UNIT V Report Writing

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5.1 INTRODUCTION

The last but the most important step in the research process is the writing and presenting research report. The report should be written in a manner that it is lucid and narrates all the findings that have been explored by the researchers.

The purpose of this unit is to help you in preparing a research report which will demonstrate all your research findings and suggestions. Further, the output produced by SPSS needs to be presented as per the research requirement so the rational and logical analysis can be made from the output generated.

5.2 OBJECTIVES

After reading this unit you will be able to:

- Learn about various types of research reports
- Assess the importance editing tables and report presentation.
- Work with the fonts and basic functions of SPSS for data presentation
- Comprehend the outputs produced by SPSS in the research report.
- Conversant with various components of research reports.

5.3 PURPOSE OF RESEARCH REPORT

Researchers, market researchers and decision makers conduct research on various topics and on the basis of the results of their research, they arrive at certain conclusions. Unless the research results are properly communicated in the reports, they would be of little use unless the entire research findings are available to them in systematic manner. The research findings need to be documented and reported in a specific format. A research report contains many items including findings, analyses, interpretations, conclusions and at, times recommendations. These findings can be presented either in written form or can be communicated orally. For research finding to be useful, the report needs to be meticulously designed, with all the necessary information arranged and presented properly. The main purposes of research report are listed as under:

- Communicating about the research problem and disseminating the knowledge accquired
- Deriving the valid conclusions to faciltate decision making
- Validating the generalisations made from the research report
- Guiding future researches

5.4 TYPES OF RESEARCH REPORT

In management research, there is no single form or type of research report. Depending upon the purpose of research, the sponsor, the audience, the type of research gets determined. Although the fundamental aspects of report writing remain the same, they all vary in terms of intensity and extensiveness. Lets us examine the various types of reports-

1. Short Reports- Short reports usually are of four-five pages and are prepared for researches which have a well-defined problem and limited scope, and which employ a clear cut methodology. These reports usually start with a precise research problem followed by research objective and then they focus on research methodology. In the end, conclusions based on the findings and recommendations, if any, are given. The basic purpose or objective of this type of report is to make information available to all those concerned in an easy-to-use format. Short reports are prepared even for small clients who have in-expensive projects.
2. Long Reports- Long reports, unlike short reports, provide detailed information regarding the project. They can be further subdivided into technical and management reports based on the objectives of the researchers and the end users. Technical reports are primarily meant for researchers. Management reports are meant for mangers (as end users), to aid their decision-making.

3. Technical Report- A technical report (TR) mainly focuses on a specific topics logically pertaining to the research objective. The report should include; a research title and its description in brief; author name and information; date of submission; list of keywords; abstract or executive summary; main body giving details of the projects, such as background, methodology, which further includes data sources, sampling techniques, statistical techniques, data analysis, results, policy recommendations; and conclusion, acknowledgement , list of references and appendices. The introduction of each TR should clearly identify its thesis and an organizational plan for the same. TR should include detailing of the research procedure which can be used or replicated by other users. Therefore, it should explain what was done, why it is done, what was discovered, and what was significant in the findings. The report should also have a section on literature review which is done for the purpose of identifying clearly. What is original about the work and how it related to past knowledge? There is no minimum or maximum length requirement for a TR. A good TR should have the conclusions and recommendations in line with the findings. While all necessary details should be referred to, it should avoid the inclusion of non-essential information and oversimplification.
4. The Management Report-To present the research outcome to the management, the format of management report is used. Managers and decision makers are more interested in research findings rather than the other related details. They want to be very quick and straight to the point. Thus, management reports are prepared for non-academic or non-technical audience who are interested only in research problem and research findings or policy recommendations. Management report does not consist of technical jargons, literature review, or detailing of in-depth methodology. The language of a management report should be such that it is easy to understand. Other features of a good management report are as follows:
    - Short and direct statements
    - Underlining relevant parts for better emphasis
    - Pictures and graphs accompanying tables
    - Graphics and animations accompanying the presentations of the report.
5. Information Report – This form of report aims to provide understanding of the current scenario in terms of business situations, economic environment, tax structure, existing technology, etc. While preparing this report to describe any company or organization, group of individual, economy, concepts, technology etc., and the researcher can make use of the 6 Ws H model which will help to convey the holistic meaning to an information report.
6. Decision Report- This report generally takes up the problem solving approach. Decision reports describe the steps required for solving the problem for various alternative solutions available. They also analyze the best solution that can be taken in the current environment and forecast the possible outcome of those decisions. Thus, they incorporate situational analysis, cause-effect analysis, etc.

For learning more about 6 Ws H Model refer to the following link:
http://en.wikipedia.org/wiki/Five_Ws

Check Your Progress-A

Q1. What do you mean by research report?

Q2. What are various types of reports?

Q3. Distinguish between Management Report and Information Report

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Q4. Fill in the Blanks with appropriate word or words.

a) ………………………. in a research report are used to convey statistical information.

b) ………………….. Report generally takes up the problem solving approach.

Q5. Which of the following statements are true or false?

a) The report should be clear, accurate in providing information and should be easy to understand.

b) A research study results in writing report which is used as a tool for communicating the various aspects of the study.

5.5 COMPONENTS OF REPORT

For any type of research reports-academic or commercial, technical or managerial, private or public- there should be a set of specified components. A typical research report has the following sections:

- **Prefatory information**
- **Title page**
- **Authorization Statement**
- **Acknowledgement**

Introduction to SPSS

- **Executive Summary**
- **Table of Contents**
- **Introduction**
    - **Problem Statement**
    - **Research Objectives**
    - **Backgrounds**
- **Methodology**
    - **Sampling Method**
    - **Research Design**
    - **Data collection sources and method**
- **Data Analysis**
- **Limitations**
- **Findings**
- **Conclusions and recommendation**
- **Appendices**
- **Bibliography**

1. Prefatory Information- The prefatory information contains the title page, authorization statement, acknowledgement, executive summary and table of contents. This is the first section of any report.
    - ❖ Title Page- The title page should include the following:
    - ❖ Title of the Report
    - ❖ Date of submission of the report
    - ❖ Name of the client or the organization which is sponsoring the project
    - ❖ Name of the organization and the researchers

   The title should incorporate the following elements: the variables taken into an account in the study, the type of relationship between the variables included in the study and the target population for whom the results can be useful. A short informative title can be effective.

