CHAPTER – 3

DESIGN AND PROCEDURE OF THE STUDY

INTRODUCTION

Always there is a need for thorough understanding of all research methods with particular reference to their strength limitations, applicability and appropriateness; however an inappropriate method can only lead to unsatisfactory results.

To do anything properly, it must be planned before hand. This helps the researcher to proceed directly without confusing with concomitant events. A well thought out plan of action in advance followed by a systematic execution brings out fruitful results. Research is not a haphazard task but it requires proceeding in a definite direction with definite intention of taking a specific problem and trying to find a solution in a scientific manner. Research design and procedure employed in an investigation determines its destiny. It is the characteristic techniques of research on which the degree of precision, objectivity, reliability and validity of results depend. There are many convincing proofs on the pages of research literature where investigator researched different conclusions by using different methods in the study of some problem. The selection of techniques and devices of an investigation is determined by the nature of the problem, objective of the study, cost, time factor availability of subjects and other resources at the disposal of the investigator.

This chapter seeks to outline the procedure followed design employed, sample selecting tools used, procedure adopted for data collection and statistical analysis conducted to realize the objectives of the study. The investigator required to discuss and explain the procedure of administering the tools and its scoring technique. However, this chapter is confined only to the discussion of these points under the following steps:-

3.1. Research methodology

3.2. Population and sampling

3.3. Tools used
3.4. Construction of the questionnaire

3.5. Scoring of the tests

3.6. Statistical techniques used

3.1 RESEARCH METHODOLOGY

Keeping in view the motive and purpose of study at hand, the investigator used a survey method. The destiny of the problem depends upon its procedure adopted by the investigator. This was employed because it deals with what exists at present and it describes and interprets the current prevailing conditions, relationships and practices. Survey type of research are widely used in education. It focuses on the present and at the same time it takes the help of past and also predicts the future. The reliability of the result depends upon the choice of the right methods to solve the problem. The selection of adequate methods, tools and techniques is a very difficult task and must be handled with ever caution care and profound consideration in respect of time, cost, ability, experience and the need of investigation. This methodology is the sheet anchor of any research. Survey is also comprehensive and though mainly concerned with present status. It establishes a valid link between all other focus of research. The purpose of the present study is to find out the impact of mass media coverage in the participation of University players in (boxing, wrestling, cricket and hockey) selected games. To achieve these objectives survey method was adopted.

3.2 POPULATION AND SAMPLING

3.2.1 Selection of Sample

In case of large population it is not possible to study the whole population to arrive at generalizations. The method of selecting a portion of the population with a view to drawing conclusion about the population is known as sampling.

A sample is a small proportion of a population selected for observations and analysed for observing the characteristics of the population from which it is drawn. The samples are not selected haphazardly. They are chosen in a systematically random way. So that chance of the operation of probability can be utilized. The sample makes the study much less expensive and small population need to be interviewed. It is also impossible to conduct a study on the total population.
According to Good “A sample is a miniature population.” To be true, sample must be representative of the whole population and must be adequate in number.

3.2.2 Population

For the present study the investigator visited to various institutions affiliated to M.D. University, Rohtak and for the collection of data which was of paramount importance in the conduct of research. The mass media questionnaire is a self developed questionnaire; Permission of the heads of institutions was duly sort before taking the administration of the questionnaire. The investigator also told the purpose of the study to the respondents and the problem was explained to them fully. It was assured that their replies would be kept confidential. The players were asked to read the questionnaire and instructions carefully and clarify from the investigator if there is any difficulty nothing should be omitted and there was no time limit for the questionnaire. However, it took fifteen minutes to complete it.

Thus the investigator collected the data from 200 players in selected games (Boxing, Wrestling, Cricket & Hockey) from M.D. University Rohtak.
CLASSIFICATION OF SAMPLE UNITS RELATED TO IMPACT OF MASS MEDIA, PARTICIPATION MALE AND FEMALE PLAYERS IN BOXING.

SAMPLE DESIGN – 1

Boxing
50

Male
25
- News, paper, Magazines etc.(12)
- T.V., Audio, VCD Cassette, Display Media(12)
- Computer & Internet(1)

Female
25
- News, paper, Magazines etc.(11)
- T.V., Audio, VCD Cassette, Display Media(12)
- Computer & Internet(2)
CLASSIFICATION OF SAMPLE UNITS RELATED TO IMPACT OF MASS MEDIA, PARTICIPATION MALE AND FEMALE PLAYERS IN WRESTLING.

