

RELATIONSHIP BETWEEN SPORTS FACILITIES  
AND PARTICIPATION IN SPORTS IN  
SELECTED NIGERIAN UNIVERSITIES

by

OLAREWAJU ADEKUNLE ADESANYA  
B.Sc. (Education) Physical Education  
(Ife), M.Ed (Ibadan)

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## A B S T R A C T

The focus of this thesis was based on the examination of the relationship between sports facilities and sports participation in selected Nigerian Universities. In conducting this research, certain issues were raised. These included the adequacy or otherwise of the available facilities, the maintenance levels of these facilities and the participation levels in sports, by both the students and staff of the selected Universities.

The null hypothesis stated that there would be no significant relationship between the available sports facilities and sports participation in the selected Nigerian Universities. The main and sub-hypotheses were tested using the Spearman Rank-Order Correlation ( $r_s$ ), the chi-square ( $\chi^2$ ), and percentages in order to accept or reject the hypotheses. The analyses were based on well presented data on the thirteen universally played sports in Nigerian Universities Games Association (NUGA).

The results showed high and positive correlation of the variables. All the sub-hypotheses were

accepted. The findings showed that sports facilities in these universities were inadequate and substandard while the maintenance levels of the facilities were unsatisfactory. The participation levels in sports were also found to be low.

Based on these findings, it was concluded that there was no significant relationship between the available sports facilities and sports participation in the selected Nigerian Universities. It was therefore recommended that Nigerian Universities should provide adequate and standard sports facilities in their campuses. The maintenance of these facilities should also be a priority to every University. These were considered as vital factors to effective participation in University sports.

D E D I C A T I O N

This work is dedicated to the following members of my family:

Alhaji Abdul Adesanya Idris

Alhaja Animot Adesanya

Mrs. O. Abiodun Adesanya

Mrs. I. Oluwatoyin Adesanya

Miss Atinuke Adenike Adesanya

Master Olumuyiwa Adesanya

Miss Aderonke Adesanya

Master Adetola Adesanya

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January, 1989

O. Ade Adesanya

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CERTIFICATION

I certify that this work was carried out by Olarewaju Adekunle Adesanya in the Department of Physical and Health Education, University of Ibadan, Ibadan, Nigeria.



Handwritten signature of J. Ademola Adedeji in black ink, written over a horizontal line.

supervisor

---

J. Ademola Adedeji, B.Sc, M.A.  
(Western Michigan), Ph.D (The Ohio  
State), C.P.E., D.L.C., S.C.P.E.  
(Loughborough, Leic., England),  
Professor of physical Education,  
Department of physical and Health  
Education, University of Ibadan,  
Ibadan, Nigeria.

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## CHAPTER ONE

### I N T R O D U C T I O N

Administrators are currently faced with various problems some of which are centred around construction of facilities in schools and colleges. As a result of the changing emphasis on the philosophy of education, new developments in technology and the growing trends to provide facilities for educational institutions, education leaders face the problems of planning and providing for adequate areas and facilities that can cope with the population growth in these institutions.

One of the major and primary concerns of physical education and sports administrators therefore is the planning and construction of facilities for physical education, sports and recreation. The governing boards of institutions and the architects have a major role to play in this direction. This is important because of the emphasis on standards and specifications which are of great significance

to sports performance. It is no wonder therefore why Crawford (1963), Delamater (1963) and Peterson (1963) emphasised the need for standards and specifications in meeting specific sporting demands when planning for sports facilities in schools and colleges.

Planning educational facilities involves more than designing and constructing facility to accommodate a number of students. The process is a combination of a continuous series of closely related but separate events or actions, some of which are pre-requisites to the others. Unfortunately, according to Keller (1971), there is a wide variety of interpretations regarding either the identification of these events or the conceptualisation of a coherent theory of facility development.

Sports facilities are therefore necessary if teachers and coaches are to perform their duties and schedule their programmes effectively and successfully. School and college buildings have been constructed without consulting those in Physical

Education profession who are competent to provide the required information for functional facilities in physical education and sports. Such facilities which could be for indoor or outdoor purposes should be provided for the use of all participants in schools and colleges.

The indoor sports facilities will include such structures that could reasonably be constructed indoors. These facilities are concerned with indoor sports-grounds that are designed and equipped for a variety of physical education and sporting activities. Various examples as outlined by Penman (1977), Bucher (1983), The Athletic Institute and American Alliance for Health, Physical Education, Recreation and Dance (1979) and Thiebert (1971) are: the gymnasium which should have the necessary building features; laboratories; auditorium; various indoor sports areas such as squash, tennis, basketball and badminton courts; offices; store rooms; swimming pools and a host of others.

The outdoors sports facilities are those facilities constructed outdoors in order to serve physical education and sports programmes. They include sports fields and areas in such sports like track and field (athletics), basketball, handball, hockey, soccer, tennis, volleyball and cricket. For effective programming, improved performance, effective utility and usage therefore sports facilities should be structured and constructed to meet required standards in the related sports.

Intramural and extramural sports participation are regarded as participation in various sporting activities within the University and Universities respectively. Intramural participation involves students and staff members taking part in such sporting activities that suit them. The participation may or may not be competitive in nature. However, extramural participation is more competitive in nature.

Intramural sports participation developed purely from the students' informal and unorganised



participation to a more formal and organised forms as we have them in our various educational institutions today (Mueller and Reznik, 1979).

In the Nigerian Universities, sports participation has assumed a wider dimension to include various forms of intramural participation to the more competitive type of extramural participation known as inter-collegiate or inter-varsity sports. Some examples of the inter-collegiate sports participation include:

- (1) Nigerian Universities Games Association (NUGA) established in 1966;
- (2) West African University Games (WAUG), started in 1965;
- (3) "Federation Africaine Du Sports Universitaire" (FASU), founded in 1971; and
- (4) "Federation Internationale Du Sports Universitaire" (FISU), known as World University Games.

At these collegiate sports levels, many competitive sporting activities are involved. These include Athletics, Badminton, Basketball, Cricket, Handball, Hockey, Judo, Lawn Tennis, Soccer, Squash, Swimming, Table Tennis and Volleyball. Facilities for these sports are therefore necessary for effective participation in the related sports. The sports facilities should also be properly and adequately constructed to give all the people in the University community the opportunity for mass participation in sports.

In this regard, a relationship should be established between sports facilities and sports participation in selected Nigerian Universities. Eight selected Universities were used to determine this relationship. They were:

1. University of Ibadan, Ibadan.
2. University of Lagos, Lagos.
3. University of Benin, Benin City.
4. University of Ife, Ile-Ife (now Obafemi Awolowo University).

5. Ahmadu Bello University, Zaria.
6. University of Ilorin, Ilorin.
7. Bendel State University, Ekpoma, and
8. Ogun State University, Ago-Iwoye.

### Statement of Problems

One of the major problems facing the development of sports and physical education in Nigerian Universities today is the lack of proper, adequate and well maintained facilities for schools and colleges (Adedeji, 1985). This problem which ignited the researcher's interest further recognised that there might exist a relationship of this problem with the actual participation in sports by members of the Universities.

Hence, this study focused on the analysis of the relationship between sports facilities and sports participation in selected Nigerian Universities. The study therefore examined:

1. the adequacy or otherwise of the sports facilities in the selected Universities.

2. the standard of the available sports facilities;
3. the effective utilisation of the available sports facilities by University students and staff members;
4. the maintenance level of these sports facilities; and
5. the participation level in intramural, extramural and recreational sports by students and staff of the selected Nigerian Universities.

#### Purpose of Study

The purpose of this study was to examine whether or not there existed a relationship between the available sports facilities and sports participation in the selected Nigerian Universities. It was also the intention of the researcher to find out the levels of standards and adequacies of the available sports facilities in these Universities with

a view to recommending steps to improve the present situations.

Participation in sports should be a primary concern for physical educators, trainers and coaches. Hence further intention was geared towards knowing the level of participation in sports among University members and how the provision of sports facilities had actually affected their participation level.

#### Significance of the Study

The significance of this study to the general development of sports at the local, state and national levels cannot be overemphasised. The need for the demand for sports facilities has become more evident due to the fact that there are greater awareness and participation in sports. Hence, a study of this nature, which investigated the relationship between available sports facilities and participation in sports in the selected Nigerian Universities, would serve as a good reference document for Universities and government of Nigeria.

This study would also serve as an eye-opener to the administrators and physical plant planners about

the problems Nigerian Universities are facing sports-wise. The National Sports Commission, States Sports Councils, Clubs and other Sporting Institutions would also find this study very useful especially when considering the relationships that exist between sports facilities and participation in the related sports.

The need to lay down specific standards, quantity and quality of sports facilities in relation to the patterns of sports participation in Nigerian Universities cannot be over-stressed. Hence, through this study, Nigerian Universities, sporting bodies and other allied areas would find the results useful data and resource avenue for realistic sports participation in Nigeria.

#### Delimitation

Eight selected Nigerian Universities were used for this research. They were:

1. University of Ibadan, Ibadan
2. University of Lagos, Lagos
3. University of Benin, Benin City
4. University of Ife, Ile-Ife (now Obafemi Awolowo University)

5. Ahmadu Bello University, Zaria
6. University of Ilorin, Ilorin
7. Bendel State University, Ekpoma; and
8. Ogun State University, Ago-Iwoye

They were grouped into Relatively Old (RO) and Relatively New (RN) Universities. Universities which started taking part in Nigeria Universities Games (NUGA) from its inception in 1966 were categorised Relatively Old while those that joined in 1974 and thereafter were categorised Relatively New.

Five relatively old universities were selected because of the well established sports facilities that were contained in them. The universities have also participated in national and international competitions with long standing growth and development in the areas of academics and physical development. In the relatively new universities, fewer facilities were available in them. They have also not been exposed to national and international competitions. The grouping into Relatively Old (RO) and New (RN) categories had the approval of the researcher's supervisor.

This research was also delimited to the use of the survey technique (questionnaire) in order to elicit the responses of sports administrators, students, lecturers and coaches of the selected Universities. Personal interviews and discussion with the administrators and other respondents were also adopted. In all, 200 respondents (staff and students) considered to have the knowledge of what type of facilities are good enough for sports performances were used.

### Limitation

This investigation is concerned with the study of the relationship between sports facilities and sports participation in selected Nigerian Universities. Some major limitation factors that militated against the research were:

1. The uncooperative attitude of the respondents in filling the questionnaire; and
2. The financial constraints to cover the wide area of scope.



The study was therefore based on only the available information at the disposal of the researcher.

### Hypothesis

The researcher was guided by the basic hypothesis:

"That there would be no significant relationship between the available sports facilities and sports participation in the selected Nigerian Universities".

### Sub-Hypotheses

Based on the above main hypothesis, the following sub-hypotheses were tested, that

1. there would be no significant relationship between the standard of available sports facilities and participation in various sports in the selected Nigerian Universities;
2. there would be no significant relationship between the adequacy of the available sports facilities and participation in various sports in

- the selected Nigerian Universities;
3. there would be no significant relationship between the maintenance of sports facilities and sports participation in the selected Nigerian Universities;
  4. there would be no significant difference in the ranking of sports between the relatively old and the new selected Universities;
  5. there would be no significant difference in the ratings of sports facilities between the relatively old and the new selected Universities.

#### Definition of Terms

For the purpose of this study, the following terms were specifically defined as used in this thesis:

**Athletics:** Sports activities based on organised competition requiring a set of rules and code of ethics, a high degree of skill,

conditioning and training. It is used to mean 'sports' especially in Nigeria.

**Equipment:** Items or materials that are not expendable but used for a period of years. They are movable furnishings as opposed to stationary property relatively permanent articles, furnishings, machinery and devices used in administering, operating and maintaining sports programmes and services.

**Planning:** The development of an organised procedure including the selection of goals and objectives and the tools of action necessary to carry out these goals.

**Sport:** A recreational or competitive activity involving a degree of physical exertion or requiring skill and which has formally recorded histories and traditions including formal rules governing role and position relationships. It is used interchangeably with athletics.

**Sports Facilities:** Sports areas and buildings for sports participation. These are essential

areas, structures and fixtures to accommodate sports programmes.

**Standards:** The required norms, dimensions and characteristics expected for the various sports facilities as authorised and approved by the various world sports governing bodies (Athletic Institute, 1968).

**Supplies:** Materials that are expendable and which need to be replaced at frequent intervals, such as balls and shuttlecocks for badminton.

**Topography:** The configuration of a surface, including its relief or graphic delineation of physical features of a place.

## CHAPTER TWO

## REVIEW OF LITERATURE

Introduction

One of the major problems facing physical education, sports and recreation programmes today is the non-provision of adequate facilities for schools, colleges and universities. This problem is made more serious and complicated when adequate plans and measures are not taken to consider the need for and the usefulness of such facilities. Many sporting programmes or activities have been disrupted or even waived as a result of poor or inadequate facilities. The resulting effect on the utility levels of participants have been discouraging.

Intramural, extramural, and recreational activities and physical education programmes are also negatively affected due to lack of proper or adequate facilities. Hence the framework of this study would be based on the concept of sports facilities, need for the facilities, basic principles and steps for planning the facilities.

The advantages of effective planning of sports facilities especially in the Universities cannot be over-emphasised, hence adequate care would be taken to cover this area. The maintenance of these facilities would also be of interest. The concepts of sports and sports participation are considered as basic ingredients to this study. Hence the important rudiments and features of these concepts would be discussed in details.

The following key areas have therefore been reviewed in this literature;

1. Concepts of sports facilities
2. Need for sports facilities
3. Planning for sports facilities
4. Principles for planning sports facilities
5. Planning facilities for Universities
6. Steps in planning facilities
7. Facility Planning Units for Universities

8. Standards of sports facilities
9. Maintenance of sports facilities
10. Rudiments and Important Features of Sports and Sports Participation
11. Values accruing from sports participation, and
12. Summary.

#### Concepts of Sports Facilities

Facilities are usually planned for both indoor and outdoor purposes. Indoor facility, according to Hornby, et al (1967) is that quality which makes learning or doing things easy or simple. Sports facilities are therefore given as running tracks, swimming pools, tennis courts, squash courts and basketball courts.

According to the Athletic Institute and AAHPER (1979), indoor facilities are those materials or structures that can conveniently be constructed indoors to

facilitate learning programmes. These will include those buildings or physical plants capable of enclosing a standard swimming pool, gymnasium, locker, shower and drying rooms, teaching stations and rooms, corridors and foyers, laboratory or research rooms and other inclusions.

Outdoor facilities, on the other hand, are constructed outdoors in order to serve physical education and sports programmes. These will include sports field and areas in track and field (athletics), basketball, handball, hockey, soccer (Association Football), tennis, volleyball, cricket and swimming. For any effective programming, improved performance, effective utility and usage, facilities must be structured and constructed to meet the standards of the related sporting activity. If substandard facilities are made available for an approved sporting programme, effective participation in this sport may be hindered. Hence, proper and standard facilities are very essential in our educational institutions, especially the Universities.



### Need for Sports Facilities

The widening impact of sports and physical education has aroused the public to the importance of more programmes, more facilities and services. Interest in a wide range of sporting activities has had a phenomenal growth as reflected in the demand for facilities for organising camping, programmed competitions and participation. Schools and colleges have increasingly accepted the responsibility for teaching skills that contribute to the high ideals of life and the satisfying use of leisure.

The aim of sports and physical education, as expressed by the Athletic Institute and AAHPER (1979), is to help people live healthy, satisfying and energetic lives by developing and maintaining optimum physical efficiency, by developing useful knowledge and physical skills, by acting in socially useful ways and enjoying wholesome physical recreation. Physical education is regarded as the science and skill of movement. All types of sports and activities are used to develop the strength, endurance and coordination

essential in both work and play. Through activities, youths and adults are taught the physical skills needed to performing daily work and conditioned through exercise and sports for the maintenance of mental and physical health. They are also taught the skills that form a part of leisure pursuits.

Schools and colleges sports activity programmes therefore include participation in appropriate activities that revolve round a wide variety of intramural and inter-collegiate activities. These activities will include participation in sports such as athletics (track and field), basketball, badminton, handball, hockey, football (soccer), tennis, volleyball, cricket, judo, squash and swimming. In order to participate effectively in all these varieties of sporting activities, the desired facilities for each sport should be provided.

The need for standard and adequate sports facilities to build an egalitarian society was advanced by Ogunbiyi (1979). In his paper titled 'Sports as a

means of nation building in Nigeria', he listed a number of influences the provision of sports facilities could have in nation building. These include:

1. the improvement of structural patterns of the city of locations through their architectural buildings;
2. the expansion of the cities of their locations, by encouraging new building sites and industries around them;
3. the drawing of the population towards them for job opportunities and recreational chances; and
4. allowing for social contacts which are made easier through various associations and club meetings and regular sports competitions.

All over the world, the provision of sports facilities takes a greater prominence for sports participation. Many countries admit that sports is that vehicle that can help a nation to solve her economic, political and social problems. Hence, as Bruce (1975) observed, premium is placed on sports participation at all levels - national and international. Sports facilities are therefore

constantly provided to suit these purposes. For example, Bruce (1975) further reported that Japan in 1970 had had 150,000 sports facilities with over two dozens stadia that could hold over 100,000 spectators each. Brazil had nine standard stadia while United States of America had five of such stadia. Bruce (1975) finally pointed out that the biggest sports stadium in the world was the Maracana Stadium in Rio de Janeiro which was built for 1950 world cup competitions. Its official capacity was 180,000 spectators.

Nigeria, on her own, built the national stadium with the first sythetic track surface in 1973 to accommodate over 60,000 spectators. These facilities were used for the Second All-Africa Games held in that year. Many more sports facilities have now been built in other parts of Nigeria. Some of these include, the Liberty, Ogbe, Ahmadu Bello, Cross River State and Kwara State Stadia located in Ibadan, Benin-City, Kaduna, Calabar and Ilorin respectively.

In educational institutions, especially the Universities, the need for the provision of sports faci-

lities is more stressed when it becomes evident that students and staff constantly participate in intramural and intercollegiate sporting activities. Intramurals have since come of age and are now recognised as vital parts of the total programmes. As the scope of intramurals became broadened and campus recreation became important and highly desirable, many colleges and universities have succeeded in planning and building new fields, courts and recreation areas designed for mass participation. According to Means (1973), the recreational gymnasium at Purdue University is a prime example of such a broadly conceived facility. In Nigeria, the University of Ife, Ile-Ife sports facilities were regarded as the best in Nigeria providing for intramurals, recreational sports and intercollegiate sports for students and staff members (University of Ife, 1973).

#### Planning for Sports Facilities

The environment is rapidly changing. Hence, the interplay of social, political, economical and

technological forces affects all institutions. Scarcity of resources in the face of ever-increasing demands and subsequent spiralling costs have had a direct effect on institutional budgets. Education has been affected by these trends which have ushered in the age of accountability, requiring justification of expenditures both for existing and new programmes and facilities.

The success or failure in the planning and construction of facilities is the direct result of planning. Mistakes in construction are costly and can handicap programmes for which the facility was designed. Long-range planning is therefore imperative in order to facilitate the expansion of facilities in the most efficient and economical way in meeting the needs of a changing programme. Many people do not understand the need for large expenditures in the field of physical education and sports. As a result, funds are not always readily approved for expensive facilities and equipment. In order to justify the needs of the programme, physical educators and sports administrators

must demonstrate the need, through careful planning and present a well-organised plan for proposed facilities.

According to Penman (1977), long range planning for facilities should include such considered factors as: the master plan of the facilities, data related to developmental trends in the community, information about the topography of the area and surroundings, an annotated bibliography of up-to-date references relating to physical education and sports facilities and sources of raising money and planning aids for facility development.

