

Field Manual

Socio-economic Survey

Training Workshop on REDD+ Research
Project in Peninsular Malaysia
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Contents

Part I: Introduction	2
Aim of this manual	2
Part II: Undertaking socio-economic surveys	3
Step 1 – Survey design, sampling and data requirements	3
Step 2 – Planning and training the team	7
Step 3 – Implementation	8
Part III: Using the data collected	11
Supporting Notes	
Note 1 – Sampling techniques	13
Note 2 – Format of questionnaire	14
Note 3 – Do & Don't in Conducting Socio-economic Interview	18
Note 4 – Conducting the survey	19
Note 5 – Guidance for community meetings	20
Note 6 - Example of questionnaire	22
Note 7 – Using SPSS software	40
Note 8 – Using R software	83



Part I: Introduction

Socio-economic survey tools are means designed to collect information on local resource management systems, resource use and the relative importance of resources for households and villages. Surveys also provide information on local interaction with the government decision-making systems and community perceptions of trends and priority issues regarding the conservation and establishment of protection forest. Knowledge about community-based institutions, which is also obtained, and their roles in the sustainable use and conservation of natural resources.

Aims of this manual

This manual aims to provide practical steps for researchers conducting socio-economic studies among households in communities and villages. The techniques involved are rapid rural appraisal, survey research and field research.

This manual is accompanied by three supporting notes which are essential tools as a basis for gathering socio-economic information. The results can be used as input to management and decision-making.

Part II: Undertaking socio-economic surveys



There are three (3) main steps in developing and implementing the socio-economic survey.

The first step is designing the survey, which includes survey design, sampling techniques and sample size, data requirement (types of data and data collection), target sample and questionnaire design. The next step is planning the survey. It involves scheduling the survey and training the enumerators. Enumerators must be trained to ensure that they fully understand and able to pose the questions to the respondents. The last step is implementation stage. This crucial stage involves key informant interviews, household surveys and focus group discussions.

Step 1:

Designing the survey

- Design
- Sampling
- Sample size
- Baseline data



Step 2:

Planning

- Scheduled survey
- Training enumerators



Step 3:

Implementation

- Rapid rural appraisal
 - interview informant
 - group discussion
- Households survey

Step 1 – Survey design, sampling and data requirements

When conducting a survey, the first step is to determine the objective and purpose of the survey. This will provide the framework for the content and scope of the survey work. It is used to help identify the types of stakeholders and communities to be surveyed.

Data requirements and survey design

Types of data: There are two types of data to be collected, namely primary data and secondary data. Primary data collection involved rapid rural appraisal, individual and group discussion, as well as household survey. Secondary data comprises information gathered from published media such as books, articles, journal, and reports.

Data to be collected: The data required from the study area may be discussed with informants and communities. The discussion helps in planning the actual survey, improving the questions asked, formulating questionnaire design, determining sampling techniques and conducting the survey.



The data gathered through the survey process will need to reflect the purpose of the study. In developing the survey, other considerations are budget available, the length of time for the interview, availability of human resources needed to effectively conduct the surveys, entering the data and analyzing the results.

Introduction of the project to local people: A researcher must create good rapport with relevant government agencies and local people during initial site visit.

The first step to meet related local government officers to explain the nature of the study.

This is followed by meeting village headmen, village representatives and villagers living in the surrounding area. In many cases, it will be necessary to contact the local community leaders before visiting. An introductory meeting may also be organized.

Researchers must briefly introduce and explain the aim of the visit and study. It is important to ensure that both local people and the researchers/study team understand which area will be studied. The aim of research/study must also be clearly introduced to avoid misunderstandings or raise false expectations. Cooperation and support from local people are essential to ensure successful implementation of the study. It is easier to achieve this support if the first impression is good. Nevertheless, it must be stressed that the fieldwork consists only in data collection and does not promise something such as local development project.



Who should be included in the survey(s)?

The individuals and communities to be surveyed should be decided when considering the objectives and purpose of the survey. Different individuals or groups of individuals will be interviewed depending on the data needed. For a household-level survey, a representative of the household should be interviewed, but the village head or traditional local leader will be interviewed in a key informant interview. Usually key informants involved are from Village Development and Security Committee or Jawatankuasa Kemajuan dan Keselamatan Kampung (JKKK). Focus group discussions will include members of the community.

Sample size and sampling technique

Sample size: Determining the size of sample is important to ensure the data reliability. The sample size needs to be sufficient to ensure that the survey results will be statistically relevant. However, in many cases, the sample size also has to be balanced with the available resources – financial, human and time.

The bigger sample size require more enumerators and high cost, however the correct techniques to estimate the sample size will give more reliable results. In general, Roscoe (1992) proposed rule for determining the sample size is "greater than 30 and less than 500" as sufficient for most research. Further guidelines specified by Calia and Strazzera (1998) in their studies of bias and efficiency evaluation model, he defines "small sample size" as a sample of 100 or less; sample sizes 250-400 as "moderate sample size", and more than 1000 as "large sample size". They concluded that even for moderate sample size, most of the evaluation model provides good performance and adequate for the estimation of the parameters to be measured. This socio-economic study applied formula from Yamano (1985) in **Supporting Note 1**.



Sampling technique: Random sampling is used to ensure that the sample is representative of the study area, while avoiding bias in the results and ensuring that all elements of the population have an equal chance of being interviewed. There are a number of approaches to determining a random sample, e.g. simple random sample, systematic, stratified and clusters.

Types of questions

For all interview types (household interviews, focus groups and key informants), questions can be structured and asked as open, closed or partially open questions. The type of question used will depend on the information required. There are advantages and disadvantages of all question types (**Supporting Note 2**).

Through an open question, such as *'Does the existence of national parks have an impact on your daily life; either positive or negative effects'*? The interviewer can uncover the meaning behind an answer, allowing respondents to provide examples and explain their answers. These types of questions are more time-consuming to recode and analyze. Open questions can be difficult to ask and interpreting the responses could be complex, so training enumerators is essential.

