among the factors that need to be parsed out to account for the temporal element in this model. For example, the measures of Football Skills Efficacy at Time 1 should have a highly significant relationship with the measures of Football Skills Efficacy at Time 2.

When these are removed (i.e., statistically controlled for), we are able to examine the relationships between the other variables of interest and the residual measures of those same factors at Time 2.

The purple arrows (Hypothesis 3) represent the direct effects of the achievement goal orientations and skills self-efficacy at Time 2 on the psychosocial outcomes at Time 2.

The green arrows (Hypothesis 4) represent the direct effects of the perceived motivational climate on the achievement goal orientations, skills efficacy and the psychosocial outcomes at Time 2. In addition, the indirect effects of the perceived motivational climate on the psychosocial outcomes at Time 2 are represented by the combination of the same green arrows and the purple arrows (Hypothesis 3).

The blue arrow (Hypothesis 5) represents the test of the tenets of Achievement Goal Theory, in that the factors that comprise the elements of Perceived Coaching Behaviors have the direct effect on the components of the Perceived Motivational Climate.

The red arrows (Hypothesis 6) represent the main research questions of this model. These arrows present the direct effect of the component factors of Perceived Coaching Behaviors on Perceptions of the Motivational Climate (the aforementioned blue arrow), Achievement Goal Orientations (at Time 2), Football Skills Efficacy (at Time 2), as well as the components of psychosocial well-being (at Time 2). Additionally, the combination of the same red and blue arrows, along with the green arrows (Hypothesis 4) and the purple arrows (Hypothesis 3), represents the indirect effects of the perceived coaching behaviors on the psychosocial outcomes at Time 2.

### **Model II (Detailed Level of Model)**

The second model (Figure 2) represents the detailed level of analyses and the actual latent factors that comprise each of the conceptual latent variables. For example, Goal Orientation (at Time 1 and Time 2) is comprised of three (3) latent factors – Mastery (MAS), Performance Approach (PAP) and Performance Avoidance (PAV). Similarly, Psychosocial Well-being (at Time 1 and Time 2) is comprised of five (5) latent factors – Self Esteem (SE1 and SE2, respectively), Competitive Anxiety (ANX1 and ANX2, respectively), Perceived Competence (PC1 and PC2, respectively), Enjoyment (ENJ1 and ENJ2, respectively), and Future Intentions (FUT1 and FUT2, respectively). Similarly, Football Skills Efficacy (at Time 1 and Time 2) is a composite variable (denoted as by the rectangular boxes FB Skills Efficacy 1 and FB Skills Efficacy 2, respectively) that encompasses players’ perceived efficacy on twelve (12) football technical skills.

In addition, Perceived Coaching Behaviors consists of six (6) latent factors – Technical Skills (Tech), Mental Preparation (Mentl), Goal Setting (Goal), Competition Strategies (Strat), Positive Personal Rapport (+Rapp), and Negative Personal Rapport (-Rapp). Furthermore, the Perceived Motivational Climate consists of four (4) latent factors: two mastery-oriented – Mastery Effort/Improvement (MAS E/I) and Mastery Important Role (MAS Role); as well as two performance-oriented – Performance Intra-team Member Rivalry (PER Rival) and Performance Unequal Recognition (PER Recog).

As shown in the Conceptual Model 1 (see Figure 1), the independent variables consist of the latent variable “achievement goal orientations,” the composite variable “football skills efficacy,” and the latent “psychosocial” initial variable at Time 1. The

dependent variables are the latent variables “perceived coaching behaviors,” “perceived motivational climate,” “achievement goal orientations,” the composite variable “football skills efficacy” at Time 2, as well as the latent “psychosocial” outcome variable.

As shown in Detailed Model 2 (see Figure 2), the independent latent variable “achievement goal orientations” at Time 1 is comprised of three (3) latent variables: 1) Mastery 1 (MAS1); 2) Performance Approach 1 (PAP1); and 3) Performance Avoidance 1 (PAV1). Similarly, the latent “psychosocial” initial variable at Time 1 was broken into five (5) latent variables: 1) Self-Esteem 1 (SE1); 2) Competitive Anxiety 1 (ANX1); 3) Perceived Competence 1 (PC1); 4) Enjoyment 1 (ENJ1); and 5) Future Intentions 1 (FUT1). The independent composite variable “football skills efficacy” (FSE1) remained as such. The dependent latent variable “perceived coaching behaviors” is comprised of six (6) latent variables: 1) Technical Feedback (TECH); 2) Mental Preparation (MENT); 3) Goal Setting (GOAL); 4) Competition Strategies (STRAT); 5) Positive Rapport (POSRAP); and 6) Negative Rapport (NEGRAP). The dependent latent variable “perceived motivational climate” is comprised of four (4) latent variables: 1) Mastery: Effort/Improvement (MASE/I); 2) Mastery Important Role (MAS ROLE); 3) Performance: Intra-team Rivalry (PER Rival); and 4) Performance: Unequal Recognition (PER Recog). The dependent latent variable “achievement goal orientations” at Time 2 has three (3) latent variables: 1) Mastery 2 (MAS2); 2) Performance Approach 2 (PAP2); and 3) Performance Avoidance 2 (PAV2). Finally, the latent “psychosocial” initial variable at Time 2 consists of five (5) latent variables: 1) Self-Esteem 2 (SE2); 2) Competitive Anxiety 12 (ANX2); 3) Perceived Competence 2 (PC2); 4) Enjoyment 2

(ENJ2); and 5) Future Intentions 2 (FUT2). The dependent composite variable “football skills efficacy” (FSE2) remained as such.

### **Participants**

Middle school youth football players (boys, ages 11-15, grades 5-9, from diverse ethnic groups) registered in a nation-wide football skills development program were asked to complete a survey prior to and at the conclusion of their participation between June 2006 and August 2007. Two thousand three hundred sixty (2,360) participants from thirty (30) selected locations (out of a possible 127 locations) in five (5) geographic regions (Mid-Atlantic, Northeast, South, Mid-West, and West Coast) completed the survey at (or near) the start of their program experience. Depending on the participants’ location, the twelve-session program spanned a two to four week time period, depending on the availability of the facility. On the final day of the program, 1,910 participants from the same locations completed a post survey. The post survey contained the same measurements as the pre-survey plus measurements that were only appropriate post hoc (i.e., perceptions of coaching behaviors and motivational climate). Of those surveyed, 1,464 participants’ post-test measurements were matched with their baseline measurements, which amounted to a 52% completion rate. It should be noted that a total of 2,798 participants completed either the pre or post survey, yielding the average survey response rate of 73% over the 30 locations.

The youth football skills development program consisted of a series of twelve (12) two-hour clinics at various locations across the United States. Each participant was actively engaged in the program for the total of twenty-four (24) hours – 12 sessions with each two hours of duration. The program and use of the equipment were provided at no

cost to all participants. One of the major objectives of the program was to “create an environment where all participants have the opportunity to experience improvement in their (football) skill development.” The program coordinators and coaches were provided with a curriculum that broke down each of the twelve (12) clinic two-hour sessions into ten to fifteen minute lesson segments. This framework included strategies and techniques to introduce new skills and provide a progression for skill acquisition through game-related drills and play. The program provided step-by-step instruction about every football position. It used a fun and engaging environment to integrate on-field development with life skills development. Participants received instruction from high school coaches and trained community volunteers that were selected by the funding agency. In addition to the curriculum, each coach was provided with a detailed DVD and “On Field Practice Plan” to be used as resources to further enhance the cohesion and consistency of instruction across all venues in this program. In 2005, a total of 19,473 adolescent boys completed the program in 130 communities across the United States. The program recruited or employed 2,600 trained instructors and volunteers.

### **Measures**

**Demographic Information:** The demographic part of the survey assessed participants’ age, ethnicity, geographic location, school grade, school, grade point average (GPA), number of members in their current household, as well as the number of years the participant had played organized football. The questionnaires can be found in Appendix A.

**Perceived Coaching Behaviors:** The Coaching Behavior Scale for Sport (CBS-S; Coté et al, 1999) is a 44-item instrument that assesses athletes’ perceptions of coaches’

roles in the development of technical skills, mental preparation, goal setting, competition strategies, physical training, as well as the positive and negative personal rapport that is established between the athletes and their coaches. An abbreviated 14-item version of this scale was completed by participants of this study, utilizing the highest loading items for each factor with the exception of the physical training, which was removed due to its irrelevance to this study. Items within the six utilized subscales included questions about perceptions of coaches' involvement in providing feedback that helps athletes improve their technique (e.g., “The coach most responsible for my technical skills provides me with advice while I’m performing a skill”), providing advice on how to perform under pressure, helping athletes set short-term goals, helping athletes to focus on the process of performing well (e.g., “The coach most responsible for my competition strategies helps me focus on the process of performing well.”), demonstrating concern for the athlete as a person, using fear in their coaching methods, etc. Each of the items was answered using a five-point Likert-type scale, ranging from 1 (“never”) to 5 (“always”) (see Appendix B). The CBS-S subscales have been found to be internally consistent (Cronbach’s alphas ranging from .79-.93; Jurko, Tomljanovic, & Cular, 2013). For this study, Cronbach’s alphas ranged from .72-.85 (see Tables 3 and 4).

**Achievement Goal Orientations:** To assess the participants’ orientations towards mastery, performance-approach, and performance-avoidance in sport, a slightly adapted form of Middleton and Midgley’s (1997) version of the *Patterns of Adaptive Learning Survey* (PALS; Midgley et al., 1996) was employed. This scale has been proven to be reliable and valid in several classroom studies of middle school students (e.g., Middleton & Midgley, 1997; Midgley et al., 1996), as well as in the context of physical education

(e.g., Carr, 2006). The scale consisted of five items assessing each of the achievement goal subscales - mastery goals, performance-approach goals, and performance-avoidance goals. Specifically, this particular adaptation replaced the phrase “in PE” with “in sports.” Participants responded to the five mastery items such as “I do sports because I like to learn new things” and “I like sports best when it really challenges me,” five performance-approach items such as “I want to do better than other athletes” and “I would feel really good if I were the only one who could do a particular skill,” and five performance-avoidance items such as “it’s important that I don’t look stupid at sports” and “I’m afraid if I make a mistake, people will think I’m not good at it.” Responses were recorded on a five-point Likert-type scale ranging from 1 (“not at all true”) to 5 (“very true”) (See Appendix B). Examination of the psychometric properties of the similarly worded instrument (Carr, 2006) revealed stable factor structure, adequate internal consistency (Cronbach’s alpha ranging from .74-.82), and adequate short-term test-retest reliability (Carr, 2006). Cronbach’s alpha in the present study ranged from .69-.84 (see Table 1).

**Perceived Motivational Climate:** The Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2; Newton, Duda & Yin, 1999) was created to determine athletes’ perceptions of goal-related behaviors in an athletic environment. The PMCSQ-2 is comprised of two higher order scales labeled mastery (or task-involving) and performance (or ego-involving). Each of these higher order scales is derived from three subscales. The Important Role, Effort / Improvement, and Cooperative Learning subscales encompass the Mastery Component, whereas the Performance component consists of the Unequal Recognition, Intrateam Rivalry, and Punishment for Mistakes

subscales. The PMCSQ-2 subscales have been found to be internally consistent (Cronbach’s alphas ranging from .75 to .87) with the exception of the intrateam rivalry subscale ( $\alpha = .54$ ; Duda & Whitehead, 1998). Additionally, confirmatory factor analysis has revealed that the six-factor model (including all six subscales) and hierarchical model (including the higher order Mastery and Performance scales, with their respective subscales) are psychometrically acceptable (Newton, et al; 2000).

An abbreviated 12-question version of this scale was completed by the participants, utilizing the three highest loading items for each factor, with the exception of cooperative learning and punishment for mistakes. The former was omitted due to the fact that the main focus of this study was the effect of perceived coaching behaviors. The latter was omitted because the wording of the items closely mirrored the phrasing of the negative rapport subscale of the perceived coaching behaviors. When completing the PMCSQ-2, the participants were asked to respond as members of their team throughout the twelve clinic sessions and then indicate, on a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree), whether they agreed or disagreed with the items reflecting mastery-orientation (e.g., “On this team, the coaches make sure players improve on skills they’re not good at.”) or performance-orientation (e.g., On this team, the coaches praise only the best players.”). Cronbach’s alpha for the scale in the present study ranged from .58-.84 (see Tables 3 and 4). (Note: Similar to Newton et al. (2000) ( $\alpha = .54$ ), the Intra-Team Rivalry component in the current study exhibited low internal consistency ( $\alpha = .58$ ), yet indicated consistency in regards to factor loadings and stability. Thus, it was included in the instrument as it represents a meaningful component of the conceptual construct.)

**Football Skills Efficacy:** The Football Skills Efficacy scale (FSE) was adapted from Bandura’s concept of self-efficacy (Bandura, 1986) and incorporated the twelve (12) fundamental skills that were taught during the twelve clinical sessions. The participants were asked to reflect on their feelings about certain football skills, and then indicate, on a 5-point Likert scale (1 – not very confident to 5 - very confident), whether they could perform a specific skill properly (e.g., I am confident I can perform the “6-point progression” properly). Cronbach’s alpha in the present study varied from .91 to .97 for the pre-test and post-test measures, respectively (see Tables 3 and 4).

**Self-Esteem:** The Washington Self-Description Questionnaire (WSDQ: Smoll, et al, 1993) was employed to measure a global construct of self-esteem that refers to one’s general sense of self worth rather than self-worth in a specific domain, such as academic, social or athletic contexts. Resembling Rosenberg’s (1979) scale, the WDSQ is designed to enhance children’s comprehension by using simpler language. The participants were asked to reflect on their feelings about themselves on a 5-point Likert scale (1 = Not like me to 5 = very much like me). Six of items refer to positive attributes (e.g., “I feel like I’m going to be a success.”) and eight of the items reference negative evaluations (e.g., “I am disappointed in myself.”). The WDSQ has been found to be internally consistent with Cronbach’s alphas ranging from .80 to .86 and test-retest reliabilities over a 6-week period ranging between .69 and .71 (Smoll, et al, 1993). In the present study, Cronbach’s alpha was found to be .78 and .87 for the pre-test and post-test measures, respectively (see Tables 3 and 4).

**Competitive Anxiety:** The Sport Competition Anxiety Test (SCAT: Martens, 1977) contains fifteen items, of which ten measure symptoms associated with anxiety and

five the likelihood of internal bias. Participants are asked to reflect on different kinds of feelings about competition on a 5-point Likert scale (1 = not at all to 5 = very much so); eight (8) items are negative (e.g., “Before I compete, I feel uneasy”) and two (2) were positive (e.g., “Before I compete, I feel calm.”). Evidence indicates that the SCAT has high internal consistency (Cronbach’s alpha values ranging from .95 to .97) in more than 80 published studies (i.e., Dunn & Dunn, 2001). In the present study, Cronbach’s alpha was found to be .77 and .85 for the pre-test and post-test measures, respectively (see Tables 3 and 4).

**Perceived Competence:** Based upon the tenets of physical subscale of the Perceived Competence Scale for Children (Harter, 1982), children’s perceptions of competence were assessed in regards to their assessment of personal competence about football and sports. Rather than using Harter’s structured alternative format, the current scale utilized a 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) to create continuity with the entire questionnaire survey format. Four (4) items were specific to football (e.g., “I believe that I have the ability to play football”) and two (2) items were not sport-specific (e.g., “In general, I am a gifted athlete.”). In the present study, Cronbach’s alpha ranged from .70 to .82 for the pre-test and post-test measures (see Tables 3 and 4).

**Enjoyment and Effort:** Three (3) items were created to assess children’s perceptions of enjoyment and effort when engaged in football. A 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) was utilized to measure both enjoyment (e.g., “I have a lot of fun playing football.”) and effort (e.g., “In general, I play sports with lots

of effort and intensity.”). In the present study, Cronbach’s alpha was found to be .75 and .80 for the pre-test and post-test measures, respectively (see Tables 3 and 4).

**Future Intentions:** Three (3) items were created to assess intentions for future participation in football. A 5-point Likert scale (1 = strongly disagree to 5 = strongly agree) was utilized to measure children’s future intentions (e.g., “I will practice and play football next season.”). The scale’s Cronbach’s alpha was .80 and .85 for the pre-test and post-test measures, respectively (see Tables 3 and 4).

## **Procedures**

In Spring 2006, a pilot study, using three (3) youth football organizations from the Mid-Atlantic region, was conducted. Its main purpose was to assess the readability, time required to complete the questionnaire, perceived respondent burden, administrative procedures and equipment needed to execute a nation-wide sampling of program participants. Two hundred twenty participants were surveyed and took part in a debriefing session to ascertain feedback about the length and readability of the questionnaire, as well as administration procedures. The average time to complete the post-test questionnaire was 18.75 minutes (ranging from 10.7 to 24.6 minutes). However, 15% of the respondents missed or skipped one page of the questionnaire. In general, the feedback for readability was favorable. As the Flesch readability ease scale was 75.0 and the Flesch-Kincaid grade level scale was 5.4, good readability was expected. In the debriefing sessions, several participants suggested using larger font sizes or bold letters to differentiate the statements from the answer boxes. This suggestion was enacted when the questionnaire’s format was converted to Scantron eListen 2005 Survey format. The change in format led to some advantages: 1) the use of

Optical Mark Readers (OMR) for batch data processing and 2) the use card stock paper to alleviate the unintentional skipping of pages.

During the debriefings sessions, the participants expressed some concerns about the questionnaire’s length; however, when the purpose of helping the coaches improve the program was reiterated many concerns were alleviated. This demonstrated that the participants were vested in the program. Another suggestion to provide an immediate reward, such as candy, for completing the survey was immediately incorporated. In terms of administrative logistics, the pilot study demonstrated the importance of coaches’ assistance in the distribution of the questionnaires as they had respectful rapport with the athletes, and could help emphasize the importance of providing feedback as a way to help improve the program. Lastly, the pilot test provided early feedback in terms of scale reliability (Cronbach’s alpha ranged from .95 to .66, see Table 6 for details). Means and standard deviations were not calculated.

Researchers and research coordinators were recruited from several universities (Ball State University, California State University at Fullerton, Sam Houston State University, and the University of Maryland) across the United States to form regional research teams to administer pre and post questionnaires to program participants at selected sites. The locations were selected from a list of sites, provided by the funding agency, based on geography (a representative sample from regions across the United States, as well as within travel parameters for the research teams), dates of the clinics, and budget (i.e., travel-related costs). Training sessions on proper survey procedures were conducted either in person or via conference call. Survey packets, clipboards, and pencils were shipped to each research team for administration.

In accordance with University of Maryland Institutional Review Board (IRB) policies and procedures, a description of the study, the study purposes, and the incentive for participation (i.e., a packet of candy at the end of participants’ respective practice session) were explained, and program participants from the selected sites were given two copies of an informed consent form (one for the participants to complete and one to take home to their parents / guardians) (see Appendix A) and a survey packet (see Appendix A). In the 2006 cohort, the initial questionnaire was administered while participants were registering for the program and getting outfitted in their football equipment (i.e., prior to the first practice session). Based on the feedback of the program’s organizers, the pre survey for the 2007 cohort took place during the second or third practice session. For all the post surveys, the administration took place during final (12<sup>th</sup>) practice session, at the conclusion of the participants’ match-related games and prior to returning their football equipment. Trained research assistants verbally explained instructions for the completion of the survey packet and addressed any questions; the completion of the survey packet took 15 to 20 minutes. Based on the feedback from the pilot study, the purpose of the evaluation – to help the funding agency improve this free program in the future – was reiterated several times to lessen any perceptions of the response burden. These data were collected at the selected program locations by the research team from the University of Maryland between June and September 2006 and from March through August 2007. In addition, the research team from California State University, Fullerton collected the data throughout July 2006, the research team from Ball State University between May and July 2007, and the research team from Sam Houston State University between March

and July 2007. (For details of the policies and procedures for the questionnaire administration, see Appendix B.)

Lastly, as a means to ensure that the coaches were conducting the program sessions in accordance with the guidelines and curriculum set forth by the funding agency, research teams performed at least one random spot check during the scheduled session times. Observations and notes were compared to the common curriculum to assess adherence. While the research teams found some variations in how sites were organized and managed, no significant deviations in the content of the lessons were reported.

### **Statistical Analyses**

Initially, data were screened for missing values. Using the Missing Values Analysis (MVA) module via SPSS V22.0, it was determined that the data were not missing at random (MNAR) ( $\chi^2 = 35939.105$ ,  $DF = 31533$ ,  $Sig. = .000$ ). Missing data ranged from 5.1% ( $n = 75$ ) to 18.1% ( $n = 265$ ), depending on the variable. If “missingness” proved problematic during the SEM analysis, an a priori decision was made to rely on the robust fit statistics from EQS v.6.2 – Structural Equation Modeling Software (Multivariate Software, Inc.) and utilize Expectation Maximization (EM), a maximum likelihood estimation method of the SPSS MVA module, or Mean Substitution (MS) in conjunction with the creation of composite scores, to resolve the problem and complete the analysis (e.g., Enders, 2010; Howell, 2008).

Next, total scores for each measure were obtained and the means, standard deviations, and distributive properties (i.e., skewness, kurtosis) were computed. Total scores from PALS, FSE, WSDQ, PMCSQ-2, CBS-S, and the perceived competence,

enjoyment and future intentions questions were negatively skewed and kurtotic (all variables except for the SCAT). The measures were transformed using square root and logarithmic procedures (Tabachnick & Fidell, 2007); however, the transformed scores were still skewed and kurtotic. The decision was made to use the non-transformed values and rely on the robust fit statistics from EQS (Finney & DiStefano, 2013). Subsequently, correlations and internal consistency reliabilities among all the variables were calculated.

Afterward, confirmatory factor analyses (CFA) were performed for each of the proposed latent variables of the proposed model. The adequacy of each is determined through the degree of fit with the sample data. Maximum Likelihood (ML) was utilized, as it is robust to moderate violations of the normality assumption, as were the data in this study. Best practices suggest model fit to utilize three types of indices (incremental, absolute and predictive) to determine if the measured associations of the latents variable (or model) are consistent with the observed associations in the data (Weston & Gore, 2006; Worthington & Whittaker, 2006). A number of goodness-of-fit index values are provided by EQS, including the Chi-square statistic ( $\chi^2$ ), the Steiger-Lind root mean square error of approximation (RMSEA) with its 90% confidence interval (Steiger, 1990), the Bentler Comparative Fit Index (CFI) (Bentler, 1990), and the Non-normed Fit Index (NNFI) (Bentler & Bonnet, 1980). Generally, models with CFI and NNFI values over .90 and RMSEA values below .06 are considered as being acceptable in fit (Bryne, 2006; Kline, 2011; Schumacker & Lomax, 2004).

In accordance with the tenets of structural equation modeling (Bentler, 1980), the proposed model was tested in a two-step process. First, we tested the measurement model through confirmatory factory analysis (CFA), in which all estimated parameters

are allowed to covary. Second, we tested the proposed structural model (Figure 2). Next, direct and indirect effects were obtained for the pathways in the model. The indirect effect implies a causal relation such that independent variable (A) affects a mediating variable (B), which, in turn, affects a dependent variable (C); the indirect effects are calculated as the products of the regression estimates [i.e., path coefficients  $(A \times B) + (B \times C)$ ] (Hanushek & Jackson, 1977; Sobel, 1990). Consistent with past research, confidence intervals for each indirect effect were calculated using the Monte Carlo Method for Assessing Mediation (MCMAM, Preacher & Selig, 2008). If the confidence interval does not contain the value 0, it is considered significant.

## CHAPTER 3

### Results

#### Demographics

Most of the sample participants ( $N = 1,464$ ) were between the ages of twelve and thirteen years of age (mean = 12.84 years,  $SD = 1.48$ ), predominantly African Americans ( $n = 707$ , 48.3%) and Caucasian ( $n = 384$ , 26.2%). In addition, the vast majority of the boys were in middle school ( $n = 1,047$ , 71.5%) and reported doing well in the classroom, earning grades of mostly B's or higher ( $n = 1,076$ , 73.4%). Furthermore, participants who reported playing football for 2 years or less ( $n = 714$ , 48.7%) slightly outnumbered those participants who reported playing football for 3 years or more ( $n = 616$ , 42.1%). Lastly, the majority of the participants were geographically located in the Mid-Atlantic region (DC, MD, PA, VA) ( $n = 605$ , 41.3%). For a more detailed demographic analysis, see to Table 7.

#### Descriptive Analyses

Table 1 contains a list of the variables and their abbreviations for the tables and figures. Table 2 reports the zero-order correlations among all the measured variables used in this study. Table 3 presents the means, standard deviations, skewness, kurtosis, and internal reliability (Cronbach's alpha) of the measured variables. Table 4 reports the means, standard deviations, skewness, kurtosis, and internal reliability (Cronbach's alpha) of the mean substitution (MS) of the composite variables.

#### Confirmatory Factor Analyses

Confirmatory factor analysis (CFA) was used to test the latent variables. Each of the fourteen items on the technical skills, mental preparation, goal setting, competition

strategies, and positive - negative personal rapport subscales of the adapted version of the Coaching Behavior Scale for Sport (CBS-S) loaded positively on to their respective latent constructs of Perceived Coaching Behaviors (ranging from .24 to .56, see Table 5). In regards to the Perceived Motivational Climate, each of the three items for the respective mastery subscales (important role and effort/improvement) and performance subscales (unequal recognition and intra-team rivalry) of the abbreviated version of the Perceived Motivational Climate in Sport Questionnaire-2 (PMCSQ-2) loaded positively on their respective latent constructs (ranging from .21 to .50, see Table 5).

Each of the five items on the mastery, performance-approach, and performance-avoidance subscales of the adapted version of the *Patterns of Adaptive Learning Survey* (PALS) loaded positively on their respective latent constructs of Achievement Goal Orientations in both the pre and post-test measurements (ranging from .09 to .46, see Table 5).

Regarding psychosocial antecedents and outcomes, the six items based on the physical subscale of Harter’s Perceived Competence Scale for Children loaded positively on the Perceived Competence construct (ranging from .37 to .53, see Table 5). The three items created to assess enjoyment loaded in the expected direction on the Enjoyment factor (ranging from .32 to .52, see Table 5). In addition, the three items created to assess future intentions for football participation loaded positively on the Future Intentions construct (ranging from .39 to .54, see Table 5).

In regards to Self-Esteem (as with previous studies; e.g., Coatsworth & Conroy, 2006), the six items of the Washington Self-Description Questionnaire (WSDQ) referring to positive attributes loaded positively on the positively-valenced construct of Self-

Esteem (ranging from .21 to .40, see Table 5); in contrast, the eight items referring to negative evaluations loaded positively on the negative-valenced construct of Self-Esteem in both the pre and post-test measurements (ranging from .05 to .11, see Table 5).

Similarly, the valence factor was found with the fifteen-item Sport Competition Anxiety Test (SCAT), such that the two negative items had no practical loadings on the negative-valenced construct of Anxiety (ranging from -.03 to .05, see Table 5), the eight positive items loaded positively on the positive-valenced construct of Anxiety (ranging from .19 to .43, see Table 5), and the five items intended to reduce the likelihood of internal bias loaded on the neutral-valenced construct of Anxiety (ranging from .24 to .40, see Table 5) in both the pre and post-test measurements.

### **Measurement Model and Fit Indices**

Overall, the fit of the measurement model was good ( $\chi^2 = 17356.063$ ;  $df = 9014$ ;  $p < .000$ ; CFI = .928; NNFI = .922; RMSEA = .025; 90% CI [.025, .026]). However, the structural model failed to converge, most likely due to issues of missingness or multicollinearity. The estimators used in structural equation modeling are iterative - a series of tentative sets of estimates are tried, with each one evaluated against the one before it in light of the optimization criterion of the estimator. When an additional update would not yield an improvement with reference to the criterion, the process is said to have converged. Nonconvergence can indicate an unidentified model, small sample size, low factor loadings, or ill-conditioned data (Gagne & Hancock, 2006; McKay, 2008).

Hence, the decision was made to utilize Mean Substitution (MS) in conjunction with the creation of composite scores to correct for “missingness.” Composite variables were created to match the aforementioned latent variables from the confirmatory factor

analyses, with three exceptions: 1) the Self-Esteem two-factor construct was reduced to a single composite variable in accordance with the previous research (e.g., Smoll, et al., 1993; Smith, Cumming & Smoll, 2008) ; 2) the Competitive Anxiety three-factor construct was reduced to a single composite variable in accordance with Martens' (1977) original conceptualization of the instrument; and 3) the single-factor Perceived Competence latent variable was divided into two composite variables – one specific to football competence and one for generalized sports competence in order to delineate potential differences between general and domain-specific competence factors that comprised the latent variable . The revised detailed composite model is shown in Figure 3. (Note: For the sake of clarity, the color-coding for the hypotheses and the corresponding arrows that represent the relationships are the same as in Figures 1 and 2.)

### **Structural Model and Path Analyses**

As the structural model was just-identified or saturated (i.e., the number of free parameters exactly equaled the number of know values, hence the model had zero degrees of freedom), the fit of the model was not able to be assessed via EQS ( $\chi^2 = 0.000$ ;  $df = 0$ ; NFI = 1.000). However, we were able to use a combination of SEM path analysis via EQS and Hierarchical regression analysis via SPSS to control for the exogenous composite variables at Time 1 and parse out the effects of the perceived coaching behaviors on subsequent outcome variables.

**Hypothesis 1: Direct Temporal Effects of Exogenous Variables at Time 1 on Outcome Variables at Time 2 (see Figure 3: black arrows).**

***Achievement Goal Orientations at Time 1.***

The Mastery component of the Achievement Goal Orientations at Time 1 (MAS1:  $M = 21.516$ ;  $SD = 0.69$ ) was significantly and directly related to the Mastery Goal Orientation at Time 2 (MAS2:  $M = 21.188$ ;  $SD = 0.76$ ) ( $\beta = .213$ ,  $p < .001$ , 95% CI [.165, .261])<sup>3</sup>; Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = -.097$ ,  $p < .001$ , 95% CI [-.138, -.056]); Perceived Competence - General at Time 2 (PCGN2) ( $\beta = -.089$ ,  $p < .001$ , 95% CI [-.134, -.043]); Enjoyment at Time 2 (ENJ2) ( $\beta = -.086$ ,  $p < .001$ , 95% CI [-.129, -.041]); and Future Intentions at Time 2 (FUT2) ( $\beta = -.062$ ,  $p < .01$ , 95% CI [-.107, -.018]).

The Performance Approach component of the Achievement Goal Orientations at Time 1 (PAP1:  $M = 17.011$ ;  $SD = 0.98$ ) was directly and significantly related to the Performance Approach Orientation at Time 2 (PAP2:  $M = 17.599$ ;  $SD = 0.97$ ) ( $\beta = .527$ ,  $p < .001$ , 95% CI [.484, .571]); Performance Avoidance Orientation at Time 2 (PAV2) ( $\beta = .080$ ,  $p < .001$ , 95% CI [.033, .127]); Competitive Anxiety at Time 2 (ANX2) ( $\beta = -.091$ ,  $p < .001$ , 95% CI [-.139, -.043]); and Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = -.076$ ,  $p < .001$ , 95% CI [-.121, -.032]).

The Performance Avoidance component of the Achievement Goal Orientations at Time 1 (PAV1:  $M = 14.348$ ;  $SD = 0.96$ ) was significantly and directly related to the Performance Avoidance Orientation at Time 2 (PAV2:  $M = 14.965$ ;  $SD = 0.98$ ) ( $\beta = .324$ ,

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<sup>3</sup> Note: Means ( $M$ ) and standard deviations ( $SD$ ) for variables are reported in the text only regards to Time 1 and Time 2 relationships (for example, MAS1 and MAS2). See Table 4 for more details. Confidence Intervals (CI) are standardized.

