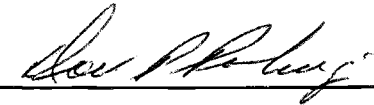


AN ABSTRACT OF THE THESIS OF

Hsu Ming-Chang for the degree of Doctor of Philosophy in  
Human Performance presented on July 6, 1992.

Title: A Comparative Analysis of the Factors Contributing to  
Olympic Success: Taiwan, Republic of China, and the People's  
Republic of China.

Abstract approved:  \_\_\_\_\_

Dr. Dow P. Poling

Taiwan separated from China as the result of the 1949 political upheaval between Chiang Kai-Shek's Nationalist Government and Mao Tse-Tung's Communists Party which concluded with the Chinese Communist take over of mainland China and the establishment of the People's Republic of China. Since then, Taiwan, ROC and the PRC have competed in the international sport arena for the "China" status. The purpose of this study was to compare and analyze the extent of Olympic success and to explore the roles and functions of selected factors of Olympic success of athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games.

Four comparative research questions were proposed for investigation:

- 1) The difference of sport success during the 1984 and 1988 Olympic Games;
- 2) The difference in sport organizations and administration;
- 3) The difference in scientific sports training practices;
- 4) The difference in the extent and application of sports resources.

Sports governing-body administrators, sports scholars, sports science researchers, national team coaches and athletes from the ROC and the PRC served as respondents to written questionnaire and personal interviews.

The data gathered from the questionnaire responses and personal interviews provided the information to describe and test the research questions for this study. Data obtained from the researcher's direct observations, and personal experiences, library resources, and official documents were treated as supplemental information.

Descriptive analyses were obtained from the questionnaire and personal interview data. Figures and percentage tables were constructed to compare the questionnaire data. Fifty participant responses were analyzed via chi-square.

Differences exist in the Olympic success, the development of sports organizations and administration, the scientific sports training practices, and the extent and application of sports resources, between Taiwan, ROC, and the PRC.

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July 6, 1992

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**A Comparative Analysis of the Factors Contributing to Olympic  
Success: Taiwan, Republic of China, and the People's  
Republic of China**

by

**Hsu Ming-Chang**

**A THESIS**

submitted to

**Oregon State University**

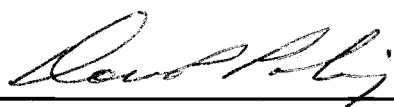
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the requirement for the  
degree of

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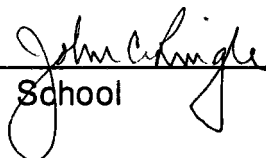
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# A Comparative Analysis of the Factors Contributing to Olympic Success: Taiwan, Republic of China and the People's Republic of China

## CHAPTER I

### INTRODUCTION

During the era following World War II, most studies of the Olympic Games centered upon either the history of the Games or upon critiques of Olympic ideals. More recent studies conducted within the last two decades have begun to examine new dimensions of the Olympic Games, among other objectives seeking to discover the various socio-cultural factors which may be associated with Olympic success (Pekka & Pekka, 1978). The universal character of modern sport, based upon common forms, rules, and rituals, has permitted the conduct of qualitative comparative analyses among and between nations.

In previously conducted studies, attempts have been made to identify and to isolate the general features common to the athletes of those nations which have met with some degree of Olympic success. These studies have been based upon the discovery that the athletes from certain nations have enjoyed Olympic success more frequently and to a greater degree than those from other nations (Pekka & Pekka, 1978). Attempts have been made to explain these differences by reference to selected environmental conditions provided in the "successful" countries. These factors have included national income, cultural and social resources (including levels of

education, health care, and nutrition), demographic factors (including population figures, population densities), and levels of urbanization (Ball, 1972; Levine, 1974; Novikov & Maksimenko, 1972). To summarize, these studies have concluded that the greater the economic, social, and population resources for a given country, the greater the chance that the given country will experience some degree of Olympic success. Thus, the current study encompasses a comparison of the factors contributing to the success in the Olympic Games experienced by athletes from Taiwan, Republic of China, and the People's Republic of China.

The name "China" may be used to identify both of these countries and also symbolizes a far broader cultural system. As one of the world's ancient civilizations, Chinese culture has enjoyed widespread influence throughout broad geographic areas of the world. In effect, in nearly 6,000 years of recorded history, China and the Chinese have never experienced any significant internal conflict over the issue of cultural status in the historic areas occupied by the Chinese. However, beginning in 1949, with the establishment of the People's Republic of China (PRC) under the leadership of Mao Tse-Tung, and the removal of the Kuomintang government of the Republic of China (ROC) led by Chiang Kai-Shek to Taiwan, in the international arena, and particularly within the International Olympic Committee (IOC), there has been a struggle for identification with the "China" status between the two states.

The nature of this struggle precluded competition by either state at Olympic events until 1984, when Chinese athletes from both the ROC and the PRC began to take part in Olympic competitions. The

athletes from the PRC surprised many observers by capturing 15 gold medals, 8 silver medals, and 9 bronze medals. At the 24th Games held in Seoul, Korea in 1988, the medals awarded athletes from the PRC were 5 gold, 11 silver, and 12 bronze. In contrast, athletes from the ROC did not realize an equivalent degree of success in either of these Olympic Games. This trend continued at the 11th Asian Games held in September, 1990 in Beijing (PRC). The home team won more than one-half of the total of gold medals, overpowering the remaining participating 37 countries, including the team from the ROC. From this point it was clear that the PRC had become the sport giant of Asia and also that it enjoyed considerable status as a world sport power.

Olympic success, or conversely, lack of success is an outcome of a number of factors inherent in the socio-cultural environments of competing countries. After 42 years of close competition, the ROC (Taiwan) has gained the advantage over the PRC (Beijing) in the arena of economic development and their respective roles in world trade. At the same time, however, the PRC has substantially larger human resources upon which it may draw in the future than the Republic of China on Taiwan.

### Statement of the Problem

The initial purpose of this study was to compare and analyze differences in success at the 1984 and 1988 Olympic Games between athletes from Taiwan, Republic of China, and athletes from the People's Republic of China.



The primary purpose of this study was to explore the roles and functions of the selected factors of the Olympic success of athletes from Taiwan, ROC and the PRC. Three variables which are dominated by human beings and have direct influence to Olympic success would be considered in this analysis: the development of sports organizations and administration, scientific training practices, and the extent and application of sports resources.

### Significance of the Study

Comparative research of Olympic Games athletic success has generally been conducted with less than ideal objectivity, that is, some studies have evidently been directed at demonstrating beneficial experiences to the advantage of the country of origin of the researcher (Kruger, 1984). Thus, a comparative analysis of Olympic success between the Taiwan, ROC and the PRC offers two specifically significant points. First, this type of research could be used to provide important factual information upon the extent of Olympic success for both nations. Second, the study would provide a format that may be employed to promote fair and reasonable comparisons related to sports, particularly those performed at such high performance levels as the Olympic Games. These two significant aspects of the approach proposed for the current study would, in turn, provide beneficial knowledge of athletic achievement both to participating athletes and to the Olympic movement.

## Research Instruments

The written questionnaire (see appendix A) administered to selected individuals within the three sports-governing bodies of the ROC and the PRC was designed to obtain the information to measure the difference of the following selected factors of Olympic success between the ROC and the PRC: development of sports organizations and administration; practices of scientific training; and the extent and application of sports resources.

Personal interviews with sports-governing body administrators, sports scholars, sports science researchers, national team coaches, and national team athletes were conducted by qualified personnel to obtain data required for the study. Field notes were taken by each interviewer to record the study subject's statements on paper. A list of question items (see Table 3.3) developed by the researcher was employed by each interviewer.

Direct observation by the researcher focused on the environment of the national sports-governing body, national sports research institutes, physical education and sports institutes, sports training centers, coaches' clinics, athletes' training, and sports-related gatherings of the ROC and the PRC. Fieldnotes were taken by the researcher during and after the observation.

## Research Questions

Based upon an extensive review of the literature (Chapter II), the following research questions were proposed for investigation of

the sports success at Olympic events in 1984 and 1988 between Taiwan, Republic of China, and the People's Republic of China.

Research question 1

Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 and 1988 Olympic Games?

S-1 Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 Olympic Games?

S-1a Is there a difference of sports success between the male athletes and female athletes from Taiwan, Republic of China during the 1984 Olympic Games?

S-1b Is there a difference of sports success between the male athletes and female athletes from the People's Republic of China during the 1984 Olympic Games?

S-1c Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1984 Olympic Games?

S-1d Is there a difference of sports success between the female athletes from Taiwan, Republic of China , and People's Republic of China during the 1984 Olympic Games?

S-2 Is there a difference of sports success between Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games?

S-2a Is there a difference of sports success between the male and female athletes from Taiwan, Republic of China during the 1988 Olympic Games?

S-2b Is there a difference of sports success between the male and female athletes from People's Republic of China during the 1988 Olympic Games?

S-2c Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games?

S-2d Is there a difference of sports success between the female athletes from Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games?

#### Research question 2

Is there a difference in the development of sports organizations and administration between Taiwan, Republic of China, and People's Republic of China?

#### Research question 3

Is there a difference in the scientific training practices between Taiwan, Republic of China, and People's Republic of China?

#### Research question 4

Is there a difference in the extent and application of sports resources between Taiwan, Republic of China, and People's Republic of China?

#### Delimitations of the Research

- 1) Investigation of the factors contributing to Olympic success is delimited to the summer Olympic Games of 1984 and 1988.
- 2) Investigation of the research data is delimited to Taiwan, ROC and the PRC from 1949 until the present.
- 3) Findings from the comparative analysis of Olympic success are limited to four methods associated with the national medal count for the ROC and the PRC during the 1984 and 1988 Olympic Games.
- 4) Factors contributing to Olympic success of Taiwan, ROC and the PRC are limited to the development of sports organizations, scientific training practices, and the extent and application of sports resources.

#### Limitations of the Research

- 1) Occasional gaps in the data for the PRC exist, particularly during the years of the Cultural Revolution (1966-1976).

- 2) Most of the studies conducted on comparative issues between the ROC and the PRC have focused upon political, economic, or military issues, or matters of a similar nature; to date, little research has been completed on comparative success between the two nations with respect to the Olympic Games.
- 3) Training procedures for national athletes in the PRC remains confidential; athletes and coaches are isolated from the public during training sessions.
- 4) Findings from this study cannot be generalized beyond the comparative success in the Olympic Games in 1984 and 1988 between Taiwan, ROC, and the People's Republic of China; thus, the results, discussion, and conclusions will be directed solely to those two nations.
- 5) The personal interviews were conducted in Taiwan, ROC and the PRC by two different individuals. While specific interviewing format was provided, consistency in the interviewing process and the recording and reporting of data can not be ascertained.

#### Research Assumptions

- 1) The interviewees to be surveyed will understand all questionnaire items; thus, their responses will be both accurate and reliable.
- 2) The translation of data from Chinese sources into English for this study will be both valid and reliable.

## Definition of Terms

**Asian Games:** A program of amateur sports competitions similar to those of the Olympic Games held each four years among Asian nations in intervals between quadrennial Olympic Games (Webster's sport dictionary, 1976).

**Chinese Taipei:** The Olympic Committee of the ROC signed an agreement with the IOC on March 23, 1981 whereby the former agree to change its designation to the Chinese Taipei Olympic Committee in return for the right to compete in the Olympic Games as the representative of a national Olympic committee.

**Development of Sports Organizations and Administration:** Size of memberships and the degree of professionalization in sport-governing bodies, including the qualification levels and the number of available experts.

**Elite Athletic Program:** An athletic training program providing for the development of sports training centers for elite national athletes. In this type of program, athletes live, study and train together on a year-round basis in order to compete effectively in international competitions, especially the Olympic Games.

**Extent and Application of Sports Resources:** For the proposed study, the reference is to budgets, availability of sports and physical education institutes, track and field stadiums, swimming pools, gymnasiums, and other Olympics facilities.

**Formosa:** The former name of Taiwan; an island nearly 14,000 square miles in area and shaped like a tobacco leaf. Formosa is considered to be an integral part of China by both the ROC and the PRC.

**Kuomintang (KMT):** The Nationalist Party of China, founded by Dr. Sun Yat-Sen in 1912 on mainland China and since 1949, the ruling party in Taiwan, ROC.

**Olympic Games:** A quadrennial program of amateur sport competitions held in a different country around the world, with representatives from more than 120 nations competing. Baron Pierre de Coubertin(1863-1937), a French educator and scholar, was primarily responsible for the establishment of the modern Olympic Games. (Webster's sport dictionary,1976).

**Olympic Success:** A term indicating relative sport accomplishments by athletes from given nations, measured by the scores achieved by the athletes in quadrennial Olympic competitions.

Scores are determined by:

- (1) Traditional medal count, where each medal counts as an equal value (i point);



- (2) Weighted medal scale, with point values distributed at 3-2-1 for gold, silver, and bronze medals;
- (3) Ratios of points/population; and
- (4) Efficiency =  $\frac{\text{total points earned}}{\text{number of sports competed}} \times 100\%$ .

**Physical Culture:** A term used synonymously with physical training, implying that health may be promoted through participation in various physical activities. This term is used extensively in self-identified socialist countries and describes physical education, recreation, sport, and mass activities as integral components of a culture (Bennett, Howell, & Simri, 1983).

**Physical Education:** Physical activities formally taught or informally practiced within educational institutions (Pooley, 1986).

**Scientific Training Practices:** Reference to the availability of research institutes, their resources, and to their output, including papers, monographs, and thesis studies.

**Sport:** Specific sets of competitive physical activities based on elements of play, games, and contests; sport is a structured, goal-oriented, competitive, contest-based type of physical activity (McPherson, Curtis, & Loy, 1989).

Third World: Reference to a noncohesive group of economically underdeveloped countries, largely of Asian, African, and Latin American origin; on the other hand, these countries are considered by some to be united on the basis that they have shared a common historical and political experience in the past (Ali, 1989).

## CHAPTER II

### REVIEW OF LITERATURE

For a number of years, research relative to the comparative analysis of sports achievements has been a popular field of study. However, few research studies of this type have been directed at comparisons between Taiwan, ROC and the People's Republic of China. Thus, the study is directed at adding to scholarly knowledge in this area of research.

The following review of literature is presented in five sections. The first section considers the history of Olympic participation by the ROC and the PRC, providing a brief and chronological summary of the competition between the two states for the "China status" in the IOC. The second section discusses general background information on the two states, including their geography, the nature of their governing institutions, populations and peoples, language and education, and their state of economic development. The third section is an introduction to sport and physical education conducted in the ROC and the PRC, including consideration of sports organizations and administration. The fourth section focuses upon standard measurements of success in Olympic events, and a number of scoring methods are analyzed. The final section centers upon comparative research in sports achievement as well as the factors which influence athletic success in Olympic events.

## Development of Chinese Olympic Participation

China was introduced to some forms of Western sports early in this century, largely through efforts undertaken in YMCA institutions (Kolatch, 1972). Following the establishment of the Republic of China in 1912, Chiang Kai-Shek and the Kuomintang (KMT) took an active role in the spread of Western-styled sports in China. In 1929, the National Physical Education law was issued for the purpose of strengthening human resources as a part of China's drive to develop its national defense capacities. The following year, the government recognized the China Amateur Athletic Federation and gave it primary responsibility to see that the law of 1929 was implemented.

The KMT government had joined the Olympic movement in 1923, but did not send a representative to meetings of the IOC, the Olympic governing body, until 1928. It was only in 1932, at the Olympic Games of Los Angeles, that the first Chinese athlete participated. This was followed by the dispatch of a Chinese delegation of 107 individuals to the Berlin Olympics in 1936. After 1936, international war and then civil war in China intervened to either prevent the holding of Olympic events or Chinese participation in the Olympics. During the civil war in China in 1948, only seven athletes were sent to London (Kolatch, 1972). In 1949, the Chinese Communists assumed government of mainland China and Mao Tse-Tung proclaimed the People's Republic of China, obliging Chiang Kai-Shek to move the KMT government to Taiwan.

## Chinese Olympic Participation, 1949-1976

Since 1949, the culture of mainland China has been difficult to penetrate, given that the PRC has purposefully shrouded life within mainland China in mystery. However, it may be said that the development of sport under direction of the PRC government has been a mirror of the development of socialist society in China, and has thus been to the ends of the state. Total state control of sport was developed in stages. Nearly one month after the establishment of the PRC, a preparatory commission was set up to investigate the establishment of an umbrella organization for all Chinese sport activities. Finally, the All-China Athletic Federation was created in June, 1952, and some few months later an official government agency, the People's Culture and Sport Committee (PCSC), was organized (Kolatch, 1972).

Under the direction of the PCSC, it was determined that the Chinese athlete would serve as a class ambassador, seeking to raise the consciousness of others throughout the world who were trained in popular athletics, but who at the same time lack common knowledge of the framework of Marxist ideology and institutions. In this approach to international competition, winning was not as important as the process which brought Chinese athletes together with their opponents. Just as in all other countries, the PRC recognized that the Olympic Games involved questions of political recognition as well as athletic prestige. Therefore, participation at the Olympic Games became the focal point of the PRC along with an

attempt to exclude the ROC from transnational athletic events as the representative of "China" (Kanin, 1978).

In 1952, a team from the PRC entered the Olympic Games, but when the ROC also proposed to send an athletic team to represent "China", the IOC refused to accept the credentials of either state. As matters stood at that juncture, the PRC was not a constituent member of five Olympic federations in individual sports, a requirement to participate at the Olympic Games and to gain representation on the IOC (Kolatch, 1972).

In 1954, the IOC voted by a margin of 23 to 21 to admit the PRC to the IOC and the 1956 games. However, PRC athletes did not attend the 1956 games in Melbourne because the PRC refused to acknowledge the "Two Chinas" policy adopted by the IOC (China Sport, 1963). In fact, both "Chinas" agreed that there was only one China, and that Taiwan was an integral part of that state. The issue was simple; it depended upon which government of "China" any given state or international institution was willing to recognize and each of the superpowers, in the context of the Cold War, campaigned for its own version of "China". The United States worked to keep the PRC out of the individual international sport federations necessary to membership in the IOC, while the Soviet representative at the 1954 IOC called the KMT a group of "political leftovers" and pushed in turn for PRC representation on the IOC (New York Times, 1954). In 1960, the IOC ended with no "China" at all. To protest Olympic acceptance of the "Two Chinas" policy, the PRC withdrew its application for Olympic membership in 1958 (Olympic Review, 1973).

The ROC in Taiwan pressed for participation at the Olympics, but then ran into problems stemming from the IOC political criteria for membership, that is, since the KMT no longer controlled mainland China, it would not be permitted to participate at the Olympic Games as "China". Under protest, the ROC marched its athletes at Rome in 1960 under the banner of "Formosa". By 1964, the IOC edged back toward recognition of the ROC as the government of "China" and the PRC accordingly remained outside of the IOC, concentrating rather upon the concept of a "Third World" sport organization. Lacking "Two Chinas" policy, the IOC leaned toward the one state which did recognize its authority, and further KMT participation at the Olympic Games was not seriously challenged until the 1970s.

By 1974, the PRC had increased its membership in the federations, and had always insisted that each of these expel the KMT from its ranks. In 1974 Asian Games, the PRC became eligible and sent a delegation of 270 athletes to Teheran and won more medals than any country but Japan while the ROC was ousted from the Asian Games Federation. However, the presence of Chinese athletes served to demonstrate that "friendship first, competition second" was a concept that was dependent on the international situation at any given moment (Sports Illustrated, 1974).

In 1975, it was reported that the IOC would treat a PRC membership application with favorable concern (New York Times, 1975). The PRC took the hint and, given that it now belonged to the requisite five international sport federations, applied for admission to the IOC and for participation at the next Olympic Games (New York Times, 1975).

However, the issue of the ROC, Taiwan remained a problem. The PRC was content to oust the ROC from one individual federation at a time in the hope of forcing a situation whereby the ROC was no longer a member of the number of federations required for membership in the IOC. This policy was aided by the fact that the next two scheduled Olympic hosts, Canada and the Soviet Union, were states which lacked diplomatic relations with the ROC. Finally, the IOC relented and allowed ROC athletes the opportunity to enter the Olympic Games under the flag of the IOC itself. The Taiwan government refused to accept this opportunity since it would clearly have diminished its legitimacy as a government of China and hence harmed its basic foreign policy (New York Times, 1976).

#### Chinese Olympic Participation, the Compromise

Following the death in 1975 and 1976, respectively, of Chiang Kai-Shek and Mao Tse-Tung, the competition for the "China" status seemed to diminish. In November 1979, the PRC was readmitted to membership in the IOC. In 1980, neither athletes from the PRC nor the ROC attended the Moscow Games, both joining other nations in protest against Soviet actions in Afghanistan. Then, on March 23, 1981, the ROC Olympic Committee signed an agreement with the IOC, whereby it agreed to change its name to the Chinese Taipei Olympic Committee. Thus, Chinese athletes from both sides of the Taiwan Straits finally competed against each other and against representatives of the other nations of the world at the 1984 and 1988 Olympic Games. Since 1989, exchange sports programs in the



fields of coaching and the study of sports sciences, as well as exchange sports exhibitions, have been held in the territories of both states. Fighting for the "China" status has been shifted into discussions of the issue of the "Reunification of China".

### General Background Information

In this section, general background information is presented on the geography, governing institutions, demographic considerations, and selected cultural features of the ROC and the PRC.

#### Taiwan, Republic of China

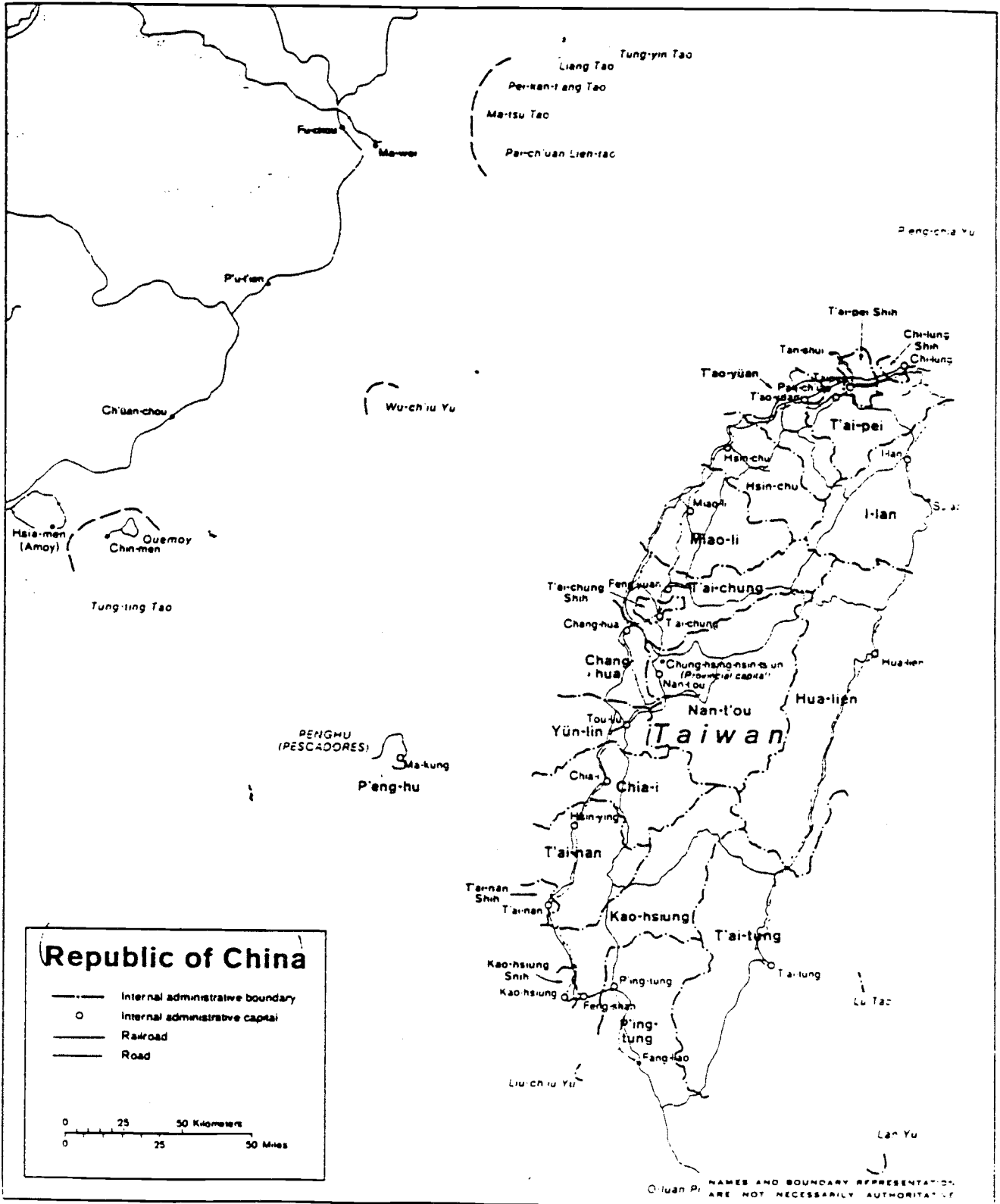
Taiwan is an island which lies 100 miles off the eastern coast of Fukien province of China, 377 km (235 miles) in length and 142 km (89 miles) in breadth at its widest point, occupying a total area of 35,961 sq km (14,047 square miles) (Figure 2.1). The climate of northern Taiwan is subtropical and southern Taiwan enjoys a tropical climate. The northeast monsoon (i.e., the winter monsoon) lasts for about five months from late October to late March, bring rain to the windward side of northeast Taiwan. The southwest monsoon (i.e., the summer monsoon) prevails for about five months beginning in May of each year. During this period, southern Taiwan usually experiences a wet weather pattern, in contrast to dryer and more pleasant weather in northern Taiwan. Rainfall is abundant in Taiwan and the mean annual rainfall is 2,580 mm. Thundershowers and typhoons often bring heavy rainfalls even in summer months.

The summers are long and are accompanied by high humidity, while the winters are generally short and relatively mild. In the coldest months, a thin layer of snow may be visible on the peaks of the higher mountains, whereas frost is rare in the lowlands. The mean monthly temperature rises to 20° C in April and remains high thereafter until November. The hottest period is from June to September, with mean monthly temperatures ranging from 25 to 28° C.

### Governing Institutions

The ROC constitution provides for a central government composed of a cabinet and five branches: The Executive Yuan is responsible for national policy making and execution; the Legislative Yuan represents the people in the passage of legislation and in supervision of the Executive; the Judicial Yuan, as the highest supervisory organ in government, has the right of consent, impeachment, censure, correction and audit; the Examination Yuan is responsible for all examination appointments, screening, recording, payments, and other personnel affairs; and the Control Yuan is in charge of civil, criminal, and administrative judicial hearings and the discipline of public functionaries. The KMT is the ruling party, conducting its relations with the government by implementing policies through party members working within the government. Local government is separate from the central government. Taiwan Province has a provincial government, in which a government council is the policymaking body. Under the jurisdiction of the provinces are

Figure 2.1 Map of Taiwan, Republic of China



Source:US Central Intelligence Agency, Base 503567 12-77 (540403)

counties (hsien) and municipalities. In Taiwan there are 16 counties and 5 municipalities. The principal and capital city is Taipei, situated on 272 sq. km (106 square miles) in northern Taiwan. As the political and economic center of the ROC, Taiwan, Taipei contains a large proportion of the nation's educational and cultural institutions. It is a densely populated city, with a total population of 2,500,000 living at approximately 9,000 to the square kilometer.