A partially open question requires the respondent to elaborate on any answer given. The advantages of these questions are that they are quicker and easier to ask and to analyze than open questions, but the interviewer may miss some information because of the lack of an appropriate category or the level of detail in the response. To avoid these problems, the respondents' answers should be recorded in full, and the interviewer should repeat the question if the respondent has not answered sufficiently. Closed questions, such as multiple choices or yes/no answers are used when key information is required, without the need for further explanation or in-depth understanding of the answer or issue. These questions are quick to ask and to analyze; however, the answers may result in a lack of depth and clarity. The example of closed question *'Are you aware with the existence of national park at the adjacent of your village?'*.

Step 2 – Planning and training the team

A well-trained and experienced team is essential for the success of any socio-economic survey. Previous practical experience is a great asset to the team, with relevant technical knowledge in socio-economics, forestry and natural resources. For purpose of this study, the research team appointed enumerators which have at least diploma certificate and preferably graduates.



All members of the team will require rigorous and robust training in all types of survey (household, focus groups, and key informant interviews) to be conducted. They should have a thorough understanding of the aims of the work and the meaning of every question to be asked. A combination of workshop and practically field-based training will provide the best understanding of survey methods and procedures. During workshop, the objectives and research background are introduced to the enumerators. Basic information and knowledge about research is also explained in the workshop. This will enhance the communication skills and ability of enumerators to interview during data collection or survey. Other than that, some basic soft skill and techniques such as communication are also taught in the workshop. In addition, field training is very useful for checking the survey questions and means of data collection, thus providing an opportunity to make any necessary revision to the survey, interview questions and procedures. **(Supporting Note 3)**



Consideration should also be given to the division of tasks between team members – team leader and interviewers. Preparation (designing the survey work, training the team, etc.) and scheduling the survey work are essential for a successful survey **(Supporting Note 4)**. Preparation of the survey team and agreeing on the work plan and time frame for completing the surveys should be finalized in advance. Villages should be given due notification prior to survey work and permission to conduct interviews should be sought and granted.

Step 3 – Implementation

Survey approaches vary. Different approaches are used for different purposes. For the purpose of the socio-economic study, three survey methods are used:

- Rapid Rural Appraisal includes
 - Community meeting
 - Key informant interview
 - Group discussion
- Household survey
- Field research

Rapid Rural Appraisal

The methods used include group discussion, community meetings, key informant interviews, mapping, ethno-histories, stories and taking-note. This RRA technique is a tool that enables a quick assessment of the existing environment and the possible impacts of the forest resource utilization and the other environmental services to the local socio-economic livelihood. Information collected during the RRA includes population size, socio-economic activities, household dependency on the forest resources and related issues faced by the community. This technique can be applied as a preliminary stage of the study, which will provide basic information, and ethno-histories of the study site for baseline in questionnaire design.

Community meeting

A community meeting is a valuable and useful way for the survey team to meet up with the villagers, explain the survey work – its aims and approach – and ensure that all members of the community understand the expected outcomes of the survey work **(Supporting Note 5)**. A decision to conduct a community meeting should be made only after meeting the community or village head. If possible, the village head could then help set up and conduct the community meeting. Information related to the community such as village profile could be obtained through District Office.



Key informant interviews

Key informants are individuals who are deemed to have knowledge of particular issues. Key informants will provide the interview team with detailed information and, importantly, interpretation of key issues that other members of the community might not be able to provide. Potential key informants should be selected, in consultation with the village head, traditional local leader, for an in-depth interview with the survey team.

Group discussion

Group discussion involves selecting a small knowledgeable individuals from the community. In this study, the group discussion is conducted by researchers to explain the study and obtain comments or reactions of the respondents. The contribution of focus group is to design and assist questionnaire preparation. Focus group analysis is used to identify the issues to be raised in the questionnaire such as land use and forest dependency.

The draft questionnaire prepared could be tested in the focus group. Focus group thus helps to formulate the questions in simple language and easily understood.



Household survey

Village and household survey is used predominantly to collect quantitative and qualitative data, through structured interviews with the head of the household, using both closed and open questions. Survey forms for both household- and village-level surveys are designed to gather specific information, relevant to the survey objective, as discussed above.



Field research

Field research includes methods of research sometimes referred to as participant observation, direction observation and case studies. This technique provides qualitative data: observations not easily reduced to number. It enables better understanding on the socio-economic conditions and activities of villagers such as paddy farming, harvesting and marketing of forest resources. Case studies involved the narration of typical experience of villagers in relation to the utilisation of forest resources. The data gathered are used to cross-check information collected from the10 survey.

The questionnaire

In conducting this study, the formation of the questionnaire is the most important component. Formation of the questionnaire is based on the initial survey (Rapid Rural Appraisal) to the study area and also by the results of the initial questionnaire test in focus group. Formation of the questionnaire usually is categorized based on types of questions to gather basic information such as demographic background, perceptions and level of involvement. Example of questionnaire is attached in **Supporting Note 6**.

Part III: Using the data collected

Analysis and use of the collected data should reflect the objectives of the survey.

Data analysis

The choice of method for data analysis will depend on the volume of data collected, the expected use of the findings and the availability of the analysis software.

Analysis of the data is usually done in a statistical package such as SPSS (Statistical Package for the Social Sciences) software. SPSS is a widely used program for statistical analysis in social science. It is also used by market researchers, health researchers, survey companies, government, education researchers, marketing organizations, data miners and others. Using such packages also allows the data to be entered and cleaned before analysis. Data may be exported to other software packages such as Microsoft Excel for further analysis and for preparation of tables and graphs. Some of the analysis that could be used are Descriptive analysis; Regression; Correlation; Anova and etc. (**Supporting Note 7**)

R-software: The new well-known statistical software available free online is R. R is a language and environment for statistical computing and graphics. R provides a wide variety of statistical (linear and nonlinear modelling, classical statistical tests, time-series analysis, classification, and clustering) and graphical techniques, and is highly extensible. One of R's strengths is the ease with which well-designed publication-quality plots can be produced, including mathematical symbols and formulae where needed. **(Supporting Note 8)**



The final analysis will need to reflect the original aims and objectives of the survey. To help structure the analysis, research questions could be developed, such as:

- How important is access to forest resources for the livelihoods of communities?
- To what extent, the communities depend on forest resources for the economic activities?
- Are the poorest communities more dependent on forest resources than other groups?
- How does the establishment of protected area affect the livelihoods of communities?
- What are the dependent communities' perceptions of ecotourism at the protected area (National park)?
- What is the relationship between communities and natural resources?
- What is the distribution of socio-economic impacts at the area, and what are the sources of leakage?
- What benefits have been foregone to surrounding communities with the establishment of protected area (National Park)?
- What are the social implications, particularly for indigenous people & local communities, associated with the management system of protected area?
- What strategies could be used to strengthen the ecotourism-environment-12 community relationships at the area that was gazetted as protected area?