   - Authorization Statement: This is an authorization by the client organization, citing approval for the project. This is very essential, particularly when there is a formal relationship between the client and the research organization. A letter of authorization is a letter from the client to the researcher approving the project and specifying some of the details.

   - Acknowledgement- An acknowledgement letter consists of a salutation of the person who commissioned the report, the objectivity of the letter and a brief synopsis of the report. The researcher takes up the opportunity to thanks all the individual and organizations who provided the support during the research.

   - Executive summary- This functions as miniature report. The key findings are very concisely presented in the executive summary. The major thrust of the executive summary should be on highlighting the objective, salient features and analysis of the results, including the recommendations. Recommendations should be given if the clients want them, else they should be avoided. This is because some decision makers does not want their thought process to be limited to the recommendations given. As the executive summary is the gist of the whole report, it is framed only after the report is completed. Conclusions should be supported with facts and graphics should be used, if necessary. This also helps those readers who want to take a glance at the report rather than reading the whole report

- Table of contents: This table lists the topics and sub-topics of the report with appropriate serial numbers and page numbers. Shorter reports can suffice with the main headings only. The list should be in the same sequence as it appears in the original report. The list of tables, charts and graphs and sometimes even annexure or appendices follow the table of contents.

2. Introduction
   Introduction to a report provides an overview of the research report. It highlights parts of the project, such as problem definition, research objectives, background material and the findings. It lays down the plan for the development of the report.
   - Problem Statement –This denotes the basic problem of the research which was addressed during the entire research. This should highlight the nature of the research problem also, such as whether it is a survey, analysis of forecasting. The statement explains the reasons as to why the research is being conducted and is usually followed by a set of objectives.
   - Research Objectives- Research objectives are an essential part of any research study and report. They address the purpose for which research is carried out. Every research follows a set of well planned objectives. Therefore, the broad and specific objectives should be stated. These can be adjusted for sequencing without changing their basic nature. The objectives of research can take the form of questions and statements. They influence the choice of research methodology and the basic structure used to report the findings.
   - Background- Background information may include a review of literature which is mainly reviewing of the earlier research. It incorporates the descriptions of conditions and circumstances that caused the project to be authorized, such as providing information about the industry or economy, discussing the current trend in a specific management issue, etc. References from the secondary data, definitions of various concepts and terminologies used and assumptions are included in this section. Depending on whether it contains literature reviews or information relating to the occurrence of the problem, the background material is placed either after the research objectives or before the problem definition, respectively.
3. **Methodology**
   This particular section varies with the type of report which has to be submitted. For example, methodology should be discussed in detail

if it is a technical report. For short reports and decisions, information report, management reports etc. it is it necessary to have a separate section on the methodology used. This can be included in the introduction section and details can be accommodated in the appendix. Thus, in a technical report methodology should be allocated a separate chapter altogether.

Sampling Design- In this section, a researchers has to provide details of population, defined target groups, sampling frames, sample sizes, sampling techniques etc. The researcher has not only to provide which sampling technique is adopted, but also has to provide reason or logic behind it, which factors were considered while deciding the sample size and sampling techniques.

Research Design- The research design has to be customized for the research purpose and should contain information on:

- Nature of the research design- whether it is explanatory , descriptive or casual research
- Sources of data –whether primary or secondary
- Data collection technique-whether interview or questionnaire
- Design of sampling, coding and method of data input
- Data analysis package used
- Scales and measurement used
- Statistical test conducted
- Strengths and weakness
- Copies of materials used and the technical details should be placed in the appendix.

Data collection: The contents of this section depend on the research design. As the name implies, data collection pertains to the information about;

- Times of data collection
- Type of data- time series or cross sectional
- Sources of data –whether primary or secondary
- In case of primary data, provisions for complete information of field work, such as geographical area covered , the number of field workers and supervisor and workers, handling of irregularities , if any
- Subject assignments to various groups
- Administration of tests and questionnaires
- Manipulations of variables.
- In case any secondary data is used, provision for the relevance of that data, the coverage of data, type of data, modification done in the data, etc. Researcher is also required to mention why particular type of data or variable is selected. The variables also have to be defined.

4. Data analysis

This section provides information on the various methods used to analyze the data and the justification for choosing those methods. In other words, it should justify the choice of the methods based on assumptions. It provides details on:

- Data handling
- Groundwork analysis
- Rational statistical tests and output

- Analysis or the output and decision reading acceptance of rejection of hypothesis

5. Limitations
   Certain researchers tend to avoid this section but this is not advisable. There should be a tactful combination of references and explanations of the various methodologies and their limitations or implantation problems. The limitations need not be explained in detail. Details of limitations do not belittle the research. They help the reader in acknowledging its honesty and validity. At times, this section is also covered after the policy recommendations.
6. Findings: major portion of the report is devoted to this section. It presents the entire analysis which is done as a part of the project, such as frequencies, trends, coverage, statistical tests outcome, etc. Charts, graphs and tables are generally used to present quantitative data. It is better to report one finding per page and support it with quantitative data. These findings should be in tune with the research objectives. The 6W-H model can again be used, especially in qualitative research. In case of quantitative, the research has to provide all the statistical tools used for data analysis, and based on the outcome, s/he has to declare whether s/he is rejecting or accepting the hypothesis.
7. Conclusions and Recommendations- Conclusions should be directly related to the research objectives or hypothesis. They are inferences drawn from the findings. The researchers should always present the conclusions as s/he has first-hand knowledge of the research study. Recommendations, on the other hand, are a few corrective actions presented by the researcher. They highlight the action the report calls for. They should be in line with the results of the report and should be explicit. They may even contain plans of how future research for the same can proceed. However, recommendations ought to be given only if the client is interested.
8. Appendices- Appendices are not mandatory. They should be used to present details that were part of the research but were not necessary to the presentation of the findings or conclusions. Appendices include raw data, calculations, graphs, types of forms and questionnaires, complex tables, instructions to field workers and other quantitative material that would look inappropriate in the main text. The reader can refer to them if required. However, care should be taken that they do not exist in isolation and reference to each appendix in the text.
9. Bibliography- A list of citations or references to books, periodicals, magazines etc, is known as a bibliography. It contains all the works consulted in the preparation of the report, not just those referred to in the text. A consistent reference format should be used all through the section. The most popular method of providing bibliography is surname, first name, year, title, source and publishers. However, there are many other ways adopted for listing bibliography. This list has to be alphabetically arranged.