### Demographic Populations and Culture

The total population of Taiwan is 20.1 million people. The native Taiwanese, numbering more than 16 million people, are descendents of Chinese who emigrated from the coastal mainland areas of Fukien and Canton Provinces, primarily in the 18th and 19th centuries. Then, more than two million "mainlanders" arrived in 1949 and thereafter, from all parts of China. Approximately 250,000 aboriginal inhabitants live in the mountainous central and eastern part of the island and are believed to be of Malayo-Polynesian origin. At 558 persons per square km in 1989, Taiwan has one of the highest population densities in the world (Statistical Yearbook of the Republic of China, 1989). Linguistically, the principal national language is Mandarin Chinese, whereas the dominant dialect is Taiwanese, originally spoken by people from the Fukien Province of mainland China. Hecca is the second most popular dialect, originally spoken by people from Canton on the mainland. English is the official second language and is studied by all secondary school students in Taiwan. The basic educational structure in Taiwan is operated under a 6-3-3-4 structure, of which

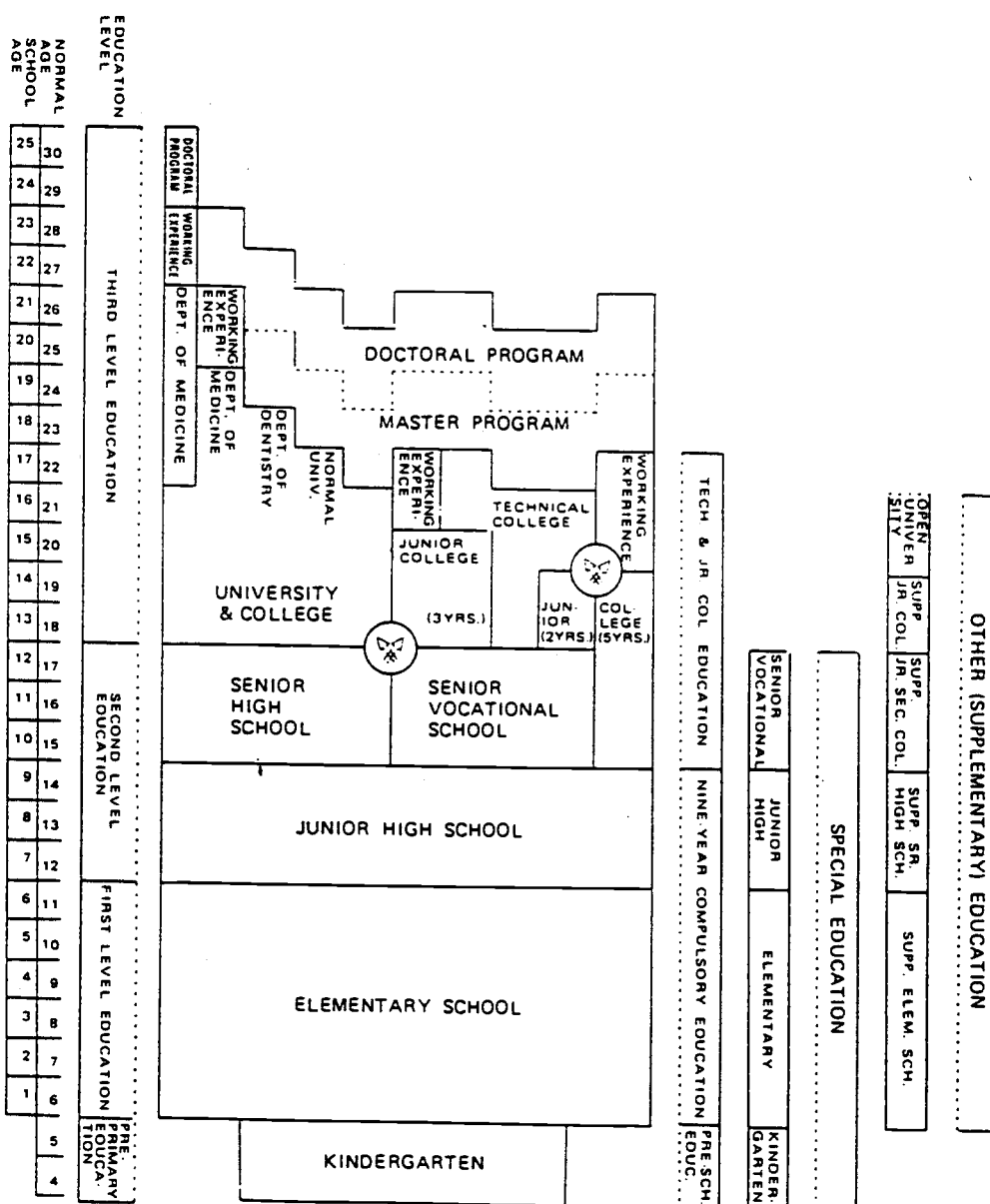
the first nine years are compulsory (Figure 2.2). Beginning in early September through early July, with a three-week winter vacation in late January, students attend schools on a full-time basis, followed by a two-month summer vacation. There are 41 universities and colleges, and 75 junior colleges in Taiwan, with a total enrollment of 515,515 in 1989. Opportunities for graduate education are offered in 293 graduate programs affiliated with universities and colleges, and there were 19,549 enrolled graduate students in 1989 (Statistical yearbook of the Republic of China, 1989). Entrance examinations play an important role in defining achievement levels within the various levels of the educational system of Taiwan. Successful completion is required for attendance at secondary schools, colleges, universities, and graduate schools.

### Economic Development

Internationally, the economic performance enjoyed by the ROC in Taiwan over the past 40 years has been regarded as something of a miracle. Annual economic growth rates have averaged nine percent over this period and foreign trade has grown rapidly, increasing by an average of approximately 25 percent annually over the past two decades. In 1988, the per capita gross national product of the ROC reached a record level of \$6,045 U.S., and overall two-way trade topped \$110 billion U.S. with an export volume of \$60.5 billion U.S. This record of trade and production made the ROC, Taiwan the 13th largest trading country in the world in terms of volume and the 13th ranked in terms of exports. At present, Taiwan is the fourth largest trading partner for the United States, total trade with which

reached \$ 36.4 billion U.S. in 1988. In effect, the level of economic development achieved in the ROC is not unlike similar patterns among the developed nations. It has been estimated by economists that per capita income in the year 2000 will approach \$12,000-15,000 U.S. (Shaw, 1989).

Figure 2.2 Educational Structure in Taiwan, Republic of China



Source: Statistical Yearbook of the Republic of China, 1989

## People's Republic of China

Located in eastern Asia, the People's Republic of China has a total land mass of 5,962,904 sq km (3,690,224 square miles), and is the third largest country in the world after the Soviet Union and Canada. The PRC has a total border length of 28,072 km (17,445 miles), shared (from the north) with Korea, the Mongolian People's Republic, the USSR, Afghanistan, Pakistan, India, Bhutan, Nepal, Burma, Laos, Vietnam, Macao, and Hong Kong. Along the seacoast, the major bodies of water include the Yellow, East China, and South China seas. Inland, two-thirds of the land mass is mountainous or semi-desert, thus approximately 10 percent of the land mass may be cultivated and 90 percent of the people of the PRC live on one-sixth of the land area, primarily in the fertile plains and deltas of the eastern river systems (Figure 2.3).

Spread over such a vast area, the PRC is subject to extremes of weather. In the north, winter falls between December and March and can be extremely cold. North of the Great Wall, into Inner Mongolia or Heilongjiang, temperatures remain well below the freezing point. Summers extend from May to August and the temperature at the capital, Beijing, can reach 38°C (100° F) or more. In both the north and the south, most of the rainfall occurs in the summer. In spring and autumn, daytimes range from 20-30° C (70-85° F), and nights can be cold and bring frost. In central China, surrounding the Yangtse River valley, the summers are long, hot and humid, and temperatures are highest between April and October.

Figure 2.3 Map of China



Source: US Central Intelligence Agency, Base 80029 (545114) 1-84



The winters are brief and cold, with temperatures falling well below the freezing point. In the far south, hot and humid periods last from approximately April through September, and temperatures can rise to more than 38° C (100° F). In the southeast coastal area, typhoons are likely between July and September. There is only a brief winter between January and March; in the autumn and spring, daytime temperatures range in the mid-20° C, or 80° F. The broadest extremes can be reached in the arid northwest area of China, where summer temperatures can reach 47° C (118° F). In winter, this region is formidably cold with average January temperatures of approximately -10° C (-50° F).

### Governing Institutions

The Communist Party of the PRC serves as the instrument of the head of state, and the government is subordinate to the Party which is responsible for setting Party, and hence national, policies. The primary instruments of state power are the State Council, an executive body corresponding to a cabinet, and the National People's Congress (NPC), a legislative institution. Under the constitution of the PRC, the NPC is in theory the leading governmental body, meeting annually to review and sanction major policy directions, legislation, and budgetary and personnel issues; in practice, the NPC is subject to the Party.

In mainland China, there are 21 provinces and 5 autonomous regions, along with three special municipalities. One of these, Beijing, is the capital city. It is the political and administrative center of the state, as well as the single greatest repository of

monuments and treasures from the imperial era. Beijing has a population of 9.3 million, inhabitants in an area covering 16,800 sq km (6,485 square miles) in land mass.

### Demographics Populations and Culture

In 1982, the national census of the PRC revealed a population of more than one billion people, of which the Han Chinese make up approximately 93 percent of the total; the remainder is composed of 55 minority nationalities. Only about one-fifth of the population reside in urban locations; the balance live in rural villages. The official language of the PRC is the Beijing dialect, generally referred to in the west as "Mandarin" (in China, "Putonghua"). Eight major dialects are spoken throughout the PRC, though about 70 percent of the population communicates in Mandarin. The second principal Chinese dialect is Cantonese, spoken throughout areas of southern China.

The educational structure of the regular school system in the PRC follows a 6-3-3-4 pattern: six years of primary school, three years each at junior middle and senior high school, and an average of four years for higher education. The academic year is composed of two semesters, the first from early September to mid-January, and the second from mid-February until mid-July, following a three-week winter break for the Chinese New Year. Thus, Chinese students have approximately six weeks of summer vacation. As of 1988, there were 1100 colleges and universities in the PRC with a total enrollment in excess of two million students; graduate programs

enroll approximately 60,000 students (Statistical Yearbook for Asian and the Pacific, 1990).

### Economic Development

The economy of the PRC is subject to central planning and control. In 1988, the GNP growth rate declined from 11.2 to 3.6 percent (by 1989), recovering in 1990 as the rate reached 5.0 percent by the end of the year. Since 1986, the government of the PRC has operated with considerable budgetary deficits, a figure which stood at a total of 9.5 billion yuan (renminbi) in 1989, compared to 7.9 billion in 1988 (Monthly Bulletin of Statistics, 1990).

The economic slowdown in the PRC was the result of deliberate measures initiated, successfully in this case, to bring the national rate of inflation under control as well as to achieve a favorable balance of trade with the United States. This policy was also successful, and the trade deficit with the U.S. of \$5.6 billion in 1989 was reversed to a surplus of \$4.8 billion by 1990. The economic rate of growth, which had averaged 10.5 percent during the period 1985-1987, accelerated to 11.4 percent in 1988 (Monthly Bulletin of Statistics, 1989).

Nonetheless, the people of the PRC must be considered "poor", since per capita income project for the year 2000 will reach only \$1,000 U.S. (Shaw, 1989). To survive, much less to prosper, the economy of the PRC must continue to grow by processes of swift modernization and reforms of the national economic management processes.

## Sport, Physical Education, and Culture

### National Physical Education Policy of the ROC

To achieve the balanced development of virtue, wisdom, physical fitness, and a collective sense of belonging, the ROC has made general physical education one of its primary principles. In Taiwan, the Chinese work toward the ideals of sound minds in sound bodies, and participation in sports is strongly encouraged (ROC, Ministry of Education, 1988).

At the end of the 19th century, missionaries were the primary instrument of the introduction of Western sports, accompanied by the concepts of physical education and training. Sports such as soccer and basketball became very popular during the KMT period in mainland China, and sports clubs were formed in all major cities. At present, on Taiwan, sports are encouraged both in schools and for everyone else outside of the school. In schools, physical education courses are offered at all levels, and two hours each week are required for all elementary, secondary, college and university students, in addition to daily 15-minute periods of calisthenics each morning for all elementary and secondary school students. Extracurricular activities are very popular in the schools and interscholastic competitions are major factors of school life.

### Government Subsidization of Physical Training

The government officially subsidizes athletic competitions and training. Promising athletes are sent to sports powerhouse countries such as USA, Japan for advanced training, and foreign

experts and coaches are frequently asked to lecture and coach. To motivate athletes, the Ministry of Education has announced that all athletes who break Asian Game or Olympic records will receive the Chung-Cheng Physical Education Award. As of February 1987, there were 103 recipients of this award for a total of 179 record-breaking accomplishments (ROC, Ministry of Education, 1988). In addition, all athletes who participate in formal international competitions and win at least a second place in Asian games, or down to the eighth place in Olympic events, receive the Kuo-Kuang Physical Education Award. As of September 1987, there were 301 recipients of this award. Both awards are accompanied by prize monies, an incentive to encourage athletes to concentrate upon training, thus adding to the prestige of the ROC in international competitions.

#### Sports Organization and Administration

The ROC Ministry of Education is responsible for the administration of the National Physical Education Act through its subsidiary Physical Education Department. In addition, there are two central, nongovernmental sports organizations, the Republic of China Amateur Sports Federation (ROCASF), governing all domestic sports activities, and the Chinese Taipei Olympic Committee, an official member of the IOC. Both organizations are funded and supported by the Ministry of Education.

The ROCASF, governed through a representative council, is composed of 54 members, including 47 national associations, 2 specialist organizations, 4 district associations, and 1 athletic

trainers association. When the council is not in session, the ROCASF is governed through its board of directors, in turn supervised by a board of supervisors. A president supervises the daily business of the Federation, assisted by from one to four vice-presidents. The Federation staff consists of a secretary-general and competitive, computer information, counseling and guidance, training, public relations, and accounting sections. The Federation sponsors two sports training centers, Tsoying Sports Training Center in southern Taiwan and the Linko Sports Training Center in the suburbs of Taipei (see Appendix F).

The functions of the ROCASF are as follows (Republic of China Amateur Sports Federation [ROCASF], 1989):

- 1) To organize the nation's athletes to establish international friendships and enhance the prestige of the nation;
- 2) To operate the Federation in a businesslike and scientific manner with respect to international standards;
- 3) To counsel each participating member organization on the expansion of organizational activities;
- 4) To expand operations and organizations, increase the number of participating athletes, and to improve the physical health of the general population;
- 5) To continue to cultivate and train youth on a long-term basis to develop a body of first-class athletic competitors;
- 6) To train elite athletes for participation in international competitions, adding to the prestige of the nation;

- 7) To obtain support from commercial and business sources for the support of training and competitive activities;
- 8) To introduce the latest research in physical culture, modernize facilities, and to train athletes in order to achieve international sports prominence; and
- 9) To increase participation at international sports activities (p. 2).

### Physical Culture and Sport in the PRC

From the founding of the PRC in 1949, physical culture and sports became important components of the socialist state. The constitution of the PRC stipulates that the state is responsible for the development of physical culture and the promotion of mass sports activities, to the end of promoting national physical fitness and the all-round moral, intellectual, and physical development of all children and youths (Xie, 1990).

#### Government and Sport

In pursuit of the objectives stated above, four general goals have been set:

- 1) Development and maintenance of a general level of good health;
  - 2) Development of new leadership for Chinese society;
  - 3) Promotion of the development of the socialist economy;
- and

- 4) Enhancement of relationships with other countries (Xie, 1990).

Following the subsequent development of mass sports activities, improving the overall health of the people proved to be an aim which could be successfully achieved. Elite athletic training was added to this agenda, with emphasis upon Olympic events. Thus, advanced techniques and strategies learned from other countries have been introduced selectively throughout the country. To expedite the training of elite athletes, leisure-time training networks connect all levels of organized sport competitions throughout the country. Sports teams are organized into three echelons, similar to the A, B, and C leagues in American amateur-league events. For training, a three-level system has been adopted, consisting of grass-roots sports teams, leisure-time sports schools, and outstanding sports teams. In this system, the child athlete receives systematic and scientific training, from the beginning level all the way through to participation with high-level teams.

Awards are given by the government to medal winners at the Olympic Games, the Asian Games, national games, and at other major international competitions, and are also given to the coaches and the administrative departments (i.e., for supervision and scientific research) responsible for training champion-level athletes. These awards consist of both moral encouragement and material rewards, and have contributed to remarkable achievements by athletes in the PRC. Since the foundation of the PRC in 1949, 231 world champions have broken a total of 302 world records (Lu & Lin, 1990). The



national Physical Education and Sports Commission confers the Honorable Medal of Sports on those responsible for outstanding contributions to the development of sport in the PRC, and between 1981 and 1985, 429 individuals were granted this honor.

At the base of the pyramid of sports participation is an instructional program for school children. In the 12 years from entrance to primary school and graduation from secondary school, a student receives at least two hours of physical education course work each week and spends one hour each day exercising. This not only serves to enhance the physical development of the population, it reinforces the intellectual and moral development of students in the schools of the PRC. The discipline and character developed in these courses of physical education has the underlying objective of developing productive citizens conscious of the need to support the high ideals of the socialist motherland.

#### Sports Organization and Administration

There are four national sports organizations in the PRC: 1) the All-China Sports Federation, a nationwide mass sports organization; 2) the State Physical Education and Sports Commission, a governmental organization under the direction of the State Council; 3) the China Olympic Committee, the national Olympic events committee responsible for promotion of national Olympic events (see Appendix F); and 4) the China Sports Science Society, the leading organization in the field of sports science.

The specific functions of the All-China Sports Federation are as follows (Wu & Que, 1990):

- 1) To develop programs for physical culture in China;
- 2) To formulate and publish rules and regulations concerning specific sports activities;
- 3) To coordinate liaison of all physical culture and sport activities engaged in with other nations;
- 4) To hold national sports meets and select and train athletes for the various events for which national teams are formed;
- 5) To collect and examine the literature of sports;
- 6) To publicize physical culture information among the broad masses of the Chinese population;
- 7) To train administrative leadership for physical culture programs; and
- 8) To design and administer all major sports facilities and the provision of appropriate sports equipment.

This Federation has branches in all the various provinces, autonomous regions, municipalities, districts, counties, and autonomous counties. The Federation also sets up sports associations at the local level by establishing units in factories and mines, in business enterprises, institutions, schools, villages, and local neighborhoods. Presently, sports associations exist within eight industries, including the railways, the coal mines, petroleum, forestry, banks, water conservation and electrical power, construction, and public security. A number of athletes of reputation have been trained in these types of organizations. In addition, the Federation plays a major role in the promotion of the development of physical culture in China. Though this mass social

organization is governmental in nature, its current president, Li Menghua, is also the government minister in charge of the Physical Education and Sports Commission.

The Physical Education and Sports Commission is a governmental ministry given supervisory charge of all physical culture and competitive sport activities under the authority of the State Council. Local sports commissions are organized at the levels of provinces, municipalities, autonomous regions, and counties. According to Wu and Que (1990), the tasks of this commission, and its subsidiary bodies, include:

- 1) To administer the enterprises, institutions, mass organizations, and schools placed under the authority of the Commission and to direct the activities of local sports commissions;
- 2) To guide, coordinate, and supervise the physical cultural activities of the various departments of government, the trade unions, and other social organizations;
- 3) To develop standards of physical exercise, mass sports activities, and to improve the skills of athletes;
- 4) To develop a national plan of sports competitions, hold national sports meets, supervise the organization tasks of sports competitions held by various departments and social organizations, and to approve national records established in various sports competitions and events;
- 5) To maintain contacts with international sports organizations, host international events, and to organize athletes for participation at international competitions;

- 6) To formulate and approve rules for sports competitions, examine and approve teaching programs, textbooks, and teaching materials for physical culture activities; and, in conjunction with the Department of Education, to examine and approve teaching programs, textbooks and teaching materials for physical education in the schools;
- 7) To establish national sports science research institutions and to supervise sports science research activities;
- 8) To cooperate with concerned departments regarding the preparation of teachers and specialists in physical culture, and to supervise the various departments and social organizations in training and assigning sports administrators;
- 9) To organize medical supervision of physical culture activities in cooperation with the Ministry of Public Health;
- 10) To disseminate sports information;
- 11) To develop plans for the construction of stadiums and gymnasiums as well as rules for their use;
- 12) To assist in the development of plans for the production of sports equipment, including supervision of its use and approval of appropriate specifications and standards; and

- 13) To formulate grading rules for athletes, coaches, and referees; to formulate rules for conferring honorary titles upon athletes, coaches, referees, and other sports workers; and to award state honorary medals for sports accomplishments (p. 49).

The national and local physical culture and sports commissions are the authoritative leading bodies governing sports in the People's Republic of China. Six out of the country's 13 leading sports institute of higher learning are directly responsible to the Physical Education and Sports Commission, including the Beijing, Shanghai, Wuhan, Xifian, Chengdu, and Shenyang institutes of physical education.

In contrast, the China Olympic Committee is a national organization ascribed the mission of developing sports in the People's Republic of China as a part of promoting participation at the Olympic Games, publicizing Olympic goals, and representing the People's Republic of China on the IOC and in relations with the Olympic committees of other nations.

The China Sports Science Society focuses upon the organization of the scientific and technical personnel from various crafts and trades concerned with research in the areas of sport science, physical culture education, training, sports management, and in the production of sporting equipment. In addition, to the end of pursuing advances in these areas, the national Sports Science Society is also responsible for conducting beneficial academic exchanges, both domestically and internationally, and for advising the

government on all major decisions and policies concerned with issues of sports science.

The China Sports Science Society is subject to the guidance and support of the national Physical Education and Sports Commission. During the past six years, the Society has expanded rapidly and established 12 subsocieties in the areas of sports scientific theory, sports training, sports medicine, sport psychology, sports biomechanics, sports information, physiological research, sports equipment and apparatus research, sports statistics, sports construction, physical education research, and the application of computer techniques to sports activities.

### Summary

The ROC, Taiwan, and the PRC have instituted similar physical education systems at each level of their respective school systems. Both countries are unanimous in their support of physical education objectives: the development of a productive citizenry. In generating elite athletic systems, the planning and centralization typical of socialist states has led the PRC to develop effective national sports organizations. Indeed, the comprehensive design undertaken by the PRC had led to the application of efficient methodologies which have produced nearly phenomenal achievements in international competitions over the past 10 years.

## Measurement of Success in Olympic Events

In affirmation of its charter, the International Olympic Committee issued the following statement in 1978: "The Olympic Games are not contests between nations and scoring by countries is not recognized" (International Olympic Committee, 1978). Reality, however, belies this ideal and the results of the Olympic Games have been compared country-by-country since the first modern games were organized in 1896. From 1908 to 1924, the host cities publicized national achievement results and the final overall ranking, a state of affairs never accepted by the IOC, which exerted its authority to eliminate "official" scorekeeping. Nonetheless, it has been an unofficial but nearly universal practice to maintain Olympic medal counts among nations, a policy engaged in by national Olympic committees and officials and the press up to the present day.

Various indicators have been used to measure Olympic success in previous studies and in the press. The mass media commonly compares national achievements in terms of the numbers of medals won. Generally, journalists furnish a daily update of the medal count, ranking all nations accordingly (Levine, 1974). This simple method is the cause of a great deal of confusion and would appear to be inappropriate as a true measure of success between nations. One good example is the difference between counts established by the press of the United States and Italy during the 1988 Olympics, as indicated in Table 2.1.

The information in the table certainly reflects a type of "national bias" that may be perceived in the medal count method. Table 2.1 indicates that Hungary won a total of 23 medals, including 11 gold, whereas Rumania won a total of 24, including only 7 gold. Nonetheless, the medal count method would rank Rumania ahead of Hungary, though the latter had a higher count of first place, or gold, medals. If a simple 4-2-1 point scale was applied for, respectively, first, second, and third places, then Hungary would gain 62 points, substantially more than the 56 earned by Rumania. It has been

Table 2.1

## Medal Count, top 10 Nations, 1988

<u>According to U.S. Media</u>					<u>According to Italian Media</u>				
Country	G	S	B	Tot	Country	G	S	B	Tot
1. USSR	55	31	46	132	1. USSR	55	31	46	132
2. East Germany	37	35	30	102	2. East Germany	37	35	30	102
3. USA	36	31	27	94	3. USA	36	31	27	94
4. West Germany	11	14	15	40	4. South Korea	12	10	11	33
5. Bulgaria	10	12	13	35	5. West Germany	11	14	15	40
6. South Korea	12	10	11	33	6. Hungary	11	6	6	23
7. China	5	11	12	28	7. Bulgaria	10	12	13	35
8. Rumania	7	11	6	24	8. Rumania	7	11	6	24
9. Britain	5	10	9	24	9. France	6	4	6	16
10. Hungary	11	6	6	23	10. Italy	6	4	4	14

Source: Raffaella Borasi (1989). Olympic Medal Counts.



suggested that the latter method is more appropriate for Olympic events since the achievement of gold medals for first places should be given greater weight in any logical scoring method.

There are a number of scoring methods which could have been applied to Olympic events. One method ranks nations on the basis of total weighted score, computed as follows:

$$\text{weighted score} = a * (nG) + b * (nS) + c * (nB) ,$$

where a, b and c are the relative weights assigned, respectively, to gold (G), silver (S) and bronze (B). Ball (1972) assigned values of 3, 2, and 1 to, respectively, a, b, and c. Ruffer and Ingersoll (1986) used a 4-2-1 scale to explain the ranking difference in medal count and point scales between the GDR and the USSR in the 1984 Olympic Winter Games, in which the USSR ranked ahead of the GDR based on medal count, but when the scale was applied, the GDR achieved 60 points to 53 for the USSR.

The second method involves the use of a logarithm applied to each placement in every event. By assigning a number of points to each athlete in every final event, Johl (1964) analyzed the success each nation achieved at the 1952 Helsinki Olympics with a point system based on the formula  $P = 100(1 - \log x/\log n)$ , where P is the number of points for a given nation, x is the placement of the athlete of team, and n is the number of contestants in the event. Hence, an Olympic gold medalist received 100 points (given that the log of 1 is zero), while the last place contestant received no points (given that the  $\log n/\log n = 1$ ). The third place finisher in a contest with eight competitors received fewer point

(47 points) than a more praiseworthy placement of third in a field of 30 contestants (68 points). This approach is clearly a more sophisticated means of measuring athletic achievement than a simple medal count.

A third method is based upon relative scoring, that is, victories (i.e., number of medals) in proportion to population (Ibrahim,1970; Seppanen, 1969) and/or economic status (Olympic scorecard,1984). Relative scoring might provide some advantages to smaller states, but the method has also been subject to some criticism. It is a method which is biased against larger countries because official limitations on the number of participants prevents the larger countries from sending teams which are truly in proportion to their population size. Absolute, or raw, scores do not take into account the size and population differentials between countries. The argument in favor of absolute scores is based on fact that Olympic competitions are absolute by nature. What counts are the victories and the points scored. In a study by Pekka and Pekka (1978), both relative and absolute scoring were used, indicating a correlation between the ranking of countries on absolute and relative scores as .01, demonstrating that the two methods are independent of each other and that they measure Olympic success in different manners.

The remaining methods considered involve three to eight point scales, most of which are six steps in length, given that six prizes for each event were awarded in the Games of 1896 to 1980. Starting in 1984, eight prizes were awarded. Five sets of scales have been developed, based upon the following schema: 10-5-4-3-2-1, 7-5-4-

3-2-1, 10-8-6-4-2-1, 10-8-6-5-4-3, and 10-7-6-5-4-3-2-1. The first was attributed to General McArthur, who added a four-point bonus for first place since he felt that this was the only placement which really counted, and all the remaining places were merely runner-up awards (Gromback, 1975). This scale has been used frequently in North America. The second scale was designed by a former executive director of the U.S. Olympic Committee (USOC), Robert Lentz, who added a one-point bonus for first place. This scale has typically been used among European nations (Ball, 1972). According to Novikov and Maksimenko (1972), all of the above noted measures of Olympic success correlate so highly with each other that the choice of indicator should not influence the research outcome.

### Comparative Research in Sports Achievement

Given that humans are complex beings, any study of a single human aspect must be conducted within the total framework of the existence of the being in question. From the earliest organizations of human collectives, comparative studies have been a part of human life. Early humans ventured into the unknown from familiar environments to see how other beings lived, worked, and played. Ultimately, humans made comparison of their lives to those of others, borrowing and adapting ideas, methods, tools, weapons, and games that proved to be of benefit (Bennett et al., 1983).

In historical terms, however, comparative studies in physical education and sport have received little attention and are a relatively recent development. Over the past three decades, as physical education has developed as an academic field in its own right, there has been growing interest in comparative physical education and sport throughout the world. While some disagreement may remain on a definition of either comparative physical education or sport, the following definition offers a certain utility for those engaged in comparative studies in physical activity and sport. (Bennett et al., 1975):

Development in physical education and sport in two or more societies, cultures, countries, or areas for purposes of investigating their similarities and differences. It involves the study of contemporary educational and sport programs in terms of their philosophical foundation; their historical and cultural background; their aims, problems, and situations; and their implications for other countries. (p. 3)

The process of studying physical education and sport in other countries is not merely a means of understanding others, it also serves to shed light upon the system in which the observer exists. As Bereday (1969) noted, "it is self-knowledge born of the awareness of others that is the finest lesson" (p. 6). Thus, the practice of considering two or more cultures at the same time permits the researcher to deduce lessons for his or her own system from the achievements and the shortcomings of the system studied.

Moreover, research in sport achievement in international competitions promotes the understanding of cross-cultural influences. Since sport is perceived as a nation-building activity and success is measured through winning, it is important to determine the nature of those factor that can affect sport achievement. Diem (1914) conducted one of the earliest studies related to comparative sports achievement in the context of a fact-finding tour in Germany and the United States, directed at the use of international comparisons for the practical improvement of elite sport activities. The object of Diem's 1913 tour was to improve the level of performance of German sport teams, and he concluded that it was not a worthwhile endeavor to focus upon accurate descriptions of actual situations encountered, but a useful purpose was rather served by drawing proper conclusions from actual situations suited to the needs of the investigator's country.

There were no other noteworthy studies of this nature until Johl (1964) investigated the influence of national health and economic standards upon sport, suggesting that there was a direct relationship between some socio-economic factors and Olympic success. Ball (1972) then conducted the first quantitative investigation in the area of comparative Olympic success, examining the relationship between national athletic success at the Olympic Games of 1964 and such national structural variables as demographic (i.e., population size, composition, and social characteristics), economic, and political factors, in all a total of 55 variables. The sample consisted of 36 countries whose athletes had attained medal awards at the Games. The scoring method used was

to assign points on a scale of 3, 2, and 1, respectively, for gold, silver, and bronze awards, with the total national points indicating the relative degree of Olympic success for each country. Data were analyzed by use of an F-test and the variables were dichotomized and compared. It was reported that there was a positive relationship between structural correlations and national Olympic success, and further that Olympic success was subject to interrelated variables including economic, political, and social factors.

Novikov and Maximenko (1972) also examined the influence of selected socio-economic factors on Olympic athletic success, with the resultant national scores, on a scoring basis of 6-5-4-3-2-1 for places one through six, as the dependent variable. A variety of socio-economic factors included per capita GNP, average population caloric food consumption, average life expectancy, percentage of urban population, and number of inhabitants were among the independent variables considered. A percentage correlation analysis was used to determine significance, and it was concluded that per capita GNP, caloric consumption, average life expectancy, percentage of illiteracy, percentage of urban population, and number of inhabitants were among those factors with the highest correlations with Olympic athletic success.

