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**RELATIONSHIPS OF COACHING LEADERSHIP AND TEAM COHESION
ON TEAM PERFORMANCE IN TAIWANESE COLLEGE
BASKETBALL PROGRAMS**

DISSERTATION

**Presented in Partial Fulfillment of the Requirements for the Degree of
Doctor of Philosophy
Lynn University**

By

Heng-Chi Chih (Jacky)

Lynn University

September, 2006

Order Number: _____

**RELATIONSHIPS OF COACHING LEADERSHIP AND TEAM COHESION
ON TEAM PERFORMANCE IN TAIWANESE COLLEGE
BASKETBALL PROGRAMS**

Heng-Chi Chih, Ph.D.

Lynn University, 2006

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U.M.I.
300 N. Zeeb Road
Ann Arbor, MI 48106

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ABSTRACT

This research explored the relationships between perceived leadership behaviors of college basketball coaches, team cohesion, and team performance, according to conference levels, genders, and years of team participation in Taiwanese college basketball programs. The study employed stratified random sampling to select 640 subjects from male and female Taiwanese college conference A1, A2, and A3, participated in the University Basketball Association (UBA) of Taiwan in 2005. A total of 522 participants who responded were valid. This study employed a four-part questionnaire to measure the variables and consists of the *Socio-Demographic Profile*, Leadership Scale for Sports (LSS), Group Environment Questionnaire (GEQ), and team performance, which was used to obtain the winning percentage of the subject's team in the season competitions of University Basketball Association (UBA) of Taiwan in 2005.

Varied statistical techniques were utilized to perform the collected data analysis in the study, including descriptive statistics, ANOVA, Pearson r Correlation Coefficients, and multiple regression analysis. Findings indicated that the Taiwanese college basketball conference A1 players perceived greater Democratic Behavior and Positive Feedback from coaches than conference A2 and A3 players. Male Taiwanese college basketball players perceived greater Training and Instruction Behavior from coaches

while female Taiwanese college basketball players perceived more Autocratic and Social Support Behavior. The “under 1 year” Taiwanese college basketball players perceived more Social Support from their coaches than players in the “1 to under 2 year”, “2 to under 3 year” and “3 and above 3 year” categories.

These findings suggest that in order to enhance the team’s cohesion, the college basketball conference A1 and A2 players’ coaches should engage in a higher achievement goal to excite the aspirations. For Taiwanese college basketball conference A3 players, coaches should create an atmosphere where respect and concern are fostered through practice and play among team members. Coach’s Autocratic Behavior (from coach’s leadership behaviors), Individual Attraction to Group-Task and Group Integration-Task (from team cohesion) are significant predictors of team performance. The limitations and future research recommendations are also included in this study.

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CHAPTER ONE

INTRODUCTION TO THE STUDY

Introduction and Background to the Problem

Basketball is one of the most popular sports among young people in Taiwan (Ho, 2001). This sport is required for both girls and boys in all physical education courses in junior and senior high schools and colleges. As a result, almost every school has either a basketball team or a basketball association. In addition, basketball league competition always has the highest participation rate of all team sports (Ho, 2001). Since 1987, Taiwanese basketball has followed the National Basketball Association (NBA) and National College Athletic Association (NCAA) tournaments to modify Taiwan's basketball tournament, and via television, attract more devotees to the sport. Despite a strong following, play in the University Basketball Association (UBA) of Taiwan is inferior to the High School Basketball League (HBL). This seems unusual when compared to the American culture of basketball, but may be explained by the fact that high school players work hard to secure admissions to college, while the college players appear to "rest on their laurels" rather than work to excel.

Basketball is a team sport with a high correlation between leadership and performance. Studies indicate a coach's leadership may affect an athlete or an entire team's performance. Therefore, coaching leadership is perhaps the most important factor that influences the team development, directly affecting the athletes' or team's performance that can lead them to success (Laios, Theodorakis & Gargalianos, 2003). Due to this dynamic, the researcher assumes that the coaching leadership program is one of the most important elements to success. Moreover, the researcher has experience as a

college basketball coach and referee in Taiwan. This experience provided many opportunities to encounter different coaching leadership styles and their impact on the team. From various college competitions, it has been observed that teams with talented players have not won competitions, while teams with limited talent have won. This phenomenon will be attributed to the problem of team cohesion. Also, it was observed that college basketball players of different socio-demographic factors perceived and reacted to coaching leadership, team cohesion and performance differently. This study attempts to explore these phenomena.

In any sport, the coach's leadership is the soul of the team's life (Ho, 2001). This leadership can make or break a team's development, cohesion, and performance. "Leadership" persists as a topic of interest for scholars, politicians, the industrial and commercial world, and the public. Barrow (1977) defined leadership as "the behavioral process of influencing individuals and groups toward set goals" (p. 232). Furthermore, leadership is characterized as the ability to effect people toward the fulfillment of goals; and has three important aspects to be identified: (a) influence, (b) people, and (c) goals (Yukl, 1989).

McGuire (1992) described the coach as the "definer, provider, [and] deliverer of sport experience for the athlete" (p. 12). Douge and Hastie (1993) used systematic observation to explore coaching behaviors. Their findings indicate that effective coaches (a) "frequently provide feedback and incorporate numerous prompts and hustles; (b) provide high levels of correction and reinstruction; (c) use high levels of questioning and clarifying; (d) are predominantly engaged in instruction and (e) manage the training environment to achieve considerable order" (pp. 15-16).

Chelladurai and Carron (1978) developed the Multidimensional Model of Leadership (MML) to decide if some leadership theories were applicable to the sporting setting. Additionally, Chelladurai and Saleh (1980) developed the Leadership Scale for Sports (LSS) to cope with some problems regarding leadership in the sport environment by measuring the Multidimensional Model of Leadership (Salminen & Liukkonen, 1994).

The model identifies five leadership dimensions:

1. Training and Instructional Behavior;
2. Democratic Behavior;
3. Autocratic Behavior;
4. Social Support Behavior; and
5. Rewarding Behavior (Chelladurai & Saleh, 1980).

There is a proverb often cited by coaches, “Unity is strength.” Phil Jackson, the former championship coach of the Chicago Bulls and Los Angeles Lakers, emphasized the importance of team cooperation saying, “What's going to make us win or lose is us playing as a team. We are not a one-man team or a two-man team, we're a twelve-man team” (as cited in Daniels, 1996, p. 38). Team cohesion is the essential element of team cooperation. Turman (2003) observed that the amount of team cohesion affects a team's success or performance, and if coaches are able to promote or create team cohesion, team performance may be dramatically enhanced.

Team cohesion is “a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of goals and objectives” (Carron 1982, p. 124). Festinger, Schachter, and Back (1950) defined cohesion as “the total field of forces which act on members to remain in the group” (p. 93).

Carron (1982) provided a Multidimensional Model of Group Cohesion. The conceptual cohesion model identified that leadership is a very important factor influencing group cohesion (Carron, 1982). Additionally, Carron, Widmeyer, and Brawley (1985) reviewed the conceptual model of team cohesion, composed of the athlete's group integration, individual attraction, and the group orientation, which included social cohesion and task cohesion, to develop the Group Environment Questionnaire (GEQ). The researchers used the GEQ to measure team cohesion.

Carron (1982) indicated that cohesion is that which achieves the team's objectives and goals such as team success and performance effectiveness. Westre and Weiss (1991) identified a positive relationship between coach's leadership behaviors and team cohesion. Further, the relationship between coach's leadership, team cohesion, and team performance is worthy of investigation at a time when in competitive sports, team cohesion is consistently one of the issues explored with interest. To enhance the team's performance, it is necessary to know how to promote and create group solidarity.

Purpose

The purpose of this research was to explore the relationships between the athlete's perception of coach's behaviors, team cohesion, and team performance, according to conference level, gender, and years of team participation in Taiwanese college basketball players. The study measured the above through selected Taiwanese college basketball players of different backgrounds (conference level, gender, and years of participating in this team) by employing a four-part questionnaire: Part 1: Socio-Demographic Profile; Part 2: Leadership Scale for Sports (LSS); Part 3: Group Environment Questionnaire (GEQ); and Part 4: Team Performance.

Results could improve coaching leadership for these teams. Specific purposes of this study were as follows:

1. To examine whether there are any differences in perceived coaching leadership among Taiwanese college basketball players of different socio-demographic characteristics;
2. To understand whether there are any differences in team cohesion between Taiwanese college basketball players of different socio-demographic characteristics;
3. To explore the relationship between coach's leadership behaviors and team cohesion; and
4. To investigate whether coaching leadership and team cohesion can effectively predict team performance.

Definitions of Terms

Based on the purpose of this research, the theoretical and operational definitions of key terms are identified below:

Autocratic behavior

Theoretical Definition

Autocratic behavior is defined as “the authority and independent decision making of the coach” (Chelladurai & Saleh, 1980).

Operational Definition

In this study, autocratic behavior relates to whether coaches emphasized their authority and made decisions by themselves, or if they allowed athletes to participate in decision-making or express their opinions on team issues. This was measured by five

items of the Autocratic Behavior dimension of the Leadership Scale for Sports instruments (Chelladurai & Saleh, 1980).

Coach's leadership behaviors

Theoretical Definition

The behavioral processes of coaching, according to his/her personal experience, traits and situational factors may affect players or team's goals. This behavior has been categorized into five dimensions: Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support and Positive Feedback (Chelladurai & Saleh, 1980).

Operational Definition

In this study, the coach's leadership behaviors was measured by utilizing five dimensions of the 40 items, using the Leadership Scale for Sports instrument (Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support and Positive Feedback) developed by Chelladurai & Saleh (1980).

Democratic Behavior

Theoretical Definition

Democratic behavior has been defined as that by which the "coach allows athletes to participate in important coaching decisions associated with group goals, practice methods, game tactics, and strategies" (Chelladurai & Saleh, 1980).

Operational Definition

In this study, democratic behavior referred to whether the coach permitted the athletes to participate in coaching decisions crucial to the team's goals, practice manners, tactics, and strategies. This was measured by nine items of the Democratic Behavior dimension of Leadership Scale for Sports instruments (Chelladurai & Saleh, 1980).

Group Integration-Social

Theoretical Definition

Group Integration-Social has been defined as “an individual team member’s perception of closeness and bonding regarding the team’s social activities” (Bahli & Büyükkurt, 2005, p. 99).

Operational Definition

In this study, Group Integration-Social regarded similar feelings of individual team members, which were analogous along with interpersonal relationships within the team, and for the group as a social unit. It was measured by four items of the Group Integration-Social dimension of the Group Environment Questionnaire instrument (Carron et al., 1985).

Group Integration-Task

Theoretical Definition

Group Integration-Task has been defined as “an individual team member's perception of the similarity and closeness within the team in accomplishing the task” (Bahli & Büyükkurt, 2005, p. 99).

Operational Definition

In this study, Group Integration-Task related to the feelings of individual team members, which were about the similitude, analogous, and interpersonal relationships within the team as a whole around the group’s task. It was measured by five items of the Individual Group Integration-Task dimension of the Group Environment Questionnaire instrument (Carron et al., 1985).

Individual Attraction to the Group-Task

Theoretical definition

Individual Attraction to Group-Task has been defined as “an individual team member's feeling about personal involvement in the group task” (Bahli & Büyükkurt, 2005, p. 99).

Operational definition

In this study, Individual Attraction to Group-Task referred to how each team member felt about his/her personal involvement, goals, purpose, and productivity. It was measured by four items of the Individual Attraction to the Group-Task dimension of Group Environment Questionnaire instrument (Carron et al., 1985).

Individual Attraction to the Group-Social

Theoretical definition

Individual Attraction to the Group-Social has defined as “an individual team member's feeling about personal involvement in the social interaction of the group” (Bahli & Büyükkurt, 2005, p. 99).

Operational definition

In this study, Individual Attraction to the Group-Social regarded the feelings of individual team members, which included his or her personal hope to be accepted, and the social interdependence within the group. It was measured by five items of the Individual Attraction to the Group-Social dimension of Group Environment Questionnaire instrument (Carron et al., 1985).

Positive Feedback

Theoretical Definition

Positive feedback behavior has been defined as “the coach's behavior of reinforcing athletes and recognizing and rewarding good performances” (Chelladurai & Saleh, 1980).

Operational Definition

In this study, positive feedback referred to whether a coach gave athletes positive feedback to reward and encourage them. It was measured by five items of the Social Support dimension of the Leadership Scale for Sports instruments (Chelladurai & Saleh, 1980).

Social Support

Theoretical Definition

Social Support behavior has been defined as “the coach's concern for the welfare of his/her athletes, creating a positive environment and interpersonal relationships with athletes” (Chelladurai & Saleh, 1980).

Operational Definition

In this study, Social Support behavior related to whether the coach was concerned about the athlete's welfare, needs, and his interpersonal relationships with the team. It was measured by eight items of the Social Support dimension of the Leadership Scale for Sports instruments (Chelladurai & Saleh, 1980).

Team cohesion

Theoretical Definition

Carron (1982) defined team cohesion as “a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of goals and objectives” (p. 124).

Operational Definition

In this study, team cohesion was measured by four dimensions of the 18 items of the Group Environment Questionnaire instrument (Individual Attraction to the Group-Task, Individual Attraction to the Group-Social, Group Integration-Task and Group Integration-Social) developed by Carron et al. (1985).

Team performance

Theoretical Definition

In team research, team performance has been described as a generalized framework that contains inputs, processes, and outcomes (Hackman, 1992).

Operational Definition

In this study, team performance was defined as a measure of the team’s winning percentage through participation in the 2005 University Basketball Association (UBA) of Taiwan.

Training and instructional behavior

Theoretical Definition

Training and instructional behavior has been defined as “the behavior of the coach that is directed toward improving the performance of athletes; these behaviors include

instructing athletes in the skills, techniques, and tactics of their sport, and organizing and coordinating activities” (Chelladurai & Saleh, 1980).

Operational Definition

In this study, training and instructional behavior was concerned with how a coach’s behavior is directed toward improving the performance of the athletes. It was measured by 13 items of training and instructional dimensions from the Leadership Scale for Sports instruments (Chelladurai & Saleh, 1980).

Independent and Dependent Variables

In this study, variables were based on the research questions and hypotheses. Research Questions #1 just described the analysis of data collection of all variables. Therefore, for Research Questions #1, there were no independent and dependent variables. Research Questions #2, #3, and #4 explored the relationships between the subjects’ socio-demographic characteristics (level, gender, and years of participating in the team) and the players’ perception of the coach’s leadership behaviors. For these questions, the independent variables were the college basketball players’ socio-demographic characteristics (level, gender, and years of participating in the team). The dependent variable was the players’ perception of the coach’s leadership behaviors.

Research Questions #5, #6, and #7 investigated the relationships between the subjects’ socio-demographic characteristics (level, gender and years of participating in the team) and team cohesion. For these questions, the independent variables were the college basketball players’ socio-demographic characteristics (level, gender, and years of participating in the team). The dependent variable was team cohesion.

Research Hypothesis #1 hypothesized that there was a significant relationship between the coach's leadership behaviors and team cohesion. The independent variable was the coach's leadership behaviors. The dependent variable was team cohesion.

Research Hypothesis #2 hypothesized that coaching leadership behaviors and team cohesion could effectively predict team performance. The independent variables were coaching leadership, and team cohesion. The dependent variable was team performance.

Justification

The study was significant because it could contribute to the athlete's understanding of the psychology concerning the relationship between coaching leadership and team cohesion. This research could equip Taiwanese basketball team coaches with types of coaching leadership behavior that could enhance their teams' cohesion, and benefit performance.

In Taiwan, there is little research if any, investigating relationships between coaches' leadership behaviors, team cohesion, and team performance. Existing research focuses on relationships between coach's leadership behaviors, team cohesion, and the athletes' satisfaction. Only rarely does research discuss the relationship between coaches' leadership behaviors, team cohesion, and team performance. Hence, the findings of the study may contribute to:

1. An understanding of the perception of Taiwanese college basketball players of different backgrounds (player's level, gender, and years of participating in this team) to the coach's different style of leadership behaviors;

2. Providing guidelines for college basketball coaches when they are training or instructing the college basketball players with different backgrounds; and
3. Guiding the college basketball coaches to modify their coaching leadership style.

The study was researchable due to posing scientific questions and having variables that could be measured by questionnaires. The study was feasible because it could be carried out within a reasonable time period and with minimal expenditure. The subjects were readily available since most Taiwanese college basketball teams were willing to be surveyed for scholarly research. Descriptive and inferential statistics could be derived from responses to the questions proposed to describe the relationships and differences between the variables. Finally, the appropriate ethical adequacy and the subjects' rights of the study were maintained and protected.

Delimitations and Scope

Scope of the Study

The scope of this study was Taiwanese college basketball players registered to participate in the 2005 University Basketball Association (UBA) of Taiwan. A four-part questionnaire was employed to collect data from the questionnaires randomly distributed. The collected data was used to identify the relationships among the subjects' socio-demographic characteristics, perceived coach's leadership behaviors, team cohesion, and team performance.

Delimitation of the Study

1. For research ethical reasons, the subjects of the study were 18 years or older. Subjects under 18 years were excluded from the survey or that questionnaire was regarded as invalid.
2. The sample of the study selected only 640 subjects from the college basketball players registered to participate in the 2005 University Basketball Association (UBA) of Taiwan.
3. In basketball, players' skills are crucial to team performance. Nevertheless, it is not easily measurable, so the study had to give up this factor. The study focused on the interrelationships between Taiwanese college basketball players and coach, player and player, and the effects on team performance.

Chapter I presented an introduction to the problem about coaching leadership, team cohesion, and team cohesion. The purpose of the study, definition of terms, description of independent and dependent variables, justification, and delimitation and scope were presented. Chapter II presents the review of literature, theoretical framework, research questions and hypotheses. Chapter III presents the methodology including research design, sampling plan, instrumentation, procedures, and methods of data analysis. Data analysis and results of the study are presented in Chapter IV. Chapter V presents the Discussion of findings including interpretations, practical implication, conclusions, limitations, and recommendations resulting from this study about coaching leadership, team cohesion, and team cohesion.

CHAPTER TWO
LITERATURE REVIEW, THEORETICAL FRAMEWORK,
RESEARCH QUESTIONS AND HYPOTHESES

Leadership Theories

Definitions of Leadership

Paul, Costley, Howell, and Dorfman (2002) indicated, “leadership is one of the most observed and least understood phenomena on earth” (p. 192). What is leadership? Leadership is different from management (Roof & Presswood, 2004); it is not a chain of command, nor a position in a ranking system. Leadership is a dynamic process (Winder, 2000) of influence between leader and followers (Schrujjer & Vansina, 2002). Bennis and Nanus (1985) indicated there are more than 350 different definitions of leadership, but it is difficult to find a single phrase to define it. The definitions of leadership have been roughly divided into a number of dimensions by different authors (Yousef, 1998).

Leadership can be viewed as a process; for example, Lussier (1990) defined leadership as “the process of influencing employees to work toward the achievement of objectives” (p. 6). Tannenbaum and Schmidt (1973) defined leadership as: “interpersonal influence, exercised in a situation, and directed, through the communication process, toward the attainment of a specified goal or goals” (p. 162). Outcalt, Faris, McMahon, Tahtakran, and Noll (2001) defined leadership as “an inherently relational process of working with others to accomplish a goal or to promote change” (p. 111). Greenberg and Baron (2000) defined leadership as “the process whereby one individual influences other group members toward the attainment of defined group or organizational goals” (p. 85).

Leadership can also be viewed as ability. For example, Robbins (1993) defined leadership as “the ability to influence a group toward the achievement of goals” (p. 275). Capezio and Morehouse (1997) defined leadership as “the ability to influence individuals or groups to think, feel, and take positive action to achieve goals” (p. 1). Foss (2001) defined leadership as “the ability to resolve coordination problems by influencing beliefs” (p. 357).

Further, leadership can also be viewed as a role. For example, Lassey and Sashkin (1983) defined leadership as “a role that leads to goal achievement, involves interaction and influence, and usually results in some form of changed structure, or behavior of groups, organizations or communities” (p. 12). Nirenberg (2001) defined leadership as “a form of influence and a type of role” (p. 5).

Historical Development of Leadership Theories

Behavioral scientists consistently aim at identifying traits, behaviors, and abilities of leadership, to note their effect on a group in trying to achieve its goals (Aronson, 2001). In 1984, Chemers studied leadership in the previous century. Chemers identified three major theories and their corresponding periods. Initially, from about 1910 to World War II, the major theory was the Trait theory (Great Man theory) which is one of the earliest approaches for investigating leadership and traits studied, included the leader’s personality, physical characteristics, and ability.

Behavioral theory emerged at the beginning of World War II and lasted until the late 1960’s, focusing on specific behaviors of leadership and exploring what leaders did. This theory indicated that leadership could be objectively observed, measured, and learned. Finally, from the late 1960s to present, the Situational theory (Polleys, 2002)

was prevalent. This theory assumed that leaders adapted their behavior to the demands, limitations, and chances presented by the situation (Burmeister, 2003).

Trait Theory

Trait theory originated from the Great Man theory, proposing that those personality traits, and characteristics that made an effective leader were innate rather than learned or acquired (Kayworth & Leidner, 2001/2002). Proponents of this theory were able to identify several personality traits or characteristics that were nearly universal among leaders than non-leaders (Cox, 1994). Stogdill (1948) reviewed 124 studies of Trait theory and found five personality traits that were common to successful leaders: (a) intelligence; (b) achievement motivation; (c) responsibility; (d) participation; and (e) status. Trait theory was widely studied from the 1900s to the late 1940s, and led to refinements.

This theory was significant due to addressing essential issues, and was useful in explaining, predicting, and discriminating between those with leadership qualities and those without. The thesis was, however, not supported by empirical studies in the domain of sports. These studies did not find any consistent relationship between personality traits and successful leadership (Mello, 2003). Therefore, support for this theory declined after World War II, and Trait theory use fell by 1972 (Cox, 1994). Furthermore, Kirkpatrick and Locke (1991) found that even though leaders had more positive personality traits or characteristics than non-leaders, there was a very low correlation between these traits and leadership.

Behavioral Theory

Behavioral theory was popular in the 1950s (Romm & Pliskin, 1999) and focused on the actions of a leader (Hsu, Hsu, Huang, Leong & Li, 2003). The studies of Ohio State University and Michigan State University identified consideration and initiating structure as the two most important factors in the behaviors of leaders (Cox, 1994). Consideration indicated a leader who could relate to subordinates with friendship, mutual trust, respect, and warmth. Initiating structure indicated that the leader's behavior was clearly defined by the relationship between him and his subordinates, and in striving to establish well-defined patterns of organization and channels of communication (Hsu et al., 2003). This theory proposed that successful leaders possessed behaviors that were universal and could be learned by anyone (Cox, 1994).

Hemphill and Coons (1957) reported that researchers had identified 2000 leadership behaviors that could be objectively observed, learned, and appraised. Nevertheless, Nahavandi (2000) indicated that the relationship between leadership effectiveness and those behaviors was not clearly established.

Schneider and Littrell (2003) conducted an empirical study of leadership preference behaviors. The purpose of the study was to examine the leadership preference opinions of business managers in England and Germany. Schneider and Littrell's literature review compared and contrasted theories of leadership behavior and performance. Empirical studies of leadership behavior were examined, and this revealed conflicts in the literature involving nation, culture style, and performance of a leader. This lead Schneider and Littrell to test the proposition of behavioral theory developed in 1957 at the Ohio State University and Michigan State University.

Schneider and Littrell (2003) used a non-experimental, comparative, quantitative survey design of business managers in England and Germany. A non-probability sampling plan resulted in the self-selected, data-producing sample of 200 managers in Germany and England where 82 managers responded (36 managers from England, 42 managers from Germany), a response rate of 41%. The Leader Behavior Description Questionnaire-Form XII (LBDQ XII) was used to measure the leadership preference behaviors of these business managers. Reliability estimates were established for internal consistency, and construct and criterion-related validity was also established.

For English leaders, Schneider and Littrell (2003) found that their subordinates seem to prefer an interventionist approach. For German leaders, the subordinates preferred imposition of order. This led to the conclusion that there were significant differences in the desired leadership characteristics of English and German business managers.

The strengths of the study reported by Schneider and Littrell was clarity and a systematic methodology. Limitations reported by the researchers were limited finances and time, which caused undesirably low response rate of the sample. However, they proposed to examine situational variables that differed across cultures in future.

Schneider and Littrell's findings are consistent with Ohio State University and Michigan State University's studies. The strengths of this study are:

1. Hypothesis testing of the propositions in behavioral theory;
2. The reliability and validity of the Leader Behavior Description Questionnaire (LBDQ), resulting in a high level of data quality;
3. Data analysis; and

4. Clearly defined procedures allowing replication.

The study was however, limited to England and Germany. Future research should examine other countries and cultures.

Situational Theory

Situational theory was popular dating from the late 1960s, and focused on how situational factors influenced leadership effectiveness (Mello, 2003). Situational theory included Fiedler's Contingency theory and House's Path-goal theory (DeVries, Roe & Taillieue, 1998). Fiedler's Contingency theory emphasized the relationship between the personality of a leader and the variables of the situation. House's Path-goal theory emphasized the relationship between behaviors of a leader and the variables of the situation (Mello, 1999).

Fiedler's Contingency Theory

Fiedler (1967) developed the seminal Theory of Contingency based on his contingency model and Least Preferred Co-worker (LPC) scale. Fiedler indicated that a leader should be placed in situations that best suited his/her leadership behaviors and capabilities (Burmeister, 2003). The Contingency Theory assumed, "there is no one best style and that effective leadership depends on the fit between the leaders' variables and situational variables" (Kayworth & Elidner, 2001/2002, p. 11).

This theory identified two major constructs: a leader's personality and situational favorableness. Fiedler believed a leader's personality was either relationship-motivated or task-motivated. Relationship motivation stated that a leader's primary concern was his interpersonal relationship with his subordinates. Task motivation stated that a leader's primary concern was to complete the task as soon as possible.

Situational favorableness depended on three factors: Leadership-member relation, task structure, and position power. The first referred to the quality of interpersonal relationship between a leader and his/her subordinates. Task structure referred to the degree to which the task clearly described the goals, procedures, and guidelines. Position power referred to the degree to which the position of a leader allowed him/her to reward or punish group members (Cox, 1994). The major propositions in the Contingency Theory were modifying the theory to the situation suitable for a number of types of leaders (Tirmizl, 2002). The last 40 years had seen the theory being revised and adapted to leadership by researchers (Cox, 1994; Fiedler, 1967).

This theory is socially significant due to addressing the relationship between leadership and contingency. Contingency Theory is useful in explaining, predicting, and discriminating among those with effective leadership skills and those without. Thus, this theory is a well-developed guide to leadership in business and sports. This theory also strikes a strong balance between simplicity and complexity, further contributing to its usefulness, and studies have verified its propositions.

The major proposition with conflicting results in empirical studies was that a leader could not simply change his/her relationship motivation or task motivation behaviors to suit contingencies (Penny, 2003). This theory has now been adapted to sports situations and sportspersons because of the well-developed propositions and strong empirical support used to examine effective leadership.

Path-Goal Theory

In 1971, House developed the Path-Goal Theory (Silverthorne, 2001), which emphasized how a leader's behaviors impacted the perceptions of a subordinate's task

and personal goals, enhanced subordinate's motivation and abilities, and helped the subordinate achieve his or her goal. Hence, the major propositions in this theory were:

1. The leader should provide a path for his/her subordinates; and
2. The leader should support his/her subordinates in accomplishing their goals (Hsu et al., 2003).

