CHAPTER THREE

RESEARCH METHODOLOGY

3.1 Introduction

This chapter explains the procedures that were used in carrying out the study. The main procedures were research method, research design and location of the study. Others were study population, the sample of the study, research instruments, and data collection procedures and data analysis.

3.2 Research Method

Research method is “a strategy or a plan of action that links methods to outcomes, and govern the choice and use of data collection methods”.¹ Research method is also viewed as “a way to systematically solve the research problem”.² Thus the scope of research method is wider than that of methods of data collection and does not only include methods of data collection but also the logic behind the methods used in the context of the research study. From the above definitions, research method can be summarized as that approach that helps one understand the process and the results clearly. Thus through research methods, one is able to systematically solve research problems by logically following various steps. Research methods can either be descriptive or inferential. They can also be qualitative or quantitative. The study adopted descriptive methods which are meant to collect data in order to answer questions about the current status of the subject or topic of the study.³ Descriptive methods use formal instruments to study preference, attitudes, practices, concerns or
interests of the subjects under study. Both quantitative and qualitative approaches were also applicable depending on the research objective.

### 3.3. Research Design

Research design is “the outline plan or framework used to seek an answer to a research question”. It can also be defined as “the schemes, outlines or plans that are used to generate answers to research problems”. Research design can also be described as “the plan and structure of the investigation used to obtain evidence to answer the research questions”. It is also viewed as “a choice of an investigator about the components of his project and development of certain components of design”. Other researchers define research design “as the procedure used by researchers to explore relationships between variables to form subjects into groups, administer measures, apply treatment conditions and analyze the data”. Thus from the above definitions, the research design describes the procedures for the study, including when, from whom, where and under what conditions the data will be obtained. It also indicates the set up, what happens to the subjects and the method of data collection used.

For the purpose of this study, research design refers to the plan or framework used to approach a research problem and come up with appropriate and relevant answers. The research design includes an outline of what the researcher does from writing the hypothesis or objectives and its operational implications to the final analysis of the data. Some examples of research designs are
i) Survey research design
ii) Historical research design
iii) Causal-comparative research design
iv) Correlation research design
v) Experimental research design
vi) Action research design.

vii) Mixed method research design

The predominant design adopted for the study was descriptive survey research design. This was done through collecting data from a relatively large number of students and teachers at a particular time. The data was collected with the aim of determining students’ and teachers’ opinions on decision making process in secondary schools of eastern province, Kenya.

3.4 Location of the Study

The study was carried out in Eastern province, Kenya (Appendix 5). This is one of the eight administrative regions of Kenya. The province is approximately 159,891 square kilometers. It is the second largest province in Kenya and it borders Ethiopia to the North East, North Eastern Province to the East, Coast Province to the south, Rift Valley, Nairobi and central provinces to the west. Nairobi Province is at the same time also a district, a municipality and the capital city. Eastern province is made up of 13 districts which are Machakos, Embu, Meru Central, Marsabit, Isiolo,
Makueni, Meru South, Meru North, Mwingi, Kitui, Moyale, Mbeere and Tharaka (the province has since then been split into more districts and counties).

Eastern province can be stratified into three zones depending on ethnic composition, economic activities and population density. These are the lower Eastern (Machakos, Kitui, Mwingi and Makueni districts), central Eastern (Embu, Meru Central, Meru south, Meru North, Mbeere and Tharaka districts) and upper Eastern (Isiolo, Marsabit and Moyale). Lower Eastern is predominantly inhabited by the Kamba ethnic group most whom are peasant farmers and the population density is high, central Eastern is inhabited by the Embu, Meru, Mbeere and Tharaka ethnic groups, most of them are cash crop farmers and the population density is moderate while upper Eastern is inhabited by the Borana, Rendille and samburu ethnic groups who are primarily pastoralists and the population density is low.

3.5 Population of the Study

Population is “a set of elements that the research focuses upon which the results obtained by testing the sample should be generalized”\(^\text{10}\). A study population can also be defined as “the group that a researcher has in mind from whom he or she can obtain information”\(^\text{11}\). Thus a population can be said to be the group from which information can be obtained and to which the results of the study are intended to apply. The definition of the population can thus be clearly done by defining the properties to be analysed by using the operational definitions. The target population for the study was the \textbf{12th standard (form four) students and teachers} in all the public secondary
schools in the 13 districts of Eastern province, Kenya. There was a total of 28441 12th standard students in the province, 5064 teachers and 596 secondary schools. The study population could be summarized in the table 2.0 below:

**TABLE 2.0**

**Secondary Schools, 12th Standard Students’ Enrolment and Teachers in Eastern Province, Kenya**

<table>
<thead>
<tr>
<th>Content</th>
<th>Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary schools</td>
<td>596</td>
</tr>
<tr>
<td>12th standard (form four) students</td>
<td>28441</td>
</tr>
<tr>
<td>Teachers</td>
<td>5064</td>
</tr>
</tbody>
</table>

### 3.6 Sampling Procedure and the Sample of the study

#### 3.6.1 Sampling Procedure

Sampling is the “selection of individuals from the population in such a way that it is a representative of the whole”. It can also be defined as “the procedure a researcher uses to gather people, places or things to study”. Sampling has advantages such as less time consuming, less costly and may be the only practical method of data collection when the investigation necessitates destruction of the item to test its’ strength or when the population is infinite. A sample is “a representation of the population from which it is selected”. Thus a sample is a subset of the whole population which is actually investigated by a researcher and whose characteristics will be generalized to the whole population. Sampling methods can broadly be
classified into probabilistic and non-probabilistic sampling. The probabilistic sampling procedures include:

- Simple random sampling
- Systematic sampling
- Stratified random sampling
- Cluster sampling
- Stage sampling

Non-probabilistic sampling methods are:

- Convenience sampling
- Voluntary sampling
- Purposeful sampling
- Snowball sampling

The sample for the study was selected through multi-stage sampling. The first sampling unit for the study was the district. Through stratified simple random sampling three districts were selected from the 13 districts of Eastern province. This was meant to subdivide the province into smaller homogeneous units in order to get more accurate representation. The province was divided into three strata as indicated above into lower Eastern, central Eastern and upper Eastern. A district was selected from each stratum through simple random sampling. The districts selected through stratified random sampling were Machakos, Mbeere and Isiolo. The numbers of secondary schools were 145, 37 and seven (7) for Machakos, Mbeere and Isiolo districts respectively.
The second sampling unit was secondary schools. Through **stratified proportionate random** sampling procedure a total of **60 secondary** schools were selected. Of these, 46 were from Machakos, 12 from Mbeere and two from Isiolo districts. The third sampling unit was made up of teachers and students. From each of the 60 secondary schools, 12 form four (12\textsuperscript{th} standard) students and six (6) teachers were selected through **simple random sampling**. Stratified random sampling was used because it gives a more representative sample, stratified proportionate random sampling decreases the chances of failing to include members of population because of classification process and characteristics of each stratum can be easily estimated while simple random sampling yields data that can be generalized to a larger population. The sampling procedure can be demonstrated through the flow chart in figure 3.1.
3.6.2 Sample Size

Sample size refers to the number of items to be selected from the population to constitute a sample. Researchers do agree that there is no absolute method and fixed number or percentage for subjects that determines the sample size, but emphasize on the optimum. It has been pointed out that “an optimum sample is one which fulfils the requirements of efficiency, representatives, reliability and flexibility”\(^\text{16}\). The ideal sample is “large enough to serve as an adequate representation of the population about which the researcher wishes to generalize and small enough to be selected economically in terms of subject availability and expense in both time and money”. \(^\text{17}\)
Several authors have come up with ways and methods of determining the appropriate sample sizes. The use of sample size tables is recommended but where it is impossible “it is generally desirable to have a minimum of 30 cases”. 18 10% of the population is also recommended as an appropriate sample size. For this study 720 students and 360 teachers were randomly selected using the sample size tables at confidence level of 95% and margin of error of 5.0% and 60 (10.07%) principals and schools were selected using the minimum of 10% of the population. Therefore the sampling matrix composed of 720 students and 360 teachers giving a total of 1080 respondents. Table 3.0 below is a summary of the population and the corresponding sample for the study.

### TABLE 3.0

**Population and the Corresponding Sample of the Study**

<table>
<thead>
<tr>
<th>Content</th>
<th>Population</th>
<th>Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Secondary schools</td>
<td>596</td>
<td>60 schools</td>
</tr>
<tr>
<td>12&lt;sup&gt;th&lt;/sup&gt; standard (form four) students</td>
<td>28441</td>
<td>720</td>
</tr>
<tr>
<td>Teachers</td>
<td>5064</td>
<td>360</td>
</tr>
</tbody>
</table>

### 3.7 Data Collection Tools

The tools for data collection included **document analysis** and two decision making questionnaires. There were two sets of questionnaires, the students’ involvement in decision making questionnaire (SIDMQ) and teachers’ involvement in
decision making questionnaire (TIDMQ). Both questionnaires were adopted from a tutor’s involvement in decision making questionnaire and adjustments were accordingly made to fit each group of respondents. The questionnaires were semi-structured, thus containing both open ended and closed questions. Although the questionnaires sought similar information from students and teachers, one questionnaire could not be used because there were a few differences that were suited to each of the groups.