Grimes, Kelly, and Rubin (1974) formulated a socio-economic regression model to determine whether communist countries performed better than noncommunist countries at the 1972 Olympic Games as well as to analyze the factors of success. The principal variables were GNP, population size, and socialist economy, and the data for 48 countries were treated as the sample. Regression

analysis indicated that all of the coefficients were significant at the 0.01 level for  $R^2 = 0.70$ , indicating that the communist countries appeared to perform better than the noncommunist countries. It was hypothesized that the former made more efficient use of their population and economic resources for the purposes of sport.

Shaw and Pooley (1976) examined the relationship between Olympic success and various socio-economic, political, military, and education factors for different countries, to determine which variable contributed most significantly to athletic success. Data were collected from 51 countries from which athletes had been among the top six finishers in at least one event. The countries were categorized into three groups: Western, Socialist, and Third World. A scoring scale of 6-5-4-3-2-1 was applied to the top six finishers, in addition to which three additional from each the socio-economic, political-military, and educational groups were considered as independent variables. From the application of Pearson's Product-Moment coefficient, partial correlation, and regression analysis, it was indicated that the factors of success differed among the three groups in question. Population and GNP factors accounted for 63 percent of the success variance for Western countries; military expenditures, per capita GNP, school enrollment ratio, and the number of Olympic sports taught in schools were the best explanatory factors of success for the Socialist states; while population size, GDP, military expenditures and the number of Olympic sports taught in schools were the most favorable factors of success for the Third World countries.

K., Pekka and M., Pekka (1978) examined athletic success at the Olympics based upon a sum of nonmaterial and material factors. The latter were related to demographic, social, and economic resources, while the base economic system and the religious culture constituted the nonmaterial factors. Results indicated that the variables examined could better be used to explain absolute success than they could relative success. Nearly a decade later, Sombat (1987) investigated sports achievements for the Association of Southeast Asian Nations (ASEAN) in regional sports competitions, and concluded that cultural variables, geographical size in relation to population size, and political and scientific factors were important in relation to sport achievements from the viewpoint absolute score analysis.

Gartner (1989) employed the ordinary least-squares technique to explain the relationship between the input factors of population, national income, and per capita income and the product of the total number of medals won at the Sapporo (winter), Munich, Innsbruck (winter), Montreal, and Calgary (winter) Games. The researcher concluded that, to some degree, higher income levels can make up for smaller population sizes. From his findings, Gartner (1989) estimated that an economy producing \$6 billion per year of aggregate income was necessary to support the successful quest for a single Olympic medal.

Seppanen (1989) investigated Olympic success from a value system point of view, analyzing the records of medal winners of all the Games since 1896 and employing a point scale of 3-2-1 for,



respectively, gold, silver, and bronze medals. Total points were calculated, then weighted by the population sizes of the compared nations. Seppanen (1989) concluded that the greater success enjoyed by socialist countries and those whose religion was predominantly Protestant was in part due to their more rational training practices and greater use of scientific applications.

### Factors of Success as Related to Olympic Sports Achievements

Studies related to factors of national Olympic success have, in general, been directed at efforts to determine which variables are most important in relation to athletic success on the part of given nations in this setting. Lempart (cited in Kruger, 1984) reconsidered all of the published findings, isolating 17 factors that provide a useful framework for determining the probabilities of athletic success in the Olympic Games.

#### Social and Political Conditions

Social and political conditions constitute constraints that cannot be altered by a sport system when national reorganization is geared toward the optimization of athletic success. For this reason, comparisons on anything but a formal level are difficult from one country to the next. Thus, it is often useless to compare psychological data on athletes and coaches, taken at their face value, between countries since their value systems and their social compositions differ so greatly. International comparisons are therefore difficult and can be accommodated only if the testing

inventory is not only translated from one system to the next, but also adapted for each different system. At times, this makes further comparison futile since the given social and political conditions are basically incomparable.

### Economic Conditions

Novikov and Maksimenko (1972) observed that it is not the maximal availability of economic possibilities that assures sports success. Rather, a minimal standard is required which allows a stated amount of resources to be placed at the service of an athletic elite as a venture in the enhancement of national prestige. Comparing percentages of GNP or absolute amounts of money spent on sports as a parameter of economic conditions as they are related to sport can provide only very crude results. In countries such as West Germany, numerous volunteers are involved in sports clubs and their value to athletic success has been estimated as greater in effect than the total amount of funds spent annually by federal, state, and local governments on all sectors of sport (Kruger, 1984). Thus, the effort to consider all of the hidden economic factors is at best difficult.

### Geophysical Conditions

Comparing athletic success for countries with different climatic and geographic conditions is also very difficult. By the standard of medals won, a medal in ice hockey has the same value as one in a track and field sprint. Yet, African countries will never have the opportunity to win a hockey medal, but nearly all countries

will have the opportunity to produce sprinters. In turn, smaller countries are generally easier to organize for success than larger countries. Moreover, countries that are geographically stretched (e.g., unequal border dimensions) have more difficult organizational problems than compact countries. Study of the effects of the geography of sport has recently been emerging as a new subdiscipline in the area of comparative athletic achievement (Bale, 1982).

### Sport Traditions

Even with expansive media input, new sports are difficult to introduce, as witnessed by the recent experience of soccer in the United States. The current tradition in sport, Western in nature and dominated by a tendency toward standardization, measurement, and records, thus makes it difficult for African and Asian states to compete while maintaining their indigenous identities. Local traditions serve to help explain why athletes in certain sports seem to come from particular areas. For example, more Olympic fencers come from the tiny German town of Taubertshausen than from any other city in Germany. In this small town, fencing is a first-priority sport for youths, whereas in the rest of Germany soccer interest comes first. Therefore, local tradition steers the most talented young children in the direction of the most popular local sport.

### Training Systems and Methods

From the time of the Renaissance onward, a rich exchange has been building in matters of physical training and related concerns (Kruger, 1984). In the modern era, this is increasingly true as numerous training concepts have been imported into the West and other countries from the Soviet Union via both East and West Germany. Many training regimens, such as interval training, can be copied very quickly. Fact-finding tour groups, and even those who resort to methods resembling international espionage, report on the training methods of top international athletes and teams. For all practical purposes, training systems and methods have been unified throughout the world and new system can be replicated within four years. The results of new approaches are published in a restricted number of journals, providing ease of perusal when an individual wishes to survey new tendencies in the world of coaching and training.

### Availability of Experts

The curricula of coaching education has been a major topic of international comparison and cross-cultural influence (Kruger, 1984). Whenever a fact-finding tour group has been dispatched to learn the methodologies of top-level sports practices, formal analysis of the curricula of coaching has been included in the survey. Nonetheless, when a new course leading to higher qualifications and improved athletic results is installed, time is required before the new curricula can be fully evaluated for coaching effectiveness. What is obvious is that active and experienced coaches will bring far

more expertise to their tasks than will newly graduated experts with only backgrounds of academic training.

Coaching certification schemes have been developed in the Soviet Union and then copied around the world to the end of increasing the available fund of expert knowledge as well as the quantity of experts. International cooperation exists in this sphere to such a degree that a considerable number of coaching certificates acquired in one country have been found to be acceptable as qualifications in other countries. This is frequently the source of a type of "brain drain" of expertise from one country or area of the world to another.

#### Material Basis for Sport Activity

The material basis for a particular sport may differ greatly from country to country in accordance with specific as well as general economic conditions. In addition, some countries may be so large that certain sports are available only in particular areas, even though tradition and the economic base provide the means to support the sport in other locations. In such cases, comparison on the basis of the number of track and field training areas or swimming pools per capita, or their distribution, could prove to be of value. However, this type of comparison is not always feasible since obtaining accurate data may be limited by the fact that the ownership of sports installations may differ considerably from one country to the next. For example, there is the contrast between private ownership in the West and public or state ownership among the Eastern bloc states. In effect, when an installation functions as

an elite sports club, then it cannot be accessed by athletes without such qualifications.

### Level and Amount of Sport-Related Research

As may be observed from the section on training systems and methods, it is one thing to have an availability of research facilities and another to put them to practical use. Research institutes can be surveyed on the basis of the state of their financial resources or their output measured in terms of papers and monographs published or doctorates granted. However, this does not explain the degree to which research results are readily applied to sport practices, or the degree to which the researchers have approached the actual problems of elite athletes. An independent research team may have excellent ideas which are applied to a small group of nearby athletes, while a research team supported by a national organization may suffer from a lack of ideas and fail to get its concepts across to either athletes or coaches. Thus, comparisons are difficult to draw at face value. In general, it may then be said that authoritarian states have been able to successfully use their powers to acquaint coaches and athletes with favorable research results, while in open and democratic states it is left up to individual researchers or institutions to either accept or not accept research findings (Kruger, 1984).

### Sport in Society Outside of Educational Institutions

Comparisons in this area are as equally difficult as in others. In West Germany, nearly 30 percent of the population belong to sport

clubs, but at the same time the entire system is geared to such a degree to activity within the club framework that sport activity outside this setting is near to impossible or extremely expensive. Even with such a high percentage of the population involved in sport activities through the clubs, supporters of physical activity could not prevent recent budget cuts at all levels throughout Germany. From the international perspective, though the amounts of money spent by local, state, and federal governments as well as industrial sponsors varies from one country to the next, comparisons of allocated funds are near to impossible since the research effort would have to encompass consideration of tax benefits and the mixture of financing for sport institutions which exist outside of the school systems. An attempt to compare the amounts of money allocated in Germany and France failed, even though both countries operate with open budgetary information (Kruger, 1984).

#### Athletes. Personal Status and Support

The personal condition of athletes could be compared at the grass roots level, and could be measured with respect to monies earned by participation in elite sports, favors or privileges granted, or for feelings of either security or insecurity when large amounts of time are invested in a sport. In this regard, the socialist states with their policy of long-range planning for athletic activities and support of personal goals and positions offer certain advantages to the average athlete. In contrast, the greater degree of personal risk entailed in devoting time to athletics in the West is generally better rewarded. The social deprivation of the individual can attach

different meanings to sport participation. For many in the Eastern bloc, participation in elite sports offers one of the few legal possibility to travel and to acquire social prestige. Comparisons conducted on this basis require that the prevailing social and economic conditions in each sport and for each athlete are analyzed. This can be a difficult task since the methodologies of sociology are interpreted differently from East to West, and situations are so individually diversified in the West that they are difficult to group for purposes of comparison (Kruger, 1984).

#### Extent of Influence of a Sport Throughout the World

If comparisons are made of countries on either a medal or point basis, then the question of how many countries each other country competes against is of considerable importance. Field hockey is an example of a sport in which few countries participate and in which relatively little training suffices to achieve international success. In contrast, the international training standards in swimming and track and field are now so high that to compete is a very difficult task. Moreover, in sports such as swimming or gymnastics more medals can be won than in team sports which involve a number of competitors per team to win just a single medal. In addition, in team sports a single team cannot win more than one medal, wherein individual superiority in another sport may lead to the personal award of a number of medals. Useful comparisons must take these differences into account since they could serve to explain why the socialist bloc countries have concentrated upon the so-called "medal intensive" sports (i.e., those



in which a maximum number of medals can be obtained with minimum investment). As soon as the mode of comparison is changed, the criteria for preferring a less practiced sports which awards a greater number of medals over a more practiced sport which awards only a single medal automatically changes at the same time.

### Development and Effect of Sport Organizations

Kruger (1984) has sought to classify national Olympic committees according to their effectiveness, efficiency, relation to social values, and dependence upon social groups. Though the accuracy of this survey was dependent upon the willingness of respondents to answer the survey questions openly and truthfully, it did provide indication on which levels comparisons could be conducted.

Moreover, Kruger's survey also demonstrated the degree to which a larger measure of professionalization has taken place in sport-governing bodies in recent years, implying the practical utility of the application of mechanism of long-term planning and structured research efforts.

### Rational Systems of Long-Term Planning

Because the development of athletes, from the start of regular training procedures to the achievement of top performances, takes many years, continuity is a requirement to assure that talents are not wasted and that individuals are steered in the right direction. In this respect it is useful to compare the means of finding and

developing athletic talents. This involves identification of the best athletes at any given moment, as well as spotting those athletes who will progress more rapidly in standardized training programs. Although in practice the same anthropometric measurements and tests are applied to specific sport events, these systems are subject to constant refinement. It is upon these grounds that the most sophisticated international comparisons are conducted.

### Application of Optimal Training Loads

Judging what is and what is not an optimal training load is a difficult task. The discussion centered about the anaerobic threshold is but one example of the difficulty of properly defining an optimum training load. International comparisons of the form and amount of training are completed by most coaches to judge the degree to which the possibilities of their athletes can be developed. In this sense, sport obviously becomes a full-time occupation, contributing to even greater degrees of professionalization within given sports as all human activities are increasingly focused upon training and competition needs. Thus, the number of full-time staff available for the encouragement of sports outside of school systems plays a role which is equally as important as the application of organization research results.

In general, the training loads tend to be larger and the training hours tend to be longer in the socialist bloc countries than in most capitalist states. This has brought a higher degree of success to the socialist states, particularly in such events of strength and

endurance as rowing, canoeing, and boxing in which intensive training practices are necessary for the achievement of success.

### Development of Techniques in Particular Sports

International sports events are closely covered by increasing numbers of observers who have helped to standardize athletic techniques throughout the world. Although considerable variation, particularly in team sports, continues to exist, in accordance with national traditions or given social and economic conditions, the level of uniformity attained has been subject to constant growth. So far as the development of techniques is concerned, it remains an open question whether systematic research is to be preferred to spontaneous developments. For example, there is the contrast between the Baryshnikov technique for shot-putting and the Fosbury flop in the high jump.

### The Perfection of Sporting Gear and Installations

Standardization has also been the rule in the area of sport equipment and installations. Though the Olympic Games always serve to demonstrate new developments, such as the supposedly super-fast skis or bobsleds, the number of inventions is generally decreasing. Upon surveying the existence of expensive installations, and comparing them on a per capita basis, it becomes obvious that the richer industrialized nations have an advantage with respect to poorer countries of the Third World. Nonetheless, the availability of top-rate installations and equipment cannot guarantee success,

unless all of the other factors important to successful achievement in sport activities are taken into consideration.

### Optimal Organizational Planning Relationships

Under conditions of state planning, it is easier to influence all of the factors which contribute to athletic success at Olympic events. On the other hand, increasing numbers of Western states have sought to improve athletic performance by optimizing selected factors. The problem then remains that a country based upon a system of free enterprise cannot incorporate systems of state planning to seek athletic performance improvements. Attempts to copy the efforts of the USSR or the GDR to improve athletic performance are bound to fail, unless the socioeconomic systems which are a part of the approach of systematic planning are also copied.

## CHAPTER III

### DESIGN OF THE STUDY

Information in this chapter is presented in two parts. The first concerns methods to measure Olympic success and the ranking by final medal standings of athletes from Taiwan, ROC and the PRC at the 1984 and 1988 Olympic Games. The second part focuses upon investigative methodology employed to analyze the contributing factors of Olympic success, including development of sports organizations and administration, scientific training practices, and the extent and application of sports resources for the ROC and the PRC. The research design for the proposed study is organized to: 1) identify the theoretical model employed in this study; 2) investigate the sources of the data; 3) organize the data into appropriate model subheadings; and 4) analyze the data.

#### Application of the Theoretical Model

Lempart's (1977) 17 factors including: (1) Social and political conditions, (2) Economic conditions, (3) Geophysical conditions, (4) Traditions of sports, (5) Training systems and methods, (6) Level and number of experts available, (7) Material basis, (8) Level and the amount of sport-related research, (9) Social position of sport, (10) Personal conditions of the athletes, (11) Spreading and development of sport around the world, (12) Development of sport organizations, (13) Rational systems of long-term planning in sports, (14) Application of optimal training loads, (15) Development of

techniques in particular sports, (16) Perfection of sporting gear and installations, and (17) Optimal relationship between these factors, that contribute to the athletic success of a nation in Olympic competition, serves as the theoretical model for the comparative analyses of contributing factors of Olympic success between Taiwan, ROC, and PRC. Each of these 17 influential factors of athletic success is discussed within certain parts of this study (Table 3.1 reveals the format employed by the researcher in treating each of Lempart's factors).

## Section I

### Measurement of Olympic Success

#### Source of the Data

An extensive review of literature revealed the following useful sources of data for the proposed study: The Olympic Review and The Demographic Yearbook (United Nations, 1990).

Lists provided in the appropriate pages on "Olympics" in The Olympic Review, the official publication of the International Olympic committee, for 1984 and 1988 were employed to ascertain "final medal standings" for these two Olympic years. Data on the populations of each country from which subjects were selected, were drawn from The Demographic Yearbook (United Nations, 1990).

Table 3.1

## Factors That Influence Athletic Success

## Questionnaire and Interview Items

Factors	Review of Literature	Sports Organizations and Administration	Scientific Training	Sports Resources	Olympic Success
Social and Political Conditions	H				
The Economic Conditions	H				
The Geophysical Conditions	H				
The Traditions of Sports				H	
The Training Systems and Methods			H		
The Level and Number of Experts Available			H		
The Material Basis				H	
The Level and the Amount of Sport-Related Research			H		
The Social Position of sport		H			
The Personal Conditions of the Athletes		H			
The Spreading and Development of Sport around the World					H
The Development of Sport Organization		H			

Table 3.1 (continued)  
 Factors That Influence Athletic Success

Questionnaire and Interview Items

Factors	Review of Literature	Sports Organizations and Administration	Scientific Training	Sports Resources	Olympic Success
Rational Systems of Long-term Planning in Sports				H	
The Application of Optimal Training Load			H		
The Development of Techniques in Particular Sports				H	
The Perfection of Sporting Gear and Installations				H	
The Optimal Relationship between these Factors					H

H--- indicates where factors from Lempart's model are included in this study

Organization of the Data

At the 1984 Los Angeles Olympic Games, 12,000 athletes from 140 nations participated, competing for 226 gold medals in 25 major sports. The People's Republic of China team sent a delegation of 227 athletes, competed in 17 sports, and obtained 15 gold, 8 silver, and 9 bronze medals. The Chinese Taipei team sent 61 athletes, competed in 15 sports and one demonstration sport, and



won two bronze medals. In all, athletes from 47 nations were awarded medals, excluding athletes from the Soviet Union and the socialist bloc nations of eastern Europe, who boycotted these games.

For the 1988 Seoul Games, 13,674 athletes from 161 nations entered the competition for 237 gold medals in 26 major sports. The People's Republic of China sent 293 athletes, who competed in 21 major sports and two demonstration sports, and were awarded 5 gold, 11 silver, and 12 bronze medals in major sports, and one gold and two silver in the demonstration sport of women's Judo. Chinese Taipei sent 91 athletes, competed in 13 major sports and two demonstration sports, and failed to win a medal in major sports, but won two gold and three bronze medals in the demonstration sport of taekwondo. In all, athletes from 52 nations won medals at these games. Among the participants at these two Olympic games, were 99 countries that won one or more medals, including the ROC in the 1984 Olympics and the PRC in both the 1984 and 1988 Olympics. In total, athletes from 34 nations won medals at both Olympic Games, thus there are actually 65 nations on the national medal count list when both quadrennial events are combined.

### Data Analyses

For purpose of this study, "Olympic success" is determined by employing four distinct measurements:

- (1) Traditional medal count, where each medal counts as an equal value (1 point);
- (2) Weighted medal scale, with point values distributed at 3-2-1 for gold, silver, and bronze medals;

(3) Ratios of points/population; and

$$(4) \text{ Efficiency} = \frac{\text{total points earned}}{\text{number of sports competed}} \times 100\%.$$

The data analyses are based on Olympic success the athletes from Taiwan, ROC and the PRC achieved during the 1984 and 1988 Olympic Games. The Olympic success achieved by the total participating athletes from Taiwan, ROC and from PRC is analyzed separately and jointly for 1984 and 1988 Olympic Games. According to Ruffer and Ingersoll (1986), "Any thorough analysis of national performances must include comparisons between results of the men and the women both within nations and between the nations" (p. 217). Therefore, the Olympic success of male athletes and the Olympic success of female athletes for Taiwan, ROC and from PRC are compared same gender and cross-gender respectively. There is also an in-sports comparison between the performance of the Olympic athletes from Taiwan, ROC, and PRC. Table 3.2 identified the proposed research questions, group compared, and the comparative methodology proposed for the study. The Olympic success achieved by the athletes (male and female) from Taiwan, ROC and the athletes from PRC is analyzed via scoring and percentage comparisons.

In comparing the ranking of the 1984 and 1988 Olympic Games between Taiwan, ROC and PRC, the final medal count table of the 1984 Olympic games, and the final medal count table of 1988 Olympic Games are adopted from The Olympic Review, 1984 and 1988 editions.

Table 3.2

Lists of Research Questions, Group Compared , and Comparative Methodology of Olympic Success between Taiwan, ROC, and the PRC.

Research Questions	Group compared	Comparative Methodology
S-1. Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 Olympic Games.	(A+B) vs. (C+D)	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-1a. Is there a difference of sports success between the male athletes and the female athletes from Taiwan, Republic of China during the 1984 Olympic Games.	A vs. B	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-1b. Is there a difference of sports success between the male athletes and female athletes from the People's Republic of China during the 1984 Olympic Games.	C vs. D	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-1c. Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1984 Olympic Games.	A vs. C	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in

Table 3.2 (continued)

Research Questions	Group Compared	Comparative Methodology
S-1d. Is there a difference of sports success between the female athletes from Taiwan, Republic of China, and People's Republic of China during the 1984 Olympic Games.	B vs. D	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-2. Is there a difference of sports success between Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games.	(E+F) vs. (G+H)	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-2a. Is there a difference of sports success between the male and female athletes from Taiwan, Republic of China during the 1988 Olympic Games.	E vs. F	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-2b. Is there a difference of sports success between the male and female athletes from People's Republic of China during the 1988 Olympic Games.	G vs. H	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in

Table 3.2 (continued)

Research Questions	Group Compared	Comparative Methodology
S-2c. Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games.	E vs. G	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
S-2d. Is there a difference of sports success between the female athletes from Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games.	F vs. H	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in
Research Question 1 Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 and 1988 Olympic Games.	(A+B+E+F) vs. (C+D+G+H)	Olympic medal count Weighted medal scaling Ratio of total points to the population Olympic sports competed in

- A --- Male athletes from Taiwan, ROC participated in 1984 Olympic Games
- B --- Female athletes from Taiwan, ROC participated in 1984 Olympic Games.
- C --- Male athletes from PRC participated in 1984 Olympic Games
- D --- Female athletes from PRC participated in 1984 Olympic Games
- E --- Male athletes from Taiwan, ROC participated in 1988 Olympic Games

Table 3.2 (continued)

- F --- Female athletes from Taiwan, ROC participated in 1988 Olympic Games
- G --- Male athletes from PRC participated in 1988 Olympic Games
- H --- Female athletes from PRC participated in 1988 Olympic Games

## Section II

### Contributing Factors of Olympic Success

The researcher selected three contributing factors identified by Lempart (cited from Kruger, 1984), as contributing to Olympic success for purposes of analysis: (a) Development of sports organizations and administration; (b) Scientific training practices; and (c) Extent and application of sports resources.

### Source of the Data

The data pertaining to this section were collected from library resources, direct observations by the researcher on the environment of the sports-related institutions and gatherings, and an examination of the official documents of the national sports-governing bodies of the ROC and the PRC. Personal interviews with sport-governing body administrators, sports scholars, sports science researchers, national team coaches, and national team athletes of the ROC and the PRC were conducted by Dr. Kunning Chen, associate professor of Physical Education Department at Chinese

Culture University, in Taiwan, ROC and Mr. Peinwhy Chia, Director of Sports Science Research Center at Beijing Physical Education and Sports Institute, in the PRC. In addition, a data gathering questionnaire was also completed by the administrators of the sports-governing bodies of the ROC and the PRC.

### Test Instruments

#### Written Questionnaire

A written questionnaire was designed by the researcher to obtain the data relevant to the three variables selected for study: development of sports organizations and administration; scientific training practices; and the extent and application of sports resources. The questionnaire consisted of 22 items (see Appendix A). Of the 22 questions, ten were related to the development of sports organization and administration, nine dealt with scientific training practice, and three related to the extent and application of sports resources.

The format employed within the questionnaire was close-ended, requiring the respondent to select between a number of choices or to indicate the degree of several stipulated choices.

Ms. Pamela Bodenroeder, Senior Research Assistant at the Oregon State University Survey Research Center, examined and edited the format of the questionnaire. Dr. Dow Poling, Dr. Sandra Suttie, and Dr. Robert Michael, associate professors of Exercise and Sports Science Department at Oregon State University examined the questionnaire items to verify that the wording and sequence of the

statements were appropriate and understandable. To assure an equivalent meaning on the two forms of the questionnaire (English and Chinese), the researcher translated the questionnaire from English into Chinese and a panel of Chinese graduate students at Oregon State University, five from Taiwan, ROC, and five from PRC, translated the items from Chinese back into English.

The ten member Chinese graduate panel had received their bachelor degree in English from their home country, and had studied in varied graduate programs at OSU for more than two years. The results verified that the words and sequence of the questionnaire items are acceptable in Chinese.

After acceptance by the Chinese student panel, a pilot test was conducted on six Chinese students studying at Oregon State University, three from Taiwan, ROC, and three from PRC. After completion of the questionnaire, each pilot subject was asked by the researcher to indicate question items which were not clear or not understandable. The pilot subjects indicated that all questions were clearly stated and did not create a problem with understanding the intent.

A copy of the questionnaire (Chinese version), a cover letter outlining the purposes of the study (see Appendix A), and a self-addressed, stamped envelop were forwarded to each of the sports-governing bodies in Taiwan, ROC, and the PRC. The Department of Physical Education at the Ministry of Education of Republic of China, the Republic of China Amateur Sports Federation, and the Chinese Taipei Olympic Committee were the organizations in Taiwan, ROC requested to offer the questionnaire data. The State Physical



Education and Sports Commission, the All-China Sports Federation, the China Olympic Committee were the organizations selected from the PRC to respond to the questionnaire items.

### Personal Interview

The personal interview employed the format of predetermined question items. These question items were designed for five different group of subjects from Taiwan, ROC, and PRC. Group A (n=6) consisted of the sports-governing body administrators, three from each country. Group B (n=12) involved sports scholars, six from each country, who are the professors in Physical Education and also involved with their government's Olympic affairs. Group C (n=10) was composed of sports science researchers, five from each country, who are involved with sports science research for their national athletes' training. Group D (n=12) consisted of the national team coaches, six from each country, who were selected or coached for their national teams during either the 1984 or 1988 Olympic Games. Group E (n=10) consisted of national team athletes, five from each country, who participated for their country either in the 1984 or 1988 Olympic Games.

The four different lists of question items, developed by the researcher, were examined and edited by Ms. Pamela Bodenroeder, Senior Research Assistant at the Oregon State University Survey Research Center. Table 3.3 lists the question items and interview groups. The interview questions in Chinese were examined and verified by the Chinese graduate student panel at Oregon State University (the same panel employed for questionnaire data). A pilot

test was conducted with the six Chinese students at OSU to assure that each question item was clear and understandable.

The four different lists of question items prepared for the personal interview are as follows:

Olympic success information

A total of 8 questions were prepared for purposes of interviewing groups A, B, C, D, and E. Four questions concerned personal information and four question were related to the Olympic success (see Appendix B).

Table 3.3

## Lists of Items in Preparation for the Personal Interview

Question Items	Interview Groups
<u>Olympic success information:</u>	
1. Degree of satisfaction or dissatisfaction with your country's Olympic success	A, B, C, D, E
2. Reason for Olympic success or lack of success	
3. Degree of government involvement	
4. National Olympic key sports	
<u>Sports organizations and administration:</u>	
1. Role of competitive sports	A, B, C, D, E
2. Ten most popular sports	
3. Athletes' social position	
4. Coaches' social position	
5. Source of personnel	
6. Athletes' skill classification system	
7. Athlete's career pattern	
<u>Scientific training information:</u>	
1. Role of sports research institute	A, B, C, D, E
2. Source of sports research personnel	
3. Required curricula of coaches' certificate	
<u>Sports resources information:</u>	
1. Sports funding	A, B, C, D, E
2. Sports facility and equipment provision	
3. Talent athletes identification and development system	

A--- Sport-governing body administrators

B--- Sport scholars

C--- Sports science researchers

D--- National team coaches

E--- National team athletes

### Development of sports organizations and administration information

A total of 11 questions were developed for interviews with groups A, B, C, D, and E. Of the 11 questions developed, four inquired about personal background, and seven questions asked personal opinions regarding the development of sports organization and administration (see Appendix C).

### Scientific training practice information

A total of 7 questions were submitted to group A, B, C, D, and E to investigate the scientific training practices in Taiwan, ROC and PRC. Of the 7 questions developed, four items sought personal information while three related to scientific training practices (see Appendix D).

### Sports resources information

A total of 7 questions were developed to obtain the sports resources information from groups A, B, C, D, and E. Three questions requested personal background, and four questions were concerned with obtaining sports resources information (see Appendix E).

The note taking protocol was employed during the interview process. In order to establish rapport with the subjects, the interviewers informed each respondent of the open note taking and obtained the interviewee's permission for this procedure.

### Observations

The researcher used direct observation to gather data relevant to the factors that contribute to Olympic success. The direct

observation procedure focuses on the environment of the sports-governing body, Physical Education and Sports Institutes, sports training centers, coaches' clinics, athletes' training, and some sports-oriented gatherings. Fieldnotes were compiled by the researcher after the observational process was completed.

Observations are usually relevant to the experience and knowledge of the researcher and are subjective. In an attempt to step outside of the subjectivity of the researcher, observers of Chinese sport in Taiwan, ROC and PRC have provided valuable information.