#### Principles for Planning Sports Facilities

Two major principles that should be prominent in the minds of sports administrators and physical educators in relation to facility management were advanced by Bucher (1979). These were facilities emanating as a result of programme needs and comparative planning as essential ingredient to avoid common mistakes. The objectives, activities, teaching methods and materials, administrative policies and equipment and supplies

represent programme considerations regarding facilities. The educational and recreational needs of both the school and community, the ideas of the administrators and physical educators and the advice of architects and lay persons are other considerations if facilities are to be planned wisely.

Other authors have advanced planning principles not seriously different from that of Bucher. While Penman (1977) advanced seventeen general principles, Daughtery and Woods (1971) proposed eight.

The general principles as advanced by Penman (1977) stressed the importance of establishing a priority for the use of physical education and sports facilities. Is it for instruction, school recreation, community recreation or athletics or both. This priority will influence in many respects, the kind of design that is developed. Designing the facilities for the unique characteristics of the community was also stressed. The other principles advanced by Penman include:

1. Specifying the age group for which the facility would be planned.



2. Making the facilities flexible in order to get maximum efficiency in their usage.
3. Obtaining the projected growth rate in addition to census data. A new facility should be designed for at least fifty years use.
4. Seriously considering the maintenance and supervision of the facilities as vital areas for concern.
5. Designing facilities primarily for participants rather than for spectators; and constructing a model of the proposed facility so as to eliminate any costly errors especially where there are areas of varying ceiling heights.

All the above principles with those proposed by the Athletics Institute and AAHPER (1979), Coates (1969) and Karabetos (1970) were very much related.

For example, Coates (1969) listed the following guiding principles for planning facilities:

1. The physical education and sports facilities should be developed and coordinated as a part of the total school - community masterplan,

- because an average of 70% of total school property is used by physical education and sports,
2. Facility design must take into consideration the future construction needs of the buildings. There should be careful projections to insure that future additions will integrate functionally and economically with the entire facility.
  3. Physical education and sports personnel should be involved in the early planning. Too often, the programme specialists are invited to participate after preliminary plans are drawn, a time when it is already difficult to effect changes.
  4. Educational consultants should be invited to participate in the planning and to evaluate the work of the planning group.
  5. Traffic patterns for spectators and students should provide for movement through corridors and spaces with a minimum of congestion.

Karabetos (1970) on his own, considered the greatest waste in physical education gymnasium construc-

tion to be the lack of sufficient educational planning. He noted that decisions should be based on a well developed long-range philosophy and that considerations should be geared to physical education first, then to recreation and intramurals and lastly to inter-scholastic and inter-collegiate sports.

Gabrielson (1969) outlined some steps in acquiring a school pool, beginning with the initial conception to the actual dedication. Many of his steps, like the guiding sets of principles listed, have relevance for the establishments of steps in planning and constructing sports and physical education facilities generally. Schooler (1950) criticised the policy of thoughtlessly imitating facilities of other institutions since this practice may only result in the reproduction of existing inadequacies. Furthermore, physical education and sports facilities should reflect the programme in action at a particular institution (Bucher, 1971). Gores (1971) discussed quality programme improvement through the use of new innovations in facilities. He maintained that a programme that is

dependent on the weather is 'primitive'. In all, it is an accepted principle that all persons concerned with the use of facilities - administrators, directors, supervisors and teachers - should be involved in the initial planning.

### Planning Facilities for Universities

The literature relating specifically to planning and construction of sports facilities in Universities or in institutions of higher education is very limited. However, there are some sources dealing with facility planning for sports, physical education and recreation generally. All these sources are however foreign. The first source published by the College of Physical Education Association (1948), and the Athletic Institute (1968), dealt primarily on College facilities for physical education, health education and recreation. The source directed attention to common errors in facility construction and to the establishment of standards.

In 1963, Columbia University, Institute of Field Studies published several monographs specifically devoted to sports and physical and Health Education faci-

lities. Three of these monographs were somewhat similar in their mention of the duties and responsibilities of those involved in the planning, although these duties were not completely defined (Crawford, 1963; Peterson, 1963; and Delamater, 1963). For example, Delamater (1963), noted the importance of organising for facility development and the use of consultative services in the development of outdoor physical education areas. He dealt mostly on site selection, site orientation and the specific requirements necessary for developing the various outdoor field and court areas.

Recognising the need for sports facilities, the AAHPER and the Athletic Institute (1965) cooperatively sponsored four national facility conferences in the United States of America. The purposes of the conferences were:

1. to establish principles for the planning of a system of community-wide inter-related facilities;
2. to determine the kind of facilities needed; and
3. to develop standards for functionally designed facilities.

The participants although realised that there were responsibilities involved in planning and that logical planning steps were essential, failed to emphasise these steps, even though they were mentioned. Instead, the following were emphasised:

1. standards and specifications for outdoor facilities;
2. indoor facilities;
3. School health facilities;
4. recreation buildings;
5. stadia and field houses; and
6. school and community swimming pools  
(Athletic Institute, 1968).

The 1968 publication of the fourth national facilities conference also emphasised standards and specifications (National Association of College Directors of Athletics, 1968).

However, Theibert (1970) admitted that colleges and universities today required that physical education and sports administrators sell physical education and sports in order to survive. He noted that educational planners must be innovative in their

approach so as to obtain the maximum facility for year-round use thus changing the present attitudes held by so many that "man's physically active period begins on Memorial Day and ceases on Labour Day". He further opined that the idea of a multiple-use physical education and recreation facility having one surface with multiple uses might be one answer in providing flexible facilities for increased use.

Frost and Marshall (1977) and Adesanya (1987) on their own, strongly felt that provision of facilities in colleges and universities must be made for classes for the typical and atypical child, recreational and intramural activities, sports clubs, free play and for inter-scholastic and inter-collegiate sports.

#### Steps in Planning Facilities

The most significant variable in establishing the need for sports and physical education facilities is the philosophy that shapes the form of each

community's education. A number of specific factors which may significantly influence and alter concepts of facility planning, development and construction must be considered in a new sports and physical education facilities. These will include:

1. enrolment trends;
2. present and proposed programmes;
3. innovative methods of instruction;
4. soaring construction costs;
5. new systems approach in building;
6. development of new construction materials; and
7. health needs of participants.

Naturally, the amount of planning for necessary new facility will be proportional to the scope of the new structure. The phases or steps in this process considered very important were identified by Penman (1977), Mariartz (1963), Theiber (1971).



Browns (1974), and The Athletics Institute and AAPHER (1979). These phases could be represented in a planning model explained as follows:

1. Idea for new facility: An idea is established for the need to have sports facilities.
2. Presentation of the idea to the school board: Here, the idea is presented through the administrative channels to the school board for approval. If the new facility is minor in nature and does not involve great expenditure, the board may be able to approve the proposal immediately, select an architect, put the project out for bid, and begin construction. If the project is a major building programme, the procedure becomes more extensive. The board will therefore consider the proposal very seriously, and accept or reject same. If rejected, the proposal is killed, but if accepted it moves on to the other stages. It is particularly important here that the sports and physical education staff members give serious con-

sideration to the total curriculum in their programme. Some salient questions that need to be answered are:

- (a) What is the real priority for use of the facilities?
- (b) Are facilities to be designed for spectators or participants, or all students who want to participate, or for the physically gifted only?
- (c) Does the curriculum provide flexibility for a varied programme?

Input is therefore assembled by the special committee for presentation to the board for consideration. If the board approves the sport, the search for an architect is initiated and the process of obtaining funds is begun by floating bonds, passing a special levy or finding a generous donator.

3. Developing educational specifications: At this stage, staff members are busy developing educational specifications. These specifications are sets of statements relating to what goes on in

the various educational stations. The unique variations in space requirements for sports and physical education areas must be worked out. For example, the space requirement for a basketball court or handball court will be different from that of hockey field. These specifications must be studied by the architects so that a design which is harmonious and functional can be developed.

4. Establishing a building committee: A permanent building committee is now established. This committee is very crucial to the development of the new facility and should include a wide representation of the community. Sub-committees can be formed to work in specific areas of development.

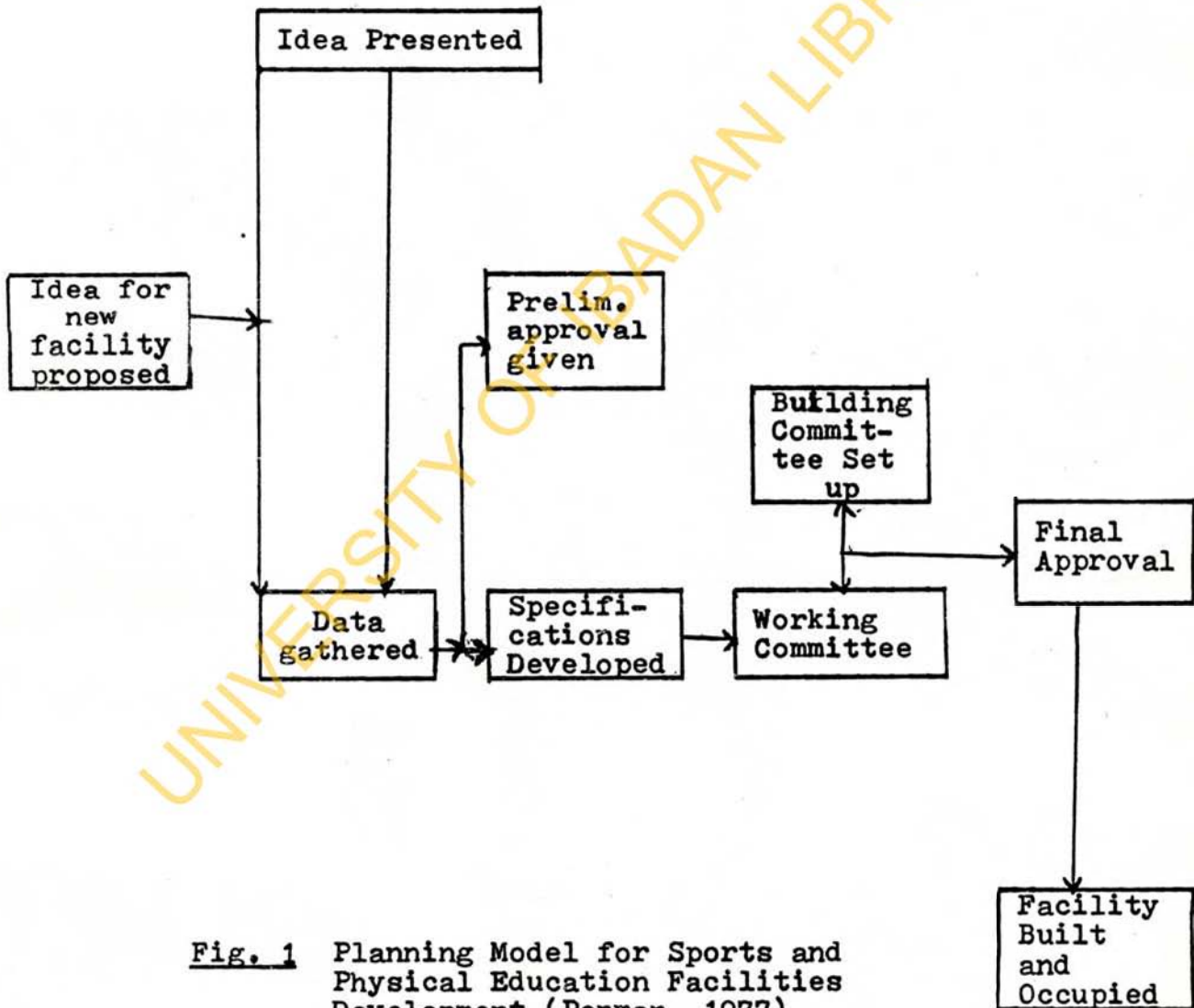
The composition of the facility planning committee as viewed by Crawford (1963), and Hughes, et al (1962), should include all professional staff in the department unless the department is so large that it would be more feasible to have representatives from each department, that

is, Physical Education, Health Education, Recreation, Intramurals and Sports departments. In this case, sub-committees in each area of representation is desirable to insure complete feedback to the committee. Crawford (1963) further stated that the major task of this committee would be to develop the educational specifications, the qualitative and quantitative need requirements for the total sports and physical education programmes. The importance of the physical education and sports staff in the planning of any new facility cannot be underestimated. In fact, the department-area-specialists who should be working as sub-committee members should be involved in planning the area of their speciality. According to Hughes, et al (1962), they should be able to bring to the planning knowledge of particularly desirable characteristics and trends in their speciality. Furthermore, they will be able to point out common errors that should be avoided, and they will most likely know

of facilities that may be viewed which illustrate either desirable or undesirable features. In addition, they should be able to clarify the scope of their programme speciality, including the types and numbers of people involved and the details of the functioning of the projected programme. Daughtrey and Woods (1971) and Seagers (1954) supported these ideas.

5. Approving final plans: When the committee has completed its work and the architect has completed all design work, the final drawings are prepared. These plans are then presented for final approval of the board. When contracts are finally awarded for construction, serious consideration should be given to establishing a penalty clause in the building contract. Penalty clauses as defined by Penman (1977), are statements in the building contract that guarantee that the building would be completed by a certain date. If it is not ready, the contractor must pay a penalty for each day thereafter.

The phases or steps in planning sports facilities are represented in a planning model shown in Figure 1 below:



**Fig. 1** Planning Model for Sports and Physical Education Facilities Development (Penman, 1977)

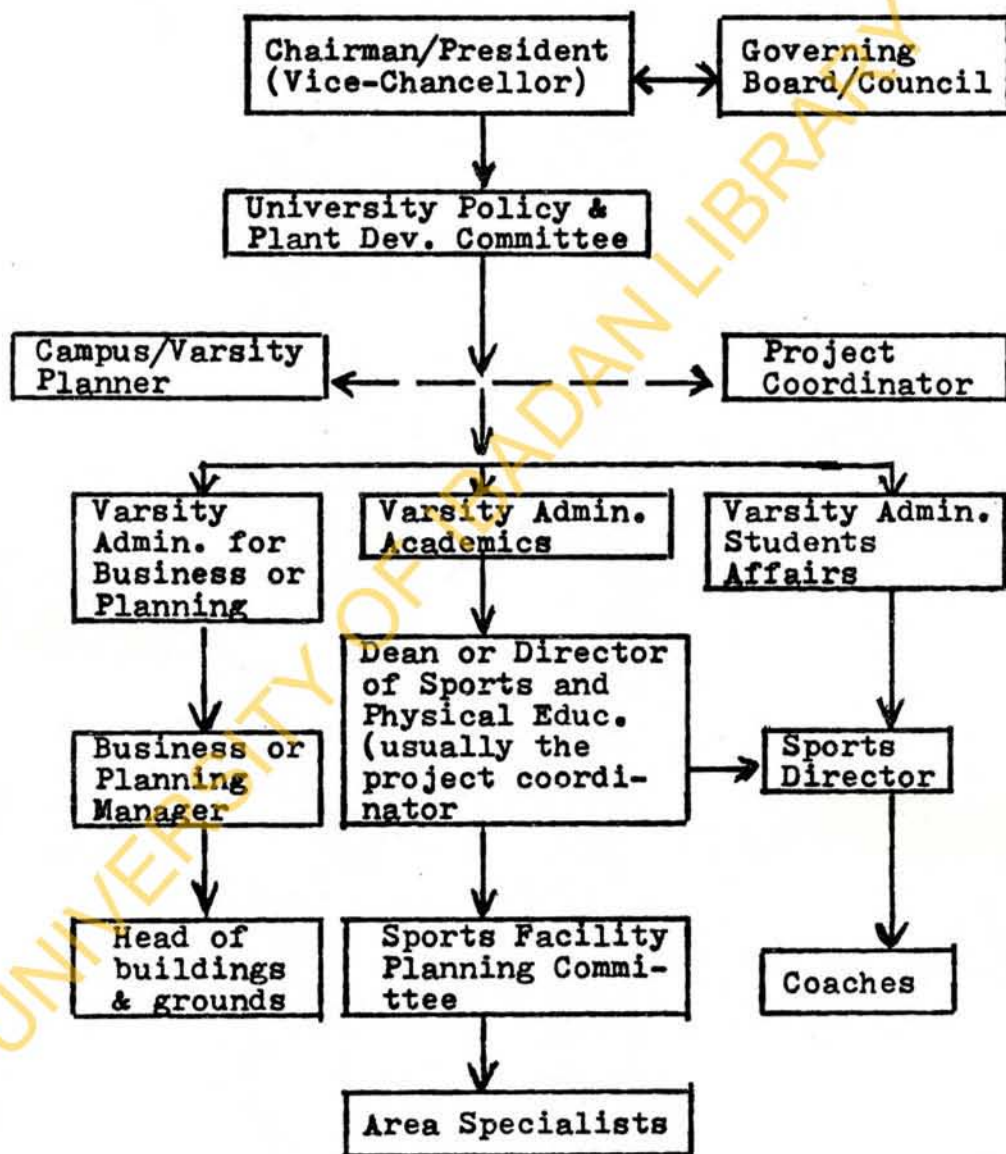
### Facility Planning Units for Universities

In planning sports facilities for Colleges and Universities, various components as advanced by the Athletic Institute (1979) that must be involved are as follows:

1. the governing board, Senate or Council;
2. the state planning division;
3. the institutional policy committee;
4. the institutional plant development committee;
5. the office of building and grounds;
6. the architectural firm;
7. the project coordinator and committee;
8. the sports planning committee; and
9. the area specialists.

These can be represented in a model as shown in Figure 2.

As illustrated above, the responsibilities of the involved groups and individuals should be clearly understood.



**Fig. 2** Involved groups and individuals for University Sports Planning - Modified from Athletic Institute (1979)



The governing board or governing council as advanced by Athletic Institute (1979), should:

1. establish policies and procedures for University sports facility development;
2. act upon the recommendation of the Chairman or the Vice-Chancellor;
3. insure that all possible steps have been taken to acquire the necessary financing;
4. engage in all formal contracts with:
  - (a) consultants
  - (b) architect
  - (c) contractors
  - (d) project supervisor; and
  - (e) suppliers of equipment.
5. approve drawings and specifications at their various stages;
6. authorise further progress or changes at the various stages of planning;
7. approve reimbursement;
8. accept the completed facility;

9. approve the policies under which the facility will be administered and supervised; and
10. dedicate the facility.

Penman (1977) opined that the Chairman or president who represent the governing council or board should either take or delegate leadership in facility development. According to Boles (1965) and MacConnell (1957), this chief executive officer should recommend or request that the director of physical education, sports and recreation department be responsible for:

1. chairing the facilities committee for this special project;
2. surveying the educational needs; and
3. developing the educational specifications.

The President, Vice-Chancellor or Provost in the case of a college may direct the campus business administrator and or the campus master planner to work closely with the department chairman in the development of building needs and specifications. At this state of the organisation, the Vice-Chancellor should be perso-

nally involved to the extent that he:

1. works closely with the governing board in establishing the manner in which the institution will proceed;
2. identifies and outlines the roles, responsibilities and authorities of those involved in all planning steps;
3. outlines the proper steps to take, assuring that there is ample time to complete each step adequately;
4. acts upon the recommendations of those to whom he has delegated responsibility by making the official recommendation to the governing board relative to:
  - (a) employment of an educational consultant, if required;
  - (b) employment of an architect;
  - (c) approval of plans and specifications; and
  - (d) all recommendations relative to facility development.
5. Keeps the governing board informed of all progress.

Communication in this case should be horizontal and vertical and in both directions so that the chief administrator and those to whom he has delegated responsibility have a clear understanding of their roles and what is expected of them. Similar communication channel is essential for all others involved and must continue through all phases of facility development in the University.