3.7.1. Students’ Involvement in Decision Making Questionnaire (SIDMQ).

A questionnaire can be defined as “a structured list containing relevant questions, statements or items on a specific subject that is submitted to a group of people or target group for their response or evaluation in order to obtain data for decision making in the study”. The questionnaire was therefore designed to fulfill specific research objectives. The SIDMQ comprised of 21 questions. The questionnaire was divided into two sections. Section A collected demographic information on the students’ gender and number of years as a student in secondary school. Section B consisted of 19 questions which had been sub-divided into sections and were designed to ascertain the students, and other stakeholders’ involvement in decision making in curriculum and instructional program, students’ management and welfare, and school community relations. Against each statement (3-15) the respondents (students) were required to indicate the extent of involvement in decision making of parents, boards of governors, the principal, the teachers and the students...
classified on a five-point likert scale as always-5, frequently-4, sometimes-3, rarely-2 and never-1. The respondents were also required to indicate (Question 16) whether students should be involved in decision making by choosing either (a)-Yes or (b) - No.

Question 17 sought the extent to which the respondents perceived the importance of the involvement of students in decision making in their schools by choosing either (a)-very significant (b) - Significant (c)-Not significant and (d) - Very insignificant. A blank space was left for them to give reasons for their answers. Question 18 required the respondents (students) to rate their level of involvement in decision making in their schools by choosing either (a) - Very adequate (b) - Adequate (c) - Inadequate or (d) - Very inadequate. They were again required to give a reason for their responses.

In question 19, the respondents were required to indicate the structures which were commonly used in their schools for students’ involvement in decision making by selecting either (a)-through prefects appointed by the teachers (b)-through a students’ council elected by the students (c)-through all students in meetings with teachers or (d)-any other. In question 20, they were required to choose from a list the areas in which they would wish to be involved more in decision making. A blank space was provided to the respondents in question 21 to make any comments that they thought were important about decision making in their schools.
3.7.2. Teachers’ Involvement in Decision Making Questionnaire (TIDMQ)

The TIDMQ comprised of 26 questions with both closed and open ended items. The questionnaire was divided into two sections. Section A which had three questions sought information on teachers’ background information of gender, teaching experience in secondary schools and number of years taught in the current secondary school. Section B was made up of 23 questions. Questions 4-21 sought information on how often different stakeholders (Parents, Boards of Governors, the principal, teachers and students) were involved in decision making activities in curriculum and instruction, students’ management and welfare, school community relations, and financial management. Question 22 sought to find out from the teachers whether their schools had constituted tender and procurement committees by choosing from a)-Yes b)-No c)-Not sure. Question 23 required of the respondents to indicate whether teachers should be involved in decision making by choosing either (a) -Yes or (b) - No. Question 24 sought to find out the significance that the respondents perceived the involvement of teachers in decision making in secondary schools by choosing either (a)-very significant (b)-significant (c)-not significant or (d)-very insignificant. They were also required to give a reason for the answer to their response in this item. Question 25 sought to know from the respondents how they rated the involvement of teachers in decision making in their schools by indicating either (a)-very adequate (b)-adequate (c)- Inadequate or (d)-Very inadequate. They were then required to give reasons for their answer to this item. Question 26 had a list of 18 sections in various management task areas where the respondents were required to indicate by putting an
X whether they were consulted before final decisions were made. Item 13 had a list of 18 sections where the teachers were required to indicate by putting an X where they felt they should be consulted more. Question 27 was an open question where respondents were required to make any comments that they thought were important on decision making in their schools.

3.8 Validity of the Research Instruments

Validity is “a measure of how well a test measures what it is supposed to measure”. A test is said to be valid to the degree that it measures what it claims to measure. The validity of all the questionnaires was established through consultation with secondary school teachers, lecturers and the guide. The guide, lecturers and the teachers carefully examined all the items in the instruments (both questionnaires and semi-structured interview schedule) in order to ascertain if they had content validity and then revisions were done accordingly. Through this, it was possible to identify problems that respondents would encounter in completing the questionnaire that were not envisaged during the development of the instruments.

3.9 Reliability of the Research Instruments.

The two questionnaires were piloted in a purposely selected secondary school in Eastern Province. The school was selected due to its’ good performance in national examination and was located in town where it could easily be accessible to the researcher. The purpose of the pilot study was to establish the reliability of the
research instruments as data collection tools. Although the pilot school was located within the study area, the school was precluded in the final study sample. 20 SIDMQ, 10 TIDMQ and two interview schedule (principal and deputy principal) were administered and re-administered (test-retest) to the same samples after two weeks. The coefficient of reliability was then calculated which resulted to 0.79 and 0.88 (2 decimal places) for SIDMQ and TIDMQ respectively which were substantial, reliable and relatively high.