SAMPLE DESIGN - 2
CLASSIFICATION OF SAMPLE UNITS RELATED TO IMPACT OF MASS MEDIA, PARTICIPATION MALE AND FEMALE PLAYERS IN CRICKET.

SAMPLE DESIGN – 3
CLASSIFICATION OF SAMPLE UNITS RELATED TO IMPACT OF MASS MEDIA, PARTICIPATION MALE AND FEMALE PLAYERS IN HOCKEY.

SAMPLE DESIGN – 4

Hockey

50

Male

25

- News, paper, Magazines etc.(10)
- T.V., Audio, VCD Cassette, Display Media(12)
- Computer & Internet(3)

Female

25

- News, paper, Magazines etc.(12)
- T.V., Audio, VCD Cassette, Display Media(13)
- Computer & Internet(0)
3.2.3 Collection of Data

200 players of selected games were administered with self-developed questionnaire on mass-media coverage. The scores of the subjects were considered as raw data.

3.3 TOOLS USED IN THE STUDY

Total 200 subjects were taken on randomly selection base to find out the impact of mass media coverage in the participation of university players in selected games i.e. boxing, wrestling, cricket and hockey at university level.

The impact of mass media coverage as tool was used according to time and space given in media. Motivation and interests for mass participation among players were used to develop the questionnaire. This includes major aspects of mass media such as television, display pictures, audio video cassettes, internet, magazines, computer, newspapers, hoarding etc. Hence with the consultation of the guide and experts in the field a self-developed questionnaire was used for the collection of data.

3.4 CONSTRUCTION OF THE QUESTIONNAIRE

The questionnaire was prepare with great care in consultation with the guide, colleagues and the research scholars and also by going through the literature on the subject, so that a detailed study could be made. The questionnaire was also circulated among different fields of specialised experts such as mass media, literature and journalism, etc. for their valuable suggestions. The questions were short, lucid, clear, direct and simple. The questionnaire was prepared in English as well as in Hindi after a lot of modifications for the better understanding of the respondents.

3.4.1 Development of questionnaire

Development of questionnaire started with writing the 108 statements and every care was taken that no ambiguities exist and the terminology was precise. The questionnaire was developed through pilot study and following stepwise used.

3.4.1.1 Initial writing

The first step in the direction of developing a questionnaire was to frame as many statements as possible with the help of advisor. Also, while developing a statement the research scholar had gone extensively through the literature that exist with respect
to motivation and scholar also took every possible care to frame the statement on the basis on the literature and research studies. Every care was taken to present the statements in simple and sequential manner. Further, all efforts were made to avoid any ambiguity in the statements these following while drafting the questionnaire. After initial writing statements were mingled drafting the questionnaire. After initial writing statements were mingled up to draft the questionnaire.

1. Investigator has avoided the specialized terminology.
2. Statement obviously based was avoided.
3. Every statement was taken to avoid tightly statements and very complex statements were also avoided. The statement has been taken in simple form.
4. Statements too difficult or time consuming was also avoided.

3.4.1.2 First Trial Run

After developing the statements and initial writing the prepared draft questionnaire was send to the trial run to a randomly selected group of 10 subjects, in order to know that the meaning of all information desired. The investigator also asked for ambiguities, in complete statement or misunderstood statements if any, they feel from the statements in the draft questionnaires.

3.4.1.3 Rewriting

On basis of the trial run the suggestions receiving from the subjects were incorporated and rewriting was done. All the ambiguous statements were modified with suitable and appropriate statements. The statements misunderstood were replaced with most appropriate statements and rewriting was finalized.

3.4.1.4 Second Trial Run

After incorporating the suggestion from the subjects the draft questionnaires was administrated again on 10 subjects selected randomly earlier. The second trial run was on subjects and they were also asked for suggestion, if any.

3.4.1.5 Final Writing

On the basis of the suggestions received, the trial writing was completed after incorporating the suggestion. Finally, the statements were typed with single space
incorporating the personal data of the subjects to know from where the questionnaire has emerged with clear instruction for fill up. The statements finalized were arranged randomly in the questionnaire.