Note 1 – Sampling techniques

Determining a sample size

The appropriate sample size ultimately depends on the purpose of the study. For example, a population census will require 100% participation, and hence the sample size must equal 100%. Factors such as the available resources (time, budget, human) will affect the sample size but care should be taken not to jeopardize the statistical relevance of the sample.

Determination of sample size is important in determining the accuracy of the estimated value of the findings. A larger sample size implies more enumerators and involves high costs, but at the same time the sample size was chosen correctly, will give greater accuracy estimates.

Example of sample size determination by Yamano (1985) is as follows:

$$\begin{aligned}n &= \frac{N}{1+N(e)^2} \\&= \frac{1136}{1+1136(0.05)^2} \\&= 400 \text{ respondents}\end{aligned}$$

Where,

n = Sample Size
N = Population Size (No. of households)
e = level of precision

From the above example of sample size, taken at the level of precision of 5% or 0.05. The results showed that the sample size of 400 respondents is the reliable sample size.

Note 2 – Format of questionnaire

When designing a survey and conducting an interview, it is important to consider how a question can be structured, that is, whether it should be open or closed, or a mixture of both. The type of question and way that it is asked will affect the answer provided.

In general, questions can be either open or closed. The main difference between these two types of question is that open questions allow respondents to explain their answers, whereas closed questions do not. With closed questions, respondents do not have the freedom to give an answer other than those provided in the list of questions. Partially open questions can also be used when conducting socio-economic surveys.

A survey/questionnaire will use a range of question types to ensure that the information is obtained in the most appropriate manner.

Open questions

Open questions – example from socio-economic study in 2014

"Does the existence of national parks have an impact on your daily life?"

"In your opinion, is the conservation of forest/natural resources important?"

Open questions provide no options for possible prompts or answers and the respondent is able to answer completely freely. However, respondent answer might be long and enumerators must be well-trained to capture and get the points. Open-ended questions have both advantages and disadvantages (**Table 1**).

Table 1. Advantages and disadvantages of open questions

Advantages	Disadvantages
• The interviewer can elicit more information and possibly uncover new information that had not been previously considered. • The interview records can be used in the report as interesting illustrations. • The responses provide additional scope for analysis and allow a new interpretation of the conclusions.	• The interviewer needs to have experience to build discussion of particular topics and record the findings. • Data analysis requires expertise and a lot of time.

To mitigate the disadvantages of open questions, those conducting the survey or interview can:

- Train interviewers and provide direction for ongoing tasks to improve the quality of the data collected.
- Prepare a list of questions that allow interviewers to systematically explore the respondents' answers.
- Use open questions in training sessions with the team members.

Partially open questions

Partially open question – example from socio-economics study in 2014

“In your point of view, the existence of protection forest (National Park) is something good or vice versa”

a) Good, because.....

b) Not good, because.....

In a partially open question, the answer is available as part of s category. Hence, the respondent is given a choice of responses: in the example above, the response is either ‘increased’ or ‘decreased’ (closed), “good” or “not good”, and “yes” or “no” but the respondent is given the opportunity to

explain his or her answer provided using ‘because ...’ (open). This type of question also has advantages and disadvantages, as set out in **Table 2**.

Table 2. Advantages and disadvantages of partially open questions

Advantages	Disadvantages
• Easy answers and quick note-taking • Easy analysis	• Important answers could be missed if there is no appropriate category provided. • Some information may be forced into existing categories and other information might be lost. • If respondents hesitate and the interviewer helps with grid answers, the results are potentially biased.

To mitigate the disadvantages of partially open questions, those conducting the survey or interview can:

- Record all answers by taking notes or using a voice recorder.
- If respondents do not give an answer, repeat the question in a different way but without leading the respondent to an answer.

Closed questions

Closed questions –example from socio-economic study in 2014

<i>View on the effects of Land Development Planning toward:</i>	<i>Strongly disagree</i> <i>(1)</i>	<i>Disagree</i> <i>(2)</i>	<i>Neutral</i> <i>(3)</i>	<i>Agree</i> <i>(4)</i>	<i>Strongly agree</i> <i>(5)</i>
<i>There is an increase of social problems in the local community</i>					
<i>Development project generates income households</i>					
<i>Development project helps participants / households out of the poverty situation</i>					

With closed questions, respondents must choose one of the available answers, and no room is provided for further explanation or elaboration. Using closed questions is useful when time is short and very specific information is required. Usually in this type of question use Likert Scale as baseline for questionnaire.

Again, this type of question has advantages and disadvantages, as detailed in **Table 3**.

Table 3. Advantages and disadvantages of closed questions

Advantages	Disadvantages
• Answers can be quickly gathered, thus saving time. • Comparison of respondents' and groups' answers over time is easy.	• Further analysis of closed questions can be difficult because of the lack of supplementary questions for respondents to elaborate on the reasons for their answer.

To avoid the disadvantages of this type of question, the interviewer could ask further questions to explore respondents' answers in more depth.