$p < .001$ , 95% CI [.272, .376]) and Perceived Competence - General at Time 2 (PCGN2) ( $\beta = -.053$ ,  $p < .05$ , 95% CI [-.101, -.007]).

***Football Skills Efficacy at Time 1.***

Football Skills Efficacy at Time 1 (FSE1:  $M = 49.102$ ;  $SD = 0.75$ ) was directly and significantly related to Football Skills Efficacy at Time 2 (FSE2:  $M = 51.282$ ;  $SD = 0.74$ ) ( $\beta = .258$ ,  $p < .001$ , 95% CI [.210, .306]); Enjoyment at Time 2 (ENJ2) ( $\beta = -.090$ ,  $p < .001$ , 95% CI [-.137, -.039]); and Future Intentions at Time 2 (FUT2) ( $\beta = -.064$ ,  $p < .01$ , 95% CI [-.107, -.019]); and Perceived Competence - General at Time 2 (PCGN2) ( $\beta = -.049$ ,  $p < .05$ , 95% CI [-.093, -.006]).

***Psychosocial Variables at Time 1.***

Self-Esteem at Time 1 (SE1:  $M = 60.045$ ;  $SD = 0.52$ ) was significantly and directly to Self-Esteem at Time 2 (SE2:  $M = 60.023$ ;  $SD = 0.62$ ) ( $\beta = .376$ ,  $p < .001$ , 95% CI [.330, .422]) and Performance Avoidance Orientation at Time 2 (PAV2) ( $\beta = -.089$ ,  $p < .001$ , 95% CI [-.139, -.040]). Similarly, Competitive Anxiety at Time 1 (ANX1:  $M = 47.753$ ;  $SD = 0.56$ ) was directly related to Competitive Anxiety at Time 2 (ANX2:  $M = 48.044$ ;  $SD = 0.61$ ) ( $\beta = .500$ ,  $p < .001$ , 95% CI [.460, .541]) and Performance Avoidance Orientation at Time 2 (PAV2) ( $\beta = .144$ ,  $p < .001$ , 95% CI [.094, .194]). Meanwhile, Perceived Competence - Football at Time 1 (PCFB1:  $M = 17.831$ ;  $SD = 0.62$ ) was directly and significantly related to Perceived Competence – Football at Time 2 (PCFB2:  $M = 17.575$ ;  $SD = 0.70$ ) ( $\beta = .311$ ,  $p < .001$ , 95% CI [.255, .366]); Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .129$ ,  $p < .001$ , 95% CI [.070, .188]); and Football Skills Efficacy at Time 2 (FSE2) ( $\beta = .108$ ,  $p < .001$ , 95% CI [.046, .170]). In addition, Perceived Competence - General at Time 1 (PCGN1:  $M = 8.686$ ;  $SD = 0.76$ ) was

significantly and directly related to Perceived Competence – General at Time 2 (PCGN2:  $M = 8.589$ ;  $SD = 0.82$ ) ( $\beta = .281$ ,  $p < .001$ , 95% CI [.231, .332]) and Perceived Competence – Football at Time 2 (PCFB2) ( $\beta = .078$ ,  $p < .001$ , 95% CI [.030, .126]). Additionally, Enjoyment at Time 1 (ENJ1:  $M = 13.919$ ;  $SD = 0.59$ ) was directly and significantly related to Enjoyment at Time 2 (ENJ2:  $M = 13.432$ ;  $SD = 0.72$ ) ( $\beta = .141$ ,  $p < .001$ , 95% CI [.090, .193]) and Self-Esteem at Time 2 (SE2) ( $\beta = .119$ ,  $p < .001$ , 95% CI [.062, .176]). Finally, Future Intentions at Time 1 (FUT1:  $M = 13.500$ ;  $SD = 0.73$ ) was significantly and directly related to Future Intentions at Time 2 (FUT2:  $M = 13.138$ ;  $SD = 0.81$ ) ( $\beta = .371$ ,  $p < .001$ , 95% CI [.321, .420]); Enjoyment at Time 2 (ENJ2) ( $\beta = .074$ ,  $p < .01$ , 95% CI [.024, .123]); and Perceived Competence – General at Time 2 (PCGN2) ( $\beta = -.058$ ,  $p < .05$ , 95% CI [-.110, -.006]).

### ***Summary***

In summary, it was hypothesized that the three (3) components of the achievement goal orientations at Time 1 would have direct effects on the three (3) components of the achievement goal orientations at Time 2. In addition, it was hypothesized that Football Skills Efficacy at Time 1 would have direct effects on Football Skills Efficacy at Time 2. Similarly, it was hypothesized that the six (6) remaining components that comprise the psychosocial variables at Time 1 would have direct effects on their corresponding six (6) components that comprise the psychosocial variables at Time 2. Furthermore, it was hypothesized that the ten (10) exogenous variables at Time 1 would have significant, but weaker direct effects on the ten (10) non-corresponding variables at Time 2, in particularly with perceptions of competence.

As shown in Figure 4, the data supported the hypothesis of the temporal effects, as the exogenous variables at Time 1 had significant, low to moderate positive, direct effects on their corresponding outcome variables at Time 2 (ranging from .141 for Enjoyment to .527 for Performance-Approach Goal Orientation). In addition, as shown in Figure 5, the data supported the hypothesis that each of the predictor variables had low, but significant positive and negative direct effects on several of the non-corresponding outcome variables (ranging from -.097 to .144). For example, the data indicated that Anxiety at Time 1 had a low, but significant positive direct effect on the Performance-Avoidance Goal Orientation at Time 2 ( $\beta = .144, p < .001, 95\% \text{ CI } [.094, .194]$ ). The data also indicated that the Mastery Goal Orientation and Football Skills Efficacy at Time 1 had low, but significant negative direct effects on several of the psychosocial outcome variables at Time 2 (i.e., Perceived Competence – both Football & General) ranging from -.097 to -.062.

**Hypothesis 2: Direct and Indirect Effects of Exogenous Variables on Perceived Coaching Behaviors and Perceived Motivational Climate (see Figure 3: black arrows).**

**Direct Effects.**

***Achievement Goal Orientations at Time 1.***

As shown in Figure 6, the Mastery component of the Achievement Goal Orientations at Time 1 (MAS1) was directly and significantly related to five of the six components of Perceived Coaching Behaviors: 1) Technical Feedback (PCB-Tech) ( $\beta = .103, p < .001, 95\% \text{ CI } [.045, .160]$ ); 2) Mental Preparation (PCB-Mental) ( $\beta = .120, p < .001, 95\% \text{ CI } [.062, .176]$ ); 3) Goal Setting (PCB-Goal) ( $\beta = .144, p < .001, 95\% \text{ CI }$

[.087, .202]); 4) Competition Strategies (PCB-Strat) ( $\beta = .139, p < .001, 95\% \text{ CI } [.083, .194]$ ); and 5) Positive Rapport (PCB-PosRap) ( $\beta = .075, p < .05, 95\% \text{ CI } [.018, .132]$ ).

In addition, as shown in Figure 10, the Mastery component of the Achievement Goal Orientations at Time 1 (MAS1) was significantly and directly related to three of the four components of Perceived Motivational Climate: 1) Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = .087, p < .001, 95\% \text{ CI } [.040, .132]$ ); 2) Mastery – Important Role (PMC-MAS Role) ( $\beta = .118, p < .001, 95\% \text{ CI } [.074, .162]$ ); and 3) Performance – Unequal Recognition (PMC-PER Recog) ( $\beta = -.086, p < .001, 95\% \text{ CI } [.137, -.034]$ ).

As additionally shown in Figure 6, the Performance Approach component of the Achievement Goal Orientations at Time 1 (PAP1) was directly and significantly related to the only one of the six components of Perceived Coaching Behaviors - Negative Rapport (PCB-NegRap) ( $\beta = .095, p < .001, 95\% \text{ CI } [.042, .148]$ ). Furthermore, as shown in Figure 10, the Performance Approach component of the Achievement Goal Orientations at Time 1 (PAP1) was significantly and directly related to two of the four components of Perceived Motivational Climate: 1) Performance – Intra-team Rivalry (PMC-PER Rival) ( $\beta = .157, p < .001, 95\% \text{ CI } [.107, .208]$ ); and 2) Performance – Unequal Recognition (PMC-PER Recog) ( $\beta = .146, p < .001, 95\% \text{ CI } [.100, .194]$ ).

As illustrated in Figures 6 and 10, the Performance Avoidance component of the Achievement Goal Orientations at Time 1 (PAV1) was not significantly related to any of the Perceived Coaching Behaviors, nor the Perceived Motivational Climate.

### ***Football Skills Efficacy at Time 1.***

As shown in Figure 7, Football Skills Efficacy at Time 1 (FSE1) was directly and significantly related to all six components of Perceived Coaching Behaviors: 1) Technical

Feedback (PCB-Tech) ( $\beta = .148, p < .001, 95\% \text{ CI } [.095, .202]$ ); 2) Mental Preparation (PCB-Mental) ( $\beta = .157, p < .001, 95\% \text{ CI } [.097, .214]$ ); 3) Goal Setting (PCB-Goal) ( $\beta = .140, p < .001, 95\% \text{ CI } [.081, .198]$ ); 4) Competition Strategies (PCB-Strat) ( $\beta = .167, p < .001, 95\% \text{ CI } [.102, .228]$ ); 5) Positive Rapport (PCB-PosRap) ( $\beta = .185, p < .001, 95\% \text{ CI } [.126, .248]$ ); and Negative Rapport (PCB-NegRap) ( $\beta = .076, p < .05, 95\% \text{ CI } [.012, .188]$ ). In contrast, as illustrated in Figure 10, Football Skills Efficacy at Time 1 (FSE1) was not significantly related to the Perceived Motivational Climate.

### ***Psychosocial Variables at Time 1***

As shown in Figures 8 and 10, Self-Esteem at Time 1 (SE1) was directly and significantly related to PCB-Strat ( $\beta = .088, p < .01, 95\% \text{ CI } [.031, .149]$ ); PCB-NegRap ( $\beta = -.082, p < .01, 95\% \text{ CI } [-.137, -.024]$ ); and PMC-PER Recog ( $\beta = -.064, p < .05, 95\% \text{ CI } [-.114, -.013]$ ). Competitive Anxiety at Time 1 (ANX1) was significantly and directly related to four of the six components of Perceived Coaching Behaviors: 1) PCB-Tech ( $\beta = .059, p < .05, 95\% \text{ CI } [.011, .111]$ ); 2) PCB-Goal ( $\beta = .072, p < .01, 95\% \text{ CI } [.019, .128]$ ); PCB-PosRap ( $\beta = .092, p < .001, 95\% \text{ CI } [.034, .147]$ ); and PCB-NegRap ( $\beta = .122, p < .001, 95\% \text{ CI } [.064, .180]$ ). In addition, Competitive Anxiety at Time 1 (ANX1) was significantly and directly related to only one of the four components of the Perceived Motivational Climate – PMC-PER Rival ( $\beta = .057, p < .05, 95\% \text{ CI } [.007, .110]$ ). Meanwhile, Perceived Competence - Football at Time 1 (PCFB1) was directly and significantly related to PCB-Strat ( $\beta = -.099, p < .05, 95\% \text{ CI } [-.176, -.022]$ ); PCB-NegRap ( $\beta = .103, p < .05, 95\% \text{ CI } [.020, .185]$ ); and PMC-MAS E/I ( $\beta = -.075, p < .05, 95\% \text{ CI } [-.137, -.012]$ ). In contrast, Perceived Competence - General at Time 1 (PCGN1) was significantly and directly related to three of the four components of Perceived

Motivational Climate: 1) PMC-MAS Role ( $\beta = .061, p < .05, 95\% \text{ CI } [.007, .114]$ ); 2) PMC-PER Rival ( $\beta = .099, p < .01, 95\% \text{ CI } [.035, .163]$ ); and 3) PMC-PER Recog ( $\beta = .078, p < .05, 95\% \text{ CI } [.017, .140]$ ). Enjoyment at Time 1 (ENJ1) was directly and significantly related to five of the six components of Perceived Coaching Behaviors: 1) PCB-Tech ( $\beta = .203, p < .001, 95\% \text{ CI } [.136, .270]$ ); 2) PCB-Mental ( $\beta = .128, p < .001, 95\% \text{ CI } [.059, .196]$ ); 3) PCB-Goal ( $\beta = .095, p < .01, 95\% \text{ CI } [.026, .163]$ ); 4) PCB-Strat ( $\beta = .148, p < .001, 95\% \text{ CI } [.078, .217]$ ); and 5) PCB-NegRap ( $\beta = -.109, p < .01, 95\% \text{ CI } [-.180, -.038]$ ). Additionally, Enjoyment at Time 1 (ENJ1) was significantly and directly related to two of the four components of Perceived Motivational Climate: 1) PMC-MAS E/I ( $\beta = .077, p < .01, 95\% \text{ CI } [.022, .133]$ ); and 2) PMC-PER Recog ( $\beta = -.064, p < .05, 95\% \text{ CI } [-.129, -.064]$ ). Finally, Future Intentions at Time 1 (FUT1) was directly and significantly related to PCB-Goal ( $\beta = .071, p < .05, 95\% \text{ CI } [.004, .139]$ ).

**Indirect Effects of Exogenous Variables on Perceived Motivational Climate through the Perceived Coaching Behaviors (see Figure 3: black and blue arrows).**

***Achievement Goal Orientations at Time 1.***

The Mastery component of the Achievement Goal Orientations at Time 1 (MAS1) was indirectly and significantly related to Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) via five of the six components of Perceived Coaching Behaviors: 1) Technical Feedback (PCB-Tech) ( $\beta = .019, p < .05, 95\% \text{ CI } [.005, .023]$ ); 2) Mental Preparation (PCB-Mental) ( $\beta = .011, p < .05, 95\% \text{ CI } [.002, .016]$ ); 3) Goal Setting (PCB-Goal) ( $\beta = .018, p < .05, 95\% \text{ CI } [.006, .023]$ ); 4) Competition Strategies (PCB-Strat) ( $\beta = .035, p < .05, 95\% \text{ CI } [.014, .038]$ ); and 5) Positive Rapport (PCB-PosRap) ( $\beta = .007, p < .05, 95\% \text{ CI } [.001, .011]$ ).

Similarly, the Mastery component of the Achievement Goal Orientations at Time 1 (MAS1) was also significantly and indirectly related to Perceived Motivational Climate: Mastery – Important Role (PMC-MAS Role) via the same five of the six components of Perceived Coaching Behaviors: 1) Technical Feedback (PCB-Tech) ( $\beta = .024, p < .05, 95\% \text{ CI } [.007, .028]$ ); 2) Mental Preparation (PCB-Mental) ( $\beta = .008, p < .05, 95\% \text{ CI } [.000, .013]$ ); 3) Goal Setting (PCB-Goal) ( $\beta = .014, p < .05, 95\% \text{ CI } [.003, .019]$ ); 4) Competition Strategies (PCB-Strat) ( $\beta = .033, p < .05, 95\% \text{ CI } [.013, .035]$ ); and 5) Positive Rapport (PCB-PosRap) ( $\beta = .008, p < .05, 95\% \text{ CI } [.001, .011]$ ).

The Performance Approach component of the Achievement Goal Orientations at Time 1 (PAP1) was indirectly and significantly related to two of the four components of Perceived Motivational Climate: 1) Performance – Intra-team Rivalry (PMC-PER Rival) ( $\beta = .031, p < .05, 95\% \text{ CI } [.008, .029]$ ); and 2) Performance – Unequal Recognition (PMC-PER Recog) ( $\beta = .041, p < .05, 95\% \text{ CI } [.014, .049]$ ) via Perceived Coaching Behaviors - Negative Rapport (PCB-NegRap).

### ***Psychosocial Variables at Time 1.***

Perceived Competence - Football at Time 1 (PCFB1) was indirectly and significantly related to Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) via two Perceived Coaching Behaviors: 1) Competition Strategies (PCB-Strat) ( $\beta = -.025, p < .05, 95\% \text{ CI } [-.046, -.005]$ ); and 2) Negative Rapport (PCB-NegRap) ( $\beta = -.009, p < .05, 95\% \text{ CI } [-.019, -.002]$ ). Enjoyment at Time 1 (ENJ1) was also significantly and indirectly related to Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) via five of the six components of Perceived Coaching Behaviors: 1) PCB-Tech ( $\beta = .037, p < .05, 95\% \text{ CI } [.031, .079]$ ); 2) PCB-

Mental ( $\beta = .012, p < .05, 95\% \text{ CI } [.004, .035]$ ); 3) PCB-Goal ( $\beta = .012, p < .05, 95\% \text{ CI } [.004, .034]$ ); 4) PCB-Strat ( $\beta = .037, p < .05, 95\% \text{ CI } [.027, .082]$ ); and 5) PCB-NegRap ( $\beta = .010, p < .05, 95\% \text{ CI } [.004, .026]$ ). In addition, Enjoyment at Time 1 (ENJ1) was indirectly and significantly related to Performance – Unequal Recognition (PMC-PER Recog) ( $\beta = -.047, p < .05, 95\% \text{ CI } [-.166, -.034]$ ) through Perceived Coaching Behaviors - Negative Rapport (PCB-NegRap).

### *Summary*

In summary, it was hypothesized that the ten (10) exogenous variables that comprise the goal orientations, football skills efficacy, and psychosocial variables at Time 1 would have direct effects on the six (6) components of the perceived coaching behaviors at Time 2, as well as direct and indirect effects (via those same six variables) on the four (4) components that comprise the perceived motivational climate at Time 2.

As shown in Figure 9, the data supported the hypothesis, as each of the predictor variables (except for the Achievement Goal Orientation - Performance Avoidance [PAV1]) at Time 1 had significant, but low direct effects on all six components of the perceived coaching behaviors. Collectively, these only accounted for 5% to 16% of the variance explained in each of the perceived coaching behaviors (see Figures 9 and 11): 1) PCB-Tech:  $R^2 = .156, F(10,1453) = 26.764, p < .001, 95\% \text{ CI } [.122, .190]$ ; 2) PCB-Mental:  $R^2 = .133, F(10,1453) = 22.196, p < .001, 95\% \text{ CI } [.101, .165]$ ; 3) PCB-Goal:  $R^2 = .123, F(10,1453) = 20.323, p < .001, 95\% \text{ CI } [.092, .154]$ ; 4) PCB-Strat:  $R^2 = .132, F(10,1453) = 22.004, p < .001, 95\% \text{ CI } [.100, .164]$ ; 5) PCB-PosRap:  $R^2 = .084, F(10,1453) = 13.347, p < .001, 95\% \text{ CI } [.057, .111]$ ; and 6) PCB-NegRap:  $R^2 = .053, F(10,1453) = 8.202, p < .001, 95\% \text{ CI } [.031, .075]$ .

Similarly, as shown in Figure 10, the data supported the hypothesis, as each of the predictor variables (except for the Achievement Goal Orientation - Performance Avoidance, Football Skills Efficacy, and Future Intentions) at Time 1 had significant, but low direct effects on all four components of the perceived motivational climate.

In addition, the data partially supported the hypothesis, as the Achievement Goal Orientation at Time 1 (again, except for the Achievement Goal Orientation - Performance Avoidance) had marginally significant and very low indirect effects on the corresponding-valenced motivational climate component at Time 2. Interestingly, only two of the exogenous variables (Perceived Competence – Football and Enjoyment at Time 1) had marginally significant, low indirect effects on two of the Perceived Motivational Climate components, mainly the Effort/Improvement factor.

Collectively, as shown in Figure 15, the significant direct and indirect effects of the exogenous variables (as indicated by the blue bars), accounted for 8.4% to 14.8% of the variance explained in each of the components of the perceived motivational climate (see Figures 10 and 15): 1) Mastery: Effort/Improvement (PMC-MAS E/I):  $R^2 = .133$ ,  $F(10,1453) = 22.233$ ,  $p < .001$ , 95% CI [.101, .165]; 2) Mastery: Important Role (PMC-MAS Role):  $R^2 = .148$ ,  $F(10,1453) = 25.176$ ,  $p < .001$ , 95% CI [.115, .181]; 3) Performance: Intra-team Rivalry (PMC-PER Rival):  $R^2 = .084$ ,  $F(10,1453) = 13.292$ ,  $p < .001$ , 95% CI [.057, .111]; and Performance: Unequal Recognition (PMC-PER Recog):  $R^2 = .104$ ,  $F(10,1453) = 16.879$ ,  $p < .001$ , 95% CI [.075, .133].

Furthermore, as shown in Figure 15, the significant direct effects from the six components of the Perceived Coaching Behaviors (as indicated by the red bars - see Hypothesis 5 below) added to these predictions: 1) Mastery: Effort/Improvement (PMC-

MAS E/I):  $R^2 = .465$ ,  $\Delta R^2 = .317$ ,  $F(16,1447) = 78.469$ ,  $p < .001$ , 95% CI [.420, .494]; 2) Mastery: Important Role (PMC-MAS Role):  $R^2 = .457$ ,  $\Delta R^2 = .325$ ,  $F(16,1447) = 76.250$ ,  $p < .001$ , 95% CI [.428, .502]; 3) Performance: Intra-team Rivalry (PMC-PER Rival):  $R^2 = .226$ ,  $\Delta R^2 = .142$ ,  $F(16,1447) = 26.440$ ,  $p < .001$ , 95% CI [.189, .263]; and Performance: Unequal Recognition (PMC-PER Recog):  $R^2 = .271$ ,  $\Delta R^2 = .167$ ,  $F(16,1447) = 33.569$ ,  $p < .001$ , 95% CI [.233, .309].

**Hypothesis 3: Direct effects of Achievement Goal Orientations and Football Skills Efficacy at Time 2 on Psychosocial Outcome Variables at Time 2 (see Figure 3: purple arrows).**

**Achievement Goal Orientations at Time 2.**

The Mastery component of the Achievement Goal Orientations at Time 2 (MAS2) was significantly and directly related to Enjoyment at Time 2 (ENJ2) ( $\beta = .296$ ,  $p < .001$ , 95% CI [.251, .341]); Future Intentions at Time 2 (FUT2) ( $\beta = .273$ ,  $p < .001$ , 95% CI [.227, .319]); Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = .223$ ,  $p < .001$ , 95% CI [.179, .269]); Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .225$ ,  $p < .001$ , 95% CI [.174, .274]); and Self-Esteem at Time 2 (SE2) ( $\beta = .122$ ,  $p < .001$ , 95% CI [.070, .174]).

The Performance Approach component of the Achievement Goal Orientations at Time 2 (PAP2) was directly and significantly related to Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = .172$ ,  $p < .001$ , 95% CI [.124, .219]); Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .138$ ,  $p < .001$ , 95% CI [.087, .192]); Competitive Anxiety at Time 2 (ANX2) ( $\beta = .060$ ,  $p < .05$ , 95% CI [.010, .109]); Future Intentions at

Time 2 (FUT2) ( $\beta = .054, p < .05, 95\% \text{ CI } [.003, .105]$ ); and Enjoyment at Time 2 (ENJ2) ( $\beta = .052, p < .05, 95\% \text{ CI } [.003, .101]$ ).

The Performance Avoidance component of the Achievement Goal Orientations at Time 2 (PAV2) was significantly and directly related to Competitive Anxiety at Time 2 (ANX2) ( $\beta = .363, p < .001, 95\% \text{ CI } [.316, .409]$ ); Self-Esteem at Time 2 (SE2) ( $\beta = -.249, p < .001, 95\% \text{ CI } [-.300, -.198]$ ); and Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = -.079, p < .001, 95\% \text{ CI } [-.125, -.036]$ ).

### **Football Skills Efficacy at Time 2.**

Football Skills Efficacy at Time 2 (FSE2) was directly and significantly related to Enjoyment at Time 2 (ENJ2) ( $\beta = .337, p < .001, 95\% \text{ CI } [.287, .384]$ ); Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = .324, p < .001, 95\% \text{ CI } [.274, .374]$ ); Future Intentions at Time 2 (FUT2) ( $\beta = .283, p < .001, 95\% \text{ CI } [.232, .333]$ ); Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .252, p < .001, 95\% \text{ CI } [.197, .303]$ ); and Self-Esteem at Time 2 (SE2) ( $\beta = .109, p < .001, 95\% \text{ CI } [.054, .163]$ ).

### **Summary**

In summary, it was hypothesized that the three (3) components of the achievement goal orientations and football skills efficacy at Time 2 would have direct effects on the six (6) composite variables that comprised the psychosocial variables at Time 2.

As shown in Figure 12, the data supported the hypothesis, as the Achievement Goal Orientations at Time 2 had significant, low to moderate positive direct effects (ranging from .052 to .363) on a variety of the psychosocial outcome variables at Time 2, except for Performance Avoidance, which had additional significant low to moderate

negative direct effects on Perceived Competence – Football (PCFB2) and Self-Esteem (SE2) (ranging from  $-.079$  to  $-.249$ ). In addition, the data indicated that Football Skills Efficacy at Time 2 had significant low to moderate positive direct effects (ranging from  $.109$  to  $.337$ ) on the same outcome variables at Time 2 as the Mastery component of the Achievement Goal Orientations.

**Hypothesis 4: Direct and Indirect effects of Perceived Motivational Climate on Psychosocial Outcome Variables at Time 2 (see Figure 3: green and purple arrows).**

**Direct Effects (see Figure 3: green arrows).**

The Mastery – Effort/Improvement component of the Perceived Motivational Climate at Time 2 (PMC-MAS E/I) was directly and significantly related to Mastery Goal Orientation at Time 2 (MAS2) ( $\beta = .207, p < .001, 95\% \text{ CI } [.142, .273]$ ); Football Skills Efficacy at Time 2 (FSE2) ( $\beta = .138, p < .001, 95\% \text{ CI } [.078, .199]$ ); Future Intentions at Time 2 (FUT2) ( $\beta = .066, p < .05, 95\% \text{ CI } [.008, .125]$ ); and Competitive Anxiety at Time 2 (ANX2) ( $\beta = -.067, p < .05, 95\% \text{ CI } [-.125, -.009]$ ).

Similarly, the Mastery – Important Role component of the Perceived Motivational Climate at Time 2 (PMC-MAS) was significantly and directly related to Football Skills Efficacy at Time 2 (FSE2) ( $\beta = .109, p < .001, 95\% \text{ CI } [.047, .171]$ ); Mastery Goal Orientation at Time 2 (MAS2) ( $\beta = .102, p < .01, 95\% \text{ CI } [.036, .168]$ ); Self-Esteem at Time 2 (SE2) ( $\beta = .066, p < .05, 95\% \text{ CI } [.002, .131]$ ); and Enjoyment at Time 2 (ENJ2) ( $\beta = .064, p < .05, 95\% \text{ CI } [.006, .122]$ ).

In addition, the Performance – Intra-team Rivalry component of the Perceived Motivational Climate at Time 2 (PMC-PER Rival) was directly and significantly related

to the Performance Approach Orientation at Time 2 (PAP2) ( $\beta = .148, p < .001, 95\% \text{ CI } [.089, .207]$ ).

Also, the Performance – Unequal Recognition component of the Perceived Motivational Climate at Time 2 (PMC-PER Recog) was significantly and directly related to the Performance Avoidance Orientation at Time 2 (PAV2) ( $\beta = .140, p < .001, 95\% \text{ CI } [.076, .205]$ ); Self-Esteem at Time 2 (SE2) ( $\beta = -.090, p < .01, 95\% \text{ CI } [-.149, -.030]$ ); and Enjoyment at Time 2 (ENJ2) ( $\beta = -.056, p < .05, 95\% \text{ CI } [-.109, -.003]$ ).

**Indirect Effects (see Figure 3: green and purple arrows).**

The Mastery – Effort/Improvement component of the Perceived Motivational Climate at Time 2 (PMC-MAS E/I) was indirectly and significantly related to the following outcome variables via Mastery Goal Orientation at Time 2 (MAS2) and Football Skills Efficacy at Time 2 (FSE2): 1) Perceived Competence - Football at Time 2 (PCFB2), respectively ( $\beta = .046, p < .05, 95\% \text{ CI } [.034, .074]$ ) and ( $\beta = .044, p < .05, 95\% \text{ CI } [.028, .075]$ ); 2) Perceived Competence - General at Time 2 (PCGN2), respectively ( $\beta = .041, p < .05, 95\% \text{ CI } [.019, .043]$ ) and ( $\beta = .035, p < .05, 95\% \text{ CI } [.012, .055]$ ); 3) Enjoyment at Time 2 (ENJ2), respectively ( $\beta = .061, p < .05, 95\% \text{ CI } [.035, .072]$ ) and ( $\beta = .047, p < .05, 95\% \text{ CI } [.022, .059]$ ); and 4) Future Intentions at Time 2 (FUT2), respectively ( $\beta = .057, p < .05, 95\% \text{ CI } [.037, .077]$ ) and ( $\beta = .039, p < .05, 95\% \text{ CI } [.021, .057]$ ).

Similarly, the Mastery – Important Role component of the Perceived Motivational Climate at Time 2 (PMC-MAS Role) was significantly and indirectly related to the same outcome variables also via Mastery Goal Orientation at Time 2 (MAS2) and Football Skills Efficacy at Time 2 (FSE2): 1) Perceived Competence - Football at Time 2

(PCFB2), respectively ( $\beta = .023, p < .05, 95\% \text{ CI } [.009, .045]$ ) and ( $\beta = .035, p < .05, 95\% \text{ CI } [.017, .065]$ ); 2) Perceived Competence - General at Time 2 (PCGN2), respectively ( $\beta = .023, p < .05, 95\% \text{ CI } [.005, .026]$ ) and ( $\beta = .027, p < .05, 95\% \text{ CI } [.008, .030]$ ); 3) Enjoyment at Time 2 (ENJ2), respectively ( $\beta = .030, p < .05, 95\% \text{ CI } [.009, .044]$ ) and ( $\beta = .037, p < .05, 95\% \text{ CI } [.014, .052]$ ); and 4) Future Intentions at Time 2 (FUT2), respectively ( $\beta = .028, p < .05, 95\% \text{ CI } [.001, .047]$ ) and ( $\beta = .031, p < .05, 95\% \text{ CI } [.013, .050]$ ).

In addition, the Performance – Intra-team Rivalry component of the Perceived Motivational Climate at Time 2 (PMC-PER Rival) was indirectly and significantly related to the following outcome variables via the Performance Approach Orientation at Time 2 (PAP2): 1) Competitive Anxiety at Time 2 (ANX2) ( $\beta = .009, p < .05, 95\% \text{ CI } [.004, .058]$ ); 2) Perceived Competence - Football at Time 2 (PCFB2) ( $\beta = .025, p < .05, 95\% \text{ CI } [.014, .038]$ ); 3) Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .020, p < .05, 95\% \text{ CI } [.006, .019]$ ); 4) Enjoyment at Time 2 (ENJ2) ( $\beta = .008, p < .05, 95\% \text{ CI } [.0003, .012]$ ); and 5) Future Intentions at Time 2 (FUT2) ( $\beta = .008, p < .05, 95\% \text{ CI } [.0003, .015]$ ).

Finally, the Performance – Unequal Recognition component of the Perceived Motivational Climate at Time 2 (PMC-PER Recog) was only significantly and indirectly related to Perceived Competence - Football at Time 2 (PCFB2) via Performance Avoidance Orientation at Time 2 (PAV2) ( $\beta = -.011, p < .05, 95\% \text{ CI } [-.016, -.0003]$ ).

### **Summary**

In summary, it was hypothesized that the four (4) component variables that comprised the Perceived Motivational Climate would have direct effects on the three (3)

component variables of the achievement goal orientations and football skills efficacy at Time 2, as well as direct and indirect effects (via those same factors) on the six (6) composite variables that comprised the psychosocial variables at Time 2.