3.10 Procedure for Data Collection

Essentially, researches of all types deal with generating, collecting, collating, analyzing data and drawing inferences from them. This study used primary data, which refers to information obtained from SIDMQ and TIDMQ’s responses. After the approval of the research proposal by the Research and Recognition committee of the University of Pune, the researcher applied for a research permit from the National Council for Science and Technology, an agency of the ministry of Higher Education, Science and Technology in Kenya (Appendix 6) which authorized the researcher to visit the selected schools. The researcher then reported to District Commissioners and District Education Officers of the affected districts to inform them of the intended data collection exercise in line with permit requirements. A letter of introduction was written to every principal in the sampled schools (Appendix 4). This was further followed by a mobile phone call to the principals of the affected schools to confirm whether the letters had reached the schools and where possible reschedule the dates in case the earlier dates as per the schedule in the letters was not suitable for the school.
His/her approval and cooperation of his members of staff and students was sought.
The principal was further assured that the findings would only be used to accomplish
the study and confidentiality was guaranteed.

The researcher visited most of the schools, and administered the SIDMQ’s and
TIDMQ’s. However in some of the secondary schools, the researcher had to assign the
principal the responsibility of supervising the filling in and forward the same to the
researcher, especially the TIDMQ where in some schools a number of teachers
requested for more time in order to fill up the questionnaire. Two of the sampled
schools in Mbeere district were unreachable since they were far much interior and
means of communication was poor hence were replaced with others, randomly
selected from the same strata. From the 720 SIDMQ’s and 360 TIDMQ’s taken to
schools for data collection 590(81.94%) and 294(81.67%) were returned.

3.11 Data Analysis

The data analysis involved: **editing, coding, classification and tabulation of
the data collected.** The data collected from students and teachers was later
summarized and displayed into tabular form for further analysis. Data was further
analyzed using descriptive analysis procedures. The descriptive analysis procedures
included **frequencies, percentages, summated ratings and Mean.** Computer based
packages for quantitative data (SPSS Version 11.5) was used to analyze the data and
where possible was presented in tables and charts. **Content analysis** method was used
for analysis of qualitative data. This was done by reading two policy documents.
(Sessional Paper No. 1 on Education, Training and Research, and the Public Procurement Manual for Schools) and one legal document (Public Procurement and Disposal Act, 2005) with a view to ascertaining the status of decision making in secondary schools. A summary of the methods used for each research objective is as shown in table 4.0
TABLE 4.0  
Summary of Research Methods

<table>
<thead>
<tr>
<th>S. No</th>
<th>Research Objectives</th>
<th>Research Method</th>
<th>Sampling Method &amp; Sample size</th>
<th>Data collection tools</th>
<th>Type of Statistical Tools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>To ascertain the status of decision making in secondary schools of Eastern Province, Kenya</td>
<td>Descriptive-Qualitative</td>
<td>Document Analysis</td>
<td>Content analysis</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>To identify key decision makers in selected management tasks in secondary schools of Eastern Province, Kenya as perceived by teachers and students.</td>
<td>Descriptive-Quantitative</td>
<td>Random sampling-360 teachers and 720 students</td>
<td>Questionnaires</td>
<td>Frequency, Weighted Mean and Summated ratings</td>
</tr>
<tr>
<td>3</td>
<td>To find out the opinion of students and teachers on their involvement in decision making process</td>
<td>Descriptive-Quantitative</td>
<td>Random sampling-360 teachers and 720 students</td>
<td>Questionnaires</td>
<td>Frequency, percentage</td>
</tr>
<tr>
<td>4</td>
<td>'To find out students’ and teachers’ perception on the adequacy of their involvement in decision making process in secondary schools of Eastern Province, Kenya.</td>
<td>Descriptive-Quantitative</td>
<td>Random sampling-360 teachers and 720 students</td>
<td>Questionnaires</td>
<td>-Frequency, percentage and mean.</td>
</tr>
<tr>
<td>5</td>
<td>To identify the structures within the secondary school system which are used in students’ and teachers’ involvement in decision making process.</td>
<td>Descriptive-Quantitative</td>
<td>Random sampling-360 teachers and 720 students</td>
<td>Questionnaires</td>
<td>Frequency and percentage</td>
</tr>
</tbody>
</table>

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References


6. Orodho, p.24


9. Sharma


13. Sharma, p. 132


18. Kasomo, p.34
