Chapter 3

Plan & Procedure

Introduction

The researcher makes a plan of his study before he undertakes his research work. This will enable researcher to save time and resource.

Technique is to research what method is to teaching or in a sense what logic is to thinking for the measurement of certain personality traits various instruments have been advised in recent years.

There are several techniques and methods of studying the personality traits in research, the researcher trying to collect factual data by which facts can be judged applying different types of statistical techniques. The investigator uses one or more methods in his work only to find out the facts of the study.

Research design is the blue print of the procedures that enable the research to test hypothesis by reaching valid conclusions about the relationship between dependent and independent variables. It is a plan structure and strategy of research prepared to obtain answers to research questions and to control variances.

Pure research is also known as fundamental or basic research. This type of research is conducted from a theory or a body of principles relating to a particular phenomenon. The theory that is evolved under the research is assumed to hold good all the times and serve the society in the long run in a general manner.

Applied research is also known as practical or particular research which is conducted to find the solution of a problem immediately faced by the society. The results of this type of research are not generally applicable.

In this type of research the researcher has a free scope to select a problem of his own choice and operate all the functions of his research in a free manner to arrive at a logical conclusion. Researches conducted to obtain a doctorate Degree is an example of conclusive research.
It refers to a research in which a researcher is required to do research over a problem to comply with the needs of a decision maker. Operations research is an example of decisive research.

**Design of the study**

Before doing the various studies on the present thesis the researcher has fixed the topic and area because it provides the entire draft of the scheme of the research starting from writing the hypothesis their operational implications to the final analysis of the data. The structural of the research is more specific as it provides the outline, the scheme the paradigm of the operation of the variables.

It presents a series of guide posts to enable the researcher to progress in the right direction it gives an outline of the structure and process of the research program. Without such a plan of study no scientific study is possible.

Research design is a strategy that is more specific than plan which includes methods to be followed in collecting and analyzing data. Hence it means that how the research objectives will be reached and how the problems encountered in the research will be tackled.

It is the overall operational pattern of the project that stipulates what information is to be collected from which sources by what procedures. If it is a good design it will ensure that the information obtained is relevant to the research questions and that it would research by objective and economical procedures.

Therefore the researcher has prepared a design of her research.

**Justification of the study:-**

Changing need of the society has changed the role of mother from just being house makers. They are moving shoulder to shoulder with men and sharing all the responsibilities within and outside the home. As the result, time spent by them with their children has decreased. Sharing caring guidance etc has taken a little back-seat. This has influence the personality of children to a great extent.
The researcher herself observed the different phenomena prevailing in the society about the personality of the children of working mothers and those of non-working mothers. After a keen observation she found that a lot of differences are there in the personality characteristics of the children of working mothers and non-working mother.

The researcher herself is mother and is in service, so she has realized the pangs of the life of a child whose mother goes to work outside the home. So she thought of this problem and took decision to conduct this study at this level.

More over several studies have been done in the area of personality related to the factors which help in the development of personality but on the personality characteristics of the children of working mothers and those of non-working mothers very few studies have been done. The investigator could not find much work in this area.

The studies which she came across were really touching the fringes only. Some studies were done on the effect of personality of the mother on the personality of their children some were on parental influences; some were on sibling relationships and personality. The investigator could not find even a single study directly related to this topic. Even in Rajasthan, Jhunjhunu district no work of such type has been done.

Various studies also have been done in the personality of children but so far no study has been done that specifically focuses on introversion and extroversion traits of personality of children of working and non-working mother.

**Statement Of The Problem**

A study of personality traits of children of working and non-working mothers.

**Definition Of The Important Terms:**

**Working mother:** - Those who are financially independent and go out of their houses to earn livelihood.
Non-Working mother: - Those mothers who stay at home they may or may not be financially independent.

Introversion: - Introversion is a trait of characteristics of behavior, introvert personality is possessed by those persons who love loneliness and have interest in themselves. They speak less are shy and do not socialize much.

Personality “Personality is the entire mental organization of a human being at any stage of his development.”

Warren.