As shown in Figure 13, the data supported the hypothesis, as each of the two mastery-oriented components of the perceived motivational climate had low, but significant direct effects on the mastery component of the achievement goal orientation and football skills efficacy at Time 2, as well as significant, but low positive direct and indirect effects on many of the psychosocial outcome variables. Similarly, the data indicated that the Performance – Intra-team Rivalry (PMC PER-Rival) component of the perceived motivational climate had low, but significant direct effects on the Performance Approach (PAP2) component of the achievement goal orientation at Time 2, as well as significant, but low positive indirect effects on many of the same psychosocial outcome variables. Not surprisingly, the data indicated that the Unequal Recognition component of the perceived motivational climate (PMC-PER Recog) had low, but significant direct effects on the Performance Avoidance (PAV2) component of the achievement goal orientation at Time 2, as well as significant, but low negative direct and indirect effects on a few of the same psychosocial outcome variables at Time 2 (i.e., self-esteem, enjoyment, and football-related perceived competence).

**Hypothesis 5: Direct Effects of Perceived Coaching Behaviors on Perceived Motivational Climate (see Figure 3: blue arrow).**

The Technical Feedback component of the Perceived Coaching Behaviors (PCB-Tech) was directly and significantly related to both Mastery components of the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = .184, p <$

.001, 95% CI [.127, .241]) and Mastery – Important Role component (PMC-MAS Role) ( $\beta = .234, p < .001, 95\% \text{ CI } [.178, .291]$ ). Similarly, the Mental Preparation component (PCB-Mental) was also significantly and directly related to both Mastery components of the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = .095, p < .01, 95\% \text{ CI } [.028, .161]$ ) and Mastery – Important Role component (PMC-MAS Role) ( $\beta = .068, p < .05, 95\% \text{ CI } [.002, .133]$ ), only to a lesser degree. In addition, the Goal Setting component (PCB-Goal) was directly and significantly related to both Mastery components of the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = .127, p < .001, 95\% \text{ CI } [.064, .189]$ ) and Mastery – Important Role component (PMC-MAS Role) ( $\beta = .098, p < .01, 95\% \text{ CI } [.035, .161]$ ). Also, the Competition Strategies component (PCB-Strat) was also significantly and directly related to both Mastery components of the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = .253, p < .001, 95\% \text{ CI } [.193, .313]$ ) and Mastery – Important Role component (PMC-MAS Role) ( $\beta = .241, p < .001, 95\% \text{ CI } [.181, .301]$ ). Furthermore, the Positive Rapport component (PCB-PosRap) was directly and significantly related to both Mastery components of the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = .099, p < .001, 95\% \text{ CI } [.048, .151]$ ) and Mastery – Important Role component (PMC-MAS Role) ( $\beta = .105, p < .001, 95\% \text{ CI } [.054, .155]$ ).

In contrast, the Negative Rapport component of the Perceived Coaching Behaviors (PCB-NegRap) was directly and significantly related to all four components of the Perceived Motivational Climate: Performance – Intra-team Rivalry (PMC-PER Rival) ( $\beta = .329, p < .001, 95\% \text{ CI } [.279, .380]$ ); Performance – Intra-team Rivalry (PMC-PER

Rival) ( $\beta = .435, p < .001, 95\% \text{ CI } [.387, .484]$ ); Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I) ( $\beta = -.090, p < .001, 95\% \text{ CI } [-.131, -.048]$ ) and Mastery – Important Role component (PMC-MAS Role) ( $\beta = -.058, p < .01, 95\% \text{ CI } [-.100, -.015]$ ).

### Summary

In summary, it was hypothesized that the six (6) composite variables that constitute the Perceived Coaching Behaviors would have direct effects on the four (4) composite variables that comprised the Perceived Motivational Climate.

As shown in Figure 14, the data supported the hypothesis, as all six of the components of the perceived coaching behaviors had low to moderate, but significant positive direct effects on the two mastery components of the perceived motivation climate, except for negative rapport - which had low, negative direct effects.

Furthermore, only the negative rapport component of the perceived coaching behaviors had moderate, positive direct effects on the two performance components of the perceived motivation climate.

As shown in Figures 14 and 15, after controlling for the effects of the exogenous variables at Time 1 (as indicated by the blue bars in Figure 15), the significant direct effects from the six components of the Perceived Coaching Behaviors (as indicated by the red bars in Figure 15) predicted: 1) Mastery: Effort/Improvement (PMC-MAS E/I):  $\Delta R^2 = .325, \Delta F(6,1447) = 144.345, p < .001, 95\% \text{ CI } [.286, .364]$ ; 2) Mastery: Important Role (PMC-MAS Role):  $\Delta R^2 = .317, \Delta F(6,1447) = 142.733, p < .001, 95\% \text{ CI } [.278, .356]$ ; 3) Performance: Intra-team Rivalry (PMC-PER Rival):  $\Delta R^2 = .142, \Delta F(6,1447) = 44.384, p < .001, 95\% \text{ CI } [.109, .174]$ ; and Performance: Unequal Recognition (PMC-

PER Recog):  $\Delta R^2 = .167$ ,  $\Delta F(6,1447) = 55.100$ ,  $p < .001$ , 95% CI [.133, .201]. In other words, as shown in Figure 15, the Perceived Coaching Behaviors (as indicated by the red bars,  $\Delta R^2 = .325$  and  $.317$ ) accounted for approximately 70% of the total variance explained in the Mastery components of the Perceived Motivational Climate (as indicated by the blue and red bars,  $R^2 = .458$  and  $.465$ ), as well as approximately 62% of the total variance explained in the Performance components of the Perceived Motivational Climate.

**Hypothesis 6: Direct and Indirect effects of Perceived Coaching Behaviors on Outcome Variables at Time 2 (see Figure 3: red, blue, green and purple arrows).**

**Direct Effects (see Figure 3: red arrows).**

The Technical Feedback component of the Perceived Coaching Behaviors (PCB-Tech) was significantly and directly related to the Mastery component of the Achievement Goal Orientations at Time 2 (MAS2) ( $\beta = .138$ ,  $p < .001$ , 95% CI [.095, .180]); Football Skills Efficacy at Time 2 (FSE2) ( $\beta = .123$ ,  $p < .001$ , 95% CI [.065, .181]); and Enjoyment at Time 2 (ENJ2) ( $\beta = .064$ ,  $p < .05$ , 95% CI [.010, .118]). The Mental Preparation component (PCB-Mental) was also directly and significantly related to the Performance Avoidance component of the Achievement Goal Orientations at Time 2 (PAV2) ( $\beta = .086$ ,  $p < .05$ , 95% CI [.012, .160]) and Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .076$ ,  $p < .05$ , 95% CI [.011, .141]). In addition, the Competition Strategies component (PCB-Strat) was also directly and significantly related to the Mastery component of the Achievement Goal Orientations at Time 2 (MAS2) ( $\beta = .083$ ,  $p < .05$ , 95% CI [.017, .150]); the Performance Avoidance component of the Achievement Goal Orientations at Time 2 (PAV2) ( $\beta = -.093$ ,  $p < .01$ , 95% CI [-.162, -

.024]); Football Skills Efficacy at Time 2 (FSE2) ( $\beta = .138, p < .001, 95\% \text{ CI } [.076, .200]$ ); and Enjoyment at Time 2 (ENJ2) ( $\beta = .068, p < .05, 95\% \text{ CI } [.011, .126]$ ).

Finally, the Negative Rapport component of the Perceived Coaching Behaviors (PCB-NegRap) was significantly and directly related to Perceived Competence - General at Time 2 (PCGN2) ( $\beta = .059, p < .05, 95\% \text{ CI } [.013, .104]$ ).

### **Indirect Effects**

***Achievement Goal Orientations at Time 2*** (see Figure 3: red, blue, and green arrows).

Four (4) of the Perceived Coaching Behaviors at Time 2 were indirectly and significantly related to Mastery Goal Orientation at Time 2 (MAS2) via the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I): 1) Mental Preparation (PCB-Mental) ( $\beta = .020, p < .05, 95\% \text{ CI } [.008, .050]$ ); 2) Goal Setting (PCB-Goal) ( $\beta = .026, p < .05, 95\% \text{ CI } [.017, .060]$ ); 3) Positive Rapport (PCB-PosRap) ( $\beta = .020, p < .05, 95\% \text{ CI } [.017, .064]$ ); and 4) Negative Rapport (PCB-NegRap) ( $\beta = -.019, p < .05, 95\% \text{ CI } [-.045, -.014]$ ).

All six (6) of the Perceived Coaching Behaviors at Time 2 were significantly and indirectly related to Mastery Goal Orientation at Time 2 (MAS2) via the Perceived Motivational Climate: Mastery – Important Role component (PMC-MAS Role): 1) PCB-Tech: ( $\beta = .024, p < .05, 95\% \text{ CI } [.019, .095]$ ); 2) PCB-Mental: ( $\beta = .007, p < .05, 95\% \text{ CI } [.00002, .023]$ ); 3) PCB-Goal: ( $\beta = .026, p < .05, 95\% \text{ CI } [.003, .029]$ ); 4) PCB-Strat: ( $\beta = .025, p < .05, 95\% \text{ CI } [.020, .095]$ ); 5) PCB-PosRap: ( $\beta = .010, p < .05, 95\% \text{ CI } [.006, .038]$ ); and 6) PCB-NegRap: ( $\beta = -.006, p < .05, 95\% \text{ CI } [-.019, -.002]$ ).

***Football Skills Efficacy at Time 2 (see Figure 3: red, blue, and green arrows).***

Only the Mental Preparation component (PCB-Mental) was indirectly and significantly related to Football Skills Efficacy at Time 2 (FSE2) ( $\beta = .013, p < .05, 95\% \text{ CI } [.011, .083]$ ) via the Perceived Motivational Climate: Mastery – Effort/Improvement (PMC-MAS E/I). However, three (3) of the Perceived Coaching Behaviors at Time 2 were significantly and indirectly related to Football Skills Efficacy at Time 2 (FSE2) via the Perceived Motivational Climate: Mastery – Important Role component (PMC-MAS Role): 1) PCB-Mental: ( $\beta = .007, p < .05, 95\% \text{ CI } [.0006, .056]$ ); 2) PCB-Goal: ( $\beta = .010, p < .05, 95\% \text{ CI } [.009, .079]$ ); and 3) PCB-NegRap: ( $\beta = -.006, p < .05, 95\% \text{ CI } [-.046, -.004]$ ).

***Psychosocial Variables at Time 2 (see Figure 3: red, blue, green and purple arrows).***

In general, while the data indicated that there were some marginally significant indirect effects for the some of the Perceived Coaching Behaviors on various psychosocial outcomes at Time 2, it would appear that the magnitude of these relationships had little practical value, in and of themselves. For example, the Technical Feedback component (PCB-Tech) was indirectly and significantly related to Self-Esteem at Time 2 (SE2) ( $\beta = .015, p < .05, 95\% \text{ CI } [.001, .167]$ ) via the Perceived Motivational Climate: Mastery – Important Role component (PMC-MAS Role). Similarly, the Mental Preparation component (PCB-Mental) was marginally significant and indirectly related to Self-Esteem at Time 2 (SE2) via the Perceived Motivational Climate: Mastery – Important Role component (PMC-MAS Role) and Performance Avoidance Orientation at Time 2 (PAV2), respectively ( $\beta = .004, p < .05, 95\% \text{ CI } [.001, .167]$ ) and ( $\beta = -.021,$

95% CI [-.132, -.010]). However, their collective effects were noteworthy, as demonstrated by the  $R^2$  values (see Figures 16 through 24 and below for details).

### *Summary*

In sum, it was hypothesized that (by statistically controlling for the temporal effects of the exogenous composite variables assessed at Time 1 – Hypotheses 1 and 2) and combining the components of Hypotheses 3 through 5, the six (6) composite variables that constituted the Perceived Coaching Behaviors would have direct effects on the four (4) composite variables that comprised the Perceived Motivational Climate, as well as direct and indirect effects on the three (3) composite variables of the Achievement Goal Orientations, Football Skills Efficacy, and, in turn, on the six (6) composite variables that comprised the psychosocial variables at Time 2.

In general, the data supported this hypothesis, but, as one would expect, the degree of support varied depending on the outcome variable. As illustrated in Figures 23 and 24, after controlling for the temporal effects (indicated by the blue bars), the cumulative direct and indirect effects of the perceived coaching behaviors on the variances explained by this model ranged from .059 (Performance-Avoidance component of the Achievement Goal Orientation at Time 2) to .234 (Perceived Competence - General at Time 2) to .342 (Enjoyment at Time 2). As illustrated in Figures 23 and 24, when the proportions of the variance explained in these components by the Perceived Coaching Behaviors (PCB) relative to the variance explained by the effects of the full model, the percentages ranged from 13.5% (Performance-Avoidance component of the Achievement Goal Orientation at Time 2) to 46.6% (Perceived Competence - General at Time 2) to 63% (Enjoyment at Time 2).

As shown in Figure 16, only two of the Perceived Coaching Behaviors (technical Feedback and Competition Strategies) had low, but significant positive direct effects on the Mastery component of the Achievement Goal Orientations (MAS2) and Football Skills Efficacy at Time 2 (FSE2), yet all six PCB components had low, positive indirect effects. Although the overall model accounted for 38.5% and 45.9% of the variance explained of the Mastery component of the Achievement Goal Orientations (MAS2) and Football Skills Efficacy at Time 2 (FSE2) (see Table 8), respectively, the data indicated that the PCBs accounted for 46.0% and 41.2% of those variances ( $R^2 = .177$  and  $.189$ ), after controlling for the effects of the exogenous variables via Hypotheses 1 and 2 (see Figure 23). Hence, for these two variables, the data indicated good support for the hypothesis.

In contrast, Figure 16 also demonstrates that the Perceived Coaching Behaviors had low to marginally significant direct and indirect effects on the Performance components of the Achievement Goal Orientations at Time 2 (PAP2 and PAV2). While the overall model accounted for 42.8% and 33.0% of the variance explained of PAP2 and PAV2 (see Table 8), respectively, the data indicated that the PCBs only accounted for 14.1 % and 13.3% of those variances ( $R^2 = .059$  and  $.044$ ), after controlling for the effects of the exogenous variables via Hypotheses 1 and 2 (See Figure 23). Hence, for these two variables, the data indicated much weaker support for the hypothesis.

As illustrated in Figures 17 and 18, the data indicated the Perceived Coaching Behaviors had no significant direct effects on either Self-Esteem (SE2) or Anxiety (ANX2) at Time 2; however, their collective indirect effects were moderately influential. As the overall model accounted for 42.1% and 51.6% of the variances explained of SE2

and ANX2 (see Table 9), respectively, the data indicated that the PCBs accounted for 22.1% and 25.6% of those variances ( $R^2 = .093$  and  $.132$ ), after controlling for the effects of the exogenous variables via Hypotheses 1 and 2 (see Figure 24). Hence, for these two variables, the data indicated moderate support for the hypothesis.

Furthermore, as demonstrated in Figures 19 and 20, while the data indicated the Perceived Coaching Behaviors had a couple of significant positive, low direct effects on the measures of Perceived Competence at Time 2 (General: PCGN2 and Football: PCFB2), their collective indirect effects were highly influential. As the overall model accounted for 46.6% and 47.5% of the variances explained of PCGN2 and PCFB2 (see Table 10), respectively, the data indicated that the PCBs accounted for 83.0% and 85.6% of those variances ( $R^2 = .234$  and  $.273$ ), after controlling for the effects of the exogenous variables via Hypotheses 1 and 2 (see Figure 24). Hence, for these two variables, the data indicated good support for the hypothesis.

Furthermore, as shown in Figure 21 and 22, while the data indicated the Perceived Coaching Behaviors had a couple of significant positive, low direct effects on Enjoyment at Time 2 (ENJ2) and none for Future Intentions at Time 2 (FUT2), their collective indirect effects were also highly influential. As the overall model accounted for 54.3% and 53.0% of the variances explained of ENJ2 and FUT2 (see Table 11), respectively, the data indicated that the PCBs accounted for 63.0% and 46.6% of those variances ( $R^2 = .342$  and  $.247$ ), after controlling for the effects of the exogenous variables via Hypotheses 1 and 2 (see Figure 24). Hence, for these two variables, the data indicated good support for the hypothesis, especially for Enjoyment.

## **CHAPTER 4**

### **Discussion**

The purpose of this investigation was to test a model on the relationships between youth sport participants’ perceptions of coaching behaviors, coach-initiated motivational climate, achievement goal orientations, self-efficacy and, ultimately, psychological outcomes (i.e., self-esteem, anxiety, competence, enjoyment, and future intentions to play football). The model was developed from several lines of research in the youth sports domain: a) goal orientations, which are influenced by (and hypothesized to result from) the motivational climate (i.e., Carr, 2006; Duda & Hall, 2001; Kavussanu & Roberts, 1996), b) the importance of perceived coaching behaviors in defining the motivational climate for young athletes (i.e., Smith et al, 2007), c) self-efficacy, which is influenced by the motivational climate (i.e., Jiang et al., 2014), d) the relationship of goal orientations to positive psychosocial outcomes (i.e., Cury et al., 2002; Kavussanu & Harnisch, 2000; Lemyre et al., 2002), and e) the relationship of self-efficacy beliefs to positive psychosocial outcomes (i.e., Bandura, 1997; Britner & Pajares, 2006). In addition, the unique format of this field study, in which all coaches were provided a set curriculum designed to enhance sport skill development, enabled the researchers to utilize a pre-test post-test design to parse out the contributions of preexisting psychosocial factors. Such a design, therefore, increased the temporal validity of the unique, short-term contributions of the perceived coaching behaviors to the aforementioned psychosocial outcomes.

The results of the study support the premise that the coach-initiated motivational climate can play an important role in determining the perceived experiences of young athletes. Previous research has demonstrated a positive relationship between a mastery-

oriented climate and mastery goal orientations in athletes (i.e., Smith et al. 2008, 2009). Although the structural path analyses and hierarchical regression-based results of this study are correlational in nature, the “deconstruction” of the perceived coaching behaviors and the “lower-order” components of the perceived motivational climate demonstrate a similar, but more complex pattern, especially in relation to changes in goal orientations and skills efficacy over the short-term (twenty-four hours of instruction over a two to four week period of time). The results contribute to the increasing body of evidence on the importance of the mastery climate-goal orientation to players’ perceptions and behaviors, as well as psychosocial outcomes. Furthermore, the results clarify how youth sports participants internalize messages, goals, and values communicated by their coaches. Coaches’ communication modifies players’ achievement goal orientations and sport-specific efficacy beliefs, which in turn affect psychosocial indicators of well being (i.e., competence, enjoyment, self-esteem, and anxiety), as well as future intentions for continued participation.

While the hypothesized effects of the components of the motivational climate on the achievement goal orientations and efficacy beliefs were only marginally supported, they nevertheless lend credence to the assertion that “climate-related coaching behaviors may be more important than other experiential factors in influencing athletes’ sport experiences” (Smith et al. 2009, pg. 181). Previous intervention studies examining how fostering a mastery motivational climate have resulted in changes in achievement goals have led researchers to consider the possibility that children’s achievement goals influence their perceptions of the coach-initiated climate (see Dweck 1999) or that climate-goal orientation relations may be a result of bidirectional causal relations (Smith

et al., 2009). The findings of the current study clearly demonstrated that this may not necessarily be the case, because coaching behaviors, directly and indirectly, explained 85% and 70% of variance in the Time 2 mastery goal orientation and football skills efficacy, respectively, over and above the influence of children’s prior achievement goals perceptions on the coach-initiated motivational climate (i.e., Time 1 effects) (see Figure 23).

Furthermore, the hypothesized impact of each of the six perceived coaching behaviors on the participants’ perceptions of the motivational climate was largely supported. However, by deconstructing the perceptions of specific coaching behaviors, the results demonstrate the relative importance of coaches’ framing technical instruction and competition strategies in a manner that emphasizes effort, improvement, and the potential contributions of all players to the team. These findings are consistent with previous research and theory. For example, coaches trained initially in Coach Effectiveness Training (CET; Smith, Smoll & Hunt, 1977) and later in the Mastery-Approach to Coaching (MAC; Smith, Smoll & Cumming, 2007) were advised to engage in such behaviors as positive reinforcement, mistake-contingent encouragement, corrective instruction that was framed positively with encouragement, and sound technical instruction. Furthermore, they were encouraged to reinforce positive behaviors and effort, encourage athletes to learn from mistakes, and avoid mistake-contingent punishment. In addition, coaches were asked to define success as giving maximum effort as opposed to winning or outperforming others. Athletes who played for MAC-trained coaches scored significantly higher on the coach-initiated mastery climate and lower on the ego climate items as a whole (though not significantly different) than athletes who

played for non-trained coaches (i.e., control group) (Smoll, Smith, & Cumming, 2007a). While the current findings are consistent with the Smith et al. (2007) Mastery-Approach to Coaching, a closer look at the components of coaches’ behaviors and the sport-specific self-efficacy beliefs points to Tharp and Gallimore’s (1976) suggestion about the importance of technical instruction, modeling, “hustles,” and reinstruction on athletes’ perceptions and behaviors. Additionally, various forms of social reinforcement would seem to be necessary.

Theoretically, Ames (1992) suggested that a mastery climate involves a focus on learning from mistakes, enjoyment, and self-referenced criteria of success. On the other hand, an ego-oriented climate involves an emphasis on winning, punishing mistakes, and encouraging normative comparisons. In the current study, participants who perceived their coaches as providing technical feedback, competitive and mental strategies, assistance in setting goals, and establishing a positive rapport of caring and respect were likely to report a mastery or task-oriented learning environment that emphasized effort, improvement and shared responsibility. In contrast, boys who scored higher on negative rapport (i.e., fear and punishment) were likely to report a learning environment that emphasized the importance of skill and performance relative to one’s teammates and opponents, that is, a performance or ego-oriented climate.

In accordance with the suggestion of Smith et al. (2007) and Harwood et al. (2015), the present study decomposed the perceived motivational climate to clarify relations between the lower-order subscales and psychosocial outcome measures. Results showed that the “effort/improvement” and “important role” components of the Perceived Motivational Climate were significantly and positively related to participants’ mastery

goal orientation. In addition, the “intra-team rivalry” component was significantly and positively related to participants’ performance-approach goal orientation. Similarly, the “unequal recognition” component was significantly and positively related to participants’ performance-avoidance goal orientations. These findings are consistent with previous research and theory (e.g., Cury et al., 2002; Nicholls, 1984). For example, Cury et al. (2002) found direct positive associations between adolescent boys’ perceptions of mastery motivational climate and their mastery goal orientation, as well as their perceptions of the performance motivational climate and their performance-approach and performance-avoidance goal orientations. In the current study, participants who perceived their coaches as creating a climate that emphasized effort, improvement, and each player’s contribution to the team were likely to report a mastery goal orientation, that is, their orientation towards skill development. In contrast, participants who perceived their coaches creating a negative rapport climate (i.e., yelling in anger, showing lack of respect for athletes, and promoting favoritism and rivalries among teammates) were likely to report a performance goal orientation, that is, a normative-referent orientation that would impede the development of new or more complex skills.

Participants’ perceived skills efficacy was significantly and positively related to the “effort/improvement” and “important role” components of the motivational climate, which is consistent with previous research and theory (e.g., Jiang et al., 2014; Bandura, 1986; 1997). For example, Jiang et al., (2014) found that students’ perceptions of their teachers’ mastery goals positively predicted students’ self-efficacy. Bandura (1986, 1997) suggested that people’s self-efficacy beliefs are formed and adjusted by carefully interpreting and weighing their mastery and vicarious experiences, verbal messages

communicated by others, and their own emotional states. Hence, learning contexts that highlight progress, effort and provide encouragement and support strengthen a person's self-efficacy. However, in contrast, contexts that highlight competition and emphasize one's relative standing often weaken one's efficacy beliefs (Ames, 1992; Roeser, Midgley, & Urdan, 1996). As expected, participants whose coaches emphasized effort, improvement, and each player's importance to the team were more likely to report increased perceptions of performing basic football skills using the proper techniques that were taught by the coaches.

The effects of the coach-created motivational climate were not just related directly to the participants' respective goal orientations, but also extended directly and indirectly (through both goal orientations and self-efficacy) to their perceptions of the self-esteem, anxiety, competence (sport-specific and general), enjoyment, and future intentions to play football. Consistent with these findings, Harwood et al. (2015) showed that the task/mastery motivational climate had a moderate to large effect on self-referenced perceived competence, confidence and self-esteem, perceived relatedness, intrinsic motivation, positive affect, and adaptive competition strategies. In addition, their review of research showed that the ego/performance motivational climate had a small to moderate effect on norm-referenced perceived competence, perceived relatedness, externally regulated motivation, negative affect, anxiety, and maladaptive competition strategies.

However, many of the studies included in the review did not address the fact that the motivational climate may act through the athletes' goal orientations. For example, Newton and Duda (1999) found that female high school athletes' perceptions of the

coach-initiated, mastery motivational climate predicted the level of enjoyment reported. They also found that the athletes’ mastery goal orientation was related to their enjoyment but did not have a large enough sample size to test whether or not goal orientation mediated the effects of the motivational climate. Atkins, Johnson, Force, and Petrie (2014), however, did test for the mediating effects of goal orientation and found that a task goals orientation mediated the effects of task motivational climates created by parents, peers, and coaches on sport competence, self-esteem, enjoyment, and future intentions to participate in sport. In the current study, as was predicted by achievement goal theory (Nicholls, 1984) and social cognitive theory (Bandura, 1997), the motivational climate had direct influence on different psychosocial outcomes, as well indirect effects through the athletes’ goal orientations or self-efficacy beliefs.

Mastery Goal Orientation was related significantly and positively to self-esteem, perceived competence (sport-specific and general), enjoyment and future intentions to play football. Kavusanu and Harnisch (2000) found that a task-orientation in children was associated with higher levels of self-esteem and greater life satisfaction. Mastery-oriented athletes believe in an evaluative process that is predicated on self-referenced standards, increasing beliefs about ability, and personal control of their efforts and goals. When these attributions are made, high self-esteem and favorable self-evaluations usually follow (Baumeister, Campbell, Krueger, & Vohs, 2003). Similarly, according to Biddle (1999), when mastery-oriented athletes view sport as an opportunity for improvement and development of new skills, their locus of control is internal and they understand that they are the source of their own success. Cury et al. (2002) demonstrated that mastery goals were positively associated with perceptions of physical education competence in

adolescent boys. Furthermore, Yli-Piipari et al. (2013) reported that a mastery/task goal orientation was associated with increased levels of enjoyment and increased participation in physical education classes. As Biddle (1999) has shown, children with mastery-oriented beliefs have more fun, and as a result, are likely to continue their involvement in sport.

Similarly, but to a lesser extent, Performance-Approach Orientation was related significantly and positively to competitive anxiety, perceived competence (sport-specific and general), enjoyment and future intentions to play football. These results are consistent with previous research (e.g., Cury, Da Fonséca, Rufo, Peres, & Sarrazin., 2003; Elliot, 2005). For example, Cury et al. (2003) reported that performance-approach goals in adolescent boys were not significantly different from mastery goal orientations in their associations with perceptions of physical education competence and state anxiety. While Yli-Piipari et al. (2013) reported that a performance/ego goal orientation was associated with increased levels of enjoyment for adolescent males and females in physical education classes, they suggested this might only be temporary. Elliot (2005) has argued that performance-approach goals can be focused on potential positive outcomes that are oriented on the attainment of normative competence. Furthermore, given the emphasis on norm-based evaluation, the pursuit of performance-approach goals may elicit “emotionality,” but the focus on the possibility of success makes it unlikely that it would be linked to anxiety (Elliot & McGregor, 1999). Empirically, Cury et al (2003) demonstrated no differences between the mastery goal orientation and performance-approach goal orientation in regards to state anxiety’s mediation effects on a physical education test preparation. However, in that particular study, students were not

aware they were being observed, which limits ecological validity of their findings. In the current field study, the adolescent boys were clearly being observed and evaluated on a daily basis. Moreover, the positive relationship between the performance-approach goal orientation and anxiety may be explained by evaluator’s (coach’s) use of negative rapport behaviors (i.e., yelling, use of fear tactics, and lack of respect) to induce a learning climate that pits one athlete’s performance against another one’s.

As expected, Performance-Avoidance Orientation was related significantly and positively to competitive anxiety and significantly and negatively to self-esteem and sport-specific competence. Similar findings have been reported in other studies. For example, Cury et al. (2002) demonstrated that performance-avoidance goals were negatively associated with perceptions of physical education competence in adolescent boys. Such findings are consistent with Elliot’s (2005) suggestion that performance-avoidance goals tend to focus on potential negative outcomes that are oriented toward demonstrating normative incompetence.

Similar to the Mastery Goal Orientation, Football Skills Efficacy was related significantly and positively to self-esteem, perceived competence (sport-specific and general), enjoyment and future intentions to play football. Previous research has shown that self-efficacy predicts academic achievement indirectly, via achievement goals (Elliot & Church, 1997; Greene, Miller, Crowson, Duke, & Akey, 2004). Such a finding is consistent with Pajares’ (2005) suggestion that “students who engage their academic work with a mastery goal orientation tend to exhibit greater self-efficacy, use deeper processing strategies, show increased task engagement, attribute their success to effort

rather than to ability or external causes such as luck, and persist longer in the face of difficulty (pg. 360).”

Overall, the results of the current study suggest that coaches have strong influence on young athletes. Specifically, athletes who perceive their coaches providing solid technical feedback for skill development, strategies for managing competitive situation, advice on mental aspects of performance, strategies for achieving realistic goals, as well as establishing a rapport of mutual respect, interpret and internalize these messages in a way that significantly increases their mastery achievement goal orientation and sport-specific efficacy beliefs. Such effects in turn enhance these athletes’ self-esteem, competence (general and sport-specific), enjoyment and future intentions to remain involved in the sport. As a whole, the findings extend previous research that has demonstrated the importance of coaches’ behaviors in shaping motivational climates (Smith, Smoll & Cumming, 2007) and in enhancing self-esteem and anxiety, and reducing sports attrition (Barnett, Smoll & Smith, 1992; Smoll, Smith, Barnett & Everett, 1993; Smoll, Smith & Cumming, 2007).

Furthermore, the findings extend previous research (Smith et al., 2007) by taking into account temporal effects of the critical variables, via a pre-test-post-test field design. The design enabled the examination of the unique contributions of perceived coaching behaviors when controlling for the effects of the psychosocial outcome variables in hierarchical regression. Atkins et al. (2014), in their examination of the effects of motivational climates, attributed their inconsistent findings on the contributions of the coach-initiated task/mastery motivational climate to the lack of temporal validity. The shortcoming of their sampling was the time that had elapsed since the athletes had

interacted with their coaches, which was not the case in the present study. Finally, the findings extend previous research through the inclusion of performance/ego motivational climate as well as performance-approach and performance-avoidance goal orientations.

### **Limitations and Directions for Future Research**

There were several limitations in this study that warrant discussion. First, the survey data were collected via self-report, meaning that the respondents had a potential to over- or underreport their perceptions. In addition, while the participants, for the most part, were separated from the coaches during the completion of the questionnaires to minimize any confounding effects, the coaches' physical presence may have also contributed to the respondents' potential to over- or underreport their perceptions, particularly in relation to the coaches' behaviors.

Second, the sample of this study was predominantly African-American and Caucasian adolescent boys from a single sport – football. Therefore, generalizability is limited to similar groups of male youth sports participants and their coaches. Future research should explore the extent to which the relationships supported in this study apply to other groups of sports participants, such as female athletes, older athletes, or groups of different racial/ethnic athletes from other countries.

Third, the temporal relations among the variables examined in this study were short-term (two to four weeks). Future research could incorporate a more longitudinal design to determine more lasting relations among the variables.

Fourth, the pre-test reports of achievement goal orientations, skills efficacy and psychosocial variables were recorded at the same time. Similarly, post-test reports of perceived coaching behaviors, motivational climate, achievement goal orientations, skills

efficacy and psychosocial variables were recorded at the same time. This may have resulted in inflated correlations among them, resulting in multicollinearity concerns. Future research should consider this issue and how to remedy it.