5.6 PRESENTATION OF THE RESEARCH REPORT

A business researcher can present the findings of his research either in an electronic format or as printout. Irrespective of the medium the researcher chooses to present his report, he should ensure that the findings are presented in a professional manner to the end-ser. Some of the important aspects that should be considered for presenting a report are listed below;

- Report should be in a printed form.
- The report should have a uniform font.
- The findings of the research study should be placed under appropriate headings and sub-headings.
- Ample space should be left between the lines and on all sides for better reading.
- Overcrowding creates problems and is stressful for the eyes.
- Large texts should be split into paragraphs.
- Bullet points should be used to list specific points.
- It should be ensured that appropriate labels are assigned to every table, figure and graph that appears in the report.

Preparation of Presentation

Once the content of the presentation is decided, the next step involves planning how to present it. For the presentation to be well constructed and tidy, it has to be prepared well in advance. The preparation should include framing a time-bound outline and proper homework of the contents in advance. The following points need to be taken into account:

- The content collected should be jotted down in big and bold letters highlighting the problem, its importance and steps to be taken.
- The outline of the presentation should be such that it keeps the interest of both audience alive throughout the presentation.
- Sentences should be short and appropriately arranged to follow a logical sequence.
- The content that has to be supported by visual aids should be determined.
  To conclude, a research study or project is incomplete till a well planned, well structure and well design research report is presented.

The effectiveness of a research report depends on how well it is presented. A report has many parts and all parts should display interconnectivity. The interconnectivity is possible only with a meticulous organization of the different parts of the report. The organization of the various parts should be reflected in the initial sections of the report. A good researcher spends significant amount of time in designing this initial for, the technical background and the limitations under which the report has been written. The technical knowledge of the end-users may not match that of the researchers. So the report should be written in a simple manner using less technical jargons. This would enable the readers to understand the theme of the project and relate the conclusions to the specific objectives outlined in the report. In fact, all parts of the report coherently pursue the research problem. This means that the conclusions and findings should show some connection with the research objectives, which were framed in line with the problem situation. This unified structure assists the reader to understand how the research problem was probed into and how the project was accomplished. As the final and organized report is written after the research is over, the researchers can relate the facts and present the findings in a manner that would appeal to the reader. There are various dimensions of the report presentation, such as outline, tone, tables, charts, graph etc.

Tables: A research report mostly contains quantitative data to substantiate the various findings. These quantitative findings can best be presented with the help of tables. Therefore, a better way of representing them is to make use of tables to present the statistics. Tables save the writer from being caught in details, which can be boring. Data in the form of tables form a vital part of the report and make the comparisons of quantitative data easier. Tables can be generated from two important sources. One is the secondary data adopted from some authentic sources. When the table is adopted as it is form source, a due acknowledgement should be provided to the source by writing note of the source at the end of the table. The other source may be the researcher himself who might have calculated and derived the figures from his statistical techniques.

Tables used in a report may be of two types: general and summary, based on their nature. General tables are large, complex and exhaustive. As they are very comprehensive, they are usually reserved for the appendices. Summary tables, on the other hand, are concise and contain data that is closely associated to an explicit finding. This form of a table can be customized to make it appealing. This can be done by retaining only such important details that will aid the reader in understanding the contents of the table. Tables should have the following features: title of the tables, number of the tables, columns and row titles, footnotes, sources etc.

Charts and graphs: Charts and graphs generally help to provide quantitative information which otherwise can be less interesting and time consuming to observe. Charts can be in the form of line, pie or bar, depending upon whether data are categorical, numerical, discrete or continuous. Charts and graphs are also used in accordance with the type of analysis to be done. Line graphs help in providing trend, whereas pie charts give relative share. Bar charts help to conduct relative comparison of cross-sectional units. While using charts and graphs, a researcher can make use of various advanced designs and colours. However, each graph should be given tile and number. Wherever specific units of measurements are used, they should be mentioned. However, the researcher should avoid having too many graphs and chart in the report.

Surveys: Surveys explain customer opinion and reaction. These reflect respondent's attitudes. Questionnaires are the important instruments in collecting information. You should request to the respondents through a covering letter to fill-up the questionnaire and send it back within a specified time. Further, pilot surveys would help the researchers in gaining insight about the research problem, the practical problem in data collection and behaviour of respondents and time required to complete the data collection.

Followings are the crisp notes for presenting the output

- Charts and tables represent relationship, comparisons and changes.
- Use graphs depending upon the purpose. For example i.e. diagram divides the whole components into parts whereas bar graphs show the relationship between two or more things.
- Tables and charts should clarify the contents in a simple manner.

Check Your Progress- B

Q1. Mention in your own words, what factors should be covered under the methodology section of a report?

Q2. When should a line graph and pie graph be used?

Q3. Distinguish between general table and a summary table.

Q4. List the features of a good management report.

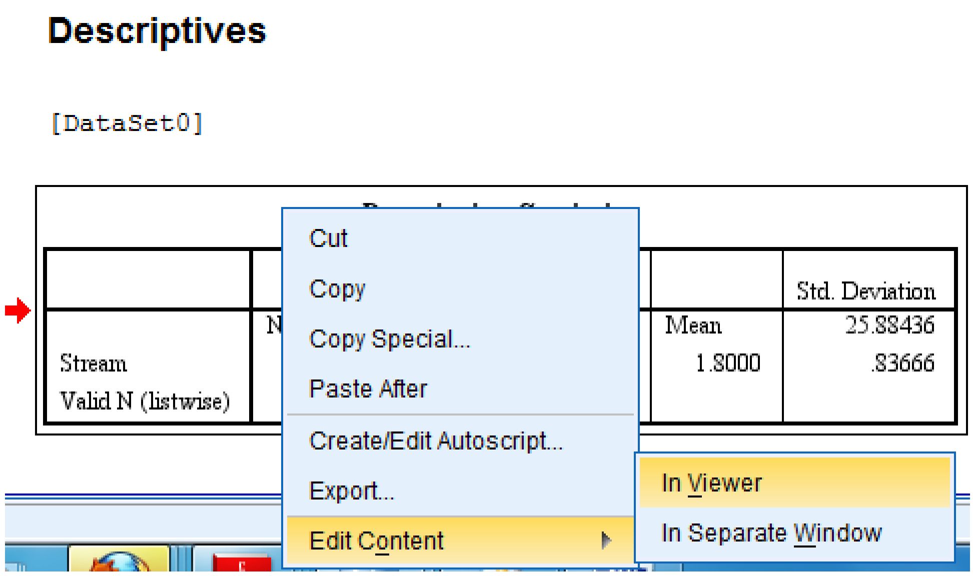
Q5. Multiple Choice Questions-

i. **Which of the following gives a natural progression to the various stages of report writing?**
  a) Outline
  b) Findings
  c) Conclusions and Recommendations
  d) All the above

ii. **Which of the following functions as a miniature report?**
  a) Executive Summary
  b) Table of contents
  c) Authorization Statement