The University policy committee is a standing committee which should exist mainly for the purpose of planning specific educational programmes. According to Ezersky and Theibert (1976) and Delamater (1963), the institutional policy committee should compose of key administrators, one member of the governing board or senate, students, and faculty representing each division, department, or college. The policies recommended by such a group not only influences the scope and nature of the institution's entire educational programme, but also provide specific emphases and direction for the development and implementation of the institution's immediate and long range goals.

Policy recommendations of this committee should provide direction to the chief executive, the governing board and the campus-wide institutional, plant development committee.

The university plant development committee should be composed of the campus planner and the various administrators in charge of business affairs, instruction, and student affairs as well as representatives of the governing board, the student body, the faculty and the superintendent of buildings and grounds (Salmen 1971). This committee should:

1. Analyse the recommendations of the University policy committee, the chief executive and the University governing board;
2. Formulate a comprehensive long range plan to house the immediate and anticipated educational programme of the institution;
3. Utilise input from various department in determining the present and future requirements of the overall campus physical plant;
4. Recommend priority of construction and development of certain areas;

5. Formulate the basic sequence for planning operations; and
6. Establish an overall tentative time schedule for the development of various specific physical plant needs.

This committee, as advanced by Salmen (1971), fulfills its function and is no longer actively concerned after the building location, site size, and its priority in campus construction have been determined.

The Project Coordinator, who should be the Director of Sports is the most critical position who requires tact and good judgement throughout all the steps in the planning and constructing process. He should determine the information required, the tasks to be performed, and select and place the proper individuals in appropriate operating groups. As he orients them to their tasks, he must motivate and instill in them a sense of self-worth and continuing enthusiasm. He should keep those involved informed of his decisions and the reasons for them in order to maintain continued support and interest. In this

capacity, the project coordinator advises, directs, coordinates and mediates the interest of the project planning committee.

According to the participants in the Fourth National Facilities Conference (1968), it is the project coordinator who arranges the meetings of the physical, health education, recreation and sports faculty and staff with the campus planner and the architect. Authority must accompany his responsibilities as he guides and coordinates the development of the educational specifications. He should be efficient, effective and capable of making decisions as he is ultimately responsible for the smooth functioning of the project. He officially makes the necessary presentations to the institutional facility development committee and to the Vice-Chancellor or President of the institution.

The consultant is an individual who gives professional advice or service. He is contacted by the governing board upon the recommendation of the administrator or he may be assigned to the institution by

the State Ministry responsible for the control of higher education. He may also be affiliated with private consultant firms, educational facilities laboratory or operate independently. He works closely with the institution's project coordinator and physical, health education, recreation and sports departments and sometimes with the architect.

The consultant is helpful in providing the department, and project coordinator with directions relative to the following (National Facilities Conference, 1968):

1. Refining departmental concepts and objectives;
2. Stressing the importance of following sequential planning steps;
3. Helping with educational surveys to determine trends and emphases in the field;
4. Appraising the existing facility;
5. Establishing need for facility modification, addition or building;
6. Justifying the need for modifying or building facilities;
7. Assisting in public relations;



8. Deciding procedures concerning programme and facility operation;
9. Suggesting assignment of responsibilities of the various involved individuals and committees;
10. Obtaining and compiling specific necessary information;
11. Analysing, evaluating and using the information obtained;
12. Providing new programme and facility perspective;
13. Serving as reinforcement to the department of physical, health education, recreation and sports and to the institution for the proposed programme and facility;
14. Inducing self-appraisal regarding the needed, desired and frill characteristics in the proposed facility;
15. Providing objectivity requiring the inclusion of necessary and desirable characteristics and in eliminating unnecessary frills;

16. Clarifying architectural terminology;
17. Assisting in specifying the project;
18. Establishing a realistic time schedule;
19. Eliminating mistakes that prevent the programme from functioning adequately;
20. Helping in equipping the facility;
21. Orienting the institutional staff and the community to facility use; and
22. Planning the dedication.

The Dean, Director or Chairman of physical, health education and recreation department, as probably the most knowledgeable and interested person on campus concerning programme objectives and needs, in his area of the University, should be vitally involved. Daughtrey and Woods (1971) and Peterson (1963) have agreed that he must be an integral part of all preliminary, planning, and constructing stages. Not only should he chair the department building planning committee, he should also have enough time to make contributions at other committee meetings pertaining to the physical, health education, recreation and

sports facility. His ideas should be in harmony with the institution and with the department relative to the projected programme, and the administration and supervision necessary for its ultimate implementation.

He should have confidence in himself, and as the specialists on campus, he should take the initiative and convey the sports and physical education needs to the architect, campus planner, superintendent of buildings and grounds, and the campus building committee. His background should include experience in facility development. He should develop a keen interest in educating himself in architectural terminology and sources of information. Together with his staff he should develop the policies and procedures for programme and facility operation. In the event of staff disagreements, he has the ability and authority to make decisions and insure that all departmental and related interests have been represented in the planning. He should also be able to anticipate their concerns in the completed project's functionality both instructionally and administratively.

The project planning committee, composed of the campus business administrator, campus planner, director of physical, health education, recreation and sports, and the superintendent of buildings and grounds should coordinate the information obtained from the involved department, student affairs office and the community service director. The following responsibilities as advanced by Delamater (1963) are included:

1. A comprehensive study of institutional policies and their concurrent effects on the total health, physical education, recreation and sports programme;
2. An analysis of materials prepared by the department, including:
  - (a) long term estimates of the maximum number of participants to be served by the facility;
  - (b) estimates of the number of teaching stations required to adequately instruct and carry out the long term projected programme; and

- (c) the estimated amount of space planned for the facility and its functionality in implementing the planned programme.
3. A study of all other campus programmes and functions such as registration, convocations and exhibitions that might conceivably take place in the proposed facility.

This committee should work closely with the architect through all phases of the planning conveying to him the institutional concepts and descriptions of the anticipated functioning of the programme.

The campus planner and or the campus planning office has the primary responsibility to plan, coordinate, and develop the total master campus plan and building programme. Salmen (1971) and Penman (1977) pointed out that this unit or person is responsible for coordinating the development of plans for and the construction of all projects on campus. When planning sports facilities, the campus planner would confer with that department to ascertain its general needs and recommendations relative to site location and size,

and then proceed to fit the facility into the total campus master plan. Test boring and elevations would be taken to insure that the area selected for the site is appropriate and capable of accommodating this facility. Crawford (1965) and the Athletic Institute (1979) emphasised that care should be taken to locate the facility on campus so that it is convenient and readily accessible to those who would be using it. Its location and overall design should be planned to enhance and complement the aesthetic qualities of the campus.

After the facility need has been recognised and further investigation sanctioned by the appropriate authorities, the campus planner should schedule a meeting with the architect, campus business administrator and director of physical, health education, recreation and sports to agree upon the organisational framework, policies and procedures that will be followed as the facility is developed and constructed. In addition to the responsibilities mentioned above, this individual or office should be concerned with

the standardisation of the various campus systems, such as heating, electrical, mechanical and others. He should be concerned with both pedestrian and vehicular traffic from both functional and aesthetic viewpoints.

Throughout the planning and constructing stages, the campus planning office should serve as liaison between the sports and physical education department, the architect, and the institutional administration in order to facilitate communication and a good working relationship among all those that are involved.

Students at the higher education level are becoming increasingly involved in decision making. Hence, as the actual beneficiaries of the facility, they should be included in the planning for its design and eventual use. The involvement of students in the early stages of the planning periods could lead to greater enthusiasm and support for the project. In addition, students may help provide direction in curriculum, course offerings, and recreational interests. However, care should be taken by the professionals to maintain the proper perspective.

The architect, is a key figure in planning. He should have previous experience in planning sports, physical, health education and recreation complexes and be retained as soon as the project has been approved by the governing board. Early involvement in the project will provide him with insight into the specific details of the proposed programme and its method of operation (Boles (1965), Penman (1977), Strevell and Burke (1959) and The Athletic Institute (1979)).

#### Standards of Sports Facilities

Every sport facility should be constructed in a standard form before it can be accepted by the ruling body of that sport. Standards here will mean, the required norms, dimensions and characteristics expected for the various sports facilities as authorised and approved by the various sports governing bodies (The Athletic Institute and AAHPERD, 1979). Schooler (1950) had emphasised for standards of facilities in Colleges and Universities based on the approved norms and dimensions. He opined that anything short of these norms



would render such facilities substandard. Every sport therefore must have its own standard.

In athletics (track and field), the ruling body is the International Amateur Athletics Federation (I.A.A.F.) founded in 1944 with the headquarter in London. Activities in this sport include cross country, running, decathlon, throwing the discus, javelin and hammer, high jump, hurdling, long jump, pole vault, shot put, steeple-chase and triple jump (Arlott, 1975).

The length of the running track is standardised at 400 metres per lap with six or eight lanes marked out according to the specification of the I.A.A.F. (Schooler, 1950; Arlott, 1975; and The Athletic Institute 1979). However, 300 meters or 200 meters track can be constructed for local use but performances on either of them will not be considered internationally acceptable if any record is broken (The Athletic Institute, 1979). Synthetic surface should be employed for the running track and also for the approaches to the high jump, long jump, tripple jump, pole vault and javelin which were formerly served by cinder approaches (Arlott, 1975 and I.A.A.F. Handbook, 1984).

In badminton, the facilities should compose of a court with overall dimensions of 13.41 meters in length by 6.10 meters in breadth. There should be a net across measuring 1.55 meters high at the posts and 1.524 meters high in the centre for national and international competitions. International Badminton Federation (IBF) with headquarters in Hong Kong stipulates that the height of the indoor court should be 7.93 meters minimum (Arlott, 1975). A clear space of a minimum of 1.22 meters is essential for the surrounding at the four sides before the court can be regarded as being standard.

Basketball, which is played indoor and outdoor, was originated in 1892 by Dr. James Naismith (Van Delen, 1971). The ruling body of this sport is the International Amateur Basketball Federation (F.I.B.A.). The standard facilities for this sport consists of a rectangular hard surface, free from obstructions, 28 meters in length and 15 meters in width measured from the inside edge of the boundary lines. The height of the ceiling (for indoor participation) should be at least 7 meters with uniform and adequate light. Other standard requirements are as contained in F.I.B.A. (1984) handbook.

In cricket, the standard playing area is contained within a defined boundary line, at least 68.58 meters from the playing pitch. The pitch is 20.12 meters long and 3.70 meters wide and marked out in whiting (Arlott, 1975). The International Cricket Conference (I.C.C.) with headquarters in London is the governing body of the sport. The Nigerian Cricket Association established in 1968 is the sporting body controlling cricket participation at all levels in Nigeria.

Handball, which originated in Germany should be made up of a standard full sized court and the goal. The playing court is a rectangular surface measuring 40 meters long and 20 meters wide. International Handball Federation (I.H.F.) is the controlling body for this sport (Arlott, 1975). The national control body is Handball Association of Nigeria (H.A.N.).

Hockey, which is a stick-and-ball sport is played all over the world. The Federation of International Hockey (F.I.H.) which is the world controlling body with headquarters in Brussels stipulates that the game be played on a rectangular pitch measuring 83 - 92 meters long and 50 - 55 meters wide and with the other inclusions as contained in the rule book (Schooler 1950).

Judo is a new sport both for University sport and even in Nigeria. It is a combat sport which developed primarily in Japan by Dr. Kano but now has world-wide appeal. It received Olympic recognition in 1964. Japan has remained the stronghold of the sport (Arlott, 1975). The terminology of the sport remains Japanese. 'Judoka' (participants) wear the 'judogi' (judo suit) which resembles a loose-fitting western suit. There are no buttons or pockets to minimise injury, and feet are left bare. The jacket is fastened by a belt, the colour of which indicates the competitor's standard.

Contests ('Shiai') are conducted by a roving referee and two judges who sit at opposite corners of a mat 9 meters square. There is a surrounding safety area of 1 metre on to which a fighter may be thrown, provided his opponent has started the movement inside the area. The mats ('tatami') are made of compressed straw with a tight canvas covering and usually measure 2m. by 1m. They are pushed tightly together and kept in place by a wooden frame. The International Judo Federation (I.J.F.) with headquarters in Berlin is the world ruling body (Arlott, 1975).

Lawn tennis, popularly called Tennis, is a game of domination, played with long-handled, oval-headed racquets made of either wood or metal, by two (singles) or four (doubles) players. They seek to collect points by controlling and manoeuvring a lively, cloth-covered, rubber ball within the confines of a court, 23.77m long and 8.23m wide for singles play. The doubles court is larger than the singles court by 1.37m at each side popularly known as the 'tram lines' or 'alleys'.

According to the Athletic Institute and AAHPER (1979), there should be at least 3.65m clearance on each side of the court and 6.40m of clearance between the baseline and the fence. The baseline fence distance remains constant regardless of the number of courts constructed. If several courts are placed side-by-side, the courts may be placed so that there are 3.65m between adjacent sidelines.

The international ruling tennis body is the International Tennis Federation (ITF) with its headquarters in London while Nigerian Lawn Tennis Association (NLTA) controls amateur tennis in Nigeria.

Soccer or Football (Association) is an 11-a-side ball-and-goal game played at first-class level throughout the world. It is played with a spherical, usually leather-covered ball with a circumference of not more than .71m and not less than .69m, weighing at the start of a game, not more than 453g nor less than 396g on a pitch not more than 120m by 90m and not less than 90m by 45m. The pitch must be rectangular in shape so that the length must in all cases exceed the breadth.

The markings of the soccer field shows that there should be distinctive lines which should not be more than 0.12m in width. The goal area is 5.50m along the goal line and 5.50m into the field of play on each side of the goal posts. These lines are joined by a line parallel to the goal line to form the goal area. From the inside of the goal posts, lines of 16.50m long are drawn along the goal line on each side of the goal posts and the same lines are drawn into the field of play. These lines are also joined by a line parallel to the goal line to form the penalty area. A spot, 11m from the centre of the goal line through the middle of the two goal posts is marked on each side of the field to form the penalty mark.

Association Football or Soccer is being internationally governed by the 'Federation Internationale De Football Association' (FIFA) with its headquarters in Zurich, Switzerland (founded in 1904) (Arlott, 1975). In Nigeria, the Nigeria Football Association (NFA) is the ruling body.

Squash is the newest of the bat and ball games to become universally popular. It is usually played by two players in an enclosed rectangular space 9.75m. by 6.40m. The object is to hit a small ball made of synthetic rubber out of reach of the opponent with a racquet.

The court is made up of walls which should be white or near white. There is a 'tell-tale' consisting of a metal sheet extending right across the front wall, surmounted by a two-inch strip of wood and painted red. The height to the top of this board is 48.3cm from the floor.

A court may have glass panels in the roof for daylight play, but should have some six electric lights or fluorescent strips suspended above the court for night play. In the case of courts below the ground level, artificial lighting is the only method.

The conduct of the game is controlled by 25 rules and 4 appendices which include the standard dimensions of a single court as approved by International Squash Racquet Federation (ISRF). Its headquarter is in New Zealand. Nigeria Squash Racquet Association (NSRA) is the ruling body in Nigeria.

Swimming: Arlott (1975), describes swimming as a method of propulsion through water, the value of which, as a physical activity and as recreation, is regarded as second to none. Swimming as a sport, is one of the four related sports recognised and governed by the 'Federation Internationale De Natation Amateur (FINA) (1976-1980). The other three are Diving, Water Polo and Synchronised swimming.

The swimming pool should have a length of 50m with dimension tolerances of plus 0.03m; 0.3m above and 0.8m below the surface of the water. The width of 21m is considered the minimum and a depth of 1.8m. The walls should be parallel and vertical with the end walls forming right angles with the surface of the water. It should be constructed with solid material and with a non-slip surface extending 0.8m below the water surface,



so as to enable the competitor to touch and push off in turning without hazard.

The minimum measurement of the electronic touch pads (where used) should be 240cm by 90cm by 1cm and should extend 30cm above and 60cm below the surface of the water. The electronic equipment of each lane must be connected independently so that they may be controlled individually. The surface of the touch panels must be of a bright colour and must bear the line markings approved for the end walls.

Rest ledges along the pool walls are permitted. They must not be less than 1.2m below the water surface and may be 0.1 - 0.15m wide. Gutters may be placed on all four walls of the pool. End wall gutters (if installed) must allow for attachment of touch panels to the required 0.3m above the water surface. They must be covered with a suitable grill or screen. They must also be equipped with suitable shut-off valves so that the water may be kept at a constant level.

The lanes should be eight with a total width of 2.5m and with 2 spaces each of 50cm width outside of lanes 1 and 8. There must be a lane rope separating these spaces from lanes 1 and 8 respectively. These lane ropes should extend the full length of the course.

During competition, the water in the pool must be kept at a constant level with no appreciable movement (Arlott, 1975).

Table tennis is basically an indoor game played by two players (singles) or two pairs (doubles) facing each other and hitting a ball with a racket (bat) so that it passes over or round a net stretched midway across the surface of a table, striking its surface at each end alternately.

The table is rectangular 2.74m in length and 1.525m in width and the height of its flat upper surface is .76m above the floor. This surface, called the playing surface and including the top of the extreme edge is divided by a net across the middle into two equal parts called 'courts'. The whole is outlined by a line 2cm broad along each side and at the ends. A narrow line 3mm broad, down the centre divides the playing surface into server's and receiver's right and left half-courts for doubles play (Arlott, 1975).

The table may be made of any material so long as a standard ball, dropped anywhere on its surface from a height of 30.5cm rebounds uniformly to a height of between 22cm and 25cm. Hardwood is therefore recommended with dark paint or lacquer. Green colour is also preferred.

The lines are white. The table should be firm and rigid.

The playing area should be spacious enough to give adequate space for convenient and free movements during play. Playing courts with at least 12m by 6m is recommended by the International Table Tennis Federation (ITTF). However, international matches should have an area of at least 14m by 7m.

Volleyball is a team sport played on a rectangular area 18m by 9m divided into two equal square courts by the centre line, above which spans a taut horizontal net at a height of 2.43m for men and 2.24m for women. A recommended playing area of 24m by 15m is allowed for an undisturbed movements by players. There must be a 2m clearance away from the lines (Arlott, 1975).

The net is 9.5m long, 1m wide (deep) and made of a mesh whose squares are 10cm wide. A double thickness of white canvas or linen 5cm wide should be stiched across the top. A flexible cable stretches the upper edge of the net and passes inside the band of the canvas. The bottom of the net is normally stretched by a cord or rope which passes through a canvas sleeve similar to the top one, or through the mesh itself.

The International Volleyball Federation (FIVB) was founded in 1947 to formalise and regulate international rules and competitions, (Arlott, 1975).

In Nigeria, the Nigeria Amateur Volleyball Association, established in 1958, is the governing body and it is affiliated with the International head-quarter in France.

#### Maintenance of Sports Facilities

The opinions of all available authors agreed to the fact that a well maintained facility generate pride on the part of students and staff and has positive effect on morale. It is also agreed that with proper maintenance a facility will last longer, provide a healthier environment, be less costly, and provide a more satisfying experience for participants (Bucher, 1983; Frost and Marshall, 1981; Adedeji, 1984; Resick, Seidel and Mason, 1970; Forsythe and Keller, 1972; and Oyewusi 1978).

Just as planning and constructing facilities are vital administrative functions, so also and equally, important responsibility is the maintaining of the facilities. It looks an unwise spending if thousands

of naira were spent on planning and constructing a facility only to be left uncared for with few 'naira'. The situation can be disturbing and participation in sports can also be affected adversely where the available sports ground are left without the necessary maintenance. The football (soccer) field, hockey pitch, cricket pitch, athletics field and other sports with grass surface need regular cutting and wetting, when necessary, if participants are to enjoy their usage. Similarly, the basketball, handball, volleyball, lawn tennis and other hard or cemented courts need proper caring in order to attract sports participants.