Fifth, the present study only examined the effects of perceived coaching behaviors. As indicated by the range in variance accounted for by the present model ( $R^2$  ranged from .10 to .51), there are clearly other factors influencing goal orientations and psychosocial outcomes. Future research should continue to examine the unique effects that the perceived behaviors of youth sports parents (e.g., O’Rourke et al, 2014) and peers/teammates (e.g., Atkins, et al, 2014) have on athletes’ perceptions of motivational climate, and their effects in turn on goal orientations, skills efficacy, self-esteem, anxiety, competence, enjoyment, and future intentions to continue to participate.

Sixth, while the present study examined a number of psychosocial outcomes, future research should examine the relationships between climate-related coaching behaviors and other psychosocial outcomes, such as the use of practice/learning and competitive strategies. Adaptive strategies could include persistence, increased effort, self-regulation, seeking help and co-operation. Maladaptive strategies might include self-handicapping and avoiding practice/training. Given the current AGT literature, one might speculate that the relations between perceived coaching behaviors and adaptive strategies would be similar to those between coaching behaviors and competence or self-esteem found in the present study.

Seventh, Elliot, Murayama, and Pekrun (2011) have proposed a 3 x 2 achievement goal framework in which competence can be defined along three dimensions: absolute (task), intrapersonal (self), and interpersonal (norm-based), as well

as valenced in a positive (approach) or negative (avoidance) manner. As this model had not been published at the time of this study, future research should examine the validity and applicability of the evolution of this framework in the youth sports domain, especially as it relates to coaches’ behaviors, motivational climate, and psychosocial outcomes.

Lastly, the nature of the field study led to “missingness” issues with the data that necessitated alternative forms of SEM analysis (i.e., the use of composite variables as opposed to the use of latent structures). Future research should incorporate more interactive types of field data collection techniques, such as the use of tablets, to ensure better compliance in completing surveys and instruments.

### **Conclusions and Implications**

Conceptual complexity and measurement issues notwithstanding, the findings support Smith et al.’s (2009, pg. 181) suggestion that “climate-related coaching behaviors may be more important than other experiential factors in influencing athletes’ sports experiences.” More specifically, coaches communicating technical instruction and competition strategies, both directly and indirectly, foster a “growth mindset” (Dweck, 2006). The findings clarify how coaches’ messages change youth sports participants’ achievement goal orientations, resulting in significant increases in mastery learning disposition and sport-specific efficacy beliefs. These effects, in turn, improve the athletes’ self-esteem, general competence, sport-specific competence, competitive anxiety, enjoyment, and intentions to remain involved in the sport.

The deconstruction of certain elements of the Mastery-Approach to Coaching (i.e., specific coaching behaviors), as well as the closer inspection of the components of

the motivational climate, created a complex picture of relations between these factors, achievement goal orientations, and psychosocial outcomes. However, a detailed examination of these relationships may give sport psychology consultants, coaches, and physical education teachers a better understanding for customizing interventions for individual athletes.

In order to better communicate and disseminate the findings to youth sports practitioners (coaches, administrators, physical education teachers, and sport psychology consultants), the findings may need to be parceled into simpler groupings that explain the relationships with one or two psychosocial outcomes at a time. An example of the effectiveness of packaging and parceling these types of research findings is provided by Smith et al.’s (2007, 2008, 2009) and Smoll et al.’s (2007a, 2007b) studies on various psychosocial aspects of youth sports participation.

From a practical perspective, the findings of the current study may help youth sport organizations develop programs for their well-meaning, but untrained volunteers to learn about the “best practices” for skill and social development in youth sports participants. The findings may also help in forming a coaching philosophy directed to improving participants’ experience. National sports organizations could create or endorse online tools that deliver training in key coaching competencies – technical instruction and competition strategies – that would be free of charge to every youth-serving organization. Furthermore, colleges could provide training programs for over 100,00 athletes who leave campuses each year so that they would become effective community coaches. As these athletes are already versed in the skills and tactics of their sport, teaching them on how to work with children and adolescents in a positive and age-

appropriate manner would alleviate the void of trained youth sports coaches in the United States.

Although the findings revealed how perceptions of specific coaching behaviors influence the multifaceted motivational climate that promotes short-term changes in achievement goals and sport-specific efficacy beliefs, more research is needed to determine long-term effects of these changes and their generalizability to other achievement situations and settings.

**APPENDIX A:**  
**CONSENT FORMS AND QUESTIONNAIRES**

## Evaluation of NFL JPD Program Parental Permission Form

**DESCRIPTION:** Your child is invited to participate in a research study on the evaluation of National Football League (NFL) Junior Player Development (JPD) Program.

**PROCEDURE:** Your child will be asked to complete two questionnaires (the first at the beginning of the first practice/clinic and the second during the 12<sup>th</sup> practice/clinic). The questionnaires will ask your child to rate a series of statements on a scale (e.g. "1" represents "not like me" and "4" represents "very much like me"). The questionnaires will include such statements as "I feel pretty sure of myself," "It is important for me to perform as well as I possibly can," and "The coaches provided me with feedback that helped me improve my technique." Your child's answers will be logged for analysis purposes. This information will not be disclosed to others and the data will be discarded after the study is over.

**RISKS AND BENEFITS:** There are minimal risks associated with this study as the questions/statements are inquiring about your child's perceptions of themselves, their sporting environment, and their experience in the NFL JPD program. In addition, other research studies have found these questions/statements to be valid and pose minimal risks to the subjects. The benefits that may reasonably be expected to result from this study are better curriculum for future NFL JPD participants, as well as better training for the instructors.

**TIME INVOLVEMENT:** Your child's participation in this experiment should take no longer than 20 minutes for each assessment.

**PAYMENTS:** Your child will receive no financial compensation for participation in this study.

**SUBJECT'S RIGHTS:** If you have read this form and have decided that your child can participate in this project, please understand that their participation is voluntary and your child has the right to withdraw consent or discontinue participation at any time without penalty. Your child has the right to refuse to answer particular questions, and may ask any question they wish. Their individual privacy will be maintained in all published and written data resulting from the study. If you have questions about your child's rights as a study subject, are dissatisfied at any time with any aspect of this study, or wish to report a research-related injury, please contact - anonymously, if you wish - the Institutional Review Board Office, 2100 Lee Building, University of Maryland, College Park, MD 20742 USA (e-mail: [irb@deans.umd.edu](mailto:irb@deans.umd.edu), telephone: 301-405-4212).

I state that I am over 18 years of age, and wish my child to participate in a program of research being conducted by Dr. Seppo Iso-Ahola and Jay Goldstein, M.A. at the University of Maryland, College Park (Tel: (301) 405-2505 or (301) 509-5425, email: [isoahol@umd.edu](mailto:isoahol@umd.edu) or [jgoldst1@umd.edu](mailto:jgoldst1@umd.edu)).

CHILD's Name \_\_\_\_\_

PARENT SIGNATURE \_\_\_\_\_ DATE \_\_\_\_\_

PARENT NAME (PRINT) \_\_\_\_\_



## Evaluation of NFL JPD Program Participant Assent Form

**DESCRIPTION:** You can help us understand how well the NFL JPD program works.

**PROCEDURE:** You will be asked to complete two questionnaires (the first at the beginning of the first practice/clinic and the second during the 12<sup>th</sup> practice/clinic). The questionnaires will include such statements as "I feel pretty sure of myself," "It is important for me to perform as well as I possibly can," and "The coaches provided me with feedback that helped me improve my technique." You will be asked to rate each statement on a scale such as "1" represents "not like me" to "4" represents "very much like me."

**RISKS AND BENEFITS:** This study will be very similar to a multiple-choice test in school, **except there are no right or wrong answers.** As such, there are very few risks associated with this study. By joining us, you can help us improve the NFL JPD program.

**TIME INVOLVEMENT:** This will take less than half an hour.

**PAYMENTS:** You will not receive anything for helping us.

**SUBJECT'S RIGHTS:** You may change your mind at any time and stop working with us, or you can ask any questions you like. You also can choose not to answer any question if you wish. If you have problems of any kind, please let your parent or coach know.

Check this box if you agree to participate: ☐

Name (PRINT) \_\_\_\_\_

DATE \_\_\_\_\_

If the subject cannot read, then this assent form was read to the child and the child understands its contents:

INVESTIGATOR \_\_\_\_\_

DATE \_\_\_\_\_





1. I feel pretty sure of myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
2. I often wish I were someone else.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
3. I feel proud of myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
4. I feel disappointed in myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
5. I wish I could change a lot of things about myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
6. I often feel like a failure.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
7. I like being the way I am.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
8. I feel like I'm going to be a success.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
9. I often feel ashamed of myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
10. I think pretty highly of myself.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
11. I'm usually so poor at things I feel like giving up.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
12. I often feel like a loser.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
13. I feel I'm as good as anyone else.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me
14. I wish I were a better person.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not like me					Very much like me

People have many different kinds of feelings about competition. Below are some sentences that describe certain feelings that people have about playing competitive sports. Read the sentence carefully and think about yourself. Check the box or circle the number that shows how you feel. There are no right or wrong answers. Be as accurate and honest as you can about your feelings.

- |  |                            |                            |                            |                            |                            |
|--|----------------------------|----------------------------|----------------------------|----------------------------|----------------------------|
| 1. Competing against others is socially enjoyable.                   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 2. Before I compete I feel uneasy. .                                 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 3. Before I compete I worry about not performing well.               | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 4. I am a good sportsman when I compete.                             | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 5. When I compete, I worry about making mistakes.                    | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 6. Before I compete I am calm.                                       | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 7. Setting a goal is important when competing.                       | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 8. Before I compete I get a queasy feeling in my stomach.            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 9. Just before competing, I notice my heart beats faster than usual. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 10. I like to compete in games that demand a lot of physical energy. | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 11. Before I compete I feel relaxed.                                 | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 12. Before I compete I am nervous.                                   | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 13. Team sports are more exciting than individual sports.            | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 14. I get nervous waiting to start the game.                         | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |
| 15. Before I compete I usually get uptight.                          | <input type="checkbox"/> 1 | <input type="checkbox"/> 2 | <input type="checkbox"/> 3 | <input type="checkbox"/> 4 | <input type="checkbox"/> 5 |
| Not at all   |                            |                            |                            |                            | Very much so               |

☐ 1                  ☐ 2                  ☐ 3                  ☐ 4                  ☐ 5  
at all true                                      Very true

1. I believe that I have the ability to play football.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
2. I am confident that I will be able to continue to play football.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
3. When I play football, I feel in complete control.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
4. People close to me think I should play football.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
5. People who are important to me encourage me to play football.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
6. I intend to practice and play football regularly in the future.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Definitely not					Definitely yes
7. I will practice and play football in the next season.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
8. I want to play football regularly. .	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Definitely do not					Definitely do
9. Playing football gives me a chance to meet new people.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
10. Playing football gives me a chance to be with my friends.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
11. Playing football makes my health better and gets my body in better condition.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
12. Playing football reduces the stress and helps me get away from everyday problems.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree

13. I am good at playing football.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
14. In general, I am humble in victory.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
15. In general, I blame others (such as the referees and my teammates) in defeat.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
16. In general, I play sports with lots of effort and intensity.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
17. In general, I am good at playing sports.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
18. In general, I shake my opponents' hands after competition as a symbol of respect.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
19. In general, it is ok to hurt an opponent, if it will help my team win. .	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
20. I like playing football.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
21. I have a lot of fun playing football?	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
22. I am a gifted football player.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
23. In sports, I take responsibility for my actions.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Never					Always
24. In general, I take responsibility to complete my homework and household chores.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
25. In general, my needs and goals come before those of my team.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
26. Together as a team, everyone achieves more.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
27. In general, I am a gifted athlete.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree

1. I am confident I can perform the “breakdown position” properly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
2. I am confident I can perform the “6-point progression” properly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
3. I am confident I can perform the “reach block” properly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
4. I am confident I can complete a pass to a moving receiver using the proper throwing motion.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
5. I am confident I can catch a pass <u>above</u> my waist correctly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
6. I am confident I can catch a pass <u>below</u> my waist correctly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
7. I am confident I can perform the drive block using the proper technique.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
8. I am confident I can perform the pass block using the proper technique.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
9. I am confident I can perform “Sideline” or “Angle” tackles using the proper technique.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
10. I am confident I can perform “Form” tackles using the proper techniques.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
11. I am confident I can rush the passer using the “Rip” technique properly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident
12. I am confident I can rush the passer using the “Swim” technique properly.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Not very confident					Very confident

☐ 1      ☐ 2      ☐ 3      ☐ 4      ☐ 5      ☐ 6 or more

☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5

Never Always

1. On this team, the coaches believe that all the players are crucial to the success of the team.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
2. On this team, the coaches praise only the best players.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
3. On this team, players are encouraged to outplay the other players.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
4. On this team, the coaches have their favorites.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
5. On this team, the coaches make sure players improve on skills they're not good at.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
6. On this team, players feel successful when they improve.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
7. On this team, each player has an important role.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
8. On this team, players are "psyched" when they do better than their teammates in a game.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
9. On this team, only the top players "get noticed" by the coaches.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
10. On this team, players are encouraged to work on their weaknesses.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
11. On this team, the coaches favor some of the players more than others.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
12. On this team, each player feels as if he or she is an important team member.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Strongly disagree					Strongly agree
13. If the next higher level (intermediate) of the NFL JPD program were offered, I would definitely sign up for it.	<input type="checkbox"/> 1	<input type="checkbox"/> 2	<input type="checkbox"/> 3	<input type="checkbox"/> 4	<input type="checkbox"/> 5
Definitely not					Definitely yes

### Descriptive Questionnaire

Please answer the following questions to help us in organizing our results. It is important to understand that the information you provide will remain confidential and that your name is only being used to group your answers to your post-clinic questionnaire.

First Name:

---

Last Name:

---

What city do you live in?

---

What is the location of this NFL JDP clinic?

---

I am a:

☐ Boy ☐ Girl

I am:

☐ Black ☐ Latino ☐ Asian ☐ White ☐ Other

How old are you?

☐ 11 ☐ 12 ☐ 13 ☐ 14 ☐ 15  
☐ Other

What grade are you in school?

☐ 5th ☐ 6th ☐ 7th ☐ 8th ☐ 9th  
☐ Other

In general, what grades do you get in school?

☐ Mostly A's ☐ Mostly B's ☐ Mostly C's ☐ Mostly D's ☐ Other

Who lives in your house with you (check all that apply)?

☐ Mother ☐ Father ☐ Brothers ☐ Sisters ☐ Cousins  
☐ Aunt ☐ Uncle ☐ Grandfather ☐ Grandmother  
☐ Other

How many years have you played organized football (such as on a team or in a league)?

☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more

**APPENDIX B:**  
**POLICIES AND PROCEDURES FOR ADMINISTERING QUESTIONNAIRES**



To: Regional Research Coordinators

Regional Research Assistants

From: Jay Goldstein  
National Research Coordinator

Date: January 10, 2007

Re: Policies and Procedures for administering the JPD Evaluation Questionnaires

Thank you for your interest, assistance, and involvement in this unique research opportunity. We hope that you treat this project as you would your own research and put forth every effort to maintain the integrity of the data during the collection process. Please use this opportunity to learn more about field research methodology and its practical application.

Outlined below are the policies and procedures that must be adhered to in order to create consistency in the data collection. Each site will pose it's own unique set of circumstances and issues that must be dealt with in a timely, efficient fashion. Please utilize the following policies and procedures as guidelines that can be adjusted to a particular situation. The bottom line is use common sense and your best judgment to accomplish our goal: the completion of the questionnaires by the majority of the programs' participants for each designated site.

#### POLICIES

**Professional attitude and attire:** Be professional in your demeanor and appearance (i.e., shirts should be tucked into pants, shorts, or skirts). Please wear red or white polo shirts (the NFL will hopefully furnish JPD polo shirts for the staff) and khaki pants, shorts, or skirts.

**Be on Time:** Please allocate sufficient travel time to arrive at the designated site with adequate time to meet with the site coordinator, prepare the staff and materials for administration of the questionnaire, and make any last minute adjustments. The rule of thumb should be to meet the site coordinator a minimum of 30 minutes before the start of practice.

**Be cordial and accommodating to everyone:** - especially site coordinators, coaches, participants, and parents. This is voluntary, so in order to maximize the number of participants that complete the questionnaires, we need the support and cooperation of everyone involved.

## PRE-TEST QUESTIONNAIRE ADMINISTRATION PROCEDURES

Time frame of administration: On average, the questionnaire will take 15 minutes to complete. **The ideal time of administration is beginning of the 2<sup>nd</sup> clinic session** (alternatively, at the beginning of the 3<sup>rd</sup> clinic). **This needs to be arranged with site coordinator well in advance (7-10 days, if possible).** Most sites will set up an a brief orientation (i.e., speech by the site coordinator to participants) will take place before everyone one begins stretching exercises.

**If no orientation:** Set up questionnaire administration as the 1<sup>st</sup> activity of the clinic, prior to the participants stretching exercises. (Note: having the coaches assist with handing out the clipboards will assist in bridging the perceived importance of the survey to the children.)

**If there is an orientation:** Set up the administration as the next activity (prior to the participants stretching exercises. (Note: having the coaches assist with handing out the clipboards will assist in bridging the perceived importance of the survey to the children.)

Preparation: Each questionnaire packet (manila envelope) should contain two (2) parental permission forms, one (1) child assent form, and the eight-page questionnaire. Please attach each envelope to a clipboard. Make sure #2 pencils are sharpened (have some points).

Set Up: Using the storage bins or tables, if available, set up two (2) distinct locations: (one for disseminating the questionnaires and one for collection.

3-person administration: 1 research assistant handing out the questionnaire, 1 research assistant collecting the questionnaire, and the research coordinator giving the instructions. The latter two persons should also routinely ask how people are doing with the questionnaire and watch for “Christmas treeing” answers (i.e., marking the same answer throughout the questionnaire – usually 3’s or 5’s).

2-person administration: 1 research assistant handing out the questionnaire, and the research coordinator giving the instructions. Then, after the 1<sup>st</sup> group, switch positions, so we maintain consistency with the instructions, and the research assistant can collect the questionnaire. The latter person should also routinely ask how people are doing with the questionnaire and watch for “Christmas treeing” answers (see above).

Dissemination of questionnaire: Each NFL JPD participant should receive one clipboard (with questionnaire attached) and one #2 pencil. (Note: having the coaches assist with handing out the clipboards will assist in bridging the perceived importance of the survey to the children.)

Verbal Instructions:

“Hello, my name is \_\_\_\_\_ or you can call me “Coach \_\_\_\_\_.” Again welcome to the NFL’s JPD program at \_\_\_\_\_(location). You’re almost at the final stage of the equipment fitting process for the clinic. The NFL needs your help in determining what effects this program has on young football players. Your site has been chosen from 150 sites across the county to participate in the study. The process will entail the JPD participants completing two (2) questionnaires – one (1) today and one (1) during the final scheduled practice.

Most of you should be able to complete today’s questionnaire in about 15 minutes. This is completely voluntary, so if you don’t want to answer a question or participate, you are not required to do so. However, the NFL wants to hear about you and what you think. For your time, we do have a small token of our appreciation – we have some \_\_\_\_\_ (candy) for when you’re done the questionnaire.

You should have received a clipboard with an envelope containing the questionnaire and a #2 pencil. If you don’t have both, please raise your hand so we can get you what you need. Please try not to bend or fold the questionnaire forms. If you would pull the questionnaire out of the envelope, you will find two (2) copies of the Parental Permission form. Essentially, this allows us to use the information that you will provide for this research study. We ask that you give one (1) copy to your parents should any questions or concerns later. If your parents are not here, please make sure you take one copy home and give it to your parents.

The next page is the Participant Assent form. If you choose to participate in the questionnaire, please check the box (show where on the form), print your name and write today’s date.

The following forms contain questions that are about your feeling towards yourself, football, and physical activity. Please be as truthful and honest with your answers as you can. The key thing to remember is there are no right or wrong answers!

On the next pages marked “Questionnaire 2-8,” we are asking about your feelings towards yourself, physical activity and football. For example on the Questionnaire 2, the 3<sup>rd</sup> question states, “I feel proud of myself.” Underneath, you will see 5 “bubbles”, marked 1-5, with the words “Not like me” closest to the “1” and “Very much like me” closest to the “5.” If, most of the time, you do not feel proud of yourself, then fill in the “bubble” marked #1 “Not like me.” If most of the time you feel proud of yourself, then fill in the “bubble” marked #5 – “Very much like me.” If most of the time you feel somewhat proud of yourself, then fill in the “bubble” marked #4. If you feel proud of yourself, occasionally then fill in the middle “bubble” marked #3. Again, remember there are no right or wrong answers! This is all about how you feel.

On the last page, we will ask for your name, but that is only being used to match up today’s questionnaire and the one you will complete at the end of the JPD program. Once we enter the information into the computer, your name will be deleted, so please be as truthful and honest with your answers as you can.

Please read all the statements on each of the pages and mark the appropriate answer. If you don't understand a word or question, please raise your hand so we can help explain it to you. *(Parents, if you choose to help your child, you may do so by reading the questions, but please let your child answer them. We need the participant's answers, not your answers.)* If you happen to make a mistake and mark the wrong answer, please mark the answer you would like and circle it on the form.

The survey should take you an average of 15 minutes to complete. Again, please try not to bend or fold the questionnaire forms. When you have completed the questionnaire, please put all the pages back into the envelope and turn it in to \_\_\_\_\_ (research assistant) with the clipboard and pencil.

## POST-TEST QUESTIONNAIRE ADMINISTRATION PROCEDURES

Time frame of administration: On average, the questionnaire will take 15-20 minutes to complete. **The ideal time of administration is between the end of the final scrimmage session and the equipment return. This needs to be arranged with site coordinator well in advance (5-7 days, if possible).** Most sites will gather the participants for a final briefing on the field. At the end of this briefing, we should try to administer the questionnaire. This will also keep the site coordinator and coaches from getting inundated with the equipment returns all at once (i.e., as participants complete the questionnaire, they will filter over to the designated area that is set up for the equipment return).

Preparation: Each questionnaire packet (manila envelope) should contain the eleven-page questionnaire. Please attach each envelope to a clipboard. Make sure #2 pencils are sharpened (have some points).

Set Up: 3-person administration: 1 research assistant handing out the questionnaire, 1 research assistant collecting the questionnaire, and the research coordinator giving the instructions. The latter two persons should also routinely ask how people are doing with the questionnaire and watch for “Christmas treeing” answers (i.e., marking the same answer throughout the questionnaire – usually 3’s or 5’s).

2-person administration: 1 research assistant handing out the questionnaire, and the research coordinator giving the instructions. The latter person should also routinely ask how people are doing with the questionnaire and watch for “Christmas treeing” answers (see above).

Dissemination of questionnaire: Each NFL JPD participant should receive one clipboard (with questionnaire attached) and one #2 pencil. Have the coaches help your team distribute the questionnaire to the participants.

### Verbal Instructions:

“Hello, my name is \_\_\_\_\_ or you can call me “Coach \_\_\_\_\_.” Did everyone have fun and learn some new techniques at the NFL’s JPD program at \_\_\_\_\_(location)? Did you thank your coaches for taking their time to teach you about football? (*Thank you, coach!!!*) You’re almost at the final stage of the equipment return for the clinic. The NFL needs your help in determining what effects this program has on young football players. Your site has been chosen from 150 sites across the county to participate in the study. The process will entail the JPD participants completing one (1) final questionnaire.

Most of you should be able to complete today’s questionnaire within 15-20 minutes. This is completely voluntary, so if you don’t want to answer a question or participate, you are not required to do so. However, the NFL wants to hear about you and what you think. For your time, we do have a small token of our appreciation – we have some \_\_\_\_\_ (candy) for when you’re done the questionnaire. After you turn in the questionnaire, get your candy, you should grab your gear and walk over to the equipment return area located \_\_\_\_\_.

You should have received a clipboard with an envelope containing the questionnaire and a #2 pencil from your coaches. If you don't have both, please raise your hand so we can get you what you need. The enclosed forms contain questions that are about your feeling towards yourself, football, and physical activity. Please be as truthful and honest with your answers as you can. The key thing to remember is there are no right or wrong answers!

On the pages marked "Questionnaire 2-11," we are asking about your feelings towards yourself, physical activity and football. For example on the Questionnaire 2, the 3<sup>rd</sup> question states, "I feel proud of myself." Underneath, you will see 5 "bubbles", marked 1-5, with the words "Not like me" closest to the "1" and "Very much like me" closest to the "5." If, most of the time, you do not feel proud of yourself, then fill in the "bubble" marked #1 "Not like me." If most of the time you feel proud of yourself, then fill in the "bubble" marked #5 - "Very much like me." If most of the time you feel somewhat proud of yourself, then fill in the "bubble" marked #4. If you feel proud of yourself, occasionally then fill in the middle "bubble" marked #3. Again, remember there are no right or wrong answers! This is all about how you feel.

On the last page, we will ask for your name, but that is only being used to match up today's questionnaire and the one you completed at the beginning of the JPD program. Once we enter the information into the computer, your name will be deleted, so please be as truthful and honest with your answers as you can.

Please read all the statements on each of the pages and mark the appropriate answer. If you don't understand a word or question, please raise your hand so we can help explain it to you. *(Parents, if you choose to help your child, you may do so by reading the questions, but please let your child answer them. We need the participant's answers, not your answers.)* If you happen to make a mistake and mark the wrong answer, please mark the answer you would like and circle it on the form.

The survey should take you an average of 15-20 minutes to complete. Again, please try not to bend or fold the questionnaire forms. When you have completed the questionnaire, please put all the pages back into the envelope and turn it in to \_\_\_\_\_ (research assistant) with the clipboard and pencil, get your candy. Then, grab your gear and head over to the equipment return area for some more goodies from the NFL.

Table 1  
Variable Abbreviations & Definitions

<b>Abbreviation</b>	<b>Subscales</b>	<b>Variable Definition</b>
PreAGO (AGO1)		Composite of Achievement Goal Orientations at Time 1
	MAS1	Mastery at Time 1
	PAP1	Performance-Approach at Time 1
	PAV1	Performance-Avoidance at Time 1
PostAGO (AGO2)		Composite of Achievement Goal Orientations at Time 2
	MAS2	Mastery at Time 2
	PAP2	Performance-Approach at Time 2
	PAV2	Performance-Avoidance at Time 2
FSE1		Football Skills Efficacy at Time 1
FSE2		Football Skills Efficacy at Time 2
PCB-QUAL		Composite of Perceived Coaching Behaviors at Time 2
	PCB-Tech	Technical Feedback
	PCB-Mentl	Mental Preparation
	PCB-Goal	Goal Setting
	PCB-Comp	Competition Strategies
	PCB-PosRapp	Positive Rapport
	PCB-NegRapp	Negative Rapport
PMC-MAS		Composite of Mastery components of Perceived Motivational Climate at Time 2
	MAS-E/I	Mastery Climate: Effort/Improvement
	MAS-Role	Mastery Climate: Important Role
PMC-Perf		Composite of Performance components of Perceived Motivational Climate at Time 2
	PER-Rival	Performance Climate: Intra-team Rivalry
	PER-Recog	Performance Climate: Unequal Recognition
SE1		Self-Esteem at Time 1
SE2		Self-Esteem at Time 2
ANX1		Competitive Anxiety at Time 1
ANX2		Competitive Anxiety at Time 2
PCFB1		Perceived Competence- Football at Time 1
PCFB2		Perceived Competence- Football at Time 2
PCGN1		Perceived Competence- General at Time 1
PCGN2		Perceived Competence- General at Time 2
ENJ1		Enjoyment at Time 1
ENJ2		Enjoyment at Time 2
FUT1		Future Intentions to Play Football at Time 1
FUT2		Future Intentions to Play Football at Time 2

Table 2  
Zero-Order Correlations

Variable	Sub-Scale	Cronbach's $\alpha$	N	% Missing	Mean	Std. Dev.	1	2	3	4	5	6
1) PreAGO		.74	1221	16.6	10.6233	1.79868	1					
2) PostAGO		.81	1168	20.2	10.7796	1.99594	.530**	1				
3)	PAP1	.76	1352	7.7	3.4197	0.99918	.770**	.470**	1			
4)	PAP2	.81	1308	10.7	3.5179	1.01364	.496**	.821**	.607**	1		
5)	PAV1	.69	1334	8.9	2.8658	0.98136	.736**	.344**	.339**	.227**	1	
6)	PAV2	.78	1304	10.9	2.9934	1.02064	.423**	.741**	.295**	.434**	.492**	1
7)	MAS1	.74	1366	6.7	4.3091	0.70229	.436**	.193**	.084**	.088**	.005	-.038
8)	MAS2	.84	1300	11.2	4.254	0.7865	.147**	.498**	.024	.203**	.071*	-.006
9) FSE1		.91	1265	13.6	4.1112	0.77277	.179**	.197**	.161**	.163**	-.067*	-.011
10) FSE2		.97	1252	14.5	4.2983	0.76459	0.92**	.265**	.043	.171**	-.074*	-.074*
11) PCB-QUAL		.90	1226	19.1	4.0127	0.69785	.141**	.368**	.067*	.231**	.007	.100**
12)	PCB-Tech	.79	1385	5.4	4.3405	0.83728	.104**	.292**	.038	.166**	-.031	.007
13)	PCB-Mental	.85	1386	5.3	4.1253	0.91995	.129**	.284**	.039	.166**	.014	.054
14)	PCB-Goal	.85	1370	6.4	4.1063	0.92661	.116**	.266**	.021	.143**	-.006	.035
15)	PCB-Comp	.82	1389	5.1	4.2484	0.86553	.084**	.229**	.014	.140**	-.049	-.039
16)	PCB-PosR	.72	1393	8.4	3.8974	0.85328	.122**	.255**	.070*	.170**	.001	.041
17)	PCB-NegR	.72	1376	6	3.1901	1.29897	.112**	.221**	.140**	.201**	.063*	.212**
18) PMC-MAS		.87	1324	9.6	4.2204	0.79054	.117**	.307**	.012	.168**	-.026	-.004
19)	MAS-Role	.72	1369	6.5	4.1850	0.83887	.131**	.294**	.016	.165*	-.004	.011
20)	MAS-Eff/Imp	.81	1369	6.5	4.2520	0.84449	.087**	.280**	.007	.154**	-.046	-.018
21) PMC-Perf		.84	1287	12.1	3.2473	1.03381	.217**	.386**	.277**	.375**	.140**	.325**
22)	Perf-Rival	.58	1346	8.1	3.4272	0.97792	.205**	.385**	.249**	.375**	.095**	.258**
23)	Perf-Recog	.84	1350	7.8	3.0667	1.25741	.191**	.322**	.259**	.319**	.153**	.324**
24) SE1		.78	1229	16.1	4.3019	0.52591	-.136**	-.101**	-.076**	-.070*	-.328**	-.275**
25) SE2		.87	1199	18.1	4.297	0.64656	-.093**	-.143**	-.097**	-.089**	-.244**	-.366**
26) ANX1		.77	1274	13	2.5907	0.83987	.381**	.256**	.200**	.139**	.505**	.424**
27) ANX2		.85	1244	15	2.626	0.94115	.272**	.404**	.160**	.236**	.388**	.613**
28) PCFB1		.76	1330	9.2	4.4671	0.62739	.173**	.147**	.119**	.151**	-.094**	-.061*
29) PCFB2		.82	1266	13.5	4.4058	0.73018	.086**	.316**	.063*	.255**	-.086**	-.063*
30) FUT1		.80	1384	5.5	4.5063	0.74041	.171**	.115**	.100**	.074**	-.072*	-.040
31) FUT2		.85	1339	8.5	4.3879	0.83992	.135**	.311**	.057*	.176**	-.024	-.018
32) PCGN1		.70	1366	6.7	4.3419	0.78392	.186**	.175**	.172**	.183**	-.060*	-.024
33) PCGN2		.75	1341	8.4	4.2964	0.85362	.109**	.336**	.120**	.279**	-.087**	-.006
34) ENJ1		.75	1368	6.6	4.6421	0.60192	.180**	.140**	.054	.093**	-.080**	-.069*
35) ENJ2		.80	1342	8.3	4.4863	0.74035	.080**	.304**	.039	.172**	-.078**	-.049