The following are the main objectives of study:

1. To study the introversion-extroversion traits of female children of non-working mother.

2. To study the introversion-extroversion traits of female children of working mother.

3. To study the introversion-extroversion traits of male children of non-working mothers.

4. To study the introversion-extroversion traits of male children of working mother.

5. To study the introversion-extroversion traits of male children of working and non-working mother.

6. To study the introversion-extroversion traits of female children of working and non-working mother.

7. To study the introversion-extroversion traits of children of working and non-working mother.
**Hypothesis**

A hypothesis is nothing but intelligence guess or a possible answer of the problem. It is a tentative solution of the problem. Action hypothesis describe a relationship between proposed actions an anticipated consequence.

This step of hypothesis formulation is most important in research, because it gives direction to the researcher. It helps in collecting evidence to solve or choose an alternative way to solve the problem.

At the start of any investigation the hypothesis is stimulation to critical thought and offers insight into the confusion of the phenomenon. At the end it has to be accepted or rejected in the light of the findings. In between these stages it furnishes the work with the sign posts for the progress of investigation.

When the hypothesis is fully established, it may take the form of facts principles of theories. Hypothesis reflected the research worker’s guess as to the probable outcomes of the experiments.

**Different Forms Of Hypothesis:-**

1. **Declarative form:** - The declarative form generally states a relationship between the variables that the experiments expect will emerge.

2. **Null form:** - A null form hypothesis states a relationship exists between the variables concerned.

3. **Question form:** - in question form hypothesis the researcher instead of stating his hypothesis in terms of expected outcome, states it as to what the outcome will be.
Hypothesis of The Problem:-

1. There is no significant difference in the personality traits (introversion-extroversion behavior) of male and female children of working and non-working mother.

2. There is no significant difference in the personality traits (introversion-extroversion behavior) of the male and female children of working mothers.

3. There is no significant difference in the personality traits (introversion-extroversion behavior) of male and female children of non-working mother.

4. There is no significance difference in the personality traits (introversion-extroversion behavior) of the male and female children of working and non working mother studying in Govt School.

5. There is no significance difference in the personality traits (introversion-extroversion behavior) of the male and female children of working and non working mother studying in private School.

Delimitation of the Problem

Meaning of the Limitation

The researchers impose the restriction and limitation on his study. It is a statement of the limits or scope of the investigation. This statement will provide information concerning who, what, where, and how many are involved in research. It will determine the boundaries of the project in hand.

While defining a problem investigator will try to delimit the problem keeping in view the purpose, goals, time, energy available to pursue the investigations. Recognition of the limitation of the study helps to focus attention on valid objectives. It helps to minimize the danger of over generalization.

Delimitation will mention the geographical limits of the study- i.e., whether the study will be covering a single town, a district, a region, a state or a country.
It will specify the time limits of the study – i.e., whether the study will be spread over a few days, a few months, a year or a number of years.

It will have to specify the type of institution to be covered – i.e., the rural schools, the middle schools, the high schools, public schools, boy’s schools, girl’s school or co educational schools.

The type of subjects of the study will also be mentioned – i.e., the heads of the institutions, the science teachers, the parents, the adolescents or the sportsmen.

It will mention as to how many subject will constitute the sample of the study and how they will be distributed over the institutions, geographical areas or time intervals.

The age level, grade level, ability level, achievement level, etc will also have to be specified.

Limitations of the Problem:-

Personality as it knows is very complex phenomena. It is difficult on the part of the investigator to assess it as a whole and therefore it is rather essential to delimit the problem in content as well as in sample.

1. The study is limited to a sample of 600 students only.
2. The study is confined only to the Secondary schools of Jhunjhunu District only.
3. The study is confined to self prepared questionnaire to check students’ extrovert and introvert personality traits.
4. The study is confined to Govt. and Private schools of Jhunjhunu district only.
5. The study is confined to the students of IX, X class of different schools.
6. The study is confined to the Male & Female students.

Meaning of Research:-

The term Research refers to an intensive search for knowledge. In the modern term it may be defined as the systematic method of arriving at the solution of a problem taken up with some motive. A research has two important aspects:-
Systematic method of solution in a research work differs from problem to problem but the method common to all the cases will include the following

- Systematic collection of relevant information and Data.
- Systematic recording of the data collected.
- Systematic processing and classification of data.
- Systematic analysis of data.
- Systematic interpretation of the data.
- Systematic reporting upon various aspects of the Problem.