Note 3 – Do & Don't in Conducting Socio-Economic Interviews

Do

1. Understand the projects background and objectives
2. Aware of questionnaire contents
3. Beware of languages
4. Proper attire or dress code (Formal, casual but most important neat, and clean)
5. Always SMILE
6. Use suitable, understandable and simpler words (layman terms)
7. When asking a question:
 - a. Speak when respondent ready
 - b. Control volume of voice
 - c. Greet sincerely
 - d. Introduce yourself, show name tag with organization logo
 - e. Explain the purpose of the survey
 - f. Explain the importance of study
 - g. Inform respondent that information given is confidential
 - h. Ask only related question
8. Use supporting tools such as Likert Scale Card, Pictures, etc.
9. Be a good listener
10. Ask for permission before taking photo
11. Give a door gift as token of appreciation
12. End interview session with THANK YOU

Don't

1. Don't ask question if the respondent is not ready
2. Don't ask respondent's full name, to avoid respondent feeling uncomfortable
3. Don't force if people do not want to be interviewed, especially in household survey
4. Don't take an advantage to look around respondent's house
5. Don't force respondent to get an answer, especially on income. Ask politely, instead.
6. Don't ask for hand phone number, if not necessary.

Note 4 – Conducting the survey

Before undertaking a survey, the following key steps should be followed.

Step 1: Preparation and scheduling of the survey work

- Preparation and scheduling of the survey work is essential for a successful survey
- The work plan and time frame for completing the surveys should be agreed with the team in advance.
- The roles and responsibilities of each team member should be clearly defined.
- Data sheets and questionnaires must be prepared
- The team trained

Step 2: Ask permission and inform about the survey work

- Ask permission from the village head prior to carrying out any survey
- Ensure that the village has been informed and permission from the village head has been obtained sufficiently in advance of the survey
- If necessary, write letter to Local Authority (JAKOA, District Office, etc.), and Head of Villages

Step 3: Meeting with community

- If possible, a meeting with the community or at least the head of the village should take place at the start of the survey
- Introduce the survey team members
- Clearly and fully explain the survey, its purpose and how it will be conducted

Note 5 – Guidance for community meetings

Community meetings are vital to the success of surveys and it is important to engage communities/villagers. Building community engagement takes time and should not be forced or rushed. Socio-economic surveys and group discussions, if done correctly, can be a good way to begin building a relationship with the community. Often information collected during socio-economic surveys is personal in nature and even confidential, and it should always be handled sensitively.

The guidance below will help to ensure that the community meeting gets off to the best possible start.

1. Set the village hall as the meeting place, and **schedule the meeting with village leaders.**
2. Start the meeting by:
 - Introducing all the team members
 - Explain the purpose and background of the study
 - The role of the organization undertaking the survey work
 - Ensure that the outputs of the survey work are clearly explained and expectations are realistic
 - Avoid making promises
3. Describe the activities and what will be achieved from this study.
 - What will be provided to the community?
 - How can the community participate?
 - How can the community assist and advise the team during the study?
4. Explain to the community
 - The importance of the study's schedule and activities
 - Check whether there are potential problems or conflicts with local activities. Determine an acceptable schedule for major activities.
5. Villages participation
 - Invite the villagers to introduce themselves or their village.

- Find out if villagers have time to participate in the survey as needed, and when they have time to do it.
6. Recognize key informant
 - Informal discussions may guide the survey team to recognize key informants, especially those who have knowledge related to the study.
 7. **Check whether any community members feel unhappy about the proposed activities.** If so, explain any specific aspects that they find unacceptable. Be willing to accept specific bans and modify the approach accordingly.
 8. Close the meeting. **Start planning survey activities based on the available options.**



**Institut Penyelidikan Perhutanan Malaysia (FRIM)
52109, Kepong, Selangor**

Dan



Forestry and Forest Products Research Institute (FFPRI), Japan

**KAJIAN KEPENTINGAN SOSIO-EKONOMI PENDUDUK TEMPATAN
SEKITAR KAWASAN HUTAN SIMPAN DAN HUTAN PERLINDUNGAN
TAMAN NEGARA, MELALUI KEPENGGUNAAN HUTAN SECARA
LESTARI DAN KONSERVASI**

*Socio-economic Study of The Local that Live Near The Adjacent of Forest
Reserve and National Park Protection Forest Through Sustainable Use of Forest
and Conservation*

Institut Penyelidikan Perhutanan Malaysia (FRIM) bersama *Forestry and Forest Products Research Institute (FFPRI) Japan* sedang menjalankan survei 'Kajian Kepentingan Sosio-Ekonomi Penduduk Tempatan Sekitar Perlindungan Taman Negara Melalui Kepenggunaan Hutan Secara Lestari dan Konservasi'. Survei ini adalah sebahagian daripada kajian 'Research on Development of Forest Carbon Monitoring Methodologies for REDD+ in Peninsular Malaysia'. Tujuan survei ini dijalankan adalah untuk mengumpul maklumat impak sosio-ekonomi penduduk tempatan terhadap kepenggunaan kawasan hutan perlindungan Taman Negara. Segala kerjasama di dahului dengan ucapan terima kasih. Segala kerjasama di dahului dengan ucapan terima kasih.

Sebarang pertanyaan mengenai kajian ini, sila berhubung dengan Program Ekonomi & Analisa Strategik, Institut Penyelidikan Perhutanan Malaysia (FRIM), 52109 Kepong, Selangor, Malaysia. Tel: 03-62797547/62797000

RES -

1. No sampel/ *No of sample* Penemuramah/*Interviewer*: _____

2. Nama Kampung/ *Name of village*

- | | |
|--|----------------|
| a. Kg. K. Tahan | f. Kg. Gusai |
| b. Kg. Pagi | g. Kg. K. Koh |
| c. Kg. Bantal | h. Kg. Merapoh |
| d. Kg. K.Sat | i. Kg. Gol |
| e. Kg. Merting | |
| j. Lain-lain/ (<i>others</i>) _____ (<i>nyatakan</i>)/ (<i>please state</i>) | |

A) Penggunaan sumber-sumber dan tanah hutan oleh ahli-ahli keluarga anda?
The usage of natural resources and forest land by you and your family?