The Path-Goal Theory is socially significant because this theory addresses essential issues on how a leader helps his/her team members to achieve goals and is useful in explaining, predicting, and discriminating among those with effective leadership skills and those without (Rajiv, Trina & Bert, 1996). The theory contributes a well-developed guide to business management and sports leadership. This theory strikes a good balance between simplicity and complexity, contributing to its usefulness. The major proposition with conflicting results in empirical studies is the style of leadership. The theory has been adapted to sports situations and sports populations.

Furthermore, studies by measurement verify the propositions of the Path-Goal Theory. In 1979, Vos Strache utilized the Leader Behavior Description Questionnaire (LBDQ) to investigate 29 public and private colleges and universities' women basketball players, who were asked to test the path-goal theory in a sports setting. The results indicated that the losing teams' players perceived their coach to be high in tolerance, while the winning teams' players perceived the coach as emphasizing production, being an accurate predictor and being persuasive. These findings were used to support the theory, stating that effective coaches were likely to offer more goal orientation than less effective coaches (Cox 1994). Hence, this was the predominant theory used to examine

different styles of leadership, with well-developed propositions and strong empirical support.

Silverthorne (2001) conducted a study on the Path-Goal Theory of leadership. The researcher used a non-experimental, comparative, quantitative survey of business managers and their subordinates in Taiwan. Silverthorne's literature review was thorough and current in comparing and contrasting theories about the Path-Goal Theory of leadership. The purpose of his study was to test how Path-Goal Theory was applicable in a non-western culture. Empirical studies of the Path-Goal Theory were examined, leading to a major gaps and conflicts in the literature about managers' leadership styles, preferences in a high-task structure versus a low-task structure style of leadership, and how this was viewed by subordinates. This resulted in Silverthorne's study testing the proposition of the Path-Goal Theory developed in 1971 by House (Silverthorne, 2001).

A non-probability sampling plan resulted in a self-selected sample of 184 subjects who were selected from a major company in Taiwan (46 managers, 46 peers, and 92 subordinates). The Leader Behavior Description Questionnaire (LBDQ) was used to measure leadership style. Reliability estimates were supported for internal consistency, and construct and criterion-related validity was established. Silverthorne found that peers had a lower level of acceptance of the managers' leadership styles. This led to the conclusion that the Path-Goal Theory could be a useful tool when applied to organizations in Taiwan with implications for the practice of leadership style. However, Silverthorne's study was limited to business managers and their subordinates in Taiwan.

Silverthorne's (2001) findings are consistent with the Path-Goal Theory of leadership. The strengths of this study are in hypothetical testing of propositions in Path-Goal Theory; the reliability and validity of LBDQ measures of variables, resulting in a high level of data quality; data analysis; and clearly defined procedures allowing replication.

The Style of Leadership

Transformational leadership

Bass (1985) described transformational leadership style as a leader who encouraged followers to overcome personal selfishness for the good of the group. Transformational leaders were able to increase and create confidence and motivate their subordinates to achieve goals beyond their expectations.

Transactional leadership

Bass (1985) described transactional leadership style as based on a succession of interchanges between leader and subordinates. A transactional leader clarified subordinates' roles and offered rewards based on performances. Also, a transactional leader provided incentives to influence his/her subordinates' motivations and behaviors in order to obtain the desired outcome (Shivers-Blackwell, 2004).

Comparison of leadership Styles

Politis (2001) conducted a study examining various leadership styles. This researcher used a non-experimental quantitative design and the Multifactor Leadership Questionnaire (MLQ). Politis's compared and contrasted theories on transformational and transactional leadership and examined empirical studies of leadership styles. This

resulted in Politis's study testing the proposition of various leadership styles developed in 1985 by Bass.

A non-probability sampling plan resulted in a self-selected sample of 227 people who were selected from a large-sized high technology manufacturing organization operating in Sydney, Australia, a response rate of 81%. The Multifactor Leadership Questionnaire was used to measure various leadership styles. Reliability estimates were examined for internal consistency and construct and criterion-related validity were established. Data collection procedures were clearly described.

Politis's (2001) Transformational and Transactional leadership styles are positively related to some dimensions of knowledge acquisition attributes. This led Politis to conclude that leadership styles were positively related to knowledge management and had implications in the practice of transformational and transactional leadership. Politis's findings were consistent with the transformational and transactional theories of leadership. The strengths of this study lay in the data analysis of propositions in Transformational and Transactional leadership theory, the reliability and validity of MLQ measurement, and clearly defined procedures allowing replication.

Limitations in this study were:

1. External validity. Politis' findings were limited to Australian employees;
and
2. The cross-sectional nature of this study rendered it vulnerable to problems typically associated with survey research.

Future studies could however, replicate this one using a larger sample size.

Leadership Measurement

A number of questionnaires and instruments have been developed and used for measuring different theories of leadership (Tirmizi, 2002). Ohio State University and Michigan State University developed the Leader Behavior Description Questionnaire (LBDQ) based on previous research behavioral theory. The LBDQ was used for measuring the behaviors of a leader (Cox, 1994).

Fleishman (1953) proposed a shortened Dutch version of the Supervisory Behavior Description Question (SBDQ). Syroit (1979) developed the instrument to measure leadership style. The SBDQ is divided into consideration structure and initiating structure. One scale has 14 items for usage and the other has 10 (Syroit, 1979). Consideration items are those leadership behaviors that are indicative of friendship, trust, respect, and warmth between a leader and subordinates. Initiating structure items are related to the leader's behaviors defining the relationship between the leader and subordinates, and in striving to establish well-defined patterns of organizations, channels of communication, and methods of procedure (Shields, Gardner, Bredemeier & Bostro, 1997). In the SBDQ, the initiating structure scale and consideration scale are independent constructs. Syroit (1979) also found the initiating structure scale and consideration scale to both have high reliability.

Bass (1985) developed the Multifactor Leadership Questionnaire (MLQ) to assess both the Transformational and Transactional styles of leadership. The MLQ consisted of five factors: (a) charisma; (b) individual consideration; (c) intellectual stimulation; (d) contingent reward; and (e) management by exception. Charisma, individual consideration, and intellectual stimulation were employed to assess Transformational

leadership styles. Contingent reward and management by exception, as defined by Bass (1985), were utilized to measure Transactional leadership style.

Coaching Leadership Behavior

The interpersonal relationship between an athlete and coach is a necessary component to develop effective coaching leadership (Armstrong, 2001). Martens (1987) indicated that coaches played one of the most important roles, helping athletes become more skillful in their performance.

What is effective coaching leadership? Douge and Hastie (1993) concluded the findings of the research that utilized organized observation to investigate coaches' behaviors and described effective coaches as those who: "a) frequently provide feedback and incorporate numerous prompts and hustles, b) provide high levels of correction and reinstruction, c) use high levels of questioning and clarifying, d) are predominantly engaged in instruction, and e) manage the training environment to achieve considerable order" (pp. 15-16). In 1980, Gallon defined the role of the sports coach as, "(a) a teacher, (b) a representative, (c) a coach, and (d) a leader" (p. 106).

Chelladurai and Carron (1978) developed the Multidimensional Model of Sport Leadership. The conceptual framework of the multidimensional model incorporated three leadership theories: (a) the Trait Theory; (b) Behavioral Theory; and (c) Situational Theory. This model was used to explore the relationship between the coach and the athlete, and specifically examined effective coaching leadership (Sherman, Fuller & Speed, 2000). In this multidimensional model, athletic satisfaction and performance were the two major consequences of interaction among the three types of coaching (Sherman et al., 2000, p. 390):

1. Required behavior that represents the coach's characteristics;
2. Actual behavior that represents the athletes' characteristics; and
3. Preferred behavior of the athlete that represents the situational characteristics.

The multidimensional model offered a framework for researchers to study coaching leadership (Zhang, Jensen & Mann, 1997). The required behavior of a coach was based on situational characteristics. In other words, the limitations on a coach's behaviors was decided by the group's structure and environment variables such as type of sport, size of team, level of team, task diversity, and conditions of play. The actual behavior of the coach was believed to be influenced directly by the coach's personal characteristics including age, gender, personality, ability, and experience, as well as being decided by the situational demands. Moreover, the coaching preferred by the athletes was also a consequence of interaction between the situational and the individual characteristics of each athlete, including the age, gender, personality, ability, and experience of the individual (Sherman et al., 2000).

The actual behavior, coaching behavior preferred by athletes, and required behavior are the central components in this model. These behaviors are affected by three antecedent variables that are: (a) the characteristics of the coach; (b) the athletes; and (c) the situation. The primary assumption of this model is that the consequences, or performance and satisfaction, are positively related to the degree of congruence among the three components of coaching (Cote & Sedgwick, 2003).

The multidimensional model has made it possible to apply theories of universal leadership to sports. Weiss and Friedrichs (1986) stated, "it is the only leadership model that utilized research findings from sport in its formulation" (p. 334).

Sherman et al. (2000) conducted a study of coaching leadership. The purpose of this study was to explore the preferred coaching leadership of Australian athletes in football (single-gender male), netball (single-gender female), and basketball (dual-gender male and female). Sherman et al. (2000) used a non-experimental, causal comparative, quantitative design of Australian athletes. Empirical studies of coaching leadership were examined, leading to a major gap and conflict in the literature about the male and female athletes requiring different types of leadership from coaches. This resulted in Sherman, Fuller, and Speed's study that tested the proposition of the Multidimensional Model of Leadership developed by Chelladurai and Saleh (1978). A non-probability sampling plan resulted in the self-selected sample of 312 athletes (110 Australian male football players, 88 female netball players, and 54 female and 60 male basketball players).

The Leadership Scale for Sports was used to measure gender and coaching leadership. Reliability estimates were examined for internal consistency, and construct and criterion-related validity were established. Sherman et al. (2000) found that athletes from all three sports indicated positive feedback, training and instruction, and democratic behavior were preferred coaching behaviors while social support and autocratic behavior were not. The researchers generated the following areas of future study: (a) different types of sports; (b) different countries besides Australia; and (c) the motivation, goals and attitudes of athletes.

The Measurement of Coaching Leadership Behavior

To understand effective coaching leadership, Chelladurai and Saleh (1980) used the multidimensional model to develop an instrument to measure the relationship

between the coaches' leadership and athletes' motivation, through the Leadership Scale for Sport (LSS). The LSS is able to predict the coaches' leadership effectiveness (Cote & Sedgwick, 2003). This instrument has three versions: (a) athlete preference; (b) athlete perception; and (c) coach self-evaluation (Zhang et al., 1997). Most of the coaching leadership studies in recent years have used the LSS to measure the relationship between coaching leadership and the athlete (Zhang et al., 1997).

The LSS is a questionnaire consisting of 40 items divided into five dimensions (Chelladurai & Saleh, 1980). The first dimension is training and instructional behavior which examines how a coach's behavior is directed toward improving the performance of his athletes. These behaviors include directing and training the athletes in the skills, techniques, and tactics for sport performance, and organizing and coordinating athletic activities.

The second dimension is democratic behavior and contains nine items to examine whether the coach permits the athletes to participate in important coaching decisions relevant to the team's goals, practice manners, tactics, and strategies. Moreover, this dimension examines whether the coach encourages the athletes to express their opinions on important issues.

The third dimension is autocratic behavior which examines whether coaches emphasize authority and make decisions by themselves. This dimension also examines whether coaches allow athletes to participate in decision-making on team issues.

The fourth dimension is social support behavior which examines whether the coaches are concerned about the welfare of athletes, the needs of athletes, and his/her interpersonal relationships with the athletes.

The final dimension is rewarding behavior. This dimension examines whether a coach will give athletes positive feedback to reward and encourage them (van Gastel, 2002).

Many researchers have examined and improved the quality of LSS (Zhang et al., 1997). To establish the reliability and construct validity of the measurement, Challedurai (1984), Dwyer and Fisher (1988), and Summers (1983) reported research that revised the LSS's quality. These researchers examined the structure, process, and quality of the LSS by carefully reviewing a number of suitable and necessary measurement procedures. Through careful revision of the LSS, a more effective measurement is expected (Zhang et al., 1997).

Zhang et al. (1997) conducted a study of three revised versions of the Leadership Scale for Sport (LSS) designed by Chelladurai and Saleh in 1980. The purpose of this study was to improve the measurement capability of the LSS. The researchers used a non-experimental, quantitative design of intercollegiate athletes and coaches. The literature review was thorough, current, and compared and contrasted theories of multidimensional leadership. Empirical studies of coaching leadership were examined. This resulted in Zhang et al. (1997) testing the proposition of the Leadership Scale for Sport (LSS).

A non-probability sampling plan resulted in a self-selected sample of 902 intercollegiate athletes and coaches (696 athletes and 206 coaches). The Leadership Scale for Sports was used to measure different characteristics of coaching leadership. Reliability estimates were examined for internal consistency, and construct and criterion-related validity were established. Data collection procedures were clearly

described. Zhang et al. (1997) found that the three different versions of LSS could be used either alone or together for different studies. This led to the conclusion that the revised LSS could be applied to measure coaching leadership. Limitations reported by Zhang et al. (1997) were that the sample comprised of only intercollegiate athletes and coaches.

The findings of Zhang et al. (1997) were consistent with the original LSS. The strengths of this study encompassed:

1. The testing of propositions in Multidimensional Leadership Theory;
2. The reliability and validity of the LSS measures of variables, resulting in a high level of data quality; and
3. Data analysis clearly describing methodology for replication.

A limitation of this study was that the findings were limited to intercollegiate athletes and coaches and the researchers suggested that future studies could use the LSS to examine:

1. The congruence between a coach's self-evaluation behaviors and the athlete's perception behaviors; and
2. The extent of congruence and its relation with team cohesion and athlete satisfaction.

Further research also is needed on other ages and competitive levels (Zhang et al., 1997).

Team Cohesion

In the sports world, one can frequently observe talented athletes not always performing well in competitions. On the other hand, there are teams with only a few, or even no talented athletes, that beat teams better than themselves. This phenomenon has

made many researchers ask why this happens (Turman, 2003). In the sports realm, if individuals in a team are able to work together, then each member will be more effective than when working independently. Therefore, it is logical to believe that if members of a team like each other, and like playing together, this team should be more successful than one lacking those qualities (Cox, 1994).

Cohesion has been defined by Bollen and Hoyle (1990) as “an individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in the group” (p. 482); and “an individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in groups” (Turman, 2003, p. 87). Festinger et al. (1950) indicated cohesion as “the total field of forces which act on members to remain in the group” (p. 93). Bollen and Hoyle (1990) described team cohesion as one factor that has always been related to the team's performance and success. Therefore, it is reasonable to deduce that if a sports team is cohesive, then this unity could affect the team's performance and success. If a leader is able to increase a group's cohesion, then he/she will effectively influence the team's performance (Turman, 2003).

Tarricone (2002) found that team cohesion could make team members work together to fulfill collective goals and could also provide a high level of motivation to help team members bear and persist through difficulties and failure. Festinger (1951) indicated that attraction-to-the-group urged team members to stay with the team. Matheson, Mathes and Murray (1997) assumed that attraction-to-the-group was caused by four interacting variables: (a) “motive base for attraction”, which is made up of requirements such as affiliation and recognition; (b) “group goals”, such as the desire for

reputation; (c) “expectancy”, or what benefits membership might afford; and (d) “comparison with other groups regarding the outcomes of being a member” (p. 285).

This viewpoint of cohesion suggests that if an individual’s needs and goals are not being met within the group and the group does not change to meet these needs, then attraction to the group declines (Matheson et al., 1997). Team effectiveness and cohesion rely on each other (Cox, 1994). Cohen and Bailey (1997) found that cohesion was an essential factor affecting the team or group’s effectiveness. Furthermore, three models describe how team cohesion is formed.

First, the Linear Model states that the development of team cohesion is linear and is comprised of four stages: (a) Forming; (b) Storming; (c) Norming; and (d) Performing. The second is the Pendulum Model: while the primary stage of the team is in the process of forming, certain conflicts among the team members will develop, and then the conflicts will be solved by the group. Meanwhile, the team cohesion will be formed.

The third model is the Life Cycle Model. This model is particularly suited for school sport teams because with team members constantly coming and going the team is required to rebuild its structure, affecting team cohesion. The Life Cycle Model states that team cohesion is formed through five stages: (a) encounter; (b) creation of roles; (c) creation of a normative; (d) production; and (e) separation (Li, 2003).

Ryska, Yin, Cooley, and Ginn (1999) studied sport team cohesion using a non-experimental, quantitative design (of Australian and the U.S. coaches). The purpose of this study was to decide the potential factors of cohesion strategies as well as type of use.

A non-probability sampling plan resulted in a self-selected sample of 354 coaches (196 Australian coaches and 162 U.S coaches), with a response rate of 47%. The Group Environment Questionnaire was used to measure team cohesion, culture, and strategies. Reliability estimates were examined for internal consistency, and construct and criterion-related validity were established. Ryska et al. (1999) found Australian and U.S. coaches were quite similar in use of athlete integration strategies when working with interactive teams, but different in use of role development strategies. This implied that coaches in various sports and cultures differed in strategies used to develop team cohesion. Limitations reported by Ryska et al. were that the researcher was limited to the influence of team cohesion strategies, suggesting that area of coach's effective training, perhaps through role playing, for future study.

Findings by Ryska et al. (1999) were consistent with the performance-maintenance theory of leadership. The strengths of this study lay in the testing of propositions in leadership theory; the reliability and validity of GEQ measures of variables, resulting in a high level of data quality; data analysis; and clearly defined methodology allowing replication. Limitations in the study were its external validity, because these findings were limited to Australian and the U.S. coaches.

Influencing Factors of Team Cohesion

Carron (1982) defined team cohesion as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of goals and objectives" (p.124). Carron described factors influencing team cohesion as: (a) environmental factors; (b) personal factors; (c) leadership factors; and (d) team factors (Carron, 1982).

Environmental factors were universal, including contractual responsibility and organization orientation. Contractual responsibility was the existing regulations between professional and non-professional sports. Organization orientation meant that different teams differed in their goals, age of members, gender, level of ability, type of team, and maturity. Therefore, different environmental factors would result in different levels of team cohesion (Cox, 1994).

Personal factors included the team members' (a) goal orientation; (b) motivation; (c) satisfaction; and (d) individual differences. The differences were related to social-cohesion or task-cohesion. For example, race, nationality, religion, culture, social and economical status, satisfaction, and similarity of experience were personal factors (Cox, 1994) that could cause differences between players from Taiwan and those from other countries.

Leadership factors included:

1. The coach's leadership;
2. Style of leadership;
3. The relationship between coach and athlete; and
4. The relationship between coach and team, which can affect the development of team cohesion (Cox, 1994).

Team factors were the desires for team success, steadiness, power of the team's prior successes, communication, having team goals, and the importance of achieving these goals. All these features were seen to affect team factors and team cohesion (Cox, 1994).

The Measurement of Team Cohesion

Carron et al. (1985) developed an 18-item questionnaire to measure team cohesion, which was based on the conceptual model of team cohesion. The questionnaire was entitled Group Environment Questionnaire (GEQ) and was divided into four dimensions to measure team cohesion:

1. Individual Attraction to Group-Task (IAG-T) which measured how each team member felt about his/her personal involvement, goals, purpose, and productivity (Carron et al., 1985);

2. Individual Attraction to the Group-Social (IAG-S): This dimension measured the feelings of individual team members, which included his or her personal hope to be accepted and the social interdependence within the group (Carron et al., 1985);

3. Group Integration-Task (GI-T): This dimension measured the feelings of individual team members, which were about the similitude, analogous, and interpersonal relationships within the team as a whole around the task of the group (Carron et al., 1985); and

4. Group Integration-Social (GI-S): This dimension measured the feelings of individual team members, which were about the similitude, analogous and interpersonal relationships within the team, but for the group as a social unit (Carron et al., 1985).

Kozub and McDonnell (2000) conducted a study to examine the relationship between perceived cohesion and collective efficacy in rugby teams. The researchers used a non-experimental, quantitative design, and a non-probability sampling plan that resulted in a self-selected sample of 96 rugby athletes. The Group Environment Questionnaire was used to measure players' perceptions of team cohesion. Reliability

estimates were examined for internal consistency, and construct and criterion-related validity was established. Data collection procedures were clearly described. Kozub and McDonnell found a significant relationship between the four dimensions of team cohesion and collective efficacy. The study showed a positive relationship between team cohesion and collective efficacy. A limitation reported by the researchers was that this study examined only rugby athletes. Kozub and McDonnell also generated an area of future study, i.e., various sport settings.

Kozub and McDonnell's findings were consistent with Spink's study of elite volleyball teams (Spink, 1990). The strengths of this study lay in hypothesis testing of propositions in leadership theory; the reliability and validity of GEQ measures of variables resulting in a high level of data quality; data analysis; and clearly defined methodology allowing replication. A limitation in the study was the external validity where findings were limited to only rugby athletes.

Coaching Leadership and Team Cohesion

In sports, a coach's behavior affects his/her team's performance. Coaching style and behavior, therefore, are important factors in understanding team cohesion (Shields et al., 1997). Turman (2003) reported that coaching leadership and team cohesion were two essential elements for development of the team. If a leader could create a high level of team cohesion, then the team would perform well.

Shields et al. (1997) used the Leadership Scale for Sports (LSS) and the Group Environment Questionnaire (GEQ) to test the relationship between coach leadership and team cohesion among baseball and softball players at two schools. The samples comprised of athletes ($n = 307$) and their coaches ($n = 23$), randomly selected from the

two schools. The findings indicated that team cohesion was strongly related to the perceived LSS version and the perceptual discrepancy scores.

Turman (2003) used the LSS and GEQ to test 15 female athletes (representing soccer, basketball, track and field, swimming, gymnastics, and volleyball) and 15 male athletes (representing track and field, swimming, basketball, football, baseball, and wrestling). This researcher identified coach's leadership behaviors and techniques that could deter (i.e. ridicule, inequity; and embarrassment) or promote (i.e. quality of opponent, motivational speeches, and dedication) team cohesion levels. These studies suggest that there are strong correlations between coach leadership and team cohesion.

Researchers investigated socio-demographic factors on coach's leadership behaviors and team cohesion. Wu (2000) conducted a non-experimental study for the purpose of investigating coach's leadership behaviors and players' socio-demographic factors in Taiwan. Field and track athletes and ping pong players in colleges were selected for participation. As a result, findings indicated that male athletes perceived a higher level of Training and Instruction, Democratic Behavior, Social Support, and Positive Feedback Behavior than female athletes. In contrast, Yu (2001) found that male archers perceived a higher level of autocratic behavior from their coaches in Taiwan. In addition, athletes participating in the team between one and three years perceived a significant higher level of coach's Training and Instruction, Social Support, and Positive Feedback Behavior. Comparing the conference level, Conference A1 athletes perceived a significant higher level of coach's Autocratic Behavior. As for Conference A2, players perceived a significantly higher level of coach's Training and Instruction, Democratic Behavior, Social Support, and Positive Feedback Behavior.

Lai (1999) examined and compared coach's leadership behaviors in field and track athletes in Taiwan. The researcher found that the male athletes perceived significantly higher level of Training and Instruction, Social Support, and Positive Feedback of coach's leadership behaviors. Quite to the opposite, female athletes perceived significantly higher level Democratic Behavior from their coaches. Further, athletes from junior colleges perceived higher level of Training and Instruction, Democratic Behavior, Social support, and Positive Feedback Behavior from their coaches than athletes from Conference A1 and A2 in Taiwanese colleges and universities.

Two follow-up studies were conducted by Lai (2001) who researched on perceived coach's leadership behaviors and socio-demographic background of field and track athletes in Taiwan's senior high schools. The findings of the study indicated that genders of socio-demographic factors had a significant difference in Training and instruction, Democratic Behavior, Social Support Behavior, and Positive Feedback Behavior of perceived coach's behaviors for track and field athletes. Further, Lai (2002) conducted a non-experimental study for the purpose of exploring the difference between socio-demographic background and coach's leadership behaviors in Taiwanese college basket players. Inferential statistical analysis of one-way ANOVA was utilized to analyze the data. The results showed that there were significant differences between athletes' perceptions of coach's leadership behaviors and genders, different levels of conferences, and years of participating in the team.

Chiang, Chen, and Yeh (2001) investigated perceptions of coach's leadership behaviors and team cohesion in Taiwanese college athletes (basketball, soccer, volleyball,

and baseball). On the one hand, female athletes perceived a significant higher level of Training and Instruction, and Social Support Behavior.

Unfortunately, this result is inconsistent with Lai's study (1999). Possible explanation could be different sports was examined. On the other hand, male athletes perceived a significantly higher level of task cohesion than female athletes. Further, male athletes perceived significant higher level of Autocratic Behavior from their coaches. This result is consistent with studies conducted by Lin (2002) and Yu (2001) but is in conflict with the study investigated by Wu (2000). Overall, athletes' perceptions of coach's Training and Instruction, Autocratic Behavior, and Social Support Behavior were significantly related to team cohesion.

Lin (2002) conducted a non-experimental research for the purpose of investigating the relationship between coach's leadership behaviors and team cohesion in Taiwanese tug-of-war athletes. Inferential statistical analyses of one-way ANOVA and stepwise regression were used to analyze the data collected from Taiwanese senior high schools and colleges. The findings indicated that male athletes perceived a higher level of coach's Democratic Behavior and Autocratic Behavior than female athletes. On the contrary, female players had significantly higher task cohesion than male players in the tug-of-war sport.

Moreover, Chiu (2002) conducted a quantitative and survey study examining the relationship between coach's leadership behavior and team cohesion for soccer players in Taiwanese universities and senior high schools. The results showed that socio-demographic factors such as gender, years of participating in the team, and different levels of conferences had significant differences in coach's leadership behaviors.

Similarly, genders also had a significant difference in team cohesion. On the one hand, Training and Instruction, Democratic, Autocratic, and Positive Feedback of the coach's leadership behaviors had a moderate, significant, and positive correlation on team cohesion. On the other hand, Social Support of coach's leadership behaviors had no significant correlation on team cohesion.

Li (2003) investigated team cohesion between male and female korfbal players before and after matches in Taiwanese colleges. Inferential statistical analysis of two-way ANOVA was conducted to analyze the data collected from four different colleges. The findings suggest that players' task cohesion was stronger after the match and had no significant difference between male and female players. In addition, players' social cohesion found no significant difference between before and after the match and between male and female players.

A similar study was conducted by Wu (2005). The researcher examined the coach's leadership behaviors and different background factors of volleyball players in Taiwanese senior high schools. A post hoc comparative research design was proposed to compare different perceptions of coach's leadership behaviors. The findings showed that there is a significant difference in overall perceived coaching leadership behavior and years of participating in the team. Players who participated three years in the team perceived a higher level of coach's Autocratic Behavior.

Team Performance

In team research, team performance has been described as a generalized framework that contains inputs, processes and outcomes (Hackman, 1992). Team performance has also been described as "the degree to which the team meets expectations

regarding the quality of the outcome” (Hoegl & Gemuenden, 2001, p. 439). In sports research, team performance has been measured by using the final ranking (Huang, 2003), and the total winning percentage of a team playing in regular competitions (Carron Bray & Eys, 2002). The coach of a sports team always intends to maximize team performance.