The provision of a good storage facility for sports equipment and supplies is a good pointer to effective use of these materials. The equipment room should be well ventilated and securely locked. Any damage or loss to any equipment or supplies should be restituted. Wet and perspiration-soaked cotton and woolen equipment must be thoroughly dried between practice sessions or games. It must also be laundered or dry-cleaned frequently.

In checking, storing, issuing and maintaining supplies, equipment and sports facilities, the following

outlined guidelines were proposed by Bucher (1983) and Adedeji (1985).

1. All supplies, equipment and other sports facilities should be carefully checked ensuring the actual specifications in terms of type, quality and quantity.
2. Supplies and equipment requiring organisation identification should be labelled. This will help to trace missing articles, discourage misappropriation and properly identify the facilities meant for the institution.
3. Procedures should be established for issuing and checking in supplies and equipment.
4. Equipment and other sports facilities should be in constant repairs. Equipment should be maintained in a serviceable condition. Procedures for caring for equipment should be routinised so that repairs are provided as needed. Supplies should be replaced when they have been expended.
5. Equipment and supplies should be stored properly.

6. Garments should be cleaned and cared for properly. Specialised all-automatic athletic laundry facilities that are owned by the organisation are recommended as a means of protecting garments against shrinkage, colour fading, snags, and bleeding.
7. All sports facility surfacing materials such as earth (loams, sand, sand-clay, clay-gravel, soil-cement); turf (grass); aggregates (gravel, graded stone, cinders); asphalt; synthetics (rubber, resins, plastics); concrete; masonry (granite, sand stone, brick) and others like the sawdust should be regularly cared for especially after heavy use. Measures should also be taken to reduce or eliminate vehicular and pedestrian traffic and security measures should be taken to reduce the possibility of vandalism and misuse of facility surfaces.

Maintenance of Cinder Surface: Cinder surface used for track (athletics), lawn tennis and other sports constructions need specific level of maintenance. This is considered essential because many Nigerian

Universities may not afford to construct the tartan track because of the high cost. Karabetos (1970), came up with operational ideas as to how to maintain cinder track and pitches.

Cinder tracks and pitches can always be exposed to both human and natural hazards. Weather conditions play a major role in damaging the surface in differential degrees and such standing onslaught has to be combated almost everyday. Hence everyday care and maintenance will naturally keep the surface in an order and thus provide a good surface for the athletes. In order to keep the cinder surface constantly standard and well maintained, the following procedures must be followed (Karabetos (1970):

1. During the dry season, water the surface. Take care that water does not overflow the borders. See that unnecessary depressions are not created by the flow of water on the surface.
2. When the water dried up, but not fully, rake manually or with the help of a tractor. Wooden planks or roller can be used if levelling is needed.
3. After heavy rain, allow the surface to dry up,



- rake it manually or tilther it mechanically. Brush it properly to have an even spread of the cinder. Then roll it with light roller.
4. After a competition or heavy use of the surface, rake, brush and roll it gently.

#### Rudiments and Important Features of Sports and Sports Participation

Sport, which derives its root meaning from "disport", meaning "to divert oneself" carried the original implication of people diverting their attention from the rigours and pressures of daily life by participating in the mirth and whimsy of frolic - some physical activity. Today, sport is anything but a diversion of its participants.

Sports differ radically from recreation, contests and games, although they may contain elements prominent in each of these (Edwards, 1973). It is only in sports that the participant can accurately be termed an 'athlete'.

Some of the salient features of sports as advanced by McIntosh (1963), and Edward (1973) are listed below:

1. They involve physical exertion. This is an imperative characteristic that cannot be over-

- stressed. Without it there simply is no sport.
2. These activities are always formally structured and organised within the context of formal and explicit rules of behaviour and procedure. These rules typically are historically based. Changes in rules are regarded as legitimate and binding only if made by officially mandated bodies carrying out their tasks in accordance with predetermined procedures. Thus, the athlete involved in sports or athletic activity is functioning within well-established traditions that are preserved in formulations of what is required and permitted as well as in formally documented and updated records and histories.
  3. There should also be the presence of disinterested and impersonal referees or judges who make the existence of formally prescribed rules of action and process always amply evident. Thus, the athlete differs radically from children at play who recite the same verses generation after generation, but have no sense of history or tradition.

From the above clearly stated features, it becomes more evidently clear that participants in sports are always representatives of groups or organisations. The representation of or affiliation with a group brings about a heightening of the pressures on the individuals involved in the effort. The resulting intense seriousness of purpose is manifest in several ways.

First, all sports demand meticulous preparation on the parts of all having a direct input into the determination of the outcome of the sporting event. Thus coaches carefully plot strategies, athletes prepare and condition themselves mentally and physically, and extensive practice sessions are carried out with the purpose of coordinating the various efforts. All these preparations are aimed toward the goal of winning.

Second, in sports all roles and positions are explicitly named, defined and delegated. The relationships and responsibilities of each relative to another are clearly detailed.

Third, and last, the seriousness of purpose in sport as a social phenomenon is manifest in the fact

that formal organisational structures and relationships are necessary. This formal organisation, as viewed by Dunning (1967), typically rivals that of other large-scale bureaucratically structured enterprises in terms of role specialisation, the complexity of its internal functions and the hierarchically arranged authority relations among positions.

In sports, the central effort is the using of whatever personal resources that a participant may have, especially the physical power, as efficiently as possible to defeat the opposition within the boundaries of the rules governing participation.

Like the participant in the game or contest, the athlete in sports has no control over the temporal and special dimensions of his activity. Both of these boundaries, as explained by Edward (1973), are set by rules and enforced by judges and referees. The athlete may therefore neither enter nor leave the activity as he desires. For to do so would constitute a breach of his role responsibilities to the collectivity which he represents or is a part of. Else, he would be adequately sanctioned.

Based on the above clarifications, sports can therefore be defined as involving activities having formally recorded histories and traditions, stressing physical exertion through competition within limits set in explicit and formal rules governing role and position relationships and carried out by actors who represent or who are part of formally organised associations having the goal of achieving valued tangibles or intangibles through defeating opposing groups (Edward, 1973).

As defined here, sports can assume the character of occupational endeavours for the participants and of businesses for coaches, administrators and owners. The 'businesslike' quality of the role relationships among these positions and the rigidly defined role responsibilities and rewards attached to each become crucial factors in determining the overall functioning of sports in a society.

This is true in both amateur and professional sports where the only real differences between the two typically pertain to the intensity and roughness of the activity and the fact that professional participants

may legitimately receive economic or material remuneration for their services to the groups of organisations which they represent while amateur participants may not.

### Values Accruing from Sports Participation

Sports participation and activities form a vital link in the pattern of blended educational experiences so necessary for students and staff in our educational institutions. Nobody should be deprived of his or her opportunity for participation in a great variety of sporting experiences which would contribute to a long, happy and normal life.

Intramurals, extramurals and recreational sports form the basic elements of sports participation in any educational institution. Intramurals are pleasing combination of the elements of physical education and the modern concept of recreation. They also form the physical recreation phase of applied physical education. All these aspects cannot therefore be insulated from each other.

All the contemporary authors agree with regards to the physical, mental health and fitness benefits sports offer to the participants (Bucher, 1983; Means,

1973; Edward, 1973; Nixon and Jewett, 1980). Competitive exercise or sports is considered a splendid safety value. When a man plays a game the way it should be played, he lets himself go. He suffers disappointments and experiences triumphs. Inwardly he applauds his good shots and frowns at the bad ones. His complexes melt away with his perspiration. When his game is over, he lies down in panting relaxation. He has discharged his mental bogies (Means, 1973; Holes, 1965; Kodzi, 1974) -- a person who keeps active in his sports need seldom fear a nervous breakdown.

Again, through the ages, great philosophers, educators and statesmen have emphasised the values of sports participation and have identified the relationship of the intellectual to the physical. These expressions as presented by Mueller, et al (1979) to substantiate these values are as follows:

Socrates (420 B.C.): Our children from the earliest years must take part in all the more lawful forms of play for if they are not surrounded with such an atmosphere, they can never grow up to be well-conducted and virtuous citizens.

Plato (380 B.C.): There will be need of sports for the habits of the soul, even at six years of age.

Aristotle (350 B.C.): The principal aim of gymnastics is education of all youth and not simply that minority of people highly favoured by nature.

Comenius (1650): Intellectual progress is conditioned at every step by bodily vigour. To attain the best results, physical exercise must accompany and condition mental training.

Froebel (1830): It is by no means, however, only the physical power that is fed and strengthened in these games; intellectual and moral power, too, is definitely and steadily gained and brought under control.

Dewey (1919): Experience has shown that when children have a chance at physical activities which bring their natural impulses into play, going to school is a joy, management is less of a burden, and learning is easier.

Menninger (1967): Too many people do not know how to play. Others limit their recreation to passive



observation of the activity of others. Some people harbour the belief of our early forefathers that to play is sinful. Others feel that play is only for children and believe that "as I become a man I put away childish things". Some regard play as simply a waste of time as well as energy. Some consider play a reward for good behaviour. Finally, some individuals have had such severe and rugged lives as children that they have never learned to play. There is considerable scientific evidence that the healthy personality is one who not only plays but who takes his play seriously.

One of the most important values of sports participation is the opportunity for individuals to respond to numerous success and failure experiences. According to Umedum and Onyilogwu (1986), a measure of success encourages a person to do all things in a successful manner, and a degree of failure causes him or her to try to improve subsequent performances. The mental adjustments to success and failure in sports provide excellent training for similar experiences in other phases of life. In analysing a sporting activity, it

is evident that success and failure are constantly present. It is therefore the pleasant and unpleasant experiences in sports that is of inestimable value to an individual's development.

The social values, group cooperation and spirit sports give especially during competitions cannot be over-estimated. According to Washke (1940), one of the greatest objectives of sports is the spread of acquaintanceship. During intramurals it is impossible for a student to know more than a small group. Acquaintance ripens fast under the stimulus of bumps and bruises received on the athletic fields and courts. Participation promotes association which establishes many beneficial social contacts for every individual. Team play also fosters the rugged virtues of courage, determination and self-control (Means, 1973).

Positive education, as opined by Awosika (1982) is a primary goal of athletics. Since competition dominates most intramural programmes, one would do well to determine, subjectively or objectively, whether or not actual occurrences suit defined purposes. Many educational objectives may be cited as probable outcomes of sports competition. Mendy (1978), advanced

that sports are not only beneficial for varsity athletes, sports offer something for everyone. That is a basic rationale for intramurals. But the pursuit of excellence is commonplace in the minds of students and being less than excellent is hard to accept and cope with.

Sports participation also develops strength and endurance as well as the neuromuscular coordination that provides agility and confidence in the control of one's movements. This statement has been confirmed by many authors such as Nordly (1969), Adedeji (1985), Mathews (1976), and Barnes (1971). They all agreed that participation develops the ability to handle the body gracefully and efficiently. The qualities of strength, endurance and agility are directly useful in meeting stresses of everyday life. Indirectly, they comprise a great asset for any individual through the inner confidence and self-assurance they bring, and through the outward addition they make to that person's carriage and presence. The importance of bodily coordination and training in motor skills should therefore receive increased emphasis.

Mental hygienists have also advocated the need for enjoyable, recreative activities, the kind which are sponsored in sports programmes. Menninger (1967), a world famous psychiatrist stated: "to the individual, good mental health is directly related to his capacity and willingness to play". He therefore suggested that competitive sports provide an unusually satisfactory social outlet for the instinctive aggressive drive. It is a drive that constantly seeks expression in all of us. Where the direct expression is denied, symptoms may develop. There are perhaps specific values in varying degrees and types of competitive activity. The most aggressive outlet is seen in those sports in which there is bodily contact with an object such as tennis, badminton and hockey; and probably least, but still evident, in sports of primarily intellectual competition such as chess and checkers. All these types of recreation meet the psychological need of many individuals whose jobs or daily work prevent sufficient expression of aggression.

Participation in such sporting activities therefore gives objective interest and outlooks. It takes the individual's mind off himself or herself and

focuses it on outside interesting objects and thereby combats tendencies to become moody, too introspective, and too introverted. The individual also learns to adapt himself or herself to group standards.

Emotionally, an individual participating in sports can attain personal satisfaction and meet individual needs such as needs for accomplishment, self-expression and creativity, recognition, new experiences and belonging. Self-reliance and self-esteem can also be developed through participation in sports.

The social benefits derivable from sports participation cannot be under-estimated. The opportunity to meet other individuals of similar age has been described by Edward (1973) and Mueller and Reznik (1979) as the most important experiences a person gains during his or her school career. On the athletic field or sports court, these associations are carried on under conditions that stimulate adult social and competitive life in many respects. Such an experience in group relations broadens the individual's viewpoint, makes him or her a better judge of his or her associates, gives him or her greater self-assurance when in the company of others, teaches him or her the

meaning of loyalty and cooperation and teaches him or her lessons of acceptable sportsmanlike conduct. Participants receive actual experience in group living which is valuable for 'getting along' in the numerous social involvements of everyday living. Friendships established in the classroom are often increased in the playing field and vice-versa.

Apart from the social benefits, the feeling of group spirit and unity that a varsity team develops among students is a most praiseworthy feature of participation in organised sports programmes. This same spirit known as 'Esprit de Corps', is exemplified in miniature by the various participating units in sports programmes. The feeling engendered is therefore that of belonging to a cause that is larger than one's self and of the willingness to sacrifice one's own interest for the welfare of the group. Pride and devotion is symbolic of the patriotism of a citizen to the state and nation and therefore a worthwhile attitude to develop in the nation's youths.

#### Summary

In summary, the literature as reviewed in this Chapter has categorically emphasised the importance

of constructing sports facilities to meet required norms and specifications. In order to do this, certain basic principles and steps for planning the facilities should be followed. The views of various authors on these procedures and specifications were therefore highlighted.

After providing for sports facilities, the need to ensure adequate maintenance of these facilities cannot be over-emphasised. Hence, certain procedures and measures that must be taken to ensure proper care and maintenance of sports facilities were suggested as opined by various authors.

Finally, the rudiments and important features of sports and sports participation have been considered very important in this review. The values accruing from participation in sports are therefore considered as basics judging from the social, mental, physical, psychological and emotional benefits derivable from such participation.

Based on the review of literature, it is deduced that participation in sports is relevant to sports facilities.

## CHAPTER THREE

## METHODS AND PROCEDURES

The study is focused on the examination of the relationship between sports facilities and participation in sports in selected Nigerian Universities. In order to obtain the data for this study, the researcher used research instruments such as the questionnaire, personal interviews and discussions with the administrators and personnels concerned with the management and use of sports facilities in the Universities. The relevant files and documents from the selected Universities sports offices were also used.

Population and Sample Selection

Nigerian Universities made up the population of this study. Eight were selected from among the twenty-four Universities currently existing in Nigeria. In selecting the eight Universities, cognisance was taken of the age and general exposures of the institutions in competitive sports. Hence the first approach used was to delimit the study to both the Relatively Old



and New Universities in Nigeria. Universities which started taking part in Nigeria Universities Games (NUGA) from its inception in 1966 were categorised Relatively Old while those that started participating in 1974 and thereafter were categorised Relatively New.

Only eight Universities were used for this study. Hence five of the relatively old and three of the relatively new Universities were randomly selected.

The majority of the selected Universities were from the relatively old institutions because almost all of them have established facilities for running sports programmes hence their participation in the national and international competitions. Fewer Universities were selected from the relatively new institutions because they have relatively fewer sports facilities contained in them. Since the essence here was to examine the relationship between the available sports facilities and sports participation in selected Nigerian Universities, the inclusion of the new Universities would only corroborate the findings of the study. Table 1 shows the selected Universities.

TABLE 1

The eight Selected Nigerian Universities.

Code	Name of University	*Esa- blished	*Popu- lation 1985/86	First Compe- ted in NUGA
01	University of Ibadan, Ibadan	1948	12,350	1966
02	University of Lagos, Lagos	1962	10,665	1966
03	University of Ife, Ile-Ife	1962	13,460	1966
04	Ahmadu Bello University, Zaria	1962	12,995	1966
05	University of Benin, Benin City	1970	9,609	1972
06	University of Ilorin, Ilorin	1977	5,847	1978
07	Bendel State University, Ekpoma	1980	4,424	1984
08	Ogun State University, Ago-Iwoye	1982	2,138	1984

\* National Universities Commission, Nigeria, Annual Reports, 1985/86.

The facilities identified for study were in those sports generally played by all the Universities and which are being participated in at both the intramural,

recreational and extramural levels. For the purpose of proper identification, the Nigerian University Games Association (NUGA) approved sports were used.

These are:

1. Athletics (Staff and Students) Male & Female
2. Badminton (Staff and Students) Male & Female
3. Basketball (Staff and Students) Male & Female
4. Cricket (Students only) Male only
5. Handball (Staff and Students) Male & Female
6. Hockey (Students only) Male & Female
7. Judo (Students only) Male & Female
8. Lawn Tennis (Staff and Students) Male & Female
9. Soccer (Staff and Students) Male only
10. Squash (Staff and Students) Male & Female
11. Swimming (Staff and Students) Male & Female
12. Table Tennis (Staff and Students) Male & Female
13. Volleyball (Staff and Students) Male & Female

In the eight selected Universities, sports participation was either well established or being established at both the intramural, extramural and recreational levels. They have also, participated in the national competitions known as Nigeria Universities

Games Association (NUGA) Games, at least twice since their inception.

From these eight selected Nigerian Universities, therefore, student athletes, staff of the Department of Physical and Health Education and or the Sports Council of the selected Universities were used as respondents. In all, 200 respondents (staff and students) considered to have the knowledge of what types of facilities are good enough for athletic and sports performances were used. The breakdown are as contained in Table 2 below:

TABLE 2

Staff and Students Respondents per University (N = 200)

	UI	Uni lag	Uni ben	Unife	ABU	Uni- lorin	Bensu	OSU	Raw Total
Stu- dents	21. 10.5	20 10.5	19 10	17 9.5	17 8.5	19 9.5	13 6.5	21 19.5	147 73.5
Staff	10 5	8 4	8 4	10 5	4 2	5 2.5	3 1.5	5 2.5	53 26.6
Column Total	31 15.5	28 14	27 13.5	27 13.5	21 10.5	24 12	16 8	26 13	200 100

The Table shows 31 (15.5%) total respondents selected from University of Ibadan broken down as 21 (10.5%) and 10 (5%) from students and staff respectively. From University

of Lagos, a total of 28 respondents were used representing 14% of the total respondents. This was broken down as 20 (10%) and 8 (4%) from students and staff respectively. University of Benin has a total of 27 (13.5%) respondents with 19 (9.5%) and 8 (4%) selected from students and staff respectively. The trend is almost the same for University of Ife with 27 (13.5%) respondents with 17 (8.5%) and 10 (5%) students and staff respondents respectively. Ahmadu Bello University has 21 (10.5%) broken down as 17 (8.5%) and 4 (2%) students and staff respectively. University of Ilorin has 24 (12%) with 19 (9.5%) students and 5 (2.5%) staff. From Bendel State University, 16 (8%) were chosen with 13 (6.5%) students and 3 (1.5%) staff respondents. And from Ogun State University, a total of 26 (13%) were chosen, broken down as 21 (10.5%) students and 5 (2.5%) staff respondents.

The total percentage selected from among the staff in relation to the total respondents was therefore 26.5% while that of students was 73.5%. This was made up of a total of 53 staff and 147 students respondents.

### Research Instrument and Data Collection

The major instrument for data collection was the questionnaire. Other instruments included, interviews and discussions with students and staff especially the coaches, lecturers and sports administrators and personal observations of the facilities available in the selected Universities. The sports offices files and documents were also used.