5.7 ABOUT FONTS AND BASIC FUNCTIONS IN SPSS

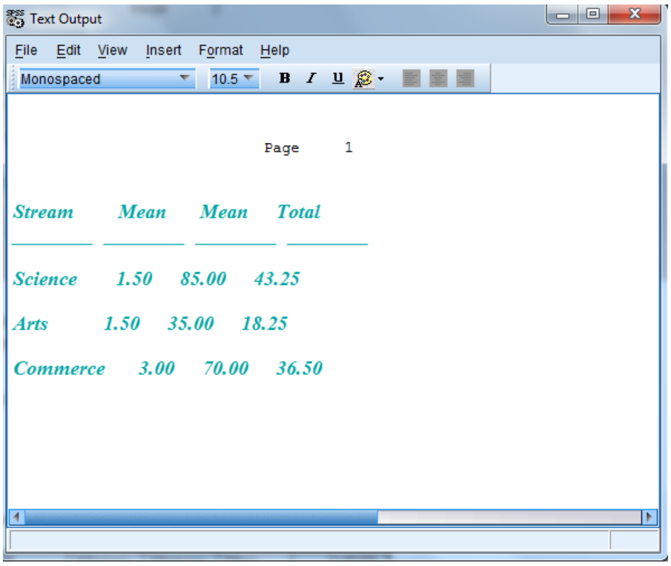
While depicting the output generated in SPSS in the research work, you can modify the font attributes like type of font, size, style and color of text or table output in the output viewer. For this you have to double click the output object then go to the edit content and choose the editing of table or text either in viewer or in separate window.


Descriptives

[DataSet0]

Std. Deviation
N
Mean
Stream
Valid N (listwise)
1.8000
25.88436
.83666
Cut
Copy
Copy Special...
Paste After
Create/Edit Autoscript...
Export...
Edit Content
In Viewer
In Separate Window

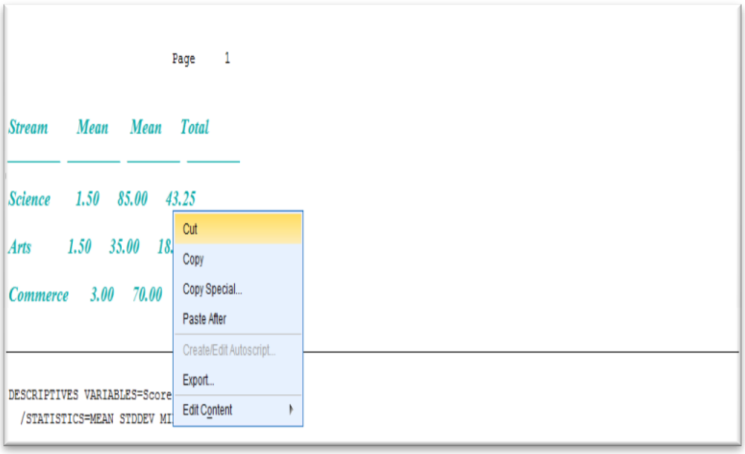
In Viewer as well as in the Separate window, you can change the font attributes like size, color, type of font and can also align the contents of the selected text.


Text Output
File
Edit
View
Insert
Format
Help
Monospaced
10.5
B
I
U

```
                    Page      1

Stream     Mean    Mean    Total
______    _____   _____   ______

Science    1.50    85.00   43.25

Arts       1.50    35.00   18.25

Commerce    3.00    70.00   36.50
```

Working with the cut and paste

The results generated in SPSS required to be presented in the report can be copied, moved or deleted. You have to right click the selected output in the contents pane, select the cut option and paste it at the location where you either want to drop the moved item either in output window or in the word file.



Page 1

Stream	Mean	Mean	Total
Science	1.50	85.00	43.25
Arts	1.50	35.00	18.
Commerce	3.00	70.00	

```
DESCRIPTIVES VARIABLES=Score
  /STATISTICS=MEAN STDDEV MI
```