Motivation in Research
In Research, a problem is taken up with some motive. The different motives with which the researcher takes up the problem areas under

- Motive to face a challenge by solving a problem that remains unsolved yet.
- Motive to get pleasure by doing a creative work.
- Motive to serve the society at large.
- Motive to get a doctorate degree from a university and to earn respectability and pecuniary thereby.

On the basis of above motives; the nature, quality, depth and duration of the research will be determined.

Types Of Research

- Pure Research
- Applied Research
- Conclusive Research
- Decisive Research
• Action Research

Research Method

It is not infrequent to find the terms ‘method’ and procedure used interchangeably in research literature. It is so because both the terms generally used to understand the tools and techniques, adopted in research study.

Research studies are distinguished on the basis of their different purpose and approaches and that is why it may technically be called deference in methods.

Research studies adopting different methods; however do not differ significantly in their procedures. Selection, formulation and definition of the problem survey of related literature collection, analysis and interpretation of new data and reporting of the work done are the steps of procedure common to all types of methods of research.

Hence it can be held that steps of procedure in educational research are an element common to all educational investigations, while methods of research in education are broad distinguishing features of different researches.

To successfully complete any research work the method selected should always be appropriate to the problem under investigation; feasible preplanned and well understood it also depends upon the type of data required to be explored.

After careful study and analysis of problem under investigation and observation of related literature the investigator has arrived to the conclusion that descriptive survey method is appropriate because this problem is related most to the survey method.

Historical Method

This provides a method of s to discover, describe and interpret what existed in the past. This type of research describes what was, the process involve recording, investigation, analysis and interpretation of the event of the past in order to make generalization, these generalization are
helpful to understand the past, building a perspective about present to a limited extent understanding the future.

The main purpose of historical research is to arrive at exact account of the past, this research help us partially to control future.

**Descriptive Method**

This method is one of the important methods in education because it describes the current position of the present research. The terms survey suggest the gathering of evidence relating to current conditions. The term descriptive survey is generally used for type of research which proposes to as certain what is the normal or typical condition or practice at the present time.

Descriptive survey method is one of the most common methods in research work. It is a method of collecting and analysis data obtained from large number of respondents representing specific population collected through highly structured and detailed questionnaire or interviews.

It follows studying local, as well as state classification, evaluation and generalization all directed towards a proper understanding and solution of significant educational problems.

**Three types of information are collected by this method these are:-**

1. Information of what exists by studying and analyzing important aspects of present situation.

2. Information of what we want by clarifying goals and objectives possible through a study of the conductions existing.

3. Information of how to get these through discovering the possible means of achieving the goals on the basis of the experience of other or the opinion of experts.

The investigator in her present study has attempted to study the personality traits of children of working and non-working mothers.

Due to large number of women taking to professional jobs, such a study is relevant to present and current conditions.
For this purpose, the investigator selected twenty schools in Jhunjhunu area. The students of class IX, X were randomly selected and self prepared introversion inventory is used.

**Main Stages of Research Methodology** Research methodology is a vital term in which a research is conducted through various stages beginning with the planning and ending with the writing of the final report. Following are the different stages of research methodology:-

1. Selecting the Research Problem.
2. Specification of the sources of information
3. Determination of the survey technique.
4. Designing the research project.
5. Census and sample investigation.
6. Collection of data.
7. Analysis of data and methods of analysis.
8. Arriving at the generalization.

**Sources of Data Collection**

**Primary source** is a direct description on of the study by the individual who actually observes or witnesses the occurrence and carries it out. The primary data are those which are collected by an investigator for the first time. These are the original data and used as raw material of the survey. The primary data are collected by the investigator or through different persons. The collection of primary data involves more time, labor and expenses.

**Methods of collection of Primary Data**

(i) Direct personal interview.

(ii) Indirect oral investigation.
(iii) Information through local sources or correspondents.
(iv) Information through schedules.
(v) Questionnaire.

