PROCEDURE

SAMPLE

The sample consisted of 700 athletes randomly selected from different sports disciplines covered to collect the data. These included Basketball, Volleyball, Athletics, Hockey, Gymnastics, Badminton, Table-Tennis, Handball, Cricket, Swimming and Football. The age group of the subjects was 14 to 22 years. The subjects were drawn from colleges affiliated to the Universities of Punjab, i.e., Guru Nanak Dev University, Amritsar; Punjabi University, Patiala and Panjab University, Chandigarh.

Two samples were taken in two different phases. The subjects taken in the first phase numbered 100, while the subjects taken in the second phase were 600. The first phase data was used to construct the two Motivation test: Sports Participation Motivation scale and motivation scale for sports performance while the second phase of the study was aimed to construct the norms of the two motivation tests.

FIRST PHASE

DEVELOPMENT OF THE QUESTIONNAIRE

The research scholar gleaned through the available scientific literature pertaining to sports motivation which included books, magazines, journals and periodicals. Keeping the feasibility criteria in
mind, the first step taken to construct the test items was to identify the psychological factors that have motivational content for sports participation and for sports performance. Keeping this fact in mind, the investigator prepared a list of test items numbering 105 for sports participation motivation and 92 for sports performance motivation.

Both these questionnaires were listed with the instructions to be followed by the subjects while responding to them.

**CONTENT VALIDITY**

In order to measure these perceptions by a content-valid self-report, it was necessary to develop item content. In order for the meaning to be salient, the item content had to be written in the language recognized by and natural for the athletes. Also the item content had to concern something about which the athlete cared or wished to evaluate. If the item content did not evoke for example, some form of agreement/disagreement it would not help to examine the variation among subjects. To have better content validity several projects were undertaken. This involved the use of:-

a) Subjects as active agents to provide item content.

b) Literature on Motivation.
c) Experts in Psychological research to ensure that constructs would be both adequately represented and sampled in the two questionnaires separately.

1) Why an individual takes to sports?

2) What triggers him to perform better in competition?

The project was undertaken on 50 male and female athletes from colleges of Chandigarh representing different sports groups. Group members were asked to describe, what motivation meant to them, what behaviour they thought reflected motivation, what incidents denoted low motivation and that factors helped to create motivation on their own teams.

Project two involved a search of the motivation literature up to 1991. In this search the focus was on article/studies in sports Psychology dealing with motivation. This scanning helped to provide systematically the basic factors that underlie motivational behaviour in sports.

The final product from these projects was a large pool of items from which items for both the questionnaires were systematically developed. The initial items of the two questionnaires were 96 for participation motivation and 85 for sports performance motivation.
The next step in the content validation process was to subject the items to the judgment of competent experts in the field of sports psychology and physical education with whom the discussions were conducted at Chandigarh. Five experts examined the items to find out their representativeness, who reduced the items to 50 for participation motivation and 45 for performance motivation.

The feedback of the judges confirmed the investigator’s view of the representativeness of the items.

As part of instrument development the procedure of the process involved:

1) Reliance on the conceptual framework for construct based scale construction.

2) Expert and statistical judgment of items presumed to be relevant to the motivation constructs.

A sample (N = 100) of athletes from the selected sports disciplines responded to the two motivation questionnaires with the items 50 and 45 for sports participation motivation and sports performance motivation respectively.

**CONSTRUCT VALIDATION FACTORIAL**

Construct validity can be established through factor analysis. Factor analysis is often used to determine how variables group together by
virtue of their inter-correlation while this tells the researchers which variables are most and least related to each group. Factor analysis also indicates which variables group most strongly as factors. A factor represents the items most related and can be statistically evaluated as a single composite variable.

In factor analysis the homogeneity of items, their grouping into the factors proposed and the number of groups found through factor analysis would offer indicant of construct validity. Nunnally (1978) has referred to this as the factorial validity of measures.

The data were subjected to factor analysis. Varimax technique was used. The factor analysis revealed the number of factors operating in sports participation motivation and sports performance motivation areas. The results of this analysis provided and accurate indication of what was suggested by factor analysis. The final product was a 24 item questionnaire for sports participation motivation and a 16 item questionnaire for sports performance motivation.

**CONCURRENT VALIDITY**

Concurrent validity is reflected by the extent to which a measure relates to alternative measures. The alternative measures may assess the construct in whole or part. The extent to which the newly developed scale correlates with others, known as criterion measures provides the investigator with estimates of the new instrument validity. However, the degree to which validity can be estimated using a
concurrent approach depends upon the ability of the other criterion measures to assess the local construct. If they are weaker measures then the newly developed test could not be dismissed as invalid simply because it did not correlate well with a weaker concurrent measure (Bohrnstedt, 1970).

One of the reasons for attempting to estimate concurrent validity was that it is traditional to psycho-metric evaluation of new instruments. This validity is criterion related because it relates the degree of correspondence between one measure and another criterion measure. We can never expect a very high correlation between the criterion measure and the test, because the test has to be different to some extent from the one against which it is being validated.

To establish concurrent validity, the investigator cross validated the two motivation scales constructed by her. These scales were administered to 70 subjects who were included in the sample of 600 subjects for construction of norms. Pearson’s ‘r’ was computed to establish the concurrent validity (criterion related). Both the scales served as criterion measures for each other since both represent the construct of motivation.

To establish objectivity of the two scales, the same investigator collected data on the same subjects (N = 50) with an interval of two days. These subjects were then included in the major sample to
construct norms of these scales. Pearson’s ‘r’ was computed to establish objectivity of the test.

RELIABILITY OF THE TESTS

The reliability of the tests was established by test and re-test and split-half methods. Test and retest on 50 subjects were conducted by the same investigator to find out the correlation between the two test samples in order to establish the reliability of the two sports motivation scales developed by the investigator. This data was also included in the data for construction of norms that numbered 600.

In Split-half method, 100 subjects were selected randomly from the collected data and were split in two groups by assigning them odd and even numbers 50 in each group. Pearson’s Product Moment Method of Correlation was computed to find the reliability of the tests.

THE SECOND PHASE OF THE STUDY

After the development of the two motivation tests; one for sports participation and another for sports performance, fresh data of 600 athletes was collected to construct the norms. During the administration of these tests, the scales consisting of 24 items for participation motivation and 16 items for performance motivation were used. The subjects were taken randomly from the leading colleges of
three universities of Punjab State: Panjab University, Chandigarh, Punjabi University, Patiala and Guru Nanak Dev University, Amritsar.

STATISTICAL DESIGN

The purpose of the study was to construct the scales for the Sports Participation Motivation and Sports Performance Motivation and then develop norms for male & female in the age group of 14 to 22.

Factor Analysis (factorial design) was used to construct the participation motivation and sport performance motivation scales.

Pearsons Product-moment Correlations were worked out to established validity, reliability and objectivity of the scales.

Hull Scale was used to develop the norms of the two scales i.e. Sports Participation Motivation and Motivation for Sports Performance.