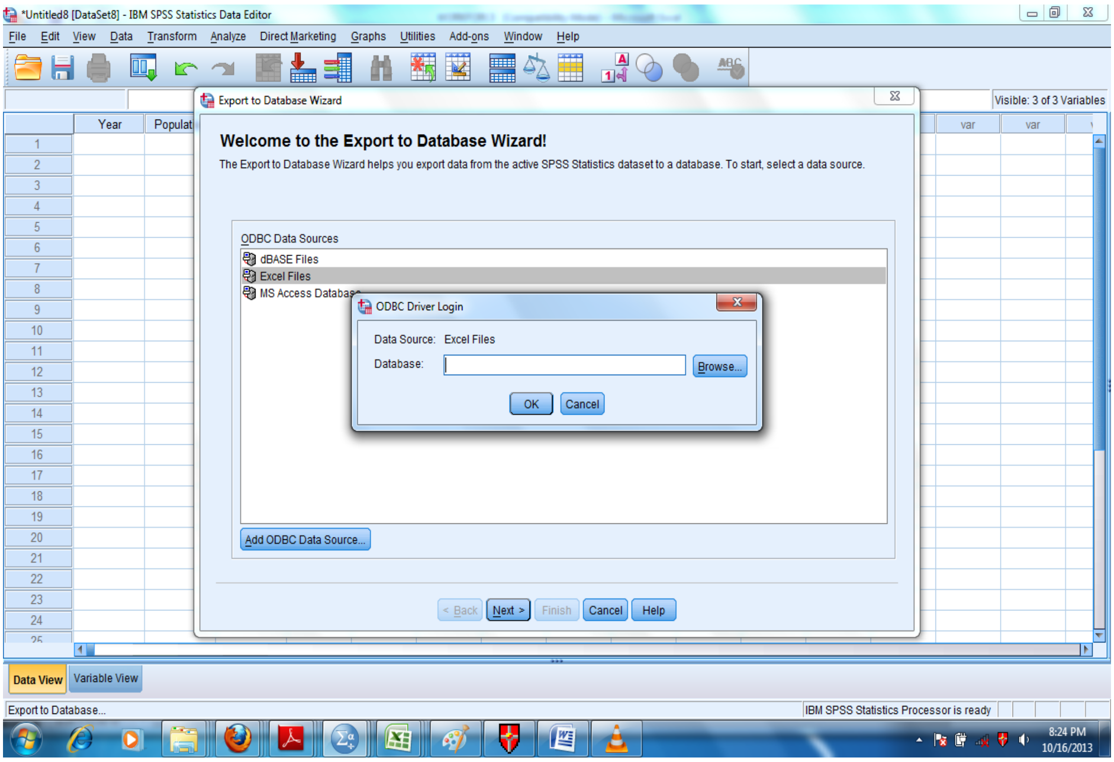
Working with copy and paste

After getting the outputs or results from the instructions given in SPSS, you may need to present it in your research work in form of Microsoft Word or the word processing similar packages then you have to first click on the output that you want to copy so that the output in the form of square is highlighted with brown color then you have to go to edit dropdown menu select copy and then return to your word file and click on the paste. Further, if you want copy more than one object then you have to hold down the control key to select the required objects and then you have to go to edit dropdown menu select copy and then return to your word file and click on the paste. If you want to copy your entire output into a Word document, then choose Edit and Select All (or Ctrl and A on the keyboard), and then proceed as above. If you want to edit in the pasted object then you can do it by double click on the table. This includes deleting or adding columns and rows, and editing text and titles.

Moreover, if you want to copy tables then you may use copy objects in edit menu the table will appear in word documents exactly as it presented in SPSS output. However, it would be like image and hence you can edit the table.

Exporting data from SPSS

You can export the data from SPSS as images, text, tables, graphs etc. the following procedure would be adopted first go to file then to export. In the objects to Export section you may select the item which you want to export. In the Document section, open the Type pull-down list and choose an output format as pdf, excel etc.


*Untitled8 [DataSet8] - IBM SPSS Statistics Data Editor
File
Edit
View
Data
Transform
Analyze
Direct Marketing
Graphs
Utilities
Add-ons
Window
Help
Visible: 3 of 3 Variables
Year
Populat
var
var
Export to Database Wizard
ODBC Data Sources
dBASE Files
Excel Files
MS Access Databas
ODBC Driver Login
Browse...
OK
Cancel
Add ODBC Data Source...
< Back
Next >
Finish
Cancel
Help
Data View
Variable View
Export to Database...
IBM SPSS Statistics Processor is ready
8:24 PM
10/16/2013

Welcome to the Export to Database Wizard!

The Export to Database Wizard helps you export data from the active SPSS Statistics dataset to a database. To start, select a data source.

Data Source: Excel Files

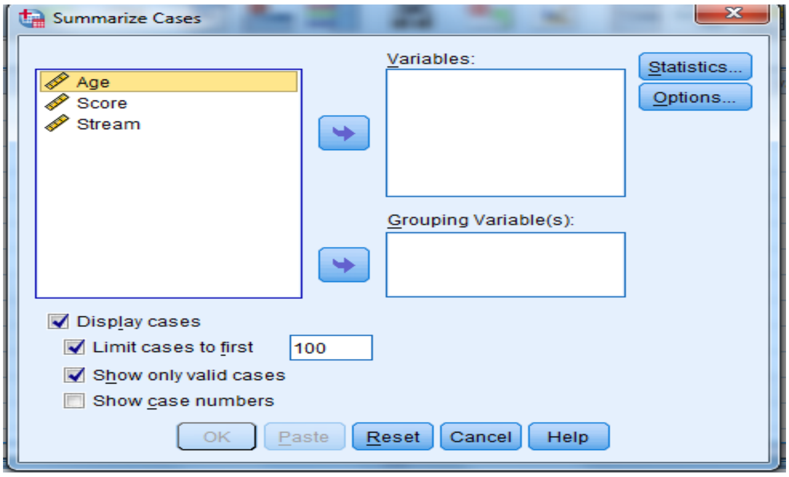
Database:

Similarly you can take in the data in pdf, ppt, Unicode, html, text files etc.

5.8 CASE SUMMARIES

. In order to assure that the data entered into SPSS is entered correctly, one has to work with case summaries. It will track all your commands given and instructed, formatted or arranged the data. The Case summaries will allow you to list the data file or part of that file, either grouped or in the order of the original data. The following path needs to pursued for finding case summaries

Path: Click to Analyze: Reports: Case Summaries


Summarize Cases
Age
Score
Stream
Variables:
Grouping Variable(s):
Statistics...
Options...
OK
Paste
Reset
Cancel
Help

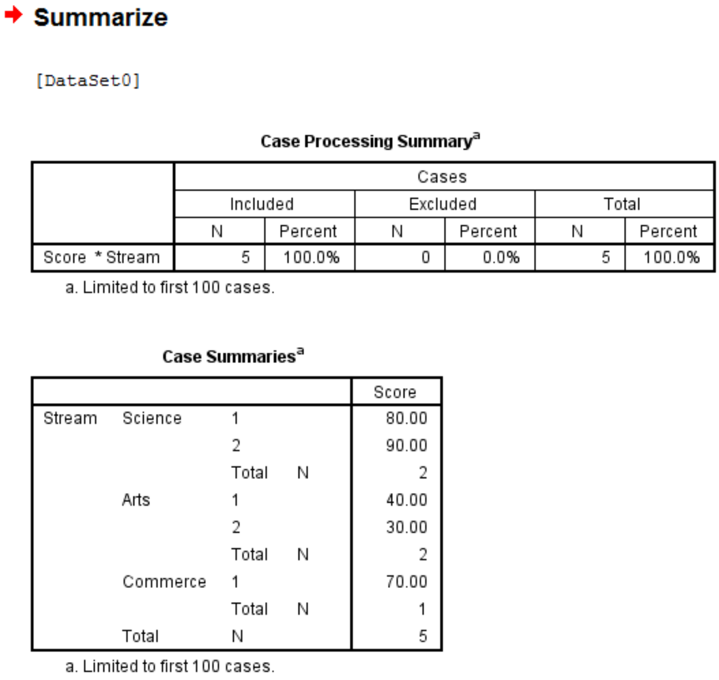
☑ Display cases

☑ Limit cases to first 100

☑ Show only valid cases

☐ Show case numbers

Once you execute the steps a window opens in which you have to mention variables or access you wish to list. You would also have an order in which you want to display the cases. Further the output would be the same as you have mentioned the order of the selection. As per the details mentioned in your research work you may grouped order the listing of variables for documenting the work with facts or figures. To group variables you must first select one or more variables in the variable box. For example, if you may include score in the variable box with the stream in the grouping variable box then the output would list score for all students as per the stream. The result of the above would be displayed in the output as below;