- | | | | |
|-----|---|--------------------|----------------------|
| 1) | Tanah untuk bercucuk tanam/ <i>Agriculture</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 2) | Menangkap ikan/ <i>Fishing</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 3) | Memburu binatang / <i>Hunting animal</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 4) | Penghasilan pokok herba untuk perubatan
<i>Medicinal plants/herbs for medicine</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 5) | Penghasilan rotan/ <i>Rattan harvesting</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 6) | Sumber air untuk pertanian/ <i>Water for agriculture</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 7) | Sumber bahan-bahan kraftangan/ <i>Handcraft</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 8) | Penghasilan buah-buahan hutan/ <i>Wild fruits</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 9) | Penghasilan buluh/ <i>Bamboo harvesting</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 10) | Penghasilan madu lebah/ <i>Honey</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 10) | Lain-Lain / <i>Others</i> | | |
-
-

B) Sebagai penduduk tempatan, adakah masalah-masalah yang berikut dihadapi oleh keluarga anda?
As local people, do the following problems faced by your family?

- | | | | |
|----|---|--------------------|----------------------|
| 1) | Masalah hasil hutan yg. Berkurangan/
<i>Decrease in forest products</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 2) | Masalah kekurangan tanah bercucuk tanam
<i>Shortage of farming land</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 3) | Kekurangan tenaga pekerja/ <i>Shortage of manpower</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 4) | Masalah penyakit tanaman/ <i>Crop diseases</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 5) | Hasil tanaman susah untuk dipasarkan
<i>Crop difficult to be marketed</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 6) | Masalah sistem pengairan untuk tanaman
<i>Problem in crop irrigation system</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 7) | Larangan menjalankan aktiviti pemungutan
hasil hutan
<i>Prohibition on collecting forest products</i> | 1 = Ya/ <i>Yes</i> | 2 = Tidak/ <i>No</i> |
| 8) | Lain-Lain / <i>Others</i> | | |
-

C) Pandangan terhadap projek konservasi/pemuliharaan Hutan Perlindungan Taman Negara / Views on conservation projects/ Conservation of National Park Protection Forest

1. Adakah saudara sedar akan kewujudan persekitaran taman negara bersempadanan penempatan saudara?/ *Are you aware with the existence of National Parks?*
 - a. Ya/ *yes* b. Tidak/ *No*
2. Adakah kewujudan persekitaran taman negara memberi kesan ke atas kehidupan seharian saudara; samada kesan positif atau negatif? / *Does the existence of national parks have an impact on your daily life; either positive or negative effects?*

Kesan-Kesan Pembangunan/ Impact of development	Sila tanda bahagian yang sesuai/ Please tick the suitable part	Sila catatkan keterangan/ ulasan yang diberikan semasa temubual/ Comments
C21. Kesan-kesan positif/ <i>Positive impacts</i>	a. Tambah pendapatan/ <i>Increase income</i> b. Tambah pekerjaan/ <i>Employment</i> c. Pembangunan tempatan/ <i>Local development</i> d. Tempat pelancongan/ <i>Tourism</i> e. Kemahiran berkomunikasi/ <i>Communication skills</i> f. Kemahiran berniaga & mengurusniaga/ <i>Business skill</i> g. Meningkatkan kemahiran kaum wanita - menceburi industri kecil/ <i>Women skill- Small industry</i> h. Merperkenalkan kebudayaan setempat/ <i>Cultural</i> i. Lain-lain (nyatakan) / <i>Others</i> _____	
C22. Kesan-kesan negative/ <i>Negative impacts</i>	a. Gangguan masyarakat luar/ <i>Disturbance from the outsider</i> b. Kekurangan sumber pendapatan/ <i>lack of income resources</i> c. Kekurangan tanah untuk pertanian / <i>land shortage for agricultural purposes</i> d. Kekurangan ruang mencari hasil hutan / <i>prohibition in collecting forest products</i> e. Lain-lain (nyatakan)/ <i>others</i> : _____	

2. Secara umumnya, apakah pandangan/perasaan saudara mengenai kewujudan persekitaran taman negara bersempadanan dengan penempatan saudara; adakah ianya sesuatu yang baik atau sebaliknya?
Generally, what is your views on the existence of a national park environment adjacent to your housing areas, is it a good thing or not?

3. Apakah pandangan saudara mengenai pelancongan/pelancong; dan kemungkinan industri ini akan lebih berkembang pada masa hadapan khususnya dipersekitaran taman negara ini?

What is your opinion on travel / tourist; and the industry will be more likely to grow in the future, especially on the area nearby the park?

5. Adakah aktiviti pemuliharaan sumber hutan/sumber semulajadi sesuatu yang penting bagi saudara? Nyatakan:

Does forest conservation / natural resources is crucial for you? Please state:

6. Pada pandangan saudara, dengan berkembangnya industri/aktiviti pelancongan setempat; adakah ia akan memberi pulangan/keuntungan atau sebaliknya kepada diri saudara sendiri dan juga komuniti secara umum?

In your point of view, is the development of industry / local tourist activities will provide a return / profit or otherwise, to your own self and the community in general?

Individu/ *Individual*

Positif/ *Positive*

Negatif/ *Negative*

Komuniti/ *Community*

Positif/ *Positive*

Negatif/ *Negative*

7. Adakah pihak berkuasa taman negara melibatkan saudara atau komuniti setempat secara langsung dalam pembangunan taman negara diperingkat-peringkat tertentu (perancangan, pendidikan, maklumat/informasi & sebagainya)?

Does the national park authorities involve you or local communities directly in park development on specific stages (planning, education, information / information & others?