**Secondary source**

Secondary source material includes publications written by an author who was not a direct observer or participant in the event described. These materials comprise textbooks, encyclopedias. Because of the practical problems in the collection of primary data the investigator makes use of data already collected and published by various organizations and persons.

**Sources of Secondary Data**

1. International Publications.
3. Publication of local Authorities.

To achieve the objective of the problem under investigation the investigator in present dissertation has selected the primary source of data collection and selected the children of five schools of Jhunjhunu area as a sample.

To collect the data the investigator has selected self prepared introversion questionnaire.

While using this tool the investigator kept in mind the following main points, the number of children of working mother and non-working mother, the children of only IX,X standard, the age limit and only the introversion extroversion personality traits.

**Population**

Refers to the larger group from which the sample is taken. Before gathering the sample, it is important for the researcher to find out as much as possible about the population.
The researcher should at least know some of the overall demographics, age, sex, class, etc, about the population.

This information will be needed later after he gets to the data analysis part of the research, but it’s also important in helping him decide sample size.

The greater the diversity and differences that exist in the populations the larger the sample size should be. Capturing the variability in the population allows for more variation in the sample.

One false belief is that a sample must be larger or it is not representative. Sample size is only one aspect of representativeness, casual; observers generally feel that the size of the population from which it is drawn.

The absolute number of people in a random sample is more significant than the sample’s size relative to the population size.

The students (Girls and Boys) of working and non-working mothers are selected from the different Govt. and Private schools.

<table>
<thead>
<tr>
<th>Mothers</th>
<th>Working Mothers</th>
<th>Non Working Mothers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Girls</td>
<td>Girls</td>
</tr>
<tr>
<td></td>
<td>Boys</td>
<td>Boys</td>
</tr>
</tbody>
</table>

Table No- 2
Sampling Procedure

Sampling procedure technique is used for the selection of students for this study as in random sampling every item in the population has an equal chance of being included.

“A random sample is a sample selected in such a way that every item in a population has equal chance of being included”.

W.M. Harper

“Random samples are characterized by the way in which they are selected. “Random” is not used in the sense of haphazard or ‘hit or miss’; a random opportunity of being selected.”

Simpson and Kafka

The method is formally defined as follows: Suppose we take a sample of size n from a finite population of size N, then there are NCn possible samples.

A sampling technique in which each of the NCn sample has an equal chance of being selected is known as random sampling and the lot obtained by this technique is termed as a random sample.
However to ensure randomness of selection one may adopt either the lottery method or consult table of random numbers.

**Sample**

The representative proportion of the population is called a sample. In the technique of sample investigation certain units from the whole domain of survey are selected as being representative. Now these are studied in detail and the conclusion arrived from these are extended to the entire field. Unlike census investigation, not all units should studies in sample investigation, but only some of these are selected for study on a certain definite basis.

The final sample consists of 600 students studying in IX,X class. The researcher has selected the sample of which 300 students are of working mothers and 300 students are of non-working mothers.

The Researcher has conducted her research work by conducting a survey in above mentioned schools covering 150 Girls and 150 Boys of working and non-working mothers studying in Government and Private schools respectively.

**Variables Under Study**

Variable are the conditions or characteristics that are observed, manipulated and controlled by the experimenter.

A variable is a measurable characteristic that varies. It may change from group to group, person to person or even within one person overtime.

**Independent Variables** The variable which is antecedent to the dependent variable is termed as an independent variable i.e. when one variable does not dependent upon other variable it is called independent variable.

The independent variables are the conditions or characteristics that the experimenter manipulates or controls in her attempt to ascertain their relationship to observed phenomena.

Hence, an independent variable is one whose values are chosen by the experimenter.
In other words, the values of these variables are independent of the participant’s/subject behavior.

**Dependent Variable** If one variable depends on the other variable, it is termed as dependent variables.

Dependent variables are the conditions or a characteristic that appear, disappear or change as the experimenter introduce, removes or changes independent variables.

The variable whose values the researcher observes and records in experimental designs is called dependent variable.

In other words, the dependent variable value depends on the behavior of the participant, rather than being set by the experimenter.