Summarize

[DataSet0]

Case Processing Summary[a]

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Score * Stream	5	100.0%	0	0.0%	5	100.0%

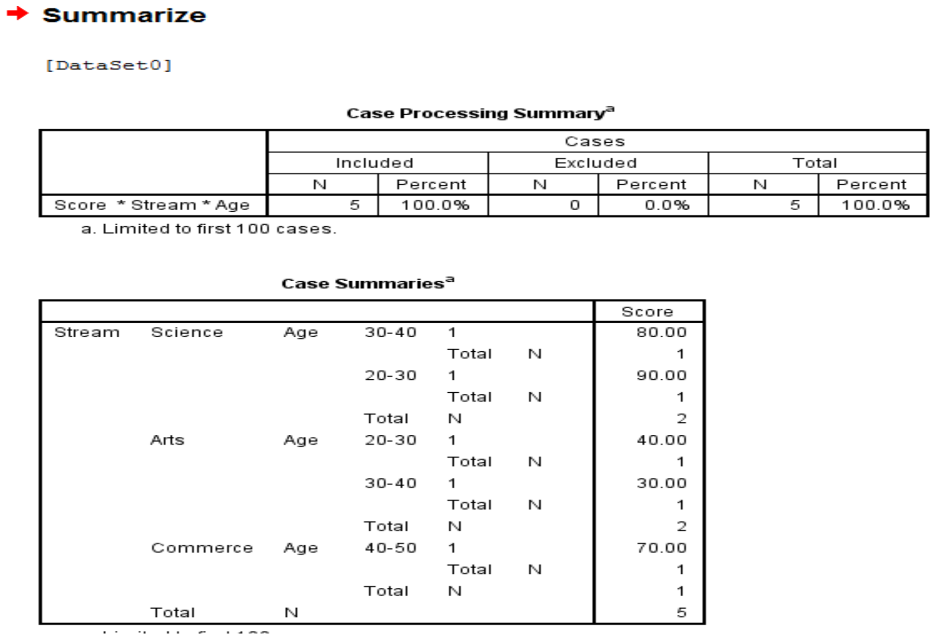
a. Limited to first 100 cases.

Case Summaries[a]

				Score
Stream	Science	1		80.00
		2		90.00
		Total	N	2
	Arts	1		40.00
		2		30.00
		Total	N	2
	Commerce	1		70.00
		Total	N	1
	Total	N		5

a. Limited to first 100 cases.

Further if would like to present the data as per the age as well as stream then you would select age in the grouping variable. Then the output would first list age for the science students then art and then commerce. The result displayed in the output for such selection is presented as under:



Summarize

[DataSet0]

Case Processing Summary[a]

	Cases					
	Included		Excluded		Total	
	N	Percent	N	Percent	N	Percent
Score * Stream * Age	5	100.0%	0	0.0%	5	100.0%

a. Limited to first 100 cases.

Case Summaries[a]

						Score
Stream	Science	Age	30-40	1		80.00
				Total	N	1
			20-30	1		90.00
				Total	N	1
			Total	N		2
	Arts	Age	20-30	1		40.00
				Total	N	1
			30-40	1		30.00
				Total	N	1
			Total	N		2
	Commerce	Age	40-50	1		70.00
				Total	N	1
			Total	N		1
	Total	N				5

Further, by default SPSS limit to first 100 cases, however if you wish to include more or less than 100 then you can type the number instead of 100.

Further, if you wish to list some statistics along with the listing values for the entire data or subset of the data then you can select it from the descriptive statistics. The number of cases is included by default. Further, other statistics would be clicked in Cell Statistics box.

Further for pasting the output you may right click on the case summary report listed on the left-hand side of the output then copy it and paste in the word file.

Moreover, the options button allows you to exclude any subjects who have missing values in their data or to include or edit titles or subtitles.

Case Summaries

						Score
Stream	Science	Age	30-40	1		80.00
				Total	N	1
					Mean	80.0000
					Minimum	80.00
					Maximum	80.00
			20-30	1		90.00
				Total	N	1
					Mean	90.0000
					Minimum	90.00

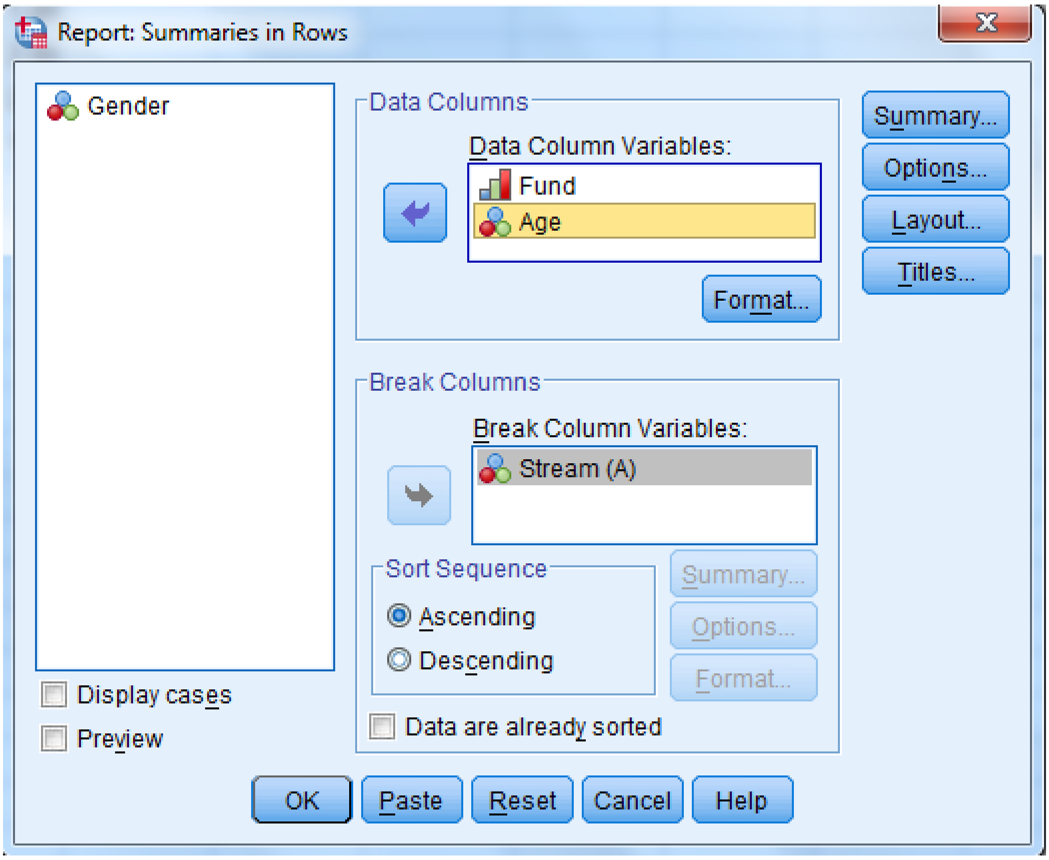
Arts	Age			Maximum	90.00
		Total	N		2
			Mean		85.0000
			Minimum		80.00
			Maximum		90.00
		20-30	1		40.00
			Total	N	1
				Mean	40.0000
				Minimum	40.00
				Maximum	40.00
		30-40	1		30.00
			Total	N	1
				Mean	30.0000
				Minimum	30.00
				Maximum	30.00
		Total	N		2
			Mean		35.0000
			Minimum		30.00
			Maximum		40.00
Commerce	Age	40-50	1		70.00
			Total	N	1
				Mean	70.0000
				Minimum	70.00
				Maximum	70.00
		Total	N		1
			Mean		70.0000
			Minimum		70.00
			Maximum		70.00
Total	N				5
	Mean				62.0000
	Minimum				30.00
	Maximum				90.00