#### Analysis of the Data

Six different types of data were obtained in this study. These were (1) questionnaire data, (2) personal interview data, (3) observational data, (4) library resources data, (5) official document data, and (6) data from personal experience and knowledge of the researcher. Descriptive analyses were conducted on the questionnaire data, and personal interview data. Data obtained from observations, library resources, official document, and personal experience and knowledge of the researcher were treated as supplemental data to describe and test the research question of this study (see Table 3.2, 3.4, 3.5, 3.6)

Table 3.4

List of Group Compared, Comparators, and Source of Data for the Comparison of the Development of Sports Organizations and Administration between Taiwan, ROC, and the PRC

Research Question	Group Compared	Comparators	Source of Data
Is there a difference in the development of sports organizations and administration between Taiwan, Republic of China and People's Republic of China.	(a+b+c) vs. (d+e+f)	1. Size and type of organization 2. Level and professionalization of employees 3. Function of the organization 4. Leadership styles 5. Structure of the organization	I, II, III, IV

#### Compared Group

##### Taiwan, Republic of China

- a --- Physical Education Department at Ministry of Education of Republic of China
- b --- Republic of China Amateur Sports Federation
- c --- Chinese Taipei Olympic Committee

##### People's Republic of China

- d --- State Physical Education and Sports Commission
- e --- All-China Sports Federation
- f --- China Olympic Committee

#### Source of Data

- I --- Library Resources
- II --- Questionnaire
- III --- Personal Interview
- IV --- Observation

Table 3.5

Lists of Comparators and Compared Groups for the Comparison of the Scientific Training Practices between Taiwan, ROC, and the PRC

Research Question	Comparators	Compared Groups
Is there a difference in the scientific training practices between Taiwan, Republic of China and People's Republic of China.	a. Number of national sports research institutes b. Number and level of research personnel c. Number of research field d. Number of sport-related research papers e. Funding for research f. Type of research system g. Intensity and duration of athletic training h. Employment of imported coaches	I, II, III, IV, V

Source of Data

- I --- Library Resources
- II --- Questionnaire
- III --- Personal Interview
- IV --- Observation
- V --- Personal Experience and Knowledge

Table 3.6

Lists of Comparators and Source of Data for the Comparison of the  
Extent and Application of Sports Resources between  
Taiwan, ROC, and the PRC

Research Question	Comparators	Source of Data
Is there a difference in the extent and application of sports resources between Taiwan, Republic of China, and People's Republic of China.	a. Number of national sports training centers b. Sports facilities in national sports training centers c. Sports facilities qualify for national athletic meets d. Sports facilities and equipment which qualify for international competition e. identification of talented athletes	I, II, IV, V

Source of Data

- I --- Library Resources
- II --- Questionnaire
- III --- Personal Interview
- IV --- Observation
- V --- Personal Experience and Knowledge



## Questionnaire Data

The questionnaire data covered the question items related to three factors of interest: (1) the development of sports organizations and administration, (2) the scientific training practice, and (3) the extent and application of sports resources. Three main sports-governing bodies in Taiwan, ROC, and PRC were asked to offer data requested by the questionnaire.

Because of the nature of the quantitative data collected in most of this questionnaire (except organizational structure and leadership style), figure and percentage tables were constructed to compare the difference between the group of Taiwan, ROC, and the group of PRC, while the graphic profiles of the educational background of sports governing body employees, sports science researchers, and coaches were conducted to compare the difference between these groups. The approach applying the criterion of sport-promotion and sport-consumption, as recommended by Houseworth (1988) and Loy, et al. (1978), seemed most appropriate to analyze and compare the structure of contemporary organization of sports in Taiwan, ROC and the PRC. The sport elite organization and the sport for all organization were two subcategories under the criterion category for this comparison. The size (membership) of the organization and the extent of sponsorship by the government (government or non-government organization) were also included in the study comparisons. The identification of the dominant style of leaderships: democratic, authoritarian, laissez-faire, or some others, was proposed as the criterion for the analysis and

comparison of the leadership of sports-governing bodies in Taiwan, ROC and the PRC.

### Personal Interview Data

The personal interview technique was employed to gather data relating to the following categories:

- (1) Olympic success information;
- (2) Development of sports organization and administration information;
- (3) Scientific training practice information;
- (4) Extent and application of sports resources information.

The groups identified by the researcher to participate in the interview process included sports-governing body administrators (6), sports scholars (5), sports science researchers (3), national team coaches (6), and national team athletes (5) from each of the two nations included in the study. Since the questionnaire/interview respondents were not randomly selected, chi-square statistical analysis, a non-parametric test of significance which does not make an assumption regarding the shape of the population distribution, was employed to determine significant differences regarding the following interview questions: Olympic success information (question 5, 6, and 7); development of sports organizations and administration information (question 5, 7, and 8); scientific training information (question 5). The note taking conducted during the interview was analyzed and compared by employing the descriptive method.

### Observational Data

The observational data were reported in accordance to the selected factors of Olympic success identified for this study. These data were supplemental information used to describe and compare the selected factors of Olympic success for Taiwan, ROC and PRC.

### Library Resources Data

Recent Chinese publications, books, and documents located in Beijing, PRC and Taipei, Taiwan, ROC libraries were the sources of this data. Additional material from the Oregon State University Kerr Library (English versions), provided supplementary sources.

### Official Document Data

The archives of the sports-governing bodies of Taiwan, ROC, and the PRC provided the sources for official document data. Specific sources from Taiwan, ROC included: the Department of Physical Education at Ministry of Education of the Republic of China, the Republic of China Amateur Sports Federation, and the Chinese Taipei Olympic Committee. Specific sources related to the PRC, included: the State Physical Education and Sports Commission, The All-China Sports Federation, and The China Olympic Committee. The researcher identified and analyzed the data which were relevant to the purpose of this study.

### Personal Experience and Knowledge of the Researcher Data

The researcher has spent more than ten years in his academic study of physical education, and has taught and coached varied

sports at the international and national level for approximately ten years. As an administrator of the Tsoying Sports Training Center for four years, the researcher observed the international sports promoted in Taiwan, ROC and PRC internally as well as externally. This personal experience and knowledge supplements the data gathered through a variety of official sources and make this study fruitful.

## CHAPTER IV

### RESULTS

The following chapter consists of two parts: the results of the research questions proposed and the investigations of the development of sports organizations and administration, the scientific training practices, and the extent and application of sports resources and their relationship to the Olympic success of Taiwan, ROC and the PRC.

The initial purpose of this study was to compare and analyze differences in success at the 1984 and 1988 Olympic Games between athletes from Taiwan, ROC, and athletes from the PRC. The data concerning the Olympic sports entered and the Olympic medal count are from the Olympic Review. "Olympic success" is defined as the resultant scores obtained by athletes from given nations, when gold, silver, and bronze medals are awarded point values of 3, 2, 1 respectively. Data on the population of each country from which the subjects were selected, are obtained from The United Nations Demographic Yearbook and Statistical Yearbook of the Republic of China, when "million" is the unit used for the comparison.

The following methods were employed to measure the Olympic success of the athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games:

- (1) Determining the traditional medal count where the gold, silver, and bronze medals are counted as equal values;

- (2) Distributing point values to gold (3), silver (2), and bronze (1) medals;
- (3) Employing a formula which relates the total medal points (3, 2, 1) awarded to each country's population;
- (4) Determining the efficiency of the Olympic success of each country by employing the following method of computation:

$$\text{Efficiency} = \frac{\text{total points earned}}{\text{no. of sports competed in}} \times 100\%$$

where 3-2-1 point of value are assigned to gold, silver, and bronze medal respectively.

The results of the aforementioned methods employed to test the research questions of this study are presented in this chapter. Research questions were tested and analyzed via scoring and percentage comparisons. The eight sub-research questions and two research questions are evaluated first, then the main research question of this section is examined.

The primary purpose of this study was to examine and analyze the roles and functions of the selected factors of the Olympic success of athletes from Taiwan, ROC, and the athletes from the PRC. The three selected variables were: development of sports organizations and administration; scientific training practices; and the extent and application of sports resources. The results, obtained via written questionnaires, personal interviews, and direct observations by the researcher to test the research questions, are presented in this chapter.

## Results of Research Questions

### Research sub Question 1a:

Is a difference of sports success between male and female athletes from Taiwan, Republic of China during the 1984 Olympic Games?

Inspection of Table 4.1 reveals that 61 athletes represented Taiwan, ROC in the 1984 Olympic Games: 53 males competed in 15 sports while eight females competed in four sports. Table 4.2 data reflect the differences in success between the male athletes and female athletes from the ROC during the 1984 Olympic Games. The male athletes earned two bronze medals (two points) in weightlifting and the demonstration sport of baseball respectively, while female athletes failed to win a medal in the four events in which they competed. No male or female athlete placed in the top eight in their competitive events besides the two aforementioned medal winners. The application of the points/population formula (see Figure 4.1) reflects that the male and female athletes from the ROC had 0.202 points and zero points respectively. Figure 4.2 identifies the efficiency rating of the ROC male athletes as 13.33 percent while the female athletes received a zero percent efficiency rating during the 1984 Olympic Games.

Table 4.1

Gender Participation by Taiwan, ROC, and PRC Athletes  
in the 1984 Olympic Games

Sport	Taiwan, ROC		PRC	
	Male	Female	Male	Female
Archery	3	2	7	7
Baseball	20	0	0	0
Basketball	0	0	12	12
Boxing	2	0	0	0
Canoeing	0	0	0	7
Cycling	3	0	5	0
Diving	1	0	7	7
Equestrian Sport	1	0	0	0
Fencing	1	0	5	5
Gymnastics	2	1	10	10
Handball	0	0	0	15
Judo	3	0	5	0
Modern Pentathlon	1	0	3	0
Shooting	2	0	6	5
Swimming	3	2	11	11
Tennis	0	0	5	5
Track and Field	7	3	15	12
Volleyball	0	0	12	12
Weightlifting	4	0	10	0
Wrestling	1	0	6	0
Total	53	8	119	108



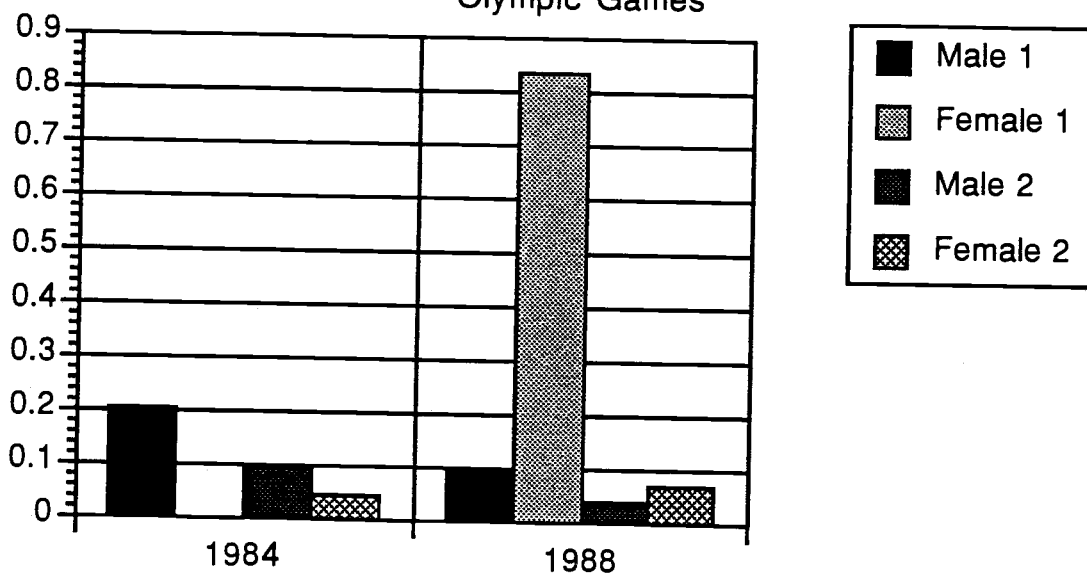
Table 4.2

Gender Olympic Success (Medal Count) between Athletes from Taiwan ROC and PRC during the 1984 and 1988 Olympic Games

Nations		1984		1988		Total
		Male	Female	Male	Female	
Taiwan, ROC	Gold	0	0	0	2	2
	Silver	0	0	0	0	0
	Bronze	2	0	1	2	5
PRC	Gold	10	5	2	4	21
	Silver	7	1	4	9	21
	Bronze	5	4	8	5	22

Figure 4.1

Gender Olympic Success (Points/population) between athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games

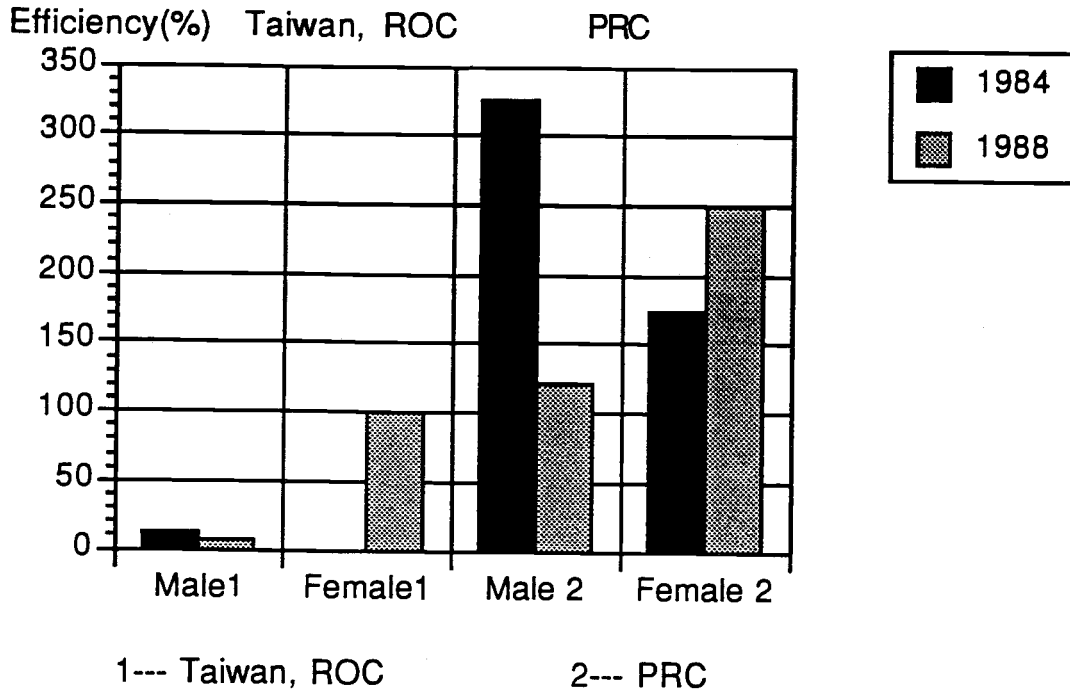


1 ----- Taiwan, ROC

2 ----- PRC

Figure 4.2

Gender Olympic Success (Efficiency) between Athletes  
from Taiwan, ROC and the PRC during the  
1984 and 1988 Olympic Games



Hence the results of the comparisons did support research sub question 1a.

Research sub Question 1b:

Is there a difference of sports success between the male and female athletes from the People's Republic of China during the 1984 Olympic Games?

Table 4.1 shows that 227 athletes represented the PRC in the 1984 Olympic Games: 119 male athletes competed in 15 sports and 108 female athletes competed in 12 sports. Tables 4.2 and 4.3

reveal that male athletes were awarded 10 gold, 7 silver, 5 bronze medals and scored 49 points based on 3-2-1 point scale; PRC female athletes were awarded five gold, one silver, and four bronze medals and scored 21 points. The male athletes earned eight 4th places, four 5th places, two 6th places, five 7th places, and four 8th places compared to the females who earned three 4th places, four 5th places, four 6th places, two 7th places, and four 8th places. Figure 4.1 shows the male athletes from the PRC had 0.092 points and the female athletes from the PRC had 0.042 points in the ratio of points/population during the 1984 Olympic Games. Figure 4.2 identifies the efficiency of PRC male athletes as 326.66 percent, while the PRC female athletes had 175 percent efficiency during the 1984 Olympic games. The results of the comparisons did support research sub question 1b.

#### Research sub Question 1c:

Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1984 Olympic Games?

Tables 4.2 and 4.3 indicate a difference in the degree of 1984 Olympic Games success between the male athletes from the ROC and the PRC. The male athletes from the ROC earned two bronze medals (two points) while the male athletes from the PRC received ten gold, seven silver, five bronze medals and scored 49 points. Figure 4.1

Table 4.3

## 1984 Olympic Success of Athletes from the PRC

## Placing

Sport	Gold		Silver		Bronze		4th		5th		6th		7th		8th	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Archery				1												1
Basketball						1										
Diving		1	1		1		1	2		1						
Fencing		1							1	1	1		1			
Gymnastics	4	1	4		1	1	4	1		1	1	3	1	1		2
Handball						1										
High Jump					1								1	1	1	
Judo									1							
Long Jump									1							
Rowing																1
Shooting	2	1			2	1						1				
Shot Put										1						
Triple Jump							1									
Volleyball		1														1
Weightlifting	4		2						1							1
Wrestling							2						2		1	
Sub Total	10	5	7	1	5	4	8	3	4	4	2	4	5	2	4	4
Points	30	15	14	2	5	4										
Total Points	45		16		9											

M---Male

F---Female

reveals that the male athletes from the ROC had 0.202 points and the male athletes from the PRC had 0.092 points in the ratio of points/population during the 1984 Olympic Games.

Figure 4.2 indicates that the male athletes from the ROC received an efficiency rating of 13.33 percent, contrasted with the male athletes from the PRC's 326.66 percent during the 1984 Olympic Games. The results of the comparisons support research sub question 1c.

#### Research sub Question 1d:

Is there a difference of sports success between the female athletes from Taiwan, Republic of China, and People's Republic of China during the 1984 Olympic Games?

Inspection of Table 4.2 and Table 4.3 reveals a significant difference of sports success between the female athletes from the ROC and PRC during the 1984 Olympic Games. The female athletes from the ROC failed to receive a medal (zero points) while the female athletes from the PRC were awarded five gold, one silver, and four bronze medals (21 points) during the 1984 Olympic Games. Figure 4.1 reflects the the ratio of points/population during the 1984 Olympic Games for both countries. Female athletes from the ROC had zero points and female athletes from the PRC had 0.042 points. Comparisons in efficiency of female athletes during the 1984 Olympic Games reveals a 175 percent efficiency sports success rating for PRC females. Conversely, female athletes from

the ROC scored zero for their efficiency sports success rating. The results of the comparisons support research sub question 1d.

Research sub Question 1:

Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 Olympic Games?

Table 4.2 and Figure 4.3 indicate a difference of sports success between the ROC and the PRC during the 1984 Olympic Games. The athletes from the ROC won two bronze medals (two points), while the athletes from the PRC won 15 gold, 8 silver, and 9 bronze medals (70 points). Figure 4.4 reflects ratios of points/population of 0.103 points for athletes from the ROC, and 0.068 points for athletes from the PRC. PRC athletes had a 259.25 percent efficiency rating (see Figure 4.5), compared to a 10.52 percent efficiency rating for athletes from the ROC. The results of the comparisons support research sub question 1.

Research sub Question 2a:

Is there a difference of sports success between male and female athletes from Taiwan, Republic of China during the 1988 Olympic Games?

Figure 4.3

Comparison of the Olympic Success (Points) between Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games

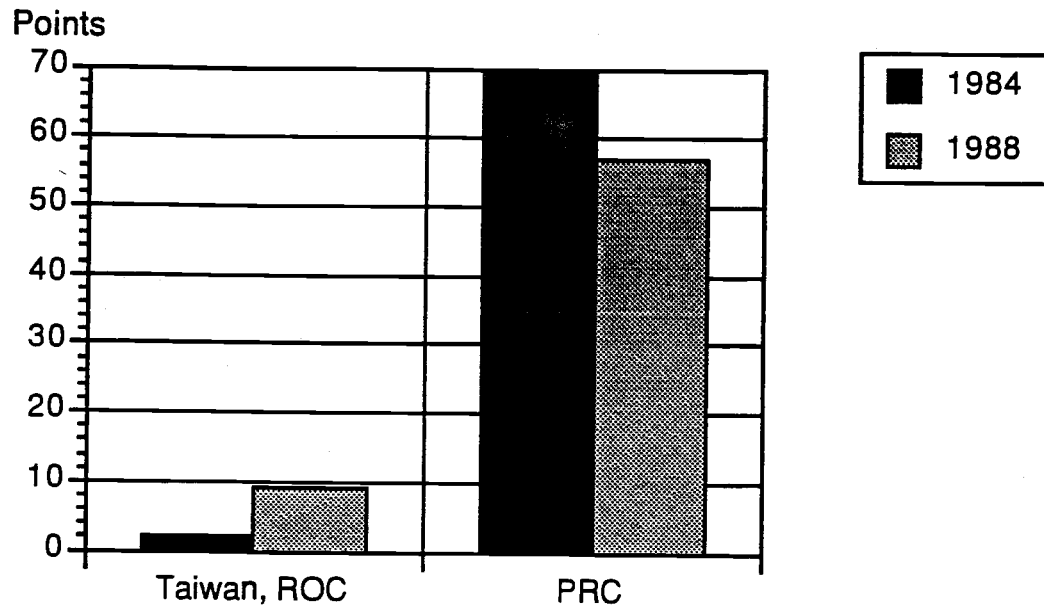


Figure 4.4

Comparison of the Olympic Success (Points/population) between the Athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games

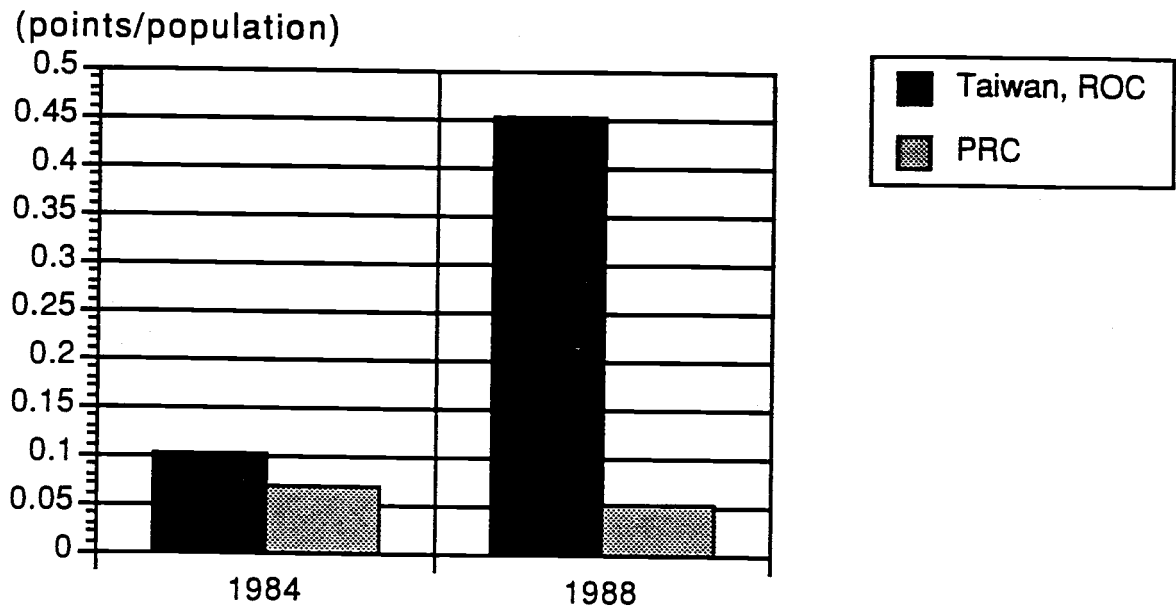
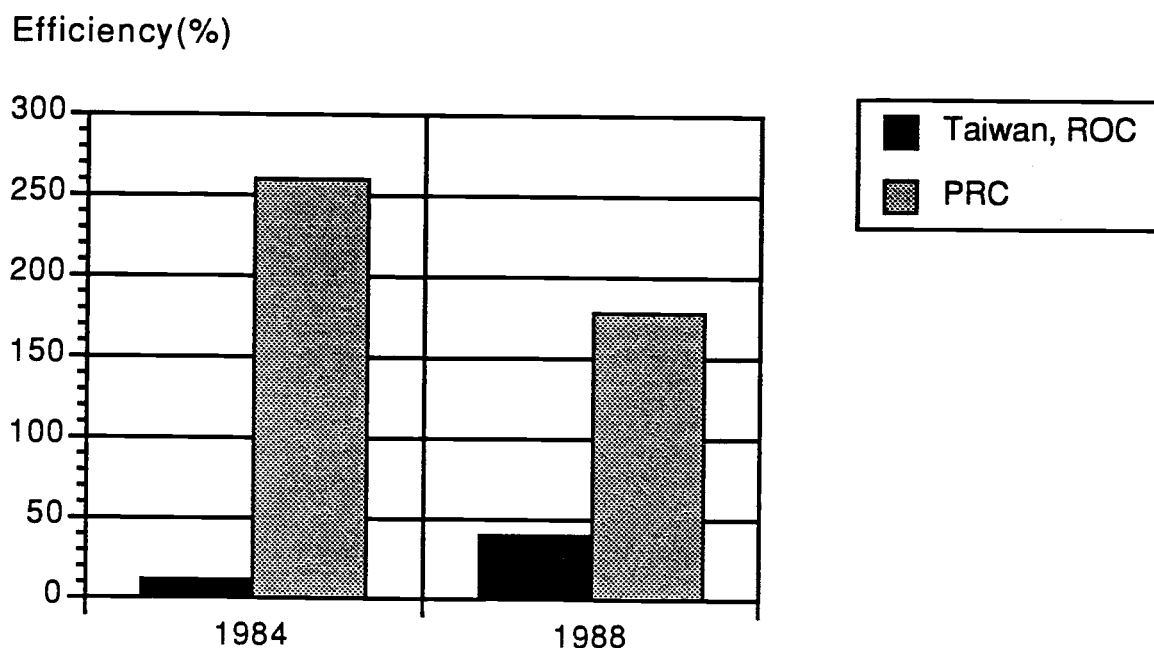




Figure 4.5

Comparison of the Olympic Success (Efficiency) for the Athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games



Ninety one athletes from Taiwan, ROC participated in the 1988 Olympic Games: 67 male athletes competed in 15 sports and 24 female athletes competed in 8 sports (Table 4.4). The difference in success during the 1988 Olympic Games between the male and female athletes from the ROC is revealed in Table 4.5. Male athletes scored only one point in the taekwondo event but captured fifth place in the baseball tournament and seventh place in archery team competition. Female athletes scored 8 points, including two gold medals and one bronze medal in the taekwondo event. Male athletes from the ROC had 0.097 points and the female athletes had 0.833 points in the ratio of points/population (Figure 4.1). The efficiency

ratings (Figure 4.2) shows male athletes from the ROC with 6.66 percent while female athletes had 100 percent during the 1988 Olympic Games. The results of the comparisons did support research sub question 2a.

Research sub Question 2b:

Is there a difference of sports success between the male and female athletes from the People's Republic of China during the 1988 Olympic Games?

There were 293 athletes representing the PRC in the 1988 Olympic Games: 158 male athletes competed in 19 sports and 135 female athletes competed in 14 sports (Table 4.4). A difference of sports success between the male athletes and female athletes from the PRC during the 1988 Olympic Games may be seen by inspection of Table 4.6. PRC male athletes won two gold, four silver, and eight bronze medals, scored 22 points while female athletes won four gold, nine silver, and five bronze medals and scored 35 points. A comparison of ratio of points/population reveals male athletes from the PRC had 0.039 points while female athletes from the PRC had 0.066 points (Figure 4.1). Figure 4.2, which reports efficiency, purports a 122.22 percent efficiency for PRC male athletes while the female athletes from the PRC received an efficiency rating of 250 percent. The results of the comparisons support research sub question 2b.

Table 4.4

Gender Participation by Taiwan ROC, and the PRC Athletes  
in the 1988 Olympic Games

Sport	Taiwan, ROC		PRC	
	Male	Female	Male	Female
Archery	3	3	3	3
Basketball	0	0	12	12
Baseball	20	0	0	0
Boxing	2	0	2	0
Canoeing	0	0	4	0
Cycling	2	1	7	4
Fencing	2	0	10	5
Football (Soccer)	0	0	18	0
Gymnastics	1	0	7	9
Judo	5	1	5	3
Modern Pentathlon	3	0	2	0
Rowing	0	0	0	11
Shooting	2	1	12	9
Swimming	3	5	30	19
Table Tennis	4	2	4	3
Taekwondo	2	5	0	0
Tennis	0	0	2	0
Track and Field	6	6	16	28
Volleyball	0	0	0	12
Weightlifting	8	0	10	0
Wrestling	4	0	11	0
Yachting	0	0	3	2
Total	67	24	158	135

Table 4.5

Olympic Success of the Athletes from Taiwan, ROC  
during the 1988 Olympic Games

Placing

Sport	Gold		Silver		Bronze		4th		5th		6th		7th		8th	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Archery													1			
Baseball									1							
Taekwondo		2			1	2										
Total		2			1	2			1				1			
Points		6			1	2										

M---Male

F---Female

Table 4.6

Olympic Success of Athletes from the PRC during the 1988  
Olympic Games

Sport	Placing															
	Gold		Silver		Bronze		4th		5th		6th		7th		8th	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
Archery													1			
Basketball												1				
Boxing									1							
Diving		2	2	1	1			1		1						
Fencing										1						
Gymnastics	1				1		1		2		3		1		1	
Handball												1				
Judo		1		2												
Rowing				1		1				1						
Shooting			1		1			1		1	1	1			1	
Swimming				3		1		1						4		1
Table Tennis	1	1		2	1	1			2		1					
Track & Field						1				1				2		2
Volleyball						1										
Weightlifting			1		4		2				1					
Wrestling							1						1			
Sub Total	2	4	4	9	8	5	4	3	5	4	7	4	2	8	2	3
Sub Points	6	12	8	18	8	5										
Total Points	18		26		13											

M---Male, F---Female

Research sub Question 2c:

Is there a difference of sports success between the male athletes from Taiwan, Republic of China and People's Republic of China during the 1988 Olympic Games?