In addition to the individual capability of players, there are many factors affecting a player’s performance (Conway, 2005). Fox (1984) assumed that the player’s performance would be influenced by the physical elements; nevertheless, a team that possesses a fair degree of skill is likely to surmount obstacles to outshine prominent teams. Scully (1999) pointed out that “a player’s performance in a rank-order tournament for the starting position is determined by his athletic endowment, enhanced by investment in playing skill, plus exogenous factors that affect performance stochastically” (p. 61). Absolute performance effectiveness refers to a team’s score, indicating whether it won or lost a contest, as opposed to relative performance, which indicates how the team performed in comparison to the last game (Cox, 1994).

Team Performance and Coaching Leadership

In the study of sports, the aspect of leadership that has been explored primarily has been the influence of coaching leadership on players’ performance (Serpa, Pataco & Santos, 1991; Summers, 1991). The Multidimensional model was developed by Chelladuria (1978), in which leaders and players were regarded as factors that influenced team satisfaction and performance. Furthermore, Weiss and Friedrichs (1986) pointed out, “the model is termed multidimensional since the outcomes of athletic performance and athlete satisfaction are explained by the interaction of leader behaviors and a number

of antecedent variables such as situational characteristics, leader characteristics, and group member characteristics” (p. 334). Sirboon (2001) concluded there was a strong relationship connecting coaching leadership and performance, and that coaches’ leadership played a principal role in bettering performance by individuals on the team. Furthermore, Sirboon (2001) suggested that for a team to devote itself to enhancing performance required an effective leader to make decisions, communicate, and treat the team members properly.

Team Performance and Team Cohesion

A critical observation for sports psychologists working with teams is to recognize concepts that are concerned with performance, and apply these concepts to enhance performance (Lowther & Lane, 2002). Sports psychologists have recognized that team cohesion affects team performance, and a successful team is probably going to generate sensations of cohesiveness (Lowther & Lane, 2002).

Most research on team cohesion has focused on performance, and the main question asked has been to what degree cohesion was able to affect team or individual performances (Cox, 1994). Bird (1977) indicated that the cohesion level of a team could influence individual team member behavior; hence, it was very important to build a level of cohesiveness for successful performance. Mullen and Copper (1994) pointed out that if there was no appropriate level of team cohesion, it was improbable that high team performance could be attained. Turman (2003) stated that it was rational to assume that the team possessed an amount of cohesiveness that was able to dramatically affect team performance.

Research also demonstrated that cohesion was positively related to team performance and suggested that the team adopt an expectation of high performance (Loy, Mcpherson & Kenyon, 1978; Mullen & Copper, 1994).

Martens and Peterson (1971) proposed a circular relationship between team cohesion, team performance, and satisfaction, in which performance was described in terms of individual and group outcomes. The researchers indicated, “those teams who are more cohesive are more successful, and teams which are successful have greater satisfaction from participation than unsuccessful teams” (Martens & Peterson, 1971, p. 58).

Carron et al. (2002) conducted a study of team cohesion and successful performance. The researchers used a non-experimental, correlational, quantitative design, of 18 elite university basketball teams and nine club soccer teams. A non-probability sampling plan resulted in the self-selected, data-producing sample of 294 (154 Females, 140 Males) Canadian intercollegiate and club athletes. The Group Environment Questionnaire was employed to measure task cohesion, and team performance was measured by the total winning percentage of a team playing in their regular competitions. Reliability was assessed for internal consistency, and construct and criterion-related validity was established. Data collection procedures were clearly described. Findings supported the hypothesis of both the Group Integration-Task and Individual Attractions to the Group-Task.

The researchers found that dimensions of cohesion were strongly related to a team's successful performance, but the findings did not support the hypothesis that the Group Integration-Task would have a stronger relationship with team performance than

Individual Attractions to the Group-Task. The findings of Carron et al. (2002) identified a positive relationship between task cohesion and team performance in sports. Limitations in the study were its external validity where findings were limited to 294 Canadian intercollegiate and club athletes.

Theoretical Framework

In the world of sports, coaching leadership and team cohesion influences athletes' performance and satisfaction like no other. Chelladurai and Carron (1978) developed the Multidimensional Model of Sports Leadership. The conceptual framework of the Multidimensional Model incorporated three leadership theories: (a) the Trait Theory of leadership; (b) the behavioral theory of leadership; and (c) the situational theory of leadership. This model was used to explore the relationship between the coach and the athlete, and specifically, to examine effective coach leadership (Sherman et al., 2000). In the Multidimensional Model, athletic satisfaction and performance were the two major consequences of interaction among the three types of coaching leadership: (a) actual behavior of the coach; (b) preferred behavior of the athlete; and (c) required behavior by the situation (Sherman et al., 2000). Furthermore, the Multidimensional Model offered a framework to researchers to study coach leadership (Zhang et al., 1997). The primary assumption of the model was that the consequences, or the performance and satisfaction were positively related to the degree of congruence among the three components of coaching (Cote & Sedgwick, 2003).

The Multidimensional Model has made possible universal leadership theories that apply to the world of sports (Zhang et al., 1997). Weiss and Friedrichs (1986) stated, "it is the only leadership model that utilized research findings from sport in its formulation"

(p. 334). Chelladurai and Saleh (1980) utilized the Multidimensional Model to develop an instrument of five dimensions (training and instructional behavior, democratic behavior, autocratic behavior, social support behavior, and rewarding behavior) to measure the relationship between leadership and the athlete, which was called the Leadership Scale for Sport (LSS). The LSS was able to predict a coach's leadership effectiveness (Cote & Sedgwick, 2003), and was widely used to measure the relationship between the coaching leadership and the athlete (Zhang et al., 1997).

Team cohesion can make team members work together to fulfill collective goals and maintain a high level of motivation to help team members to persist through difficulties and failure (Tarricone, 2002). Bollen and Hoyle (1990) described team cohesion as one factor that had always been related to the team performance and success. It is reasonable, therefore, to deduce that if a team is cohesive, this unity could positively affect the team's performance and success. If the leader is able to increase the group's cohesion, it will effectively influence the team's performance (Turman, 2003), since team performance and cohesion are related (Cox, 1994). Cohen and Bailey (1997) indicated that cohesion was an essential factor affecting the team or group's effectiveness. Three models describe the formation of team cohesion:

1. The Linear Model, in which the development of team cohesion was linear to advancement;
2. The Pendulum Model, in which during the primary stage of the team produced certain conflicts among the team members, which were resolved by the group; and gradually team cohesion evolved; and

3. The Life Cycle Model was particularly suitable for the sports teams of schools, because members of the sport teams of schools constantly come and go every year, which caused the team to rebuild its structure, which affects team cohesion (Li, 2003).

Other influential factors included environmental factors, personal factors, leadership factors, and team factors (Cox, 1994): (a) Environmental factors included contractual responsibility and organizational orientation; (b) personal factors included team members' goal orientation, motivation, satisfaction, and individual differences; (c) leadership factors included the coach's leadership, style of leadership, the relationship between coach and athlete, and the relationship between coach and team, all of which can affect the development of team cohesion; and (d) team factors are the desire for team success, the steadiness of team, the power of teams, prior successes, communication, having team goals, and the perceived importance of achieving goals, all of which will affect the team factor and team cohesion (Cox, 1994).

Carron et al. (1985) reviewed the Conceptual Model of team cohesion, which is composed of the athlete's group integration and individual attraction, and the group orientation, which includes social cohesion and task cohesion, to develop the Group Environment Questionnaire (GEQ). Furthermore, the researchers used the GEQ to measure team cohesion. By synthesizing the theoretical literature, the findings support the idea that team cohesion will be affected by coach leadership (Brawley, 1990).

In a sports team, the coach always intends to maximize the performance of the team. However, except for the individual capability of players, there are many factors that affect a player's performance (Conway, 2005). Scully (1999) pointed out that "a

player's performance in a rank-order tournament for the starting position is determined by his athletic endowment, enhanced by investment in playing skill, plus exogenous factors that affect performance stochastically" (p. 61).

In sports research, team performance has been measured by using the final ranking (Huang, 2003), and the total winning percentage of a team playing in their regular competitions (Carron et al., 2002).

The aspect of leadership that has been explored primarily the influence of coaching leadership on players' performance (Serpa, Pataco & Santos, 1991; Summers, 1991). The Multidimensional Model was developed by Chelladuria (1978), in which leaders and players are regarded as factors that influence team satisfaction and team performance. Furthermore, Weiss and Friedrichs (1986) pointed out, "the model is termed multidimensional since the outcomes of athletic performance and athlete satisfaction are explained by the interaction of leader behaviors and a number of antecedent variables such as situational characteristics, leader characteristics, and group member characteristics" (p. 334).

Most research on results of team cohesion have focused on performance, and the main question that has been asked is to what degree team cohesion led to team or individual performance (Cox, 1994). Turman (2003) stated it is rational to assume that the team which possesses an amount of cohesiveness is able to dramatically affect team performance. Martens and Peterson (1971) proposed a circular relationship between team cohesion, team performance, and satisfaction, in which performance is described in terms of individual and group outcomes. Furthermore, the researchers indicated, "those teams who are more cohesive are more successful, and teams which are successful have

greater satisfaction from participation than unsuccessful team” (Martens & Peterson, 1971, p. 58). Research has also demonstrated that cohesion was positively related to team performance, and recommended that the team adopt criteria of high performance (Mullen & Copper, 1994).

Turman (2003) indicated that coach leadership and team cohesion are two essential elements for the development of the team. Moreover, the coach’s styles and behaviors are very important factors for understanding team cohesion (Shields et al., 1997). If the leaders can create and promote a high level of team cohesion, the team will have a dramatic improvement in performance. Therefore, the theoretical framework of the study is formulated according to the literature review, and a schematic model (see Figure 1) shows the relationships among these variables in the research.

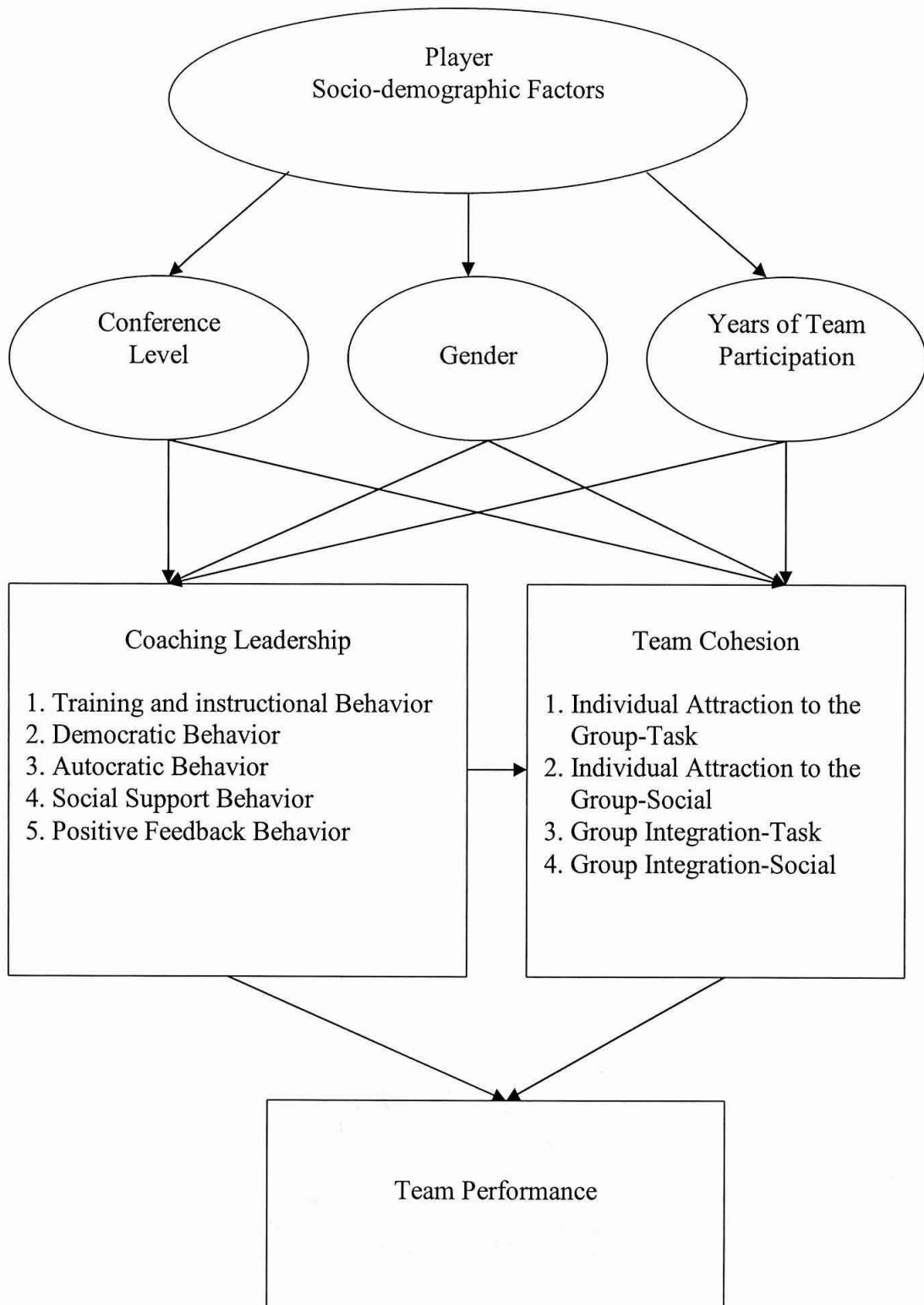


Figure 1. Theoretical model for the analysis of team performance.

Research Questions

- 1. What are the socio-demographic characteristics of college basketball players, coach's leadership behaviors, team cohesion, and team performance in Taiwan?**
- 2. Is there any significant difference in overall perceived coaching leadership among three different conferences in Taiwanese college basketball players?**
 - 2.1 Is there any significant difference in Training and Instruction Behavior among three different conferences?
 - 2.2 Is there any significant difference in Democratic Behavior among three different conferences?
 - 2.3 Is there any significant difference in Autocratic Behavior among three different conferences?
 - 2.4 Is there any significant difference in Social Support Behavior among three different conferences?
 - 2.5 Is there any significant difference in Positive Feedback Behavior among three different conferences?
- 3. Is there any significant difference in overall perceived coaching leadership between genders in Taiwanese college basketball players?**
 - 3.1 Is there any significant difference in Training and Instruction Behavior between genders?
 - 3.2 Is there any significant difference in Democratic Behavior between genders?
 - 3.3 Is there any significant difference in Autocratic Behavior between genders?
 - 3.4 Is there any significant difference in Social Support Behavior between genders?

3.5 Is there any significant difference in Positive Feedback Behavior between genders?

4. Is there any significant difference in overall perceived coaching leadership among different years of participating in the team in Taiwanese college basketball players?

4.1 Is there any significant difference in Training and Instruction Behavior among different experiences in year?

4.2 Is there any significant difference in Democratic Behavior among different years of participating in the team?

4.3 Is there any significant difference in Autocratic Behavior among different years of participating in the team?

4.4 Is there any significant difference in Social Support Behavior among different years of participating in the team?

4.5 Is there any significant difference in Positive Feedback Behavior among different years of participating in the team?

5. Is there any significant difference in overall team cohesion among three different conferences in Taiwanese college basketball players?

5.1 Is there any significant difference in Individual Attraction to the Group-Task among three different conferences?

5.2 Is there any significant difference in Individual Attraction to the Group-Social among three different conferences?

5.3 Is there any significant difference in Group Integration-Task among three different conferences?

5.4 Is there any significant difference in Group Integration-Social among three different conferences?

6. Is there any significant difference in overall team cohesion between genders in Taiwanese college basketball players?

6.1 Is there any significant difference in Individual Attraction to the Group-Task between genders?

6.2 Is there any significant difference in Individual Attraction to the Group-Social between genders?

6.3 Is there any significant difference in Group Integration-Task between genders?

6.4 Is there any significant difference in Group Integration-Social between genders?

7. Is there any significant difference in overall team cohesion among different years of participating in the team in Taiwanese college basketball players?

7.1 Is there any significant difference in Individual Attraction to the Group-Task among different years of participating in the team?

7.2 Is there any significant difference in Individual Attraction to the Group-Social among different years of participating in the team?

7.3 Is there any significant difference in Group Integration-Task among different years of participating in the team?

7.4 Is there any significant difference in Group Integration-Social among different years of participating in the team?

Hypotheses

- 1. There is a positive significant explanatory relationship between leadership behaviors of coaches and team cohesion.**
- 2. Leadership behaviors of coaches and team cohesion are significant predictors of team performance in Taiwanese college basketball players.**

Chapter II presented the review of literature about leadership theories, coaching leadership behavior, measurement of coaching leadership, team cohesion, and team performance. Key gaps in the literature were the need to examine the relationships between coaching leadership, team cohesion, and team performance in other countries. This resulted in a recommendation for future inquiry into explaining these relationships in Taiwan with college basketball program and players. The theoretical framework to guide this study integrates the constructs of coaching leadership, team cohesion, and team performance, in addition to player characteristics emphasizing gender, conference level, and years of team participation. This led to seven major research questions and two hypotheses in this exploratory (causal-comparative) and explanatory (correlational) study. Chapter III presents the research methodology for this study about the relationships between leadership behaviors of coaches, team cohesion, and team performance in Taiwanese college basketball players.

CHAPTER THREE

RESEARCH METHODOLOGY

The primary purpose of this chapter is to describe the research methods and procedures of data collection and analysis of this study, which were used to address the research questions and hypotheses about the relationship between the coaching leadership, team cohesion, and team performance. This study aims to determine perceptual differences based on the years of participation in the team, gender, conference levels of Taiwanese college basketball players, and team cohesion. This chapter is divided into six sections, including research design, population and sampling plan, instrumentation, ethical considerations and data collection methods, methods of data analysis, and proposed evaluation of research methods.

Research Design

A quantitative, non-experimental, correlational (explanatory) and causal-comparative survey (exploratory) research design was utilized in this study. The research aimed at examining the relationships between the perceived coach's leadership behaviors, team cohesion, and team performance, and to investigate the influence of conference levels, gender, and years of team participation on Taiwanese college basketball players and their perceptions.

The research design was *ex post facto*. The instrument chosen was a survey study with closed-ended questions, which would identify the behaviors, attitudes, opinions and beliefs of Taiwanese college basketball players. The data collected were analyzed to answer the research questions and test hypotheses of the study.

Quantitative methods are contained in research methods that involve numbers and are based on the concept that everything is quantifiable; therefore, quantitative methods are different from qualitative methods. The common styles of quantitative methods are counting and measuring. The consequence of the quantitative research is a number or a succession of numbers. These are presented in diagrams, tables, or other statistical forms (Gay & Airasian, 1999). Huysamen (1997) stated, "Descriptions of quantitative research typically discern a cycle of successive phases of hypothesis formulation, data collection, analysis, and interpretation" (p. 48).

Quantitative research employs a deductive approach to make predictions, build facts, and test hypotheses. For the most part, the quantitative researcher's data analysis is statistical, endeavoring to display that which can be understood and measured (Gay & Airasian, 1999). Moreover, the difference between quantitative and qualitative data is defined as "quantitative data are numerical data; qualitative data are not" (Babbie, 2001, p.39).

Black (1999) indicates that there were some advantages for researchers to utilize the quantitative approach. First, quantitative research is used to collect and analyze data in a numerical form; therefore, the consequences can be more reliably expressed as statistics, and the resulting analysis can be more objective.

Second, the consequences are according to large sample sizes that are most probably representative of the population, allowing the researcher to make specific inferences to the general population.

Third, quantitative methods can measure both behavior and attitude; furthermore, the research can be replicated easily with high reliability.

This study was based on research questions to identify the independent variables and dependent variables. Research Questions #2, #3, and #4 explored the relationships between the socio-demographic characteristics of the players (conference levels, genders, and years of participating in the team) and the leadership behaviors of the coach as perceived by the team members. For these questions, the independent variables were the college basketball players' socio-demographic characteristics (conference level, gender and years of participating in the team), and the dependent variable was the leadership behaviors of the coach as perceived by the team members.

Research Questions #5, #6, and #7 investigated the relationships between the subjects' socio-demographic characteristics (conference levels, genders and years of participating in the team) and team cohesion. Hence, for Research Questions #5, #6, and #7, the independent variables were the college basketball players' socio-demographic characteristics (conference level, gender and years of participating in the team), and the dependent variable was team cohesion.

Hypothesis #1 predicted the relationship between coach's leadership behaviors and team cohesion was significant and positive. The independent variable was coach's leadership behaviors. The dependent variable was team cohesion.

Hypothesis #2 predicted that the coaching leadership and team cohesion can effectively predict the team performance. The independent variables were coaching leadership and team cohesion. The dependent variable was team performance.

In this study, the socio-demographic variables were Taiwanese college basketball players' demographic data, which included player level, gender, and years of participating in the team, measured by a socio-demographic profile developed by the

researcher. The coach's leadership behaviors were measured by the Leadership Scale for Sports (LSS). Team cohesion was measured by the Group Environment Questionnaire (GEQ). Team performance was measured by the winning percentage of the team participating in the University Basketball Association (UBA) of Taiwan in the 2005 season.

This study used an ex post facto research, exploratory and explanatory design. The survey instruments were utilized to collect and analyze data from a large sample. The primary reason for the researcher to use the quantitative research method was that these quantifying relationships between the independent variables and the dependent variable could be measured and used to answer the research questions in this study.

Population and Sampling Plan

Target Population

The primary purpose of the study was to investigate and understand the relationships between coaches' leadership behaviors, team cohesion, and team performance among Taiwanese college basketball players. Hence, the main population in this study was the basketball players who were presently members of teams in Taiwanese universities or colleges in 2005.

Accessible Population

In this study, the accessible population was chosen from among the university and college basketball players in Taiwan registered as formal players by the coaches participating in the University Basketball Association (UBA) of Taiwan in 2005. In Taiwan, the University Basketball Association is divided into three conferences: conference A1, conference A2 and conference A3 (CTUSF, 2004). The maximum

number of players in each team that can be registered is 18 (however, the coach may only choose 12 players from the 18 registered players to participate in a single competition), and the minimum number of players in each team that can be registered is five (CTUSF, 2004). According to the report in 2004 of the Chinese Taipei University Sports Federation (CTUSF), there were 16 teams (281 players) registered in male conference A1, 12 teams (187 players) in female conference A1; 48 teams (824 players) in male conference A2, 27 teams (428 players) in female conference A2; 77 teams (1297 players) in male conference A3, and 47 teams (750 players) in female conference A3 (see Table 1).

Table 1

CTUSF 2004 Report: Distribution of Teams and Players in Each Conference

Conference A1		Conference A2		Conference A3	
Male	Female	Male	Female	Male	Female
16 teams	12 teams	48 teams	27 teams	77 teams	47 teams
281 players	187 players	824 players	428 players	1297 layers	750 players

In total, there were 2402 male basketball players and 1365 female basketball players registered to participate in the University Basketball Association of Taiwan (CTUSF, 2004). All of the registered college basketball players were the accessible population involved in this study.

Eligibility and Exclusion Criteria of Sampling Plan

1. The geographical area and setting of the sampling plan in this study was limited to Taiwan.

2. The sampling plan was aimed at university or college basketball players in Taiwan.
3. These university or college basketball teams must have registered to participate in the seasonal competitions of the University Basketball Association (UBA) of Taiwan in 2005.
4. The university or college basketball players must be registered by the coach to participate in the season competitions of the University Basketball Association (UBA) of Taiwan in 2005.
5. The basketball players must be 18 years old or over.
6. The basketball players who agreed to participate in this study would have to complete the survey questionnaire.
7. The basketball players who were not registered to participate in the season competitions of the University Basketball Association (UBA) of Taiwan in the year 2005 by the coach would be excluded from this study.
8. The basketball players who were registered to participate in the season competitions of the University Basketball Association (UBA) of Taiwan in 2005, but who due to injury or other reasons did not play in any season competitions of the University Basketball Association (UBA) of Taiwan, would be excluded from this study.
9. The basketball players who were in graduate school would be excluded from this study.
10. In Taiwan, some teams are sometimes formed for short periods of time. These may be similar to a team of “walk-ons” or an All-Star team, but

because of their temporary nature, all such teams formed by the University Basketball Association (UBA) of Taiwan in 2005 would be excluded from this study.

11. The basketball teams and players who had no coach to direct them would be excluded from this study.
12. The basketball teams and players who did not complete the season competitions of the University Basketball Association (UBA) of Taiwan in 2005 would be excluded from this study.

Stratified Random Sampling Plan

The main purpose of the research was to discover the principles of leadership behaviors in Taiwanese college basketball coaches that might be applied universally. However, to investigate a whole population to reach generalizations would be unworkable, if not impossible. Fortunately, the sampling procedures made it possible to draw valid inferences through research that investigated variables within a relatively small portion of the population (Best & Kahn, 1998). The concept of sampling is “taking the portion of the population, making observations on this small group, and then generalizing the findings to the parent population, the larger population from which the sample was drawn” (Ary, Jacobs & Razavieh, 1996, p. 174).

This study employed stratified random sampling, a probability-sampling plan to select the research sample. The main purpose of the study was to investigate and to understand the relationships between leadership behaviors of college coaches, team cohesion, and team performance in Taiwanese college basketball players. The sampling focused on the Taiwanese university and college basketball players, and the sample was

chosen from the basketball players who were registered by the coach to participate in the season competitions of the University Basketball Association (UBA) of Taiwan in 2005. Since this study compared players' conference levels and gender to avoid sampling error, the population would be divided into six subgroups: (a) male conference A1; (b) female conference A1; (c) male conference A2; (d) female conference A2; (e) male conference A3; and (f) female conference A3 (CTUSF, 2004). Using random sample from each of these subgroups is a technique called stratified random sampling. The advantages of stratified random sampling are that it is more accurate than simple random sampling and increases the probability of representation, particularly if the sample is not large. Further, random sampling allows the researcher to choose a sample that accurately reflects the diverse subgroups and characteristic patterns in the desired population (Wallen & Fraenkel, 2001).

The principal characteristic of probability sampling is that every member or individual has an equal probability to be selected from the population as the sample (Ary et al., 1996). This is why the researcher used a probability-sampling plan here, which would, through use of inferential statistics, allow researchers to evaluate the extent to which the findings were likely to be different from what would have been found by investigating the whole population (Ary et al., 1996).

What constitutes an adequate or sufficient sample size? Wallen and Fraenkel (2001) indicated that there is no clear-cut answer to this question. These authors suggest, "The best answer is that a sample should be as large as the research can obtain with a reasonable expenditure of time and energy" (Wallen & Fraenkel, 2001).

Nevertheless, Gay (1996) provided a different perspective. This author indicated that if

the members or elements of the population are more than 100,000, the sample size ought to be around 384 (Gay, 1996).

In this study, the target population or accessible population is around 4,000 (CTUSF, 2004). Based on the notions of Wallen and Fraenkel (2001) and Gay (1996), the desired sample size in this study was 640, which is equal to 40 teams (according to CTUSF records in 2004, the average number of the registered players for each team is 16). Since this study compared conference levels and gender, the population was classified into six subgroups: (a) male conference A1; (b) male conference A2; (c) male conference A3; (d) female conference A1; (e) female conference A2; and (f) female conference A3.