**3.4.1.6 Reliability of the test**

The reliability index ascertained by split half (correlating the odd-even items) of the test applying. Spearman Brown Formula is .95 (N-100) with an index reliability of .97.

The test retests reliability of the test N-60 time interval 3 M with an index of reliability .85. The r values .95 and respectively have been found significantly at 1% level which show the highest reliability of the questionnaire.

<table>
<thead>
<tr>
<th>Table: Split Half and Test-Retest Reliability</th>
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<tbody>
<tr>
<td>N</td>
</tr>
<tr>
<td>Split Half</td>
</tr>
<tr>
<td>Test-Retest</td>
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**3.4.1.7 Validity of the test**

The content validity is ensured as item for which there has been 100% agreement amongst judges regarding their relevancy to impact of mass-media coverage are included in the questionnaire. The upper 27% and lower 27% of the subjects serves as criterion group (Kelley 1939) as only highly discriminative items are included in the questionnaire.

**3.5 SCORING OF THE QUESTIONNAIRE**

The questionnaire consists of both yes keyed and no keyed, and three items newspaper, magazines, TV, display media and computer keyed items of scoring have to be adopted. All the positive items are counted.
3.6 STATISTICAL TECHNIQUE USED

The z-test for Difference between Proportions mainly used

Using sample data, we complete the following computations to find the test statistic and its associated P-Value.

- Pooled sample proportion. Since the null hypothesis states that $P_1=P_2$, we use a pooled sample proportion ($p$) to compute the standard error of the sampling distribution.

$$p = \frac{(p_1 * n_1 + p_2 * n_2)}{(n_1 + n_2)}$$

where $p_1$ is the sample proportion from population 1, $p_2$ is the sample proportion from population 2, $n_1$ is the size of sample 1, and $n_2$ is the size of sample 2.

- Standard error. Compute the standard error (SE) of the sampling distribution difference between two proportions.

$$SE = \sqrt{p \times (1-p) \times \left[ \frac{1}{n_1} + \frac{1}{n_2} \right]}$$

where $p$ is the pooled sample proportion, $n_1$ is the size of sample 1, and $n_2$ is the size of sample 2.

- Test statistic. The test statistic is a z-score ($z$) defined by the following equation.

$$z = \frac{(p_1 - p_2)}{SE}$$

where $p_1$ is the proportion from sample 1, $p_2$ is the proportion from sample 2, and SE is the standard error of the sampling distribution.

- P-value. The P-value is the probability of observing a sample statistic as extreme as the test statistic. Since the test statistic is a z-score, use the normal distribution to assess the probability associated with the z-score.

The analysis described above is a two-proportion z-test.
Interpret Results

If the sample findings are unlikely, given the null hypothesis, the researcher rejects the null hypothesis. Typically, this involves comparing the P-value to the significance level, and rejecting the null hypothesis when the P-value is less than the significance level.

Chi square test of equal proportions

Using sample data, find the degrees of freedom, expected frequency counts, test statistic, and the P-value associated with the test statistic as follows:

- Degrees of freedom. The degree of freedom (DF) is equal to the number of levels (k) of the categorical variable minus 1: DF = k - 1.

- Expected frequency counts. The expected frequency counts at each level of the categorical variable are equal to the sample size times the hypothesized proportion from the null hypothesis

\[ E_i = np_i \]

where \( E_i \) is the expected frequency count for the \( i \)th level of the categorical variable, \( n \) is the total sample size, and \( p_i \) is the hypothesized proportion of observations in level \( i \).

- Test statistic. The test statistic is a chi-square random variable (\( \chi^2 \)) defined by the following equation.

\[ \chi^2 = \sum \left( \frac{(O_i - E_i)^2}{E_i} \right) \]

where \( O_i \) is the observed frequency count for the \( i \)th level of the categorical variable, and \( E_i \) is the expected frequency count for the \( i \)th level of the categorical variable.

- P-value. The P-value is the probability of observing a sample statistic as extreme as the test statistic. Since the test statistic is a chi-square, use the Chi-
Square distribution to assess the probability associated with the test statistic.
Use the degrees of freedom computed above.

**Interpret results**

If the sample findings are unlikely, given the null hypothesis, the researcher rejects the null hypothesis. Typically, this involves comparing the P-value to the significance level, and rejecting the null hypothesis when the P-value is less than the significance level.