Tables 4.5 and 4.6 depict a difference in 1988 Olympic Games success between male athletes from the ROC and the PRC. Male athletes from the ROC earned one bronze medal (one point) while male athletes from the PRC obtained two gold, four silver, and eight bronze medals (22 points). Male athletes from the ROC had 0.097 points while male athletes from the PRC had 0.039 points during a comparison of the ratio of points/population (Figure 4.1). Figure 4.2 reflects an efficiency rating of 6.66 percent for male athletes from the ROC, while male athletes from the PRC received an efficiency rating of 122.22 percent. The results of the comparisons support research sub question 2c.

Research sub Question 2d:

Is there a difference of sports success between the female athletes from Taiwan, Republic of China and the People's Republic of China during the 1988 Olympic Games?

Table 4.5 and Table 4.6 indicates a difference of sports success between female athletes from the ROC and the PRC during

the 1988 Olympic Games. Female athletes from the ROC won two gold, and two bronze medals, scored eight points, and the female athletes from the PRC obtained four gold, nine silver, and five bronze medals, scored 35 points. A comparison of the ratio of points/population reveals female athletes from the ROC had 0.833 points and the female athletes from the PRC had 0.066 points (Figure 4.1). An efficiency rating of 100 percent was awarded to female athletes from the ROC, while female athletes from the PRC had an efficiency rating of 250 percent. The results of the comparisons support research sub question 2d.

#### Research sub Question 2:

Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1988 Olympic Games?

Table 4.2 and Figure 4.3 reveal a difference of sports success between the ROC, and the PRC during the 1988 Olympic Games. The athletes from the ROC earned two gold, and three bronze medals (nine points), and the athletes from the PRC won six gold, thirteen silver, and thirteen bronze medals (fifty-seven points). Athletes from the ROC had 0.452 points and the athletes from the PRC had 0.053 points in the ratio of points/population during the 1988 Olympic games (Figure 4.4). Athletes from the ROC received 39.13 percent efficiency rating while the athletes from the PRC were

awarded a 178.12 percent efficiency rating (Figure 4.5). The results of the comparisons support research sub question 2.

#### Research Question 1:

Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 and 1988 Olympic Games?

Table 4.7 reflects that there is a difference of sports success between the ROC and the PRC during the 1984 and 1988 Olympic Games. The athletes from the ROC won two gold, five bronze medals, and scored 11 points during the 1984 and 1988 Olympic Games, while the PRC athletes were awarded 21 gold, 21 silver, 22 bronze medals, and scored 127 points during the 1984 and 1988 Olympic games. Figure 4.6 reflects the ratio of points/population and shows the athletes from the ROC had 0.289 points and the athletes from the PRC had 0.06 points during the 1984 and 1988 Olympic Games. Figure 4.7 depicts the athletes from the ROC as receiving an efficiency rating of 26.19 percent and the athletes from the PRC an efficiency rating of 215.25 percent during the 1984 and 1988 Olympic Games. The comparative results support research question 1.



Table 4.7

Comparison of the Olympic Success (Medal Count) between Athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games

	<u>Taiwan, ROC</u>			<u>PRC</u>		
	1984	1988	Total	1984	1988	Total
Gold	0	2	2	15	6	21
Silver	0	0	0	8	13	21
Bronze	2	3	5	9	13	22
Score	2	9	11	70	57	127

Figure 4.6

Combined Comparison of the Olympic Success (Points/population) between Athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games

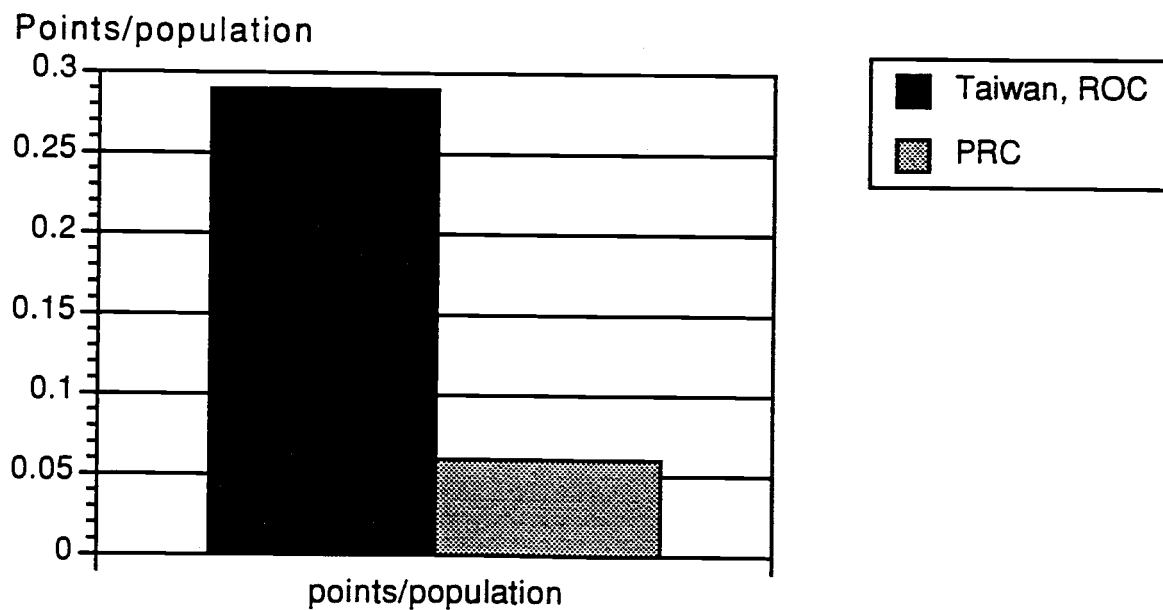


Figure 4.7

Combined Comparison of the Olympic Success (Efficiency) between Athletes from Taiwan, ROC and the PRC during the 1984 and 1988 Olympic Games

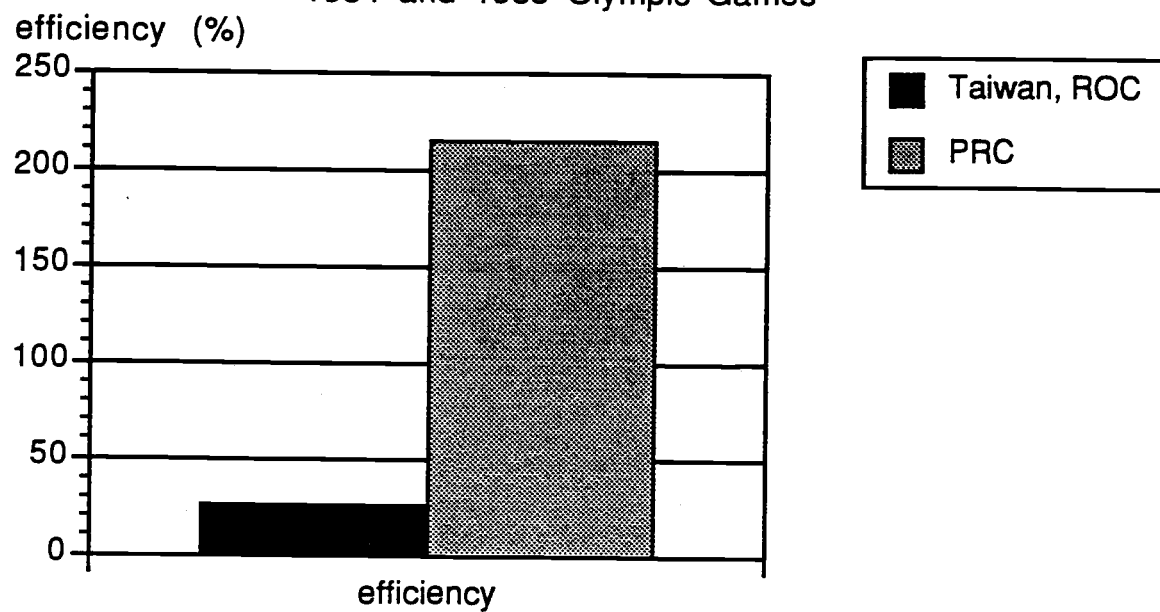


Table 4.8

## Extent of Satisfaction/Dissatisfaction of Olympic Success

	Taiwan, ROC	PRC	Total
Satisfaction	2 (13)	24 (13)	26
Dissatisfaction	23 (12)	1 (12)	24
Totals	25	25	50

$$X^2 = 37.24 \quad p < .05$$

A group of 50 people which included sports-governing body administrators (6), sports scholars (5), sports science researchers (3), national team coaches (6), and national team athletes (5) from Taiwan, ROC and the PRC, responded to the personal interview question "To what degree are you satisfied with your nation's current Olympic success ?" (see Appendix B, question 5). Among the 25 interviewees from each country, two (one taekwondo athlete and one taekwondo coach) were satisfied and 23 expressed dissatisfaction with the ROC's current Olympic success. Twenty four PRC respondents were satisfied and only one was dissatisfied with the PRC's current Olympic success. The results are reflected in Table 4.8.

Inspection of Table 4.8 reveals the value of the chi-square statistic to be 37.24. The degree of freedom (df) was equal to one. For df=1, the chi-square critical value at .05 level of significance equals 3.84 (Devore, 1987). Since 37.24 was larger than 3.84, the two samples showed a significant difference at or beyond the .05

level in the extent of satisfaction/dissatisfaction of Olympic success.

Research Question 2:

Is there a difference in the development of sports organizations and administration between Taiwan, Republic of China, and the People's Republic of China?

The differences in the development and structure of sports organizations and administration between the ROC, and PRC are reflected in Table 4.9 which compares the national sports organizations of the two countries. Differences exist in the following comparators: the year the organization were founded, the number of employees, the educational level of employees, the source of employees, the type of the organization, the leadership style, the funding of the organization, and the structure of the organization (Tables 4.9a, 4.9b, 4.9c). Differences in the number of and educational level of national coaches, the number of coaches associated with the 1984 and 1988 Olympic Games, the ten most popular national sports (sports engaged by general population of the nation), the athletes' career pattern and skill classification systems are revealed in Tables 4.9d, and 4.9e. The results of the comparisons support research question 2.

Table 4.9a

**Comparison of the Development of Sports Organizations and  
Administration between Taiwan, ROC, and the PRC**

Comparators	Taiwan, ROC	PRC
<b>National governing body</b>	<b>ROC Amateur Sports Federation</b>	<b>All-China Sports Federation</b>
<b>Year founded</b>	1954	1949
<b>Employees</b>	42	185
<b>Educational levels (%)</b>		
1. Doctoral degree	0	0
2. Master's degree	2.4	40
3. Bachelor's degree	95.6	60
4. High School diploma	2	0
<b>Source of employees</b>	1% government assignment; 99% public application	100% government assignment
<b>Type of organization</b>	non-government, decentralized, sports-promotion and sports-consumption	government, centralized, sports-promotion and sports-consumption
<b>Leadership style</b>	democratic	authoritarian
<b>Funding (%)</b>	95% government 5% private enterprise	100% government
<b>Structure of the organization</b>	See appendix F	See appendix F

Table 4.9b

**Comparison of the Development of Sports Organizations and  
Administration between Taiwan, ROC, and the PRC**

<b>Comparators</b>	<b>Taiwan, ROC</b>	<b>PRC</b>
<b>National governing body</b>	<b>Chinese Taipei Olympic Committee</b>	<b>China Olympic Committee</b>
<b>Year Founded</b>	1954	1952
<b>Employees</b>	31	176
<b>Educational levels</b>		
1. Doctoral degree	3.2	0
2. Master's degree	0	35
3. Bachelor's degree	95	65
4. High School diploma	1.8	0
<b>Source of employees</b>	1% government assignment; 99% public application	100% government assignment
<b>Type of organization</b>	non-government, decentralized, sports-promotion	government, centralized, sports-promotion
<b>Leadership style</b>	democratic	authoritarian
<b>Funding</b>	95% government 5% private enterprise	100% government
<b>Structure of the organization</b>	See appendix F	See appendix F

Table 4.9c

**Comparison of the Development of Sports Organizations and  
Administration between Taiwan, ROC, and the PRC**

Comparators	Taiwan, ROC	PRC
National governing body	<b>Physical Education Department at the Ministry of Education</b>	<b>State Physical Education and sports Commission</b>
<b>Year founded</b>	1976	1952
<b>Executive officer</b>	Director	Minister
<b>Number of Employees</b>	13	1500
<b>Educational levels (%)</b>		
1. Doctoral degree	7.7	10
2. Master's degree	30.8	45
3. Bachelor's degree	61.5	45
4. High School diploma	0	0
<b>Source of employees</b>	100% by government examination	100% government assignment
<b>Type of organization</b>	government, decentralized sports-promotion and sports-consumption	government, centralized sports-promotion and sports-consumption
<b>Leadership style</b>	democratic	authoritarian
<b>Funding</b>	100% government	100% government
<b>Structure of the organization</b>	See appendix F	See appendix F

Table 4.9d

Comparison of Number of Coaches Involved with 1984 and 1988  
Olympic Games by Sport

Comparators	Taiwan, ROC		PRC	
	1984	1988	1984	1988
<b>Number of coaches involved with 1984 and 1988 Olympic Games by Sport</b>				
Archery	2	2	2	2
Baseball	3	3	0	0
Basketball (M)	0	0	2	2
Basketball (W)	0	0	2	2
Boxing	1	1	0	1
Canoeing	0	0	1	1
Cycling	1	1	2	2
Diving	0	1	2	2
Fencing	1	1	4	3
Gymnastics	0	1	7	7
Handball (W)	0	0	2	2
Judo	1	1	1	2
Modern Pentathlon	1	1	1	1
Rowing	0	0	1	2
Shooting	1	1	5	7
Soccer	0	0	0	2
Swimming	1	1	3	6
Table-tennis	0	1	0	4
Taekwondo	2	2	0	0
Tennis	0	0	0	0
Track and Field	2	2	5	8
Volleyball (M)	0	0	2	0
Volleyball (W)	0	0	2	2
Water Polo	0	0	2	2
Weightlifting	1	1	2	3
Wrestling	1	1	2	2
Yachting	0	0	1	1

0--- no team participated



Table 4.9e

**Comparison of Most Popular National Sports, Athletes' Career Pattern, Number of National Coaches and their Educational Levels, and Athletes' Skill Classification System**

Comparators	Taiwan, ROC	PRC
<b>Ten most popular National sports</b>	Basketball Baseball Track and Field Table-tennis Swimming Tennis Soccer Volleyball Taekwondo Badminton	Radio Calisthenics Cycling Running Basketball Table tennis Soccer Swimming Chess Go (weiqi) Wushu
<b>Athletes' career pattern (%)</b>		
1. Athletes-Coaches	5	25
2. Athletes-Physical educators	40	50
3. Athletes-Sports administrators	5	20
4. Other professions	50	5
<b>Number of national coaches</b>		
1. Full time	0	26,000
2. Part time	1,159	0
<b>Educational levels (%)</b>		
1. College education	65	95
2. High school graduates	35	5
<b>Athletes' skill classification system</b>	International National Provincial Junior	International Master Master Sportsman First Class Sportsman Second Class Sportsman Third Class Sportsman Junior Class

Table 4.10

## National Perception of Competitive Sports (Popularity)

	Taiwan, ROC	PRC	Totals
Very Popular	5 (13)	21 (13)	26
Popular	20 (12)	4 (12)	24
Totals	25	25	50

$$X^2 = 20.5 \quad p < .05$$

The interview population which consisted of sports-governing body administrators, sports scholars, sports science researchers, national team coaches, and national team athletes from the ROC and the PRC, were requested to specify their perception of their national popularity of competitive sport (See Appendix C, questions).

Three national basketball players and two national baseball coaches perceived competitive sports in Taiwan, ROC as very popular, because the sports in which they are involved (basketball and baseball) are within top ten most popular sports of the country. Twenty ROC interviewees perceived competitive sports in their country as popular. Twenty-one PRC interviewees perceived competitive sports as very popular, while only four (two wrestlers and two boxers) PRC interviewees regarded competitive sports as popular, since wrestling and boxing are not as popular as volleyball, table tennis, and basketball in the PRC. The results are identified in Table 4.10.

Examination of Table 4.10, reveals the value of the chi-square statistic to be 20.5. The degree of freedom (df) was equal to one. For  $df=1$ , the chi-square critical value at the .05 level of significance equals 3.84 (Devore, 1987). Since 20.5 was larger than 3.84, a comparison of the two selected groups showed a significant difference at or beyond the .05 level in the perception of competitive sports popularity (.05 level).

Table 4.11

## National Public Acceptance of Olympic Athletes

	Taiwan, ROC	PRC	Totals
High Degree of Respect	7 (12.74)	19 (13.26)	26
Low Degree of Respect	17 (11.26)	6 (11.74)	23
Totals	24	25	49

$$X^2 = 10.81$$

$$p < .05$$

The interview population was requested to indicate the extent of national public acceptance of Olympic athletes (see Appendix C, question 7). Seventeen ROC interviewees stated that national athletes receive a low degree of respect. Seven (two sports-governing body administrators, two taekwondo athletes, one taekwondo coach, and two sports scholars) interviewees responded that ROC athletes receive a high degree of respect. Nineteen PRC interviewees indicated a "high degree of respect" for their athletes, while only six interviewees (two wrestling athlete, two boxing

athletes, and two wrestling coaches) regarded PRC athletes as receiving a low degree of respect. Data regarding national acceptance of Olympic athletes is reported in Table 4.11.

The value of the chi-square statistics in Table 4.11 was 10.81. The degree of freedom (df) was equal to one. For  $df=1$ , the chi-square critical value at the .05 level of significance equals 3.84 (Devore, 1987). Since 10.81 was larger than 3.84, the two selected groups revealed a significant difference in the public acceptance of Olympic athletes at or beyond the .05 level.

Table 4.12

## National Public Acceptance of Olympic Coaches

	Taiwan, ROC	PRC	Totals
High Degree of Respect	10 (15.5)	21 (15.5)	31
Low Degree of Respect	15 (9.5)	4 (9.5)	19
Totals	25	25	50

$$x^2 = 10.26$$

$$p < .05$$

Study respondents were requested to indicate their perception of the national public acceptance of Olympic coaches (see Appendix C, question 8).

Ten ROC interviewees perceived that Olympic coaches were accorded a high degree of respect while fifteen ROC interviewees perceived that Olympic coaches were accorded a low degree of respect. Twenty-one PRC interviewees perceived a high status of

respect for their Olympic coaches while only four PRC interviewees perceived a low status of respect for their Olympic coaches.

The value of the chi-square statistic, regarding Olympic coaching status (Table 4.12) was found to be 10.26. The degree of freedom (df) was equal to one. For  $df=1$ , the chi-square critical value at the .05 level of significance equals 3.84 (Devore, 1987). Since 10.26 was larger than 3.84, the two selected groups reflected a significant difference at or beyond the .05 level in the public acceptance of Olympic coaches.

### Research Question 3:

Is there a difference in the scientific training practices between Taiwan, Republic of China, and the People's Republic of China?

A comparison of the national sports scientific training practices between Taiwan, ROC, and the PRC is presented in Table 4.13. The following criteria were identified as comparators: the number of research institutes, the number of research personnel assigned to sports science research, the educational levels of research personnel, the number of research departments, the number of sport-related publications, the source of personnel, the extent of funding, the training loads prescribed for national athletes, the training duration prescribed for national athletes, the required curricula for national coaches' certification, the sports science research systems, subject planning, and the application of results.

Table 4.13

Comparison of Sports Science Research Practices between  
Taiwan, ROC and the PRC

Comparators	Taiwan, ROC	PRC
<b>Research Institutes</b>	2	35
<b>Personnel assigned to research</b>	20	3,500
<b>Educational levels (%)</b>		
1. Doctoral degree	10	30
2. Master's degree	70	60
3. Bachelor's degree	20	10
<b>Research departments</b>	Sports psychology Exercise physiology Sports biomechanics Sports medicine	Athletic training Ball games training Sports biomechanics Mass sports Sports medicine Exercise physiology Sports theory Sports instruction
<b>Publication of sport-related papers</b>	1980-1984 105 papers	1980-1984 3,000 papers (estimated)
	1985-1988 150 papers	1985-1988 12,000 papers (estimated)
<b>Source of personnel</b>	Volunteers recruited by public application	Appointed by the government
<b>Research funding</b>	Provided by mass organizations and enterprises awarded research contracts; direct government aid	Government budget
<b>Training load of national athletes</b>	5-6 hours/day	9-10 hours/day

Table 4.13 (continued)

Comparators	Taiwan, ROC	PRC
<b>Training duration</b>	300 days/year	350 days/year
<b>Required Curricula, National coaches' certification</b>	Sports medicine Sports biomechanics Sports psychology Exercise physiology Sports and nutrition	Sports medicine Sports biomechanics Sports psychology Exercise physiology Sports and nutrition Sports theory Athletic training Physical training methods Sports statistics Measurement and evaluation Basic computer
<b>Sports Science Research System</b>	Decentralized	Concentrated
<b>Subject Planning</b>	Sponsor organization; Researcher choice	Government assigned topics; some degree of intuitive
<b>Application of Results</b>	Academic exchanges and publications	Results published as directed
<b>Comparisons</b>	1. Manpower and material resources scattered, funds limited 2. Comprehensive research difficult to conduct 3. Practice difficult to service 4. Free choice of subjects	1. Manpower and material resources concentrated 2. Comprehensive research easy to conduct 3. Practice easy to service 4. Choice of subjects restricted

Table 4.14

## The Perceived Value of Sports Science Research

	Taiwan, ROC	PRC	Totals
Important	19 (20)	21 (20)	40
Not Important	6 (5)	4 (5)	10
Totals	25	25	50

$$\chi^2 = 0.5$$

The results of the comparisons revealed significant differences between the two countries, thereby supporting research question 3.

The perceived value of sports science research (see Appendix D, question 5), was posed to the interview population and the subsequent results presented in Table 4.14.

Nineteen ROC interviewees perceived sports science research as important, three athletes and three coaches thought sports science research was not important, since sports science research has not significantly contributed to their sports training. In the PRC, twenty-one interviewees perceived sports science research as important; only three wrestling athletes and one coach thought sports science research was not important, because they had not benefited from sports science research.

According to Table 4.14, the value of the chi-square statistic was found to be 0.5. The degree of freedom (df) was equal to one. For df=1, the chi-square critical value at the .05 level of significance equals 3.84 (Devore, 1987). Since 0.5 was smaller than 3.84 the two samples reflected a lack of significant difference



regarding the perception of the value of sports science research with respect to Olympic success.

Research Question 4:

Is there a difference in the extent and application of Olympic sports resources between Taiwan, Republic of China, and the People's Republic of China?

Tables 4.15a, and 4.15b identify the differences in the extent and application of sports resources between Taiwan, ROC, and PRC. The following categories were compared: the number of national sports training centers, the facilities within the national sports training centers, the number of facilities which qualify for international and national competition, the sports and physical education institutes, the extent of the sports institute faculties, the number of students graduated from sports institutes, sports equipment designed and manufactured which is employed at the international level, the method of identifying talented athletes, and the system employed to develop athletes. As shown in Tables 4.15a, and 4.15b significant differences exist between the two countries in these areas, therefore research question 4 was supported. PRC figures reflected greater involvement in each category compared.

Table 4.15a

A Comparison of the Extent and Application of Sports  
Resources between Taiwan, ROC, and the PRC

Comparators	Taiwan, ROC	PRC
<b>National Sports Training Facilities</b>		
Archery fields	2	10
Baseball field	1	1
Basketball gyms	2	20
Boxing gyms	1	15
Canoeing	0	5
Diving pools	1	50
Fencing arenas	1	45
Gymnastic gyms	1	60
Handball gyms	1	20
Judo gyms	1	25
Modern pentathlon arenas	1	5
Rowing lakes	0	5
Shooting ranges	1	12
Soccer fields	1	25
Swimming pools	2	50
Table-tennis gyms	2	50
Track and field stadia	2	15
Volleyball gyms	2	24
weightlifting gyms	2	30

Table 4.15a (continued)

Comparators	Taiwan, ROC	PRC
<b>International Competition Facilities</b>		
Archery fields	2	10
Baseball stadia	2	3
Cycling arena	1	5
Diving pool	1	15
Modern Pentathlon arena	1	5
Shooting ranges	1	20
Soccer stadia	1	15
Swimming pool	2	15
Tennis pavilions	1	5
Track and field stadia	3	50
Multi-purposes gyms	3	50
<b>National Competition Facilities</b>		
Archery fields	10	60
Baseball stadia	10	5
Cycling arenas	5	25
Diving pools	2	50
Modern Pentathlon arenas	1	10
Shooting ranges	2	50
Soccer stadia	5	30
Swimming pools	10	50
Tennis pavilions	10	30
Track and field stadia	15	60
Volleyball gyms	14	60
Multi-purposes gyms	15	100

Table 4.15b

**Comparison of Sports Budget, Sports Training Centers, Athletes  
Trained in Centers, Sports and Physical Education Institutes,  
Students Graduated from the Institutes, Sports  
Equipment, Method of Identifying Talented  
Athletes, and Athletic Development**

Comparators	Taiwan, ROC	PRC
<b>Sports budget</b>	US \$ 740 million (1989-1993)	Estimated US \$ 300 million (1985)
<b>Sports training centers</b>	2	400
<b>Athletes trained in centers</b>	400	20,000
<b>Sports and physical education institutes</b>	1	15
<b>Faculties employed by physical education and sports institutes</b>	25	3,000
<b>Students graduated from the institutes</b>	50	50,546
<b>Sports equipment, international level</b>	"Kennex" tennis racket "Kennex" badminton racket	"Red Double Happiness" table-tennis ball and paddle "Double Fish" table-tennis ball "Golden Cup" soccer ball and basketball "Train" brand volleyball "Lishi" brand barbells
<b>Method of identifying talented athletes; athletic development</b>	Through the intuition and experience of coaches  School training Regional training National training	"Research to select promising young athletes"  Three level training system based upon: primary-level middle-level high-level

## CHAPTER V

### DISCUSSION

The general purpose of this study was to compare and analyze the factors contributing to the differences of success at the 1984 and 1988 Olympic Games between athletes from Taiwan, ROC, and athletes from the PRC. Specifically, the roles and functions of the development of sports organizations and administration, the scientific training practices, and the extent and application of sports resources in both the ROC and the PRC were analyzed and discussed to provide a relationship for the Olympic successes of athletes from Taiwan, ROC, and athletes from the PRC.

#### Sports Success for the ROC, 1984 and 1988 Olympic Games

Baseball is one of the most popular competitive and spectator sports in Taiwan. Baseball players from the ROC have performed very well in three levels, including little leagues, junior leagues, and youth leagues, and at international competitions since 1970. In the 1984 Olympic Games, the ROC baseball team won a bronze medal, but failed to win a medal and placed only fifth at the 1988 Olympic Games.

Taekwondo, a sport which originated in Korea more than 300 years ago, was exported to the ROC by the Korean Marine Corp in 1970. Since that time, taekwondo events have developed rapidly and have become one of the most productive sports events in

international competition for the ROC. Taekwondo athletes from the ROC have won several championship in the light weight division of the Taekwondo World Championship, a number of regional and Asian championships, and have been recognized as leaders in this sport. At the 1988 Seoul games, ROC athletes won two gold and 2 bronze medals in taekwondo, a medal count exceeded only by South Korea athletes. Yi-Fang Chen won a gold in 43 kg category, while Yi-An Chen won a gold in the 47 kg category. Two bronze medals were awarded to Jiun-Feng Chen and Tsung-Che Wu, representatively, for the women's 55 kg and men's 70 kg events.

In weightlifting, since the East European countries were not at the 1984 games, Wen-Yee Tsai, ROC national record holder, captured a bronze medal in the 60 kg category. However, at the 1988 Olympic Games he failed to place among the top eight places.

Among 13 targeted Olympic sports, including archery, baseball, boxing, women's basketball, cycling, gymnastics, judo, shooting, swimming, table tennis, track and field, weightlifting, and wrestling, athletes from the ROC won medals only in baseball, taekwondo, and weightlifting.

#### Sports Success for the PRC.1984 and 1988 Olympic Games

In its first full schedule of Olympic participation (1984), PRC athletes were awarded 15 gold, 8 silver, and 9 bronze medals. This remarkable achievement ended Chinese disappointment with athletic results in the modern Olympic Games and ushered in a new era in Chinese international sports.

The PRC gymnastic team received the greatest number of medals, including five gold, four silver and two bronze medals. Ning Li became the first triple-gold PRC medalist, winning the floor exercise, the rings, and the pommel horse competition. Li also was awarded a silver medal for the vault and a bronze medal for the individual all-round event, and led the PRC men's team to a silver medal. Yun Lou won a gold medal in the vault and a silver medal for the floor exercise, while Fei Tong won a silver medal for the horizontal bar. Yanhong Ma won a gold medal for the uneven bars, and helped the PRC women's team to win a bronze medal in the team event.

Weightlifters, Guoqiang Zeng, Shude Wu, Weiqiang Chen, and Jngyuan Yao swept four golds in a row in the 52 kg, 56 kg, 60 kg, and 67.5 kg categories. Peishun Zhou and Runming Lai won two silver medals for the 52 kg and 56 kg events.