a. Limited to first 100 cases.

Summaries in rows

If you want to list the values of a variable in a column in the left with the corresponding values associated with it in a row to the right then you may do so by

selecting summaries in rows. Further in addition, you can select to have multiple rows for each break variable by simply selecting the type of statistic.
You can follow the following steps to generate row summary table:
You have to first choose the file you want to open. Go to analyze and then to reports and choose reports summaries in Rows. Out of the variables listed you have to first select the files which you want to move to the Data Column Variables Panel by clicking the arrow button. Then select the variables you want to move to the *Break Column Variables panel.*
The dialogue box would look like the image pasted as under:



Report: Summaries in Rows

Gender

Data Columns

Data Column Variables:
Fund
Age

Break Columns

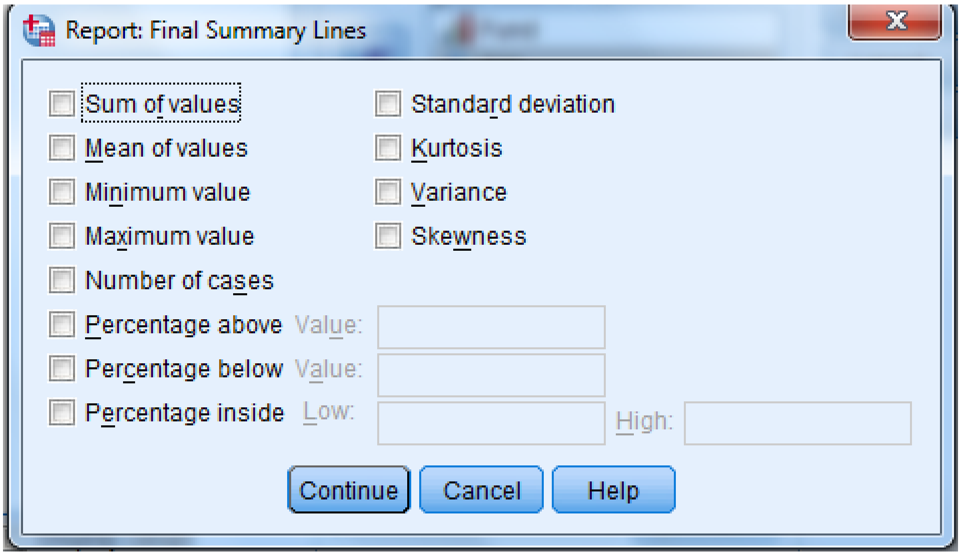
Break Column Variables:
Stream (A)

Sort Sequence
● Ascending
○ Descending

☐ Data are already sorted

☐ Display cases
☐ Preview

There are two summary buttons one is in Break column variable and the other is overall summary button on the right hand side of the dialogue box.
Summary button of break column generates the report which will include a row for each of the types of statistics selected in summary button. Here you can select the functions like Mean of Values, Minimum Value, Maximum Value, and Number of Cases check boxes. While selecting overall summary button the values so generated appear as part of the summary at the bottom of the resulting table.



Report: Final Summary Lines

☐ Sum of values
☐ Mean of values
☐ Minimum value
☐ Maximum value
☐ Number of cases
☐ Percentage above Value:
☐ Percentage below Value:
☐ Percentage inside Low: High:
☐ Standard deviation
☐ Kurtosis
☐ Variance
☐ Skewness

Moreover, the missing values can be excluded or can be depicted by a character like @, $ etc. by clicking to the options button. Further you have to mention heading using title button. In the upper-right corner of the dialog box, click the Titles button. You should then Click Continue and then click OK.
The output is shown as under:

```
   Fund Selection as per stream and gender           Page     1

Fund                           Stream    Gender
_______________________  ________  ________

Lowest Cost Fund
Mean                             1.67      1.67
Minimum                          1.00      1.00
Maximum                          2.00      2.00
N                                   3         3

Second Lowest Cost Fund
Mean                             1.00      1.50
Minimum                          1.00      1.00
Maximum                          1.00      2.00
N                                   2         2

Third lowest cost fund
Mean                             2.50      1.50
Minimum                          2.00      1.00
Maximum                          3.00      2.00
N                                   2         2

Highest Cost Fund
Mean                             1.00      1.00
Minimum                          1.00      1.00
Maximum                          1.00      1.00
N                                   1         1
```

```
Grand Total

Mean                          1.63      1.50
Minimum                       1.00      1.00
Maximum                       3.00      2.00
N                                8         8
```

In the output, the break variable is the Fund and appears in the first column. Also in the first column are the names of the types of statistics, and to the right of each one is a row of values for that statistic for each variable chosen. Because of such depiction, this table is known as summary in rows.

