CHAPTER 5

Research Methodology

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CHAPTER 5
RESEARCH METHODOLOGY

5.1 Research Methodology
Research is a scientific and systematic search for pertinent information on a specific topic. Research is an art of scientific investigation. Research is systematic gain of knowledge. Research should add to the existing knowledge (25). The information and observation gathered should support the concerned people, society, and further research in the allied areas.

5.2 Research Steps
1. Define the area and scope of research.
2. Review literature.
3. Formulate the "Hypothesis".
4. Research Design.
5. Data Collection.
6. Analysis of the data. (Testing the hypotheses)
7. Interpretation and report writing.

5.3 Objectives of Study:
- To obtain the factual information about computerization at college level administration.
• Where the offices are fully or partially computerized or claimed to be, study the effect of the same on student related services.
• To arrive at the firm conclusions / suggestions which can help the undergraduate education sector in future in automating the colleges and their administrative functioning.
• To study whether the institutes are integrating all their work on a computer.
• To find out and analyze the problems in introducing and expanding the computerization in academic sector, particularly to find out the obstacles in adopting the integrating computerization at college level administration.
• To carry out an analytical study of college level computerization to create the data useful in future for colleges and Universities.

5.4 Selection of sample –

The population is the undergraduate colleges in and around Pune city. Every college starting from very oldest college to newly opened college is almost same in structure and way of functioning as the norms regarding these factors are decided by the University and they are applicable to each and every college. So the sample was found to be quite homogeneous.
Looking in to this fact a purposive sample of 15 colleges out of 98 was selected for research. It is customary to provide for sample size around 10% of the population. In this case it comes out to be 15.3%.

5.5 Data collection
The task of data collection begins after defining the hypothesis and deciding the research-scope. Conventionally there are two types of data which are required to be collected for the purpose of research.

1. Primary Data
2. Secondary Data

Primary Data: It is the data which are collected in fresh form and for the first time. This data is original in nature. Normally it is collected from actual site or place of research.

Secondary Data: These are the data which are already collected by someone else and which has already passed through the statistical process.

The methods of collecting primary and secondary data differ due to differences in their nature and according to requirement. For example the primary data is compulsorily collected from the site whereas collection of secondary data merely involves the compilation of the existing data.
5.5.1 Primary Data for this research:

Primary data was collected by following ways.

- Actually visiting and observing the functioning the administrative offices of the colleges.
- Primary data was collected through scheduled questionnaire.

The categories at various levels are:

  a) Office staff
  b) Principal
  c) Accounts staff
  d) Student
  e) A person looking after computer related work
  f) Library staff

This data was collected during the period – September 2003 to November 2004.

5.5.2 Secondary Data for this research:

The secondary data was collected from following sources.

1. Various records in colleges. (Policies, Students’ Registers, rules and regulations etc.)
2. UGC journals / Magazines.
3. Newspapers.
4. University Circulars, Ordinances etc.
5. Other relevant historic documents related to this subject.
6. Internet
5.6 Types of research-studies & the nature of research undertaken:

There are three categories of research studies (26).

1. Exploratory study (search for understanding)
2. Descriptive study (search for generalization)
3. Experimental study (search for replication)

Exploratory Studies –

This type is applicable where there is lack of clear idea of the problems that will be met during the study. Through exploration concepts are developed more clearly, priorities are established, and research design is improved. This type of research is done where previous research is not available, the concept is new, and it is required to create a knowledge base about the subject. Exploratory study creates inputs for descriptive studies. Exploratory research is a research for understanding.

This research is done for transformation from “general” to “specific”. Exploration saves time and money. In exploratory studies more formal studies may be cancelled. In this research idea of research is new and so vague that researcher required doing the exploration to learn something about the research problem. No formal hypotheses are needed for exploratory studies. Exploratory Research heavily relies on “qualitative techniques” than on “quantitative techniques” because of absence of problem-specific hypotheses.

The purpose of exploratory research (37) study may be:
• To generate new ideas or
• To increase researcher’s familiarity with the problem or
• To make precise formulation of the problem or
• To gather information for clarifying concepts

**Descriptive Studies** –
These are more formalized studies and are structured by clearly stated hypotheses. It is more specific than exploratory study. For descriptive study, the prime requirement is that problem must be describable and not arguable. Second is the data should be amenable to an accurate, objective and quantitative assemblage. The previous research is available in this type of studies. They may have specific investigative questions. Descriptive study can be demanding of research skills as causal study. Degree of clarity is more in descriptive studies than that in exploratory research study. The research undertaken does not fall in this category because nature of data is qualitative than the quantitative, the problem not being crystal-clear due to absence of extensive previous research.

**Causal Study** –
To establish the cause & effect relationship is the aim of causal research. This type of research is more specific than descriptive research study. A degree of clarity about the subject is higher in causal research than that in descriptive research study. In causal (also called as analytical study), the nature of data is totally quantitative and suitable for applying statistical techniques. The analytical study’s
design approximates the model of an experimental design (39) as every aspect of the study is clear in this study.

WHY THIS IS AN EXPLORATORY RESEARCH?
From the description of various types of research-studies given above it is clear that this research clearly belongs to “Exploratory” type of study. Whether the computerization exactly results in upgradation of service efficiency was not clear at the beginning. This is because it is common trend to keep computers at work places even just to increase the aesthetic value of the office and not for its extensive use in routine work. Hence the exploratory type of research was badly needed in this matter. So instead of very formal hypotheses, some working hypotheses were formulated. Further “Qualitative techniques” were adopted for analyzing the data both primary and secondary. Truly speaking “exploratory study” does not aim at testing hypotheses. It just attempts “to see what is there rather than to predict the relationships that will be founded” (38)

5.7 Hypotheses:
Being an “Exploratory Study”, hypotheses testing in case of this subject has been treated differently. In case of Causal and Experimental Study, the data is well defined and hypotheses are well defined and problem-specific. So the quantitative techniques / statistical tests can be applied. However in Exploratory Studies, no formal hypotheses are present. Working hypotheses are formulated just to give proper direction to study and to define a scope for the
research. These working hypotheses are indicative in nature. The collected data doesn’t allow itself for easy and precise quantification.

**Working Hypotheses:**

The following "working hypotheses" were formed to carry out the research.

- Computerization improves the quality of service in academic sector.
- College level administration, now-a-days has been aware of the importance of using the computers in offices but still not actively entered in computerizing their work procedures.
- Many applications which are claimed to be computerized are still partially carried out manually.
- College administration staff is curious in getting computer training and use them in routine work but at the same time they carry fear of failure in their mind due to lack of confidence.
- In spite of 100 % support from management, till today total computerization is not observed in undergraduate colleges.
- Inadequate training results in wrong or partial results in spite of good infra structural facilities regarding computer centers.
5.8 Scope of Research:
The research was conducted by surveying all the undergraduate colleges located in and around Pune and affiliated to University of Pune. So Medical, Ayurved etc. colleges are not included in the study as they are affiliated to M.U.H.S. Nasik. It has covered all the variety ranging from well-developed colleges to colleges under development and also the newly opened colleges. The research was mainly aimed at the critical study of extent of computerization achieved by the colleges only in the Administrative part, and not the Academic part.

The computers can be used in teaching process (CBT i.e. computer based teaching) in many ways and these are in practice at many places. CBT is a separate area of study. This research is mainly aimed at the critical study of extent of computerization achieved by the colleges mainly in administration involving the various applications regarding services rendered to the students and other concerned users of “information system” of college administration.