The dependent variables are the measured changes in pupil performance attributable to the influence of the independent variable.

**In present research study the variables used are**

**Independent variables:-**
Introversion-extroversion personality traits.

**Dependent variables** Children of working mothers and non-working mothers.

**Tools And Technique :-**

“The primary goal of survey techniques is to understand immediate, distant and past social problems in order to gain better measure of control over them.”

Paulin V. Young

1) Sex

2) Education
3) Age

4) Work

For collecting the data for the study of any problem the researcher may use different types of device, which in technical language are called tools or instruments.

The progress of mankind depends upon well-conducted research programs. A well-conducted research program postulate sufficient, reliable and valid facts. Such facts are obtained through a systematic procedure, which involves various devices.

A great variety of research tools are of many kinds and employ distinctive ways to describe and qualify the data. Each tool is particularly appropriate for certain sources of data yielding information of the kind and in the form that would be most effectively used.

Some of these devices merely identify the presence or absence of certain aspect of a situation. Some of the devices collect qualitative description, which may involve comparison or contradiction between elements present in the situation, other devices yield quantitative measures. The measurement of what is identified adds an important dimension on not only what, but how much it revealed.

Many of the research tools have been designed to yield quantitative measures. Others yield description that may be refined by count of frequency of appearance. This qualification of data is an essential part of research.

While some judgment cannot be expressed in frequency counts, percentage or scores, most data are made more meaningful by quantification.

In addition to frequency counts and percentage or factional comparison, data may be refined by numerical ratings, rank order placement, paired comparison, social distance scales, equal appearing intervals, summated ratings and standardized score value.

In the present study, the investigator took pains in selecting the tools for collection of data. She kept in view the reliability, validity, adequacy, demonstrability and sociability of the instrument she needed in respect of the Personality traits of the children.
The investigator thus employed the following predictive measure:-

**Self prepared Introversion – Extroversion Inventory**

**Procedure Of The Study:**

The investigator designed a questionnaire to measure introversion extroversion personality traits of the children of working and non working mothers.

**Description of the Test** Introversion means a preference for relating to the inner world of ideas than to outer world of things and people. They like quiet item for concentration and don’t appreciate interruptions.

They don’t have the same “need” to be around or interact with people as extroverts do. They have trouble remembering names and faces. They like to process information either by thinking about it or getting a feel for it, before taking action or delivering their conclusions.

Sometimes they go over things in such depth in their minds that they think they have done it or communicated it, when actually they have not.

They would rather write a letter to communication than pick up the phone and call. Introverts like silence to think and they believe it is rude and inconsiderate when people won’t let them respond.

**Extroversion** means a preference for interacting with the outer world of things and people. In facts, extroverts meet people easily and are good at greeting them.

Extroverts like variety and action. They like interruptions, phone or in person-always an open door. Very often they take the “act-think-act again” approach to life.

They are do something type, right or wrong, but do something. They are very impatient with long “slow” jobs and prefer to act quickly.

**Jung** did not assert that human being could be of 2 types. No person is wholly introvert or wholly extrovert. Rather, he carries both possibilities within him. Some are dominated more by one tendency than the other.
Observation and measurement indicate that most persons lie between two extremes and that there is a continuous gradation from one pole of this bipolar continuum to the other.

The present inventory therefore; aims at studying whether an individual is predominantly extroverted or predominantly introverted or falls somewhere in the middle of the continuum.

**Reliability** is one of the important factors of any test. It refers to the precision or accuracy of the measurement or score. A well-made instrument should yield accurate results both at present as well as overtime. That is such instrument should give consistent results.

Reliability refers to this consistency of scores of measurement which is reflected in the reproducibility of the scores

There are there common methods of estimating the reliability coefficient of test scores.

  - **Test – retest reliability**
  - **Split – half method of reliability**
  - **Alternate form reliability**

In the present study the investigator has used the test retest reliability method.

**Test – Retest reliability** In this method the single form of the test is administered twice on the same sample with a reasonable time gap. Hence two administration of the same test yield the two independent sets of scores.

The two sets, when correlated, give the values of the reliability coefficient indicates that the examiner who obtains to score low on the second administration tends to score high on the second administration.