In shooting, Xu Haifeng made Chinese sports history when he won the first Olympic gold medal in the men's free pistol event for the PRC. Xu's achievement was accompanied by a gold for Yuwei Li in the running target shooting event and by a gold for Xiaoxuan Wu in women' small-bore standard rifle shooting. This athlete, the first Chinese woman gold medalist in shooting, also won a bronze. Yifu Wang and Shiping Huang both won bronze medals in men's free pistol and running game targets, respectively.

Jujie Luan became Asian's first woman champion in an individual foil event, a sport traditionally dominated by Europeans.

The men's diving team was not as successful. Liangde Tan received a silver for the three-meter springboard, Kongzheng Li

added a bronze in the platform event, and Jihong Zhou won the women's 10-meter platform diving event, the only gold won by the PRC in aquatic sports.

The PRC women's volleyball team defeated the United States to receive the gold medal. This victory enabled the PRC to become the third country, after the Soviet Union and Japan, to win consecutive women's volleyball World Cup, World Championship, and Olympic events.

In archery, Lingjuan Li won a silver in the women's individual all-round competition and established a new Olympic record of 694 points in the women's 30-meter double-round event. Making their debut at a major international event, the women's handball team was awarded a bronze medal, a feat duplicated by the women's basketball team.

The PRC's track and field team achieved a major upset in the 23rd Olympics when Jianhua Zhu, the holder of the world high jump record, finished third at 2.31 meters. This bronze was the only medal in the PRC won track and field events. PRC progress in swimming was evident as Mulati established a PRC 100-meter freestyle record at 52.21 seconds, and Jilian Ding became the first PRC woman to break the one-minute barrier in the women's 100-meter free-style, with a time of 59.11 seconds.

At the 24th summer Olympics (1988), PRC athletes tallied 28 medals including 5 golds, 11 silvers, and 12 bronzes. Although PRC won fewer medals in Seoul than four years previously, Menghua Li, head of the PRC delegation, said that "the games show that Chinese



sports have improved in the past four years. By learning at Seoul, our athletes have raised their standards" (Beijing Review, 1988, p. 24).

In diving events, the PRC athletes won two golds, four silvers, and one bronze. Yamei Xu, age 17, won the women's platform diving title, Min Gao, age 18, captured a gold in a women's springboard diving, and Qing Li placed second in the same event. In men's springboard diving, Liangde Tan was awarded a silver and Deliang Li a bronze. Ni Xiong, age 14, also won a silver in men's platform diving. 1988 marked the emergence of the PRC's young and promising divers, an indication that the PRC was one of the "four powerhouses" of diving events, along with the U. S., the Soviet Union, and the Germany Democratic Republic (GDR).

After their poor performance in 1984, the swimmers were sent to train in the German Democratic Republic and the United States. These training programs assisted PRC swimmers to win three silver medals and one bronze medal in 1988. Yong Zhung, age 16, won a silver in the women's 100-meter freestyle. Xiaoming Huang won a silver medal and broke the Olympic record for the women's 200-meter breaststroke. World record breaker Wenyi Yang won a silver in the women's 50-meter freestyle, and Hong Qian won a bronze in the women's 100-meter butterfly. Analysis of the performances by the PRC swimmers in Seoul revealed that PRC women swimmers were strongest in the short distance events, while PRC men swimmers still lagged behind world-class standards.

Rowing, a sport originating in Europe more than 200 years ago, was brought to China by the British only recently. Since there are

14 gold medals awarded in Olympic rowing events, this activity was selected by PRC Olympic officials as one of the 16 target Olympic sports. The PRC had never before reached the Olympic rowing finals. At Seoul, however, PRC athletes won a silver in the women's coxed four-oar boats and a bronze in the women's eight-oar event. It was the first time Asians had won awards for rowing events.

At the 1984 Olympic Games, PRC marksmen won three gold and three bronze medals, ranking second in the total number of medals for these events. In 1988, 21 PRC athletes took part in six shooting events. Shiping Huang won a silver medal in the moving target event and Haifeng Xu, the 1984 title holder in the men's air-pistol event, finished third. The remainder of the PRC marksmen appeared to have lost their edge at Seoul. Guorui Zhao, the head coach of the PRC shooting team, blamed the setback on "too much psychological pressure" (Beijing Review, 1988, p. 26).

In 1984, PRC gymnasts won 11 medals, including five gold, four silver, and two bronzes, a situation that was very different at Seoul in 1988. The Soviet Union and the GDR, two nations with outstanding gymnastic teams, boycotted the 1984 games, but dominated gymnastics in the 1988 Olympic Games. Thus, the PRC men's team, which had been the runner-up in 1984, placed fourth in the team event in 1988. Ning Li, a former triple-gold medalist, won no medals in 1988. Only Yun Lou was successful, winning a gold in the pommel-horse event and a bronze in floor exercise.

Weightlifters from the PRC won four gold and two silver medals at the 1984 Olympic games. In 1988, the PRC performance was less successful. Yingqiang He won a silver in the 56 kg

category, while his teammate Shoubin Liu finished third. Zhouqiang He, Huanming Ye, and Jinhe Li each won a bronze in, respectively, the 52 kg, 60 kg, 67.5 kg categories.

In the period from 1959 to 1987, PRC table tennis players won 53 championships, 40 second places and 74 thirds at world championships. PRC table tennis players have dominated world events for many years and faced a serious challenge only from South Korea players at the 1988 Olympic Games. Longcan Chen and Qingguang Wei won gold medals in the men's doubles; Jing Chen, Huifen Li, and Zhimin Jiao were awarded the first three places in the women's singles; and Jing Chen and Zhimin Jiao received gold medal in the women's doubles.

The PRC women's volleyball team, defender of the 1984 Olympic title and five-time winner in world championship events, placed only third at the 1988 Olympic Games. The Beijing Review (1988) reported that the main reason for this unexpected performance was that the Chinese women's volleyball players were apparently defeated by self-impaired psychological burden of being "five-time champions."

During the 1988 Olympic Games, the PRC made progress in events in which its athletes had previously lagged. Woman shot-putter Meisu Li was the only Asian athlete to win a track and field medal (bronze). In the women's marathon, Youfeng Zhao was fifth place in the women's marathon and broke the Asian record. PRC athletes also recorded significant achievements in the women's 10,000 meter race, the 100-km cycling time trials, and the men's long jump. In Greco-Roman wrestling, Chengcen Li took fourth place,

the best finish the PRC has achieved in this event. In the demonstration sport, women's judo, the PRC won two gold and one bronze medals. But in track and field, which awards one-quarter of the total number of Olympic medals, the PRC failed to achieve a significant breakthrough, even though 44 athletes had competed.

To summarize, the PRC targeted 16 Olympic sports: archery, women's basketball, canoeing, diving, fencing, gymnastics, women's handball, judo, rowing, shooting, soccer, swimming, table tennis, track and field, weightlifting, and wrestling. PRC Olympic athletic success occurred in table tennis, shooting, gymnastics, weightlifting, diving, women's volleyball, and swimming at both the 1984 and 1988 Olympic Games.

#### Comparison and Analysis of Success at the 1984 and 1988 Olympic Games

Women were not permitted to participate in the ancient Olympic Games, either as competitors or spectators. However, societal attitudes have changed markedly since then and women have participated in many of the Olympic Games of the modern era. The number of events specifically directed at women has increased from 14% in 1948 to 28% in 1984 (Ruffer & Ingersoll, 1986). In addition, there are a number of events in which men and women compete against one another either singularly, in teams, or in pairs. The sport of shooting has been opened to women, as have equestrian and yachting competitions. In 1984, sixteen female sports events were

included in the Olympic Games. This number was increased to 19 sports events for female athletes by the 1988 Olympic Games.

To compare and analyze differences in success at the 1984 and 1988 Olympic Games between athletes from the ROC and athletes from the PRC, the following four methods were employed:

- (1) Traditional medal count, where each medal counts as an equal value (1 point);
- (2) Weighted medal scale, with point values distributed at 3-2-1 for gold, silver, and bronze medals;
- (3) Ratios of points/population; and
- (4) Efficiency =  $\frac{\text{total points earned}}{\text{number of sports competed}} \times 100\%$ .

#### Traditional Medal Count

Absolute or raw scores for gold, silver, and bronze medals are counted as equal in value (1 point), with no consideration for population differences between countries. Public support for absolute scores is based on the fact that modern top level competitions such as the Olympic Games are absolute in nature; that is, what counts are victories and the points scored.

At the 1984 Los Angeles Olympic Games, 53 male athletes from the ROC competed in 15 sports and earned two bronze medals, while eight female athletes competed in four sports and failed to win any medals. The PRC team sent 227 athletes, competed in 17 sports, and obtained ten gold, seven silver, and five bronze medals for male athletes, whereas female athletes won five gold, one silver, and four bronze medals.

For the 1988 Olympic Games, the ROC sent 91 athletes, competed in 13 major sports and 2 demonstration sports. Male and female of ROC teams failed to win a medal in major sports, but female athletes won two gold and one bronze medal and a male athletes won one bronze medal in the demonstration sport of taekwondo. In contrast, the PRC sent 293 athletes, competed in 21 major sports and 2 demonstration sports. Male athletes won two gold, four silver, and eight bronze medals, while female athletes were awarded four gold, nine silver, and five bronze medals.

A comparison of either single Olympic events or combined Olympic results employed the traditional medal count method revealed that the athletes from the PRC overwhelmed the athletes from the ROC. The differences were 30 points at the 1984 Olympic Games and 28 points at the 1988 Olympic Games, an average difference of 29 points. These results support research sub questions 1 and 2.

Within nation gender comparisons enable one to conclude that: (1) PRC male athletes achieved a record superior to that of female athletes in 1984, with a difference of 12 points; in 1988, the female athletes achieved a superior performance with respect to males, with a difference of four points; (2) the ROC male athletes were superior to female athletes at the 1984 Olympics with a difference of two points; and female athletes were superior to male athletes in 1988 with a difference of three points. These results support research sub questions 1a, 1b, 2a, and 2b.

A similar comparison of gender between nations reveals that: (1) PRC male athletes were superior to the ROC male athletes at

both the 1984 and 1988 Olympic Games, with differences of 20 points and 13 points, respectively; (2) PRC female athletes were superior to ROC female athletes at both the 1984 and 1988 Olympic Games by 10 and 15 points, respectively.

#### Weighted Medal Scale (3-2-1)

This method takes into consideration the theory that winning first place should be given more credit than winning second place, and that the least credit should be given to winning third place.

At the 1984 Olympic Games, the male athletes from the ROC won two points while female athletes were awarded no points; PRC male athletes were awarded 49 points while female athletes were awarded 21 points. At the 1988 Olympic Games, male athletes from the ROC were awarded one point, while female athletes won seven points; PRC male athletes were awarded 22 points, while female athletes were awarded 35 points.

To compare, either separately or jointly, the results of the 1984 and 1988 Olympic Games based on a weighted medal scale (3-2-1) between athletes from the ROC and the PRC, it is clear that the athletes from the PRC achieved more successful performances than athletes from the ROC. The differences were 68 points for the 1984 Olympic Games and 49 points for the 1988 Olympic Games, with an average difference of 58.5 points. These results support research sub questions 1 and 2.

The weighted medal scale comparison of the results by gender within nations indicated that: (1) PRC male athletes were superior to female athletes at the 1984 Olympic Games by a difference of 28

points; female athletes were superior to male athletes at the 1988 Olympic Games by a difference of 13 points; (2) ROC male athletes were superior to female athletes at the 1984 Olympic Games by a difference of two points; female athletes were superior to male athletes at the 1988 Olympic Games by a difference of six points. These results supported research sub questions 1a, 1b, 2a, and 2b.

A similar between nation gender comparison concluded that: (1) PRC male athletes were superior to the ROC male athletes at both the 1984 and 1988 Olympic Games by differences of 47 and 21 points, respectively; (2) PRC female athletes were superior to the ROC female athletes at both the 1984 and 1988 Olympic Games by differences of 21 and 28 points, respectively. These results support research sub questions 1c, 1d, 2c, and 2d.

#### Points/Population Ratio Scaling

Many of those involved in Olympic affairs feel that scorekeeping based upon a point scale tends to bias final rankings in favor of the greater populated nations. It may be argued that the sports success of a nation is, in part, a function of the size of its population, thus giving an advantage to those nations with larger populations. The population of a nation relates to the size of the genetic pool which provides a combination of anatomical, physiological, sociological, and psychological traits which are essential to athletic excellence. Thus larger nations have a better opportunity to produce more quality athletes than do smaller nations.



Employing the points to population rating scaling, male athletes from the ROC would have achieved 0.202 points while female athletes would have earned zero points at the 1984 Olympic Games. PRC male athletes would have achieved 0.092 points, while female athletes would have earned 0.042 points. At the 1988 Olympic Games, male athletes from the ROC would have earned 0.097 points, while female athletes would have won 0.833 points. PRC male athletes would have earned 0.039 points, while female athletes would have won 0.066 points.

In 1984, the PRC had a population of 1.03 billion, whereas the ROC population numbers 19.25 million. In 1988, the comparative figures were 1.08 billion and 19.90 million, respectively. Based on these population differences between the two countries, the athletes from the ROC achieved higher success rates than athletes from the PRC, compared either separately or jointly by the 1984 and 1988 Olympic Games, when employing the ratio points to population size. The differences were 0.035 and 0.299 points for the 1984 and 1988 Olympic Games, with an average difference of 0.167 points between the athletes from two nations. These results support research questions 1, and 2.

A gender within nations comparison reflected that: (1) PRC male athletes were superior to female athletes at the 1984 Olympic Games (a difference of 0.05 points); female athletes were superior to male athletes at the 1988 Olympic Games (a difference of 0.027 points); (2) ROC male athletes were superior to female athletes at the 1984 Olympic Games (a difference of 0.202 points); female athletes were superior to male athletes at the 1988 Olympic Games

(a difference of 0.736 points). These results support research sub questions 1a, 1b, 2a, and 2b.

A comparison of the results by gender between nations revealed that: (1) ROC male athletes were superior to PRC male athletes at both the 1984 and 1988 Olympic Games (differences of 0.11 and 0.058 points, respectively); (2) PRC female athletes were superior to ROC female athletes at the 1984 Olympic Games (a difference of 0.042 points); whereas ROC female athletes were superior to PRC female athletes at the 1988 Olympic Games (a difference of 0.767 points). These results support sub-research questions 1c, 1d, 2c, and 2d.

#### Efficiency Rating Scale

The sports efficiency rating scale is based on awarded points in relationship to the number of sports in which athletes are entered by any nation.

At the 1984 Olympic Games, male athletes from the ROC earned a 13.33 percent efficiency rating, while ROC female athletes had a zero percent efficiency rating; male athletes from the PRC earned a 326.66 percent efficiency rating, compared to a 175 percent efficiency rating for PRC female athletes. At the 1988 Olympic Games, male athletes from the ROC earned a 6.66 percent efficiency rating while ROC female athletes earned a 100 percent efficiency rating; PRC male athletes earned a 122.22 percent efficiency rating, while PRC female athletes earned a 250 percent efficiency rating.

A comparison, either separately or jointly, of the results of the 1984 and 1988 Olympic Games between athletes from the ROC and the PRC based on efficiency rating would demonstrate that athletes from the PRC would have a decided advantage. The difference for the 1984 and 1988 Olympic Games was 248.73 percent and 138.99 percent, while the average difference was 193.86 percent. These results support research questions 1 and 2.

It may be concluded, based on a comparison of the results by gender within nations, that: (1) PRC male athletes were superior to PRC female athletes at the 1984 Olympic Games by difference of 204.44 percent, whereas female athletes were superior to male athletes at the 1988 by a difference of 75 percent; (2) ROC male athletes were superior to ROC female athletes at the 1984 Olympic Games by a difference of 13.33 percent, whereas female athletes were superior to male athletes at the 1988 Olympic Games by a difference of 93.34 percent. These results support research sub questions 1a, 1b, 2a, and 2b.

Gender comparisons between nations revealed that: (1) PRC male athletes were superior to ROC male athletes for both the 1984 and 1988 Olympic Games (differences of 313.33% and 115.56%, respectively); (2) PRC female athletes were superior to ROC female athletes at both the 1984 and 1988 Olympic Games (differences, of 175% and 150%, respectively) These results support research sub questions 1c, 1d, 2c, and 2d.

## Summary

Findings from the present investigation indicate that differences existed in sports success between nations, by gender within nations, and by gender between nations for the ROC and the PRC at the 1984 and 1988 Olympic Games. PRC athletes were more successful than ROC athletes for either individual Olympic or combined Olympic events for the 1984 and 1988 Olympic Games when scores were computed by: 1) traditional medal count; 2) weighted medal scale; or 3) efficiency rating. Athletes from the ROC gained the advantage over athletes from the PRC when Olympic success was measured via the points/population ratio formula.

It was also determined that there was a trend toward greater Chinese female athlete participation from both sides of the Taiwan Straits, and that female athletes had become an important part of the international sport arsenal for both the ROC and the PRC. These findings are supported by Swift (1988), who reports that gender knows no double standard in Chinese sport. Two practical reasons may be proposed to substantiate why the PRC Chinese treat female athletes equitably. First, almost half of the gold medals awarded in international competitions are directed to women's events, and the PRC is dedicated towards success in international competitions. Second, since most Chinese women in the PRC marry at a relatively later age, then complete their reproductive task within one year or less. The PRC enjoys an advantage with respect to more fecund nations: PRC women have been allocated more time to practice sports and tend to stay with the activity longer. In Taiwan, women's

sports receive strong public support because of their past achievements in international competitions.

Findings from the result of the interview process concerning the respondents' perception of the extent of satisfaction/dissatisfaction of Olympic success in the ROC and PRC (Table 4.8) revealed a significant difference between the two samples. Survey participants from the PRC perceive a more satisfactory relationship than respondents from the ROC regarding Olympic success.

#### Development of Sports Organizations and Administration in the ROC and the PRC

After more than 30 years of construction, a National Sports Headquarters and Service Center has been completed in southern Beijing, PRC. Located in contiguous buildings, the Center houses three leading national sports organizations: the State Physical Education and Sports Commission; the China Olympic Committee; and the All-China Sports Federation. Additionally, the Chinese Society of Sports Science, the National Research Institute of Sports Science, the General Office of Sports News, the People's Sports Publishing House, the Sports Photo Publishing House, and the editorial offices of several sports magazines, including New Sports and China Sports are affiliated with the Center. The complex also contains the China Sports Service Company, the Sports Hotel, the Beijing Gymnasium, and the Longtanhu Stadium (Xie, 1990). Therefore, a highly unified and concentrated administrative system for sports has been developed within these sports organizations, all of whom have been

organized since the founding of the PRC. The State guides all sports development with policies, decrees, plans, and budgets. Employees are selected from among the top student graduates from colleges, universities, or graduate schools in relevant fields, and then assigned by the government to appropriate sports organizations. Funds for sports activities are allocated by centralized government departments.

According to Simon, Kozmetsky, Guetzkow, and Tyndall (1981), "centralization" is a word with many meanings. With reference to management problems, an administrative organization is centralized to the extent that decisions are made at relatively high levels in the organization and persons at lower levels have relatively little discretion. Conversely, an administrative organization is decentralized to the extent that important delegations of discretionary and decision making authority are made from higher to lower levels of the organization. For an economically underdeveloped country, the administratively centralized PRC has drawn advantage from this organizational structure to use its limited financial and material resources, concentrated through governmental adjustments and controls, to develop a major Olympic sports event competitive force.

However, when the State changed to a planned commodity economy in the 1980s, PRC sports administrators realized that such a degree of overconcentration tended to yield contradictions that were difficult to overcome. One of the major problems is that overconcentration of authority served to discourage less centralized institutions from pursuing or developing interests in sports

management. A monolithic managerial pattern thus resulted in an inflexible system of sports competition. Therefore, one of the objectives of the ongoing reform of the PRC sports system is to determine a balance that can maintain the advantages of socialist centralization, while providing other parts of society with the initiative to engage in sports not only as social projects, but also as business enterprises. Several approaches were suggested to encourage new projects, including the provision of financial assistance and the establishment of sports foundations, and then combination with business activities (Xie, 1990).

In contrast to the PRC's modernized national sports headquarters, the three leading national sports organizations in the ROC are not located in contiguous buildings. The Department of Physical Education of the Ministry of Education is a governmental organization located in the Ministry of Education building in the center of Taipei. The Republic of China Amateur Sports Federation and the Chinese Taipei Olympic Committee are non-governmental organizations, chaired by Mr. Fong-Shi Chang, former Minister of the Interior, since 1987. These two non-governmental sports governing bodies are located in contiguous buildings in east Taipei. Since these buildings are relatively old, a new national sports headquarter will be completed by 1995.

A system of decentralized and democratic administration has been practiced in these three ROC sports governing bodies since the founding of the Department of Physical Education of the Ministry of Education in 1976, a factor which has contributed to a certain inefficiency at the level of international competition.

Approximately 15 years ago, President Chin-Kuo Chiang recognized the need to construct a sports park which would include an international standard sports complex and recreation area to host international competitions and to improve fitness levels of the population. Lands were designated for this sports park, but to date nothing has been constructed. Role conflict and a lack of unanimity with respect to policies and priorities exists among the three sports governing bodies charged with sports promotion and elite sports training. It was proposed, in 1989, to expand the Department of Physical Education into the Ministry of Physical Education, a motion suspended by the Legislature. Thus it would appear that this under-size Physical Education Department, consisting of 13 employees, will continue to direct international sports affairs for the ROC in the foreseeable future.

The effectiveness of similar national sports governing bodies of both nations were compared. Analyses of the effectiveness of the ROC Amateur Sports Federation and the All-China Sports Federation, the Chinese Taipei Olympic Committee and the China Olympic Committee, and the Physical Education Department (Ministry of Education, ROC) and the State Physical Education and Sports Commission reveals an advantage to the PRC.

The All-China Sports Federation was founded immediately after the establishment of the PRC, and the China Olympic Committee and the State Physical Education and Sports Commission were established in 1952, including the importance of the role of sport as perceived by the PRC government. Because of the civil war in China, the ROC Amateur Sports Federation and the Chinese Taipei



Olympic Committee were not formulated in Taiwan until the Asian Games of 1954. The first government sports body, the Department of Physical Education of the Ministry of Education was founded by the ROC in 1976.

Since the PRC has approximately 55 times the population of the ROC it is not surprising to ascertain that the number of employees of the PRC national governing bodies far exceeds their ROC counterparts. According to Mrs. Shinchin Chou, the chairperson of the Sports Management Department at the Beijing Physical Education and Sports Institute, this institute has become the cradle of sports administrators for the PRC's sports organizations. Students matriculate through a four-year sports management curriculum program, and are then assigned by the government to national, regional, or county sports organizations, in accordance with their academic records. The four-year sports management courses include: psychology of sports management; sports management and administration; theory and practice of analysis of sports management strategy and policy; sports information; science of leadership; management systems and decision making; sports facilities and equipment; techniques and methods of data processing and office automatization. In all, there are 54 required courses. Thus, the employees of the PRC sports governing bodies have stable resources and staffs that reflect a high percentage of university graduates.

The educational level of employees in the Department of Physical Education of Ministry of Education of the ROC is more advanced than the educational level required for the two other non-

governmental sports governing bodies. Government positions in Taiwan are very attractive because of the security they provide. An employee must pass the national government employees examination to be an official. The ROC Amateur Sports Federation and the Chinese Taipei Olympic Committee were led by retired military officers until Mr. Fong-Shi Chang assumed leadership in 1987. Though qualified staff members have been employed, a lack of sports management skills is still reflected by the veterans employed with the two organizations. To strengthen the quality of their employees since 1987, new regulations require a university diploma for new applicants. It is anticipated that the quality of the staff will gradually improve over the long-run.

In summary, it may be noted that the PRC governing party has always attached great importance to sports. In 1952, a Sports Ministry was established with the mission of improving the physical fitness of the nation by bringing sports to the masses. At that time, Mao's credo of no-win sports was practiced: "Friendship first, competition second." Only recently, following the success of the 1984 Olympic Games where PRC athletes captured 15 gold medals, has winning become essential to the PRC. Sports in the PRC serves as both a source of national pride and as a powerful international public-relations tool. Thus, for the administration of capital construction, allocation of funds, and development of scientific research capabilities, priorities were awarded to those organizations that trained athletes for participation in the Olympic Games.

The Chinese government in Taiwan, ROC has also recognized the importance of sport to its people and to the country. However, it would seem that sports for all and sports for elite competitions continue to enjoy an equal priority in the government scale of values and priorities.

### Scientific Training Practices in Taiwan, ROC, and the PRC

Each advanced country devotes considerable attention to the development of sports science. National sport research systems generally consist of organizational structure guided by a system of regulations governing the purpose, goals, and extent of scientific sports research. According to Xiong (1986), sports science research systems can be classified as one of three types, including concentrated, decentralized, and combined systems.

In a concentrated system, scientific research is conducted principally by special organizations of the state as guided by civil government, a system in which colleges of physical education, sports training centers, or other scientific units play supporting roles. The Soviet Union and the eastern European countries represent this type of system, as does the PRC. In countries which adopt decentralized systems, nation-wide sports science research organizations are not established, nor are unified organizations created for this purpose by the government. Rather, scientific research is conducted separately by sports associations, departments of physical education in universities and colleges, medical institutions, or other research appropriate units throughout

the country. The United States, Japan, and most western countries as well, reflect this type of system. In countries which adopt combined systems, the government plays a directive role in cooperation with mass sport organizations. France, the Federal Republic of Germany, and Switzerland are countries which reflect this type of mixed system.

Analysis of interview respondents regarding the perception of the importance of sports science research in the ROC and PRC (Table 4.14), reflected a lack of significant difference. Sports science research was perceived as an important relationship with Olympic success in both the ROC and PRC.

In the PRC, the research system for sports science is largely a concentrated system. The science and education section of the State Physical Education and Sports Commission leads and coordinates sports science research throughout the PRC. The first physical education and sports research organization in the PRC was established in 1958 as the Beijing Physical Education and Sports Research Institute. In 1972, the name was changed to the National Research Institute of Sports Science. Most of the original research personnel were graduates of academic programs in the Soviet Union or Hungary, six of whom had obtained doctoral degrees. This group became the backbone of sports research work in the PRC and established the foundation for future research (Yang, 1991).

The 1980s witnessed a period of new development, including an increase in the number of research personnel and the organization of their research institutes. By the end of 1991, 35 institutions with 3,500 research workers existed in the PRC. The National

Research Institute of Sports Science, with 1,400 research workers, had become the second largest sports science research institution in the world, next to the Central Research Institute of Sports Science in the Soviet Union (China Sports, 1991). The National Research Institute has the dual role of conducting basic research and training postgraduate students. It consists of eight departments, including sports training, ball games training (including a sport psychology section), sports biomechanics, mass sports, sports medicine, exercise physiology, sports theory, and sports instrumentation.

For the most part, full-time sports research workers have earned master's or doctoral degrees from the Physical Education and Sports Research Institute and various colleges of physical education and sports. Others are college graduates with excellent academic records, who are drawn from departments of basic science, including biochemistry, anatomy, and sports medicine. Some are graduates of comprehensive universities or universities of technology, medicine, or the natural sciences. There are also some experienced former coaches on the staff. All of these personnel are knowledgeable about the basic principles of physical education and sports. Former coaches or sports participants on the staff principally perform sports training research. Zhonghui Qiu, the first Chinese world champion in table tennis, is an outstanding example; she now conducts research on the training of table tennis athletes.

Recently, PRC researchers have begun to apply sports research to the improvement of athletic skills, and the sports of table tennis and sprinting (track and field) have benefited most from this research. Sprinters have achieved excellent results, breaking the

Asian records in the men's 100-meter dash and the 4 x 100-meter relay. Research in table tennis has identified and described 10 distinct styles of play, 20 methods of serving the ball, and 214 individual skill techniques (Yang, 1991). The PRC men's and women's table tennis athletes have dominated the world table tennis championships in singles, doubles, and team events since the 1960s.

The sports science research system in the ROC is decentralized. The government is aware of the importance of sports science research in training elite athletes, but to this point has not taken the initiative to assume direct control of a national sports science research organization. However, most sports science research is conducted through the Department of Physical Education, but not to the extent of taking the initiative in the improvement of athletic performances. The National Sports Training Center in Tsoying has had a sports science research section since 1987, and has purchased updated sports science research equipment. Nonetheless, the results of sports science research in the ROC are limited because of the paucity of professional staff personnel.

According to Lawrence (1992), the PRC has hired a number of foreign coaches for its national teams and they have introduced the Chinese to the latest scientific training techniques. For example, a Cuban coaches the PRC Olympic boxing team, Soviet and British coaches have helped train track and field Olympians, and an East German coach is credited with the progress of the PRC women's swimming team in the 1980s. Several former Soviet-bloc trainers, now in the PRC, are experienced not only with scientific training methods, but also with the use of performance-enhancing drugs.

Some foreign observers, noting recent advances by PRC women in swimming, weightlifting, the discus, and the javelin, have suggested that former eastern bloc trainers may also have introduced the Chinese to steroid use, a charge which PRC officials vehemently deny.

In the ROC, foreign coaches have made considerable contributions to athletic advances in international competitions. Korean coaches have trained ROC athletes to win several championships in international taekwondo competitions, including medals at the 1988 Olympic Games. American personnel have served as coaches of the ROC national basketball team. A Korean gold medal archery coach has coached the national archery athletes for the last three years, and it is anticipated that the current ROC women team will provide medalists at the 1992 Olympic Games.