The questionnaire which was the major instrument used was planned to investigate the various parameters in the study. Since this study is a relatively new one in Nigeria, efforts were made to consider some relevant studies conducted overseas especially relating to facility planning and construction. Hence, apart from the general questions to elicit information from the respondents, efforts were made to use the closed-ended types of questions in asking very relevant alternatives from among the sets of given answers.

Questions were also presented in form of statements, each followed by a 5-point scale, namely:

Strongly agree      (SA)      (5)

Agree                      (AG)      (4)

Neutral/Undecided	(N)	(3)
Disagree	(D)	(2)
Strongly disagree	(SD)	(1)

The respondent scored only one by a tick  in the appropriate column or box in each case from the questionnaire.

The Facility Evaluation Instrument (FEI) designed by Penman (1977) was also used in a modified form. The modified rating scale was therefore used to evaluate the existing facilities. The rating scale was based on the following:

Very Good (especially for competitions of all types)	(VG)	(5)
Good (especially for intramural purposes)	(G)	(4)
Fair (Average) (can be used for recreational purpose only)	(F)	(3)
Poor	(P)	(2)
Not available	(NA)	(1)

A remark column was then included to indicate an individual's preference on emphasis. Penman (1977) feels that any evaluation process is of little value unless it is used. Hence, after each area in the facility

has been evaluated, the rating column was totalled and with the use of a profile card, an Efficiency Rating (ER) was calculated using the scale of 5 as the maximum baseline. This was therefore used to determine strengths and weaknesses of the University Sports programmes and participation. It was also used to access the University facility standards and dimensions based on the actual standards and dimensions approved by the various sporting bodies both in Nigeria and world-wide as recommended below:

Determining Standards and Adequacy of Sports Facilities

Sports facilities will be regarded as standard when they meet the required specifications and norms of the ruling bodies. The required specifications should be universally used by all nations irrespective of their peculiar nature, culture or differences (Bronzen, 1974 and The Athletic Institute, 1979) (Table 3).

As regards the adequacy of the sports facilities especially for Universities and Colleges, the basic criterion recommended was to base the minimum number required on the population of the institution (Athletic Institute, 1968 and Bronzen, 1977). The Athletic



Institute (1968) therefore recommended specific numbers of facilities for a range of population of students and staff in the institution. In Tennis for instance, University National Standard was fixed as one full court per 400 students of applied student population. If there are 8,000 students, 20 courts are expected to be constructed (The Athletic Institute, 1985). A standard track for athletics should also be a 400 meters track with six or eight lanes, well marked out and with synthetic surface. Approaches for high jump, long jump, triple jump, pole vault and javelin should also have synthetic surfaces. At least one standard track is recommended for a College or University, with not more than 10,000 students. An additional standard practising track is also required for institution with this number of students (Bronzan, 1974; The Athletic Institute, 1985).

The Athletic Institute, 1979 and 1985 Athletic Institute 1968 and Arlott, 1975 recommended the following standards and minimum requirements based on series of Conferences and reviews on College and University Facilities Guide for Health, Physical Education, Recreation and Athletics;

TABLE 3

## Standard Specifications and Recommended Adequacies for Sports Facilities

No.	Sports	Recommended Number per 10,000 Students	Surface Type	Standard Specification (m)	Height (m)	Clear Space (m)
1.	Athletics	2	Synthetic	400m track	Open	Open
2.	Badminton	10	S or C	13.41x 6.00	7.93 (Indoor)	1.22 (round)
3.	Basketball	(a) 2 Indoor (b) 4 Outdoor	S or C	28.00x15.00	7.00 and Open	1.22
4.	Cricket	2	Turf	20.12x 3.70	Open	Open
5.	Handball	(a) 1 Indoor (b) 2 Outdoor	S or C	40.00x20.00	8.00	1.50
6.	Hockey	2	Turf	23.92x50.55	Open	Open
7.	Judo	1 hall	Mat	9.00x 9.00	Open	1.00 (round)
8.	Lawn Tennis	25	S or C	23.77x10.97 (doubles)	Open	3.65 side or 6.40 baseline
9.	Soccer	2	Turf	120.00x90.00	Open	Open
10.	Squash	4	Concrete	9.75x6.40	Indoor	-
11.	Swimming	1	Water	50.00x21.00	-	-
12.	Table Tennis	25	Table	2.74x 1.53	Indoor	12.00x6.00 (Area per Table)
13.	Volleyball	10	S or C	18.00x 9.00	Open	6.00

Key: S = Synthetic C = Concrete

Adapted from: The Athletic Institute (1985)

The researcher therefore used these recommendations (Table 3) as useful guides in determining standard specifications and adequacies for sports facilities.

The maintenance levels of the available facilities in these Universities were also considered. Respondents were therefore requested to describe the level of maintenance of the available sports facilities based on the 5-point scale as follows:

Always Maintained	(AM)	(5)
Often Maintained	(OM)	(4)
Sometimes Maintained	(SM)	(3)
Seldom Maintained	(Sel.M)	(2)
Never Maintained	(NM)	(1)

The rating scales have been used in many cases in order to provide standard reference and allow the respondents to quantify the statements and scales provided. According to Thorndike and Hagen (1977) and Guilford (1979), rating procedures attempt to get appraisals on a common set of attributes for all raters and ratees and to have these expressed on a common qualitative scale. The reliability of ratings has been found to be low: about .55 (Symonds 1931), but where ratings are

pooled together especially where a number of raters properly know the persons or things being rated, the reliability for ten raters was found to be .92 (Thorn-dike and Hagen, 1977).

This therefore explains why only the athletes and staff who have the knowledge of the sports and also use the sports facilities were used as respondents.

#### Administering the Questionnaire

The researcher tested the questionnaire in a pre-test study using selected staff and students of University of Ibadan and who were also part of the target population but not included in the sample selected. This test determined the reliability of the questionnaire and also helped to correct the ambiguities of the instrument.

Penman (1977) Facility Evaluation Instrument (FEI) which was found to have a reliability coefficient of .73 was used. The questionnaire format was based on six sections which required information on respondents personal data, rating and evaluating the standards and adequacies of the available sports-

grounds, level of maintenance of the available sports-grounds, selected statements, rating of the level of participation and sports facilities. However, the questionnaire was designed to maintain the anonymity of the respondents.

In preparing the instrument, the investigator took suggestions from his supervisor, sought assistance from other faculty and departmental members, collected needed information from literature review and submitted the sample to the supervisor for necessary correction and approval in order to ascertain the face validity of the questionnaire.

In order to ensure proper filling and return, the researcher administered the questionnaire personally on the respondents and on completion, he collected them. Even with this approach, there were quite a number of questionnaire forms that could not be retrieved.

The researcher also interviewed some student-athletes and staff in the selected Universities. This information was found necessary when one considered the level of involvement of staff and students

in the use of these sports facilities. Of particular interest was the discussions the researcher had with some of the sports administrators and directors of the selected Universities. Information collected from this interview therefore helped to clarify, elucidate and enrich other information got through the questionnaire.

#### Method for Data Analysis

For the purpose of analysis, only the questionnaires that were duly completed were used. Since the study is to determine the relationship between sports facilities and sports participation, the data reflected the findings of this relationship. Hence the Spearman Rank-Order Correlation ( $r_s$ ) was used to determine the relationship between the available sports facilities and the participation levels in every sports that was played in all the eight selected Universities. In calculating  $r_s$ , therefore, the raw scores of the two variables (facilities and sports participation) were assigned ranks - 1, 2, 3, etc. after the percentage scores had been calculated. The differences between the ranks ( $R_x - R_y$ ) were found before the squares of

the differences ( $D^2$ ) were calculated. The formula used to calculate the correlation ( $r_s$ ) between the two variables under investigation was:

$$r_s = 1 - \frac{6 \sum D_i^2}{n(n-1)}$$

where:

$D_i$  = difference between the ranks assigned to single variates in each pair of observations.

$\sum D_i^2$  = summation of the squared differences between ranks.

$n$  = number of pairs of observations.

Using 0.05 significance level, the critical values for significance of Spearman Rank-Order Correlation Coefficient was used to test the level of relationship of the  $H_0$ .

Again, since this study involves two or more nominal categories in which the data collected consisted of frequency count that were tabulated and placed in appropriate cells, the researcher had to use the chi-square ( $X^2$ ) statistics to test the observed and expected cases in the same categories.

The formula used for applying the  $X^2$  was therefore:

$$X^2 = \sum \frac{(f_o - f_e)^2}{f_e}$$

where:  $f_o$  = the observed number of responses

$f_e$  = the expected number of responses

$E$  = the summation of

The level of significance used was 0.05 level of probability and with 4 df.

There was also a supplementary application of percentage analysis of a number of responses in each category with a view to quantifying and ranking the polled number of responses along given columns and rows of the categories relatively.

In ranking the sports popularity among the selected Universities, the researcher adopted a 'relatively old and new Universities' approach. This, in effect means that the eight Universities were conveniently divided into 'relatively old' and 'relatively new' areas. Five Universities therefore fell into the former category while three were in the 'relatively new' category. The basic criterion used for this



categorisation was that those which participated in Nigerian University Games (NUGA) between 1966 and 1974 were regarded as 'Relatively Old' (RO) while those that participated later were grouped under 'Relatively New' (RN). The Spearman Rank-Order Correlation ( $r_s$ ) was also used to determine the relationship that existed between the two categories.

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## CHAPTER FOUR

## DATA ANALYSIS AND INTERPRETATIONS

Analysis of Data

This Chapter focuses on the analysis of the data collected in order to test the sub-hypotheses.

Sub-Hypothesis 1

There would be no significant relationship between the standards of available sports facilities and participation in various sports in the selected Nigerian Universities.

TABLE 4

Summary of Relationships between standards of available facilities and sports participation levels in various sports.  
(N = 200)

Sports	ED <sup>2</sup>	r <sub>s</sub>	Significance
1. Athletics	6.5	.922	P > .05 (NS)
2. Badminton	44	.476	P < .05
3. Basketball (Outdoor)	16	.809	P > .05 (NS)
(Indoor)	80.5	.042	P < .05
4. Cricket	8	.905	P > .05 (NS)

Sports	Ed <sup>2</sup>	r <sub>s</sub>	Significance
5. Handball	56	.333	P < .05
6. Hockey	34	.595	P < .05
7. Judo	19.5	.768	P > .05 (NS)
8. Lawn Tennis	12	.857	P > .05 (NS)
9. Soccer	10	.881	P > .05 (NS)
10. Squash	27	.679	P < .05
11. Swimming	8	.905	P > .05 (NS)
12. Table Tennis	4	.952	P > .05 (NS)
13. Volleyball	22	.738	P < .05

n = 8 df = 7

NS = Not Significant

$\alpha$  = .05 significance level

Critical Value = .714

Table 4 gives a summary of the Spearman Rank Order Correlation Coefficient of the rankings of standards of available facilities and sports participation levels in the various sports under investigation. This table shows very high correlation coefficient in athletics, basketball (outdoor), cricket, lawn tennis, soccer, swimming and table tennis with r<sub>s</sub> of .809 and above at .05 significance level. These

obtained values are also higher than the table value of .714 (critical value) at 7 degree of freedom which also indicates an acceptance of the null hypothesis for these sports.

An examination of the individual sports (Appendices 3, 5, 7, 11, 12, 14 and 15) show high rating percentage scores for standards of available facilities with corresponding high rating percentage scores for participation levels in these sports. Where the percentage scores are low in respect to standards of facilities, the percentage scores are also low in respect of sports participation levels. The result therefore is the low summation of squared differences which ranged from 4 for table tennis to 16 for basketball (outdoor.). In athletics, basketball (outdoor), cricket, lawn tennis, soccer, swimming and table tennis, the calculated  $r_g$  are .922, .809, .905, .857, .881, .905 and .952 respectively.

The correlation coefficient of the standards of the available facilities and participation levels in Judo was calculated as .768. This obtained value is also higher than the critical value of .714 at .05

probability level and 7 df. There is therefore a positive relationship between the variables. Although Judo is a relatively new sport in the Universities of Nigeria, the fact remains that the standards of available facilities correlate positively with the level of participation in this sport. This can be explained from the ratings percentage scores and rankings shown in the calculations (Appendix 10).

In the case of badminton, basketball (indoor), handball, hockey, squash and volleyball, the calculated  $r_s$  were .476, .042, .333, .595, .679 and .738 respectively. These values which are lower than the critical value of .714 at .05 significant level and at 7 degree of freedom indicate that there are significant differences in the variables for the sports. The values also indicate low to modest correlation results.

An inspection of the various sports show that badminton and basketball facilities could be constructed indoor<sup>s</sup> and outdoor<sup>s</sup>. Badminton facilities should normally be constructed indoor (Arlott, 1975) and (Table 3) with a clear height of 7.93 metres. Some

of these Universities under investigation possess outdoor facilities in this sport and therefore recorded low percentage score ratings but with a corresponding high percentage score rating in sports participation level. An example of this is shown in code 08 University with rating percentage score of 37.2 and 58.5 for standards of facilities and participation levels respectively (Appendix 4). In basketball which can either be played outdoors or indoors, the relationship is negligible for indoor basketball whereas it is high for outdoor basketball.

From the foregoing analyses it is concluded that the first hypothesis which advanced that there would be no significant relationship between the standards of available facilities and participation in various sports in the selected Nigerian Universities is hereby accepted in part and rejected in part. There is no significant relationship between the variables in athletics, basketball (outdoor), cricket, judo, lawn tennis, soccer, swimming, and table tennis whereas there is significant relationship between the

variables in badminton, basketball (indoor), handball, hockey, squash and volleyball.

### Sub-Hypothesis 2

There would be no significant relationship between the adequacy of available sports facilities and participation in various sports in the selected Nigerian Universities.

TABLE 5

Summary of relationship between adequacy of available sports facilities and sports participation levels in various sports.  
(N = 200)

Sports	ED <sup>2</sup>	r <sub>s</sub>	Significance
1. Athletics	6.5	.922	P > .05 (NS)
2. Badminton	14	.833	P > .05 (NS)
3. Basketball (Outdoor)	14	.833	P > .05 (NS)
(Indoor)	52	.381	P < .05
4. Cricket	12	.857	P > .05 (NS)
5. Handball	14	.833	P > .05 (NS)
6. Hockey	27.75	.673	P < .05
7. Judo	28	.667	P < .05
8. Lawn Tennis	8	.905	P > .05 (NS)

Sports	ED <sup>2</sup>	r <sub>s</sub>	Significance
9. Soccer	2	.976	P > .05 (NS)
10. Squash	8.25	.899	P > .05 (NS)
11. Swimming	6	.929	P > .05 (NS)
12. Table Tennis	18	.785	P > .05 (NS)
13. Volleyball	16	.809	P > .05 (NS)

n = 8    df = 7    NS = Not Significant  
 $\alpha$  = .05 Significant level  
 Critical Value = .714

This sub-hypothesis was tested based on the thirteen sports under investigation. Table 5 shows the summary of the Rank Order Correlation Coefficient of the variables in the various sports. The results show no significant relationship between the adequacy of available facilities and participation levels in athletics, badminton, basketball (outdoor), cricket, handball, lawn tennis, soccer, squash, swimming, table tennis and volleyball. The calculated r<sub>s</sub> for these sports range between .785 for table tennis and .976 for soccer. The r<sub>s</sub> also exceed the critical value of .714 at .05 significant level and at 7 df.



The relationship between these variables however show significance in hockey, judo and basketball (indoor) with  $r_s$  recorded for these sports as .673, .667 and .381 respectively.

In considering the adequacy level for these sports facilities, cognisance was taken of the required number of facilities that should be constructed based on the number of students in each university as reflected in Table 3 above. These results imply that where sports facilities are not adequate the likelihood of high participation levels seems remote. The results as analysed in appendices 17 - 30 are in line with Folawiyo's (1979) study on Ahmadu Bello University, Zaria and Umedum and Onyiliogwu (1986) pilot study on the influence of variable factors of incentive, adequate facilities/equipment and human relations in participation and performance in sports.

Table 5, therefore, indicates a total acceptance of the null hypothesis in eleven of the sports under investigation and rejection in only two sports. The  $r_s$  of .381 was calculated for basketball (indoor)

whereas it was .833 in basketball (outdoor).

Indoor basketball facilities ratings are generally low in all the selected Universities with percentage rating scores of 20.0% in four and 40% in two of the eight selected Universities. Only one University, code 04 (Appendix 20) records 78.5% rating score. In the case of outdoor facilities, the percentage rating scores are fairly high especially, in five Universities (Appendix 19). The adequacy ratings notwithstanding, participation levels in basketball (indoor and outdoor) are fairly high. This probably explains the highly positive relationship shown for basketball (outdoor) and low relationship shown for basketball (indoor).

The level of adequacy of handball, judo, hockey, squash and swimming facilities have not been high enough, so also the level of participation in these sports. In Judo, all the selected Universities recorded very low percentage scores (20%-30%) in the adequacy ratings with corresponding low percentage scores (20-30%) in the participation level ratings except code 01 with a score of 60.6% (Appen-

dix 24). From the summary, as reflected in table 5, therefore, only hockey, judo and basketball (indoor) have squared differences higher than 27, thus indicating the marked or modest relationship of the variables. In all the other sports, squared differences ranging between 2 and 18 were recorded thus reflecting the high relationships of the variables.

### Sub-Hypothesis 3

There would be no significant relationship between the maintenance of sports facilities and sports participation in the selected Nigerian Universities.

TABLE 6

Summary of calculated Chi Squares in the maintenance levels of available sports facilities and sports participation in various sports.

(N = 200)

Sports	Calculated $\chi^2$	Significance
1. Athletics	12.157	$P > .05$ (NS)
2. Badminton	6.205	$P > .05$ (NS)
3. Basketball	8.250	$P > .05$ (NS)

Sports	Calculated $x^2$	Significance
4. Cricket	5.517	$P > .05$ (NS)
5. Handball	2.119	$P > .05$ (NS)
6. Hockey	2.859	$P > .05$ (NS)
7. Judo	13.638	$P < .05$
8. Lawn Tennis	1.797	$P > .05$ (NS)
9. Soccer	7.855	$P > .05$ (NS)
10. Squash	7.264	$P > .05$ (NS)
11. Swimming	3.319	$P > .05$ (NS)
12. Table Tennis	21.116	$P < .05$
13. Volleyball	3.175	$P > .05$ (NS)

Critical Value of  $x^2 = 12.592$

$\alpha = .05$  Significance level

df = 6 (r-1) (c-1)

Table 6 gives a summary of the calculated Chi-square values of the relationship that exist between the levels of maintenance of facilities and sports participation in the various sports.

The critical value of  $x^2$  for every sport is 12.592 at  $P = .05$  and 6 df. The analyses of the thirteen sports as reflected in appendices 31 - 43 show that sports participation levels could either be high, fair or low whereas the maintenance levels

could be regarded as being excellent, good, fair or poor. In athletics therefore, the calculated  $\chi^2$  of  $12.157 < 12.592$  shows a no significant relationship between the variables. In badminton, basketball, cricket, handball and hockey, calculated  $\chi^2$  of 6.205, 8.250, 5.517, 2.119 and 2.859 respectively and which is less in each case, than the critical value of 12.592 indicate no significant relationship between the variables.

Significant relationship of the variables however occur in judo and table tennis with the calculated  $\chi^2$  of  $13.628 > 12.592$  for judo and  $21.116 > 12.592$  for table tennis at  $P = .05$  and 6 df.

The calculated  $\chi^2$  values of 1.797 for lawn tennis, 7.855 for soccer, 7.264 for squash, 3.319 for swimming and 3.175 for volleyball indicated statistically no significant relationship between participation and maintenance levels in these sports.