To diminish sampling error, the researcher established a ratio of each conference's basketball teams based on the total number of teams in the conference (227), and 40 teams would be selected for the sample. A proportionate number of teams would be chosen from each conference. According to CTUSF's report in 2004, male conference A1 contained 16 teams out of a total of 227 teams; hence, the appropriate sample size being selected was three teams, 48 players (7.1%). Male conference A2 contained 48 teams; the appropriate sample size being selected was eight teams, 128 players (21%). Male conference A3 contained 77 teams; the appropriate sample size being selected was 14 teams, 224 players (33.9%). Female conference A1 contained 12 teams; the appropriate sample size being selected was two teams, 32 players (5.7%). Female conference A2 contained 27 teams; the appropriate sample size being selected was five teams, 80 players (11.5%). Female conference A3 contained 47 teams; the appropriate sample size being selected was eight teams, 128 players (20.8%).

The number of samples chosen from each conference was fairly and adequately representative of the total of sample size of 640 (see Figure 2). In this study, the settings for data collection were the campuses of each university and college in Taiwan. There was a quiet and unrestricted place available for these representatives to complete the survey questionnaire that would be used in the study.

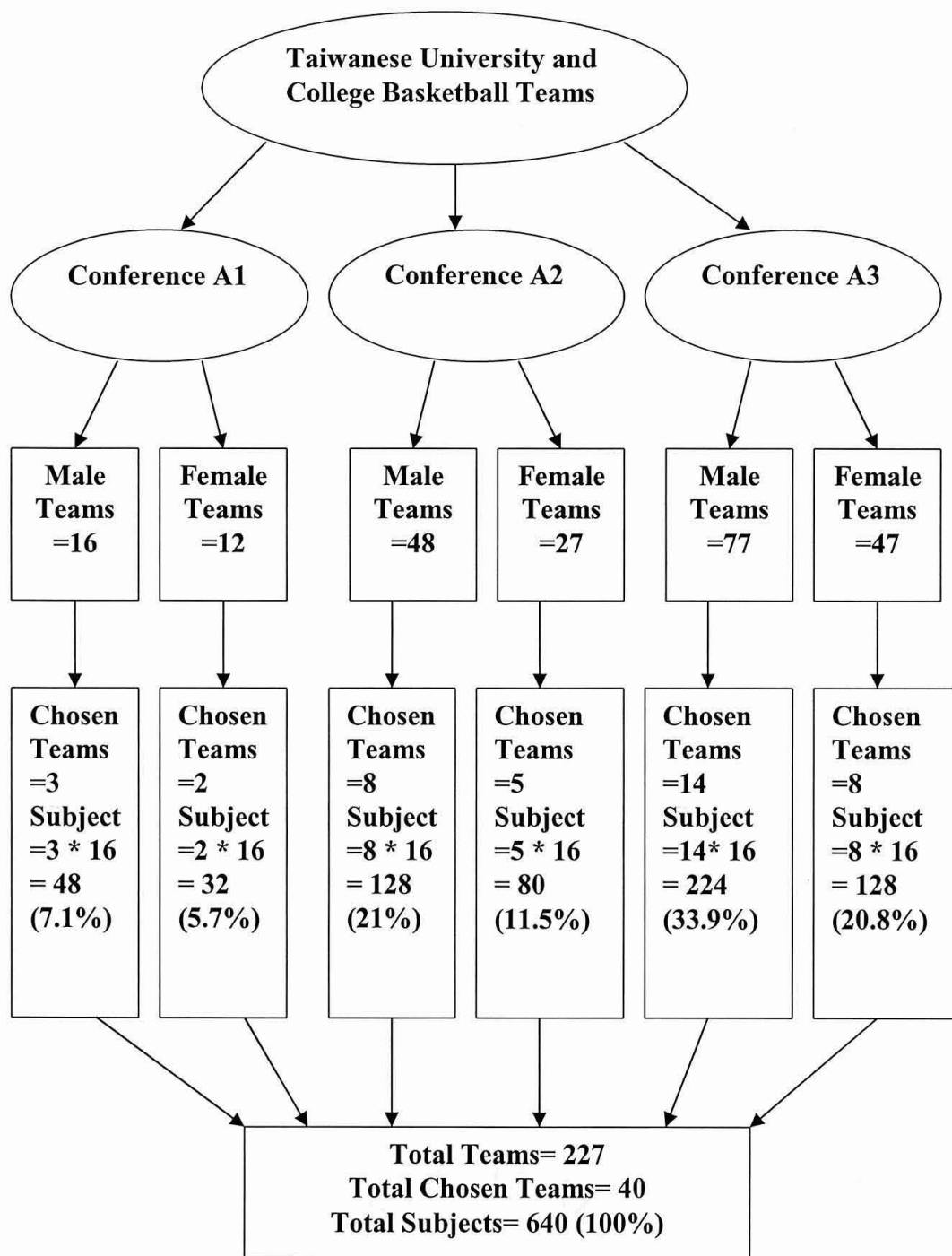


Figure 2. Stratified sampling method.

Instrumentation

The questionnaire employed in this study consisted of four parts and is shown in Appendix C (English) and Appendix D in Chinese. It consists of a total of 64 items.

Part 1 is the Socio-Demographic Profile, which was developed by the researcher. This was designed to obtain the college basketball players' demographic and background information and has five items.

Part 2 is the Leadership Scale for Sports (LSS), which consisted of 40 items and was divided into five dimensions: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; and (e) Positive Feedback to measure the college basketball players' perceptions of their coach's leadership behaviors.

Part 3 is the Group Environment Questionnaire (GEQ), which consisted of 18 items and was divided into four dimensions: (a) Individual Attraction to the Group-Task; (b) Individual Attraction to the Group-Social; (c) Group Integration Task; and (d) Group Integration-Social to measure team cohesion.

Part 4 is team performance, which consisted of one question to determine the winning percentage of the subject's team in the season competitions of the University Basketball Association of Taiwan in 2005.

The four-part questionnaire is a self-report survey instrument that obtained information from the Taiwanese college basketball players. The five-point Likert rating scale, fill-in-the-blank, and checklists was employed. The four-part questionnaire survey required around 15 minutes to complete.

Part 1: Socio-Demographic Profile

The socio-demographic profile and background information of the Taiwanese college basketball players who were randomly selected to participate in this study was measured via “check-list” questions such as player’s level, gender, and years of participating in this team. The participants’ age was indicated as a “fill-in-the-blank.”

The socio-demographic data and background information were collected to describe the sample and to understand their relationships with other variables in this study. Player level was categorized into conference A1, conference A2 and conference A3. Gender was classified as “Male” or “Female.” Years of participating in this team are categorized as “under 1 year,” “1 to under 2 years,” “2 to under 3 years,” and “3 years and above.” A “fill-in-the-blank” where the participant’s age was filled in was displayed. The name of the participant’s school was filled in the blank provided.

The directions for the participant to complete Part 1 were as follows: “This part comprises some demographic questions that are only for the purpose of scholarly research. Please feel comfortable to respond to these questions, and please choose the most appropriate option that you feel and place an (✓) into the . Despite the name of the participant’s school being collected, the names of schools were not shown in this dissertation.

Part 2: Leadership Scale for Sports-LSS

Leadership Scale for Sports (LSS) was developed by Chelladurai and Saleh (1980). This instrument has been widely adapted and employed in numerous investigations regarding coaches’ leadership behaviors, because the LSS has accurately predicted coaches’ leadership effectiveness (Cote & Sedgwick, 2003). Zhang et al.

(1997) also mentioned that most of the coaching leadership studies in recent years have used the LSS to measure the relationship between coaching leadership and the athlete.

The LSS contains three versions: (a) athletes' preferences; (b) athletes' perceptions; and (c) coaches' perceptions of their own behavior (Chelladurai & Saleh, 1980). Part 2 of this instrumentation employed only the athletes' perceptions version to identify the subjects' perceptions of coach's leadership behaviors.

The Leadership Scale for Sports (LSS) consists of 40 items and is divided into five dimensions: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; (e) and Positive Feedback (Chelladurai & Saleh, 1980). Each dimension (coaches' behavior) can be measured by some of the 40 items, which are as follows:

1. Training and Instruction was measured by items 1, 5, 8, 11, 14, 17, 20, 23, 26, 29, 32, 35, and 38 (Total: 13 items);
2. Democratic Behavior was measured by items 2, 9, 15, 18, 21, 24, 30, 33, and 39 (Total: nine items);
3. Autocratic Behavior was measured by items 6, 12, 27, 34, and 40 (Total: five items);
4. Social Support was measured by items 3, 7, 13, 19, 22, 25, 31, and 36 (Total: eight items); and
5. Positive Feedback was measured by items 4, 10, 16, 28, and 37 (Total: five items).

In this section, the participants were asked to respond to their perception of coach's leadership behaviors, according to a five-point frequency rating scale, ranging

from 1 (Always) to 5 (Never). The direction was equivalent for each of the LSS questions. The low numbers showed high levels of a specific leadership behavior, and the high numbers showed low levels of a specific leadership behavior.

Reliability

Internal consistency (Cronbach's α) for the five leadership dimensions of the Leadership Scale for Sports was assessed by Chelladurai and Saleh (1980), who indicated that the Leadership Scale for Sports possessed acceptable reliability. Furthermore, these researchers showed the Cronbach α of each dimension demonstrated the reliability of the instrument. The reliability coefficients of each subscale were:

1. Training and Instruction (13 items): Cronbach $\alpha = 0.93$;
2. Democratic Behavior (nine items): Cronbach $\alpha = 0.87$;
3. Autocratic Behavior (five items): Cronbach $\alpha = 0.79$;
4. Social Support (eight items): Cronbach $\alpha = 0.86$; and
5. Positive Feedback (five items): Cronbach $\alpha = 0.92$.

According to these data, the reliability of the Leadership Scale for Sports used in this study is acceptable.

Validity

The construct validity of the Leadership Scale for Sports (LSS) was identified by using the method of construct factor analysis used by Chelladurai and Saleh (1980). Since the LSS was developed by Chelladurai and Saleh in 1980, the LSS has been widely utilized by many researchers to measure coaching leadership (Chelladurai, 1990). Therefore, the validity of this instrument in this part has been established.

Part 3: Group Environment Questionnaire-GEQ

The Group Environment Questionnaire (GEQ) was developed by Carron et al. (1985), and is frequently used to measure team cohesion by researchers. The Group Environment Questionnaire consists of 18 items and is divided into four dimensions: (a) Individual Attraction to the Group-Task (IAG-T); (b) Individual Attraction to the Group-Social (IAG-S); (c) Group Integration-Task (GI-T); and (d) Group Integration-Social (GI-S) (Carron et al., 1985).

Furthermore, each dimension can be measured by some of the 18 items, which were as follows:

1. Individual Attraction to the Group-Task (IAG-T) was measured by items 2, 4, 6, and 8 (Total: four items);
2. Individual Attraction to the Group-Social (IAG-S) was measured by items 1, 3, 5, 7, and 9 (Total: five items);
3. Group Integration-Task (GI-T) was measured by items 10, 12, 14, 16, and 18 (Total: five items); and
4. Group Integration-Social (GI-S) was measured by items 11, 13, 15, and 17 (Total: four items).

In this part, the 18 items were appraised on a nine-point semantic differential scale with anchors of one (Strongly Disagree) and nine (Strongly Agree). Generally speaking, the direction of GEQ questions indicated that low numbers presented high levels of attraction or integration, and high numbers presented low level of attraction or integration. However, for questions 5, 9, 10, 12, 15 and 16, the responses were not identical. For these questions, the responses showed that low numbers presented low

levels of attraction or integration, and high numbers presented high levels of attraction or integration. In order to give the same direction for all GEQ questions, the items 5, 9, 10, 12, 15 and 16 would be reversed in the statistical process.

Reliability

Carron et al. (1985) had examined the reliability of the Group Environment Questionnaire. These researchers identified the internal consistency for the four cohesion dimensions of the Group Environment Questionnaire, and indicated that the Group Environment Questionnaire had acceptable reliability. Furthermore, Carron et al. (1985) showed the Cronbach α of each dimension to provide evidence of the reliability of the instrument. The reliability coefficients of each subscale were as follows:

1. Individual Attraction to the Group-Task (4 items): Cronbach $\alpha = 0.75$;
2. Individual Attraction to the Group-Social (5 items): Cronbach $\alpha = 0.60$;
3. Group Integration-Task (5 items): Cronbach $\alpha = 0.70$; and
4. Group Integration-Social (4 items): Cronbach $\alpha = 0.76$.

According to these data, the reliability of the Group Environmental Questionnaire used in this study was acceptable.

Validity

Since the Group Environment Questionnaire (GEQ) was developed by Carron et al. in 1985, the GEQ has been widely employed by many researchers to examine the team cohesion (Carron et al., 1985). Furthermore, the construct validity of the GEQ was attested to by Carron et al. (1985). Therefore, the validity of this instrument in this part was established.

Part 4: Team Performance

In this study, team performance was defined as the total winning percentage of each team for the games played in the 2005 season of University Basketball Association (UBA) of Taiwan; play-off competitions were excluded. The score of winning percentage was calculated by dividing the number of acquired points by the total number of games played. One point was designated for a winning game and no points were designated for a game lost. There was no possibility for a tie to occur in basketball games because in all regular basketball competitions, overtime was used to break a tie. In this section, the subject was asked to fill in the blank to indicate the team's winning percentage.

Procedures: Ethical Considerations and Data Collection Methods

1. The study employed a survey that included the Socio-Demographic Profile, Leadership Scale for Sports, Group Environmental Questionnaire, and Team Performance, as the instrument of data collection. The researcher first contacted the original developer of each instrument to ask for permission to use the instruments, allowing the researcher to use the original developer's creations to perform a scholarly survey, and permit the researcher to translate the questionnaire into a Chinese version (see Appendixes A and B).
2. After the instruments were translated into Chinese by the researcher, the new version of the instruments was examined by certified translators to ensure the accuracy and authenticity of the new Chinese version (see Appendixes C and D).
3. The sample for this study was randomly selected on a stratified basis from the Taiwanese college basketball players who were registered to participate in the

2005 UBA of Taiwan. Therefore, the participant's information, which included names of the participating schools, the coaches, and the participating basketball players were collected, but were not shown in this dissertation. This information was made available from the Taiwanese College Basketball Association (TCBA) website on December 2005 (all of the participating college teams were to complete their registration process before November 2005).

4. Based on the principle of protecting the human subjects, an application was presented to the Lynn University Institutional Review Board (IRB) for approval for this research study. The data collection was not initiated until the application was approved by the IRB (see Appendix G).
5. Since this study compared the perception of coaching leadership among different gender and different conference level basketball players, the population was classified into the following six subgroups: (a) male conference A1; (b) male conference A2; (c) male conference A3; (d) female conference A1; (e) female conference A2; (f) and female conference A3. Therefore, the researcher used stratified random sampling to select forty teams, and all the team players of each of the forty teams were included in the sample to complete the survey.
6. After the stratified random sampling was designed, the researcher contacted the coaches and players sampled from the population to request their agreement to participate in this survey by telephone or e-mail. If the coaches

and players were willing to participate, the Informed Consent Form was then mailed to them.

7. After receiving the replies from these coaches, the researcher made an appointment with each team for a convenient time to conduct the survey research;
8. The researcher collected the data on outdoor basketball courts in each selected university or college, and conducted the survey after their training programs. Therefore, there was no need to contact the selected university and college for data collection approval. To enhance the efficacy and accuracy of data collection, the researcher supervised and completed the data collection processes personally. All participants were informed that anonymity was protected, and there was no individual participant identifier in this survey form. Each survey questionnaire was given a number as code. Otherwise, all data collected from the participants was unidentified;
9. To ensure anonymity, the participants completed the survey questionnaire in private, after which the survey questionnaires were placed in an envelope, and then put the survey in a mail box with a slot;
10. During the survey, if there were any questions, participants approached the researcher who responded immediately. Further, if the participant felt uncomfortable or unwilling to do this survey, the subjects could stop at any time. However, all completed the survey.
11. The confidentiality of this survey was maintained. The survey data and questionnaires were preserved in a locked depository box, for safekeeping by

the researcher for three years. After that time, all the survey data and questionnaires will be destroyed.

12. The target population in this study was from among the Taiwanese college basketball players with a stratified-random sampling design; therefore, participants would be located all over Taiwan. The researcher used three months to conduct the data collection processes.
13. The period for the data collection processes in this study was between January 1, 2006 and March 31, 2006. Form 8 completion of data collection was submitted to IRB in July, 2006.
14. A summary report was sent to the participating teams that expressed interest in the findings of the study.

Evaluation of Ethical Aspects of the study

1. To protect the human subjects, an application was presented to the Lynn University Institutional Review Board (IRB) for the approval of this research study. After the application was approved by IRB, the data collection processes was then initiated.
2. In the data collection process, after the random sampling, the researcher contacted those coaches and players who were sampled from the population to ask their agreement for participating in this survey research by telephone or e-mail. If these coaches and players were willing to participate in this survey research, the Informed Consent Form was then sent to the coaches.
3. The participants were notified that all data collected would be unidentified.

4. Each survey questionnaire was anonymous, and used a number for coding purposes.
5. To ensure the subject's privacy, the participants completed the survey questionnaire in private and placed the survey questionnaires into an envelope in person.
6. During the survey, if the participant felt uncomfortable or was unwilling to complete this survey, the subject would immediately stop doing the survey at any time.
7. To maintain the confidentiality of this survey, the survey data was saved on a "password protected" computer. The survey questionnaires and responses were stored in a locked depository box for three years, after which all of the survey data and questionnaires of this research will be destroyed.

On evaluation of ethical aspects, it is found that these research activities have shown ethical consideration for this study.

Methods of Data Analysis

The Statistical Package of Social Science (SPSS) for Windows version 13.0 was employed in this study to analyze the all data collected from the surveys. Varied statistical techniques were used, including descriptive statistics, *t*-Test, ANOVA, simple regression, and Step-Wise multiple regression analysis.

Descriptive statistics (frequency, mean, and standard deviation) explained socio-demographic characteristics such as (a) conference level; (b) gender; (c) years of participating; (d) coach's leadership behaviors; (e) team cohesion; and (f) team performance in Taiwanese college basketball players in Research Question #1.

For Research Questions #2, and #4, ANOVA was employed to investigate the relationship between college basketball players' socio-demographic characteristics and their perception of coach's leadership behaviors. For Research Questions #3, *t*-Test was employed to examine whether significant differences existed between genders.

For Research Questions #5, and #7, ANOVA was utilized to examine the relationship between college basketball players' socio-demographic characteristics and team cohesion. For Research Questions #6, *t*-test was employed to examine whether significant differences existed between genders.

For Hypothesis #1, a simple regression was used to explain whether there were significant relationships between coach's leadership behaviors and team cohesion.

For Hypothesis #2, a step-wise multiple regression was used to explain whether the coach's leadership behaviors and team cohesion could effectively predict team performance.

Evaluation of Research Methods

The internal and external validity was assessed through the strengths and weaknesses of the research method. Internal validity concerns the factors in addition to the independent variable that influence the dependent variable; external validity regards the extent to which the research outcomes can be generalized to another population (Gay & Airasian, 2000). These strengths and weaknesses were as follows:

Strengths

1. It was an advantage to employ a quantitative research method in this study to ensure the findings can be generalized to a large population (Gay, 1996);

2. Quantitative research utilizes a deductive approach to make predictions, build facts, and test those stated hypotheses. Most of the quantitative research data analysis is statistical, endeavoring to display that the world can be viewed in terms of a reality, and that the reality is able to be understood and measured (Gay & Airasian, 1999);
3. The advantage of using quantitative research is to collect and analyze data in a numerical form; therefore, the consequences will be more reliable statistically, and the analysis will be more objective;
4. The research instruments in this study were valid and reliable, providing internal validity to the study;
5. Correlational research, which attempts to build a connection between two or more variables (Gay, 1996), formed the strength in this study;
6. The advantage of using the sampling method was to “ensure that no subpopulation will be omitted from the sample, and avoid overloading in certain subpopulations” (Wiersma, 1995, p. 10);
7. The strength of the stratified random sampling method is that it allows the researcher to study any distinctions that exist between different subgroups of a population (Ary et al., p. 67). The main advantage of this technique is that it reflects the representation of defined groups in the population (Ary et al., 2002);
8. For the data analysis, the consideration of statistical procedures was appropriate to respond the research questions and hypotheses of this

investigation. This was helpful to intensify the internal validity of the study in its appraisal of variables; and

9. The large sample size obtained in this study strengthened internal validity.

Weaknesses

1. The quantitative method also has “the disadvantage that the resulting theory often fails to take account of the unique characteristics of individual cases” (Edwards, 1998, p. 53);
2. The primary disadvantage of quantitative research is that “issues are only measured if they are known prior to the beginning of the survey” (McCullough, 1997, phrase 10);
3. The research method, using questionnaires to survey the subjects, was chosen because the researcher could not talk face-to-face with participants to clearly understand their thoughts. The questionnaire employed Likert five-point and nine-point scales to measure the subject’s response; a limitation that might not have allowed the subject to completely express his/her opinions; and
4. The weakness of school settings was that there might be some factors beyond the researcher’s control which might interfere with participants in the data collection process. Therefore, during the data collection, anything that might affect the subject’s response would potentially influence the construct validity of the study.

CHAPTER IV

DATA ANALYSIS AND RESULTS

The major purpose of this study was to explore the relationships between coach leadership behaviors as perceived by team players, team cohesion, and team performance, according to conference level, gender, and years of team participation in Taiwanese college basketball players.

Chapter Four evaluates the results analyzed from the data collected. This chapter begins with the instrument validation which contains the reliability and factor analysis. The internal consistency reliability of this instrument was examined by using Cronbach's coefficient α , and the construct validity of this instrument was measured by using the exploratory factor. The subsequent section analyzed all data using descriptive analysis that obtained characteristics of all variables.

The next section employed analysis of variance (ANOVA) to analyze the differences between groups of the nominal variables: (a) player's gender; (b) conference level; (c) years of team participation; (d) five dimensions of coach's leadership behaviors; and (e) four dimensions of team cohesion.

The final section used a step-wise multiple regression analysis to predict the dependent variable from nine independent variables. The dependent variable of this study was Team Performance. The independent variables of this study were: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; (e) Positive Feedback; (f) Individual Attraction to the Group Task; (g) Individual Attraction to the Group Social; (h) Group Integration-Task; and (i) Group Integration-Social.

During a two-month period of data collection, 618 questionnaires were sent out, of which 546 were returned. A total of 72 questionnaires were not returned, and 24 questionnaires were incomplete or ineffective. Therefore, a total of 522 effective questionnaires were acquired for the data analysis. All effective questionnaires were coded for statistical analysis, and the computer software of Statistical Package for Social Sciences (SPSS) was utilized to process the statistical analysis.

Reliability Analysis

Cronbach's coefficient α is employed typically to analyze variables that are composed of several Likert scale items. In this study, the internal consistency reliability was measured by using Cronbach's coefficient α according to the mean or average correlation of each item with every other item.

In this study, the internal consistency reliability of the five dimensions of the Leadership Scale for Sports was assessed and the reliability coefficients of each subscale were as follows:

1. Training and Instruction (13 items): Cronbach $\alpha = 0.90$;
2. Democratic Behavior (nine items): Cronbach $\alpha = 0.88$;
3. Autocratic Behavior (four items): Cronbach $\alpha = 0.71$;
4. Social Support (eight items): Cronbach $\alpha = 0.84$; and
5. Positive Feedback (five items): Cronbach $\alpha = 0.83$.

In the process of statistical analysis, item #6 of Autocratic Behavior was removed. Had item #6 of Autocratic Behavior not been removed, then Cronbach's α coefficient of Autocratic dimension would have been under 0.70 and insufficient to prove the internal consistency reliability of the autocratic dimension of the Leadership Scale for Sports.

To explore the reason for the unreliable results for item #6, the likely explanation was that the translation from English into Chinese was unclear and caused misunderstanding when respondents answered the question, which resulted in the low Cronbach's α coefficient. Leech, Barrett and Morgan (2005) indicated that Cronbach's α value should be above .70. As shown in Table 2, each dimension of the Leadership Scale for Sports for Cronbach's α value was above .70. Hence, the internal consistency reliability of the five dimensions of the Leadership Scale for Sports was approved.

Table 2

Reliability Statistics of Five Dimensions of Leadership Scale for Sports

Variable	Cronbach's α Coefficient	Items
Training & Instruction	.90	13
Democratic Behavior	.88	9
Autocratic Behavior	.71	4 ^a
Social Support	.84	8
Positive Feedback	.83	5

^a Item #6 of Autocratic Behavior was removed.

The internal consistency reliability of the four dimensions of the Group Environment Questionnaire was assessed and the reliability coefficients of each subscale were:

1. Individual Attraction to the Group-Task (four items): Cronbach $\alpha = 0.71$;
2. Individual Attraction to the Group-Social (five items): Cronbach $\alpha = 0.72$;
3. Group Integration-Task (three items): Cronbach $\alpha = 0.76$; and
4. Group Integration-Social (three items): Cronbach $\alpha = 0.79$

In the process of statistical analysis, items #14 and #18 of Group Integration-Task, and item #15 of Group Integration-Social were removed. Had item #14 and #18 of Group Integration-Task, and item #15 of Group Integration-Social not been removed, then Cronbach's *a* coefficient of Group Integration-Task and Group Integration-Social would have been under 0.70 and therefore insufficient to prove the internal consistency reliability of the Group Environmental Questionnaire. The possible reason for this was an unclear translation from English into Chinese which caused participants to misunderstand the question. Hence, the low Cronbach's *a* coefficient. After removing items #14 and #18 of Group Integration-Task, and item #15 of Group Integration-Social, as shown in Table 3, each dimension of the Group Environmental Questionnaire for Cronbach's *a* value was above .70. Hence, the internal consistency reliability of the four dimensions of the Group Environmental Questionnaire was acceptable.

Table 3

Reliability Statistics of Four Dimensions of Group Environment Questionnaire

Variable	Cronbach's <i>a</i> Coefficient	Items
Individual Attraction to Group Task	.71	4
Individual Attraction to Group Social	.72	5
Group Integration-Task	.76	3 ^a
Group Integration-Social	.79	3 ^a

^a Item #14 and #18 of Group Integration-Task were removed.

^a Item #15 of Group Integration-Social was removed.

Exploratory Factor Analysis

The primary intention of factor analysis was to inspect the associations among variables, according to the correlations between variables, to examine whether there are underlying factors. In this study, most of the instruments were used from prior research and these instruments had been put to the test by the instrument developer.

To verify whether the construct of this study was the same as the original set of variables, this study employed factor analysis to re-examine these variables. Furthermore, the consequence of the factor analysis stood for the construct validity of the instrument of this study.

There were two parts of the instrument that needed to be examined: Leadership Scale for Sports and Group Environment Questionnaire. Each part was comprised of several dimensions or variables. For instance, Leadership Scale for Sports was composed of: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; and (e) Positive Feedback.

The Group Environment Questionnaire was composed of: (a) Individual Attraction to the Group Task; (b) Individual Attraction to the Group Social; (c) Group Integration-Task; and (d) Group Integration-Social. Each dimension or variable was made up of several items, which required answers in the questionnaire. Factor analysis was employed to examine whether the items hung together by each of these dimensions and corresponded to the original dimension sets.

The principal axis factor analysis was employed here to examine the underlying structure for the 39 items of Leadership Scale for Sports. According to prior research conducted by Chelladurai and Saleh (1980), the 39 items were designed to be categorized

into five dimensions: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; and (e) Positive Feedback.

The items and factor loading for the rotated factors were shown in Table 4. All items' factor loading were above .50, according to the recommendations of Igbaria and Livari (1995), which indicated that the construct validity was acceptable. Furthermore, all construct design tallied with prior research conducted by Chelladurai and Saleh (1980).