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 2  
Zero-Order Correlations

	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>	<u>11</u>	<u>12</u>	<u>13</u>	<u>14</u>	<u>15</u>	<u>16</u>	<u>17</u>	<u>18</u>	<u>19</u>	<u>20</u>	<u>21</u>
1															
.439**	1														
.340**	.296**	1													
.312**	.527**	.476**	1												
.282**	.483**	.313**	.529**	1											
.292**	.493**	.296**	.530**	.776**	1										
.282**	.432**	.279**	.491**	.838**	.688*	1									
.280**	.426**	.246**	.460**	.837**	.619**	.754**	1								
.279**	.479**	.274**	.534**	.792**	.689**	.702**	.681**	1							
.232**	.394**	.306**	.433**	.801**	.571**	.612**	.613**	.597**	1						
-.004	.001	.086**	.080**	.507**	.114**	.164**	.242**	.124**	.314**	1					
.361**	.570**	.255**	.533**	.673**	.643**	.623**	.596**	.671**	.562**	.069*	1				
.347**	.513**	.240**	.492**	.623**	.601**	.568**	.544**	.608**	.518**	.076**	.935**	1			
.312**	.541**	.241**	.506**	.627**	.596**	.574**	.560**	.631**	.521**	.042	.936**	.750**	1		
-.042	-.011	.094**	.091**	.262**	.093**	.098**	.133**	.098**	.145**	.509**	.125**	.146**	.081**	1	
.033	.109**	.131**	.170**	.342**	.203**	.201**	.226**	.194**	.224**	.429**	.253**	.261**	.205**	.901**	
-.095**	-.062*	.047	.012	.149**	-.013	-.001	.027	.003	.060	.471**	.000	.025	-.029	.942**	
.220**	.211*	.286**	.238**	.138**	.165**	.145**	.165**	.212**	.160**	-.074*	.190**	.196**	.155**	-.100**	
.235**	.296**	.232**	.344**	.188**	.254**	.200**	.205**	.224**	.190**	-.101**	.262**	.259**	.238**	-.196**	
-.041	-.081**	-.104**	-.098**	.028	-.026	-.021	-.004	-.063*	.036	.136**	-.017	.000	-.043	.158**	
-.065*	-.116**	-.070*	-.128**	.031	-.056	-.019	-.009	-.082**	-.005	.185**	-.088**	-.059*	-.118**	.264**	
.422**	.289**	.535**	.409**	.262**	.270**	.248**	.222**	.201**	.229**	.076**	.217**	.233**	.180**	.054	
.288**	.568**	.385**	.659**	.517**	.471**	.442**	.408**	.463**	.420**	.104**	.471**	.446**	.442**	.082**	
.409**	.255**	.452**	.349**	.239**	.272**	.235**	.252**	.232**	.184**	.011	.259**	.247**	.228**	-.004	
.321**	.579**	.324**	.591**	.450**	.472**	.424**	.397**	.434**	.370**	.026	.507**	.459**	.477**	.059	
.368**	.249**	.536**	.354**	.251**	.243**	.254**	.185**	.189**	.236**	.080**	.213**	.231**	.173**	.117**	
.256**	.510**	.383**	.597**	.500**	.452**	.446**	.390**	.431**	.396**	.142**	.443**	.419**	.408**	.131**	
.497**	.340**	.447**	.405**	.275**	.357**	.293**	.269**	.288**	.216**	-.027	.317**	.293**	.305**	-.043	
.291**	.608**	.305**	.656**	.488**	.515**	.445**	.412**	.494**	.401**	-.002	.548**	.498**	.519**	-.002	

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 2  
Zero-Order Correlations

	<u>22</u>	<u>23</u>	<u>24</u>	<u>25</u>	<u>26</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>30</u>	<u>31</u>	<u>32</u>	<u>33</u>	<u>34</u>	<u>35</u>
1														
.702**	1													
-.054	-.133**	1												
-.110**	-.242**	.529**	1											
.124**	.163**	-.326**	-.271**	1										
.197**	.263**	-.238**	-.423**	.685**	1									
.100**	.012	.354**	.303**	-.127**	-.094**	1								
.160**	.002	.244**	.397**	-.105**	-.160**	.534**	1							
.056*	-.047	.275**	.278**	-.087**	-.074**	.634**	.384**	1						
.140**	-.020	.212**	.318**	-.035	-.114**	.398**	.721**	.535**	1					
.150**	.066*	.308**	.243**	-.113**	-.087**	.677**	.440**	.421**	.301**	1				
.209**	.041	.236**	.320**	-.099**	-.120**	.449**	.760**	.293**	.562**	.509**	1			
.036	.094**	.293**	.343**	-.088**	-.099**	.615**	.404**	.647**	.433**	.495**	.356**	1		
.099**	-.089**	.205**	.373**	-.075*	-.129**	.347**	.744**	.370**	.715**	.293**	.671**	.437**	1	

Note: \*  $p < .05$ , \*\*  $p < .01$ , \*\*\*  $p < .001$

Table 3  
Descriptive Statistics for Study Variables

<b><u>Scale</u></b>	<b><u>N</u></b>	<b><u>Items</u></b>	<b><u>Mean</u></b>	<b><u>Mean/Avg</u></b>	<b><u>Range</u></b>	<b><u>st. dev.</u></b>	<b><u>Alpha</u></b>
<b><u>Football Skills Efficacy</u></b>							
FSE1 (pre)	1265	12	49.3344	4.1112	48 (12-60)	0.772775	0.91
FSE2 (post)	1252	12	51.5791	4.298258333	48 (12-60)	0.764591667	0.94
<b><u>Self-Esteem</u></b>							
SE1 (pre)	1229	14	60.227	4.301928571	43 (27-70)	0.525907143	0.78
SE2 (post)	1199	14	60.1585	4.297035714	55 (15-70)	0.646564286	0.87
<b><u>Perceived Competence (General)</u></b>							
PCGN1 (pre)	1366	2	8.6837	4.34185	8 (2-10)	0.7839	0.7
PCGN2 (post)	1341	2	8.5928	4.2964	8 (2-10)	0.8536	0.75
<b><u>Perceived Competence (Football)</u></b>							
PCFB1 (pre)	1330	4	17.8684	4.4671	12 (8-20)	0.6274	0.76
PCFB2 (post)	1266	4	17.6232	4.4058	16 (4-20)	0.730175	0.82
<b><u>Competitive Anxiety</u></b>							
ANX1 (pre)	1265	15	30.3486	2.758963636	48 (27-75)	0.777845455	0.77
ANX2 (post)	1236	15	30.5672	2.778836364	49 (26-75)	0.851127273	0.85
<b><u>Enjoyment</u></b>							
ENJ1 (pre)	1368	3	13.9262	4.642066667	12 (3-15)	0.601933333	0.75
ENJ2 (post)	1342	3	13.459	4.486333333	12 (3-15)	0.740366667	0.8
<b><u>Goal Orientations</u></b>							
AGO-MAS1 (pre)	1366	5	21.5454	4.30908	20 (5-25)	0.70228	0.74
AGO-MAS2 (post)	1300	5	21.27	4.254	20 (5-25)	0.7865	0.84
AGO-PAP1 (pre)	1352	5	17.0984	3.41968	20 (5-25)	0.99918	0.76
AGO-PAP2 (post)	1308	5	17.5894	3.51788	20 (5-25)	1.01364	0.81
AGO-PAV1 (pre)	1334	5	14.3598	2.87196	20 (5-25)	1.01362	0.69
AGO-PAV2 (post)	1304	5	14.967	2.9934	20 (5-25)	1.02064	0.78
<b><u>Future Intent (Football)</u></b>							
FI1 (pre)	1384	3	13.5188	4.506266667	12 (3-15)	2.2212	0.8
FI2 (post)	1339	3	13.1636	4.387866667	12 (3-15)	2.5198	0.85

(Note: All instrument scales were based on 5-point Likert Scales. Mean = Average score based on total # of items. Mean/Avg = Mean divided by total # of items or mean per item per instrument.) 99

Table 3  
Descriptive Statistics for Study Variables

<u>Scale</u>	<u>N</u>	<u>Items</u>	<u>Mean</u>	<u>Mean/Avg</u>	<u>Range</u>	<u>st. dev.</u>	<u>Alpha</u>
<b><u>Perceived Motivational Climate (Post Only)</u></b>							
PMC-Mastery	1324	6	25.3225	4.220416667	24 (6-30)	4.7432	0.87
PMC-Mas-Role	1369	3	12.5551	4.185033333	12 (3-15)	2.5166	0.72
PMC-Mas-Eff/Imp	1369	3	12.756	4.252	12 (3-15)	2.5335	0.81
PMC-Performance	1287	6	19.4841	3.24735	24 (6-30)	6.2029	0.84
PMC-Perf-Rivalry	1346	3	10.2816	3.4272	12 (3-15)	2.9338	0.58
PMC-Perf-Unequal Recog	1350	3	9.2	3.066666667	12 (3-15)	3.7722	0.84
PMC (Total)	1219	12	44.84	3.736666667	48 (12-60)	8.2508	0.81
<b><u>Perceived Quality &amp; Behavior of Coach (Post Only)</u></b>							
Perceived Coaching Ability	1386	2	9.0592	4.5296	8 (2-10)	1.5611	0.81
Perceived Relatedness to Coach	1409	2	8.6771	4.33855	8 (2-10)	1.7201	0.77
PCB-Technical Skills	1385	2	8.6809	4.34045	8 (2-10)	1.6746	0.79
PCB-Mental Preparation	1386	3	12.3759	4.1253	12 (3-15)	2.7598	0.85
PCB-Goal Setting	1370	3	12.319	4.106333333	12 (3-15)	2.7818	0.85
PCB-Comp. Strategies	1389	2	8.4968	4.2484	8 (2-10)	1.7311	0.82
PCB-Positive Rapport	1393	2	7.7947	3.89735	8 (2-10)	2.0666	0.72
PCB-Negative Rapport	1376	2	6.3801	3.19005	8 (2-10)	2.5979	0.72

(Note: All instrument scales were based on 5-point Likert Scales. Mean = Average score based on total # of items. Mean/Avg = Mean divided by total # of items or mean per item per instrument.) 100

Table 4

Adjusted Descriptive Statistics for Study Variables after replacing Missing Data via Mean Substitution Methodology

<u>Scale</u>	<u>N</u>	<u>Items</u>	<u>mean</u>	<u>Mean/Avg</u>	<u>Range</u>	<u>st. dev.</u>	<u>Alpha</u>	<u>Skewness</u>	<u>Kurtosis</u>
<b><u>Football Skills Efficacy</u></b>									
FSE (pre)	1464	12	49.102	4.091833333	48 (12-60)	0.75239417	0.91	-0.855	0.583
FSE (post)	1464	12	51.2823	4.273525	48 (12-60)	0.74359	0.94	-0.959	0.341
<b><u>Self-Esteem</u></b>									
SE (pre)	1464	14	60.0448	4.288914286	43 (27-70)	0.52063286	0.77	-1.057	1.223
SE (post)	1464	14	60.0233	4.287378571	55 (15-70)	0.62242643	0.86	-1.243	1.474
<b><u>Perceived Competence (General)</u></b>									
PC-Gen (pre)	1464	2	8.6855	4.34275	8 (2-10)	0.760605	0.69	-1.08	0.64
PC-Gen (post)	1464	2	8.5892	4.2946	8 (2-10)	0.821505	0.75	-1.145	0.948
<b><u>Perceived Competence (Football)</u></b>									
PC-FB (pre)	1464	4	17.8313	4.457825	12 (8-20)	0.6178425	0.75	-1.318	1.487
PC-FB (post)	1464	4	17.5749	4.393725	16 (4-20)	0.7026225	0.8	-1.324	1.582
<b><u>Competitive Anxiety</u></b>									
SCAT (pre)	1464	15	47.7525	3.1835	48 (27-75)	0.55577	0.72	0.279	-0.36
SCAT (post)	1464	15	48.0444	3.20296	49 (26-75)	0.61172067	0.79	0.382	-0.264
<b><u>Enjoyment/Effort</u></b>									
Enj/Eff (pre)	1464	3	13.919	4.639666667	12 (3-15)	0.58758	0.74	-2.159	5.052
Enj/Eff (post)	1464	3	13.4317	4.477233333	12 (3-15)	0.71794	0.79	-1.508	1.866
<b><u>Goal Orientations</u></b>									
AGO-MAS (pre)	1464	5	21.516	4.3032	20 (5-25)	0.690494	0.73	-1.107	1.024
AGO-MAS (post)	1464	5	21.1876	4.23752	20 (5-25)	0.758436	0.83	-0.913	0.323
AGO-PAP (pre)	1464	5	17.011	3.4022	20 (5-25)	0.97853	0.76	-0.315	-0.535
AGO-PAP (post)	1464	5	17.5985	3.5197	20 (5-25)	0.97366	0.81	-0.432	-0.207
AGO-PAV (pre)	1464	5	14.3484	2.86968	20 (5-25)	0.95778	0.71	0.101	-0.491
AGO-PAV (post)	1464	5	14.9647	2.99294	20 (5-25)	0.98114	0.77	0.079	-0.26
<b><u>Future Intent (Football)</u></b>									
FI (pre)	1464	3	13.5001	4.500033333	12 (3-15)	0.725963333	0.79	-1.662	2.521
FI (post)	1464	3	13.1381	4.379366667	12 (3-15)	0.809629667	0.85	-1.344	1.395

(Note: All instrument scales were based on 5-point Likert Scales. Mean = Average score based on total # of items. Mean/Avg = Mean divided by total # of items or mean per item per instrument.) 101

Table 4

Adjusted Descriptive Statistics for Study Variables after replacing Missing Data via Mean Substitution Methodology

<u>Scale</u>	<u>N</u>								
<b><u>Perceived Motivational Climate (Post)</u></b>									
PMC-Mastery									
PMC-Mas-Role		<u>Items</u>	<u>mean</u>	<u>Mean/Avg</u>	<u>Range</u>	<u>st. dev.</u>	<u>Alpha</u>	<u>Skewness</u>	<u>Kurtosis</u>
PMC-Mas-Eff/Imp									
PMC-Performance	1464	6	25.2699	4.21165	24 (6-30)	0.7688	0.86		
PMC-Perf-Rivalry	1464	3	12.5512	4.183733333	12 (3-15)	0.817603333	0.72	-0.794	-0.083
PMC-Perf-Unequal Recog	1464	3	12.7186	4.239533333	12 (3-15)	0.82814	0.8	-0.957	0.443
<b><u>Perceived Quality &amp; Behavior of Coach (Post)</u></b>									
	1464	6	19.4749	3.245816667	24 (6-30)	1.001105	0.84		
PCB-Technical Skills	1464	3	10.2634	3.421133333	12 (3-15)	0.952303333	0.57	-0.101	-0.396
PCB-Mental Preparation	1464	3	9.2115	3.0705	12 (3-15)	1.221256667	0.84	-0.105	-0.873
PCB-Goal Setting									
PCB-Comp. Strategies	1464	2	8.6778	4.3389		0.821115	0.78	-1.176	0.765
PCB-Positive Rapport	1464	3	12.3501	4.1167	8 (2-10)	0.907286667	0.84	-0.894	0.304
PCB-Negative Rapport	1464	3	12.3041	4.101366667	8 (2-10)	0.906463333	0.84	-0.892	0.379
		2	8.4881	4.24405	8 (2-10)	0.848055	0.81	-0.989	0.469
		2	7.7895	3.89475	12 (3-15)	1.013165	0.71	-0.623	-0.288
		2	6.3909	3.19545	12 (3-15)	1.264405	0.71	-0.125	-0.93

(Note: All instrument scales were based on 5-point Likert Scales. Mean = Average score based on total # of items. Mean/Avg = Mean divided by total # of items or mean per item per instrument.) 102

Table 5

Factor Loadings based on Structural Equation Modeling of Measurement Model

Variable	<u>PAP1</u>	<u>PAP2</u>	<u>PAV1</u>	<u>PAV2</u>	<u>MAS1</u>	<u>MAS2</u>	<u>FSE1</u>	<u>FSE2</u>	<u>ENJ1</u>	<u>ENJ2</u>
Loadings	.2414	.3523	.1528	.2392	.2871	.3948	<b>.4788</b>	<b>.5913</b>	.3232	<b>.4359</b>
	.2830	.3931	.1592	.2482	.3195	<b>.4350</b>			<b>.4273</b>	<b>.5228</b>
	.2078	.2976	.0854	.1393	.3373	<b>.4587</b>			<b>.4313</b>	<b>.5139</b>
	.3137	<b>.4338</b>	.1369	.2104	.3435	<b>.4637</b>				
	.2926	<b>.4027</b>	.0995	.1825	.3454	<b>.4466</b>				
Variable	<u>SE1</u>	<u>SE2</u>	<u>ANX1</u>	<u>ANX2</u>	<u>PCFB1</u>	<u>PCFB2</u>	<u>PCGN1</u>	<u>PCGN2</u>	<u>FUT1</u>	<u>FUT2</u>
Loadings	.2737	<b>.4042</b>	.2559	<b>.4041</b>	.3993	<b>.4965</b>	<b>.4167</b>	<b>.5320</b>	.3924	<b>.5221</b>
	.0520	.0914	.1981	.2363	<b>.4047</b>	<b>.4889</b>	.3732	<b>.5033</b>	.3966	<b>.5041</b>
	.2879	<b>.4095</b>	.2075	.2508	<b>.4225</b>	<b>.5232</b>			<b>.4082</b>	<b>.5394</b>
	.0592	.1003	.2219	.3287	.3928	<b>.5235</b>				
	.0527	.0844	.1987	.2447						
	.0668	.1066	.0398	-.0284						
	.2285	.3597	.3018	.3986						
	.2861	<b>.4149</b>	.2161	.2591						
	.0649	.1012	.1908	.2328						
	.2794	.3948	.3163	<b>.4320</b>						
	.0648	.1064	.0450	-.0318						
	.0662	.1053	.2355	.2730						
	.2066	.3189	.2375	.3687						
	.0507	.0813	.1958	.2553						
			.1758	.2142						
Variable	<u>PCB-Tech</u>	<u>PCB-Mental</u>	<u>PCB-Goal</u>	<u>PCB-Strat</u>	<u>PCB-PosR</u>	<u>PCB-NegR</u>	<u>MAS-Role</u>	<u>MAS-Eff/Im</u>	<u>Perf-Rival</u>	<u>Perf-Recog</u>
Loadings	<b>.4845</b>	<b>.4958</b>	<b>.4958</b>	<b>.5134</b>	<b>.4343</b>	.2462	<b>.4261</b>	<b>.4442</b>	.3043	.2119
	<b>.5601</b>	<b>.5217</b>	<b>.4894</b>	<b>.5134</b>	<b>.4278</b>	.2430	<b>.4961</b>	<b>.4794</b>	.1996	.2322
		<b>.5253</b>	<b>.5124</b>				<b>.4450</b>	<b>.4116</b>	.1928	.2338

Note: Factor loadings > .40 are in bodface. MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence- General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt 2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition).

Table 6  
Pilot Study Reliability

<b><u>Scale</u></b>	<b><u>n</u></b>	<b><u># of Items</u></b>	<b><u>Cronbach's Alpha</u></b>
<b><u>Football Skills Efficacy</u></b>			
FSE	189	12	0.95
<b><u>Self-Esteem</u></b>			
SE	187	14	0.87
<b><u>Perceived Competence (General)</u></b>			
PCGN	N/a	2	N/a
<b><u>Perceived Competence (Football)</u></b>			
PCFB	175	4	0.87
<b><u>Competitive Anxiety</u></b>			
ANX	188	10	0.87
<b><u>Enjoyment/Effort</u></b>			
ENJ	N/a	3	N/a
<b><u>Goal Orientations</u></b>			
AGO-MAS	193	5	0.87
AGO-PAP	193	5	0.84
AGO-PAV	190	5	0.84
<b><u>Future Intent (Football)</u></b>			
FI	N/a	3	N/a
<b><u>Perceived Motivational Climate</u></b>			
PMC-Mastery	208	6	0.89
PMC-Mas-Role	209	3	0.76
PMC-Mas-Eff/Imp	211	3	0.83
PMC-Performance	203	6	0.87
PMC-Perf-Rivalry	207	3	0.66
PMC-Perf-Unequal Recog	207	3	0.86
<b><u>Perceived Coaching Behaviors</u></b>			
PCB-Composite of 6 components	203	14	0.93

Table7  
Demographics for final sample of study (N = 1464)

<b><u>Variable</u></b>	<b><u>Category</u></b>	<b><u>n</u></b>	<b><u>%</u></b>
<b>Age</b>	11	280	19.1
	12	369	25.2
	13	376	25.7
	14	219	14.9
	15	74	5.1
	Other	110	7.5
	No response	36	2.5
<b>Ethnicity</b>	African-American	707	48.3
	Caucasian	384	26.2
	Hispanic	190	13.0
	Asian	27	1.8
	Multicultural/Other	95	6.5
	No response	60	4.1
<b>Grade</b>	5th	159	10.9
	6th	305	20.8
	7th	407	27.8
	8th	335	22.9
	9th	149	10.2
	Other	73	5.0
	No response	36	2.5
<b>School GPA</b>	Mostly A's	384	26.2
	Mostly B's	692	47.2
	Mostly C's	252	17.2
	Mostly D's	19	1.3
	Other	27	1.8
	No response	90	6.1
<b>Yrs. Played Football</b>	None	268	18.3
	One	213	14.5
	Two	233	15.9
	Three	183	12.5
	Four or more	433	29.6
	No response	133	9.1
<b>Geographic Region</b>	Mid-Atlantic (DC,MD,PA, VA)	605	41.3
	Northeast (NJ, NY)	270	18.4
	Midwest (IN)	212	14.5
	South (TX)	131	8.9
	West (CA)	246	16.6

Table 8

Hierarchical Multiple Regression Analyses Predicting Achievement Goal Orientations and Football Skills Efficacy From Perceived Coaching Behaviors and Perceived Motivational Climate.

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	MAS2							[LL,UL]
Step 1				38.146 (10,1453)		0	0	[.171,.244]
Step 2	Control variables*	0.208				0	0	
	Perceived Coaching Behaviors	0.343	0.135	47.264 (16,1447)	49.681 (6,1447)	0	0	[.304,.382]
Step 3	Perceived Motivational Climate	0.385	0.042	45.173 (20,1443)	24.518 (4,1443)	0	0	[.347,.424]

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	PAP2							[LL,UL]
Step 1				81.400 (10,1453)		0	0	[.320,.398]
Step 2	Control variables*	0.359				0	0	
	Perceived Coaching Behaviors	0.384	0.025	56.442 (16,1447)	9.8741 (6,1447)	0	0	[.345,.422]
Step 3	Perceived Motivational Climate	0.418	0.034	51.780 (20,1443)	20.786 (4,1443)	0	0	[.380,.456]

\*Control variables included: MAS1 = Mastery @ Time 1; PAP1 = Performance-Approach @ Time 1; PAV1 = Performance-Avoidance @ Time 1; FSE1 = Football Skills Efficacy @ Time 1; SE1 = Self-Esteem @ Time 1; ANX1 = Anxiety @ Time 1; PC-FB1 = Perceived Competence- Football @ Time 1; PC-GN1 = Perceived Competence- General @ Time 1; Enj1 = Enjoyment @ Time 1; and FutInt1 = Future Intentions to Play @ Time 1.

Table 8

Hierarchical Multiple Regression Analyses Predicting Achievement Goal Orientations and Football Skills Efficacy From Perceived Coaching Behaviors and Perceived Motivational Climate.

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	PAV2							[LL,UL]
Step 1				58.098 (10,1453)		0	0	[.247, .325]
Step 2	Control variables*	0.286				0	0	
	Perceived Coaching Behaviors	0.305	0.02	39.760 (16,1447)	6.8561 (6,1447)	0	0	[.266, .344]
Step 3	Perceived Motivational Climate	0.33	0.024	35.466 (20,1443)	13.009 (4,1443)	0	0	[.291, .369]

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	FSE2							[LL,UL]
Step 1				53.839 (10,1453)		0	0	[.231, .309]
Step 2	Control variables*	0.27				0	0	
	Perceived Coaching Behaviors	0.433	0.163	69.129 (16,1447)	69.303 (6,1447)	0	0	[.395, .471]
Step 3	Perceived Motivational Climate	0.459	0.026	61.300 (20,1443)	17.429 (4,1443)	0	0	[.422, .496]

\*Control variables included: MAS1 = Mastery @ Time 1; PAP1 = Performance-Approach @ Time 1; PAV1 = Performance-Avoidance @ Time 1; FSE1 = Football Skills Efficacy @ Time 1; SE1 = Self-Esteem @ Time 1; ANX1 = Anxiety @ Time 1; PC-FB1 = Perceived Competence- Football @ Time 1; PC-GN1 = Perceived Competence- General @ Time 1; Enj1 = Enjoyment @ Time 1; and FutInt1 = Future Intentions to Play @ Time 1.

Table 9

Hierarchical Multiple Regression Analyses Predicting Self-Esteem and Competitive Anxiety From Perceived Coaching Behaviors, Perceived Motivational Climate, Achievement Goal Orientations, and Football Skills Efficacy.

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	SE2							[LL,UL]
Step 1				70.548 (10,1453)		0	0	[.288,.366]
Step 2	Control variables*	0.327						
	Perceived Coaching Behaviors	0.345	0.018	47.655 (16,1447)	6.723 (6,1447)	0	0	[.306,.384]
Step 3								
	Perceived Motivational Climate	0.362	0.017	40.951 (20,1443)	9.601 (4,1443)	0	0	[.323,.401]
Step 4								
	Achievement Goals & Skills Efficacy	0.421	0.058	43.511 (24,1439)	36.285 (4,1439)	0	0	[.383,.459]
Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	ANX2							[LL,UL]
Step 1				90.797 (10,1453)		0	0	[.346,.424]
Step 2	Control variables*	0.385						
	Perceived Coaching Behaviors	0.398	0.013	59.676 (16,1447)	5.189 (6,1447)	0	0	[.360,.436]
Step 3								
	Perceived Motivational Climate	0.416	0.018	51.316 (20,1443)	11.169 (4,1443)	0	0	[.378,.454]
Step 4								
	Achievement Goals & Skills Efficacy	0.516	0.101	63.982 (24,1439)	74.812 (4,1439)	0	0	[.481,.551]

\*Control variables included: MAS1 = Mastery @ Time 1; PAP1 = Performance-Approach @ Time 1; PAV1 = Performance-Avoidance @ Time 1; FSE1 = Football Skills Efficacy @ Time 1; SE1 = Self-Esteem @ Time 1; ANX1 = Anxiety @ Time 1; PC-FB1 = Perceived Competence- Football @ Time 1; PC-GN1 = Perceived Competence- General @ Time 1; Enj1 = Enjoyment @ Time 1; and FutInt1 = Future Intentions to Play @ Time 1.

Table 10

Hierarchical Multiple Regression Analyses Predicting Perceived Competence From Perceived Coaching Behaviors, Perceived Motivational Climate, Achievement Goal Orientations, and Football Skills Efficacy.

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	PCFB2							[LL,UL]
Step 1				62.900 (10,1453)		0	0	[.263,.341]
Step 2	Control variables*	0.302						
	Perceived Coaching Behaviors	0.417	0.115	64.754 (16,1447)	47.650 (6,1447)	0	0	[.379,.455]
Step 3								
	Perceived Motivational Climate	0.439	0.022	56.449 (20,1443)	13.954 (4,1443)	0	0	[.401,.477]
Step 4								
	Achievement Goals & Skills Efficacy	0.575	0.136	81.038 (24,1439)	114.881 (4,1439)	0	0	[.548,.607]
Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	PCGN2							[LL,UL]
Step 1				53.188 (10,1453)		0	0	[.229,.307]
Step 2	Control variables*	0.268						
	Perceived Coaching Behaviors	0.386	0.118	56.768 (16,1447)	46.192 (6,1447)	0	0	[.347,.425]
Step 3								
	Perceived Motivational Climate	0.401	0.016	48.3366 (20,1443)	9.359 (4,1443)	0	0	[.363,.439]
Step 4								
	Achievement Goals & Skills Efficacy	0.502	0.1	60.324 (24,1439)	72.420 (4,1439)	0	0	[.466,.538]

\*Control variables included: MAS1 = Mastery @ Time 1; PAP1 = Performance-Approach @ Time 1; PAV1 = Performance-Avoidance @ Time 1; FSE1 = Football Skills Efficacy @ Time 1; SE1 = Self-Esteem @ Time 1; ANX1 = Anxiety @ Time 1; PC-FB1 = Perceived Competence- Football @ Time 1; PC-GN1 = Perceived Competence- General @ Time 1; Enj1 = Enjoyment @ Time 1; and FutInt1 = Future Intentions to Play @ Time 1.

Table 11

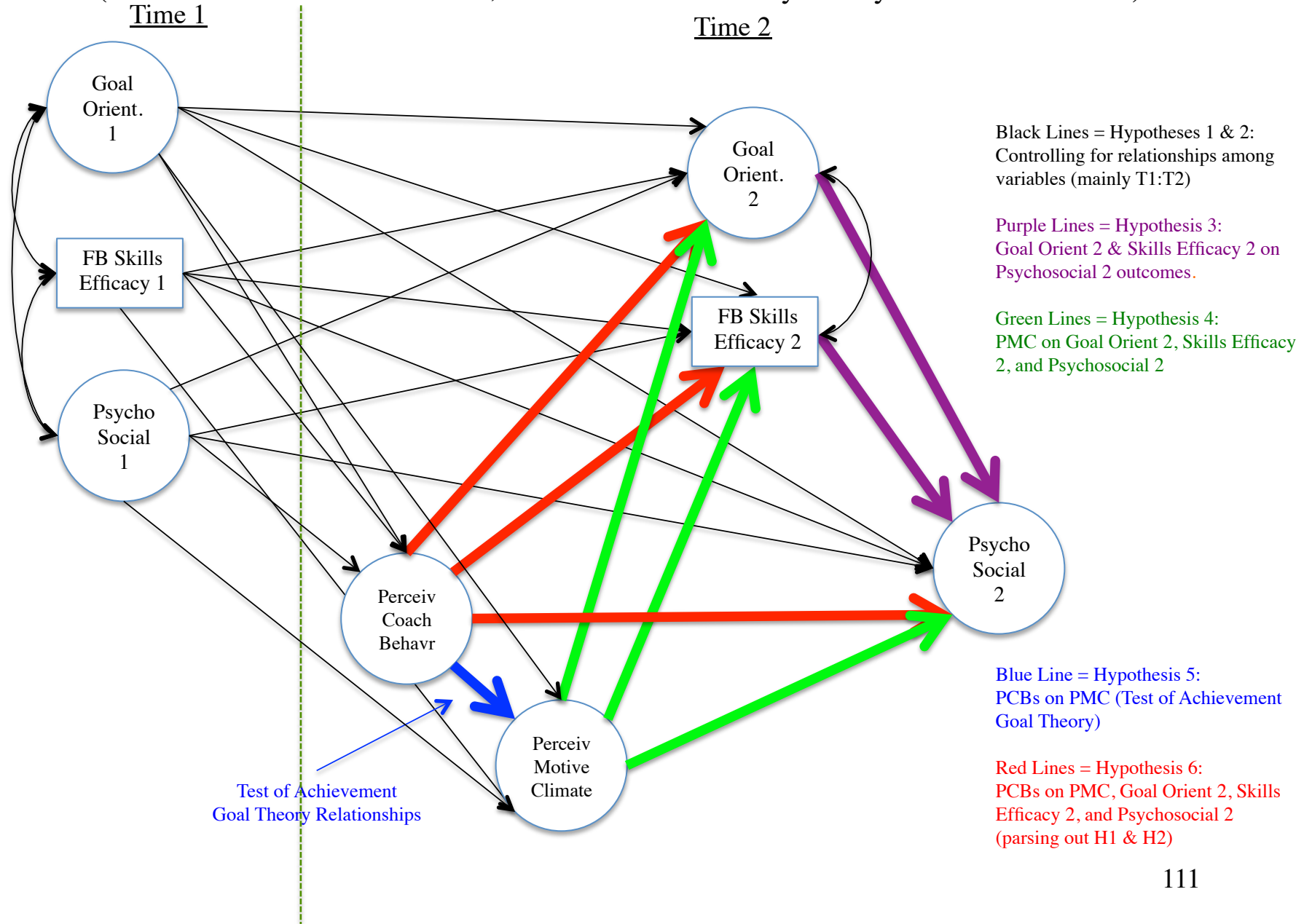
Hierarchical Multiple Regression Analyses Predicting Enjoyment and Future Intentions to Play Football From Perceived Coaching Behaviors, Perceived Motivational Climate, Achievement Goal Orientations, and Football Skills Efficacy.

Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	ENJ2							[LL,UL]
Step 1				36.475 (10,1453)		0	0	[.165,.237]
Step 2	Control variables*	0.201				0	0	
Step 3	Perceived Coaching Behaviors	0.357	0.156	50.127 (16,1447)	58.456 (6,1447)	0	0	[.318,.396]
Step 4	Perceived Motivational Climate	0.395	0.038	47.026 (20,1443)	22.634 (4,1443)	0	0	[.357,.433]
	Achievement Goals & Skills Efficacy	0.543	0.148	71.1248 (24,1439)	116.3991 (4,1439)	0	0	[.509,.577]
Predictor	Outcome Variable	$R^2$	$\Delta R^2$	$F(df1,df2)$	$\Delta F(df1,df2)$	Sig.	$\Delta$ Sig.	95% CI
	FutInt2							[LL,UL]
Step 1				57.411 (10,1453)		0	0	[.244,.322]
Step 2	Control variables*	0.283				0	0	
Step 3	Perceived Coaching Behaviors	0.389	0.106	57.588 (16,1447)	41.773 (6,1447)	0	0	[.350,.428]
Step 4	Perceived Motivational Climate	0.415	0.026	51.167 (20,1443)	15.957 (4,1443)	0	0	[.377,.453]
	Achievement Goals & Skills Efficacy	0.53	0.115	67.641 (24,1439)	88.185 (4,1439)	0	0	[.496,.564]

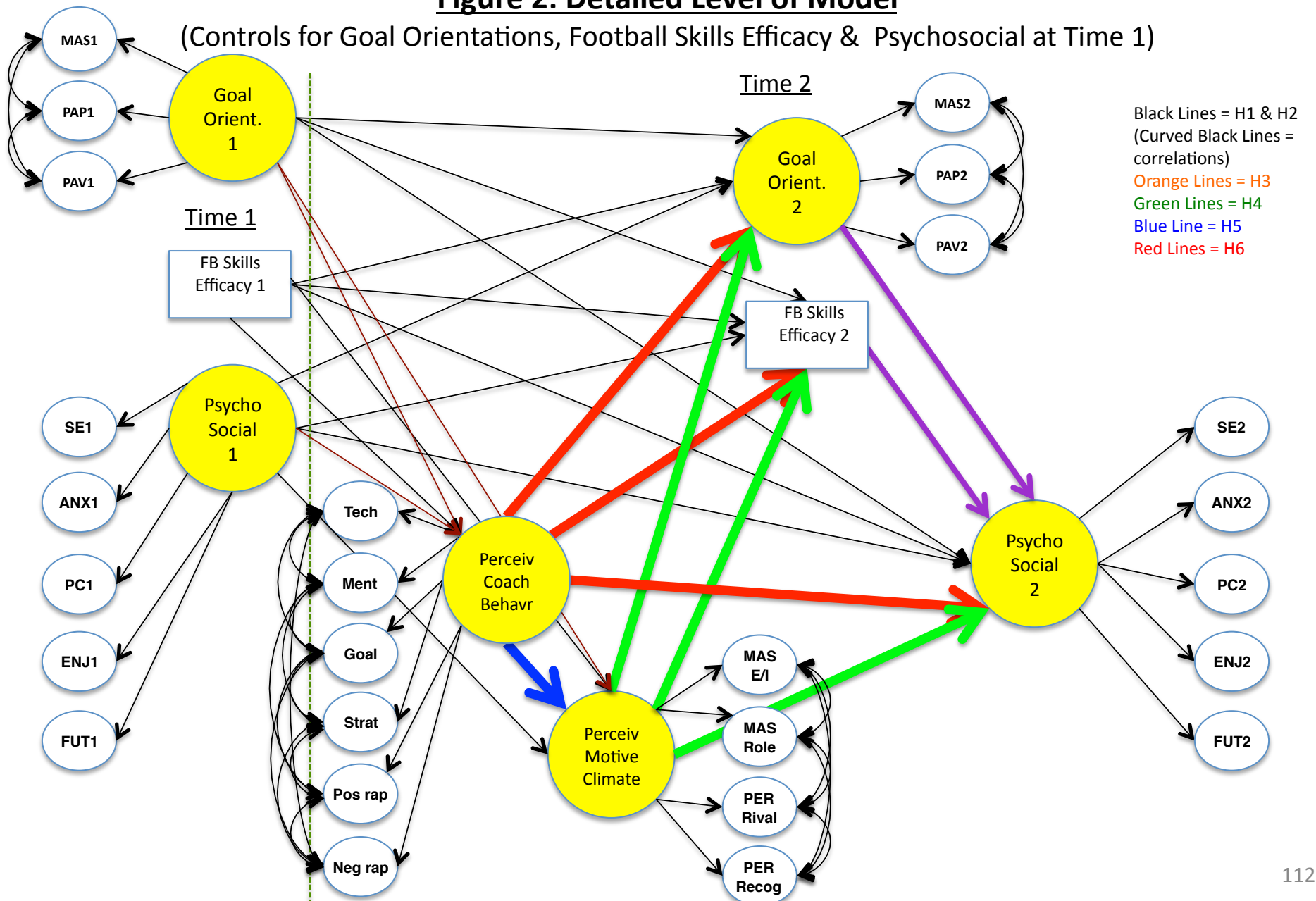
\*Control variables included: MAS1 = Mastery @ Time 1; PAP1 = Performance-Approach @ Time 1; PAV1 = Performance-Avoidance @ Time 1; FSE1 = Football Skills Efficacy @ Time 1; SE1 = Self-Esteem @ Time 1; ANX1 = Anxiety @ Time 1; PC-FB1 = Perceived Competence- Football @ Time 1; PC-GN1 = Perceived Competence- General @ Time 1; Enj1 = Enjoyment @ Time 1; and FutInt1 = Future Intentions to Play @ Time 1.

# Figure 1: General Conceptual Model Overview

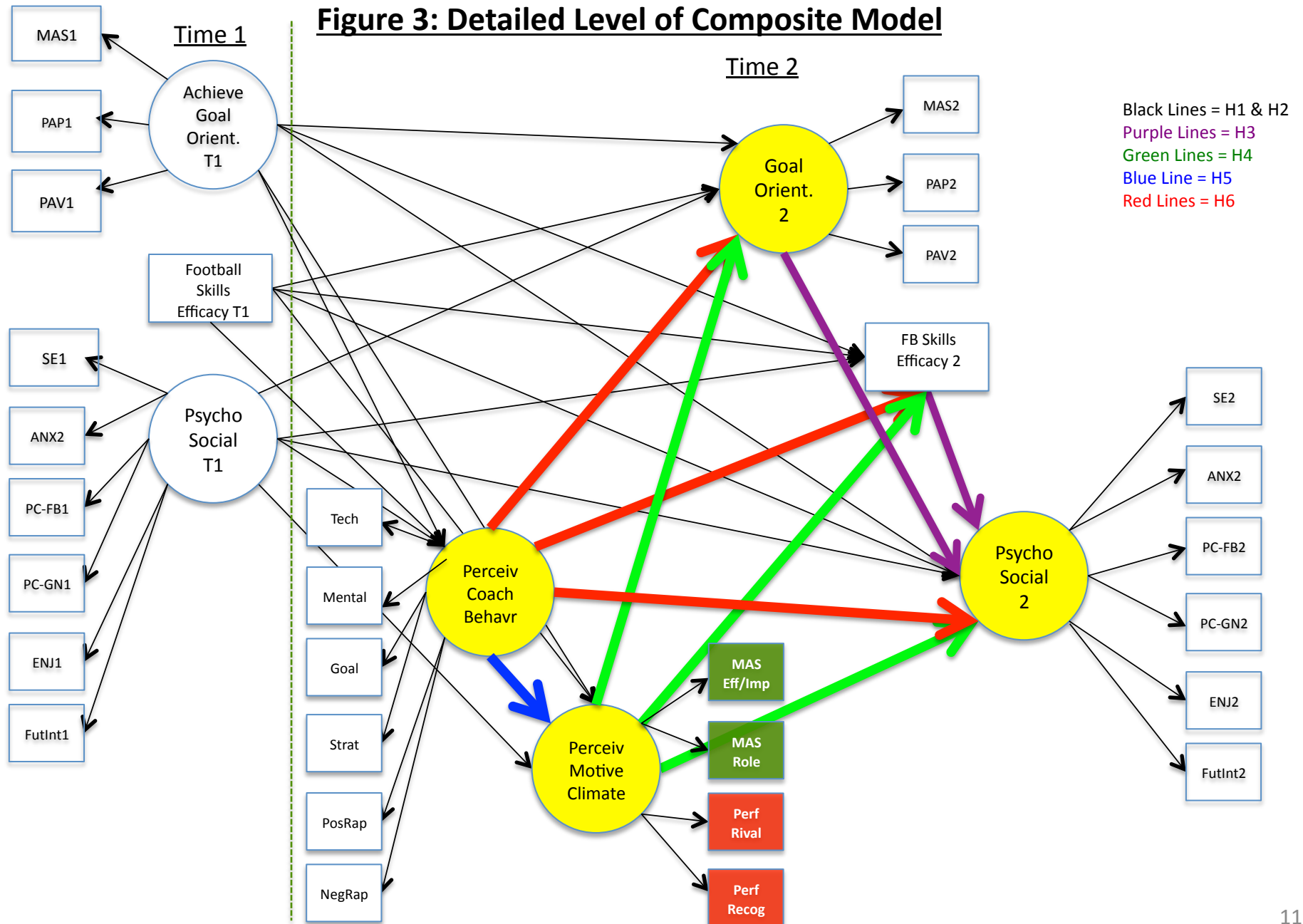
(Controls for Goal Orientations, Football Skills Efficacy & Psychosocial at Time 1)



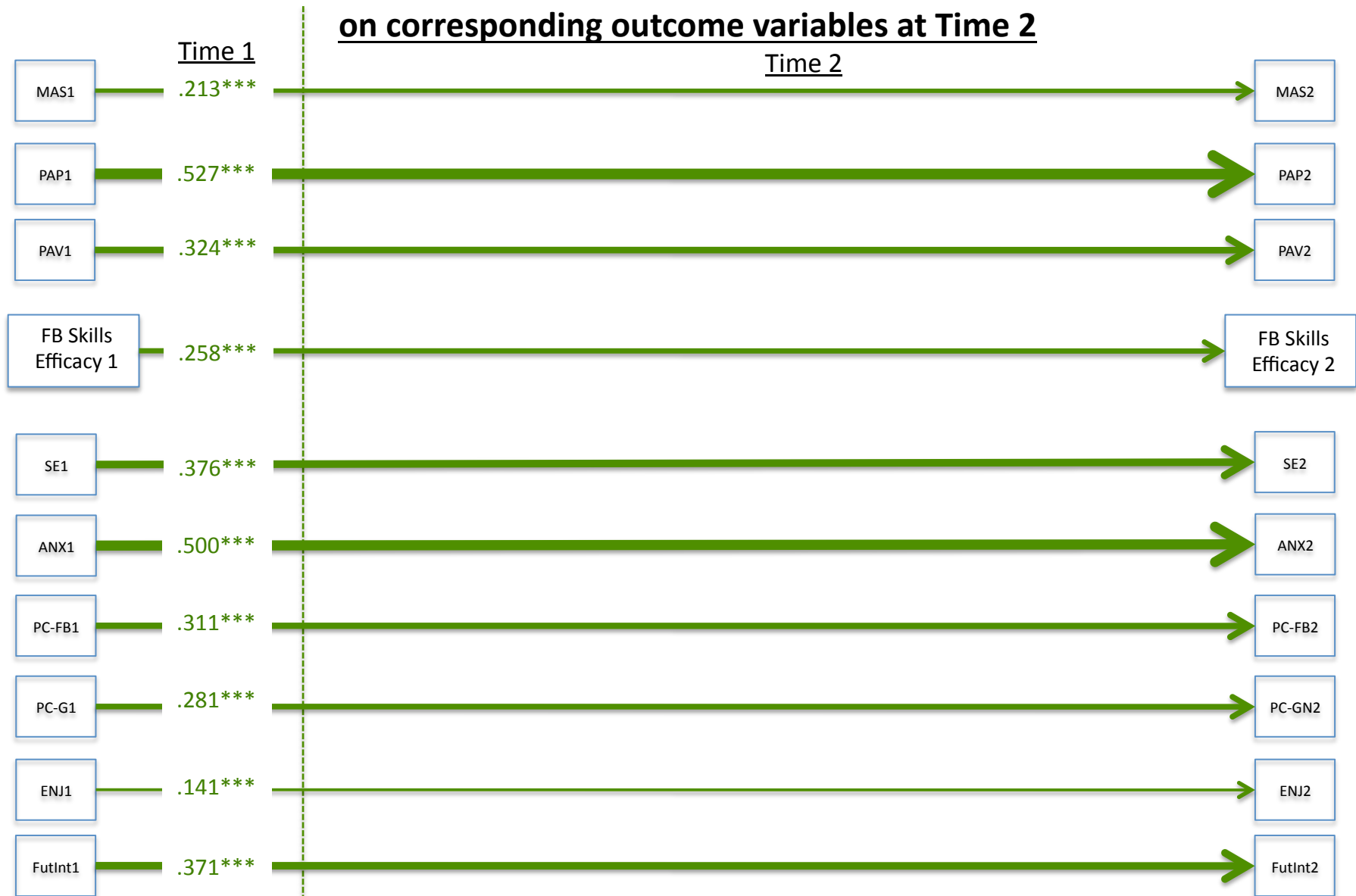
**Figure 2: Detailed Level of Model**



**Figure 3: Detailed Level of Composite Model**



**Figure 4: Hypothesis 1: Direct effects of exogenous variables at Time 1  
on corresponding outcome variables at Time 2**

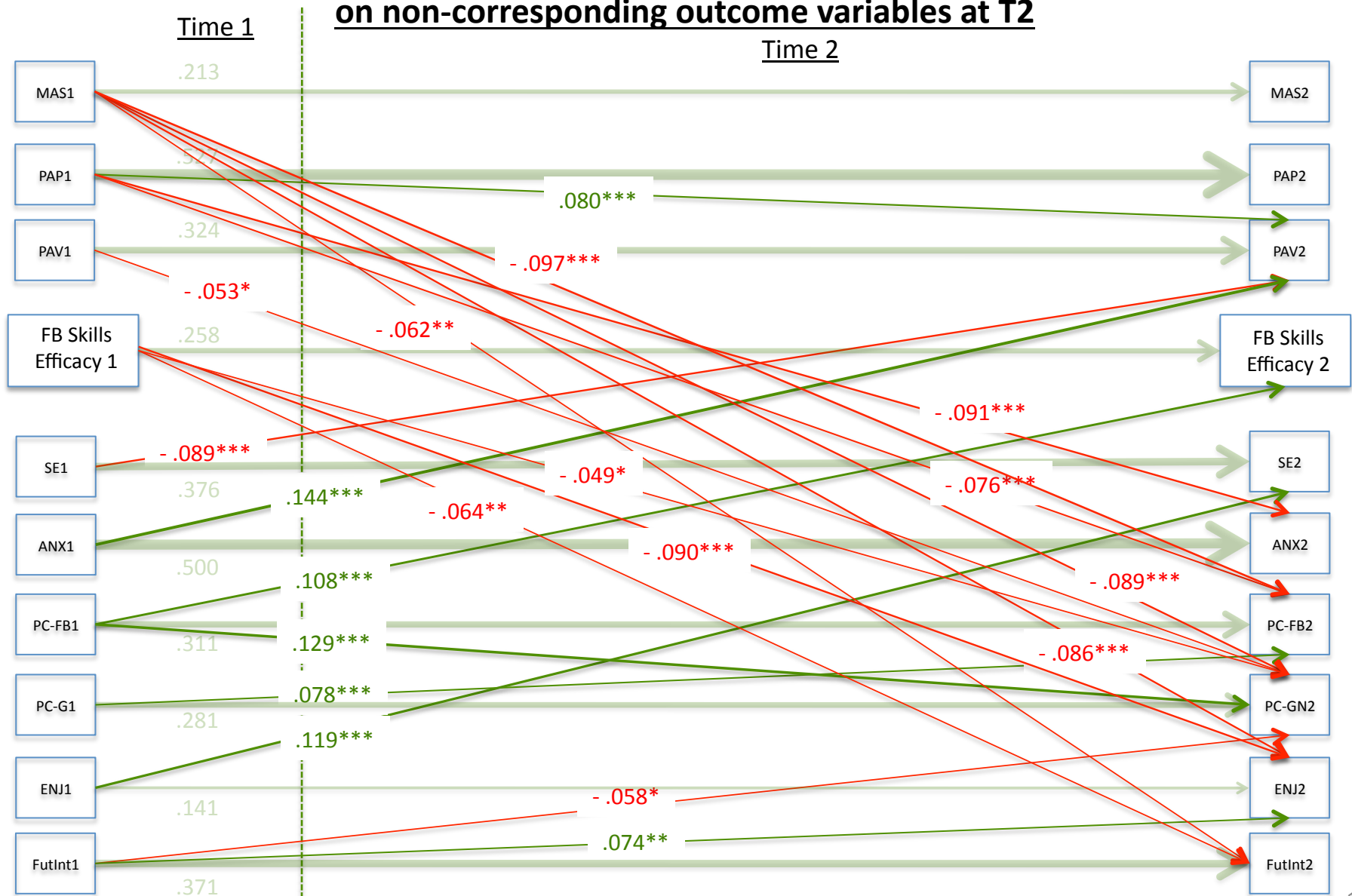


114

Statistical significance of path coefficients is indicated as follows: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE+1 = Self-Esteem Positive @ Time 1; SE+2 = Self-Esteem Positive @ Time 2; SE-1 = Self-Esteem Negative @ Time 1; SE-2 = Self-Esteem Negative @ Time 2; ANX+1 = Anxiety Positive @ Time 1; ANX +2 = Anxiety Positive @ Time 2; ANX-1 = Anxiety Negative @ Time 1; ANX-2 = Anxiety Negative @ Time 2; ANX01 = Anxiety Neutral @ Time 1; ANX02 = Anxiety Neutral @ Time 2; Comp1 = Perceived Competence @ Time 1; Comp2 = Perceived Competence @ Time 2; Enjoy1 = Enjoyment @ Time 1; Enjoy 2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt 2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Ment1 = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

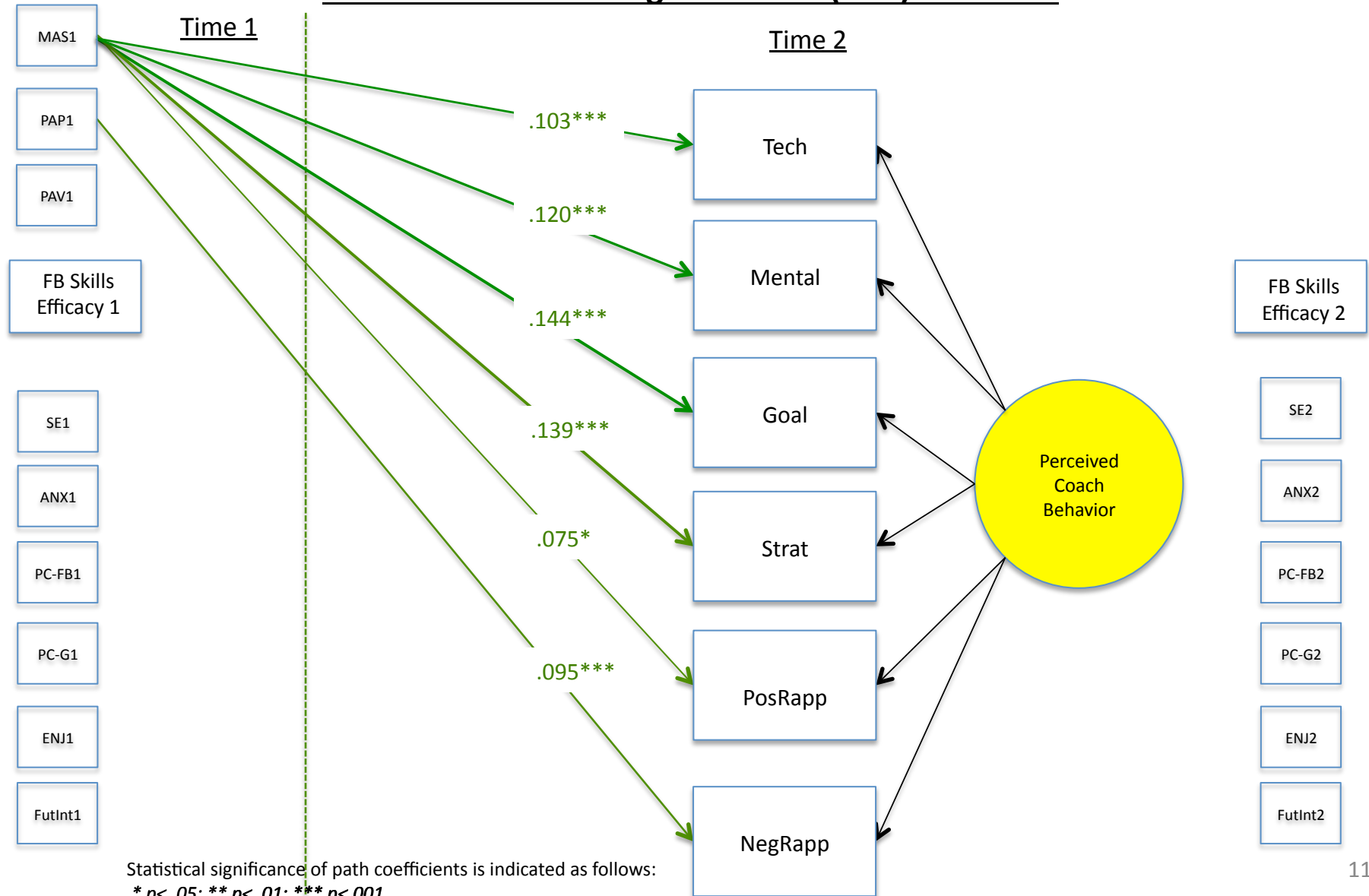
**on non-corresponding outcome variables at T2**



Statistical significance of path coefficients is indicated as follows: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

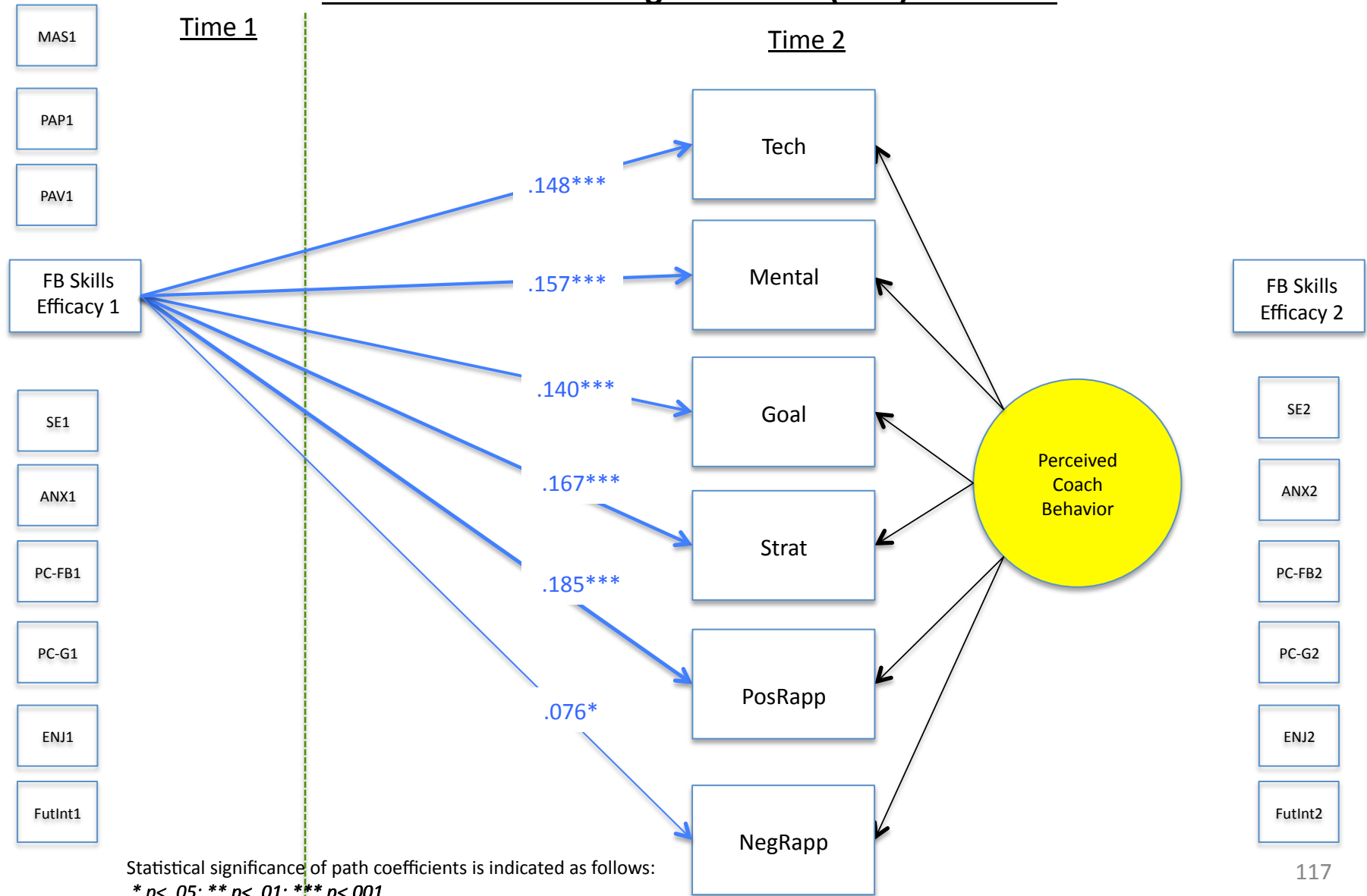
(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE+1 = Self-Esteem Positive @ Time 1; SE+2 = Self-Esteem Positive @ Time 2; SE-1 = Self-Esteem Negative @ Time 1; SE-2 = Self-Esteem Negative @ Time 2; ANX+1 = Anxiety Positive @ Time 1; ANX+2 = Anxiety Positive @ Time 2; ANX-1 = Anxiety Negative @ Time 1; ANX-2 = Anxiety Negative @ Time 2; ANX01 = Anxiety Neutral @ Time 1; ANX02 = Anxiety Neutral @ Time 2; Comp1 = Perceived Competence @ Time 1; Comp2 = Perceived Competence @ Time 2; Enjoy1 = Enjoyment @ Time 1; Enjoy 2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt 2 = Future Intentions to Play @ Time 2

**Figure 6: Hypothesis 2: Direct effects of exogenous variables at Time 1  
on Perceived Coaching Behaviors (PCB) at Time 2**



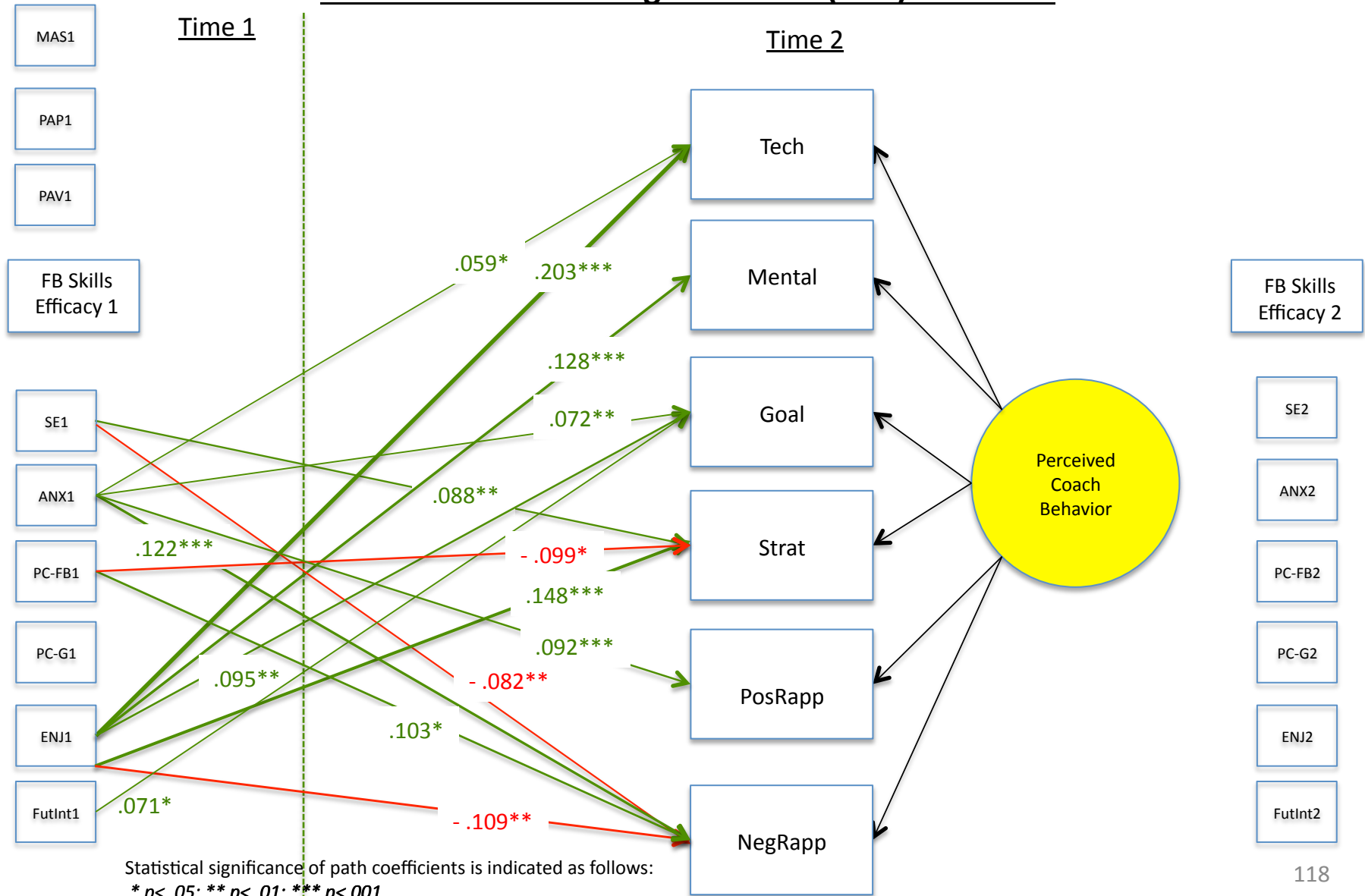
(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; ENJ1 = Enjoyment @ Time 1; ENJ2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt 2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 7: Hypothesis 2: Direct effects of exogenous variables at Time 1  
on Perceived Coaching Behaviors (PCB) at Time 2**