Summaries in columns

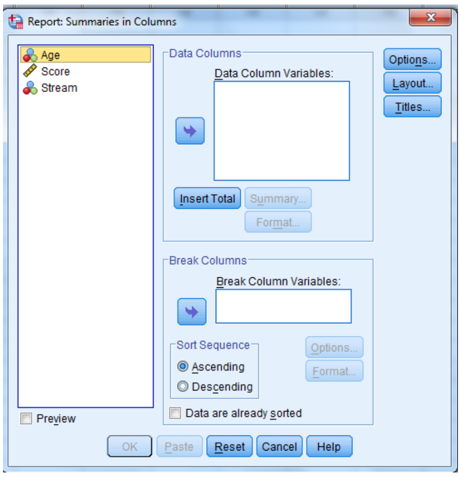
Summaries in columns can be produced using the same procedure as used to produce a report in rows. You can produce a summary in column format using the following procedure:

Choose analyse

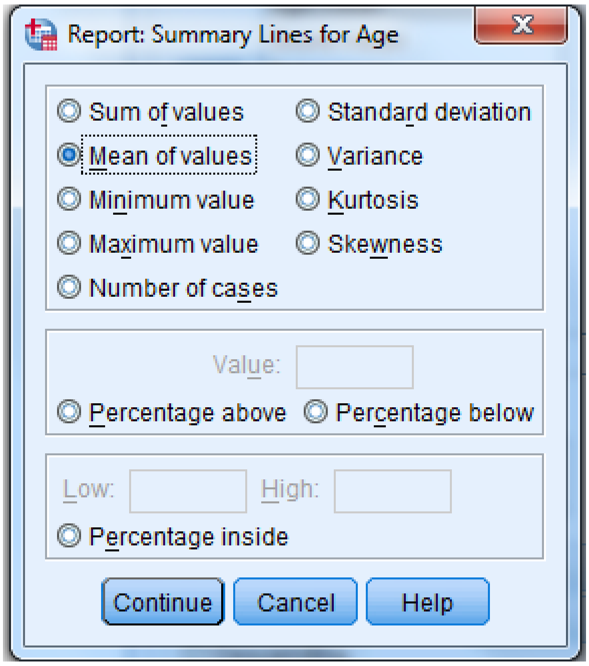
Reports

Reports summaries in columns

The dialogue box for the case summaries for columns would be opened as below:


Report: Summaries in Columns
Age
Score
Stream
Data Columns
Data Column Variables:
Insert Total
Summary...
Format...
Options...
Layout...
Titles...
Break Columns
Break Column Variables:
Sort Sequence
Ascending
Descending
Options...
Format...
Data are already sorted
Preview
OK
Paste
Reset
Cancel
Help

Accordingly, you have to first choose Age and move it to data column panel by using arrow button. The age will be listed using its statistics type as sum. . Similarly, select the score and take it to data column panel using arrow button. And then you may select as stream in Break Column Panel. Now, you may select Insert Total button then a new column would be inserted as total. Further you may select the particular file in the data Column and change the statistics type. For example you may select mean of variable and then the file would be listed as age: mean.


Report: Summary Lines for Age
○ Sum of values
● Mean of values
○ Minimum value
○ Maximum value
○ Number of cases
○ Standard deviation
○ Variance
○ Kurtosis
○ Skewness
Value:
○ Percentage above
○ Percentage below
Low:
High:
○ Percentage inside
Continue
Cancel
Help

You can then select total in the data columns variables panel and then click summary. In the summary column select the variables in the data columns and click the arrow button to move it to the summary column panel. You may also choose the statistics in which you want to calculate the total and you can do the same using pull down list.

You have to then click continue and ok. The table is output and displayed by SPSS Viewer, as shown in for each stream listed in the first column, the report shows the mean age, the mean score, and the total of the two means — the total mean age score.

```
                               Page      1


Stream          Mean       Mean      Total
________     ________   ________   ________

Science         1.50      85.00      43.25

Arts            1.50      35.00      18.25

Commerce        3.00      70.00      36.50
```

5.9 SUMMARY

This unit has introduced us with the conceptual understanding of the report writing and presentation. We learnt that it is imperative for that report should contain all the necessary details. This unit also explained that the how the output in SPSS can be well depicted in research reports. We traced and examined that the how case summaries option help in proofing and editing of data.

5.10 GLOSSARY

- **Technical Report:** It refers to the report which mainly focuses on a specific topics logically pertaining to the research objective.
- **Decision Report:** It refers to the report which focuses on providing information on various alternative solutions or decisions that have to be taken by the company.
- **Problem Statement:** It denotes the basic problem of the research which was addressed during the entire research.
- **Bibliography:** .A list of citations or references to books, periodicals, magazines, etc. is known as a bibliography.
- **Case summaries:** The Case summaries allow to list the data file or part of that file, either grouped or in the order of the original data.

5.11 ANSWERS TO CHECK YOUR PROGRESS

Check Your Progress –A

Q4.

a) (Tables)
b) (Decision)

Q5.

a) True
b) True

Check Your Progress –B

Q5. Multiple Choice Questions-

i. (a)
ii. (a)

5.12 REFERENCES

1. Gupta S.L. and Gupta Hitesh, SPSS 17.0 for Researchers, International Book House Pvt. Ltd., New Delhi
2. Pandya Kiran, Bulsari Smruti, Sinha Sanjay(2012) , SPSS in Simple Steps, Dreamtech press, New Delhi
3. Hooda R. P(2000), Statistics for Business and Economics, Macmillan India Ltd.
4. George Darren and Mallery Paul (2011), SPSS for windows Step by Step, Dorling Kindersley Publishing

5. The matter regarding the research report has been derived from Research and Communications Methodology, Self Learning Material for MBA Course CP1007(UOU), Unit 9, Vikas Publications, Noida

5.13 SUGGESTED READINGS

6. Gupta S.L. and Gupta Hitesh, SPSS 17.0 for Reserachers, International Book House Pvt. Ltd., New Delhi
7. Pandya Kiran, Bulsari Smruti, Sinha Sanjay(2012) , SPSS in Simple Steps, Dreamtech press, New Delhi
8. Hooda R. P(2000), Statistics for Business and Economics, Macmillan India Ltd.
9. George Darren and Mallery Paul (2011), SPSS for windows Step by Step, Dorling Kindersley Publishing

5.14 TERMINAL QUESTIONS

Q1. What are the various components of research reports? Explain

Q2. Explain the various types of research reports.

Q3. What do you understand by presentation of research outcomes? Explain various objectives of presentation of a research report.

Q4. Explain the use of case summaries. Also how to generate summaries by rows and columns.