Table 4

Factor Loading for the Five Dimensions of Leadership Scale for Sports

Items	Factor Loadings				
	1	2	3	4	5
Item #1 (Training & Instruction)	.718				
Item #5 (Training & Instruction)	.647				
Item #8 (Training & Instruction)	.616				
Item #11 (Training & Instruction)	.571				
Item #14 (Training & Instruction)	.583				
Item #17 (Training & Instruction)	.569				
Item #20 (Training & Instruction)	.536				
Item #23 (Training & Instruction)	.621				
Item #26 (Training & Instruction)	.732				
Item #29 (Training & Instruction)	.697				
Item #32 (Training & Instruction)	.658				
Item #35 (Training & Instruction)	.614				
Item #38 (Training & Instruction)	.711				
Item #2 (Democratic Behavior)		.678			
Item #9 (Democratic Behavior)		.638			
Item # 15 (Democratic Behavior)		.849			
Item #18 (Democratic Behavior)		.753			
Item #21 (Democratic Behavior)		.535			
Item #24 (Democratic Behavior)		.521			
Item #30 (Democratic Behavior)		.751			
Item #33 (Democratic Behavior)		.591			
Item #39 (Democratic Behavior)		.672			

Table 4 (Continued)

Factor Loading for the Five Dimensions of Leadership Scale for Sports

Item #12 (Autocratic Behavior)	.507
Item #27 (Autocratic Behavior)	.679
Item #34 (Autocratic Behavior)	.710
Item #40 (Autocratic Behavior)	.776
Item # 3 (Social Support)	.521
Item #7 (Social Support)	.536
Item #13 (Social Support)	.572
Item #19 (Social Support)	.662
Item #22 (Social Support)	.555
Item #25 (Social Support)	.657
Item #31 (Social Support)	.831
Item #36 (Social Support)	.727
Item #4 (Positive Feedback)	.542
Item #10 (Positive Feedback)	.709
Item #16 (Positive Feedback)	.676
Item #28 (Positive Feedback)	.764
Item #37 (Positive Feedback)	.746

For the Group Environment Questionnaire, 15 items were examined by the principal axis factor analysis. According to the prior research conducted by Carron et al. (1985), these items were designed to be categorized into four dimensions: (a) Individual Attraction to the Group-Task; (b) Individual Attraction to the Group-Social; (c) Group Integration-Task; and (d) Group Integration-Social. The items and factor loading for the rotated factors are shown in Table 5. The results showed that all factor loading was above .50, according to the recommendations of Lgbaria and Livari (1995), which indicated that the construct validity was acceptable. Furthermore, all construct design tallied with prior research conducted by Carron et al. (1985).

Table 5

Factor Loading for the Four Dimensions of Group Environment Questionnaire

Items	Factor Loadings			
	1	2	3	4
Item # 2 (Individual Attraction to Group Task)	.776			
Item #4 (Individual Attraction to Group Task)	.641			
Item #6 (Individual Attraction to Group Task)	.693			
Item #8 (Individual Attraction to Group Task)	.598			
Item #1 (Individual Attraction to Group Social)		.536		
Item #3 (Individual Attraction to Group Social)		.547		
Item #5 (Individual Attraction to Group Social)		.727		
Item #7 (Individual Attraction to Group Social)		.524		
Item #9 (Individual Attraction to Group Social)		.809		
Item #10 (Group Integration-Task)			.770	
Item #12 (Group Integration-Task)			.635	
Item #16 (Group Integration-Task)			.822	
Item #11 (Group Integration-Social)				.704
Item #13 (Group Integration-Social)				.869
Item #17 (Group Integration-Social)				.790

Research Question Explored*Research Question 1*

Socio-demographic Descriptive Analysis of participants was conducted first.

Among the 522 respondents, there were 317 (60.7%) males and 205 (39.3%) females.

The frequency distribution of respondents' gender is shown in Table 6 and Figure 3.

Table 6

Frequency of Sample by Players' Gender

Gender	Frequency (<i>F</i>)	Percent (%)
Male	317	60.7
Female	205	39.3

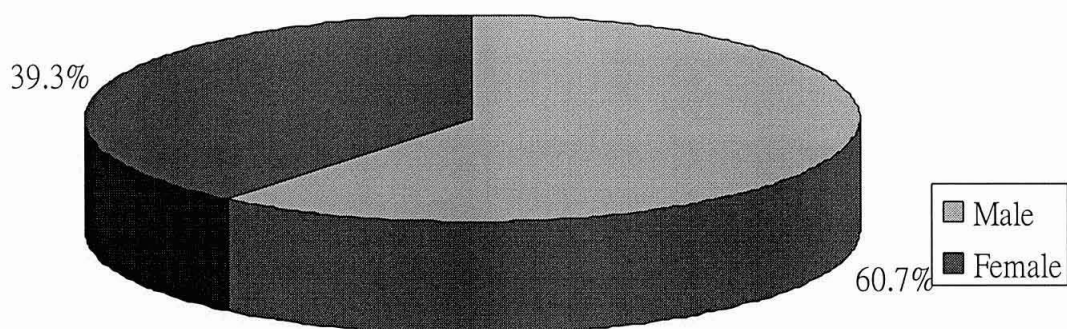


Figure 3. Distribution of sample by player's gender.

In this study, 83 (15.9%) respondents were 18 years old; 105 (20.1%) respondents were 19 years old; 119 (22.8%) respondents were 20 years old; 103 (19.7%) respondents were 21 years old; and 67 (12.8%) respondents were 22 years old. Only 45 (8.6%) respondents were 23 or above 23 years old. The frequency distribution of respondents' age is shown in Table 7 and Figure 4.

Table 7

Frequency of Sample by Players' Age

Age	Frequency (<i>F</i>)	Percent (%)
18	83	15.9
19	105	20.1
20	119	22.8
21	103	19.7
22	67	12.8
23 +	45	8.6

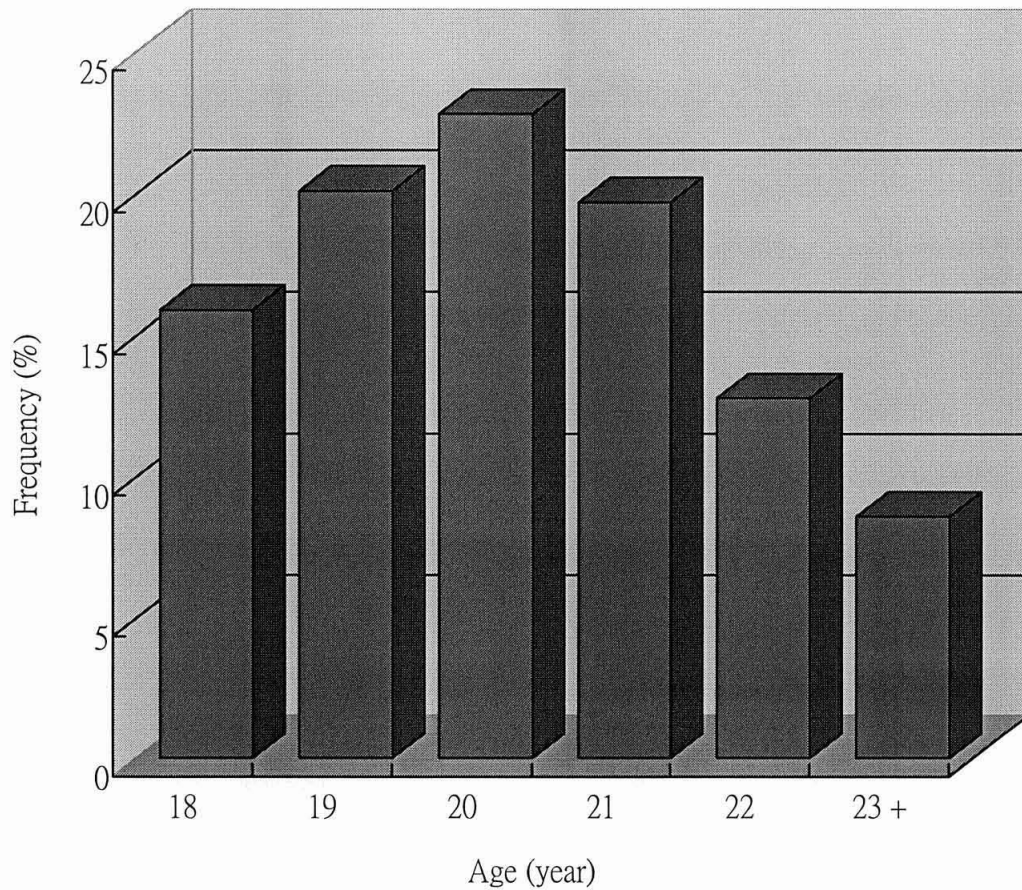


Figure 4. Distribution of sample by player's age.

In this study, there were 64 (12.3%) conference A1 respondents; 159 (30.5%) conference A2 respondents; and 299 (57.3%) conference A3 respondents. The frequency distribution of respondents' conference level is shown in Table 8 and Figure 5.

Table 8

Frequency of Sample by Players' Conference Level

Conference Level	Frequency (<i>F</i>)	Percent (%)
Conference A1	64	12.3
Conference A2	159	30.5
Conference A3	299	57.2

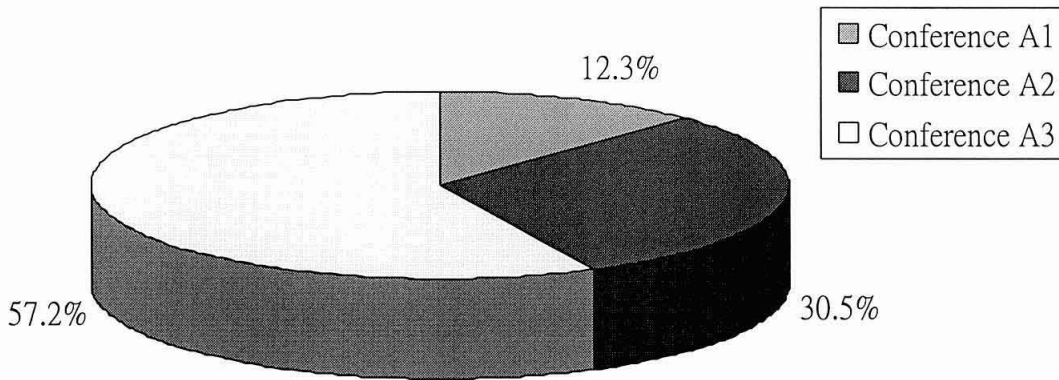


Figure 5. Distribution of sample by player's conference level.

In Taiwan, the college basketball conference is classified into six subgroups: (a) male conference A1; (b) male conference A2; (c) male conference A3; (d) female conference A1; (e) female conference A2; and (f) female conference A3. To diminish the sampling error, the researcher selected a proportionate number of samples from each conference, according to a ratio of each conference's basketball teams, based on the total number of teams in the conference, as shown in the 2004 report of the Chinese Taipei University Sports Federation (CTUSF). According to the report, there were 16 teams (281 players) registered in male conference A1; 12 teams (187 players) in female conference A1; 48 teams (824 players) in male conference A2; 27 teams (428 players) in female conference A2; 77 teams (1297 players) in male conference A3; and 47 teams (750 players) in female conference A3. Therefore, in this study, male conference A3 was the largest group of sample selected. Thus, the male conference A3 was the largest group with 197 (37.7%) respondents.

The next largest group was female conference A3 with 102 (19.5%) respondents. The third group was male conference A2 with 88 (16.9%) respondents. The fourth group was female conference A2 with 71 (13.6%) respondents. Male and female conferences

A1 were the two smallest groups with the same 32 (6.1%) respondents. The frequency distribution of respondents' gender x conference level is shown in Table 9 and Figure 6.

Table 9

Frequency of Sample by Players' Gender X Conference Level

		Male	Female
Conference A1	Count	32	32
	% of Total	6.1%	6.1%
Conference A2	Count	88	71
	% of Total	16.9%	13.6%
Conference A3	Count	197	102
	% of Total	37.7%	19.5%

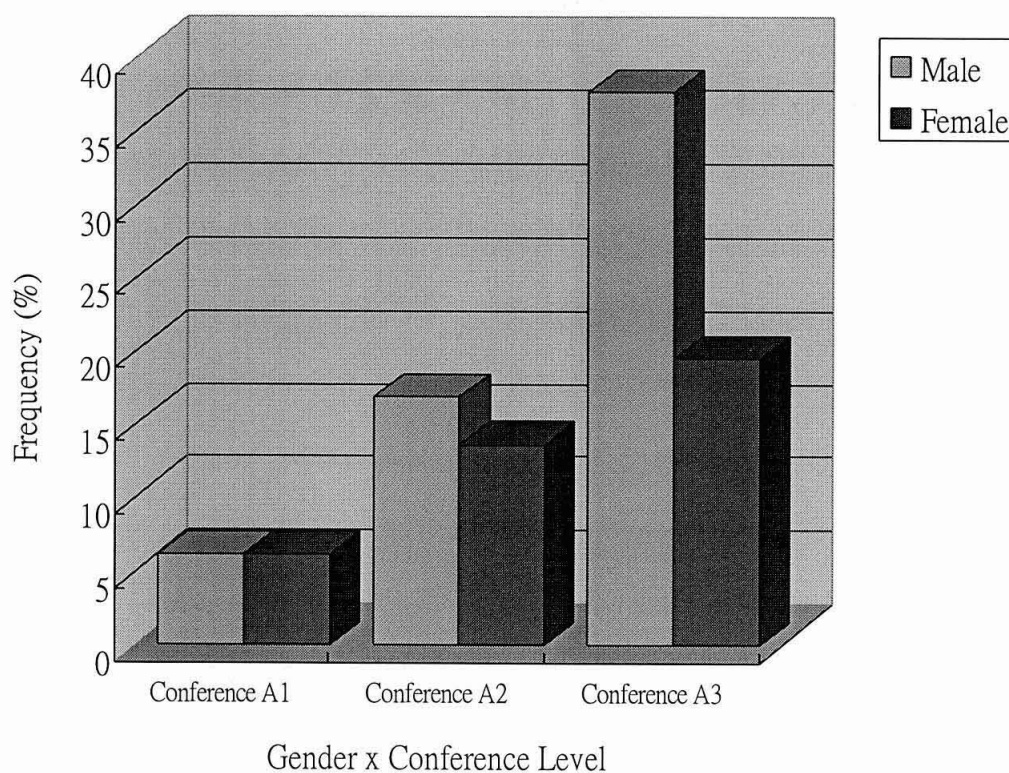


Figure 6. Distribution of sample by player's gender x conference level.

The frequency distribution of respondents' years of team participation is shown in Table 10 and Figure 7. There were 187 (35.8%) respondents who participated in their team under one year. There were 119 (22.8%) respondents whose years of team participation were one to two years; 89 (17.0%) respondents were two to three years; and 127 (24.3%) respondents were three or above three years.

Table 10

Frequency of Sample by Players' Years of Team Participation

Years of Team Participation	Frequency (F)	Percent (%)
Under 1 year	187	35.8
1 to 2 years	119	22.8
2 to 3 years	89	17.0
3 and above 3 years	127	24.3

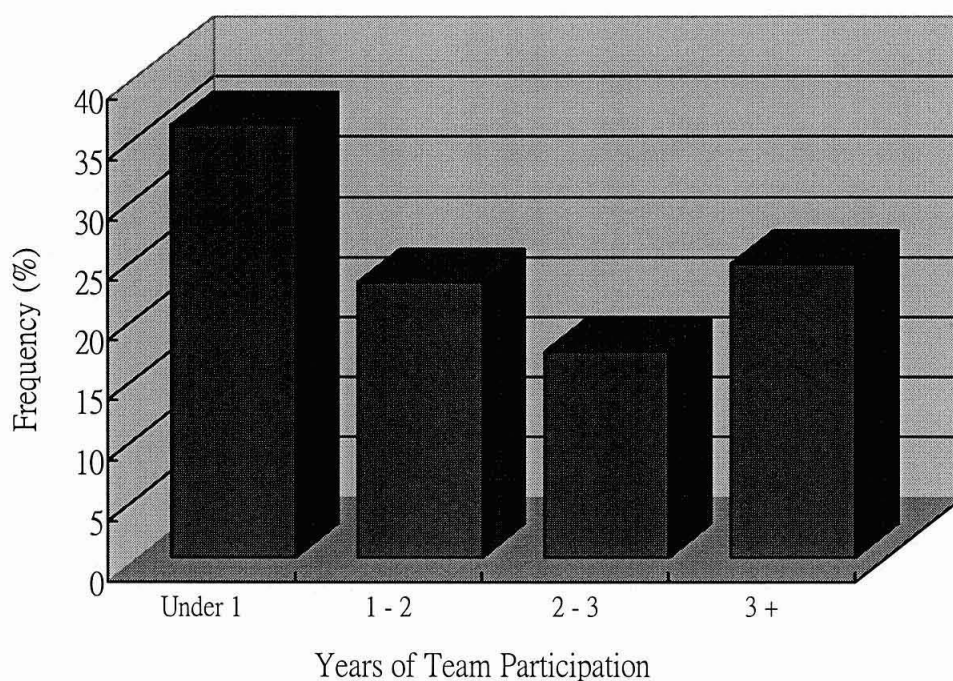


Figure 7. Distribution of sample by player's years of team participation.

In this study, the team performance was presented by the team's winning percentage. There were 18 teams for which winning percentage was between 0 and 50%, and there were 21 teams which winning percentage was from 51% to 100%. The frequency distribution of teams is shown in Table 11 and Figure 8.

Table 11

Frequency of Sample by Teams' Winning Percentage

Winning Percentage	Frequency (<i>F</i>)	Percent (%)
0 – 50%	18	46.2
51% – 100%	21	53.8

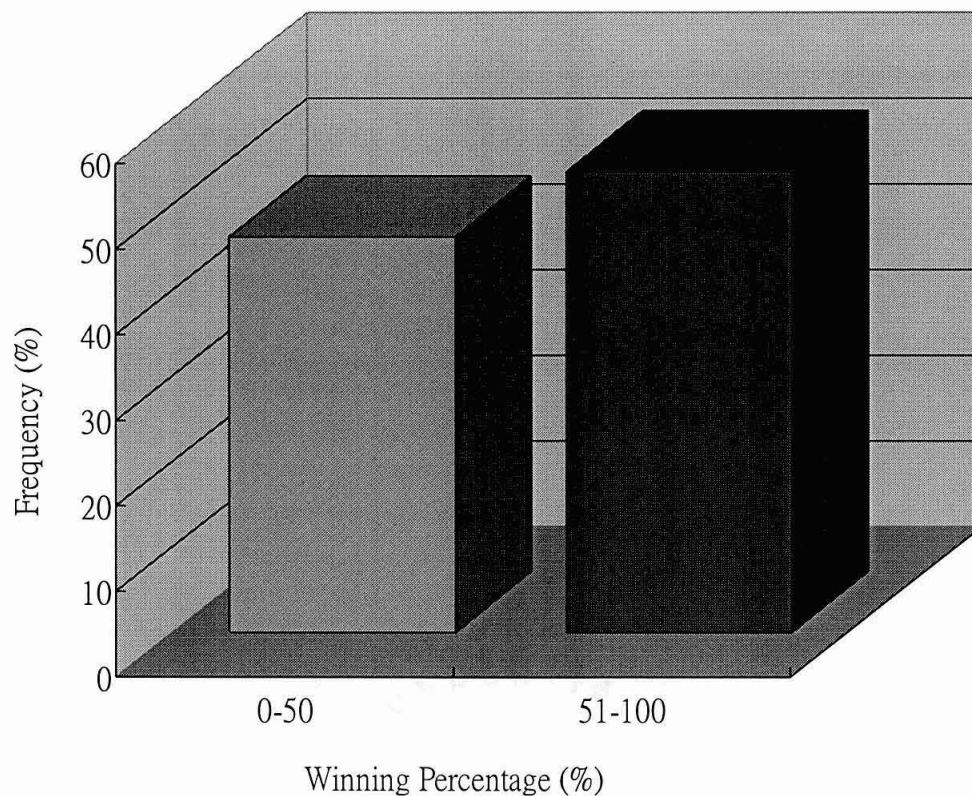


Figure 8. Distribution of sample by teams' winning percentage.

Further, descriptive analysis of means (*M*) and standard deviations (*SD*) were used to describe participants' age, team performance, coach's leadership behaviors, and team cohesion, shown in Table 12. College basketball players had a *M* age of 20.26 with a *SD* of 1.68. As for team performance, winning percentage had a *M* of 0.59 with a *SD* of 0.33. Coach's leadership behaviors (39 items) had *M* ranged from 1.82 to 3.44 and *SD* ranged from 0.81 to 1.31. Team cohesion (15 items) had *M* ranged from 2.38 to 7.48 and *SD* ranged from 1.94 to 2.61.

Table 12

Range, Mean and Standard Deviation of All Variables

	<i>N</i>	Range	Minimum	Maximum	<i>M</i>	<i>STD</i>
Age	522	10	18	28	20.26	1.68
Team Performance (Winning %)	522	1	0	1	0.59	0.33
Leadership Behavior (39 items)	522	4	1	5	1.82~3.44	0.81~1.31
Team Cohesion (15 items)	522	8	1	9	2.38~7.48	1.94~2.61

Research Question 2

The second research question is “Is there any significant difference in overall perceived coaching leadership among the three different conferences of Taiwanese college basketball players?” One-way analysis of variance (ANOVA) was employed to examine whether significant differences existed among the three conferences.

Moreover, if there were significant differences, then the Tukey HSD test or

Games-Howell test was used as post hoc tests to detect those differences. The independent variable was “conferences” (Conference A1, Conference A2, and Conference A3). The dependent variable was “coaching leadership as perceived by team members” (Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback). The coaching leadership as perceived by team members was comprised of five dimensions: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; and (e) Positive Feedback. Hence, this Research Question 1 could be divided into five sub-questions:

- 2.1 Is there any significant difference in Training and Instruction Behavior among three different conferences?
- 2.2 Is there any significant difference in Democratic Behavior among three different conferences?
- 2.3 Is there any significant difference in Autocratic Behavior among three different conferences?
- 2.4 Is there any significant difference in Social Support Behavior among three different conferences?
- 2.5 Is there any significant difference in Positive Feedback Behavior among three different conferences?

Research Question 2.1

There was a statistically significant difference in Training and Instruction Behavior among three different conferences, $F(2, 519) = 6.15, p = .002$ (see Table 13). As shown in Table 14, a post hoc comparisons test using the Tukey HSD test showed no significant difference between Conference A1 and Conference A2. However, there was

a significant difference between Conference A1 and Conference A3, and the Mean Difference between Conference A1 and Conference A3 was .27. Table 14 also showed that there was a significant difference between Conference A2 and Conference A3, and the mean difference between Conference A2 and Conference A3 was .20.

Table 13

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Training and Instruction of Coach's Leadership Behaviors

Source	df	SS	MS	F	p
Training & Instruction					
Between Groups	2	6.33	3.17	6.15	.002
Within Groups	519	267.15	0.52		
Total	521	273.48			

Table 14

Tukey HSD Test Comparing the Differences in Training & Instruction Based on the Three Conference Levels

	Conference A1	Conference A2	Conference A3
Conference A1	--	0.08	0.27*
Conference A2	--	--	0.20*
Conference A3	--	--	--

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

Research Question 2.2

A statistically significant difference was found in Democratic Behavior among three different conferences, $F(2, 519) = 6.94, p = .001$ (see Table 15). As shown in Table 16, a post hoc comparisons test using the Games-Howell test showed that there was a significant difference between Conference A1 and Conference A2, and the mean difference between Conference A1 and Conference A2 was .38. Moreover, there was a significant difference between Conference A1 and Conference A3, and the mean difference between Conference A1 and Conference A3 was .36. There was no significant difference between Conference A2 and Conference A3.

Table 15

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Democratic Behavior of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Democratic Behavior					
Between Groups	2	7.75	3.88	6.94	.001
Within Groups	519	289.94	0.56		
Total	521	297.69			

Table 16

Games-Howell Test Comparing the Differences in Democratic Behaviors Based on the Three Conference Levels

	Conference A1	Conference A2	Conference A3
Conference A1	--	0.38*	0.36*
Conference A2	--	--	-.020
Conference A3	--	--	--

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

Research Question 2.3

A statistically significant difference was not found in Autocratic Behavior among the three different conferences (see Table 17).

Table 17

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Autocratic Behavior of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Autocratic Behavior					
Between Groups	2	3.23	1.61	2.27	.105
Within Groups	519	369.85	0.71		
Total	521	373.01			

Research Question 2.4

There was no significant difference in Social Support among three different conferences (see Table 18).

Table 18

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Social Support of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Social Support					
Between Groups	2	2.62	1.31	1.55	.213
Within Groups	519	437.74	0.84		
Total	521	440.36			

Research Question 2.5

There was a statistically significant difference in Positive Feedback among the three different conferences, $F(2, 519) = 8.57, p = .001$ (see Table 19). As shown in Table 20, a post hoc comparisons test using the Tukey HSD test showed that there was no significant difference between Conference A1 and Conference A2. However, there was a significant difference between Conference A1 and Conference A3, and the mean difference between Conference A1 and Conference A3 was .39. Moreover, Table 19 indicated that there was no significant difference between Conference A2 and Conference A3.

Table 19

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Positive Feedback of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Positive Feedback					
Between Groups	2	8.67	4.33	8.57	.001
Within Groups	519	262.46	0.51		
Total	521	271.13			

Table 20

Tukey HSD Test Comparing the Differences in Positive Feedback Based on the Three Conference Levels

	Conference A1	Conference A2	Conference A3
Conference A1	--	0.23	0.39*
Conference A2	--	--	0.15
Conference A3	--	--	--

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

Research Question 3

The next research question is “Is there any significant difference in overall perceived coaching leadership between genders in Taiwanese college basketball players?” Independent Samples *t*-Test was employed to examine whether significant differences existed between genders. The independent variable was “genders” (Male and Female). The dependent variable was “coaching leadership as perceived by team

members” (Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback). Since the perceived coaching leadership was comprised of five dimensions: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; and (e) Positive Feedback, Research Question 3 was divided into five sub-questions, which were as follows:

3.1 Is there any significant difference in Training and Instruction Behavior between genders?

3.2 Is there any significant difference in Democratic Behavior between genders?

3.3 Is there any significant difference in Autocratic Behavior between genders?

3.4 Is there any significant difference in Social Support Behavior between genders?

3.5 Is there any significant difference in Positive Feedback Behavior between genders?

Research Question 3.1

As shown in Table 21, males were significantly different from females in terms of the Training and Instruction Behavior of the Coach’s Leadership Behaviors, $t = 12.35$, $p = .000$. The M indicated that the average score (1.96) for female college basketball players in Training and Instruction Behavior of perceived coach’s leadership behaviors was lower than the average score (2.19) for males, and the mean difference between the two groups was .23.

Table 21

The t-Test Summary Table Comparing Gender on the Training and Instruction of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SD</i>	<i>M</i>	<i>t</i>	<i>p</i>
Training & Instruction					
Males	317	.74	2.19	12.35**	.000
Females	205	.68	1.96		
Total	522	.72	2.10		

Research Question 3.2

There were no differences between males and females on Democratic Behavior of perceived coach's leadership behaviors (see Table 22)

Table 22

The t-Test Summary Table Comparing Gender on the Democratic Behavior of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Democratic Behavior					
Males	317	.71	2.31	0.20	.654
Females	205	.83	2.34		
Total	522	.76	2.32		

Research Question 3.3

As shown in Table 23, males were significantly different from females on the Autocratic Behavior of perceived coach’s leadership behaviors, $t= 16.86, p= .000$. The mean indicated that the average score (3.24) for female college basketball players in Autocratic Behavior of perceived coach’s leadership behaviors was higher than the average score (2.93) for male college basketball players, and the mean difference between the two groups was -0.31.