The reliability was determined on a sample of 361 male and female subjects by the test – retest method after interval of 15 to 20 days.

Test retest reliability coefficient was - .91

Index of reliability was - .95
This indicates that the true scores did not deviate too greatly from their true values.

**Validity** is another important characterized of a scientific instrument. The term validity means truth or fidelity.

Thus validity refers to the degree to which a test measures what it claims to measure.

Validity is not the self-correlation of the test; rather it is correlation with some outside independent criteria which are regarded by experts as the best measure of the trait or ability being measured by the test.

**Definition** “The validity of a test concerns what the test measures and how well it does so.”

Antsi

“ As the accuracy with which it measures that which is intended to measure or as the degree to which it approaches infallibility in measuring what it purpose to measure”.

The above two definitions point the fact that for determining the validity of a test, the test must be compared with some ideal Independent measures or criteria.

The correlation coefficient computed between the test and the ideal measures or “**independent criteria**” refers to some measure of the trait or the group of traits that it itself claims to measure.

Validity is concerned with generalizability when a test is a valid one; it means its conclusion can be generalized in relation to the general population.

When the independent criterion has been set and when both the test and the criterion are reliable the correlation between the test and the criterion can safely be taken as evidence of validity of the test.

Cross validation was carried on a sample of 288 individuals. The criteria related validity was determined by correlating the scores obtained on the inventory with the scores obtained by the subject on the Neymann Kohlstedt introversion – extroversion test. The validity coefficient obtained is .95, which is significant beyond .01 level 0.

**Administration Of Tools:**
Correct administration and accurate scoring of psychological tool is basic to any program tool administered carelessly or in such a manner as either to give individuals.

The introversion extroversion inventory is self-administering. General instructions and direction explaining how to give the answer are given on the title page of the booklet.

The intent inventory may be administered in a group or individually.

It is important that each member of the group is well motivated to give his honest expression of choices.

Members should be assured of confidential nature.

It must be duly emphasized that all items have to be answered either in the positive or negative in ‘yes’ or ‘no’ and no statement must be skipped.

There is no fixed limit. Generally, an individual takes. Around 60-80 minutes.

Personality measurement test has some reliability. The reliability was determined by Test – retest reliability method. The test – retest method was subjected on male and female children after an interval of 15 to 20 days.

In this test 65 items of Yes or No type are given. In this both positive and negative type questions are included. There is no fixed time limit for this test. 30 Minutes is generally enough which was given to the students and data was collected from 600 students 300 working and 300 non-working mother’s boys and girls. The test was administered keeping in view the instructions given in manual of the test. Proper instructions work was also done. The difficulties of the students during the course of the test were removed.

**Scoring Of Tool:-**

Scoring system is very easy. Extrovert responses are considered to be correct. One mark is awarded for each correct response. Correct responses are given in manual.

After checking the response of the subject from manual subjects score is calculated by following formula:-
Score obtained = No of correct responses

(-) No of incorrect responses

The subject obtains a plus score when the no of correct responses exceeds that of the incorrect ones. He/she gets a minus score when the no of incorrect responses exceeds that the correct ones.

If the subjects score ranges between -15 and +15, he is said to be an ambivert. If the score is above +15, he is said to be an extrovert and if the score is below -15, he is said to be an introvert.

After scoring is done, the data is presented in the tabular form.

Tabulation of Survey Results:-

<table>
<thead>
<tr>
<th></th>
<th>Extrovert</th>
<th>Introvert</th>
<th>Ambivert</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working Mothers</td>
<td>272</td>
<td>28</td>
<td>0</td>
<td>300</td>
</tr>
<tr>
<td>Non-working Mothers</td>
<td>217</td>
<td>68</td>
<td>15</td>
<td>300</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>489</strong></td>
<td><strong>96</strong></td>
<td><strong>15</strong></td>
<td><strong>600</strong></td>
</tr>
</tbody>
</table>

Table-4
Personality Attributes of Children of Working Mothers:

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<tr>
<th></th>
<th>Extrovert</th>
<th>Introvert</th>
<th>Ambivert</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>137</td>
<td>13</td>
<td>0</td>
<td>150</td>
</tr>
<tr>
<td>children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>135</td>
<td>15</td>
<td>0</td>
<td>150</td>
</tr>
<tr>
<td>children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>272</td>
<td>28</td>
<td>0</td>
<td>300</td>
</tr>
</tbody>
</table>

Table-5

Personality Attributes of Children of Non-Working Mothers

<table>
<thead>
<tr>
<th></th>
<th>Extrovert</th>
<th>Introvert</th>
<th>Ambivert</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>97</td>
<td>53</td>
<td>0</td>
<td>150</td>
</tr>
<tr>
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<td></td>
</tr>
<tr>
<td>Female</td>
<td>120</td>
<td>15</td>
<td>15</td>
<td>150</td>
</tr>
<tr>
<td>children</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>217</td>
<td>68</td>
<td>15</td>
<td>300</td>
</tr>
</tbody>
</table>

Table - 6

Statistical Technique:-

Statistics is that science in which facts are collected in the form of figure with a certain aim in view. Then these facts or dates’ are so classified that an event may be followed properly. It
classifies and arranges the data and tries to explain the event may be followed properly. It classifies and arranges the data and tries to explain the events by arranging them in a methodical manner.

W.A. Sutcliffe has defined status in the following words “statistics comprise the collection tabulation, presentation an analysis of aggregate facts collected in a methodical manner without bias and related to pre-determined purpose”.

The modern educational are of the view that almost all the characteristics of the child’s personality can be measured in figures and statics.

In the present study the investigator has used the following statistical techniques:

**Mean:** Value obtained by adding together all the items and by dividing this total with the number of items is known as mean.

\[ \text{Mean (M)} = \frac{\sum x}{N} \]

Where,

- \( M \) = Mean.
- \( N \) = Number of personality attributes under study.
- \( \sum x \) = sum of total number of observations in different personality traits.

**Standard Deviation** The standard deviation concept was introduced by Karl person in 1823. It is a special form of average deviation from the mean standard deviation is the square root of the sum of the squares of the individual deviations from the mean divided by the number of items. In other words, the standard deviation is the root-mean square of the deviations from the arithmetic mean.
The standard deviation measures the absolute dispersion the greater the standard deviation, for the greater will be the magnitude of the deviations of the values from their mean. A small standard deviation means a high degree of uniformity of the observation as well as homogeneity of a series a large standard deviation means just the opposite.

Standard deviation of any distribution shows the dispersion of the scattered scores in that distribution along with mean, here in the present study the standard deviation was calculated by using the following data.

\[
\sqrt{\frac{\sum d^2}{N}}
\]

Where,

S.D. = Standard Deviation

\(\sum\) = Sum of all (total)

\(d\) = Deviation of particular observation from mean

\(d^2\) = square of deviations.

\(N\) = Total No of observations in a table.

**Correlation coefficient** was also used to determine the level of correlation between the personality traits of children of working and non-working mothers as well as amongst male and female children of children of working and non working mothers in order to test the hypothesis that there is no significant difference between personalities of children of working and non working mothers.

The correlation coefficient is obtained with the help of the following formula:-

\[
r_{xy} = \frac{\sum x.y}{\sqrt{\sum x^2.\sum y^2}}
\]
Where,

\[ r_{xy} \] = correlation coefficient between variable X and variable Y

\[ x \] = deviation of variable X from its mean score.

\[ y \] = deviation of variable Y from its mean score.

\[ x^2 \] = square of deviations of variable X from its mean score.

\[ y^2 \] = square of deviations of variable Y from its mean score.

\[ \sum x.y \] = sum of product of deviations of variable X and variable Y from their respective mean scores.

**Percentage Calculation** The observations are presented as percentage of total number of observations. The percentage method facilitates in decision making and testing of hypothesis under study as it shows the trend of personality attributes of children of working and non-working mothers and their male and female children also. This method is a great tool to arrive at the solution and conclusion of the problem under study.

The formula for computation of percentage is:

\[
\frac{\text{Observations of a particular object}}{\text{Total No. of observations i.e. } N}
\]