D) Pandangan terhadap penggunaan kawasan Hutan Perlindungan Taman Negara dengan bijaksana mengikut keutamaan bagi setiap penggunaan seperti yang berikut:

Views on the usage of Protection Forest National Park according to priority as follows:

	Pilihan mengikut keutamaan/ <i>Choice of priority</i>			
1. Pemeliharaan (Dibiarkan secara semulajadi)/ <i>Conservation (Left naturally)</i>	1	2	3	4
2. Pembangunan eko-pelancongan/ <i>Development of eco-tourism</i>	1	2	3	4
3. Pembalakan dan menanam semula dgn sistemetik/ <i>Logging and replanting with systematic</i>	1	2	3	4
4. Dibuka semula utk pembangunan pertanian/ <i>Reopened for agricultural development</i>	1	2	3	4

E) Kedudukan ahli-ahli isi rumah (iaitu ahli keluarga yang tinggal bersama) di kampung ini/ *The members of the households (ie family members living together) in the village.*

- Jumlah ahli keluarga yang tinggal bersama/ *Number of family members living together* _____
- Bilangan ahli keluarga yang bekerja/ *Number of family members working* _____
- Bilangan ahli keluarga yang bergantung kepada ahli lain/ *Number of dependent family member to other members* _____
- Bilangan ahli keluarga yang menganggur/ *The number of jobless family members* _____
- Bilangan ahli keluarga berhijrah/ *Number of family members migrated* _____
- Bangsa (Sila nyatakan)/ *Race (please state)* _____
- Kawasan tanah pertanian dimiliki oleh keluarga/ *The area of agricultural land owned by the family* :
 - Luas tanah asal yang dimiliki / *Land area owned* _____ ekar/
acres
 - Jenis tanaman yang diusahakan (Mengikut keutamaan) / *Types of crops cultivated (by priority)*

1. Padi/ *Paddy* ☐ 2. Getah / *Rubber* ☐ 3. Dusun/ *Garden* ☐
4. Tnm. Kontan/ *Cash crops* ☐ 5. K. Sawit/ *Oil palm* ☐ 6. Lain-lain
(nyatakan)/ *Others (please state)*

8. Maklumat tanaman di atas:/ *Information on the crop above:*

Bil. <i>Bil</i>	Jenis tanaman <i>Type of crop</i>	Luas (ekar) <i>Area (acre)</i>	Umur tanaman sekarang <i>Age of crop</i>
1.	Padi / <i>Paddy</i>		
2.	Getah/ <i>Rubber</i>		
3.	Dusun/ <i>Garden</i>		
4.	Tanaman kontan/ <i>Cash crops</i>		
5.	Kelapa sawit/ <i>Oil palm</i>		
6.	Lain-lain (nyatakan)/ <i>Others (please state)</i>		
	Jumlah luas/Total area		

F) Status pekerjaan ahli-ahli Isirumah yang bekerja
Employment status of working household member

(F1) Ahli/ <i>Member</i>	(F2) Umur / <i>Age</i>	(F3) Jantina/ <i>Sex</i> 1 = L/M 2 = P/F	(F4) Pencapaian Pendidikan / <i>Education achievement</i> 0=Tiada/None 1=Sek. Ren(Primary school) 2=Sek Men(Secondary school) 3=Tkt 6(Form 6) 4=Kolej & U/Colleague & U)	(F5) Taraf Perkahwinan / <i>Status</i> 1=Bujang/Single 2=Berkahwin/ Married 3=Duda/janda/ Divorced	(F6) Pekerjaan Utama / <i>Main job</i> 1= Pencari hasil hutan/ <i>Seekers of forest</i> 2= Penanam padi/ <i>Paddy farmer</i> 3= Bertani dusun/ <i>Garden farmer</i> 4= Penoreh getah / <i>Rubber tapper</i> 5= Penanam sayur / <i>Farmer</i> 6= Pekerja kontrak/ <i>Contract workers</i> 7= Berniaga/ <i>Business</i> 8.= Kerajaan/ <i>Govern ment</i> 9= Swasta/ <i>Private</i>	(F7) Status Pekerjaan / <i>Employment status</i> 1=Majikan/ <i>Employer</i> 2=Pekerja/ <i>Employee</i> 3=Kerja sdr/ <i>Freelance</i> 4=Pekerja keluarga tanpa upah / <i>Employee family without wages</i>	(F8) Pekerjaan Sekunder / <i>Secondary employment (sambilan) (part time)</i>
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					10= Pesara/ <i>Retired</i> 11= Suri rumah/ <i>Housewife</i> 12= Lain-lain/ <i>Others</i>		
Bekerja/ <i>Working</i> 81 (ketua) (<i>Leader</i>)							
2							
3							
4							
5							
6							
Tak Kerja/ <i>Jobless</i> 91							
92							
93							
94							
95							
96							
97							
98							
99							
100							
101							
102							

**PENGUNAAN SUMBER-SUMBER EKOSISTEM HUTAN SIMPAN
DAN KAWASAN SEKITAR & HUTAN PERLINDUNGAN TAMAN
NEGARA, 2013**

**USE OF FOREST RESERVED ECOSYSTEM RESOURCES AND RESPECTIVE
AREAS & FORESTS PRESERVED NATIONAL PARK, 2013**

G) Penghasilan sumber bukan kayu (Non-timber Forest Products)

1. Jenis hasil / *Type of product* 1=rotan/ *Rattan* 2=buluh/ *Bamboo* 3=bahan kraftangan / *Crafts materials* 4= Keranji / *Black velvet* 5=petai / *Bitter beans* 6=ubatan/ *Medicines* 7=madu/ *Honey* 8= Lain- lain/ *others*:

2. Tahun berapa terlibat/ *Year involved*: _____
4. Kekerapan masuk hutan (2013)/ *Frequency enter forest*:
_____ (trip/bulan)/ (trip/month) _____ (bulan/setahun) / (month/years)
5. Jenis spesies yang diambil/ *Type of species taken*
 1. Rotan/ *Rattan* _____
 2. Buluh/ *Bamboo* _____
 3. Bhn. Kraftangan/ *Crafts materials* _____
 4. Keranji/ *Black velvet* _____
 5. Petai / *Bitter beans* _____
 6. Ubatan/ *Medicines* _____
 7. Madu / *honey* _____
 8. _____
6. Maklumat pungutan hasil untuk semua spesies/ *Information on revenue of collection for all species*