Research Question 3.4

As shown in Table 24, males were significantly different from females on the Social Support of perceived coach’s leadership behaviors, $t= 16.95, p = .000$. The mean indicated that the average score (2.98) for female college basketball players in Social Support of perceived coach’s leadership behaviors was higher than the average score (2.64) for male college basketball players, and the mean difference between the two groups was -0.34.

Table 23

The t-Test Summary Table Comparing Gender on the Autocratic Behavior of Coach’s Leadership Behaviors

Source	df	SS	MS	F	p
Autocratic Behavior					
Males	317	.88	2.93	16.86**	.000
Females	205	.76	3.24		
Total	522	.85	3.05		

Table 24

The t-Test Summary Table Comparing Gender on the Social Support of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Social Support					
Males	317	.84	2.64	16.95**	.000
Females	205	.99	2.98		
Total	522	.92	2.77		

Research Question 3.5

There were no differences between males and females on Positive Feedback of perceived coach's leadership behaviors (see Table 25).

Table 25

The t-Test Summary Table Comparing Gender on the Positive Feedback of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Positive Feedback					
Males	317	.71	2.13	3.53	.061
Females	205	.73	2.01		
Total	522	.72	2.08		

Research Question 4

The next research question is "Is there any significant difference in overall perceived coaching leadership among Taiwanese college basketball players who have

different years of participation in the team?” In this question, one-way analysis of variance (ANOVA) was employed by the researcher to examine whether significant differences existed among the different years of Taiwanese college basketball player’s participation in the team. If significant differences existed among them, the Tukey HSD test or Games-Howell test was used for the post hoc tests to detect them. The independent variable was “different years of participating in the team” (Under 1 year, 1 to Under 2 year, 2 to Under 3 year, 3 and Above 3 year). The dependent variable was “perceived coaching leadership” (Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback). Since the perceived coaching leadership was comprised of five dimensions: Training and Instruction, Democratic Behavior, Autocratic Behavior, Social Support, and Positive Feedback, this Research Question 4 could be divided into five sub-questions:

- 4.1 Is there any significant difference in Training and Instruction Behavior among different years of participating in the team?
- 4.2 Is there any significant difference in Democratic Behavior among different years of participating in the team?
- 4.3 Is there any significant difference in Autocratic Behavior among different years of participating in the team?
- 4.4 Is there any significant difference in Social Support Behavior among different years of participating in the team?
- 4.5 Is there any significant difference in Positive Feedback Behavior among different years of participating in the team?

Research Question 4.1

There was no significant difference in Training and Instruction Behavior among players with different years of participation in the team (see Table 26).

Table 26

One-Way Analysis of Variance Summary Table Comparing Years of Team Participation on the Training and Instruction of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Training & Instruction					
Between Groups	3	3.91	1.30	2.50	.058
Within Groups	518	269.57	0.52		
Total	521	273.48			

Research Question 4.2

A statistically significant difference was not found in Democratic Behavior among different years of participating in the team (see Table 27).

Table 27

One-Way Analysis of Variance Summary Table Comparing Years of Team Participation on the Democratic Behavior of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Democratic Behavior					
Between Groups	3	0.49	0.16	0.29	.836
Within Groups	518	297.20	0.57		
Total	521	297.69			

Research Question 4.3

There was no significant difference in Autocratic Behavior among players with different years of participation in the team (see Table 28).

Table 28

One-Way Analysis of Variance Summary Table Comparing Years of Team Participation on the Autocratic Behavior of Coach's Leadership Behaviors

Source	df	SS	MS	F	p
Autocratic Behavior					
Between Groups	3	2.34	0.78	1.09	.354
Within Groups	518	370.75	0.72		
Total	521	373.08			

Research Question 4.4

A statistically significant difference was found in Social Support behavior among players with different years of participation in the team, $F(3, 518) = 4.99, p = .002$ (see Table 29). As shown in Table 30, a post hoc comparisons test using the Games-Howell test showed that there was a significant difference between “Under 1 year” and “1 to Under 2 years.” Moreover, a statistically significant difference was also found in “Under 1 year” and “3 and above 3 years.” The mean difference between “Under 1 year” and “1 to Under 2 years” was .37, and the mean difference between “Under 1 year” and “2 to Under 3 years” was .31. The significant difference was not found in “Under 1 year” and “2 to Under 3 year.” Furthermore, the significant difference was also not found in “1 to

Under 2 years” and “2 to Under 3 year,” “1to Under 2 years” and “3 and above 3 years,” and “2 to Under 3 year” and “3 and above 3 years.”

Table 29

One-Way Analysis of Variance Summary Table Comparing Years of Team Participation on the Social Support of Coach’s Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Social Support					
Between Groups	3	12.37	4.12	4.99*	.002
Within Groups	518	427.98	0.83		
Total	521	440.36			

Table 30

Games-Howell Test Comparing the Differences in Social Support Based on the Player’s Years of Team Participation

	Under 1 Year	1 to Under 2 Years	2 to Under 3 Years	3 Years and Above
Under 1 year	--	0.37*	0.17	0.31*
1 to Under 2 years	--	--	-0.20	-.020
2 to Under 3 years	--	--	--	0.14
3 Years and Above	--	--	--	--

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

Research Question 4.5

There was no significant difference in Positive feedback among players with different years of participation in the team (see Table 31).

Table 31

One-Way Analysis of Variance Summary Table Comparing Years of Team Participation on the Positive Feedback of Coach's Leadership Behaviors

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Positive Feedback					
Between Groups	3	1.36	0.45	0.87	.458
Within Groups	518	269.77	0.52		
Total	521	271.13			

Research Question 5

The next question in this study is “Is there any significant difference in overall team cohesion among three different conferences in Taiwanese college basketball players?” One-way analysis of variance (ANOVA) was used to examine whether significant differences existed among the three conferences. If there were significant differences among the three conferences, then the Tukey HSD test or Games-Howell test was used to do the post hoc tests to detect the differences.

The independent variable was “conferences” (Conference A1, Conference A2, and Conference A3). The dependent variable was “team cohesion” (Individual Attraction to the Group-Task; Individual Attraction to the Group-Social; Group Integration-Task; and Group Integration-Social). Since the team cohesion was composed of four dimensions: (a) Individual Attraction to the Group-Task; (b) Individual Attraction to the Group-Social; (c) Group Integration-Task; and (d) Group Integration-Social, Research Question 5 could be divided into four sub-questions:

- 5.1 Is there any significant difference in Individual Attraction to the Group-Task among three different conferences?
- 5.2 Is there any significant difference in Individual Attraction to the Group-Social among three different conferences?
- 5.3 Is there any significant difference in Group Integration-Task among three different conferences?
- 5.4 Is there any significant difference in Group Integration-Social among three different conferences?

Research question 5.1

There was a statistically significant difference in Individual Attraction to the Group-Task among three different conferences, $F(2, 519) = 12.82, p = .000$ (see Table 32). As shown in Table 33, a post hoc comparisons test using the Tukey HSD test showed that there was no significant difference between Conference A1 and Conference A2. However, there was a significant difference between Conference A1 and Conference A3, and the mean difference between Conference A1 and Conference A3 was .60. Table 33 also showed that there was a significant difference between Conference A2 and Conference A3, and the mean difference between Conference A2 and Conference A3 was .79.

Table 32

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Individual Attraction to the Group Task of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Individual Attraction to the Group Task					
Between Groups	2	70.46	35.23	12.82	.000
Within Groups	519	1426.60	2.75		
Total	521	1497.06			

Table 33

Tukey HSD Test Comparing the Differences in Individual Attraction to the Group Task Based on the Three Conference Levels

	Conference A1	Conference A2	Conference A3
Conference A1	--	-0.18	0.60*
Conference A2	--	--	0.79*
Conference A3	--	--	--

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

Research Question 5.2

There was no significant difference in Individual Attraction to the Group-Social among three different conferences (see Table 34).

Table 34

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Individual Attraction to the Group Social of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Individual Attraction to the Group Social					
Between Groups	2	8.41	4.20	1.21	.298
Within Groups	519	1799.00	3.47		
Total	521	1807.40			

Research Question 5.3

There was a statistically significant difference in Group Integration-Task among three different conferences, $F(2, 519) = 11.42, p = .000$ (see Table 35). As shown in Table 36, a post hoc comparisons test using the Tukey HSD test showed that there was no significant difference between Conference A1 and Conference A2. However, there was a significant difference between Conference A1 and Conference A3, and the mean difference between Conference A1 and Conference A3 was -0.69. Table 36 also showed that there was a significant difference between Conference A2 and Conference A3, and the mean difference between Conference A2 and Conference A3 was -0.70.

Table 35

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Group Integration-Task of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Group Integration-Task					
Between Groups	2	62.06	31.03	11.42	.000
Within Groups	519	1410.67	2.72		
Total	521	1472.73			

Table 36

Tukey HSD Test Comparing the Differences in Group Integration-Task Based on the Three Conference Levels

	Conference A1	Conference A2	Conference A3
Conference A1	--	0.16	-0.69*
Conference A2	--	--	-0.70*
Conference A3	--	--	--

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

Research Question 5.4

There was a statistically significant difference in Group Integration-Social among three different conferences, $F(2, 519) = 6.57, p = .002$ (see Table 37). As shown in Table 38, a post hoc comparisons test using the Tukey HSD test showed that there was no significant difference between Conference A1 and Conference A2. A significant difference also was not found between Conference A1 and Conference A3. However,

there was a significant difference between Conference A2 and Conference A3, and the mean difference between Conference A2 and Conference A3 was -0.61.

Table 37

One-Way Analysis of Variance Summary Table Comparing Conference Levels on the Group Integration-Social of Team Cohesion

Source	df	SS	MS	F	p
Group Integration-Social					
Between Groups	2	46.01	23.00	6.57	.002
Within Groups	519	1816.72	3.50		
Total	521	1862.72			

Table 38

Tukey HSD Test Comparing the Differences in Group Integration-Social

Based on the Three Conference Levels

	Conference A1	Conference A2	Conference A3
Conference A1	--	0.21	-0.59
Conference A2	--	--	-0.61*
Conference A3	--	--	--

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

Research Question 6

Research Question 6 in this study was “Is there any significant difference in overall team cohesion between genders in Taiwanese college basketball players?”

Independent Samples *t*-Test was employed to examine whether significant differences

existed between genders. The independent variable was “genders” (Male and Female). The dependent variable was “team cohesion” (Individual Attraction to the Group-Task, Individual Attraction to the Group-Social, Group Integration-Task, and Group Integration-Social). Since team cohesion was comprised of four dimensions: (a) Individual Attraction to the Group-Task; (b) Individual Attraction to the Group-Social; (c) Group Integration-Task; and (d) Group Integration-Social, Research Question 6 could be divided into four sub-questions:

- 6.1 Is there any significant difference in Individual Attraction to the Group-Task between genders?
- 6.2 Is there any significant difference in Individual Attraction to the Group-Social between genders?
- 6.3 Is there any significant difference in Group Integration-Task between genders?
- 6.4 Is there any significant difference in Group Integration-Social between genders?

Research Question 6.1

As shown in Table 39, males were significantly different from females on the Individual Attraction to Group-Task of team cohesion, $t = 12.79$, $p = .000$. The mean indicated that the average score (3.23) for female college basketball players in the Individual Attraction to Group-Task of team cohesion was lower than the average score (3.77) for males, and the mean difference between the two groups was .54.

Table 39

The t-Test Summary Table Comparing Gender on the Individual Attraction to the Group Task of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>M</i>	<i>t</i>	<i>p</i>
Individual Attraction to the Group Task					
Males	1	35.93	3.77	12.79	.000
Females	520	1461.13	3.23		
Total	521	1497.06	3.56		

Research Question 6.2

As shown in Table 40, males were significantly different from females on the Individual Attraction to the Group-Social of team cohesion, $t = 7.80$, $p = .005$. The mean indicated that the average score (7.42) for female college basketball players in Individual Attraction to the Group-Social of team cohesion was higher than the average score (6.96) for males, and the mean difference between the two groups was -0.46.

Research Question 6.3

As shown in Table 41, males were significantly different from females on the Group Integration-Task of team cohesion, $t = 23.20$, $P = .000$. The mean indicated that the average score (7.66) for female college basketball players in the Group Integration-Task of team cohesion was higher than the average score (6.95) for males, and the mean differences between the two groups was -0.71.

Table 40

The t-Test Summary Table Comparing Gender on the Individual Attraction to the Group Social of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Individual Attraction to the Group Social					
Males	1	26.68	6.96	7.80	.005
Females	520	1780.72	7.42		
Total	521	1807.40	7.14		

Table 41

The t-Test Summary Table Comparing Gender on the Group Integration-Task of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Group Integration-Task					
Males	1	62.89	6.95	23.20	.000
Females	520	1409.84	7.66		
Total	521	1472.73	7.23		

Research question 6.4

As shown in Table 42, males were significantly different from females on the Group Integration-Social of team cohesion, $t = 25.98$, $p = .000$. The M indicated that the average score (7.01) for female college basketball players in the Group Integration-Social

of team cohesion was higher than the average score (6.17) for males, and the mean difference between the two groups was -0.84.

Table 42

The t-Test Summary Table Comparing Gender on the Group Integration-Social of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Group Integration-Social					
Males	1	88.62	6.17	25.98	.000
Females	520	1774.10	7.01		
Total	521	1862.72	6.50		

Research Question 7

The Research Question 7 in this study was “Is there any significant difference in overall team cohesion among players with different years of participation in the team?” One-way analysis of variance (ANOVA) was employed to examine whether significant differences existed among players with different years of participation in the team. If significant differences existed among players with different years of participation in the team, then the Tukey HSD test or Games-Howell test was used to do the post hoc tests to detect these differences. The independent variable was “different years of participating in the team” (Under 1 year; 1 to Under 2 years; 2 to Under 3 years; 3 and Above 3 years). The dependent variable was “team cohesion” (Individual Attraction to the Group-Task, Individual Attraction to the Group-Social, Group Integration-Task, and Group Integration-Social). Since team cohesion was composed of four dimensions: (a)

Individual Attraction to the Group-Task; (b) Individual Attraction to the Group-Social; (c) Group Integration-Task; and (d) Group Integration-Social, Research Question 7 could be divided into four sub-questions:

7.1 Is there any significant difference in Individual Attraction to Group-Task among different years of participating in the team?

7.2 Is there any significant difference in Individual Attraction to the Group-Social among different years of participating in the team?

7.3 Is there any significant difference in Group Integration-Task among different years of participating in the team?

7.4 Is there any significant difference in Group Integration-Social among different years of participating in the team?

Research Question 7.1

There was no significant difference in Individual Attraction to Group-Task among different years of participating in the team (see Table 43).

Table 43

One-Way Analysis of Variance Summary Table Comparing Player's Years of Team Participation on the Individual Attraction to the Group Task of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Individual Attraction to the Group Task					
Between Groups	3	16.77	5.59	1.96	.12
Within Groups	518	1480.29	2.86		
Total	521	1497.06			

Research Question 7.2

A statistically significant difference was not found in Individual Attraction to the Group-Social among players with different years of participation in the team (see Table 44).

Table 44

One-Way Analysis of Variance Summary Table Comparing Player's Years of Team Participation on the Individual Attraction to the Group Social of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Individual Attraction to					
the Group Social	3	24.39	8.13	2.36	.07
Between Groups	518	1783.01	3.44		
Within Groups	521	1807.40			
Total					

Research Question 7.3

There was no significant difference in Group Integration-Task among players with different years of participation in the team (see Table 45).

Research Question 7.4

There was no significant difference in Group Integration-Social among players with different years of participation in the team (see Table 46).

Table 45

One-Way Analysis of Variance Summary Table Comparing Player's Years of Team Participation on the Group Integration-Task of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Group Integration-Task					
Between Groups	3	6.83	2.28	0.81	.49
Within Groups	518	1465.90	2.83		
Total	521	1472.73			

Table 46

One-Way Analysis of Variance Summary Table Comparing Player's Years of Team Participation on the Group Integration-Social of Team Cohesion

Source	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>p</i>
Group Integration-Social					
Between Groups	3	21.54	7.18	2.02	.11
Within Groups	518	1841.19	3.55		
Total	521	1862.72			

Research Hypotheses Examined

Research Hypothesis 1

The Research Hypothesis 1 of this study was “There is a positive significant relationship between coach’s leadership behaviors and team cohesion.” Here, a simple regression was used to examine whether there were any significant relationships between five dimensions of a coach’s leadership behavior and four dimensions of team cohesion. The findings of the relationships between five dimensions of coach’s leadership behaviors and four dimensions of team cohesion were as follows:

1. Training and Instruction:

(a) For Individual Attraction to the Group Task, there was a significant and positive relationship between Training and Instruction and Individual Attraction to the Group Task ($\beta = .44$ and $\text{Adj. } R^2 = .18, p \leq .01$);

(b) For Individual Attraction to the Group Social, there was a significant and positive relationship between Training and Instruction and Individual Attraction to the Group Social ($\beta = .34$ and $\text{Adj. } R^2 = .12, p \leq .01$);

(c) For Group Integration-Task, there was a significant and positive relationship between Training and Instruction and Group Integration-Task ($\beta = .31$ and $\text{Adj. } R^2 = .10, p \leq .01$); and

(d) For Group Integration-Social, there was a significant and positive relationship between Training and Instruction and Group Integration-Social ($\beta = .38$ and $\text{Adj. } R^2 = .14, p \leq .01$).

2. Democratic Behavior:

(a) For Individual Attraction to the Group Task, there was a significant and positive between Democratic Behavior and Individual Attraction to the Group Task ($\beta = .35$ and Adj. $R^2 = .12$, $p \leq .01$);

(b) For Individual Attraction to the Group Social, there was a significant and positive relationship between Democratic Behavior and Individual Attraction to the Group Social ($\beta = .23$ and Adj. $R^2 = .05$, $p \leq .01$);

(c) For Group Integration-Task, there was a significant and positive relationship between Democratic Behavior and Group Integration-Task ($\beta = .29$ and Adj. $R^2 = .08$, $p \leq .01$); and

(d) For Group Integration-Social, there was a significant and positive relationship between Democratic Behavior and Group Integration-Social ($\beta = .34$ and Adj. $R^2 = .11$, $p \leq .01$).

3. Autocratic Behavior:

(a) For Individual Attraction to the Group Task, there was no significant relationship between Autocratic Behavior and Individual Attraction to the Group Task;

(b) For Individual Attraction to the Group Social, there was a significant and negative relationship between Autocratic Behavior and Individual Attraction to the Group Social ($\beta = -0.19$ and Adj. $R^2 = .04$, $p \leq .01$);

(c) For Group Integration-Task, there was no significant relationship between Autocratic Behavior and Group Integration-Task; and

(d) For Group Integration-Social, there was no significant relationship between Autocratic Behavior and Group Integration-Social.

4. Social Support:

(a) For Individual Attraction to the Group Task, there was a significant and positive relationship between Social Support and Individual Attraction to the Group Task ($\beta = .28$ and Adj. $R^2 = .08$, $p \leq .01$);

(b) For Individual Attraction to the Group Social, there was a significant and positive relationship between Social Support and Individual Attraction to the Group Social ($\beta = .18$ and Adj. $R^2 = .03$, $p \leq .01$);

(c) For Group Integration-Task, there was a significant and positive relationship between Social Support and Group Integration-Task ($\beta = .21$ and Adj. $R^2 = .04$, $p \leq .01$); and

(d) For Group Integration-Social, there was a significant and positive relationship between Social Support and Group Integration-Social ($\beta = .30$ and Adj. $R^2 = .09$, $p \leq .01$).

5. Positive Feedback:

(a) For Individual Attraction to the Group Task, there was a significant and positive relationship between Positive Feedback and Individual Attraction to the Group Task ($\beta = .39$ and Adj. $R^2 = .15$, $p \leq .01$);

(b) For Individual Attraction to the Group Social, there was a significant and positive relationship between Positive Feedback and Individual Attraction to the Group Social ($\beta = .33$ and Adj. $R^2 = .11$, $p \leq .01$);

(c) For Group Integration-Task, there was a significant and positive relationship between Positive Feedback and Group Integration-Task ($\beta = .27$ and Adj. $R^2 = .07, p \leq .01$); and

(d) For Group Integration-Social, there was a significant and positive relationship between Positive Feedback and Group Integration-Social ($\beta = .37$ and Adj. $R^2 = .13, p \leq .01$).

All of the β weight and adjusted R^2 between five dimensions of coach's leadership behaviors and four dimensions of team cohesion were shown in Table 47.

Table 47

Simple Regression of Five Dimensions of Coach's Leadership Behaviors and Four Dimensions of Team Cohesion

Coach's Leadership Behaviors	Team Cohesion							
	Individual Attraction to Group Task		Individual Attraction to Group Social		Group Integration Task		Group Integration Social	
	β	Adj. R^2	β	Adj. R^2	β	Adj. R^2	β	Adj. R^2
Training & Instruction	.42**	.18**	.34**	.12**	.31**	.10**	.38**	.14**
Democratic Behavior	.35**	.12**	.23**	.05**	.29**	.08**	.34**	.11**
Autocratic Behavior	-0.05	0	-.19**	.04**	0.08	0.01	-0.05	0
Social Support	.28**	.08**	.18**	.03**	.21**	.04**	.30**	.09**
Positive Feedback	.39**	.15**	.33**	.11**	.27**	.07**	.37**	.13**

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

Research Hypothesis 2

The Hypothesis 2 of this study was “Coach’s leadership behaviors and team cohesion are significant predictors of team performance in Taiwanese college basketball players.” As shown in Table 48, the results of Step-Wise regression analysis indicated that the combination of three variables; (a) Individual Attraction to the Group Task; (b) Group Integration-Task; and (c) Autocratic Behavior significantly predicted the team performance (winning percentage), $F(3, 518) = 21.99, p \text{ value} < .001$. The R^2 value was .11 which meant that 11% of the variance in the team performance was explained by this model. According to Leech, Barrett, and Morgan (2005), the effect of the size of this model was not large.

Table 48

The Summary of Step-Wise Regression Model on Team Performance from the Coach’s Leadership Behaviors and Team Cohesion

<i>F</i>	<i>Df of Regression</i>	<i>Df of Residual</i>	<i>Sig. (p)</i>	<i>R²</i>
21.99	3	518	.000**	.108

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

The B values are presented in Table 49 which was the coefficient of each independent variable in the Step-Wise regression model. Furthermore, as shown in Table 50, the results of the statistical test in Model 3 indicated that the Autocratic Behavior (from coach’s leadership behaviors), Group Integration-Task and Individual Attraction to the Group Task (from team cohesion) were the significant predictors to the prediction model of team performance. The other variables of coach’s leadership

behaviors such as Training and Instruction, Democratic Behavior, Social Support, Positive Feedback, and the other variables of team cohesion such as Individual Attraction to the Group Social, and Group Integration-Social did not significantly contribute to the model for predicting the team performance from the whole set of predictors. The independent variables for step-wise regression analysis were “Individual Attraction to the Group Task”, “Autocratic Behavior”, and “Group Integration-Task”, and the dependent variable was “Team Performance” (Winning Percentage).

The prediction model of team performance was as follows:

$$\text{The Team Performance (Winning Percentage)} = 1.062 - 0.253 \times (\text{Individual Attraction to the Group Task}) - 0.128 \times (\text{Group Integration-Task}) - 0.095 \times (\text{Autocratic Behavior})$$

Table 49

The Coefficients of Step-Wise Regression Model

	B	Std. Error	Standardized Beta (β)	t
(Constant)	1.062	.078		13.658**
Individual Attraction to the Group Task	-.049	.009	-.253	-5.676**
Group Integration-Task	-.040	.014	-.128	-2.851*
Autocratic Behavior	-.041	.018	-.095	-2.272*
	B			t
Training & Instruction	.009			.185
Democratic Behavior	.082			1.806
Social Support	.043			.959
Positive Feedback	.008			.182
Individual Attraction to the Group Social	.072			1.489
Group Integration-Social	.006			.120

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

Table 50

The Three Step-Wise Regression Models

Model	<i>R</i>	<i>R</i>²	<i>Adjusted R</i>²	<i>Std. Error</i>
1	.296 ^a	.088	.086	.311
2	.323 ^b	.104	.101	.309
3	.336 ^c	.113	.108	.307

^a Predictors: (Constant), Individual Attraction to the Group-Task

^b Predictors: (Constant), Individual Attraction to the Group-Task, Autocratic Behavior

^c Predictors: (Constant), Individual Attraction to the Group-Task, Group Integration-Task, Autocratic Behavior

Chapter IV analyzed the reliability of the Leadership Scale for Sports and Group Environment Questionnaire of the instrument and provided an exploratory factor analysis to establish construct validity for the instrumentation. Further, seven research questions were explored and two hypotheses were examined. Chapter V discussed the findings, provided interpretations and conclusion, and offered recommendations for future study.

CHAPTER V

DISCUSSION

Chapter V presents a final review of this study. This chapter begins with a description of the research findings based on the data analysis, subsequent to the discussion on interpretations of the research findings with regard to the current literature and gives rational explanations for the outcomes of this study. The next section provides recommendations on practical implications according to the findings of this study for Taiwanese college basketball coaches and players. Then comes the conclusion which addresses the limitations of this research. The final section reviews this study and provides the recommendations for future studies on the same subject.

Research Findings

This explanatory quantitative study was undertaken to examine the relationships between the leadership behaviors of the coach as perceived by the team members, team cohesion, and team performance, and to investigate the influence of conference level, gender, and years of team participation in Taiwanese college basketball players on these perceptions. In this study, coaching leadership was measured by the coach's leadership behaviors as perceived by Taiwanese college basketball players through five dimensions of Leadership Scale for Sports: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; (d) Social Support; and (e) Positive Feedback. Team cohesion was measured through four dimensions of Group Environment Questionnaire: (a) Individual Attraction to the Group Task; (b) Individual Attraction to the Group Social; (c) Group

Integration-Task; and (d) Group Integration-Social. Team performance was measured by the winning percentage of team's season competitions.

Stratified random sampling was employed to select the research sample, and there were a total of 522 respondents to participate in the survey research. After data collection, Statistical Package for Social Sciences (SPSS) was utilized to process the statistic analysis. After the data analysis, the major research findings of each research question of this study were as follows:

Research Question 1: Characteristics of All Variables

Frequency distribution, mean, and standard deviation were utilized to describe all variables. The major findings indicated that 60.7% participants were male; the mean age of all participants was at 20.26, participants were mainly from conference A3, accounting for 57.2%, and most participants' years of team participation were under 1 year, accounting for 35.8%. As for team performance, winning percentage had a *M* of 0.59 with a *SD* of 0.33. Coach's leadership behaviors (39 items) had *M* ranged from 1.82 to 3.44 and *SD* ranged from 0.81 to 1.31. Team cohesion (15 items) had *M* ranged from 2.38 to 7.48 and *SD* ranged from 1.94 to 2.61.