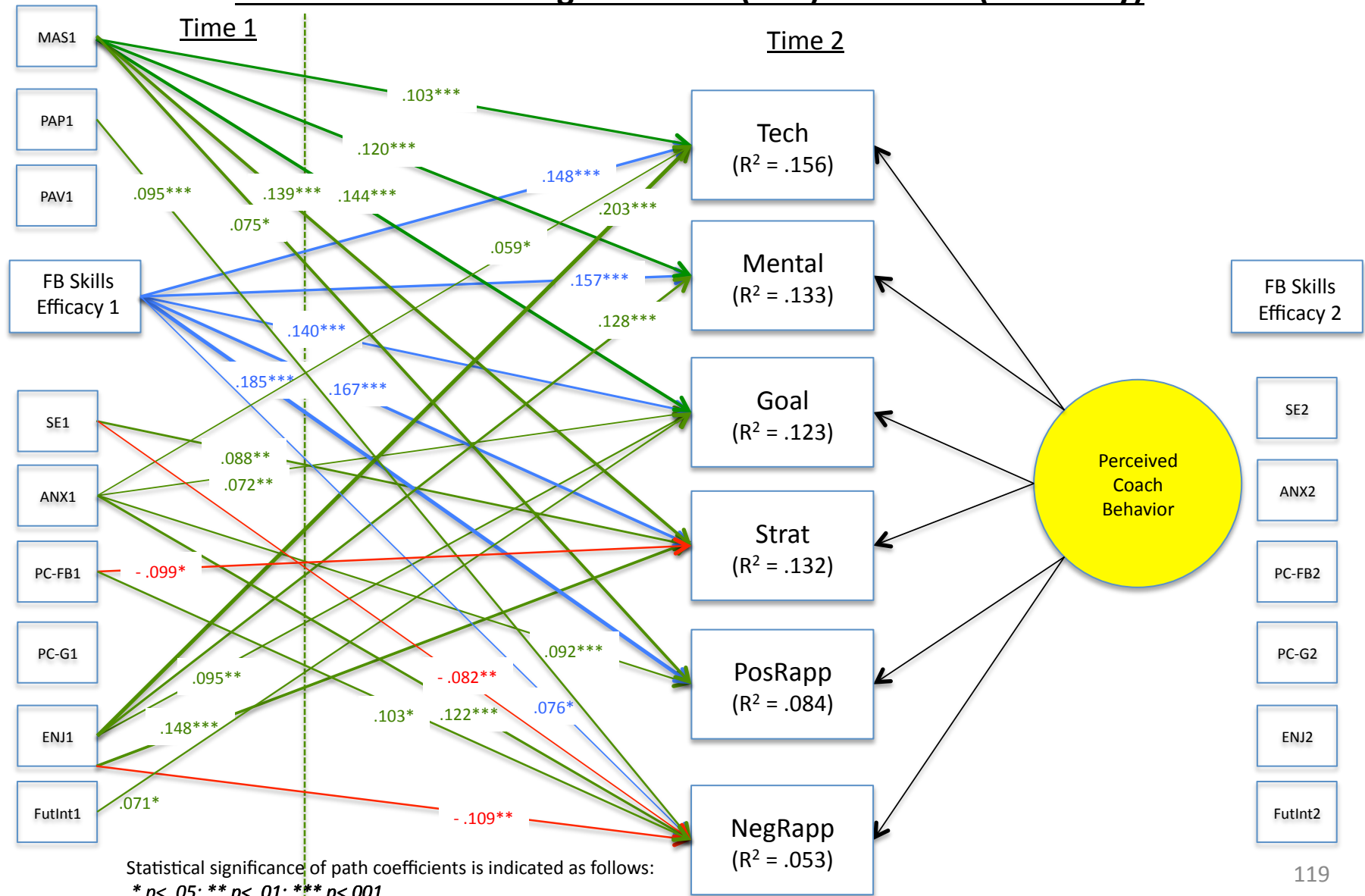
(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt 2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 8: Hypothesis 2: Direct effects of exogenous variables at Time 1  
on Perceived Coaching Behaviors (PCB) at Time 2**



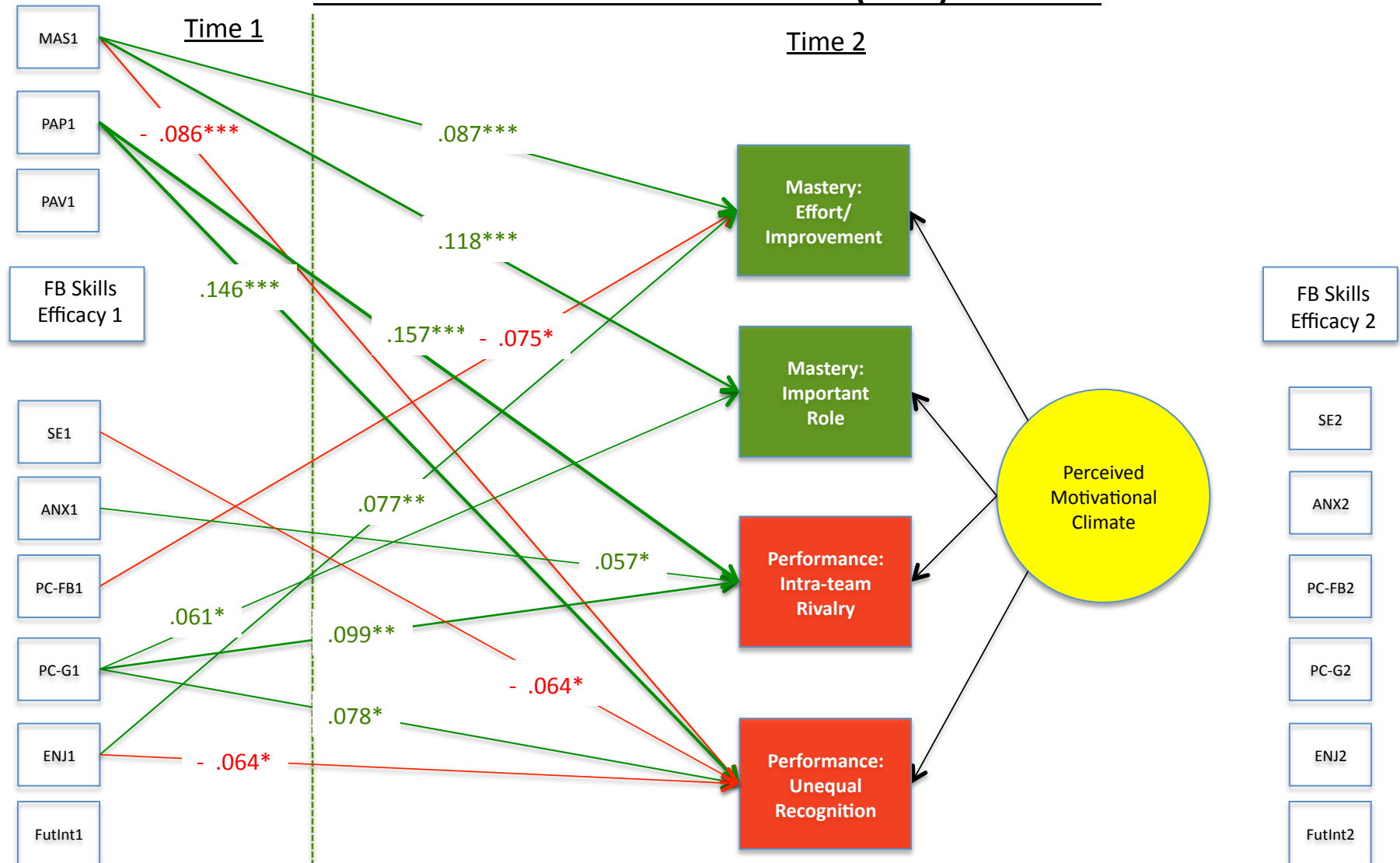
(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 9: Hypothesis 2: Direct effects of exogenous variables at Time 1 on Perceived Coaching Behaviors (PCB) at Time 2 (Summary)**



(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; ENJ1 = Enjoyment @ Time 1; ENJ2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 10: Hypothesis 2: Direct effects of exogenous variables at Time 1  
on Perceived Motivational Climate (PMC) at Time 2**



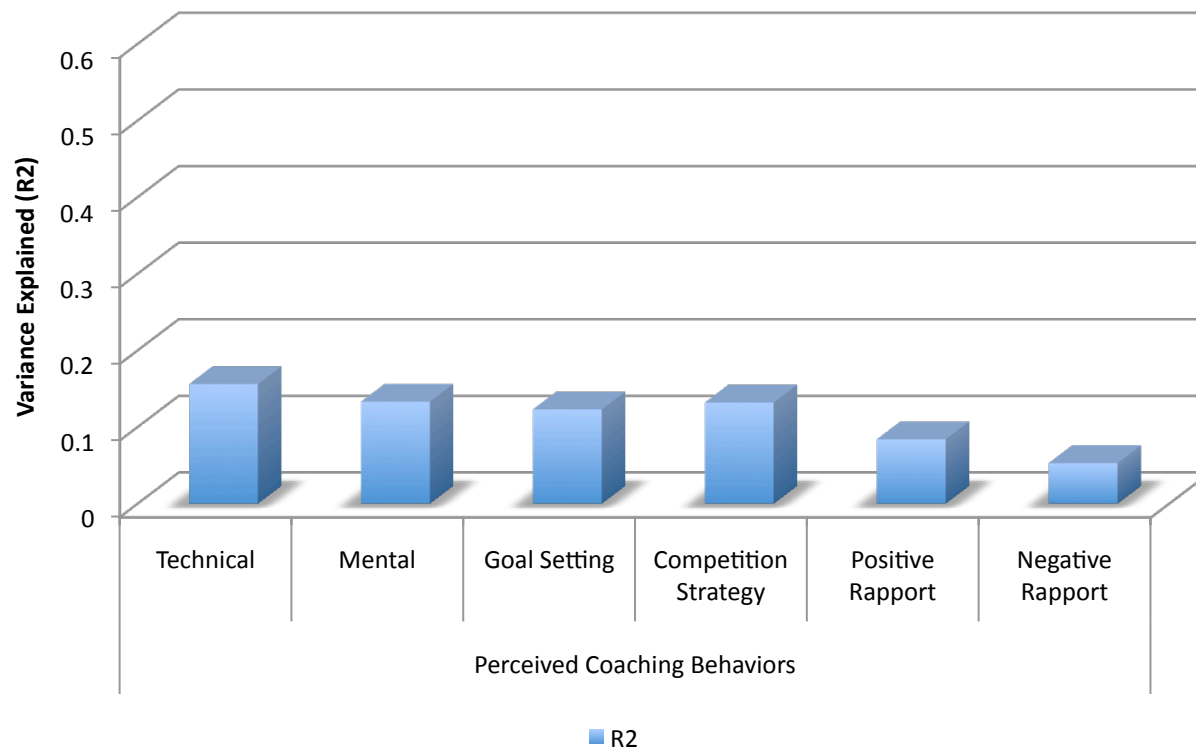
Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

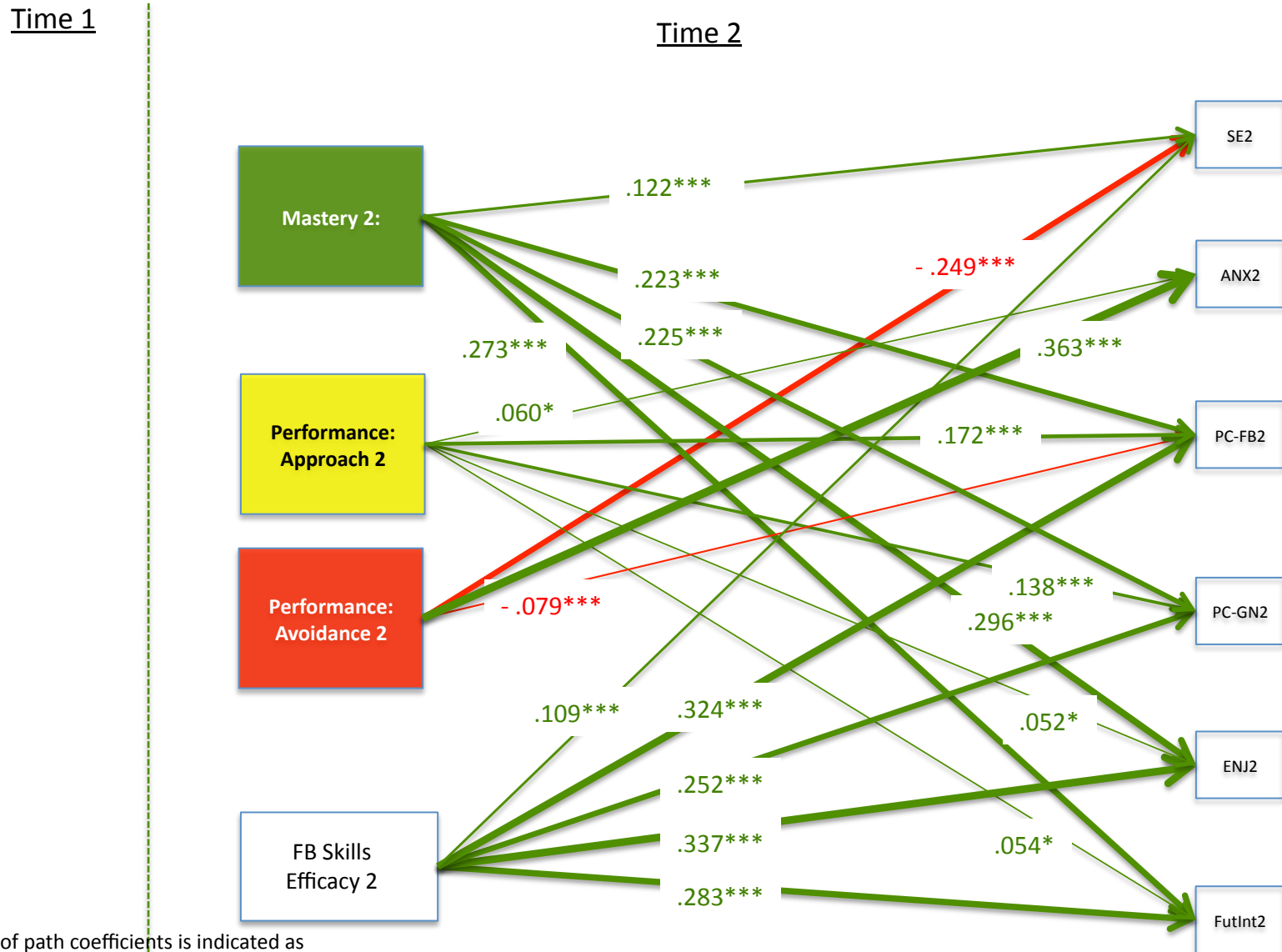
(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 11: Hypothesis 2: Direct effects of exogenous variables at Time 1 on Perceived Coaching Behaviors (PCB) at Time 2**

- 5%-15% of the variance in the Perceived Coaching Behaviors (PCBs) components is explained by the predictor variables.
  - All adjusted- $R^2$  are significant:,  $p < .001$



**Figure 12: Hypothesis 3: Direct effects of Achievement Goal Orientations and Football Skills Efficacy on Psychosocial Outcome Variables at Time 2**

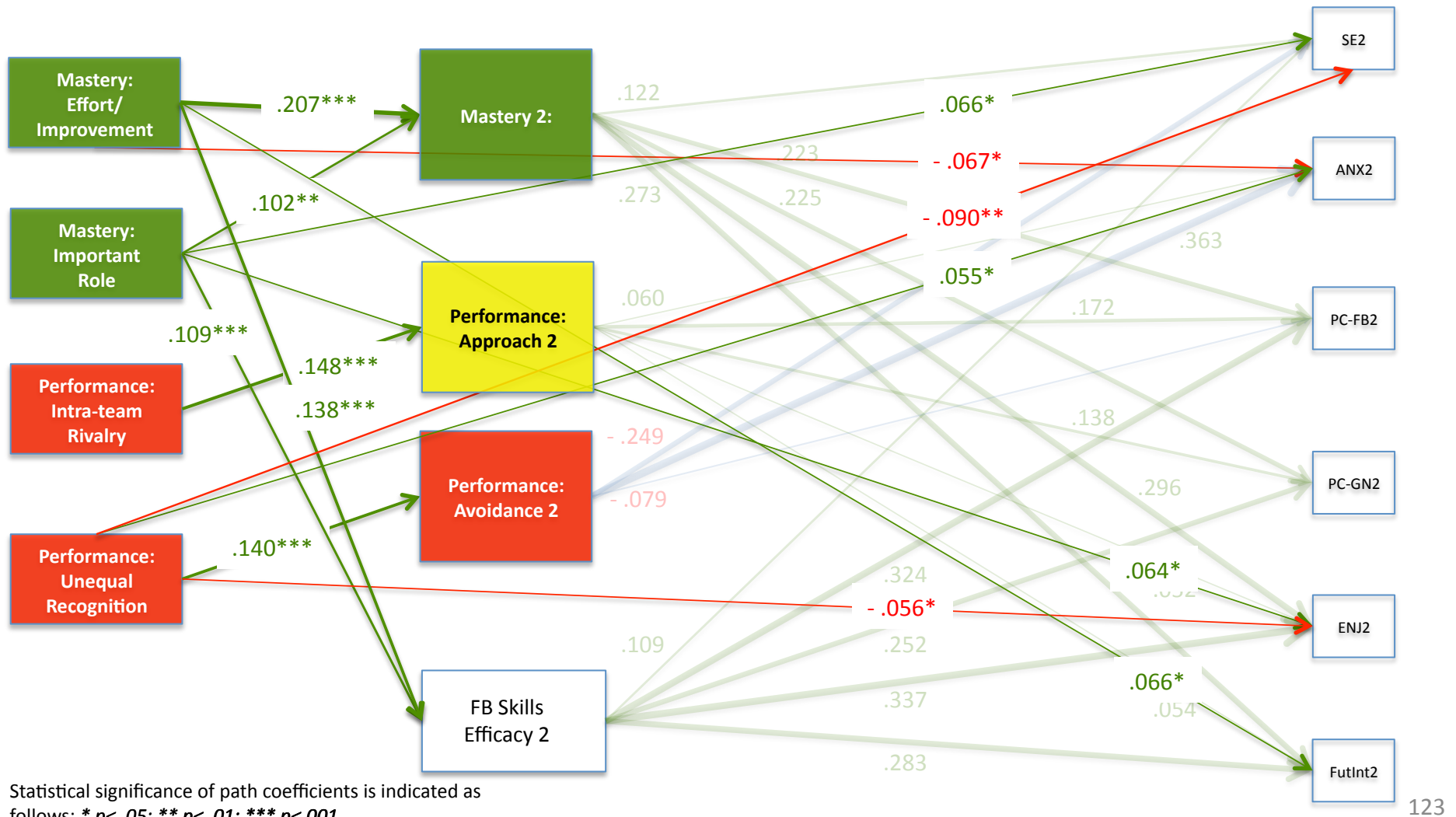


Statistical significance of path coefficients is indicated as follows: \*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt 2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

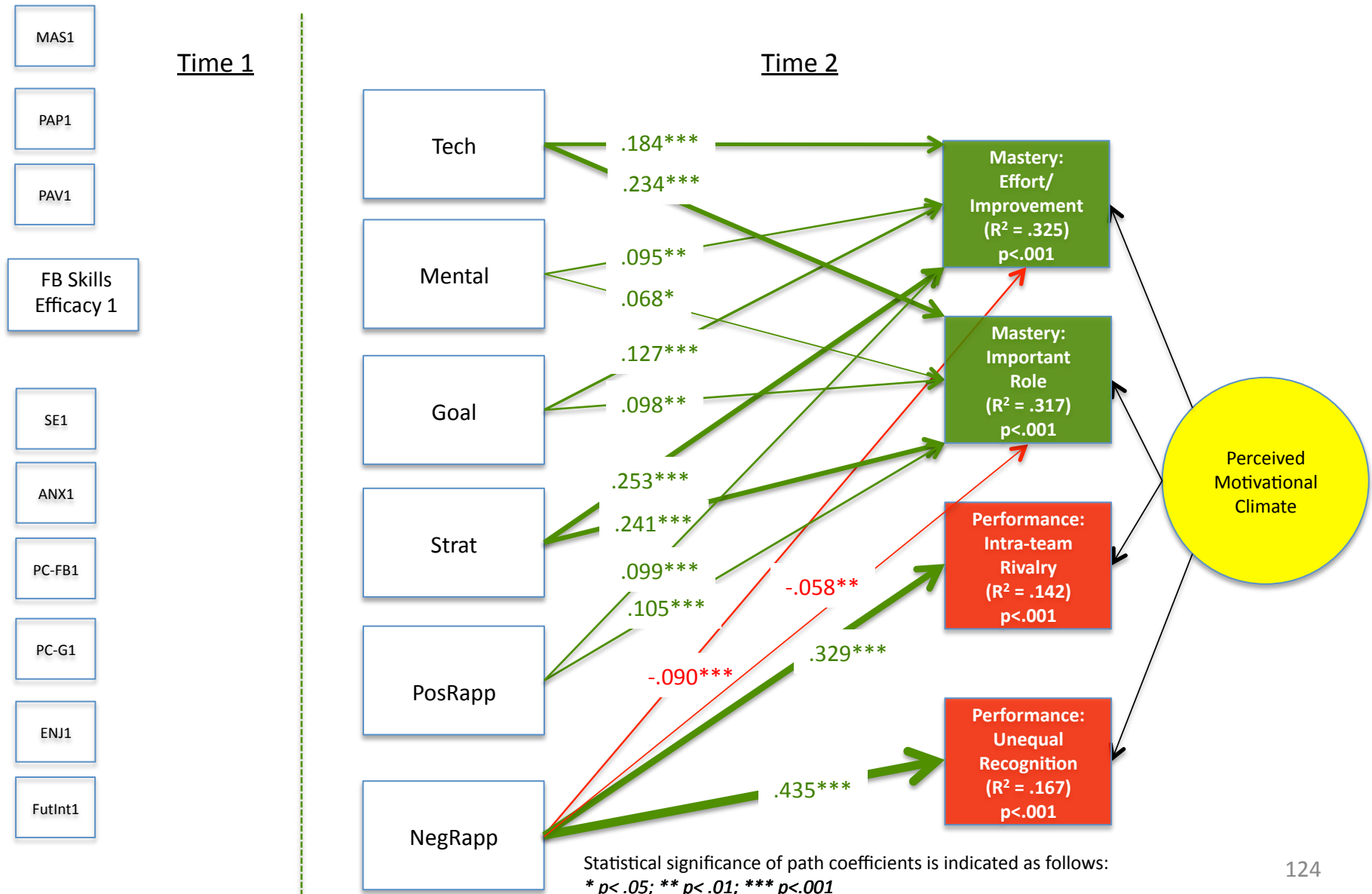
**Figure 13: Hypothesis 4: Direct and Indirect effects of Perceived Motivational Climate on Psychosocial Outcome Variables at Time 2**

Time 2



(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence- General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Ment1 = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

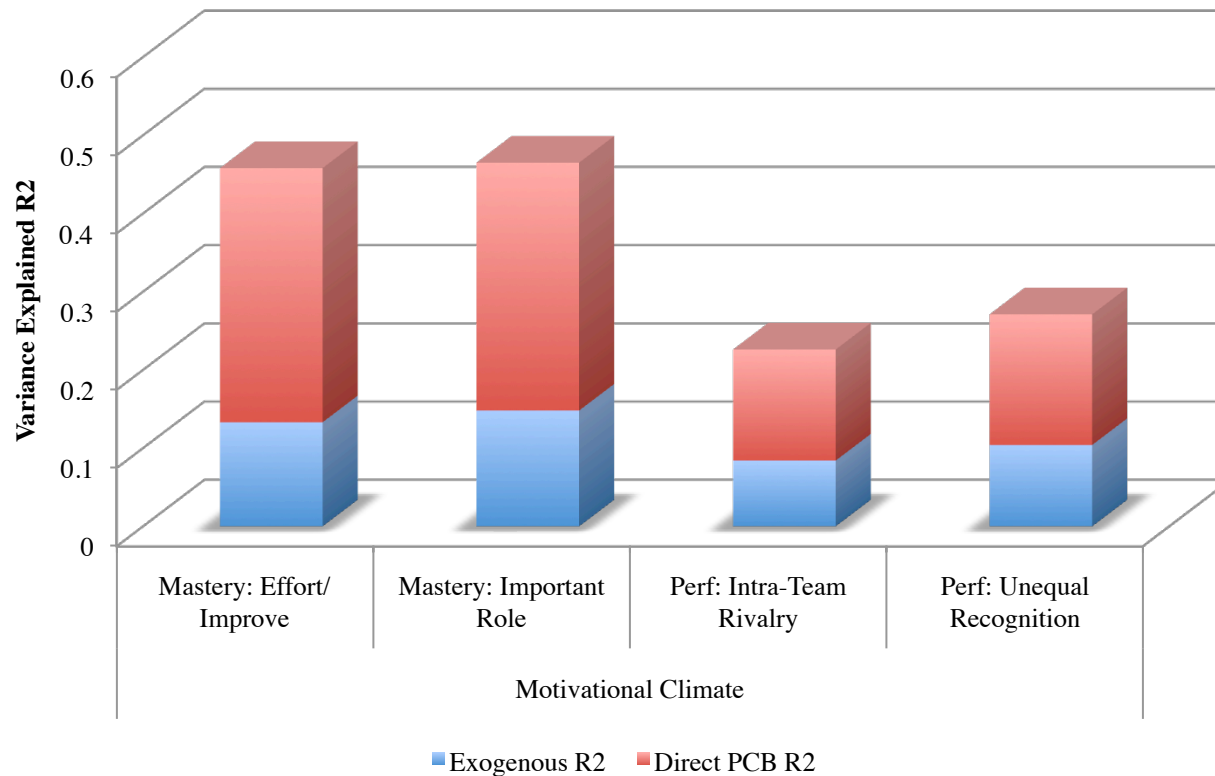
**Figure 14: Hypothesis 5: Direct Effects of Perceived Coaching Behaviors on Perceived Motivational Climate – Test of Achievement Goal Theory**



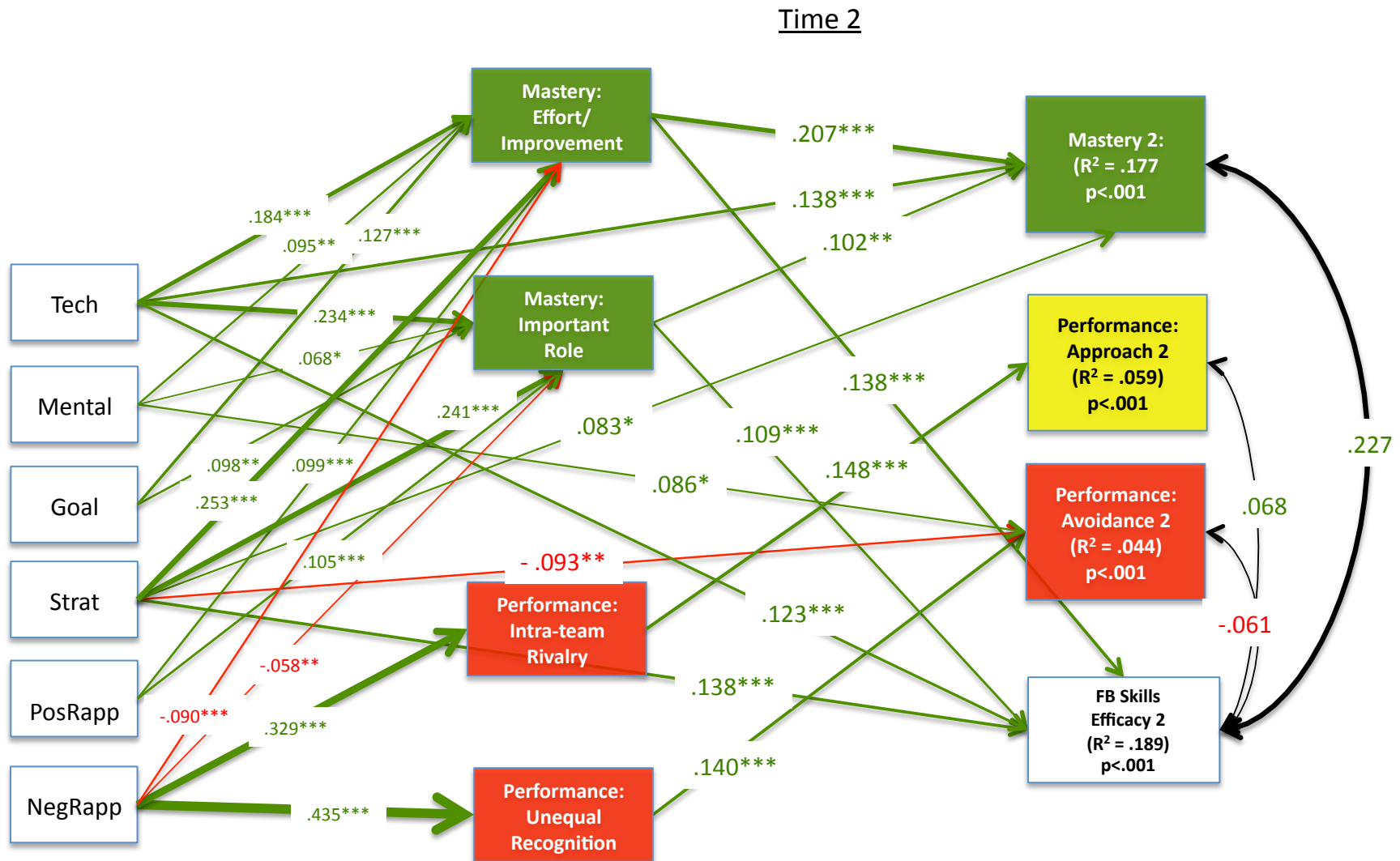
(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

## **Figure 15: Hypothesis 5: Direct Effects of Perceived Coaching Behaviors on Perceived Motivational Climate – Test of Achievement Goal Theory**

- Variance explained in the Perceived Motivational Climate (PMC) components
  - All  $R^2$  are significant ( $p < .001$ )
    - (Note: Red Bars = Perceived Coaching Behaviors, after controlling for effects of predictor variables at Time 1)



**Figure 16: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on Achievement Goal Orientations (AGO2) and Football Skills Efficacy (FSE2) at Time 2**