In the ROC, the method of identifying talented athletes remains largely a factor of coaching intuition and experience. Conversely, in the early 1980s in the PRC, a major national project was initiated that resulted in the publication of a report, "Research among Selected Promising Young Athletes". This report was based on 123 published research articles which were directed at developing criteria and standards of reference for the evaluation and selection of promising athletes. The data recorded during the testing procedure covered body form, quality, functional ability, psychological condition, and heredity. This research has provided a significance basis for identifying and training prospective athletes (Yang, 1990).

Extent and Application of Sports Resources in Taiwan,  
ROC. and the PRC

While approximately one percent of the national budget in most developing countries is spent upon sports activities, in the PRC, approximately 0.4% of the PRC government budget is allocated for sports, approaching \$300 million U.S. in 1985. According to the 1988 National Physical Education Construction project, the ROC sports budget for a 5 year period (1989-1993) was approximately \$740 million U.S.. This budget is designated for the development of the sports infrastructure, including construction of sports facilities and the training of athletes and coaches.

In modern China, there were very few stadiums or gymnasiums. In the modern PRC, the number of stadiums, gymnasiums, swimming pools, or floodlit courts with fixed bleachers, as well as sports grounds suitable for mass activities is in excess of 410,000. This increase has been both rapid and massive (Xie, 1990).

The State Olympic Center was erected for the 1990 Asian Games and for a possible future Olympiad in Beijing. The first-stage project included stadiums, comprehensive gymnasiums, indoor swimming pools, training halls for ball games, and office buildings. In addition, there are grounds for hockey, tennis, softball and soccer, plus training grounds for track and field and other athletic events, and artificial lakes, all constructed on an area of 66 hectares. The second-stage project will add 60 hectares, including a central stadium to accommodate more than 100,000 people, a motorcycle



race track, and an outdoor swimming pool. The overall scheme for the Center's buildings will match advanced world levels (Wei, 1991).

After successfully hosting the 11th Asian Games at the Center in 1990, Beijing has been officially nominated as the PRC candidate to host the 27th Summer Olympic games in the year 2000. According to the Central Daily News (1992, Feb. 10), a sports official of the China Olympic Committee suggested co-hosting the 2000 Olympic Games with the ROC, a concept which received favorable response from a ROC sports official. Because of the dearth of Olympic standard facilities in Taiwan, this goal would be difficult to achieve by the year 2000. Consequently, the development of international level facilities to host the Asian Games has become the initial priority for sports workers in the ROC.

In the PRC, the manufacture of sports equipment has multiplied both in quantity and in type, while the quality has been improved and sales have risen dramatically. According to the Beijing Daily News (1992, April 12), "Crown" brand javelins, shots, and hammers for track and field have been approved by the IOC for use at the Barcelona 25th Olympic Games. In addition, "Red Double happiness" brand and the "Double Fish" brand of table tennis ball, the "Golden Cup" basketball and soccer ball, the "Train" volleyball, and the "Lishi" brand barbells have all been chosen for formal international competitions by world sports organizations.

In the ROC, the only internationally famous sporting good manufacturer is the "Kennex Sporting Good Company". "Kennex" brand tennis racquets have been popular in international tennis tournaments for the past 15 years. However, most of the domestic-

made sports equipment have not been recognized by international sports organizations. At present, most sports equipment is imported from either Japan or the United States for training national athletes or for hosting international competitions.

Inspection of interview data regarding the national perception of competitive sports popularity (Table 4.10), indicated a significant difference between the ROC and PRC. Competitive sports are more popularity viewed by PRC citizens than their ROC counterparts.

Interest in sports in the PRC has also been increased by the designation of various "homes of sports". Today, in the PRC there are numerous "homes," including the home of volleyball, the home of track and field, the home of swimming, and the home of soccer. This has provided a highly effective means to concentrate the PRC's limited financial and material resources for the development of major Olympic sports athletes. In such a vast country, the quality of coaching and the condition of training facilities vary greatly from place to place. Therefore, by assigning key sports events to different administrative areas, the PRC has drawn considerable advantage from local initiative. For instance, the city of Dolian in Liaoning province has become a training center for soccer, whereas Nanning in Guangxi Province produces great divers. A key feature of this system of concentrated support is the establishment of state-of-the-art training centers in appropriate areas, contributing to international success in such events as women's volleyball. Sports training centers for national athletes have been established in Beijing, Qinhuangdao in Hebei Province, Kunming in Yunnan Province,

and in Zhangzhou in Fujian Province. The number of athletes training in these centers is estimated to be nearly 20,000. The training intensity and duration varies for different sports events. On the average, athletes train from 9-10 hours/day, 350 days/year.

The first sports training center in the ROC was established in 1976 to prepare athletes to participate in the Montreal Olympic Games. C. K. Yang, a famous decathlete of the 1960s, recognized the trend in athletic training systems, especially the pattern of concentrated training in the socialist countries. The advocated construction of a national sports training center in Tsoying, located in southern Taiwan, to train top athletes for the Olympics is an example of the ROC's effort to prepare athletes for international competition.

The other sports training center, in Linko, Taipei County, was founded in 1989. This training center shares training facilities with the students of the National Linko Physical Education and Sports Institute. Athletes in 13 major Olympic sports events train at these two national sports training centers, averaging 5-6 hours/day for 300 days/year.

### Sports Training System

Sports training in the PRC is systemized into primary, middle, and high-levels. Sports teams from schools, factories, villages, enterprises, and government agencies participate at the primary level. These teams train during the participants' spare time and hold regular competitive events. The primary and middle school sports

teams, in particular, constitute the base from which outstanding athletes are drawn.

Middle-level training includes athletes from major amateur sport schools, secondary sport schools, and physical culture and sport schools. Students live at the schools and receive a half-day of study and a half-day of training each day. This system does not affect regular academic careers, but it does enable students to undergo several years of systematic training with adequate facilities and instruction. By 1988, there were 254 amateur sport schools, enrolling 32,425 students and 3,069 full-time coaches. In the secondary sport schools, students experience the same curriculum as students at ordinary secondary schools except that instruction is more advanced for spare-time sports training. By 1988, the country had 87 secondary sport schools, enrolling 10,264 students and 950 full-time coaches. The physical culture and sport schools are four-year vocational secondary schools which cultivate the future athletes of the PRC. Those graduating students who are not sent to the teams of a province, an autonomous region, or a municipality generally become physical culture teachers at primary or secondary schools. By 1988, the country had 27 physical culture and sport schools, enrolling 5,710 students and nearly 1,000 full-time coaches.

About one-quarter of the students who pass through middle-level training continue to the next stage, high-level training. High-level training includes sport teams organized by and representing provinces, autonomous regions, and municipalities, sport teams organized within the army and occupational trades, physical culture

institutes, and institutions of higher learning. The number of athletes engaged in systematic high-level training throughout the country is less than 20,000 (Wu, 1990). This three-level training system has proved successful in fostering outstanding athletes and increasing the technical skills within sports.

Sports training systems in the ROC are varied among different sports associations. Basically, school athletic teams are the basis for primary-level training. In some sports events such as track and field, middle-level training exists in cooperation with county or regional sports governing bodies. For high-level training, athletes are gathered at the sports training center, receive top coaching instruction and general education, and decent housing and material support. All expenses are covered by the government at this level. The greatest problem with this training system is the lack of sports population at the foundation level, from which only a few high-level athletes originate in most sports events.

### Athletic Skill Classification Systems

In the PRC, the State Physical Education and Sports Commission has initiated a system designed to encourage athletes to improve their skills. Athletes are categorized within six skill levels: international master of sports, master of sports, and sportsman first class, second class, third class, and junior class. An athlete qualified in any of the six classes is given a certificate and a badge, and is entitled to participate in contests within that class. The technical standards for the various classes are established according to the technical levels and prescribed

conditions for all PRC athletes and in reference to standards of international competition. An international master of sports usually competes at international standards. According to statistics from 1985, athletes who qualified in these skill classifications numbered more than 67,000, among which 59 men and 54 women were international masters of sports and 550 men and 302 women were master of sports.

In the ROC, to date no official skill classification system for athletes has been developed. However, there are three unofficial levels of athletic classification which have been popular among sports workers and the sports media. International athletes includes those who represent the ROC at international sports competitions; the title of national athlete is bestowed upon those who are selected for national teams, while athletes who represent their county or region and participate in Taiwan competitions earn the title of provincial athlete.

### Athletes and Coaches

An old Chinese proverb states, "jade is not of much use before it is carved." Likewise, good athletes do not grow without expert coaches who can identify them and then nurture them into world champions. In the PRC, coaches are derived from three sources: former athletes, graduates of sports colleges, and amateur sports participants. Currently, there are more than 26,000 professional coaches in the PRC, each placed in one of three classes: head coach, coach, and assistant coach. These are the coaches for national teams, provincial teams, and spare-time sports schools. Since the

founding of the PRC, sports governing bodies have attached great importance to fostering coaches and improving their competence. In 1981, the State Physical Education and Sports Commission authorized sports colleges in Beijing, Shanghai, and Tianjin to establish training courses for coaches. A university or college education degree is required for a top sports team coach. Academic record along with seniority and work achievement, is one of the important standards for testing, job assignments, and promotion.

The people of the PRC love and praise their athletes and coaches and respect all who make athletic contributions to the country. The state has also conferred "Honor Medals" on world champions and world record breakers and First, Second, and Third Class Sports Medals on national champions and national record breakers. When athletes reach the end of their competitive careers, they often become either coaches or officials in their sports. Others engage in sports science research or write books on sports.

"Coaching" in the ROC is still a part-time profession, with the exception of a small number of professional baseball coaches. Most coaches teach physical education classes in addition to their part-time responsibilities as team coaches. The number of certified national coaches is approximately 1,200 for 24 Olympic sports events. Certified coaches are required to attend the national coaches clinics and pass an examination administered by the ROC Amateur Sports Federation. Coaches for the national team are selected from among those who receive the national coaches' certificate.

Most of athletes in the ROC are from colleges, universities, and secondary schools. They are selected to train at one of the two national sports training centers, based on their sports achievements and potential as determined by each national sports association. They are then housed and supported at the sport training centers with all expense covered by the government. When these athletes win medals in international competitions, the awards and prize monies are given to the athletes and their coaches. Elite athletes who win medals in international competitions are often rewarded by government employment upon the completion of their athletic careers. Most athletes become physical educators or coaches while a small percentage receive jobs as sports management personnel, or are involved in sporting goods manufacturing. Baseball and golf are the only two professional sports which presently exist in Taiwan.

According to data provided by the interview population, PRC Olympic athletes and Olympic coaches received more respect and public acceptance than their colleagues in the ROC (Tables 4.11 and 4.12).



## CHAPTER VI

## SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

## Summary

The purpose of this study was to compare and analyze differences in the factors of success between athletes from Taiwan, ROC, and athletes from the PRC during the 1984 and 1988 Olympic Games. The development of sports organizations and administration, practices of scientific training, and the extent and application of sports resources were the three selected factors of interest. The review of literature focused on the history of Olympic participation by the ROC and the PRC, the general backgrounds of the two countries, sports and physical education conducted in the ROC and the PRC, standard measurements of success for Olympic events, and comparative research in sports achievement, as well as selected factors which influence athletic success in Olympic events.

To measure Olympic success, four methods were employed in this study: (1) The traditional medal count where each medal is awarded an equal value; (2) A weighted medal scale where points are distributed in the values 3-2-1 for gold, silver, and bronze medals; (3) Population size to points ratio; and (4) Relation of total points received to the number of sports competed in.

A written questionnaire, personal interviews, and direct observations were the source of research data. Descriptive analyses were conducted for the questionnaire and personal interview data.

Data obtained from observations, published resources, official documents, and from personal experience and knowledge of the researcher were treated as supplemental data for the description and testing of the research questions for this study.

Fifty individuals served as the subjects for personal interviews, 25 from each the ROC and the PRC, including three sports governing body administrators, six sports scholars, five sports science researchers, six national team coaches, and five national team athletes.

The following research questions were examined:

Research question 1      Is there a difference of sports success between Taiwan, ROC, and the PRC during the 1984 and 1988 Olympic Games?

S-1      Is there a difference of sports success between Taiwan, Republic of China, and the People's Republic of China during the 1984 Olympic Games?

S-1a      Is there a difference of sports success between the male athletes and female athletes from Taiwan, Republic of China during the 1984 Olympic Games?

S-1b      Is there a difference of sports success between the male athletes and female athletes from the People's Republic of China during the 1984 Olympic Games?

- S-1c Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1984 Olympic Games?
- S-1d Is there a difference of sports success between the female athletes from Taiwan, Republic of China , and People's Republic of China during the 1984 Olympic Games?
- S-2 Is there a difference of sports success between Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games?
- S-2a Is there a difference of sports success between the male and female athletes from Taiwan, Republic of China during the 1988 Olympic Games?
- S-2b Is there a difference of sports success between the male and female athletes from People's Republic of China during the 1988 Olympic Games?
- S-2c Is there a difference of sports success between the male athletes from Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games?
- S-2d Is there a difference of sports success between the female athletes from Taiwan, Republic of China, and People's Republic of China during the 1988 Olympic Games?

Research question 2 Is there a difference in the development of sports organizations and administration between Taiwan, ROC, and the PRC?

Research question 3 Is there a difference in the scientific sports training practices between Taiwan, ROC, and the PRC?

Research question 4 Is there a difference in the extent and application of sports resources between Taiwan, ROC, and the PRC?

Ten research sub questions within research question 1, examining differences in Olympic success by gender within nations and between nations for the ROC and PRC were also considered.

### Conclusions

From the results of this investigation, the following may be concluded:

Factors which contribute to the sport success of PRC athletes at the 1984 and 1988 Olympic Games include:

- a. The PRC government views "sport" seriously, virtually as a business. From government policy, "sport" is a tool to demonstrate the strength of the PRC to the outside world. Winning medals at Olympic events has become a priority

goal, given the international prestige of the Olympic Games.

- b. The PRC draws an advantage from its socialist system. With a highly centralized system of administration, sports careers enjoy substantial prestige in the PRC. Youth in the PRC desire fame and fortune, and success in sport can earn them both under the PRC system.
- c. The PRC draws an advantage from its rich athletic resources. The PRC has a population of over one billion, or about one-fourth of the world population, providing a wide variety of talent for all types of sports events. To cultivate this talent, the PRC government agencies at all levels attach great importance to physical culture and to mass sports activities.
- d. The PRC has successfully established a systematic training system. Since 1960, sport in the PRC has implemented a three-level training system. This system guarantees the production of larger number of outstanding athletes, coaches, and sport management personnel, and is an important element in the promotion of physical culture and elevating the level of sport competitions in the PRC.
- e. The Chinese of the PRC respect successful athletes and coaches. PRC athletes and coaches have an unprecedented chance to succeed and to gain material rewards for that success. According to a poll completed in Beijing, athletes and their coaches are highly revered by the public, second only to actors.

- f. The PRC emphasizes competition and winning. Competition, the most conspicuous characteristic of sport, is considered the best means of discovering and nurturing elite athletes. The slogan "Friendship first, Competition second" no longer exists in the PRC. The competition comes first, winning is very important to the athletes, especially winning in the international competitions such as the Olympic games.

According to information from a PRC sport official, one crisis has arisen from the PRC's "one child" family plan which may impact the development of elite programs in the PRC. The Chinese of the PRC are provided strong incentives to produce only one child. The government's "single-child syndrome", has resulted in increasing numbers of parents refusing to send their children to spare-time schools, a situation which has curtailed the PRC Olympic project.

Factors which underlie the lack of success at the 1984 and 1988 Olympic Games for Taiwan, ROC include:

- a. A lack of unanimity regarding purposes and priorities. The government has not decided between the policy of sport for all and sport for an elite. Thus, sport governing-bodies have not had clear directives to follow.
- b. A more comprehensive and systematic sports training system is required in Taiwan, ROC. Many talented athletes and their parents are hesitant when they consider sports as a career. The existing sport training system fails to provide athletes with a sense of security.
- c. Coaches in the ROC should be professionalized. Coaching jobs are part-time professions, with the exception of a

small number of baseball coaches. In the highly competitive world sports arena, all advanced sports countries have employed full-time professional coaches for many years. To catch up to the pace of the advanced sports world, a professional coaching system to raise coaching qualification level should be established.

- d. The national sport budget should be increased. Athletic programs are the resources of the elite athletes. Due to tight sports budgets, schools cannot afford to acquire sports facilities or purchase sports equipment for athletic training at this level. This budgetary problem has affected high-level sports training, and was a critical factor in the lack of success at the 1984 and 1988 Olympic Games.
- e. It would be useful to expand the Physical Education Department of the Ministry of Education into the Ministry of Physical Education; 13 national administrative personnel are an insufficient number to administer national sports affairs.

#### Recommendations for Further Study

The following recommendations for future research are submitted:

1. With an increasing number of international sports competitions occurring between the ROC and the PRC, comparative studies of sports success between the two

nations should be expanded to include events such as the winter Olympics;

2. To obtain a more comprehensive comparative study of Chinese sports success, a similar study should be designed to include the Chinese populations in Hong Kong and Singapore;
3. A comparative study of the relationship between sports for all and sports for the elite athlete should be conducted between socialist and capitalist countries;
4. Since the Gross National Product (GNP) of the PRC was not available for this study, it is recommended that Olympic success, based upon the ratio of total points awarded to the national GNP of the PRC and the ROC should be conducted.
5. The political situation which presently exists in the PRC contributed to the difficulty in obtaining reliable and valid comparative study data. It is recommended that this study should be replicated when the political situation in the PRC is more stable.
6. To obtain more detailed data, the principle of random sampling of personnel to be interviewed should be applied. In addition, the interview population should include an equal number of participants by sports categories.



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## APPENDICES

APPENDIX A  
WRITTEN QUESTIONNAIRE

## Cover Letter to the Sports-Governing Bodies

Dear Sir,

My name is Ming-Chang Hsu, and I am a doctoral student at Oregon State University. I am conducting a comparative analysis research study of the Olympic success between Taiwan, Republic of China, and the People's Republic of China. The development of sports organizations and administration, the scientific training practices, and the existence of sports resources are the contributing factors of Olympic success I am interested in.

Your organization is one of the institutions in charge of your country's Olympic affairs, no doubt it is one of the most influential factors of your country's Olympic success. I am requesting you to respond to questions related to your country's Olympic success. Please answer each question carefully, and return the survey instrument at your earlier convenience.

Your cooperation is the key point to the success of this comparative study. I appreciate your kind assistance.

Sincerely Yours,

Ming-Chang Hsu



## OLYMPIC SUCCESS SURVEY

Sports Organization and Administration

1. In what year was your organization established?

\_\_\_\_\_ YEAR

2. Number of full-time employees in your organization

\_\_\_\_\_ EMPLOYEES

3. Please indicate the number of employees at each of the following educational levels

<u>Educational Level</u>	<u>Number of People</u>
a. Doctoral degree	_____
b. Master degree	_____
c. College or university graduate	_____
d. High school graduate	_____
e. Other(Please specify _____)	_____

4. How many coaches available for the following level teams?

	<u>Number of coaches</u>
a. Coaches for the national teams	_____
b. Coaches for the provincial teams	_____
c. Total	_____

5. Please give the number of coaches you employed during both the 1984 and 1988 Olympic Games sport events

<u>Event</u>	<u>Number of coaches</u>	
	<u>1984</u>	<u>1988</u>
a. Archery	_____	_____
b. Baseball	_____	_____
c. Basketball	_____	_____
d. Boxing	_____	_____
e. Canoeing	_____	_____
f. Cycling	_____	_____
g. Diving	_____	_____
h. Fencing	_____	_____
i. Gymnastics	_____	_____
j. Handball	_____	_____
k. Judo	_____	_____
l. Modern Pentathlon	_____	_____
m. Rowing	_____	_____
n. Shooting	_____	_____
o. Soccer	_____	_____
p. Table-tennis	_____	_____
q. Taekwondo	_____	_____
r. Tennis	_____	_____
s. Track and Field	_____	_____
t. Volleyball	_____	_____
u. Weightlifting	_____	_____
v. Wrestling	_____	_____
w. Yachting	_____	_____

6. Please indicate the educational background of coaches for 1984 and 1988 Olympic games

	1984	1988
a. Doctoral degree	_____	_____
b. Master degree and above	_____	_____
c. College or university graduate	_____	_____
d. High school graduate	_____	_____
e. Other (Please specify_____)	_____	_____

7. Educational background of coaches for national team  
Number of coaches

a. Doctoral degree	_____
b. Master degree and above	_____
c. College or university graduate	_____
d. High school graduate	_____
e. Other (Please specify_____)	_____

8. Please circle one of the following organization types for your institute

1. Centralization: Centralization means an administrative organization is centralized to the extent that decision are made at relatively high levels in the organization.
2. Decentralization: Decentralized to the extent that discretion and authority to make important decisions are delegated by top management to lower levels of executive authority.

9. Please circle one of the following leadership styles for your organization

1. Democratic: The democratic philosophy implies a leader who submits important matters to group discussion and involves group members in decision making.
2. Authoritarian: The authoritarian philosophy usually implies a one-person leadership with decision making imposed by the leader on group members.
3. Laissez-faire: The laissez-faire philosophy implies a leader who give little guidance and frequently leaves decision making to group members.
4. Other \_\_\_\_\_

10. Please draw or attach a copy of the organization chart for your organization.

Scientific Training Factor

11. Number of National Sports Research Institute

\_\_\_\_\_ SPORTS RESEARCH INSTITUTES

12. Number of research personnel

\_\_\_\_\_ RESEARCH PERSONNEL

13. Please indicate number of researchers in each blank for their educational background and specialized fields

FIELD	DOCTOR	MASTER	BACHELOR
a. Exercise Physiology	_____	_____	_____
b. Sports Biomechanics	_____	_____	_____
c. Sports Psychology	_____	_____	_____
d. Sports Medicine	_____	_____	_____
e. Sports Training	_____	_____	_____

14. Total number of sport-related research paper

a. RESEARCH PAPERS(1980-1984)\_\_\_\_\_

b. RESEARCH PAPERS(1985-1988)\_\_\_\_\_

15. Funding for sports related research

DOLLAR

a. 1980-1984 \_\_\_\_\_

b. 1985-1988 \_\_\_\_\_

16. Intensity and duration of training for 1984 and 1988 Olympics athletes

	1984	1988
a. Training Load(Hours/Day)	_____	_____
b. Training Duration(Days/Year)	_____	_____

17. Does an imported coach make any difference to your country's athletic success?(Please circle one number)

1. Yes

2. No

18. Please indicate number of imported coaches, their sports and nationality

Sports Event	Number	Nationality
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

19. Types of research system (Please circle one number)

1. Concentrated: In the concentrated system, scientific research is carried out mainly by the special organizations of the state under the guidance of the government, with colleges of physical education, athlete training centers, and other scientific units playing a supporting role.
2. Decentralized: In the decentralized system, no nationwide research organization of sports science is established, nor is any such unified organization set up by the government, scientific research is carried out separately by sports associations, department of physical education in universities and colleges medical institutions, and other research units in all parts of the country.
3. Combined: In the combined system, the government cooperate with mass organization.

### Sports Resources

20. Number of national sports training centers

\_\_\_\_\_ NUMBER OF CENTERS

## 21. National Spots Training Center Facilities

Type of Facility	Number of facilities
a. Archery fields	_____
b. Baseball fields	_____
c. Basketball gyms	_____
d. Boxing gyms	_____
e. Canoeing ponds	_____
f. Cycling arena	_____
g. Diving pools	_____
h. Fencing arenas	_____
i. Gymnastic gyms	_____
j. Handball gyms	_____
k. Judo gyms	_____
l. Modern pentathlon	_____
m. Rowing ponds	_____
n. Shooting ranges	_____
o. Soccer fields	_____
p. Table-tennis gyms	_____
q. Tennis courts	_____
r. Track and field stadia	_____
s. Volleyball gyms	_____
t. Weightlifting gyms	_____
u. Wrestling gyms	_____
v. Yachting lakes	_____
w. Other(Specify _____)	_____

22. List total number of facilities which would qualify for both international and national competition in your country

	International	National
a. Archery fields	_____	_____
b. Baseball stadium	_____	_____
c. Cycling arena	_____	_____
d. Diving pools	_____	_____
e. Modern pentathlon arena	_____	_____
f. Shooting ranges	_____	_____
g. Soccer stadium	_____	_____
i. Tennis stadium	_____	_____
j. Track and field stadium	_____	_____
k. Multi-purposes gym (basketball, volleyball, handball, fencing, etc.)	_____	_____



**WRITTEN QUESTIONNAIRE  
CHINESE VERSION**

敬啟者：

我是許明彰，美國奧瑞崗州立大學運動研究學博士候選人；目前我正從事一項比較海峽兩岸中國人奧運成就的專題研究，運動組織和行政體系的發展，運動訓練科學化的實施，以及現有的運動資源是此研究主要鑽研重點。

您應任行政要職多年，對於體育運動建樹良多，相信您的高見必定能對此研究提供許多助益；請撥冗回答附上之問卷調查，並請在您完成此問卷後放入附上之信封儘快寄回。

感謝您的時間和合作。

敬祝

安好

許明彰敬筆

1. 運動組織和行政體系的發展

a. 貴單位成立年份

19\_\_\_\_年

b. 貴單位專職員工人數

\_\_\_\_\_人

c. 專職員工學歷概況

a. 碩士以上.....\_\_\_\_\_人

b. 大專畢業.....\_\_\_\_\_人

c. 高中(職)畢業....\_\_\_\_\_人

d. 其他.....\_\_\_\_\_人

d. 在職教練人數

專職

兼職

國家級 \_\_\_\_\_ 人      \_\_\_\_\_ 人

省級      \_\_\_\_\_ 人      \_\_\_\_\_ 人

e. 1984 和 1988 奧運代表隊教練人數

1984

1988

射箭隊      \_\_\_\_\_

棒球隊      \_\_\_\_\_

籃球隊      \_\_\_\_\_

拳擊隊      \_\_\_\_\_

獨木舟隊      \_\_\_\_\_

自由車隊	_____	_____
跳水隊	_____	_____
西洋劍隊	_____	_____
體操隊	_____	_____
手球隊	_____	_____
柔道隊	_____	_____
現代五項隊	_____	_____
划船隊	_____	_____
射擊隊	_____	_____
足球隊	_____	_____
桌球隊	_____	_____
跆拳道	_____	_____
網球隊	_____	_____
田徑隊	_____	_____
排球隊	_____	_____
舉重隊	_____	_____
摔角隊	_____	_____
輕艇隊	_____	_____
游泳隊	_____	_____
馬術隊	_____	_____

1. 奧運代表教練教育程度

碩士以上 \_\_\_\_\_人

大專畢業 \_\_\_\_\_人

高中(職)畢業 \_\_\_\_\_人

其他 \_\_\_\_\_人

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**g. 貴單位行政體系**

1. 集權      2. 分權      3. 兩者混用

**h. 貴單位領導統御型態**

1. 民主方式   2. 獨裁式   3. 放任式   4. 其他

**i. 請描繪貴單位之組織架構圖**

2. 訓練科學化

a. 運動科學研究中心(所)數量.....所

b. 運動科學研究人員.....人

c. 科研人員教育程度和專研科目人數統計

	博士	碩士	學士
運動生理學	_____	_____	_____
運動生物力學	_____	_____	_____
運動心理學	_____	_____	_____
運動醫學	_____	_____	_____
運動訓練學	_____	_____	_____

d. 運動科學研究報告篇數

1980-1984年.....篇

1985-1988年.....篇

e. 運動科學研究經費

1980-1984.....美元

1985-1988.....美元

f. 運動員訓練強度和持續時間

訓練強度:每日\_\_\_\_\_時

持續時間:每年\_\_\_\_\_天

g. 外籍教在奧運成就所扮演的角色

(1) 肯定      (2) 否定      (3) 不足道

i. 外籍教練人數、國籍、和專長項目

運動專長	人數	國籍
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. 現有運動設施資源

a. 國家選手訓練中心數量

\_\_\_\_\_所

b. 國家選手訓練中心設施和數量

設施名稱	數量
射箭場	_____
棒球場	_____
籃球館	_____
拳擊館	_____
自由車廠	_____
擊劍室	_____
體操館	_____
手球場	_____
柔道館	_____
現代五項訓練場	_____
射擊場	_____
足球場	_____
桌球館	_____
網球場	_____
田徑場	_____
排球館	_____
舉重室	_____
摔跤館	_____



游泳池 \_\_\_\_\_  
 跳水池 \_\_\_\_\_  
 划船輕艇訓練池 \_\_\_\_\_  
 跆拳道館 \_\_\_\_\_  
 其他( ) \_\_\_\_\_

c. 運動設施夠格舉辦全國、國際運動競賽

設施名稱	國際水平	國家水平
射箭場	_____	_____
棒球場	_____	_____
自由車場	_____	_____
游泳池	_____	_____
跳水池	_____	_____
現代五項場	_____	_____
射擊場	_____	_____
足球場	_____	_____
網球場	_____	_____
田徑場	_____	_____
划船場	_____	_____
多項用途體育館	_____	_____

個人資料

- 1.姓名：
- 2.服務單位：
- 3.職稱：
- 4.服務年限：

個人訪問題目

- 1.您對貴國的奧運成就滿意度如何？(A,B,C,D,E)
  - a.很滿意
  - b.滿意
  - c.不滿意
  - d.很不滿意
  
- 2.請選擇一和貴國奧運成就有關之主因(A,B,C,D,E)
  - a.運動組織和行政工作的推展
  - b.運動訓練科學化
  - c.現有的運動資源和場地設施
  - d.其他(請說明\_\_\_\_\_)
  
- 3.您認為貴國政府和貴國的奧運表現相關百分比如何(A,B,C,D,E)
  - a.100%
  - b.80%
  - c.50%
  - d.20%
  - e.0%
  
- 4.您認為貴國的奧運重點項目應該是那些項目(A,B,C,D,E)

5.請從下列選擇一符合競技運動在貴國發展的情形  
(A,B,C,D)

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- a.很受歡迎
- b.受歡迎
- c.不受歡迎

6.請列舉貴國最受歡迎的十大運動項目(以運動人口多少為基準)(A,B,D)

7.運動員在貴國的社會地位如何(A,B,C,D,E)

- a.很受尊重
- b.受尊重
- c.不受尊重

8.貴國教練員的社會地位如何(A,B,C,D,E)

- a.很受尊重
- b.受尊重
- c.不受尊重

9.貴單位行政人員的主要來源百分比(A,C)

- a.政府委派(\_\_\_\_%)
- b.公開甄選(\_\_\_\_%)
- c.其他(\_\_\_\_%)

10.請依據下列類別評量貴國國家運動員生涯流程比率 (A,B,C)

- a.運動員→教練員(\_\_\_\_%)
- b.運動員→體育教師或教授(\_\_\_\_%)
- c.運動員→體育行政人員(\_\_\_\_%)
- d.其他行業(\_\_\_\_%)

11.請敘述貴國優秀運動員等級和培訓計劃(A)

12.請選擇下列能代表貴國運動科學研究和奧運選手訓練的關係(A,B,C,D)

- a.很重要
- b.重要
- c.不重要

13.貴國運動科研人員主要來源百分比(A,C)

- a.政府分發(\_\_\_\_%)
- b.公開招考(\_\_\_\_%)
- c.其他方式(\_\_\_\_%)

14.貴國國家級教練員必修的學術課程有那些(A,B,C,D)

15.貴國競賽運動年度總開銷的主要財源比率(A,B)

- a.政府編列預算(\_\_\_\_%)
- b.私人、民間企業捐款(\_\_\_\_%)

16.請大略評估貴國現有的場地設備等級比率(A,B)

- a.國際級(\_\_\_\_%)
- b.國家級(\_\_\_\_%)

17.請依據下列等級列舉您認為在國際上已被認可之貴國運動器材產品(A,B,C)

- a.國際級
- b.亞洲級

18.請解說貴國發掘有潛力運動員的方法(A,B,C)

## APPENDIX B

Lists of Items in Preparation for Personal Interview  
For Groups A, B, C, D, E

Personal Information

1. Organization
2. Status in your organization
3. How many years have you been involved in the Olympic Movement?
4. How did you become associated with your country's Olympic program?