Research Question 2: Perceived Coach's Leadership Behaviors and Conference Level

Among the five dimensions of the perceived coach's leadership behaviors, the results indicated that only three dimensions: (a) Training and Instruction Behavior; (b) Democratic Behavior; and (c) Positive Feedback differed among the three different conferences. However, Autocratic behavior and Social Support were not found to have significant differences as far as the three different conferences were concerned. The findings were as follows:

1. There was a statistically significant difference in Training and Instruction behavior among the three different conferences.
2. A statistically significant difference was found in Democratic behavior among the three different conferences.
3. No statistically significant difference was found in Autocratic behavior among the three different conferences.
4. There was no significant difference in Social Support among the three different conferences.
- 5.. There was a statistically significant difference in Positive Feedback among the three different conferences.

Research Question 3: Perceived Coach's Leadership Behaviors and Gender

Among the five dimensions of the perceived coach's leadership behaviors, the results indicated that there were three dimensions: (a) Training and Instruction Behavior; (b) Autocratic Behavior; and (c) Social Support which were significantly different between male and female players. However, Democratic behavior and Positive Feedback were not different for both genders. The findings were as follows:

1. Males differed from females on the Training and Instruction Behavior of coach's leadership behaviors as perceived by team members.
2. There were no differences between males and females on the Democratic Behavior of coach's leadership behaviors as perceived by team members.
3. Males differed from females on the Autocratic Behavior of coach's leadership behaviors as perceived by team members.

Males differed from females on the Social Support of coach's leadership

4. behaviors as perceived by team members.
5. There were no differences between males and females on the Positive Feedback of coach's leadership behaviors as perceived by team members.

Research Question 4: Perceived Coach's Leadership Behaviors and Years of Team

Participation

Among the five dimensions of the perceived coach's leadership behaviors, the results indicated that there was only one dimension, Social Support, which was different for players with different years of team participation. The findings were as follows:

1. There was no significant difference in Training and Instruction Behavior among players with different years of team participation.
2. A statistically significant difference was not found in Democratic Behavior among players with different years of team participation.
3. There was no significant difference in Autocratic Behavior among players with different years of team participation.
4. A statistically significant difference was found in Social Support Behavior among players with different years of team participation.
5. There was no significant difference in Positive Feedback among players with different years of team participation.

Research Question 5: Team Cohesion and Conference Level

Among the four dimensions of team cohesion, the results indicated that there were three dimensions: (a) Individual Attraction to Group-Task; (b) Group Integration-Task;

and (c) Group Integration-Social which were different for the three different conferences.

The findings were:

1. There was a statistically significant difference in Individual Attraction to Group-Task among the three different conferences.
2. There was no significant difference in Individual Attraction to the Group-Social among the three different conferences.
3. There was a statistically significant difference in Group Integration-Task among the three different conferences.
4. There was a statistically significant difference in Group Integration-Social among the three different conferences.

Research Question 6: Team Cohesion and Gender

Among the four dimensions of team cohesion, the results indicated that the four dimensions: (a) Individual Attraction to Group-Task; (b) Individual Attraction to Group-Task; (c) Group Integration-Task; and (d) Group Integration-Social were different for males and females. The findings were as follows:

1. Males significantly differed from females on the Individual Attraction to Group-Task of team cohesion.
2. Males significantly differed from females on the Individual Attraction to the Group-Social of team cohesion.
3. Males significantly differed from females on the Group Integration-Task of team cohesion.
4. Males significantly differed from females on the Group Integration-Social of

team cohesion.

Research Question 7: Team Cohesion and Years of Team Participation

Among the four dimensions of team cohesion, the results indicated that no dimension was different among players with different years of participation in the team.

The findings were as follows:

1. There was no significant difference in Individual Attraction to Group-Task among players with different years of participation in the team.
2. A statistically significant difference was not found in Individual Attraction to the Group-Social among players with different years of participation in the team.
4. There was no significant difference in Group Integration-Task among players with different years of participation in the team.
5. There was no significant difference in Group Integration-Social among players with different years of participation in the team.

Hypothesis 1: Perceived Coach's Leadership Behaviors and Team Cohesion

Research Hypothesis 1 was mainly accepted that the four out of the five dimensions of the coach's leadership behaviors as perceived by team members were positive significantly related to the four dimensions of team cohesion. Only one significant and negative relationship was found between Autocratic Behavior of the coach's leadership behaviors as perceived by team members and Individual Attraction to the Group Social dimension of the team cohesion. The findings were as follows:

1. There was a significant and positive relationship between Training and Instruction and Individual Attraction to the Group Task.
2. There was a significant and positive relationship between Training and Instruction and Individual Attraction to the Group Social.
3. There was a significant and positive relationship between Training and Instruction and Group Integration-Task.
4. There was a significant and positive relationship between Training and Instruction and Group Integration-Social.
5. There was a significant and positive relationship between Democratic Behavior and Individual Attraction to the Group Task.
6. There was a significant and positive relationship between Democratic Behavior and Individual Attraction to the Group Social.
7. There was a significant and positive relationship between Democratic Behavior and Group Integration-Task.
8. There was a significant and positive relationship between Democratic Behavior and Group Integration-Social.
9. There was no significant relationship between Autocratic Behavior and Individual Attraction to the Group Task.
10. There was a significant and negative relationship between Autocratic Behavior and Individual Attraction to the Group Social.
11. There was no significant relationship between Autocratic Behavior and Group Integration-Task.

12. There was no significant relationship between Autocratic Behavior and Group Integration-Social.
13. There was a significant and positive relationship between Social Support and Individual Attraction to the Group Task.
14. There was a significant and positive relationship between Social Support and Individual Attraction to the Group Social.
15. For Group Integration-Task, there was a significant and positive relationship between Social Support and Group Integration-Task.
16. For Group Integration-Social, there was a significant and positive relationship between Social Support and Group Integration-Social.
17. There was a significant and positive relationship between Positive Feedback and Individual Attraction to the Group Task.
18. There was a significant and positive relationship between Positive Feedback and Individual Attraction to the Group Social.
19. There was a significant and positive relationship between Positive Feedback and Group Integration-Task.
20. There was a significant and positive relationship between Positive Feedback and Group Integration-Social.

Hypothesis 2: Perceived Coach's Leadership Behaviors, Team Cohesion, and Team Performance

To predict team performance, a step-wise multiple regression analysis was used to explain the relationship among perceived coach's leadership behaviors, team cohesion

and team performance. The results showed that Autocratic Behavior (from coach's leadership behaviors), Individual Attraction to the Group Task and Group Integration-Task (from team cohesion) were the significant indicators of the prediction model of team performance. The prediction model of team performance is as follows; The Team Performance (Winning Percentage) = 1.062 -0.253 x (Individual Attraction to the Group Task) -0.128x (Group Integration-Task) -0.095 x (Autocratic Behavior).

The outcome of multiple regression analysis presented the combination of three predictors significantly predict perceived coach's leadership behaviors and team cohesion on team performance, with 11 % variance.

Interpretations

Socio-Demographic

The socio-demographic factors in this study comprised players' conference level, gender, and years of team participation. According to the data collected from 522 Taiwanese college basketball players, male players counted for 60.7% and female players counted for 39.3%. In this study, there were 83 (15.9%) respondents who were 18 years old; 105(20.1%) respondents were 19 years old; 119 (22.8%) respondents were 20 years old; 103 (19.7%) respondents were 21 years old; and 67 (12.8%) respondents were 22 years old. Only 45 (8.6%) respondents were 23 or above 23 years old.

The results of this study showed that male conference A3 was the largest group with 197 (37.7%) respondents. The next largest group was female conference A3, with 102 (19.5%) respondents. The third group was male conference A2, with 88 (16.9%) respondents. The fourth group was female conference A2, with 71 (13.6%) respondents. Male and female conference A1 were the two smallest groups, with the same 32 (6.1%)

respondents. Furthermore, there were 187 (35.8%) respondents who participated on their team under one year; 119 (22.8%) respondents were one to two years; 89 (17.0%) respondents were two to three years; and 127 (24.3%) respondents were three or above three years. Moreover, the results of this study indicated that there were 18 teams whose winning percentage was from 0 to 50%, and there were 21 teams whose winning percentage was from 51% to 100%. The descriptive statistics of social demographic factors were consistent with the report of Chinese Taipei University Sports Federations (CTUSF, 2004). Hence, the study could represent all Taiwanese college basketball players.

Context of Coaching Leadership

Coaching leadership is crucial in the world of sports, helping athletes become more skillful in their performance (Martens, 1987). To acknowledge the roles of coaches in Taiwanese college basketball teams, this study utilized the Leadership Scale for Sport (LSS) instrument to measure the relationship between coaching leaderships and the athletes. The Leadership Scale for Sports (LSS) by Chelladurai and Saleh (1980) was based on the multidimensional model of sport leadership developed to understand effective coaching leadership. Moreover, LSS was divided into five dimensions: (a) Training Behavior; (b) Autocratic Behavior; (c) Democratic Behavior; (d) Social Support; and (e) Rewarding Behavior (Positive Feedback). According to these, the study further intended to investigate the differences in the coach's leadership behaviors as perceived by Taiwanese college basketball players among conference level, gender, and the years of team participation.

Conference Level

In this study, the results showed that there were significant differences among the three conference levels players' perception of Training and Instruction, Democratic Behavior, and Positive Feedback, but there was no significant difference in autocratic behavior and social support ($P \leq 0.05$). The results were consistent with the prior empirical study by Chiu (2002). The findings also indicated that Taiwanese college basketball conference players from A1 and A2 perceived greater Training and Instruction Behavior from coaches than conference A3 players; however, there was no significant difference between conference A1 and A2 players' perceptions. Taiwanese college basketball conference A1 players perceived greater Democratic Behavior of coaches than conference A2 and A3 players, but there was no significant difference between conference A2 and A3 players' perception. Moreover, conference A1 players perceived greater Positive Feedback from coaches than conference A3 players. These results of the study were inconsistent with the findings of the prior empirical study by Yu (2001). As for a coach's autocratic Behavior and Social support, all of the three college conference basketball players' perceptions were similar.

Generally, Taiwanese college basketball players in conference A1 evaluated higher scores for coaches' leadership behavior than players in conference A2 and A3. The most likely explanation of this phenomenon was that conference A1 in Taiwan was more competitive and these players were more experienced and skillful compared to A2 and A3 players. Therefore, coaches in this conference demonstrated identical leadership style in Training and Instruction, and allowed players to participate in tactical design and decision making in order to pursue higher winning performances. Furthermore, in this conference, coaches always gave the players more praise and encouragement than

punishment. Therefore, the college basketball players in conference A1 perceived more of the above three characteristics of coaches' leadership behaviors.

Gender

The results of this study indicated that there were three dimensions of coach's leadership behaviors as perceived by team members: (a) Training and Instruction Behavior; (b) Autocratic Behavior; and (c) Social Support where males significantly differed from female college basketball players ($P \leq 0.05$). This finding was consistent with Chiu's (2002) finding. However, Democratic Behavior and Positive Feedback were not significantly different for either gender. This finding was inconsistent with Lai's (2002) finding.

Furthermore, the results of this study showed that male college basketball players perceived greater coach's Training and Instruction behavior than female college basketball players. This result supported Lai (1999) and Wu's (2002) findings. However, female college basketball players perceived greater coach's Autocratic Behavior and Social Support Behavior than male college basketball players. The result supported Wu (2002), and Chiang, Chen and Yeh's (2001) finding, but did not support Yu (2001) and Lin's (2002) finding. Finally, the perceptions of coach's Democratic Behavior and Positive and Feedback were not different for either gender.

Years of Team Participation

The results of this study found that there were four dimensions of perceived coach's leadership behaviors: (a) Training and Instruction; (b) Democratic Behavior; (c) Autocratic Behavior; and (d) Positive Feedback. There had no significant differences for players who had spent time participating in the team. This finding was inconsistent with

Cihiu's (2002) finding. Only Social Support Behavior was significant as a factor ($P \leq 0.05$).

Furthermore, the results of this study indicated that the differences among "under 1 year"; "1 to under 2 years"; and "3 and above 3 years" players had a significant and positive relationship. Although the difference between "under 1 year" players and "2 to under 3 years" players, 0.17, was not statistically significant, this was probably caused because the sample of "2 to 3 years" players in this study was low. However, "under 1 year" players still evaluated higher scores in this item. Therefore, the "under 1 year" players perceived more social support from their coaches than "1 to under 2 years", "2 to under 3 years" and "3 and above 3 years" players. This result was inconsistent with Yu's (2001) finding. Based on the results, the researcher assumed that the likely explanation was that the coach considered new players needed more attention than older or more experienced players; therefore, the coach would care and look after new players more.

Context of Team Cohesion

In the sports realm, if members of a team liked each other, and enjoyed playing together, this team would be more successful than one lacking those qualities (Cox, 1994). Bollen and Hoyle (1990) defined cohesion as "an individual's sense of belonging to a particular group and his or her feelings of morale associated with membership in the group" (p. 482). Carron (1982) defined team cohesion as "a dynamic process which is reflected in the tendency for a group to stick together and remain united in the pursuit of goals and objectives" (p.124). Furthermore, Bollen and Hoyle (1990) indicated that team cohesion was one factor that would always be related to the team's performance and

success. Hence, it would be reasonable to deduce that if a sports team was cohesive, then this cohesiveness could affect the team's performance and success.

This study employed the Group Environment Questionnaire (GEQ) to investigate a team's cohesiveness. The GEQ is divided into four dimensions to measure team cohesion: (a) Individual Attraction to Group-Task (ATG-T); (b) Individual Attraction to the Group-Social (ATG-S); (c) Group Integration-Task (GI-T); and (d) Group Integration-Social (GI-S). The study further attempted to examine the differences between team cohesion and conference level, gender, and the years of team participation.

Conference Level

In this study, the results showed that there were statistically significant differences in Individual Attraction to Group-Task; Group Integration-Task; and Group Integration-Social among the three conferences. However, there was no significant difference to be found in Individual Attraction to the Group-Social ($P \leq 0.05$). Furthermore, the results of the study found that Taiwanese college basketball players in conference A1 and A2, compared to ones in conference A3, had significantly higher scores in the dimension of Individual Attraction to the Group-Task. Nevertheless, there was no difference found between conference A1 and A2 players.

There were no differences found among the three conference players in the dimension of Individual Attraction to the Group-Social. In the dimension of Group Integration-Task, the Taiwanese college basketball players in conference A3 had higher scores than conference A1 and A2 players, and there was no difference found between conference A1 and A2 players. Taiwanese college basketball players in conference A3 had higher scores than the conference A2 players had in the dimensions of Group

Integration-Social. However, there were no differences between conference A1 and A2 players, and conference A1 and A3 players.

Gender

In this study, the results presented statistically significant differences in the dimension of Individual Attraction to Group-Task; Individual Attraction to the Group-Social; Group Integration-Task; and Group Integration-Social between the genders. This finding was consistent with Chiu's (2002) finding. Moreover, the results indicated that the male Taiwanese basketball players only had higher scores than the female Taiwanese basketball players in the dimension of Individual Attraction to Group-Task. However, the female Taiwanese basketball players had higher scores than the male Taiwanese basketball players in the dimension of Individual Attraction to the Group-Social; Group Integration-Task; and Group Integration-Social. These findings were inconsistent with Li's (2003) findings.

Years of Team Participation

The results of this study showed that there were no significant differences among the Taiwanese basketball players who had years of team participation in the four dimensions of team cohesion.

Context of Coaching Leadership and Team Cohesion

The coach's styles and behaviors are very important factors for understanding team cohesion (Shields et al., 1997). Moreover, if a leader can create a high level of team cohesion, then the team will perform well. In this research, a correlation study investigated the relationships between each dimension of perceived coaching leadership behaviors and team cohesion. To state symmetrically, the study discussed and

interpreted the correlations based on the five dimensions of coaching leadership behaviors.

Training and Instruction

The results of simple regression analysis of the study indicated that there were significant and positive relationships of Training and Instruction with four dimensions of team cohesion. These statistics meant that the more Training and Instruction a player perceived, the more Individual Attraction to the Group Task; Individual Attraction to the Group Social; Group Integration-Task; and Group Integration-Social the player had. The finding was consistent with Chiang, Chen and Yeh's (2001) results that there was a medium positive relationship between Training and Instruction and Individual Attraction to the Group Task

Democratic Behavior

The results of simple regression analysis of the study indicated that there were significant and positive relationships of Democratic Behavior with four dimensions of team cohesion. These statistics meant that the more Democratic Behavior a player perceived, the more Individual Attraction to the Group Task; Individual Attraction to the Group Social, Group Integration-Task; and Group Integration-Social the player had. These results were inconsistent with Chiang, Chen and Yeh's (2001) findings.

Autocratic Behavior

The results of simple regression analysis displayed that there were no significant relationships of Autocratic Behavior with Individual Attraction to the Group Social; Group Integration-Task; and Group Integration-Social. However, autocratic behavior was negatively significant related to Individual Attraction to the Group Social. The

statistics expressed that more Autocratic Behavior a player perceived, the less Individual Attraction to the Group Social a player had. This finding was inconsistent with Chiang, Chen and Yeh's (2001) findings.

Social Support

The results of simple regression analysis of the study indicated that there were significant and positive relationships of Social Support with four dimensions of team cohesion. These statistics meant that the more Social Support a player perceived, the more Individual Attraction to the Group Task; Individual Attraction to the Group Social; Group Integration-Task; and Group Integration-Social the player had. This finding was consistent with Chiang, Chen and Yeh's (2001) results that there was a weak positive relationship between Social Support and Individual Attraction to the Group Task.

Positive Feedback

The results of simple regression analysis of the study indicated that there were significant and positive relationships of Positive Feedback with four dimensions of team cohesion. These statistics meant that the more Positive Feedback a player perceived, the more Individual Attraction to the Group Task; Individual Attraction to the Group Social; Group Integration-Task; and Group Integration-Social the player had. The results were not supported by Chiang, Chen and Yeh's (2001) findings.

Context of Coaching Leadership, Team Cohesion and Team Performance

Turman (2003) indicated that coach leadership and team cohesion were two essential elements for the development of the team. If the leaders could create and promote a high level of team cohesion, the team would display a dramatic improvement in performance. The findings of this study showed that coach's leadership behaviors

and team cohesion could be employed to predict team performance. In the present study, the results of the statistical test found that the Individual Attraction to the Group Task, Group Integration-Task (from team cohesion), and Autocratic Behavior (from coach's leadership behaviors) were the significant predictors of team performance. However, because the R^2 value of the prediction model was 11 %, which is lower than 25%, the prediction model was not enough to predict the team performance accurately (Huang, 2003).

Practical Implications

Based on the findings of this study, the practical implications were provided to the Taiwanese college basketball coaches and players to enhance their teams' performance. These practical implications were as follows:

1. The study found that Taiwanese college basketball conference A1 players perceived greater coach's Democratic Behavior and Positive Feedback than conference A2 and A3 players. The findings indicated that conference A1 coaches should rely on their professional knowledge to train and direct their players more positively. Furthermore, in spite of most Taiwanese college basketball conference A1 players being the best players compared to conference A2 and A3 players, sometimes coaches could allow the team members to participate in the decision-making process and in the application of game tactics. However, since the players were students, this should be regulated, and the coaches for the most part should work according to their experience and professional knowledge, asking the players to comply with their demands, strategies, and decisions strictly. Except to train and direct the players, conference A1 coaches should be more concerned about the players' schoolwork,

behaviors and the way of life to further positive interaction, which would enhance the centripetal force of the team;

2. The study found that male Taiwanese college basketball players perceived greater Training and Instruction Behavior from coaches, while female Taiwanese college basketball players perceived greater Autocratic Behavior and Social Support Behavior. The findings revealed that Taiwanese college basketball coaches needed to offer more concern about male players' requirements regarding psychology and spirit. The female players would need more training and direction about basketball skills and tactical application. Furthermore, irrespective of gender, to improve the team's chances of winning, coaches should allow players to participate in the decision-making process with regard to team's goal or tactical design, and provide more encouragement and rewards;
3. The study found that "under 1 year" players perceived more social support from their coaches than "1-under 2 years", "2-under 3 years" and "3 and above 3 years" players. The findings indicated that Taiwanese college basketball coaches would care for and look after the new players in order to integrate the new players into the team and promote the team's capability. Also, coaches would train and instruct the new players more regarding basketball skills and tactical application, and ask the new players to strictly abide by the team's regulations and coach's directions;
4. To enhance the team's cohesion, Taiwanese college basketball conference A1 and A2 coaches should engage in a higher achievement goal to excite the players' aspirations to fulfillment. For Taiwanese college basketball conference A3 players, coaches

should create an atmosphere encouraging the players to be concerned with and show respect for each other, and enjoy practicing and playing with their team members; and

5. The study found that coaches' Autocratic Behavior, the Individual Attraction to Group-Task, and Group Integration-Task of team cohesion's four dimensions were significant predictors of team performance. Taiwanese college basketball coaches could employ the prediction model to modify their leadership style to improve the team's performance.

Conclusions

Research Question 1

In this study, 60.7% participants were male; the mean age of all participants was at 20.26, participants were mainly from conference A3, accounted for 57.2%, and most participants' years of team participation were under 1 year, accounted for 35.8%. Moreover, the collected data indicated that team performance (winning percentage) had a *M* of 0.59 with a *SD* of 0.33. Coach's leadership behaviors (39 items) had *M* ranged from 1.82 to 3.44 and *SD* ranged from 0.81 to 1.31. Team cohesion (15 items) had *M* ranged from 2.38 to 7.48 and *SD* ranged from 1.94 to 2.61.

Research Question 2

In Taiwan, college conference A1 and A2 basketball players perceived greater coach's Training and Instruction Behavior than conference A3 players. Conference A1 players perceived greater coach's Democratic Behavior than conference A2 and A3 players. Conference A1 players perceived greater coach's Positive Feedback than conference A3 players' perception. The three college conference basketball players' perception of coach's autocratic Behavior and Social support were similar.

Research Question 3

Taiwanese male college basketball players perceived greater coach's Training and Instruction Behavior than female college basketball players. However, female college basketball players perceived greater Autocratic Behavior and Social Support of coach's leadership behaviors than male college basketball players.

Research Question 4

The differences among "under 1 year," "1 to under 2 years," and "3 and above 3 years" Taiwanese college basketball players had a significant and positive relationship. Besides, "under 1 year" players perceived greater social support from their coaches than "1 to under 2 years," "2 to under 3 years" and "3 and above 3 years" players.

Research Question 5

Taiwanese college basketball players in conference A1 and A2, compared to those in conference A3, had significantly higher scores in the dimension of Individual Attraction to Group-Task. Nevertheless, in the dimension of Group Integration-Task, the Taiwanese college basketball players in conference A3 had higher scores than conference A1 and A2 players. Taiwanese college basketball players in the dimensions of Group Integration-Social, conference A3 players had higher scores than the conference A2 players.

Research Question 6

The male Taiwanese college basketball players had higher scores than the female Taiwanese basketball players in the dimension of Individual Attraction to Group-Task. However, the female Taiwanese basketball players in the dimension of Individual Attraction to the Group-Social; Group Integration-Task; and Group Integration-Social

had higher scores than the male Taiwanese basketball players.

Research Question 7

There were no significant differences found among the players with various numbers of years spent in team participation in the four dimensions of team cohesion.

Research Hypothesis 1

The results of Research Hypothesis 1 found that the Training and Instruction; Democratic Behavior; Social Support; and Positive Feedback of the coach's leadership behaviors as perceived by team members were positive significantly related to the four dimensions of team cohesion. Only one significant and negative relationship was found between Autocratic Behavior of the coach's leadership behaviors as perceived by team members and Individual Attraction to the Group Social dimension of the team cohesion.

Research Hypothesis 2

The results of the study found that the Autocratic Behavior (from coach's leadership behaviors), Individual Attraction to the Group Task and Group Integration-Task (from team cohesion) were the significant predictors of team performance.

Limitations

This study was confined by several limitations. These limitations were as follows:

1. The findings were limited to the Taiwanese college basketball players who were registered to participate in the 2005 University Basketball Association (UBA);
2. This study was constrained by manpower, financial resources and time; hence, the study adopted only a quantitative research method and employed a questionnaire to conduct the survey. However, the questionnaire is a self-reporting instrument. The

researcher cannot control the authenticity of the responses of the subjects. Hence, this study assumes that all of the respondents replied truthfully; and

3. Although this research survey is confidential and all participants will be unidentified, the players out of respect or fear of their coaches could have hesitated to respond unfavorably or negatively for questions concerning coaches.

Recommendations for Future Study

1. Future studies could consider comparing different cultures to explore the differences and similarities of a coach's leadership behaviors and team cohesion on team performance between Taiwanese basketball players and another country's basketball players;
2. This study employed only a quantitative approach to explore the relationships between a coach's leadership behaviors, team cohesion and team performance, but could not understand in depth the players' perceptions of coach's leadership behaviors and team's cohesiveness. Therefore, future studies may add a qualitative method to make up the insufficiencies in the quantitative method;
3. The performance of a basketball team depends mainly on the basketball players' skills. However, skills are difficult to measure; hence, this study adopted only two variables, coach's leadership behaviors and team's cohesiveness, to investigate the impact on the team's performance. Therefore, future studies may include more variables such as player's motivation, player's satisfaction, and team's conflicts to explore the relationships among these variables and team performance. Furthermore, future studies can employ Structural Equation Model (SEM) to measure the causal relationships among these variables and team performance;

4. The samples of this study were selected only from Taiwanese college basketball players. To clearly realize different levels of Taiwanese basketball players, future studies may include the basketball players of elementary school, junior high school, and senior high school to increase the sampling plan;
5. This study was limited to the sport of basketball; future research may extend the study to other team sports to extensively investigate the influence of coaches' leadership behaviors and team cohesion on team performance there; and
6. Athletes might perceive coach's leadership behaviors differently between male and female coaches. Therefore, future study in this area should be investigated.

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APPENDIX A

Permission Letter by Instrument Developer (GEQ)

GEQ

Subject: Re: Please grant me your permission! Thanks!

Date: Wed, 20 Jul 2005 08:29:35 -0400

From: "Bert Carron" [REDACTED]

To: "Jacky Chih" [REDACTED]

You have our permission to translate the GEQ if you wish to see the questionnaire contact FIT Publications ... further we have laid out some caveats on using and/or translating the GEQ in other cultures. In our experience, authors who have embarked on the task have generally done mediocre jobs because they see the items as sacrosanct as opposed to a means to an end (i.e., assessing the four scales). We have discussed this in the GEQ Manual which is also available from FIT (address is on the net)

good luck

bert carron

Albert V. Carron
School of Kinesiology
University of Western Ontario
London, Ontario N6A 3K7

PHONE: [REDACTED]

FAX: [REDACTED]

----- Original Message -----

From: Jacky Chih

To: Carron

Sent: Tuesday, July 19, 2005 11:52 PM

Subject: Please grant me your permission. Thanks!

Dear Dr. Carron,

How are you? My name is Heng-Chi Chih and I am an international student at Lynn University in Florida. I am now starting on my dissertation and working toward a doctoral degree. My research project is concerned with the relationships of coaching leadership and team cohesion on team performance in Taiwanese college basketball

programs. I read one of your great articles about team cohesion “The development of an instrument to assess cohesion in sport teams: The group environment questionnaire” in Journal of Sport Psychology (1985). Your measuring instrument (Group Environment Questionnaire) is widely employed and adopted by many researchers. Therefore, the Group Environment Questionnaire is accepted and confirmed as an effective instrument to measure team cohesion in sports. I would like to ask for your permission to use and translate the Group Environment Questionnaire in my research. Would you please grant me your permission via e-mail? I really need your approval to continue my research.