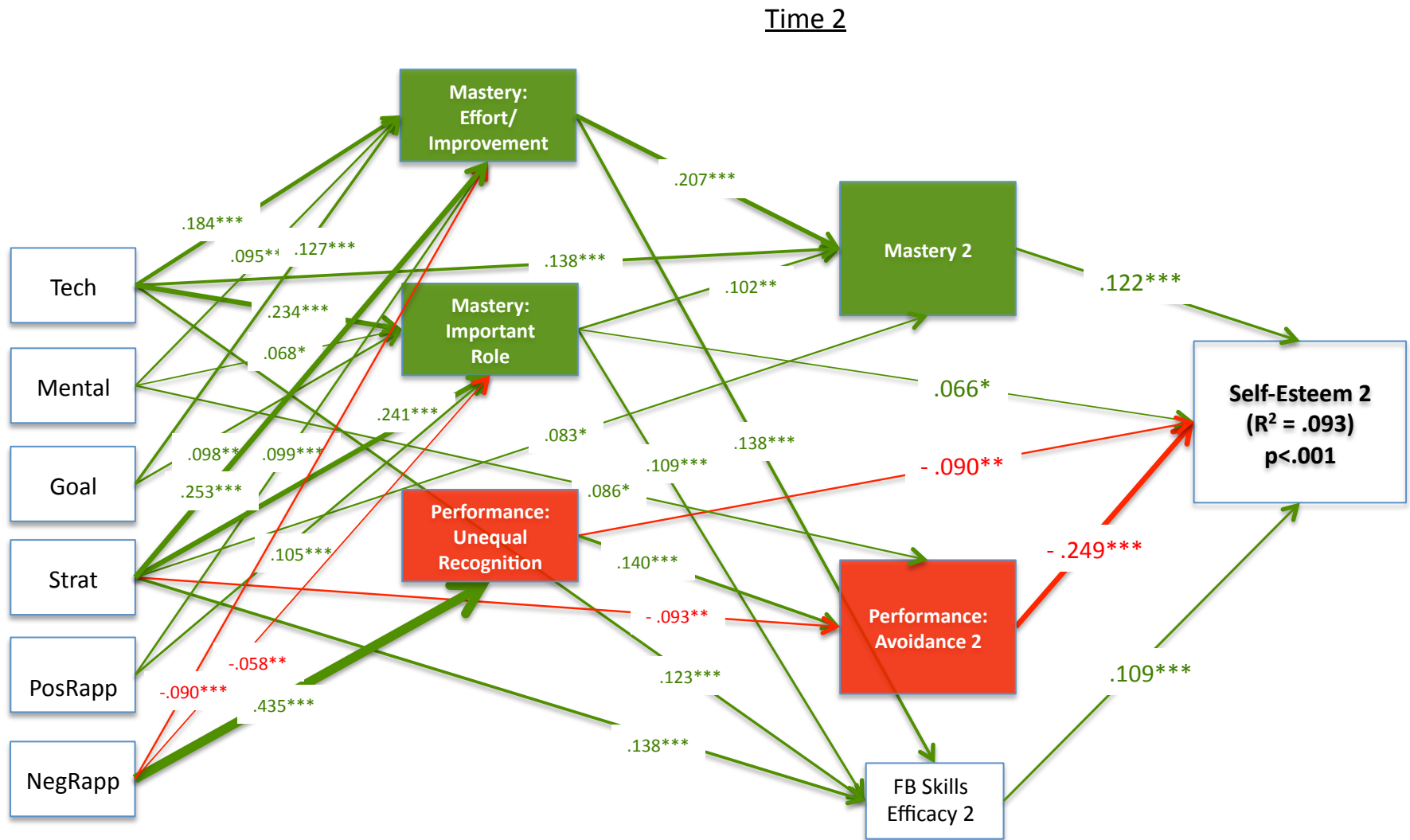


Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 17: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on psychosocial outcomes at Time 2: Self-Esteem**

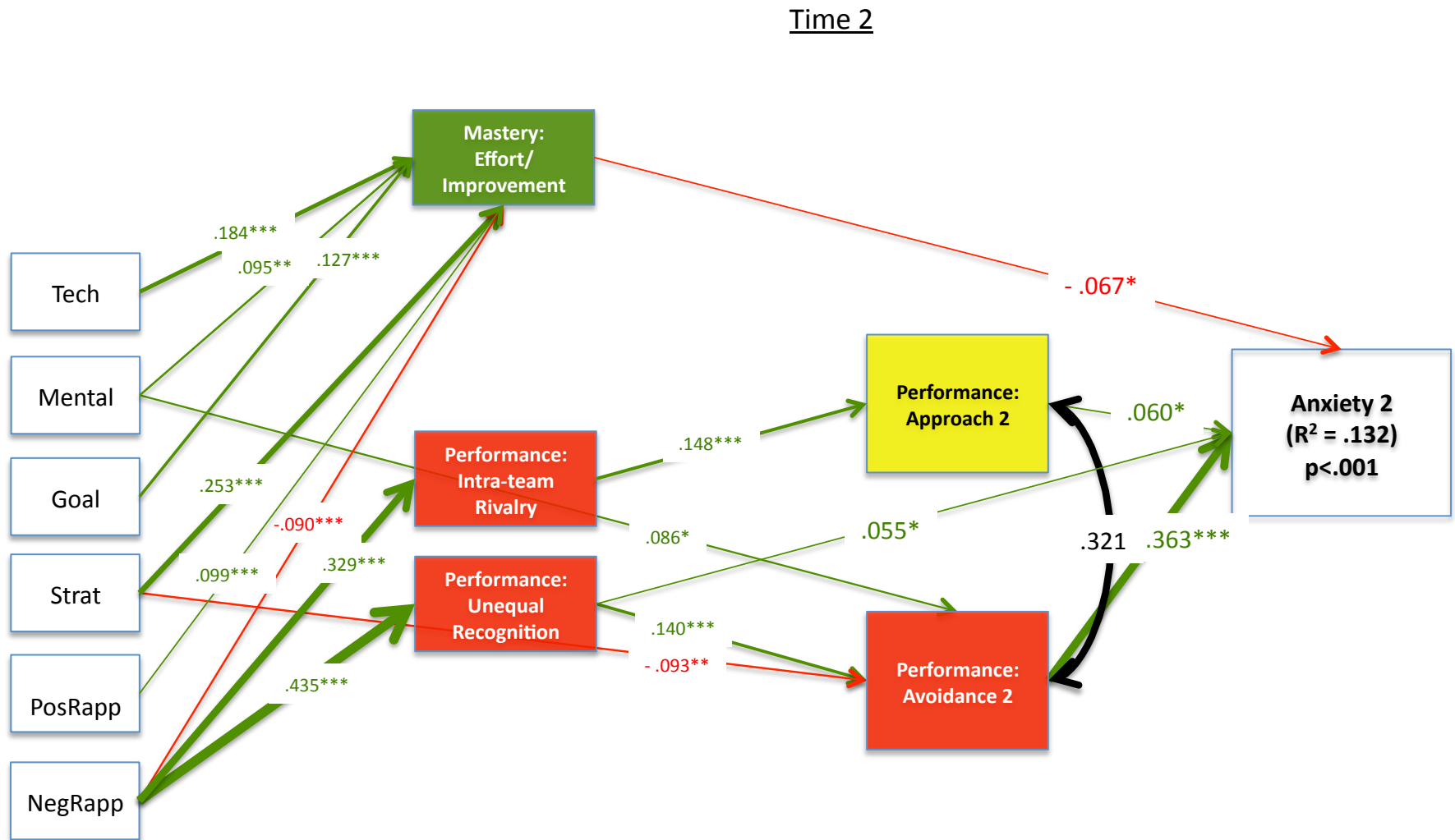


Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 18: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on psychosocial outcomes at Time 2: Anxiety**

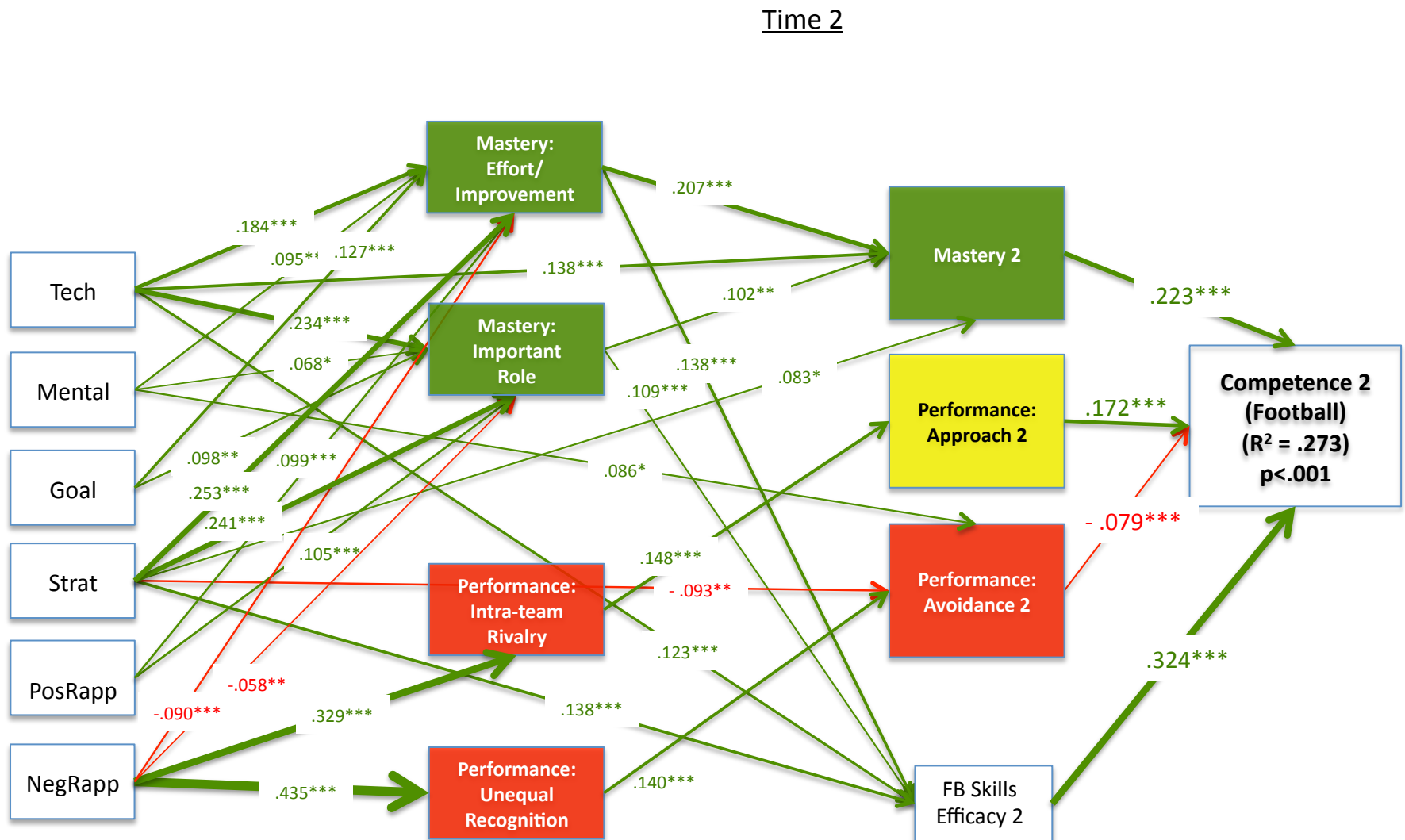


Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 19: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on psychosocial outcomes at Time 2: Competence (Football)**

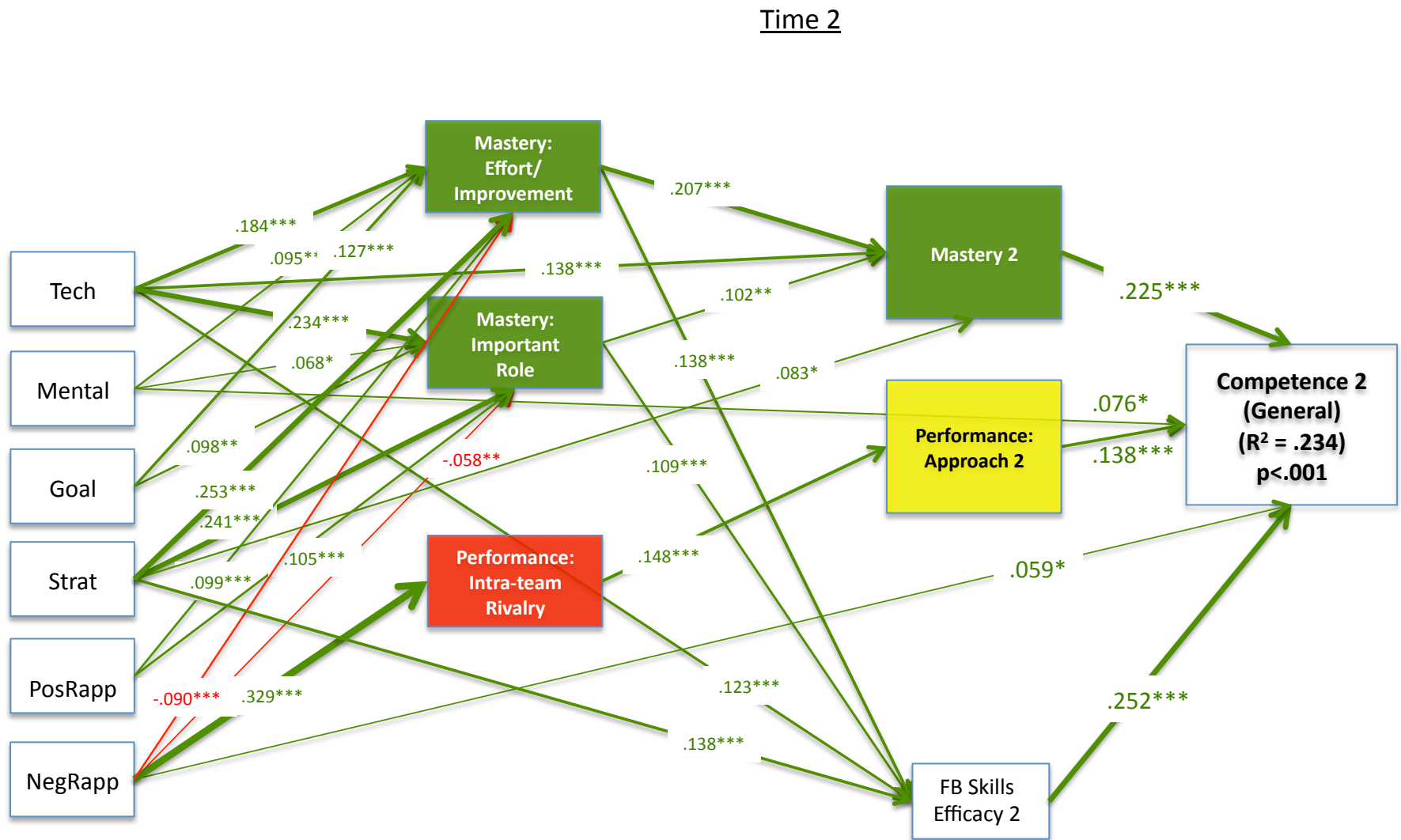


Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 20: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on psychosocial outcomes at Time 2: Competence (General)**

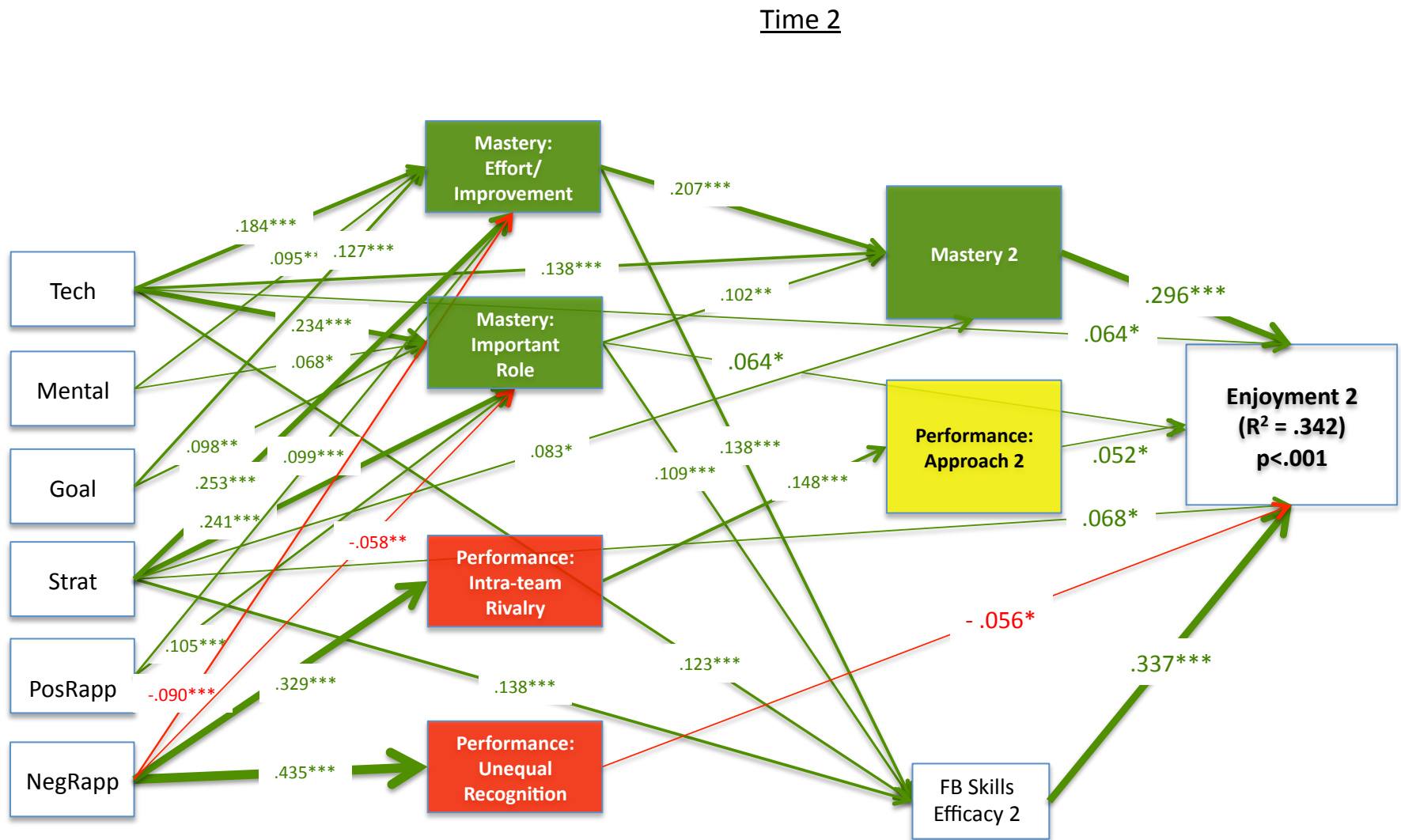


Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 21: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on psychosocial outcomes at Time 2: Enjoyment**

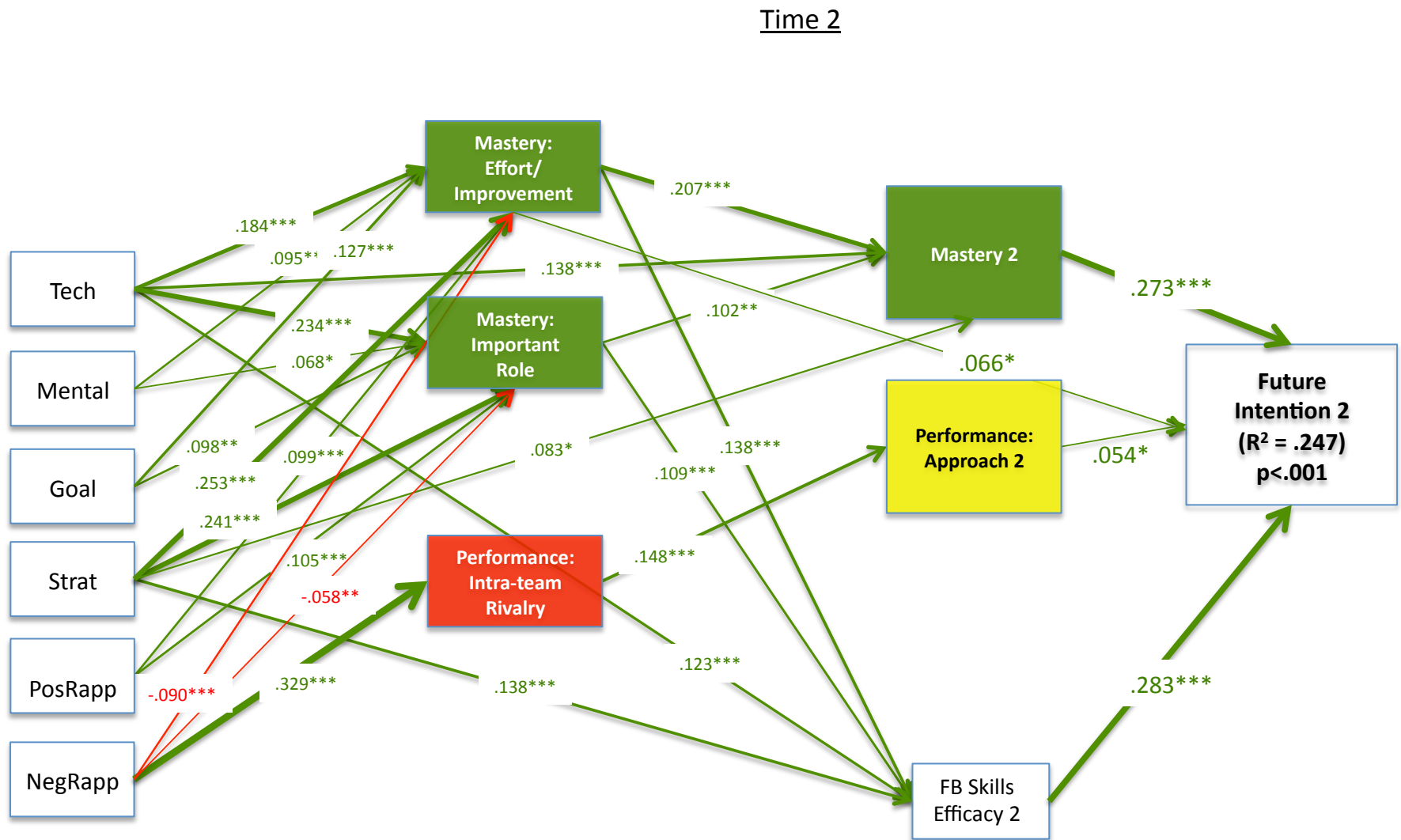


Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

**Figure 22: Hypothesis 6: Direct and Indirect Effects Effects of Perceived Coaching Behaviors on psychosocial outcomes at Time 2: Future Intention to Play Football**



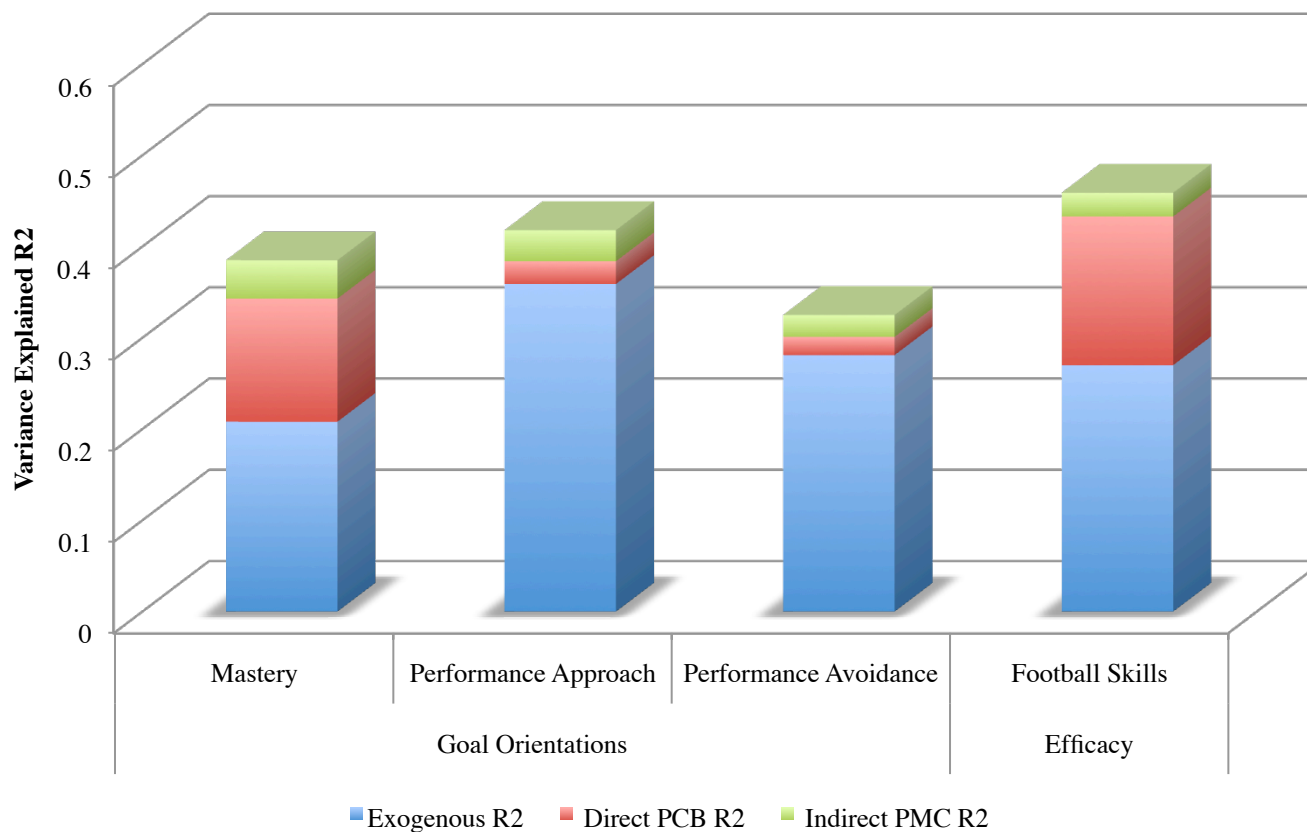
Statistical significance of path coefficients is indicated as follows:

\*  $p < .05$ ; \*\*  $p < .01$ ; \*\*\*  $p < .001$

(Note: MAS1 = Mastery @ Time 1; MAS2 = Mastery @ Time 2; PAP1 = Performance-Approach @ Time 1; PAP2 = Performance-Approach @ Time 2; PAV1 = Performance-Avoidance @ Time 1; PAV2 = Performance-Avoidance @ Time 2; SE1 = Self-Esteem @ Time 1; SE2 = Self-Esteem @ Time 2; ANX1 = Anxiety @ Time 1; ANX2 = Anxiety @ Time 2; PC-FB1 = Perceived Competence- Football @ Time 1; PC-FB2 = Perceived Competence- Football @ Time 2; PC-GN1 = Perceived Competence-General @ Time 1; PC-GN2 = Perceived Competence- General @ Time 2; Enj1 = Enjoyment @ Time 1; Enj2 = Enjoyment @ Time 2; FutInt1 = Future Intentions to Play @ Time 1; FutInt2 = Future Intentions to Play @ Time 2; Tech = Technical Feedback; Mentl = Mental Preparation; Goal = Goal Setting; Strat = Competition Strategies; Pos rapp = Positive Rapport; Neg rapp = Negative Rapport; MAS E/I = Mastery: Effort/Improvement; MAS Role = Mastery Important Role; PER Rival = Performance Intra-team Rivalry; PER Recog = Performance Unequal Recognition)

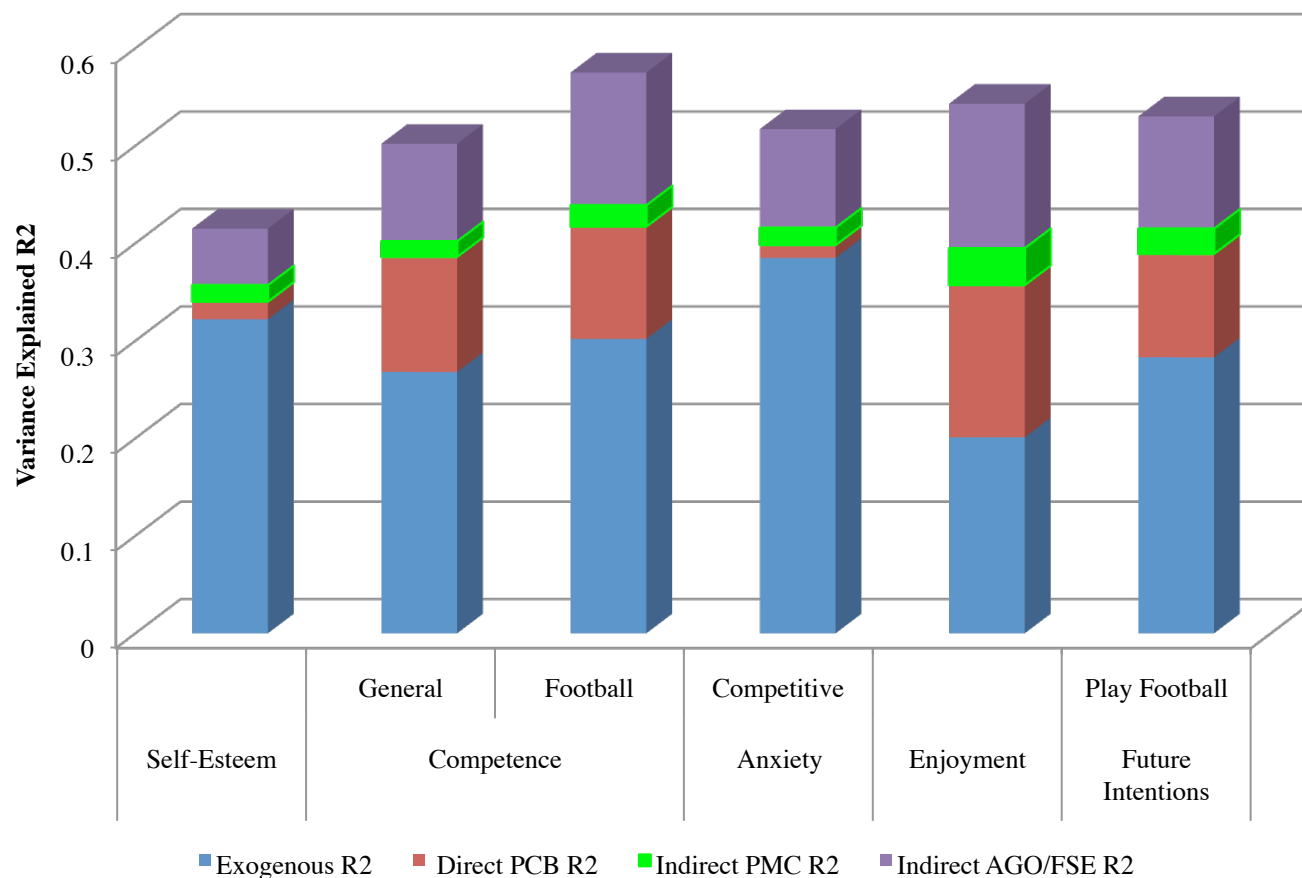
**Figure 23: Hypothesis 6: Direct and Indirect Effects of Perceived Coaching Behaviors  
On Achievement Goal Orientations and Football Skills Efficacy at Time 2**

- Variance explained in the Achievement Goal Orientations (AGOs) and Football Skills Efficacy (FSE) components
  - All  $R^2$  are significant ( $p < .001$ )
    - (Red Bars = Direct effects of PCBs, after controlling for effects of predictor variables at Time 1)
    - (Green Bars = Indirect effects of Perceived Motivational Climate, after controlling for effects of predictor variables at Time 1)



**Figure 24: Hypothesis 6: Direct and Indirect Effects of Perceived Coaching Behaviors  
On Psychosocial Outcome Variables at Time 2**

- Variance explained in the Psychosocial Outcome components
  - All  $R^2$  are significant ( $p < .001$ )
    - (Red Bars = Direct effects of PCBs, after controlling for effects of predictor variables at Time 1)
    - (Green Bars = Indirect effects Perceived Motivational Climate, after controlling for effects of predictor variables at Time 1)
    - (Purple Bars = Indirect effects Achievement Goal Orientations and Football Skills Efficacy, after controlling for effects of predictor variables at Time 1)



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