An observation of the various sports as shown in the appendices show that both sports participation and maintenance levels recorded highest scores 64 (32%) and 80 (40%) respectively for 'Fair' categories

in athletics (Appendix 31); 95 (47.5%) and 82 (41%) respectively for 'fair' categories in badminton (Appendix 32); and 111 (55.5%) and 68 (34%) respectively for 'High' and 'Fair' categories in basketball (Appendix 33). In cricket however, the level of participation is not only low, with 90 (45%) responses but also poor with 85 (42.5%) responses. The maintenance level of the available cricket facilities is also considered fair and poor with 87 (43.5%) and 76 (38%) responses respectively (Appendix 34). In the case of handball and hockey the relationship trend looks the same as in cricket. Participation levels in handball is considered fair with 96 (48%) responses whereas in hockey it is low (86 (43%). The maintenance level in handball was considered Fair/Poor judged by 81 (40.5%) responses recorded for each category. Also in hockey it is Fair and Poor 77 (38.5%) and 64 (32%) responses respectively.

The participation and maintenance levels in judo are considered low and poor based on 151 (75.5%) and 102 (51%) responses respectively (Appendix 37). In lawn tennis 92 (46%) and 85 (42.5%) responses indica-

ted fair participation and maintenance levels respectively (Appendix 38). In soccer however participation level was considered as high while the maintenance level was also considered as good. As for squash and swimming, participation and maintenance levels are generally low and poor (Appendices 40 and 41). In table tennis and volleyball fair levels are recorded for both participation and maintenance levels (Appendices 42 and 43).

The result of these findings indicate close and positive relationships between the two variables in all the sports except two which exhibited significant differences between the variables. It can therefore be concluded that the third hypothesis is accepted for eleven of the sports and rejected in the case of two sports. Good maintenance levels of sports facilities can therefore be considered as having positive effect on high participation in sports.

#### Sub-Hypothesis 4

There would be no significant difference in the ranking of sports between the relatively old (RO) and the new (RN) selected Universities.

TABLE 7

Relationship of Sports Popularity Ranking  
between the Relatively Old (RO) and New  
(RN) selected Universities  
(N = 200)

Sports	Popu- larity Rating (RO)	Ranks	Popu- larity Rating (RN)	Ranks	d	d <sup>2</sup>
1. Athletics	2.02	2	3.73	4	-2	4
2. Badminton	6.10	5	5.67	6	-1	1
3. Basketball	2.78	3	2.77	2	1	1
4. Cricket	10.62	12	10.17	11.5	.5	.25
5. Handball	5.94	4	5.83	7	-3	9
6. Hockey	7.18	7	7.33	9	-2	4
7. Judo	11.00	13	12.67	13	0	0
8. Lawn Tennis	7.42	8	7.20	8	0	0
9. Soccer	1.38	1	1.20	1	0	0
10. Squash	10.14	11	10.17	11.5	-.5	.25
11. Swimming	9.34	10	9.83	10	0	0
12. Table Tennis	7.90	9	4.93	5	4	16
13. Volleyball	6.20	6	3.00	3	3	9

$$Ed^2 = 44.5$$

$$n = 13 \quad df = 12$$

$$r_s = .877 \quad \text{Critical Value} = .506$$

$$\alpha = .05 \text{ significance level}$$



Table 7 shows the data on the correlation coefficient of the sports popularity ratings between the relatively old and the relatively new selected Nigerian Universities. The result shows an  $r_s$  of .877 which indicates a high correlation of the two variables. This calculated  $r_s$  is also higher than the critical value for significance of Spearman Rank-Order Correlation Coefficient which is .506 at .05 significance level and 12 degree of freedom. This also indicates a statistically significant correlation coefficient and shows a positive relationship between the relatively old and new Universities.

An observation of the data reveals that out of the 13 cases (sports), both Universities (RO and RN) agree perfectly in four cases - with zero difference in soccer, lawn tennis, swimming and judo. In another six cases, there are .5 to 2 differences. It is in only three cases that the differences in ranking opinions are 3 to 4. Soccer remains the number one sport for both categories while a slight variation occurs in the case of which sport should be number two and three. Basketball and athletics seem to be in favour of these ratings. However, there is no doubt

as to which of the sports is regarded as the last of the ratings. This is Judo, rated as number 13 in both categories.

Based on this analysis, it is concluded that there is no significant difference in the ranking of sports for popularity between the relatively old and the new selected Universities. This means that the ranking of sports for popularity was not differently done by either relatively old or new Universities.

#### Sub-Hypothesis 5

There would be no significant difference in the ratings of sports facilities between the relatively old and the new selected Universities.

TABLE 8

Relationship of sports facilities ratings between the Relatively Old (RO) and Relatively New (RN) selected Universities. (N = 200)

Sports	Percentage Rating (RO)	Ranks	Percentage Rating (RN)	Ranks	d	d <sup>2</sup>
1. Athletics	57	13	30	10.5	2.5	6.25
2. Badminton	65	7.5	40	8.5	-1	1
3. Basketball	88	3	68	1.5	1.5	2.25
4. Cricket	92	1	44	6.5	-5.5	30.25

Sports	Percentage Rating (RO)	Ranks	Percentage Rating (RN)	Ranks	d	d <sup>2</sup>
5. Handball	72	6	52	3	3	9
6. Hockey	88	3	48	4	-1	1
7. Judo	60	11.5	30	10.5	1	1
8. Lawn Tennis	80	5	45	5	0	0
9. Soccer	88	3	68	1.5	1.5	2.25
10. Squash	60	11.5	20	12.5	-1	1
11. Swimming	63	10	20	12.5	-2.5	6.25
12. Table Tennis	64	9	44	6.5	2.5	6.25
13. Volleyball	65	7.5	40	8.5	-1	1
						$\sum d^2 = 67.5$

$$n = 13 \quad df = 12$$

$$r_s = .815 \quad \text{critical value} = .506$$

$$\alpha = .05 \quad \text{significance level}$$

Table 8 shows the data on the correlation coefficient of the sports facilities Ratings between the relatively old and the relatively new selected Universities. In rating the available sports facilities, the Facilities Evaluation Instrument as propounded by Penman (1977) was used. Every listed facility was

ranked as follows:

Very Good	=	5 points
Good	=	4 points
Fair	=	3 points
Poor	=	2 points
Not available	=	1 point

Based on the maximum point rating expected, the percentage of the point evaluation ratings for every sport per category was calculated before the rankings were computed.

The resultant  $r_s$  between the RO and the RN (Table 8), gives .815 which indicates a high correlation of the two variables. Again, the calculated  $r_s$  of .815 is higher than the critical value for significance of Spearman Rank-Order Correlation Coefficient of .506 at .05 significance level and at 12 degrees of freedom. It therefore shows a statistically significant correlation and a positive relationship between the old and the new categorised Universities.

The result therefore shows a total acceptance of the null hypothesis which advanced that there would be no significant difference in the sports facilities ratings between the relatively old (RO) and the new (RN) selected Universities.

An observation of the data shows that most of the facilities available in these Universities were rated either poor or fair with the exception of basketball, cricket, hockey, lawn tennis and soccer considered as good in the relatively old Universities. In the new Universities, most of the facilities were rated either poor or not available. The only two sports facilities considered fair were in basketball and soccer. The ratings by both categories (old and new Universities) indicate a highly positive relationship in their opinions that the facilities available in these Universities were inadequate.

### Discussion

Every sport has its own standard dimensions, measurements and specifications that are used all over the world. Table 3 provided a guide concerning what should be regarded as standard specification for each sport under investigation. It also provides the recommended number of facilities that should be provided in order for such facility to be considered adequate. It is based on these criteria that stan-

dards and adequacy of sports facilities were considered basic to participation in sports.

The first sub-hypothesis which advanced that 'there would be no significant relationship between the standards of available facilities and participation in various sports in the selected Nigerian Universities, was tested and found to be partly acceptable and unacceptable (Table 4). The part acceptance was based on the high correlation results shown in athletics, basketball (outdoor), cricket, judo, lawn tennis, soccer, swimming and table tennis. The part rejection was also based on the significant difference of the variables found in badminton, basketball (indoor), handball, hockey, squash and volleyball (Table 4).

The standards of the available sports facilities in the selected Universities were fair enough especially in athletics, hockey, badminton, volleyball, lawn tennis and table tennis (Appendices 3, 9, 4, 16, 11 and 15). The available facilities for swimming, basketball and soccer were of high standard whereas in handball, cricket, judo and squash, facilities

there were considered substandard. These various situations have however positively affected the participation levels in the various sports except in badminton, handball and basketball (indoor) where low relationships occurred. It is therefore right to advance that standard sports facilities are very essential to sports performance and participation. All efforts should therefore be made to provide for standard facilities for various sports.

#### Adequacy of Sports Facilities

Although sports facilities are essential to sports performance, the importance of adequate sports facilities cannot be over-emphasised. This important factor guided the formulation of the second sub-hypothesis which advanced that:

"there would be no significant relationship between the adequacy of available sports facilities and participation levels in various sports in the selected Nigerian Universities."

This sub-hypothesis tested and reflected in Table 5 affirmed that the null hypothesis was accepted for

most of the sports. The only exception was in hockey, judo and basketball (indoor). The result of this finding however confirmed that sports facilities available in these Universities were inadequate. The low percentage rating scores of the respondents (Appendices 17-30) affirmed this result.

It must be noted that whereas the Athletic Institute (1968, 1979 and 1985) recommended minimum required number of facilities that should be provided for sports in any college or university based on the population of such College or University (Table 3), these requirements have not been met by all the tested Universities in Nigeria

An investigation into the number of sports facilities available in the selected Universities is self-revealing (Appendix 44). In athletics, for instance, only one University (Benin) out of the eight had a tartan track. Four others which were among the relatively old Universities had a cinder track each. The other two had grass tracks. From Table 3 it can be seen that two track facilities were recommended and these should be made up of synthetic surfaces. It is



no wonder therefore why the respondents only considered the facilities available in these Universities fair (Appendix 17).

Sports that may be regarded as having fairly adequate facilities include basketball (outdoor), cricket, hockey and volleyball. (Appendices 19, 21, 23 and 30). Provision should be made to increase the numbers in all the above and especially in badminton, basketball (indoor), handball, judo, lawn tennis, squash, swimming and table tennis where the facilities were regarded as inadequate. The latter listed facilities have been regarded as inadequate due to the respondents low percentage scores for adequacy returned by them (Appendices 18, 20, 22, 24, 25, 27, 28, and 29). Also the numbers available in these Universities did not meet up with the minimum required numbers as recommended in Table 3.

The inclusion of gymnasium and practising wall in this study was reflected in the facility distributed list of Appendix 44. Both were included because of their significance to sports participation and performance. The gymn in most cases, houses the indoor basketball, badminton, table tennis

and sometimes judo facilities. An observation of the available gymnasia in the selected Nigerian Universities revealed that there were only five including a table tennis hall owned by code 04 (University of Ife). In Code 01 (University of Ibadan), the gymnasium there was considered substandard and inadequate. In Code 02 (University of Lagos), construction works were still going on in that gymnasium while Code 03 (University of Benin) had not got any gymnasium. The multi-use gymnasium in Code 04 (University of Ife), had facilities for a standard basketball court, four badminton courts, a standard volleyball court, an indoor tennis court and other accessories. Sporting activities could go on at any time of the day and night in this gymnasium. There was also another indoor sports hall in the University. Two other Universities, Codes 07 and 08 (Bendel and Ogun States Universities) had no gymnasium at all.

The practising wall is a special facility that is very useful for instruction and other sporting programmes. Where one is available in an institution, it serves as a play mate or individualised improvement of skill facility in various sports such as soccer, volley-

ball lawn tennis, cricket, basketball and squash. Out of the eight selected Universities only four had one practising wall each.

It must be remarked that swimming facility or pool was outside the reach of most Universities. Only three Universities — Ibadan, Benin and Ahmadu Bello, Zaria had a swimming pool each. As a matter of fact, personal observation revealed that these were the only three standard swimming pools available in all the Universities in Nigeria. Although, swimming pool is an expensive facility, the non-provision of it had made the participation levels in this sport very low. In the Universities where swimming pools were available the standards of participation in swimming had been fairly high (Appendix 28).

In cricket, six Universities had records for having one cricket facility each, only one of the six Universities actually had exclusive facility for the sport. This was Code 04 (University of Ife). The oval (field) in all other Universities were always part of the facilities for other sports like hockey, soccer and volley-ball. For example, in Code 01

(University of Ibadan), the cricket stumps were always set in the spaces sometimes used for soccer or hockey. So, when the sport was being played, no other sport could be played on the same ground simultaneously. The inadequate provision of this sport and the low participation levels in it explained for the high correlation recorded as reflected in the analysis of the data (Appendix 21).

In all other sports, such as handball, judo (a new University Sport), volleyball and others, the trends were the same. No sport recorded an  $r_s$  less than .600 which is a modest correlation. In basketball (indoor) however, an  $r_s$  of .381 was calculated which showed a low correlation. In this case, indoor basketball facility was considered to be low and inadequate whereas the level of participation in basketball was fairly high. This was probably because most of the participants in basketball played it mostly outdoors. Basketball outdoor facilities were considered to be fairly adequate.

#### Maintenance of Sports Facilities

Sports facilities could be adequate and of

Olympic standard but where these facilities are not properly maintained, such sports facilities usually become old and spoilt within a very short time. This was a major reason why this important factor (maintenance) should be considered and discussed in full details.

The maintenance levels of sports facilities in Nigerian Universities were far from satisfactory. Although every University recorded that there were provisions for various types of sports facilities, the available statistics represented in the data from Appendices 31 - 43 showed that eleven of the sports facilities suffered immensely from poor maintenance.

An observation of the appendices indicated that the maintenance levels in athletics (track and field) and badminton tended towards fair to poor (Appendices 31 and 32). These findings are not satisfactory at all when one considers the high cost of constructing the facilities. In athletics, for instance, the track needs constant special level of maintenance especially the cinder surface tracks. Since most of the Univer-

sities in Nigeria could not afford to construct tartan tracks, every effort should be made to water, rake, brush and roll the available cinder surface very regularly.

A personal observation of the available athletics tracks in the selected Universities revealed that all the Universities tracks were not adequately maintained. In the cinder tracks, after a downpour of rain, the tracks become muddy and later very sandy. In most cases, these tracks would not be rehabilitated for the immediate use of the athletes. Hence, athletes would either not want to train or unable to train due to the poor state of the track. A further observation however revealed that five of the Universities did not have the personnel responsible to take care of the facilities, hence the apparent neglect and lack of maintenance.

The situation was a little better in badminton. This was because, the badminton facilities were constructed indoors - in the gym. However, where the facilities were outdoors, little or no attention was paid to maintain them.

The situation in handball showed that five cemented handball courts were made available. However, as was observed personally, all these cemented courts were not cared for. Apart from the fact that most often, the courts surfaces were not mended when the surfaces got spoilt, the nets at the goalposts were always left outside for the rains to wear out. This was considered a very unsatisfactory situation as far as maintenance of facilities is concerned (Ezersky and Theibert, 1976).

The unsatisfactory situations were basically the same concerning the maintenance levels in Hockey, Judo, Squash, Swimming and Volleyball (Appendices 36, 37, 40, 41 and 43) respectively. The hockey fields were not properly cared for. The Judo hall or mats, where they were available, faced maintenance problems. Volleyball courts damaged surfaces remained unmended. Squash was being played by few participants, especially the staff members where the courts were available. These courts and their areas were not swept often and in some cases not visited by the maintenance staff for weeks.

The situation in swimming was more serious when one considers the cost of constructing this facility. In the three Universities where swimming pools were available, proper care was not taken to maintain them. Personal investigation revealed that sometimes, maintenance materials were not available, but often times it was clearly a case of maintenance crew not doing their bit and no one cared to take appropriate steps to see that maintenance personnel carried out their paid functions.

The maintenance in lawn tennis and table tennis facilities were considered to be good (Appendices 38 and 42). The participation levels in these sports were also rather high. The relatively satisfactory maintenance levels recorded for these sports could be basically as a result of the special interest most of the sports administrators and other personnel have in these sports. This in effect means adequate repairs could always be made whenever they (the administrators and personnel) found one to be necessary.



### Sports Participation in the Universities

Sports participation in any educational institution and especially in Nigerian University has been accepted as a part of the total programmes of the institution. The degree of acceptance could however vary from institution to institution. In some, it could be part of the instructional programme, while in others it could be separated or part of the intramural, extramural and recreational programmes.

Sports participation in the selected Nigerian Universities could be regarded as fair enough considering the levels of participation in every sport (Appendices 31 - 43). Whereas, the participation levels in athletics (track and field), badminton, handball, hockey, lawn tennis, table tennis and volleyball were considered to be fair (Appendices 31, 32, 35, 36, 38, 42 and 43), the levels of participation in cricket, judo, squash and swimming were low (Appendices 34, 37, 40 and 41). Only two sports had high level participation in them. These were basketball and soccer (Appendices 33 and 39).

From these findings, it could be concluded that

this boarder-line case (fair participation) was not a convenient score or assessment for the institutions of higher learning of this calibre. These findings corroborate Awosika's (1982) findings when he advanced that before a national competition, sports participation levels would increase both in tempo and intensity.

#### Implication of the Findings

The findings and discussions of this research have clearly elicited the basic problems Nigerian Universities have been facing and which they are likely to continue to face. It has been made clearer through the results that a positive relationship existed between the available sports facilities and sports participation in the selected Nigerian Universities. The Implication of these findings are as follows:

1. Without facilities in a particular sport, it is difficult to perform in that sport. Sports facilities are therefore prerequisites to participating in the related sports. For instance, swimming cannot be done without a swimming pool.

2. It has been found out that the sports facilities available in the selected Nigerian Universities were not adequate. These inadequacies have therefore affected the participation levels of University members which have also not been good enough.
3. The sports facilities available in most of the selected Universities were substandard thereby militating against effective sports participation and performance.
4. It was found out that the maintenance levels of the sports facilities in the selected Nigerian Universities were not satisfactory.
5. Sport participation in the selected Universities was found to be fair.

## CHAPTER FIVE

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Summary

This study has examined the relationship that existed between sports facilities and sports participation in selected Nigerian Universities.

Eight Universities were randomly selected using the age and date of first participating in Nigeria University Games Association (NUGA) competitions as basic criteria. Also, questionnaire, personal interviews and discussions with administrators, coaches, lecturers and student-athletes were used in order to effectively discern whether or not positive relationship existed between the available sports facilities and the levels of sports participation in these Universities.

Relevant assumptions had earlier been made in order to properly test and to either reject or accept the hypotheses. The main hypothesis was therefore stated followed by five sub-hypotheses. In testing these hypotheses, the following findings were

deduced from the results:

1. The sports facilities that were available in these selected Nigerian Universities were inadequate.
2. The standards of the available sports facilities were only fair.
3. The maintenance level of the sports facilities that were available in the selected Nigerian Universities was unsatisfactory.
4. The participation level in sports was only fair.
5. The relatively old and new Nigerian Universities did not differ significantly in their opinions concerning the ranking of sports in their campuses. Soccer remained the number one sport while judo was considered the least popular.

### Conclusions

The results of the findings showed the following conclusions:

1. Standard Sports facilities positively result

- in high participation in the related sports.
2. Adequate sports facilities positively affect high participation in the related sports.
  3. There is a great need for constant and proper maintenance of available facilities in order to attract high participation in the sports.
  4. Nigerian Universities Sports Facilities were still below standard.
  5. There is need to encourage Nigerian Universities to participate more meaningfully in sports through the provision of adequate and standard sports facilities.

#### Recommendations

Based on the results and findings of this study, the following recommendations are made:

1. In every Nigerian University with at least ten thousand students population, standard and adequate sports facilities should be provided.
2. At least a practising wall with double faces or two separated walls are essential in every University.