I know you are very busy at your work; I deeply appreciated your willing to take the time to read and consider my request. I look forward to seeing your reply.

Here is my phone number and email address:

Phone: [REDACTED]

Email: [REDACTED]

Sincerely,

APPENDIX B

Permission Letter by Instrument Developer (LSS)

LSS

Subject: Re: Please grant me your permission! Thanks!

Date: Tue, 12 Jul 2005 08:21:31 -0400

From: "Packianathan Chelladurai" [REDACTED]

To: "Jacky Chih" [REDACTED]

Hi, Jacky:

Thank you for your interest in my work. Yes, you have my permission to use the LSS. I have attached the file for the Manual for the LSS.
All the best with your research

Chella

At 05:47 AM 7/12/2005, you wrote:

Dear Dr. Chelladurai,

How are you? My name is Heng-Chi Chih and I am an international student at Lynn University in Florida. I am now starting on my dissertation and working toward a doctoral degree. My research project is concerned with the relationships of coaching leadership and team cohesion on team performance in Taiwanese college basketball programs. I read one of your great articles about coach's leadership behaviors "Dimensions of leader behavior in sports: development of a leadership scale" in Journal of Sport Psychology (1980). Your measuring instrument (Leadership Scale for Sports) is widely employed and adopted by many researchers. Therefore, the Leadership Scale for Sports is accepted and confirmed as an effective instrument to measure coach's leadership behaviors in sports. I would like to ask your permission to use and translate the Leadership Scale for Sports in my research. Would you please grant me your permission via e-mail? I need your approval to continue my research.

I know you are very busy at your work; I deeply appreciated your willing to take the time to read and consider my request. I look forward to seeing your reply.

Here is my phone number and email address:

Phone: [REDACTED]

Email: [REDACTED]

Sincerely,

Heng-Chi Chih 12/ July/ 2005

APPENDIX C

Questionnaire (English Version)

Part 1: Socio-Demographic Profile

Directions:

This part comprises some demographic questions that are only for the purpose of scholarly research. Please feel comfortable to respond to these questions. Please fill out the correct answer in the blank, and select the appropriate option to place an “✓” into the .

1. School's Name: _____ University (College)
2. Age: _____ years old
3. Conference Level: (1) Conference A1 (2) Conference A2
 (3) Conference A3
4. Gender: (1) Male (2) Female
5. Years of Team participation: (1) Under 1 year (2) 1-Under 2 years
 (3) 2-under 3 years (4) 3 and above 3 years

Part 2: Leadership Scale for Sports

(Athlete's perception of coach's behavior)

Directions:

The statements which listed below characterize the specific behavior that your coach may display. There are five options for each statement: 1. "Always" (around 100% of the time); 2. "Often" (around 75% of the time); 3. "Occasionally" (around 50% of the time); 4. "Seldom" (around 25% of the time); 5. "Never" (around 0% of the time).

Please **circle** the most appropriate one of the five numbers (1, 2, 3, 4, 5) in each item to show your answer which indicates your coach's actual behavior that you perceived.

Each item has not a standard answer, please respond according to your "**real feeling.**"

My coach:

	<u>Always</u>	<u>Often</u>	<u>Occasionally</u>	<u>Seldom</u>	<u>Never</u>
1. See to it that every athlete is working to his capacity.	1	2	3	4	5
2. Asks for the opinion of the athletes on strategies for specific competitions.	1	2	3	4	5
3. Helps athletes with their personal problems.	1	2	3	4	5
4. Compliments an athlete for good performance in front of others.	1	2	3	4	5
5. Explains to each athlete the techniques and tactics of the sport.	1	2	3	4	5
6. Plans relatively independent of the athletes.	1	2	3	4	5
7. Helps members of the group settle their conflicts.	1	2	3	4	5
8. Pays special attention to correcting	1	2	3	4	5

	athletes' mistakes.					
9.	Gets group approval on important matters before going ahead.	1	2	3	4	5
10.	Tells an athlete when the athlete does a particularly good job.	1	2	3	4	5
11.	Makes sure that the coach's function in the team is understood by all athletes.	1	2	3	4	5
12.	Does not explain his/her actions.	1	2	3	4	5
13.	Looks out for the personal welfare of the athletes.	1	2	3	4	5
14.	Instructs every athlete individually in the skills of the sport.	1	2	3	4	5
15.	Lets the athletes share in decision making.	1	2	3	4	5
16.	Sees that an athlete is rewarded for a good performance.	1	2	3	4	5
17.	Figures ahead on what should be done.	1	2	3	4	5
18.	Encourages athletes to make suggestions for ways to conduct practices.	1	2	3	4	5
19.	Does personal favors for the athletes.	1	2	3	4	5
20.	Explains to every athlete what should be done and should not be done.	1	2	3	4	5
21.	Lets the athletes set their own goals.	1	2	3	4	5
22.	Expresses any affection felt for the athletes.	1	2	3	4	5
23.	Expects every athlete to carry out one's assignment to the last detail.	1	2	3	4	5
24.	Lets the athletes try their own way even if they make mistakes.	1	2	3	4	5
25.	Encourages the athlete to confide	1	2	3	4	5

in the coach.

26. Points out each athlete's strength and weaknesses.	1	2	3	4	5
27. Refuses to compromise on a point.	1	2	3	4	5
28. Expresses appreciation when an athlete performs well.	1	2	3	4	5
29. Gives specific instructions to each athlete on what should be done in every situation.	1	2	3	4	5
30. Asks for the opinion of the athletes on important coaching matters.	1	2	3	4	5
31. Encourages close and informal relations with athletes.	1	2	3	4	5
32. Sees to it that the athlete's efforts are coordinated.	1	2	3	4	5
33. Lets the athletes work at their own speed.	1	2	3	4	5
34. Keeps aloof from the athletes.	1	2	3	4	5
35. Explains how each athlete's contribution fits into the total picture.	1	2	3	4	5
36. Invites the athletes home.	1	2	3	4	5
37. Gives credit when it is due.	1	2	3	4	5
38. Specifies in detail what is expected of athletes.	1	2	3	4	5
39. Lets the athletes decide on plays to be used in a game.	1	2	3	4	5
40. Speaks in a manner which discourages questions.	1	2	3	4	5

Note. Leadership Scale for sports is from "Dimensions of leader behavior in sports: development of a leadership scale," by P. Chelladurai, and S. D. Saleh, 1980, *Journal of Sport Psychology*, 2(1), p. 34-35. Adapted with permission of the authors.

Part 3: The Group Environment Questionnaire

Directions:

The statements listed below are designed to characterize your feelings concerning your **personal involvement with this team, and your team as a whole.** There are nine options for each statement: from 1. Strongly Disagree to 9. Strongly Agree. Please **circle** the most appropriate one of the nine numbers (1, 2, 3, 4, 5, 6, 7, 8, 9) in each item to show your answer which indicate your level of agreement. Each item has not a standard answer, please respond according to your **“real feeling.”**

1. I do not enjoy being a part of the social activities of this team.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
2. I'm not happy with the amount of playing time I get.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
3. I am not going to miss the members of this team when the season ends.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
4. I'm unhappy with my team's level of the desire to win.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
5. Some of my best friends are on this team.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
6. This team does not give me enough opportunities to improve my personal performance.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
7. In enjoy other parties more than team parties.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
8. I do not like the style of play on this team.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree

9. For this team is one of the most important social groups to which I belong.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
10. Our team is united in trying to reach its goals for performance.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
11. Members of this team would rather go out on their own than get together as a team.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
12. We all take responsibility for any loss or performance by our team.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
13. Our team members rarely party together.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
14. Our team members have conflicting aspirations for the team's performance.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
15. Our team would like to spend time together in the off season.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
16. If members of our team have problems in practice, everyone wants to help them so we can get back together.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
17. Members of our team do not stick together outside of practices and games.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree
18. Our team members do not communicate freely about each athlete's responsibilities during competition or practice.
1 2 3 4 5 6 7 8 9
Strongly Disagree Strongly Agree

Note. The Group Environment Questionnaire is from "The development of an instrument to assess cohesion in sport teams: The group environment questionnaire," by A. V. Carron, W. N. Widmeyer and L. R. Brawley, 1985, *Journal of Sport Psychology*, 4, p. 244-246. Adapted with permission of the authors.

Part 4: Team Performance

Directions:

Team performance is defined as the total winning percentage of each team for the games played in the 2005 season of University Basketball Association (UBA) of Taiwan; but the play-off competitions are excluded. The score of winning percentage is calculated by dividing the number of acquiring points by the total number of games played. One point is designated for a winning game and no points are designated for a losing game (there is no possibility for a tie to occur in basketball games because in all regular basketball competitions due to overtime).

For example, the total number of the team played the games is 5; the team won 3 games and lost 2 games. Therefore, the winning percentage of the team is

$$(3*1 + 2*0) \div 5 = 0.6$$

Please fill out the correct answer in the blank.

The **winning percentage** of my team is _____.

APPENDIX D

Questionnaire (Chinese Version)

問 卷

第一部分：個人基本資料

說明：

本人口統計資料僅供學術研究之用。請回答下列問題：在空格內填上正確答案並將合宜的選擇放在 內打“√”。

1. 學校名稱：_____ 大學(學院)
2. 年齡：_____ 歲
3. 參賽級別： (1) 一級 (2) 二級 (3) 三級
4. 性別： (1) 男 (2) 女
5. 參加本球隊的球齡： (1) 一年以下 (2) 一年至二年以下
 (3) 二年至三年以下 (4) 三年至三年以上

第二部份：運動教練領導行為量表
(選手對教練行為的感覺)

說明：

下列問題係描述你對你的教練所表現出的特定行為的感覺。每一個問題有五個選擇：1.”總是如此”(大約 100%) 2.”經常”(大約 75%) 3.”偶爾”(大約 50%) 4.”不常”(大約 25%) 5.”從不如此”(大約 0%)。請就每一個問題從 1,2,3,4,5 這五組號碼中圈選出一個你認為最能代表你對你的教練，其實際行為的感覺的號碼。每一個問題都沒有標準答案，請就你最真實的感覺回答。

我的教練：

	<u>總是</u>	<u>經常</u>	<u>偶爾</u>	<u>不常</u>	<u>從不</u>
1. 注意到每位球員都盡其所能。	1	2	3	4	5
2. 詢問球員對特定比賽戰略的意見。	1	2	3	4	5
3. 幫助球員處理個人問題。	1	2	3	4	5
4. 在其他球員面前讚美某位球員好的表現。	1	2	3	4	5
5. 對每位球員講解這項運動的技巧及戰術。	1	2	3	4	5
6. 依球員的個別性做安排。	1	2	3	4	5
7. 協助解決球員間的衝突。	1	2	3	4	5
8. 特別注意去改正球員的錯誤。	1	2	3	4	5
9. 在進行重要事項前會先得到全隊的贊同。	1	2	3	4	5
10. 當球員有特別良好的表現時會告知球員。					
11. 確定所有球員都能了解教練在球隊中的功能。	1	2	3	4	5
12. 不解釋他(她)的行為。	1	2	3	4	5
13. 注重球員的個人福利。	1	2	3	4	5
14. 個別指導每位球員的運動技能。	1	2	3	4	5
15. 讓球員參與決策。	1	2	3	4	5
16. 重視球員在表現良好時應得獎勵。	1	2	3	4	5
17. 在必須完成的事務前預作計畫。	1	2	3	4	5
18. 鼓勵選手對訓練方式提出建議。	1	2	3	4	5
19. 以個人名義幫球員的忙。	1	2	3	4	5
20. 向每位球員解釋在球隊中什麼事該做什麼事不該做。	1	2	3	4	5
21. 讓球員設定自己的目標。	1	2	3	4	5
22. 向球員表達喜愛之意。	1	2	3	4	5
23. 期待每位球員都能盡力達成任務。	1	2	3	4	5
24. 讓球員用自己的方式去做,即使會犯錯。	1	2	3	4	5
25. 鼓勵球員信任教練。	1	2	3	4	5
26. 指出每位球員的優缺點。	1	2	3	4	5

27. 在某些觀點上拒絕妥協。	1	2	3	4	5
28. 當球員表現優異時會表示讚賞。	1	2	3	4	5
29. 在各種情況下對所該完成的事給予每位球員具體的指示。	1	2	3	4	5
30. 在重要的訓練事務上徵詢球員的意見。	1	2	3	4	5
31. 與球員建立密切的私人關係。	1	2	3	4	5
32. 注意球員的努力是否符合球隊的目標。	1	2	3	4	5
33. 讓球員按照自己的進度練習。	1	2	3	4	5
34. 會與球員保持距離。	1	2	3	4	5
35. 解釋每一球員的貢獻與球隊的成敗相關。	1	2	3	4	5
36. 邀請球員到家中作客。	1	2	3	4	5
37. 適時的鼓勵球員。	1	2	3	4	5
38. 明確的表達對球員的期望。	1	2	3	4	5
39. 讓球員決定比賽時應使用的戰術。	1	2	3	4	5
40. 對球員說話時不喜歡球員提問題。	1	2	3	4	5

第三部份：團隊凝聚力量表

說明：

下列敘述係描述你與球隊的相處情形以及你對球隊互動的看法。每一題有九個選擇，從 1.非常不同意到 9.非常同意。請在每題中圈選出一個你認為最適當的號碼(從 1 到 9)，也就是最能代表你同意程度的號碼。每一個問題都沒有標準答案，請就你最真實的感覺回答。

1. 我不喜歡成為球隊社交活動的一份子
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
2. 我不滿意我上場比賽的次數。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
3. 賽季結束後我不會想念我的隊友。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
4. 我不滿意球隊想要贏球的程度。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
5. 我有一些很要好的朋友在球隊中。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
6. 我的球隊沒有給我足夠的機會去改進我個人的表現。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
7. 我喜歡參加其他的聚會多於球隊的聚會。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
8. 我不喜歡我球隊比賽的風格。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
9. 這個球隊是我所參加最重要的社交團體之一。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
10. 我的球隊很團結要共同去達到目標。
1 2 3 4 5 6 7 8 9
非常不同意 非常同意
11. 隊員寧願單獨出去而不是團隊行動。
1 2 3 4 5 6 7 8 9

- | | | | | | | | | | |
|-----|------------------------------|---|---|---|---|---|---|---|------|
| | 非常不同意 | | | | | | | | 非常同意 |
| 12. | 無論球隊成敗隊員們都一起承受。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |
| 13. | 隊友很少一起聚會。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |
| 14. | 隊員對球隊的表現有不同的期望。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |
| 15. | 就算賽季結束隊員仍願聚在一起。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |
| 16. | 若隊員有練習上的問題，大家都樂意協助，好讓球隊發揮實力。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |
| 17. | 隊員除了比賽和練習並不常聚在一起。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |
| 18. | 在比賽或練習之時隊員不會坦率的談論每個人的職責。 | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
| | 非常不同意 | | | | | | | | 非常同意 |

第四部份：團隊表現

說明：

團隊表現的定義是每支球隊在參加 2005 年大專盃籃球聯賽 (UBA)預賽時的總勝率，而複賽的成績則不列入計算。勝率的計算方式是球隊贏得一場比賽記一分，若輸球則該場比賽記分為 0 (一般的籃球比賽因為有延長賽的規定，所以不會有打成平手的情形)。而勝率的分數就是以球隊比賽輸贏場次的總得分除以比賽的總場次(預賽)。

例如，某球隊的預賽比賽總場次為 5 次，該球隊贏三場輸二場，所以該球隊的勝率為 $(3*1 + 2*0) \div 5 = 0.6$

請在空格處填入正確的答案

我的球隊的勝率是 _____

APPENDIX E

**Written Informed Consent Letter (English Version) and Stamped Certified
Translation**

WU YUAN TRANSLATION SERVICE
950 Mitsu 1st Road, Kaohsiung, Taiwan, R.O.C.
TEL:(07)3426631 ext.251 FAX:(07)3429741
Uniform No.76687629



PROJECT TITLE: Relationships of Coaching Leadership and Team Cohesion on Team Performance in Taiwanese College Basketball Programs

Project IRB Number: 2005-041 Lynn University 3601 N. Military Trail Boca Raton, Florida 33431

I, Heng-Chi Chih, am a doctoral student at Lynn University. I am studying Global Leadership, with a specialization in Education. Part of my education is to conduct a research study.

DIRECTIONS FOR THE PARTICIPANT:

You are being asked to participate in my research study. Please read this carefully. This form provides you with information about the study. The Principal Investigator (Heng-Chi Chih) will answer all of your questions. Ask questions about anything you don't understand before deciding whether or not to participate. You are free to ask questions at any time before, during, or after your participation in this study. Your participation is entirely voluntary and you can refuse to participate without penalty or loss of benefits to which you are otherwise entitled.

PURPOSE OF THIS RESEARCH STUDY: The study is about the relationships between perceived leadership behaviors of college basketball coaches, team cohesion, and team performance. There will be approximately 640 people participating in this study. College basketball players must be 18 years and older. The Taiwanese college basketball players are the players who are registered as a formal player by the coach to participate in the University Basketball Association (UBA) of Taiwan in 2005.

PROCEDURES: You will first complete a *demographic survey*. Then you will be asked to complete a 40-item survey about your perceptions of your coach's leadership behaviors

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Lynn University
3601 N. Military Trail, Boca Raton, Florida 33431



SZU YUAN TRANSLATION SERVICE
900 Mintsu 1st Road, Kaohsiung, Taiwan, R.O.C.
TEL:(07)3426031 ext.251 FAX:(07)3429741
Uniform No.76687629

Scale for Sports) and an 18-item survey about your perceptions of team cohesion (Group Environment Questionnaire). Finally, you will be asked to fill out your team's winning percentage in the season competitions of University Basketball Association (UBA) of Taiwan in 2005. These surveys should take about 15 minutes to complete. If necessary, the researcher (Heng-Chi Chih) can help you complete the surveys.

POSSIBLE RISKS OR DISCOMFORT: This study involves minimal risk. You may find that some of the questions are sensitive in nature. In addition, participation in this study requires a minimal amount of your time and effort.

POSSIBLE BENEFITS: There may be no direct benefit to you in participating in this research. But knowledge may be gained which may help basketball coaches to modify their behaviors to lead their team, and may help the basketball teams to enhance their performance.

FINANCIAL CONSIDERATIONS: There is no financial compensation for your participation in this research. There are no costs to you as a result of your participation in this study.

ANONYMITY: This survey will be anonymous. You will not be identified and data will be reported as "group" responses. Participation in this survey is voluntary and return of the completed survey will constitute your informed consent to participate.

RIGHT TO WITHDRAW: You are free to choose whether or not to participate in this study. There will be no penalty or loss of benefits to which you are otherwise entitled if you choose not to participate.

CONTACTS FOR QUESTIONS/ACCESS TO CONSENT FORM: Any further questions you have about this study or your participation in it, either now or any time in the future, will be answered by Heng-Chi Chih (Principal Investigator) who may be reached at [REDACTED] and Dr. William Leary, faculty advisor who may be reached at [REDACTED]. For any questions regarding your rights as a research subject, you may call Dr. Farideh Farazmand, Chair of the Lynn University Institutional Review Board for the Protection of Human Subjects, at [REDACTED]. If any problems arise as a result of your participation in this study, please call the Principal Investigator (Heng-Chi Chih) and the faculty advisor (Dr. William Leary) immediately.
A copy of this consent form will be given to you.

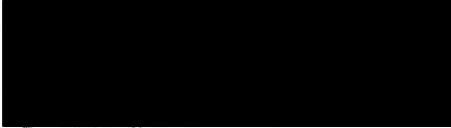
INVESTIGATOR'S AFFIDAVIT: I have carefully explained to the subject the nature of the above project. The person participating has represented to me that he/she is at least 18

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Lynn University
3601 N. Military Trail, Boca Raton, Florida 33431



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TEL:(07)3426031 ext.251 FAX:(07)3429741
Uniform No.76687623

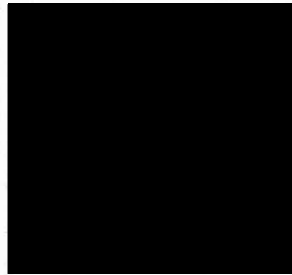
...and that he/she does not have a medical problem or language or educational barrier that precludes his/her understanding of my explanation. I hereby certify that to the best of my knowledge the person who is signing this consent form understands clearly the nature, demands, benefits, and risks involved in his/her participation and his/her signature is legally valid.



Signature of Investigator

Date of IRB Approval: 1/25/06 7.7.

Date of IRB Expiration:



Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail, Boca Raton, Florida 33431

APPENDIX F

Written Informed Consent Letter (Chinese Version)



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900 Wintsu 1st Road, Kaohsiung, Taiwan, R.O.C.
TEL:(07)3426031 ext.251 FAX:(07)3429741
Platform No.76987629



本文件僅供問卷調查之用。

論文題目：教練領導行為和團隊凝聚力與團隊表現的關係，以台灣大學籃球隊為實驗對象。

論文 IRB 編號：2005-041 Lynn University 3601 N. Military Trail Boca Raton, Florida 33431

遲珩起為林恩大學國際領導系博士班學生，主修教育。以下為博士研究的問卷內容：

問卷說明

謝謝您同意填寫此份研究問卷。請仔細閱讀以下關於此份問卷的說明。在決定是否參與此問卷調查之前，歡迎提出任何詢問。同時，在填寫問卷之前、填寫問卷當時或填寫問卷之後如有任何問題，歡迎隨時提出。遲珩起研究生將誠摯回答您的所有問題。在此聲明，您的參與是完全出於自願。所以您可以隨時終止填寫此問卷。終止填寫問卷並不會受到任何的處罰或喪失任何的利益。

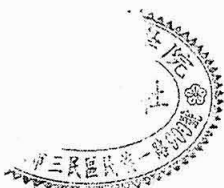
研究目的：此份研究涉及大學籃球教練的領導行為和團隊凝聚力對團隊表現的研究計畫。約有 640 人參與此項研究。大學籃球隊員必需年滿 18 歲且經教練鄰選為 2005 年大學籃球聯賽的正式球員。

填寫步驟：首先請您先完成人口統計學的調查，接下來，有 40 道題是詢問您對教練領導行為的看法和 18 道有關您對團隊凝聚力的看法，最後再請您填寫 2005 年大學籃球聯賽貴隊的勝利率。此問卷之完成時間約需時 15 分鐘。遇任何問題，遲珩起研究員將隨時協助您完成此問卷。

潛在危險或不適：此研究所涉及的風險極小。您可能會覺得有些問題較為敏感，不過並不會耗掉您太多的時間和精力。

潛在利益：您的參與或許沒有直接的利益，但您寶貴的意見可幫助籃球教練改善他們的領導行為並可協助球隊有更好的表現。

Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail, Boca Raton, Florida 33431



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 TEL:(07)3426031 ext.251 FAX:(07)3429741
 Uniform No.76687629

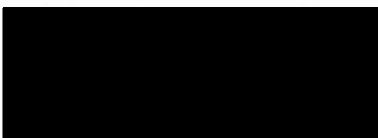
金錢報酬：參與此研究並無金錢報酬亦無需負擔任何費用。

匿名：此問卷採匿名方式進行，不會公佈填寫人姓名。所有的數據都將以“團隊”的名義來呈現。填寫此份問卷乃自願行為。交回此份問卷表示您同意參與此項研究計畫。

關於此同意書：無論您現在或將來的任何時刻有任何的問題，逕琦起研究員都將誠摯的為您解答。如有任何問題 [redacted] 或與我的指導教授 Dr. William Leary 聯絡。他的電話是 [redacted]。如有任何關於您的權利的問題，請聯繫 Dr. Farideh Farazmand 教授，他的電話是 [redacted]。如在填寫問卷期間有任何的問題請立即聯絡逕琦起研究員和他的指導教授 Dr. William Leary。在您填寫問卷的同時將會給您一份同意書的副本。

研究員的宣誓書：我在此保證已將研究計畫謹慎周詳的解釋給參與者了解。參與者皆年滿 18 歲並且沒有任何健康上的問題。無語言的隔閡或教育的障礙，他/她們對我的解譯完全理解。我在此丹保證我已盡全力使參與者了解此項研究的種類、要求、利益和風險，並且讓他/她們了解他/她們的簽名具有法律上的效力。

此致



研究員簽名

IRB 同意日期: 1/25/06

IRB 到期日: [redacted]

思源翻譯社
 SZU YUAN TRANSLATION SER
 The undersigned confirms
 to be true and has been
 translated from the attached
 original.
 Translator [redacted]
 Corporation License No. 76687629
 Date: Dec. 29, 2005

APPENDIX G

Institutional Review Board Approval



Lynn University

Principal Investigator: Heng-Chi Chih

Project Title: Relationships of Coaching Leadership and Team Cohesion on Team Performance in Taiwanese College Basketball Programs.

IRB Project Number 2005-041 :

APPLICATION AND PROTOCOL FOR REVIEW OF RESEARCH INVOLVING HUMAN SUBJECTS OF A NEW PROJECT: Request for Exempt Status Expedited Review

Convened Full-Board

IRB ACTION by the CONVENCED FULL BOARD

Date of IRB Review of application and Research Protocol 01/25/06

IRB ACTION: Approved Approved w/provision(s) Not Approved Other

COMMENTS

Consent Required: No Yes Not Applicable Written Signed

Consent forms must bear the research protocol expiration date of 01/25/07

Application to Continue/Renew including an update consent, is due:

- (1) For a Convened Full-Board Review, two month prior to the due date for renewal
- (2) For an Expedited IRB Review, one month prior to the due date for renewal
- (3) For review of research with exempt status, one month prior to the due date for renewal

Name of IRB Chair (Print) Farideh Farazmand

Signature of IRB Chair _____

Date: 01/25/06

Cc: Dr. Leary

Institutional Review Board for the Protection of Human Subjects
Lynn University
3601 N. Military Trail Boca Raton, Florida 33431

APPENDIX H

Invitation Email (English Version)

Dear Coach,

This is an inquiry letter. My name is Heng-Chi Chih and I am a doctoral student at Lynn University in Florida, U.S.A. I am now researching on my dissertation for the doctoral degree. My research project is related to the relationship between coaching leadership and team cohesion in team performance in Taiwanese college basketball programs. I therefore would like to have the help from you and your basketball team players for the survey. This survey is only for the scholarly research purpose, and it would be anonymous. If you and your basketball team players are willing to help me, please kindly send me an email or give me a call. I deeply appreciate your assistance. Look forward to your reply. Thank you very much!

My phone number and email address please read as follows:

Phone: (School) [REDACTED]

([REDACTED]

[REDACTED]

Sincerely,

Heng-Chi Chih

APPENDIX I

Invitation Email (Chinese Version)

親愛的教練，

您好！我是遲珩起，是美國佛羅里達州林恩大學博士班的學生，目前正在進行論文研究好完成我的博士學位。我的研究計畫是關於台灣大專籃球員對教練領導行為和團隊凝聚力影響團隊表現之間的關係。因此，我希望您和您的隊友能夠幫忙我完成這個研究調查。這項調查採不記名且僅供學術參考研究之用。如果您和您的隊友可以協助我，請寫 E-mail 或打電話給我。對您的幫助我在此先深表感激。期盼您的答覆。我的電話和 E-mail 地址如下所述：

電話：

[REDACTED]

(家

[REDACTED]

E-mail:

[REDACTED]

遲珩起敬上

661B14 15522
03/12/07 39800 SELF

RF Group