Bil/ <i>Bil</i>	Jenis spesies dipungut/ <i>Species collected</i>	Kekerapan dipungut sebulan/ <i>Frequency collected in the month</i>	Jumlah hasil dipungut per trip (nyatakan unit sama ada dalam kg, bilangan, batang, dll)/ <i>Total revenue collected per trip (indicate whether units in kg, number, trunk, etc.</i>	Lokasi/ <i>Location</i>	Jarak (km)/ <i>Distance (km)</i>
1.	Rotan/ <i>Rattan</i>				
2.	Buluh/ <i>Bamboo</i>				
3.	Bahan kraftangan/ <i>Crafts materials</i>				
4.	Keranji/ <i>Black</i>				

	<i>velvet</i>				
5.	Petai/ <i>Bitter beans</i>				
6.	Pokok ubatan/ <i>Medicine plants</i>				
7.	Madu/ <i>Honey</i>				

7. Nyatakan alatan yang dibawa/ digunakan (kos tetap)/ *Specify tools brought / used (fixed costs)*

(a) Jenis alatan/ <i>Type of equipment</i>	(b) Bilangan <i>Unit</i>	(c) Harga beli (RM) <i>Price(RM)</i>	(d) Jangkahayat (tahun) <i>Lifespan (years)</i>
1. _____	_____	_____	_____
2. _____	_____	_____	_____
3. _____	_____	_____	_____
4. _____	_____	_____	_____

8. Lain-lain kos terlibat (makanan, kos luar jangka): RM _____
Other related costs (food, contingency cost): RM _____

9. Jumlah pengambilan hasil/ trip/ bulan (unit)/
Total revenue intake / trip / month (units)

1. Rotan/ *Rattan* _____ 2. Buluh/ *Bamboo* _____ 3. Bhn.
Kraftangan/ Crafts materials _____
4. Keranji/ *Black velvet* _____ 5. Petai/ *Bitter beans* _____ 6.
Ubatan/ Medicine _____
7. Madu/*Honey* _____ 8. _____ 9. _____

10. Jenis kenderaan yang digunakan :/ *Types of vehicles used*

11. Lokasi pengambilan hasil/ *Location of sample taken*

(a) Tempat (Htn. Simpan, Tnh. Kerajaan, T. Negara atau Hakmilik)	(b) Jarak dr tempat tempat tinggal (km)
Place (Conserved Forest,. Government Land Country Land or Preseved Land)	Distance from residence (km)

1. Rotan/ *Rattan* _____
2. Buluh/ *Bamboo* _____
3. Bhn. *Kraftangan/ Crafts materials* _____

4. Keranji/ *Black velvet* _____
5. Petai/ *Bitter beans* _____
6. Ubatan/ *Medicine* _____
7. Madu/ *Honey* _____
8. _____
9. _____
12. Bilangan pekerja yang terlibat untuk satu-satu trip/ *The number of employees involved for a trip*
1. Ahli keluarga/ *Family members* _____ orang/ *person*
2. Bukan ahli keluarga/ *Non Family members* _____ orang/ *person*
13. Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip: RM _____ / seorang
Wages paid if not family members per trip : RM _____ / person
14. Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip)/
Duration of work during sample collection (per trip)
1. Masuk hutan (jam) / *In forest (hours)* _____
2. Keluar hutan (jam) *Out forest (hours)* _____
15. Adakah anda memproses sendiri hasil yang diambil: 1=Ya/Yes 2=Tidak/No
Do you process the result taken by yourself: ☐ ☐
16. Jika 'tidak' dimanakah ianya dijual dan purata harga jualan (ex-farm)
 If 'no' where is it sold and the average selling price (ex-farm)
- | (a) | (b) | (c) | (d) |
|---------------------|--|----------------------------|------------------------|
| Jenis NTFP | Lokasi jualan dan jarak
(Nama syarikat) | Harga jualan
(RM)/unit | Cara
jualan |
| <i>Type of NTFP</i> | <i>Location of sale and distance
(Name of company)</i> | <i>Price
(RM)/Unit</i> | <i>Method of sales</i> |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ |
17. Jika dihantar sendiri, nyatakan jenis kenderaan yang digunakan dan jumlah pekerja yang terlibat (16d):/ *If delivered by hand, specify type of vehicle used and no. of worker involved:*
- a. Jenis kenderaan/ *Type of Vehicle:* _____ b. _____
 orang/ *person*

18. Jika ianya diproses sendiri, apakah nama produk yang dikeluarkan./ *If it is processed itself, named the products*

(a) Nama produk/ <i>Name of Products</i>	(b) Lokasi jualan/ <i>Location</i> (Pasar malam, pasar tani, ..)	(c) Harga jualan/ <i>Price</i> (RM/unit)
1. _____	_____	_____
2. _____	_____	_____
3. _____	_____	_____
4. _____	_____	_____

(d) Kekerapan menjual hari/minggu <i>Selling Frequency</i>	(e) Jumlah pengeluaran unit/bulan <i>Total production</i>	(f) Jumlah jualan/bulan (unit) <i>Total sales/ month</i>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

(g)
Kos pembuatan/ *Manufacturing cost*
(RM/unit)

H) Penglibatan penduduk dalam aktiviti eko-pelancongan

Local involvement in ecotourism activities

1. Adakah saudara atau ahli keluarga terlibat dalam aktiviti pelancongan
Do you or a family member are involved in tourism activities
 a) Restoran b) Chalet c) Homestay
 d) Kedai runcit/ *Grocery* e) Pemandu bot/ *Boatman*
 f) Pemandu pelancong/ *tourguide*
 g) Lain-lain (nyatakan) *Others* _____

2. Adakah terdapat perbezaan dari segi pendapatan isirumah pada tahun 80 an berbanding sekarang/ *Is there a difference in terms of household income in the 80s than it is now*
 a1. pendapatan meningkat, *Income increase* _____ %
 a2. pendapatan menurun, *income decrease* _____ %
 a3. pendapatan tidak berubah, *no changes*