3. After providing for these facilities, essential methods and approaches should be taken to ensure proper maintenance of the sports facilities.
4. The participation levels in sports by students and staff in the various Universities should be improved through positive institutional policies and statements.
5. Sports facilities should be evaluated regularly so as to ensure their quality status and to effect necessary improvements on them.
6. Finally, efforts should be made to encourage philanthropists to build sports facilities on University campuses.

#### Recommendations for Further Studies

Since this study focused on only eight of the twenty-four Universities in Nigeria, efforts should be made to investigate the current situations in other Universities.

Other variables could also be considered in finding the relationships that may exist with sports participation. Such variables could be provision of incentives, academics and or levels of organisation and administration.

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Appendix 1

UNIVERSITY OF IBADAN  
DEPARTMENT OF PHYSICAL AND  
HEALTH EDUCATION

Our Ref. PHE/15.03

14th August, 1984.

TO WHOM IT MAY CONCERN

ADESANYA, O. A. (Matric. 33247)

The bearer is a student in this department and is carrying out some research work in connection with his studies.

I shall therefore be exceedingly grateful if you would please give him all necessary assistance that he may require.

Signed  
Professor J. A. Adedeji  
Head  
Department of Physical and  
Health Education.

UNIVERSITY OF IBADAN  
DEPARTMENT OF PHYSICAL AND  
HEALTH EDUCATION

QUESTIONNAIRE

Please assist in completing this questionnaire on a Research on "The Relationship between Sports Facilities and Sports Participation in Selected Nigerian Universities.

Your responses will be treated in strict confidence.

Thank you.

O. Ade. Adesanya

SECTION A

Please tick  the answers in the various columns as appropriate. Fill in spaces where necessary.

1. Name of University:.....
2. Department:.....



3. Sex: Male  Female

4. Age:

Below 30 years

31 - 40 years

41 - 50 years

Above 50 years

5. Status:

Lecturer

Coach

Lecturer/Coach

Administrative Staff

Head/Dean/Professor/Director (delete unapplicable)

Qualifications:

Pre-degree

Bachelor's degree

Master's degree

Ph.D

7. Length of years in University: .....

8. State, lecture-free afternoon(s) for sports in your University:

(a) .....

(b) .....

(c) .....

9. How frequent do you organise Intramural Sports Competitions?

- Every Session
- During NUGA year only
- Every month
- Every week
- Every semester (half session)

10. On what levels do you organise intramural sports?

- Hall
- Faculty
- Department
- House

11. How frequent do people come to recreate in sports activities?

- Every morning
- Twice a week
- Every morning and evening
- Every evening
- Once a week

12. How do participants get the equipment used for sports?

- Loan from sports office everyday
- Participants bring them
- All of the above

13. The level of participation by students in Intramural sports is:

- Very high
- Moderately high
- Fair enough
- Low

14. When do students participate more in sports?

- When facilities are available
- When coaches are available
- When facilities and coaches are available
- When equipment are made available
- When all the above facilities, coaches and equipment are available.

15. The participation level of University staff in Intramural and recreational sports is:

- Very high

Moderately high

Fair enough

Low

16. The level of encouragement given by staff to students to take part in sports is:

Very high

Moderately high

Fairly encouraging

Low (not encouraging)

17. Students fail to take part in University sports because of: (You can tick more than one)

Academic pursuits

Lack of facilities

Lack of equipment and supplies

Lack of coaches

Lack of basic skills

Lack of incentives

Victimization by other lecturers

18. SECTION B

Please rate the following sports grounds in terms of their levels of Standards and Adequacies in

your University, Record one appropriate number rating (1, 2, 3, 4 or 5) from the ratings below:

(a) Ratings for Standards:

1. Substandard
2. Fairly standard
3. Highly standard

(b) Ratings for Adequacy:

1. Highly inadequate
2. Inadequate
3. Undecided
4. Fairly adequate
5. Highly adequate

Sportsgrounds	Type	Number Available	(a) Standard Rating	(b) Adequacy Rating	Remarks
1. Athletics (Track and Field)	a) Cinder b) Tartan c) Grass				

Sportsgrounds	Type	Number Available	(a) Standard Rating	(b) Adequacy Rating	Remarks
2. Badminton	a) Indoor (Hard surface) b) Outdoor (Hard surface) c) Outdoor (Grass surface)				
3. Basketball	a) Indoor b) Outdoor (Hard surface) c) Outdoor (Grass and sand)				
4. Cricket	a) With Mat b) Grass only				

Sportsgrounds	Type	Number Available	(a) Standard Rating	(b) Adequacy Rating	Remarks
5. Handball	a) Hard Court b) Grass only c) Tartan d) Sand				
6. Hockey	Field				
7. Judo	a) Mat b) Hall				
8. Lawn Tennis	a) Hard surface b) Cinder surface c) Sand surface				
9. Soccer	Field				

Sportsgrounds	Type	Number Available	(a) Standard Rating	(b) Adequacy Rating	Remarks
10. Squash	Court				
11. Swimming Pool	a) Pool (50m) b) Pool (30m)				
12. Table Tennis	a) Tables b) Hall				
13. Volleyball	a) Hard surface b) Grass surface				

19.

SECTION C

Please tick  the appropriate column that best describes the level of maintenance of the available sports facilities in your University.



Sports Facilities	Type	Always Maintained	Often Maintained	Sometimes Maintained	Seldom Maintained	Never Maintained
1. Athletics (Track & Field)	Indoor					
	Outdoor					
2. Badminton	Indoor					
	Outdoor					
3. Basketball	Indoor					
	Outdoor					
4. Cricket	Pitch					
	Mat					
5. Handball	Hard surface					
	Grass surface					
6. Hockey	Field					
7. Judo	Mat and Hall					

Sports Facilities	Type	Always Maintained	Often Maintained	Sometimes Maintained	Seldom Maintained	Never Maintained
8. Lawn Tennis	Hard surface					
	Cinder					
9. Soccer	Field					
10. Squash	Court					
11. Swimming	Pool					
	Surroundings					
12. Table Tennis	Tables					
	Hall					
13. Volleyball	Hard surface					
	Grass surface					

20. Rank the popularity of the following sports in your University in ascending order of importance e.g.

1, 2, 3, 4 etc.

- |                          |                             |                          |              |
|--------------------------|-----------------------------|--------------------------|--------------|
| <input type="checkbox"/> | Athletics (track and field) | <input type="checkbox"/> | Lawn Tennis  |
| <input type="checkbox"/> | Badminton                   | <input type="checkbox"/> | Soccer       |
| <input type="checkbox"/> | Basketball                  | <input type="checkbox"/> | Squash       |
| <input type="checkbox"/> | Cricket                     | <input type="checkbox"/> | Swimming     |
| <input type="checkbox"/> | Handball                    | <input type="checkbox"/> | Table Tennis |
| <input type="checkbox"/> | Hockey                      | <input type="checkbox"/> | Volleyball   |
| <input type="checkbox"/> | Judo                        |                          |              |

21. Please rank the following in ascending order of agreement 1, 2, 3, 4, 5 and 6 on how each has influenced sports participation and awareness in your University.

- Provision of sports facilities
- Teaching of sports skills
- Provision of incentives to students and staff
- Creating more periods for sports
- Good organisation and administration of University sports
- Frequent organisation of competitions

22. Suggest five measures to improve on the present sports facilities available.

(a) .....

- (b) .....
- (c) .....
- (d) .....
- (e) .....

23. Suggest five measures to improve the participation level of students and staff in University sports.

- (a) .....
- (b) .....
- (c) .....
- (d) .....
- (e) .....

24.

SECTION D

Please tick  the column of your choice to indicate how strongly you feel about these statements in regard to University sports participation and sports facilities:

- SA = Strongly Agree
- AG = Agree
- N = Neutral
- D = Disagree
- SD = Strongly Disagree

	SA	AG	N	D	SD
1. Standard playgrounds attract more students and staff to participate in sports.					
2. Where adequate playgrounds are available more participants take part in University sports.					
3. It is important that all playgrounds for sports participation should conform with required specifications and dimensions.					
4. Standard and adequate sports facilities bring about improved sports participation and better results during competitions.					
5. Effective maintenance of available sports facilities encourage more participation in sports.					
6. Employment of at least a qualified coach for every sports should be mandatory for effective participation in varsity sports.					

	SA	AG	N	D	SD
7. The Department of Physical Education staff should be used as coaches for University sports.					
8. The Department of Physical Education staff should be in charge of the administration of University sports.					
9. The administration of University sports with the administrative leadership from the Department of Physical Education influence better and effective sports participation than when the leadership comes elsewhere.					
10. Employment of separate administrative staff, coaches and groundsmen for varsity sports enhance more participation in sports.					
11. The provision of adequate equipment and supplies by the University for University sports enhance more participation in sports.					

	SA	AG	N	D	SD
12. Students should have separate sports facilities from that of University staff.					
13. Physical education and sports should be a general study course for all students in the University.					
14. Sports facilities should be located centrally and very close to lecture rooms, halls of residence of staff and students.					
15. Awards and recognitions should be given to outstanding athletes in the University.					
16. The financing of sports in my University is very encouraging.					
17. The construction of a gymnasium and sports hall should be mandatory and will attract more participation in University sports.					

	SA	AG	N	D	SD
18. There should be a positive relationship between the sports facilities available in a University and its sports participation.					

25.

SECTION E

How would you rate the following sports in terms of their levels of acceptance and participation in your University for the past ten years.

Please tick  the appropriate column.

	Very High Participa- tion	Moderately High Participa- tion	Fair Parti- cipation	Low Parti- cipation	Very Low Participa- tion
1. Athletics					
2. Badminton					
3. Basketball					
4. Cricket					



	Very High Participation	Moderately High Participation	Fair Participation	Low Participation	Very Low Participation
5. Handball					
6. Hockey					
7. Judo					
8. Lawn Tennis					
9. Soccer					
10. Squash					
11. Swimming					
12. Table Tennis					
13. Volleyball					

26.

SECTION FSPORTS FACILITIES RATINGS

VG = Very Good (especially for competitions of all types)

G = Good (especially for Intramural purposes)

F = Fair (Average) (can be used for Recreational purposes only)

P = Poor

NA = Not Available

Remark: Indicate where necessary -

IDN = I do not know the equipment

NE = Not available, not enough

Athletics (Track and Field)	Ratings					Remarks
	VG	G	F	P	NA	
1. Track Condition						
2. Field Condition						
3. Drainage						
4. Lanes markings						

Athletics (Track and Field)	Ratings					Remarks
	VG	G	F	P	NA	
5. Hurdles						
6. Photofinish Equipment						
7. Judges Stands						
8. Starting Blocks						
9. Stop Watches						
10. Lap scoring board						
11. Wind Guage						
12. Long jump pit						
13. Long jump runaway						
14. Triple jump runaway						
15. Landing foam						
16. Jumping stand						

Athletics (Track and Field)	Ratings					Remarks
	VG	G	F	P	NA	
17. Vaulting poles						
18. Shot-put court surface						
19. Shot-put step board						
20. Discus court surface						
21. Javelin run-away						
22. Shots for putting						
23. Discus						
24. Javelin						
25. Seaters for spectators						
26. First aid or medical corner						
27. Gates for gate takings						
28. Parkings						

	Ratings					Remarks
	VG	G	F	P	NA	
<u>Athletics (Track and Field)</u>						
29. Groundmen Office						
30. Equipment and Supplies Offices						
<u>Badminton</u>						
1. Indoor court(s)						
2. Net(s)						
3. Racquets						
4. Outdoor court(s)						
<u>Basketball</u>						
1. Courts surface						
2. Basketball up-right (support)						
3. Backboard Markings						
4. Recording Board						
5. Balls						

	Ratings					Remarks
	VG	G	F	P	NA	
<u>Gymnasium</u>						
1. Gymnastic floor						
2. Weight Room						
3. Lighting						
4. General feature						
<u>Cricket</u>						
1. Hat						
2. Pitch						
3. Wicket						
4. Bats						
5. Ball						
<u>Football</u>						
1. Field						

	Ratings					Remarks
	VG	G	F	P	NA	
2. Goal Posts						
3. Nets						
4. Score board						
5. Balls						
<u>Handball</u>						
1. Court (Hard court)						
2. Court (Grass court)						
3. Nets						
4. Score Board						
5. Balls						
<u>Hockey</u>						
1. Pitch						
2. Nets						

	Ratings					Remarks
	VG	G	F	P	NA	
3. Goal Post						
4. Hockey sticks						
5. Protectors						
6. Guards						
<u>Judo</u>						
1. Mats						
Costume						
<u>Lawn Tennis</u>						
1. Courts						
2. Nets						
3. Racquets						
4. Balls						



	Ratings					Remarks
	VG	G	F	P	NA	
<u>Squash Racquet</u>						
1. Courts						
2. Racquet						
3. Balls						
<u>Swimming</u>						
1. Pool						
2. Showers and locker rooms						
3. Diving Pool						
4. Spectator seating						
5. Children Pool area						
6. Life saving facilities						
<u>Table Tennis</u>						
1. Tables						
2. Nets						

	Ratings					Remarks
	VG	G	F	P	NA	
3. Bats						
4. Balls						
5. Table Tennis room (hall)						
<u>Volleyball</u>						
1. Courts						
2. Nets and markers						
3. Balls						
4. Score Board						

Relationship between standards of available facilities and sports participation levels for Athletics (Track and Field).  
(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	68.8	5	68.4	4	1	1
02	69.0	4	68.6	3	1	1
03	100.0	1	85.2	1.5	-.5	.25
04	74.1	2	85.2	1.5	.5	.25
05	69.8	3	61.0	5	-2	4
06	68.1	6	55.8	6	0	0
07	64.6	7	50.0	7	0	0
08	33.3	8	37.7	8	0	0
						Ed <sup>2</sup> =6.50

$$n = 8 \quad df = 7$$

$$r_s = .922 \quad \alpha = 0.05 \text{ Significance Level}$$

$$\text{critical value} = .714$$

## Appendix 4

Relationship between standards of available facilities and sports participation levels for Badminton.

(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>	
	Ratings % Scores	Ranks	Ratings % Scores	Ranks			
01	67.7	5	60.6	3	2	4	
02	67.9	4	77.9	2	2	4	
03	72.8	2	57.8	5	-3	9	
04	86.4	1	87.4	1	0	0	
05	69.8	3	57.1	6	-3	9	
06	57.4	6	41.7	7	-1	1	
07	39.6	7	37.5	8	-1	1	
08	37.2	8	58.5	4	4	16	
						$\Sigma d^2$	44

$$n = 8 \quad df = 7$$

$$r_s = .476 \quad \alpha = 0.05 \text{ Significance level}$$

$$\text{critical value} = .714$$

Relationship between standards of available facilities and sports participation levels for Basketball (Outdoor)  
(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	96.8	2	78.7	1	1	1
02	71.4	6	68.6	3	3	9
03	96.3	3	62.2	4	-1	1
04	97.5	1	78.5	2	-1	1
05	77.4	5	42.9	6	-1	1
06	47.2	8	38.3	7	1	1
07	70.8	7	37.5	8	-1	1
08	79.5	4	60.8	5	-1	1
						$\sum d^2 = 16$

$$n = 8 \quad df = 7$$

$$r_s = .809 \quad \alpha = .05 \text{ Significance level}$$

$$\text{critical value} = .714$$

## Appendix 6

Relationship between standards of available facilities and sports participation levels for Basketball (Indoor)  
(N = 200)

Univer- sity Code	Standards of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	33.3	6.5	78.7	1	5.5	30.25
02	33.3	6.5	68.6	3	3.5	12.25
03	35.8	4	62.2	4	0	0
04	98.8	1	78.5	2	-1	0
05	66.7	2	42.9	6	-4	16
06	36.1	3	38.3	7	-4	16
07	33.3	6.5	37.5	8	-1.5	2.5
08	33.3	6.5	60.8	5	1.5	2.5
						Ed = 80.5

$$n = 8 \quad df = 7$$

$$r_s = .042 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 7

Relationship between standards of available facilities and sports participation levels for Cricket.  
(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	82.8	1	64.5	3	-2	4
02	70.2	4	60.7	4	0	0
03	72.8	3	78.5	2	1	1
04	74.1	2	80.0	1	1	1
05	63.5	5	40.9	5	0	0
06	36.1	7	40.8	6	1	1
07	37.5	6	23.8	7	-1	1
08	33.3	8	23.1	8	0	0
						Ed= 8

$$n = 8 \quad df = 7$$

$$r_s = .905 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between standards of available facilities and sports participation levels for Handball.

(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	68.8	3	61.9	5	-2	4
02	67.9	4	45.0	6	-2	4
03	98.8	1	77.0	4	-3	9
04	90.1	2	91.8	1	1	1
05	66.7	5	85.7	2	3	1
06	38.9	7	21.7	7	0	0
07	41.7	6	18.8	8	-2	4
08	34.6	8	80.0	3	5	25
						Ed <sup>2</sup> = 56

$$n = 8 \quad df = 7$$

$$r_s = .333 \quad \alpha = 0.05 \text{ Significance level}$$

$$\text{critical value} = .714$$



## Appendix 9

Relationship between standards of available facilities and sports participation levels for Hockey. (N = 200)

Univer- sity Code	Standards of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	54.8	5	41.9	4	1	1
02	41.7	6	45.0	3	3	9
03	76.5	1	54.1	1	0	0
04	72.8	2	51.9	2	0	0
05	68.3	3	30.5	5	-2	4
06.	65.3	4	20.0	8	-4	16
07	35.4	7	21.2	7	0	0
08	34.6	8	21.5	6	2	4
					Ed <sup>2</sup> = 34	

$$n = 8 \quad df = 7$$

$$r_s = .595 \quad \alpha = 0.05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between standards of available facilities and sports participation levels for Judo. (N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	66.7	3	60.6	1	2	4
02	58.3	4	37.1	3	1	1
03	56.8	5	37.0	4	1	1
04	72.8	1	38.5	2	-1	1
05	61.9	2	35.2	5	-3	9
06	34.7	7	20.8	6	1	1
07	35.4	6	20.0	7.5	-1.5	2.25
08	33.3	8	20.0	7.5	.5	0.25
						Ed <sup>2</sup> = 19.50

$$n = 8 \quad df = 7$$

$$r_s = .768 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 11

Relationship between standards of available facilities and sports participation levels for Lawn Tennis.  
(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	75.3	1	81.3	3	-2	4
02	71.4	4	78.6	4	0	0
03	71.6	3	81.5	2	1	1
04	74.1	2	83.0	1	1	1
05	68.3	5	72.4	5	0	0
06	50.0	6	58.3	7	-1	1
07	37.5		41.3	8	-1	1
08	37.2	8	60.8	6	2	4
						Ed <sup>2</sup> = 12

$$n = 8 \quad df = 7$$

$$r_s = .857 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between standards of available facilities and sports participation level for soccer.  
(N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	96.8	2	98.1	1	1	1
02	95.2	4	82.1	5	-1	1
03	97.5	1	95.6	3	-2	4
04	96.3	3	96.3	2	1	1
05	92.1	5	95.2	4	1	1
06	83.3	6	62.5	7	-1	1
07	79.2	7	78.8	6	1	1
08	33.3	8	60.8	8	0	0
						Ed <sup>2</sup> = 10

$$n = 8 \quad df = 7$$

$$r_s = .881 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 13

Relationship between standards of available facilities and sports participation level for squash. (N = 200)