The Olympic Success Information

5. To what degree are you satisfied with your country's current Olympic success?
  - a. Satisfaction
  - b. Dissatisfaction
  
6. Among the following factors, please rate 1, 2, 3 as the primary reason for your country's Olympic success
 

	RATE
a. Development of sports organization and administration.....	_____
b. Scientific training practice.....	_____
c. Extent and application of sports resources.....	_____
  
7. To what degree do you attribute governmental involvement to the Olympic success or lack of success?
  - a. 100%
  - b. 80%
  - c. 50%
  - d. 20%
  
8. In your opinion, which sports events should be included in your country's Olympic major key sports program.

## APPENDIX C

Lists of Items in Preparation for Personal Interview  
For Group A, B, C, D, E

Personal Information

1. Organization
2. Status in your organization
3. How many years have you been involved in sports organization and administration?
4. How did you become associated with sports organization?

The Development of Sports Organization and Administration

5. What's the role of competitive sports in your country based on the following criteria, and give the rationale
  - a. Very popular
  - b. Popular
6. List the top ten most popular sports in your country based on the sport population
 

NAME OF SPORT

#1.....\_\_\_\_\_

#2.....\_\_\_\_\_

#3.....\_\_\_\_\_

#4.....\_\_\_\_\_

#5.....\_\_\_\_\_

#6.....\_\_\_\_\_

#7.....\_\_\_\_\_

#8.....\_\_\_\_\_

#9.....\_\_\_\_\_

#10.....\_\_\_\_\_
7. What's the athletes' social position in your country, and give the rationale
  - a. Respect
  - b. Low respect

8. What's the coaches' social position in your country, and give the rationale
  - a. Respect
  - b. Low respect
  
9. What's the percentage source of your personnel based on the following categories
  - a. Government assignment(\_\_\_\_%)
  - b. Self application(\_\_\_\_%)
  
10. Indicate the percentage of your national athletes' career pattern based on the following categories between 1980-1988
  - a. Athlete ----- Coach(\_\_\_\_%)
  - b. Athlete ----- Physical educator or professor(\_\_\_\_%)
  - c. Athlete ----- Sports administrator(\_\_\_\_%)
  - d. Athlete ----- Other professions(\_\_\_\_%)
  
11. Explain the skill classification systems for your athletes.

## APPENDIX D

Lists of Items in Preparation for Personal Interview  
For Group A, B, C, D, EPersonal Information

1. Organization
2. Status in your organization
3. How many years have you been involved in the scientific training program?
4. How did you get involve with this program?

The Scientific Training Information

5. Describe the relationship of sports science research with your country 's Olympic success, and explain it
  - a. Very important
  - b. Important
  - c. Not important
6. Explain the source of your sports science researcher
  - a. Government assignment(\_\_\_\_%)
  - b. Self Application(\_\_\_\_%)
7. Explain the required curricula of your national coaches' certificate



## APPENDIX E

Lists of Items in Preparation for Personal Interview  
For Group A, B, C, D, E

Personal Information

1. Organization
2. Status in your organization
3. How long have you been involved in this program?

Sports resources information

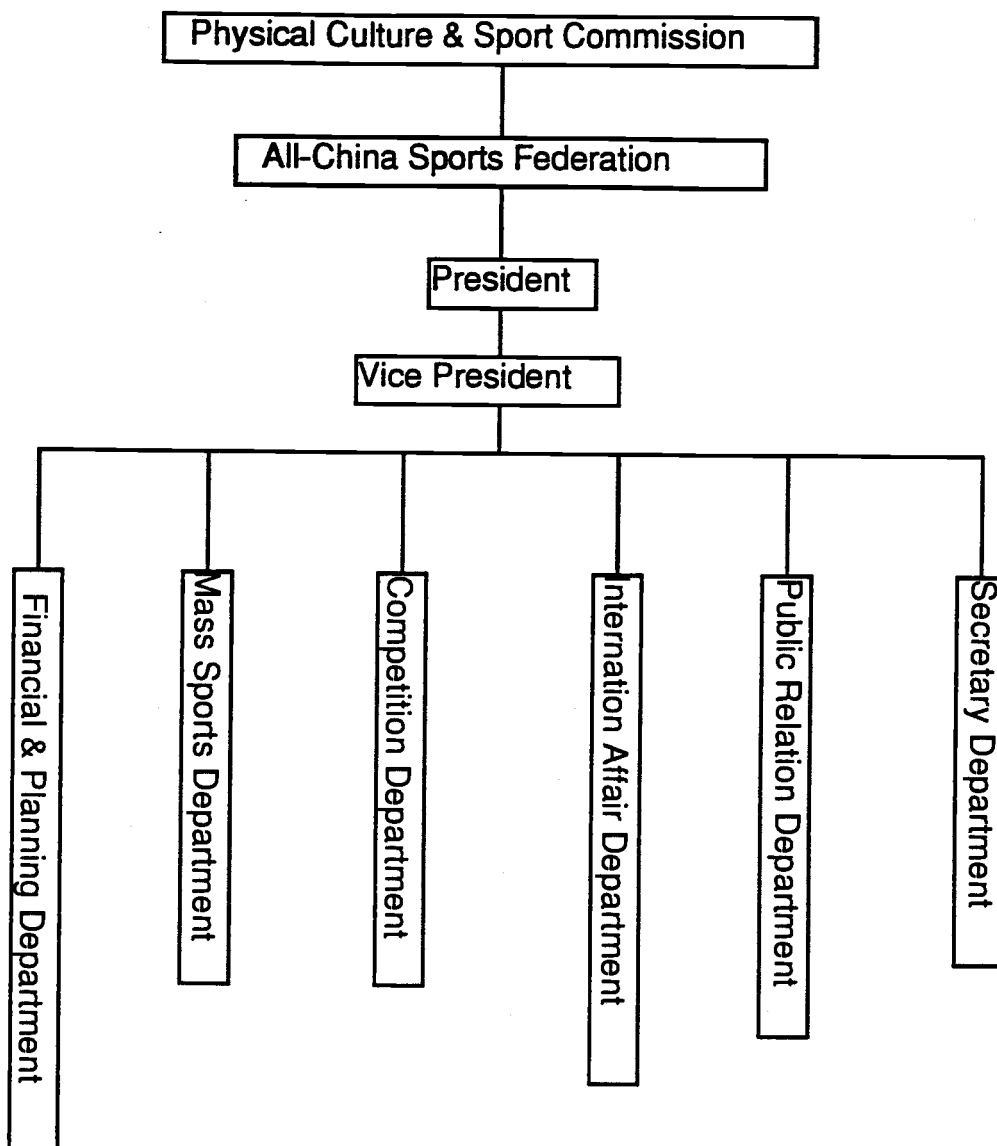
4. Indicate the following percentage of your national sports funding sources
 

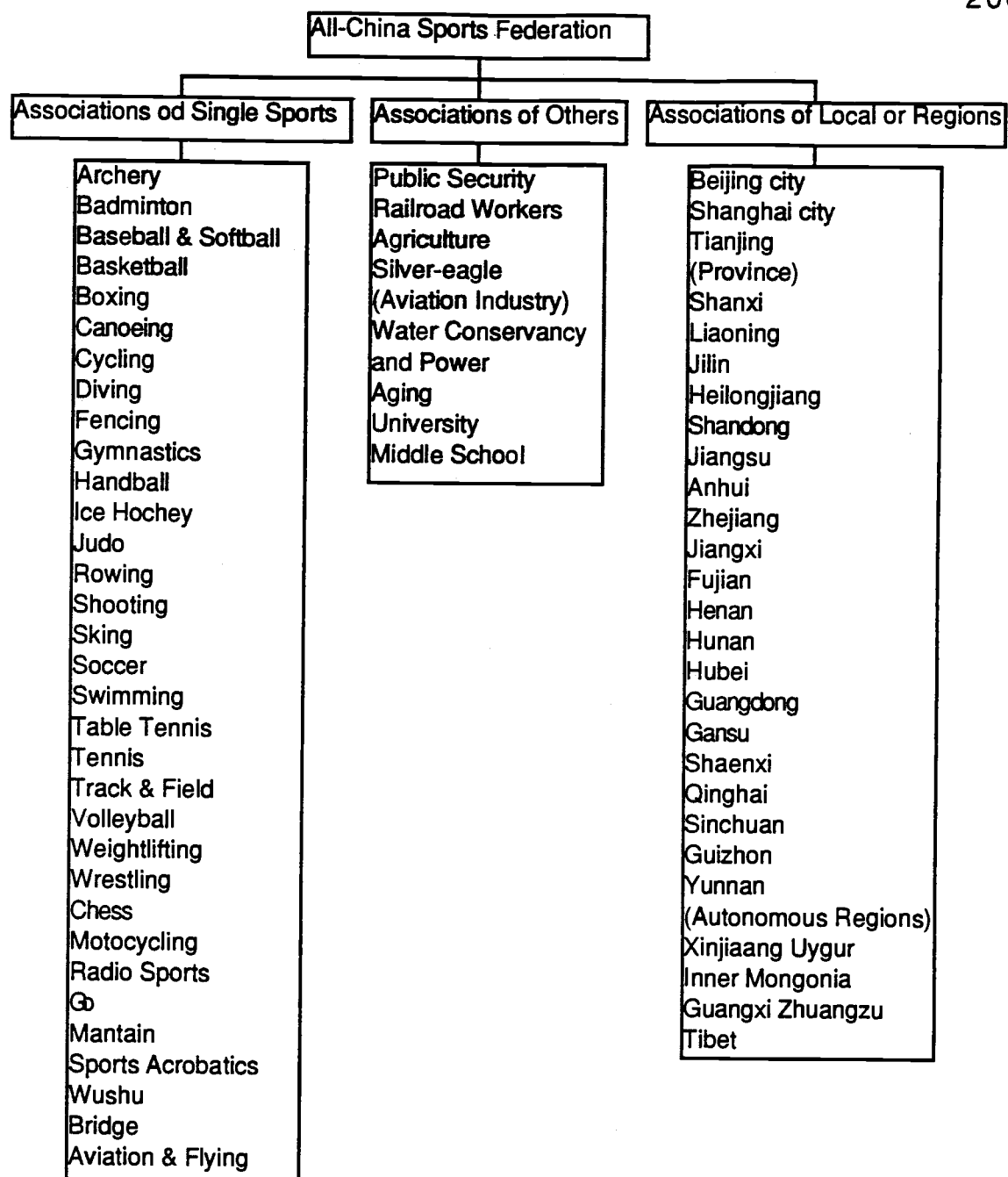
FUND SOURCES	PERCENTAGE
a. State budget.....	_____ %
b. Private corporation donation.....	_____ %
5. Please analyze and indicate the percentage of your total national sports facilities based on the following criteria
  - a. International level..... \_\_\_\_\_ %
  - b. National level..... \_\_\_\_\_ %
6. Please indicate any of your country's sports equipment products in the International level
7. Describe your talent athletes identification and development system.

APPENDIX F

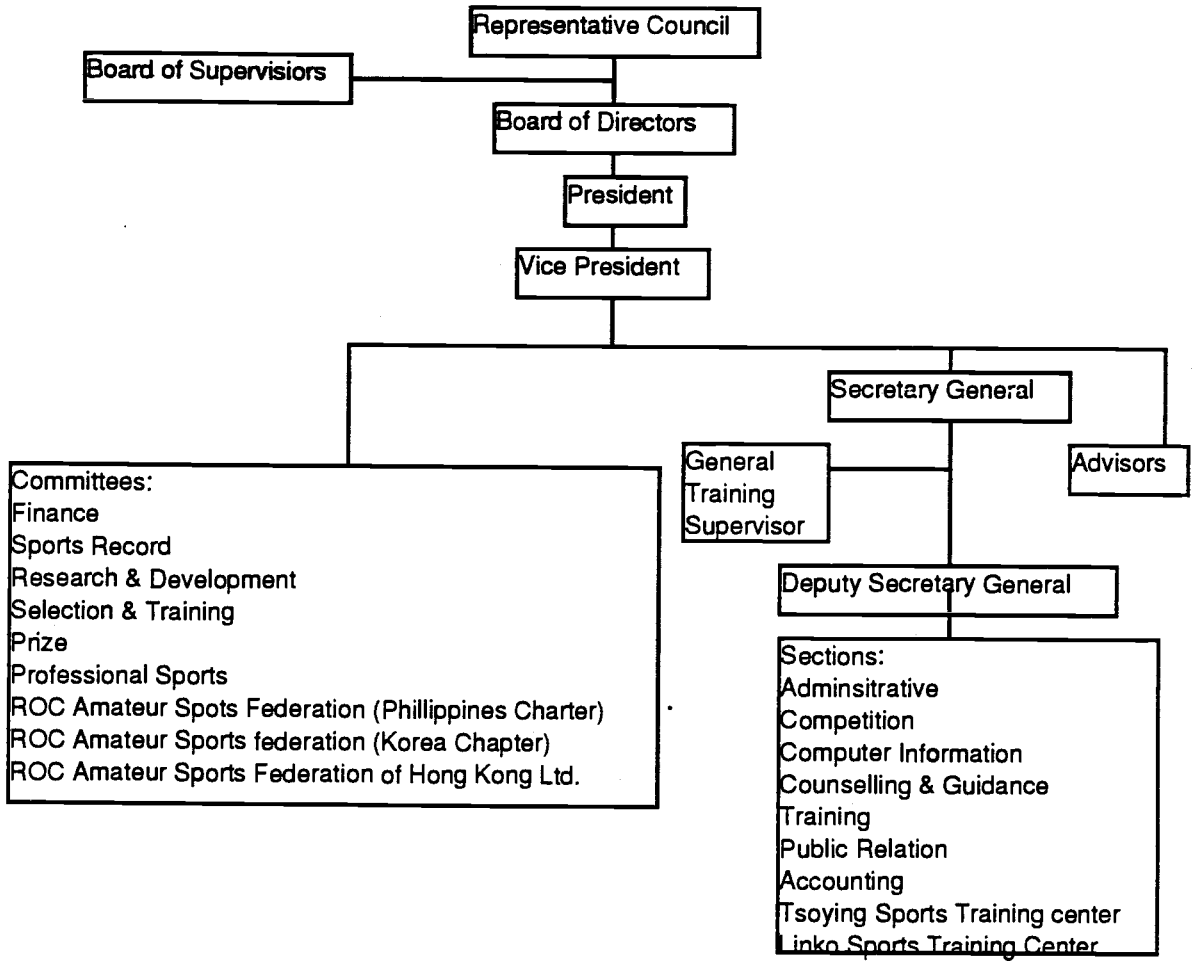
SPORTS ORGANIZATIONS CHART

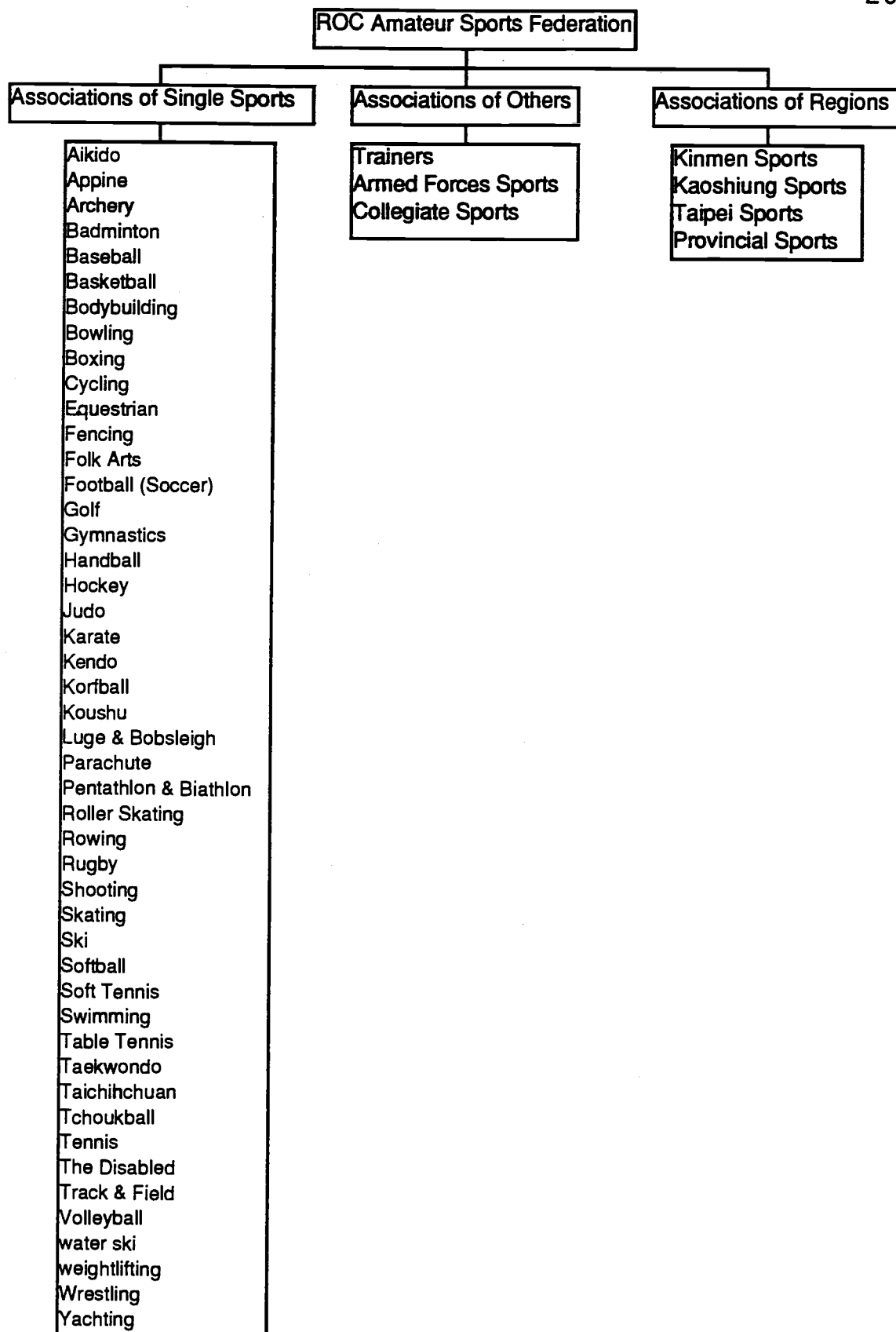
Organization Chart of All-China Sports Federation



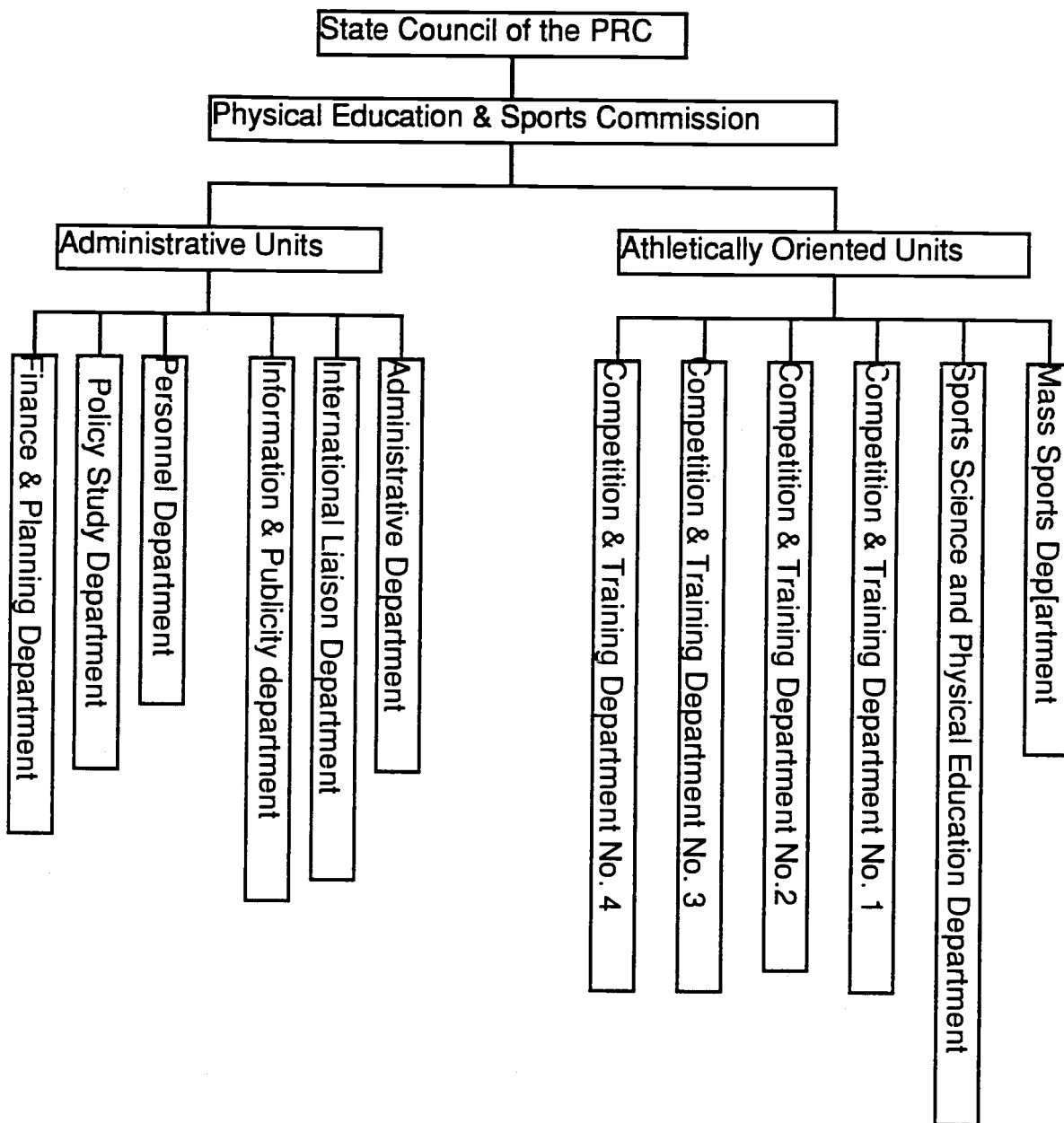


# Organization Chart of the Republic of China Amateur Sports Federation

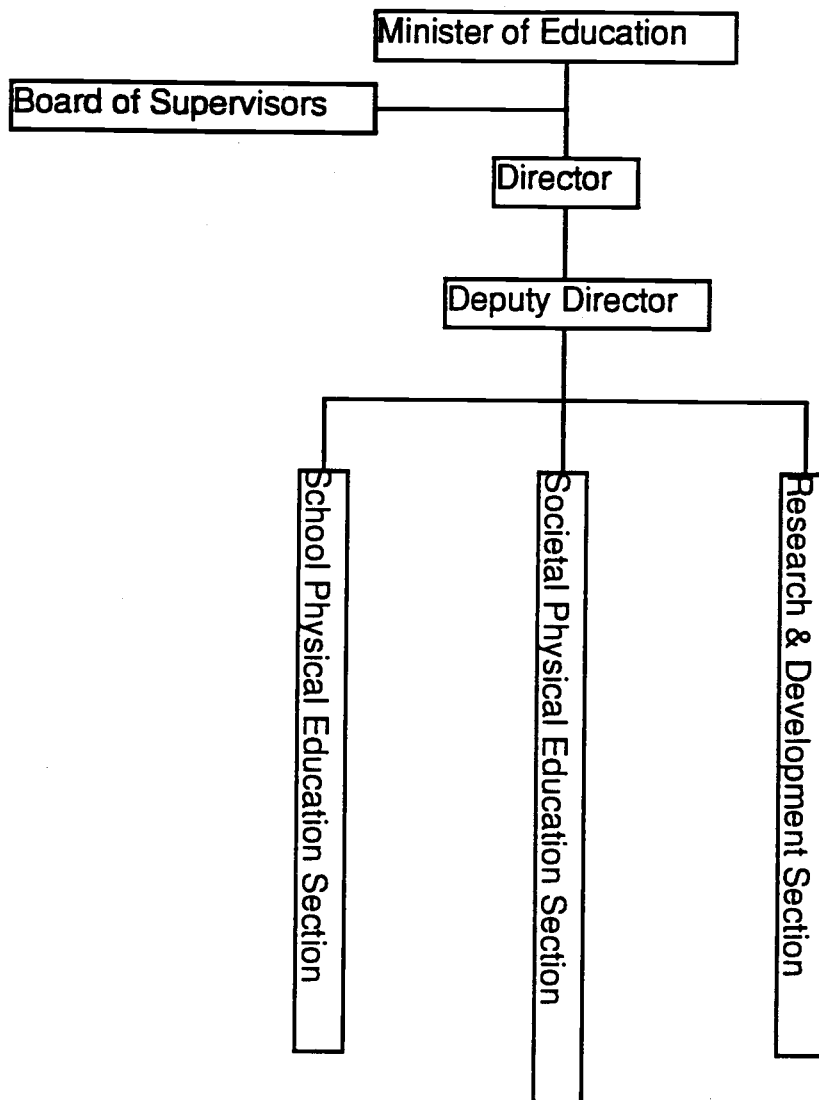




### Organization Chart of The Physical Education and Sports Commission

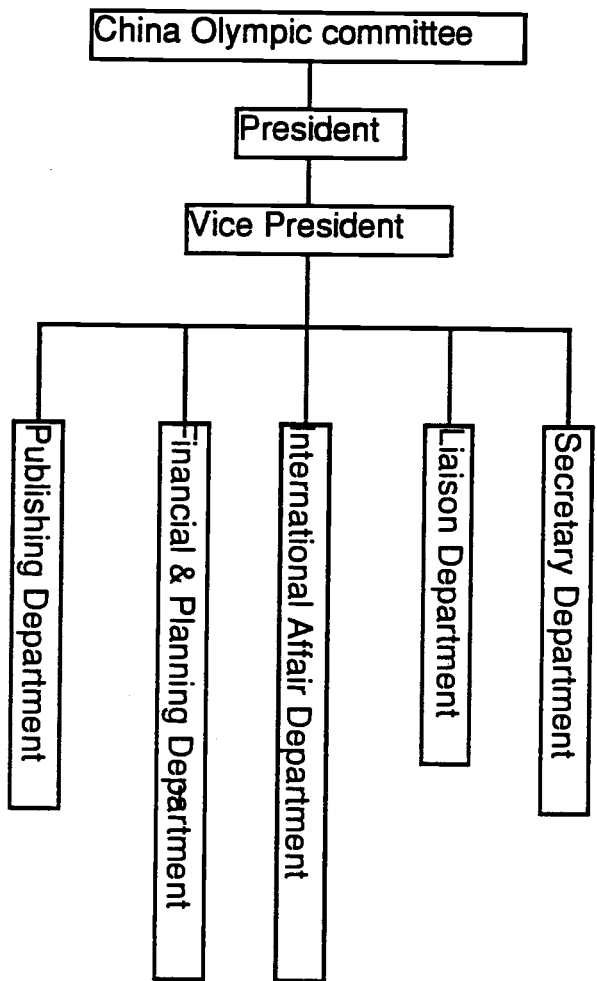


# Organization Chart of the Department of Physical Education at the Ministry of Education of ROC





Organization Chart of China Olympic Committee



Organization Chart of Chinese Taipei Olympic Committee