University Code	Standards of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	68.8	1	37.3	2	-1	1
02	45.2	5	35.0	5	.0	0
03	55.6	2.5	37.0	3	-.5	.25
04	37.0	6	36.3	4	2	4
05	46.0	4	45.7	1	3	9
06	55.6	2.5	21.7	6	-3.5	12.25
07	33.3	7.5	21.2	7	.5	.25
08	33.3	7.5	20.0	8	-.5	.25
						Ed <sup>2</sup> = 27

$$n = 8 \quad df = 7$$

$$r_s = .679 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between standards of available facilities and sports participation level for swimming.  
(N = 200)

Univer- sity Code	Standards of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	98.9	1	83.2	2	-1	1
02	35.7	5	82.1	3	2	4
03	98.8	2	89.6	1	1	1
04	37.0	4	42.2	5	-1	1
05	43.9	3	46.7	4	-1	1
06	33.3	7	20.0	7	0	0
07	33.3	7	20.0	7	0	0
08	33.3	7	20.0	7	0	0
						Ed <sup>2</sup> = 8

$$n = 8 \quad df = 7$$

$$r_s = .905 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 15

Relationship between standards of available facilities and sports participation level for Table Tennis.  
(N = 200)

Univer- sity Code	Standards of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	93.5	4	78.1	4	0	0
02	94.0	2	91.4	2	0	0
03	93.8	3	78.5	3	0	0
04	97.5	1	93.3	1	0	0
05	88.9	5	64.8	6	-1	1
06	69.4	7	60.0	8	-1	1
07	64.6	8	62.5	7	1	1
08	75.6	6	67.9	5	1	1
						Ed <sup>2</sup> = 4

$$n = 8 \quad df = 7$$

$$r_s = .952 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between standards of available facilities and sports participation level for Volleyball.  
(N = 200)

Univer- sity Code	Standards of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	92.5	1	77.4	1	0	0
02	47.6	7	60.7	5	2	4
03	72.8	4	71.1	2	2	4
04	76.5	3	66.7	3	0	0
05	77.8	2	64.8	4	-2	4
06	43.1	8	43.3	7	1	1
07	63.5	5	40.0	8	-3	9
08	55.1	6	58.5	6	0	0
						Ed <sup>2</sup> = 22

$$n = 8 \quad df = 7$$

$$r_s = .738 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$



Relationship between adequacy ratings of available facilities and participation level for Athletics (Track and Field)  
(N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	65.8	5	68.4	4	1	1
02	67.1	4	68.6	3	1	1
03	96.3	1	85.2	1.5	-.5	.25
04	84.4	2	85.2	1.5	.5	.25
05	70.5	3	61.0	5	-2	4
06	53.3	6	55.8	6	0	0
07	51.3	7	50.0	7	0	0
08	29.2	8	37.7	8	0	0
						Ed <sup>2</sup> = 6.5

$$n = 8 \quad df = 7$$

$$r_s = .922 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between adequacy ratings of available facilities and participation level for Badminton. (N = 200)

University Code	Adequacy of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	61.3	3	60.6	3	0	0
02	78.6	2	77.9	2	0	0
03	55.6	5	57.8	5	0	0
04	80.7	1	87.4	1	0	0
05	60.0	4	57.1	6	-2	4
06	40.8	6	41.7	7	-1	1
07	27.5	8	37.5	8	0	0
08	33.8	7	58.5	4	3	9
						Ed <sup>2</sup> = 14

$$n = 8 \quad df = 7$$

$$r_s = .833 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between adequacy ratings of available facilities and participation level for Basketball (Outdoor).  
(N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	82.6	3	78.7	1	2	4
02	55.7	4	68.6	3	1	1
03	96.3	2	62.2	4	-2	4
04	97.8	1	78.5	2	-1	1
05	52.4	5	42.9	6	-1	1
06	20.8	8	38.3	7	1	1
07	22.5	7	37.5	8	-1	1
08	40.0	6	60.8	5	1	1
						Ed <sup>2</sup> = 14

$$n = 8 \quad df = 7$$

$$r_s = .833 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 20

Relationship between adequacy ratings of available facilities and sports participation levels for Basketball (Indoor).  
(N = 200)

University Code	Adequacy of Facilities Inventory		Sports participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	20.0	6.5	78.7	1	5.5	30.25
02	40.7	3	68.6	3	0	0
03	40.0	4	62.2	4	0	0
04	78.5	1	78.5	2	-1	1
05	57.1	2	42.9	6	-4	16
06	20.0	6.5	38.3	7	-.5	.25
07	20.0	6.5	37.5	8	1.5	2.25
08	20.0	6.5	60.8	5	1.5	2.25
						Ed <sup>2</sup> = 52

$$n = 8 \quad df = 7$$

$$r_s = .381 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .643$$

## Appendix 21

Relationship between adequacy ratings of available facilities and sports participation levels for Cricket.

(N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	78.0	1	64.5	3	-2	4
02	58.6	3	60.7	4	-1	1
03	58.5	4	78.5	2	2	4
04	62.9	2	80.0	1	1	1
05	46.7	5	40.9	5	0	0
06	20.8	7	40.8	6	1	1
07	21.3	6	23.8	7	-1	1
08	20.0	8	23.1	8	0	0
						Ed <sup>2</sup> = 12

$$n = 8 \quad df = 7$$

$$r_s = .857 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 22

Relationship between adequacy ratings of available facilities and sports participation levels for Handball. (N = 200)

University Code	Adequacy of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	41.3	4	61.9	5	-1	1
02	40.7	5	45.0	6	-1	1
03	77.8	3	77.0	4	-1	1
04	80.0	2	91.8	1	1	1
05	80.9	1	85.7	2	-1	1
06	25.0	7	21.7	7	0	0
07	17.5	8	18.8	8	0	0
08	39.2	6	80.0	3	3	9
						Ed <sup>2</sup> = .14

$$n = 8 \quad df = 7$$

$$r_s = .833 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between adequacy ratings of available facilities and sports participation levels for Hockey (N = 200)

University Code	Adequacy of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>	
	Ratings % Scores	Ranks	Ratings % Scores	Ranks			
01	38.1	4	41.9	4	0	0	
02	37.1	5	45.0	3	2	4	
03	55.6	3	54.1	1	2	4	
04	59.3	2	51.9	2	0	0	
05	60.9	1	30.5	5	-4	16	
06	20.8	6.5	20.0	8	-1.5	2.25	
07	17.5	8	21.2	7	1	1	
08	20.8	6.5	21.5	6	5	.25	
						$\Sigma d^2$	27.50

$$n = 8 \quad df = 7$$

$$r_s = .673 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 24

Relationship between adequacy ratings of available facilities and sports participation levels for Judo. (N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	21.19	5	60.6	1	4	16
02	25.0	4	37.1	3	1	1
03	25.9	3	37.0	4	-1	1
04	34.1	1	38.5	2	-1	1
05	30.5	2	35.2	5	-3	9
06	20.8	6	20.8	6	0	0
07	20.0	7.5	20.0	7.5	0	0
08	20.0	7.5	20.0	7.5	0	0
						Ed <sup>2</sup> = 28

$$n = 8 \quad df = 7$$

$$r_s = .667 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$



## Appendix 25

Relationship between adequacy ratings of available facilities and sports participation levels for Lawn Tennis.

(N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	85.2	3	81.3	3	0	0
02	82.1	4	78.6	4	0	0
03	97.0	1	81.5	2	-1	1
04	96.3	2	83.0	1	1	1
05	76.2	5	72.4	5	0	0
06	33.3	6	58.3	7	-1	1
07	25.0	7	41.3	8	-1	1
08	24.6	8	60.8	6	2	4
						$\sum d^2$ = 8

$$n = 8 \quad df = 7$$

$$r_s = .905 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 26

Relationship between adequacy ratings of available facilities and sports participation levels for Soccer. (N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	87.1	1	98.1	1	0	0
02	60.7	5	82.1	5	0	0
03	80.7	3	95.6	3	0	0
04.	81.5	2	96.3	2	0	0
05	66.7	4	95.2	4	0	0
06	45.0	6	62.5	7	-1	1
07	43.8	7	78.8	6	1	1
08	20.8	8	60.8	8	0	0
						Ed <sup>2</sup> = 2

$$n = 8 \quad df = 7$$

$$r_s = .976 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 27

Relationship between adequacy ratings of available facilities and sports participation levels for Squash. (N = 200)

University Code	Adequacy of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	38.7	4	37.3	2	2	4
02	35.7	5	35.0	5	0	0
03	40.7	3	37.0	3	0	0
04	41.5	2	36.3	4	-2	4
05	46.7	1	45.7	1	0	0
06	20.8	6	21.7	6	0	0
07	20.0	7.5	21.2	7	.5	.25
08	20.0	7.5	20.0	8	-.5	.25
						Ed <sup>2</sup> = 8.5

$$n = 8 \quad df = 7$$

$$r_s = .899 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 28

Relationship between adequacy ratings of available facilities and sports participation levels for Swimming. (N = 200)

University Code	Adequacy of Facilities Inventory		Sports Participation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	96.8	2	83.2	2	0	0
02	40.7	4	82.1	3	1	1
03	97.0	1	89.6	1	0	0
04	42.2	3	42.2	5	-2	4
05	38.1	5	46.7	4	1	1
06	20.0	7	20.0	7	0	0
07	20.0	7	20.0	7	0	0
08	20.0	7	20.0	7	0	0
						$\sum d^2$ = 6

$$n = 8 \quad df = 7$$

$$r_s = .929 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

## Appendix 29

Relationship between adequacy ratings of available facilities and sports participation levels for Table Tennis. (N = 200)

Univer- sity Code	Adequacy of Facilities Inventory'		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	54.2	6	78.1	4	2	4
02	81.4	2	91.4	2	0	0
03	59.3	5	78.5	3	2	4
04	81.5	1	93.3	1	0	0
05	61.9	3	64.8	6	-3	9
06	41.7	8	60.0	8	0	0
07	47.5	7	62.5	7	0	0
08	60.0	4	67.9	5	-1	1
						Ed <sup>2</sup> = 18

$$n = 8 \quad df = 7$$

$$r_s = .785 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between adequacy ratings of available facilities and sports participation levels for Volleyball.

(N = 200)

Univer- sity Code	Adequacy of Facilities Inventory		Sports Parti- cipation level Inventory		d	d <sup>2</sup>
	Ratings % Scores	Ranks	Ratings % Scores	Ranks		
01	78.7	1	77.4	1	0	0
02	42.9	7	60.7	5	2	4
03	62.2	3	71.1	2	1	1
04	61.5	4	66.7	3	1	1
05	74.2	2	64.8	4	-2	4
06	41.7	8	43.3	7	1	1
07	47.5	6	40.0	8	-2	4
08	56.9	5	58.5	6	-1	1
						Ed <sup>2</sup> = 16

$$n = 8 \quad df = 7$$

$$r_s = .809 \quad \alpha = .05 \text{ significance level}$$

$$\text{critical value} = .714$$

Relationship between the level of maintenance of available Athletics (Track and Field) facilities and sports participation in the selected Nigerian Universities  
(N = 200)

Sports Participation Level		Maintenance Levels				
		Excellent	Good	Fair	Poor	Total
High	O	10	16	27	23	76
	E	12.5	19	24.3	20.2	
Fair	O	9	22	26	23	80
	E	13.2	20	25.6	21.2	
Low	O	14	12	11	7	44
	E	7.3	11	14.1	11.6	
Total		33	50	64	53	200

$$\chi^2 = 12.157$$

$$\alpha = .05$$

$$df = 6 (r - 1) (c - 1)$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$12.157 < 12.592$$

Relationship between the level of maintenance of available Badminton facilities and sports participation in the selected Nigerian Universities  
(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	2	5	12	16	35
	E	3.0	4.7	14.4	12.9	
Fair	O	6	15	41	33	95
	E	8.1	12.8	38.9	35.2	
Low	O	9	7	29	25	70
	E	5.9	9.5	28.7	25.9	
Total		17	27	82	74	200

$$\chi^2 = 6.205$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$6.205 < 12.592$$



Relationship between the levels of maintenance of available Basketball facilities and sports participation in the selected Nigerian Universities  
(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	12	23	41	35	111
	E	14.4	30	37.8	28.8	
Fair	O	9	19	17	11	56
	E	7.3	15.1	19	14.6	
Low	O	5	12	10	6	33
	E	4.3	8.9	11.2	8.6	
Total		26	54	68	52	200

$$\chi^2 = 8.250$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$8.250 < 12.592$$

## Appendix 34

Relationship between the levels of main -  
tenance of available cricket facilities  
and sports participation in the selected  
Nigerian Universities  
(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Exce- llent	Good	Fair	Poor	
High	O	1	4	9	11	25
	E	0.9	3.7	10.9	9.5	
Fair	O	4	8	38	35	85
	E	3.0	12.8	36.9	32.3	
Low	O	2	18	40	30	90
	E	3.1	13.5	39.2	34.2	
Total		7	30	87	76	200

$$\chi^2 = 5.517$$

$$\alpha = .05$$

$$df = 6$$

$$\text{critical value for } \chi^2 = 12.592$$

$$5.517 < 12.592$$

Relationship between the levels of maintenance of available Handball facilities and sports participation in the selected Nigerian Universities

(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	3	7	22	23	55
	E	2.2	8.2	22.3	22.3	
Fair	O	2	15	39	40	96
	E	3.8	14.4	38.9	38.9	
Low	O	3	8	20	18	49
	E	2.0	7.4	19.8	19.8	
Total		8	30	81	81	200

$$\chi^2 = 2.119$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$2.119 < 12.592$$

Relationship between the levels of maintenance of available hockey facilities and sports participation in the selected Nigerian Universities.

(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	2	6	10	10	32
	E	2.1	7.4	12.3	10.2	
Fair	O	6	20	33	23	82
	E	5.3	18.8	31.6	26.3	
Low	O	5	20	34	27	86
	E	5.6	19.8	31.1	27.5	
Total		13	46	77	64	200

$$\chi^2 = 2.959$$

$$\alpha = .05$$

$$df = 6$$

$$\text{critical Value for } \chi^2 = 12.592$$

$$2.859 < 12.592$$

Relationship between the levels of maintenance of available Judo facilities and sports participation in the selected Nigerian Universities.

(N = 200)

Sports Participation Levels	Maintenance Levels				Total
	Excellent	Good	Fair	Poor	
High	0	0	1	3	4
E	.1	.5	1.4	2.0	
Fair	0	1	12	32	45
E	.6	6.1	15.3	23.0	
Low	0	26	55	67	151
E	2.3	20.4	51.3	77.0	
Total	3	27	68	102	200

$$\chi^2 = 13.628$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$13.628 > 12.592$$

Relationship between the levels of maintenance of available lawn tennis facilities and sports participation in the selected Nigerian Universities.

(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	5	18	29	11	63
	E	4.4	20.8	26.8	11.0	
Fair	O	7	32	37	16	92
	E	6.4	30.4	39.1	16.1	
Low	O	2	16	19	8	45
	E	3.2	14.8	19.1	7.9	
Total		14	66	85	35	200

$$\chi^2 = 1.797$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$1.797 < 12.592$$

Relationship between the levels of maintenance of available soccer facilities and sports participation in the selected Nigerian Universities.  
(N = 200)

Sports Participation Levels	Maintenance Levels				Total
	Excellent	Good	Fair	Poor	
High O	11	46	35	10	102
E	10.7	44.9	36.7	9.7	
Fair O	8	38	37	9	92
E	9.7	40.5	33.1	8.7	
Low O	2	4	0	0	6
E	.6	2.6	2.2	.6	
Total	21	88	72	19	200

$$\chi^2 = 7.855$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$7.855 < 12.592$$

Relationship between the levels of maintenance of available Squash facilities and sports participation in the Selected Nigerian Universities.

(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	0	0	6	8	14
	E	.1	1.4	4.6	7.9	
Fair	O	0	5	18	45	68
	E	.7	6.8	22.1	38.4	
Low	O	2	15	41	60	118
	E	1.2	11.8	38.3	66.7	
Total		2	20	65	113	200

$$\chi^2 = 7.264$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$7.264 < 12.592$$



Relationship between the levels of maintenance of available swimming facilities and sports participation in the selected Nigerian Universities.

(N = 200)

Sports Participation Level		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	1	3	6	16	26
	E	1.4	4.3	4.8	15.5	
Fair	O	3	8	14	37	62
	E	3.4	10.2	11.5	36.9	
Low	O	7	22	77	66	112
	E	6.2	18.5	20.7	66.6	
Total		11	33	37	119	200

$$\chi^2 = 3.319$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$3.319 < 12.592$$

## Appendix 42

Relationship between the levels of maintenance of available Table Tennis facilities and its participation in the selected Nigerian Universities (N = 200)

Sports Participation Levels	Maintenance Levels				Total
	Excellent	Good	Fair	Poor	
High	4	21	14	17	56
E	6.2	28.2	22.1	9.5	
Fair	14	30	42	17	103
E	11.3	33.5	40.7	17.5	
Low	4	14	23	0	41
E	4.5	13.3	16.2	7.0	
Total	22	65	79	34	200

$$\chi^2 = 21.116$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$21.116 > 12.592$$

Relationship between the levels of maintenance of available Volleyball facilities and its participation in the selected Nigerian Universities.

(N = 200)

Sports Participation Levels		Maintenance Levels				Total
		Excellent	Good	Fair	Poor	
High	O	0	10	33	12	55
	E	.	12.7	30.8	10.7	
Fair	O	2	26	52	20	100
	E	1.5	23.0	56	19.5	
Low	O	1	10	27	7	45
	E	.7	10.3	25.2	8.8	
Total		3	46	112	39	200

$$\chi^2 = 3.175$$

$$\alpha = .05$$

$$df = 6$$

$$\text{Critical value for } \chi^2 = 12.592$$

$$3.175 < 12.592$$

## Appendix 44

Distribution of the available sports facilities in the eight selected Nigerian Universities  
(Codes 01 - 08)

	Facilities	Selected Universities <i>Code</i>							
		01	02	03	04	05	06	07	08
1.	Athletics tracks								
	(a) Cinder track	1	1	-	1	1	-	-	-
	(b) Tartan track	-	-	1	-	-	-	-	-
	(c) Grass track	-	-	-	-	-	-	1	1
2.	Badminton Courts								
	(a) Indoor	1	2	-	4	2	1	-	-
	(b) Outdoor	2	-	-	-	-	-	1	2
3.	Basketball Courts								
	(a) Outdoor (Cement)	2	3	2	1	2	1	1	1
	(b) Indoor	-	-	-	1	-	1	-	-
4.	Cricket Oval	1	1	1	1	1	-	1	-
5.	Handball Courts								
	(a) Cement	1	1	1	1	2	-	-	-
	(b) Grass	-	-	-	1	-	1	1	1
	(c) Tartan	-	-	1	-	-	-	-	-

	Facilities	Selected Universities							
		01	02	03	04	05	06	07	08
6.	Hockey Pitch	1	1	1	1	1	-	1	-
7.	Judo								
	(a) Hall	1	-	-	-	-	-	-	-
	(b) Mat	30	-	-	-	-	-	-	-
8.	Lawn Tennis Court								
	(a) Hard (Cement)	2	11	4	1	-	2	2	1
	(b) Laterite/Cinder	4	-	-	11	6	-	-	-
9.	Soccer Pitch	2	2	1	2	1	1	1	1
10.	Squash Court	1	2	-	1	-	1	-	-
11.	Swimming Pool	1	-	1	-	1	-	-	-
12.	Table Tennis								
	(a) Tables	4	8	6	5	2	2	2	2
	(b) Hall	1	1	1	1	1	1	1	1
13.	Volleyball								
	(a) Hard/Cement	2	1	3	1	2	-	1	1
	(b) Grass	-	1	1	1	2	1	-	-
14.	Gymn/Indoor Sports Hall	1	1	-	2	1	1	-	-
15.	Practising Wall	1	1	-	1	1	-	-	-