3. Adakah berhasrat menceburi bidang yang bersangkutan dengan sektor sokongan kepada sektor pelancongan (spt: berniaga kecilan, mengusahakan homestay, pemandu pelancong & pembekal)/ *Do intend to venture into the field*

related to the support for the tourism sector (eg: business scale, doing homestays, guides & suppliers)

a) Ya/ Yes

b) Tidak/ No

4. Faktor penghalang (jika berkaitan)/ *Restraining factors*
a1. masalah modal/ *capital problems* a2. masalah peluang/ *Chances*
a3. Lain-lain (nyatakan) *Others* _____
5. Komen dan cadangan: Kaedah untuk membantu meningkatkan sosio-ekonomi penduduk melalui pembangunan eko-pelancongan sekitar Taman Negara.
Comments and suggestions: Methods to help improve the socio-economic population through the development of eco-tourism around National Park.
-
-

I) Pengusaha Tanaman Kontan/ *Cash crop/agriculture/ Farming*

1. Tahun mulai menjadi peladang / *Since when become farmer*= 19____
2. Jenis Tanaman/ *type of crops* 1= Lada/ *Chili* 2=Jagung/ *corn* 3=Terong / *eggplants* 4= Lain-lain/ *others*: _____
3. Purata keluaran sehari / *Average products per day* (kg)= _____
4. Purata harga keluaran sehari/ *Av. product price per day* (RM) 1Kg = _____
5. Purata hari kerja sebulan/ *Average working days per month* = _____
6. Kos tetap/ *Fixed cost*
a1. (Water pump) Harga dibeli(Price) RM____
a2. Jangka umur/ *life span* ____ tahun/ *Year*
b1. (Power spray) Harga dibeli(Price) RM____
b2. Jangka umur/ *life span* ____ tahun/ *Year*
c1. (Pam galas) Harga dibeli(Price) RM____
c2. Jangka umur/ *life span* ____ tahun/ *Year*
d1. (Kayu 'penyokong) Harga dibeli(Price) RM____
d2. Jangka umur/ *life span* ____ tahun/ *Year*
e1. (Lain -lain) Harga dibeli(Price) RM____
e2. Jangka umur/ *life span* ____ tahun/ *Year*
7. Kos semasa / *Current cost*
a. (Upah membajak) Belanja/ musim RM____ (Plowing)
b. (Petrol) Belanja sehari RM____ (Petrol)
b. (Upah pekerja) Belanja sehari RM____ (workers wages)
c. (Racun) Belanja sebulan RM____ (pesticides)
d. (Benih) RM____ (Seeds)
e. (Lain-lain) RM____ (Others)

J) Pesawah Padi / Paddy farmer

1. Jenis pesawah/ *Type of farmer*
1a=Tanah sendiri/ *Own land* 1b=Tanah sewa/pajakan/ *Rented land*
2. Luas kawasan dikerjakan/ *Total area of land* = _____ekar/ *acre*
3. Berapa tahun sudah bersawah/ *How many years involve* = _____tahun
4. Subsidi diterima 2013/ *Subsidies received*=_____
5. Keluaran musim 2013/ *Production per season*=_____ kg/tan
6. Kos operasi satu musim/ *Operation cost per season*
 - a. Sewa/Pajak / *rent or lease per season* RM_____
 - b. Upah membajak/ *plower wages* (mesin-3 kali) RM_____
 - c. Beli benih/ *seeds* _____/bag x _____bag RM_____
 - d. Beli racun rumput/ *herbacide* RM _____/liter x _____ liter RM_____
 - e. Beli racun serangga/ *pesticides* RM_____
 - f. Beli baja (tambahan)/ *fertilizer* RM_____
 - g. Upah menuai/ *harvester wages per day* RM_____
 - h. Lain-lain/ *Others* RM_____
7. Anggaran pendapatan/ *Estimated income*
 - a. Harga jualan / *Sales price* RM_____/tan

K) Penoreh getah/ Rubber tapper

1. Jenis pesawah/ *Type of farmer*
1a=Tanah sendiri/ *Own land* 1b=Tanah sewa/pajakan/ *Rented land*
2. Luas kawasan dikerjakan/ *Total area of land* = _____ekar/ *acre*
3. Berapa tahun sudah bersawah/ *How many years involve* = _____tahun
4. Subsidi diterima 2013/ *Subsidies received*=_____
5. Keluaran musim 2013/ *Production per season*=_____ kg/tan
6. Kos operasi satu musim/ *Operation cost per season*
 - a. Sewa/Pajak / *rent or lease per season* RM_____
 - b. Upah membajak/ *plower wages* (mesin-3 kali) RM_____
 - c. Beli benih/ *seeds* _____/bag x _____bag RM_____
 - d. Beli racun rumput/ *herbacide* RM _____/liter x _____ liter RM_____
 - e. Beli racun serangga/ *pesticides* RM_____
 - f. Beli baja (tambahan)/ *fertilizer* RM_____
 - g. Upah menuai/ *harvester wages per day* RM_____
 - h. Lain-lain/ *Others* RM_____
7. Anggaran pendapatan/ *Estimated income*

Harga jualan / *Sales price* RM_____/tan

L) Pengusaha Ladang Kelapa Sawit

1. Luas kawasan dikerjakan/ *Total area of land* = _____ekar/ *acre*
2. Berapa tahun sudah bersawah/ *How many years involve* = _____tahun/ *Years*
3. Hasil keluaran 2013 / *Production 2013* = _____tan/bulan
4. Hasil diterima 2013/ *revenue 2013* = RM _____/tan
6. a. Kos penanaman (penyediaan tanah & anak pokok) = RM _____
Cultivation cost (Land preparations and seedling)
- b. Tahun ditanam/ *planted year* _____
7. Kos operasi purata 2013/ *Operation cost 2013*
 - a. Merumput/ *weeding* RM _____
 - b. Beli racun/ *pesticides* RM _____
 - c. Meracun/ *cost positioning* RM _____
 - d. Beli baja/ *fertilizer* RM _____
 - e. Membaja/ *cost fertilizing* RM _____
 - f. Memetik buah / *Picking fruit* RM _____
 - g. Mengangkut hasil/ *Transportation of fruit* RM _____
 - h. Lain-lain/ *others* RM _____
8. Subsidi diterima 2013/ *subsidies received 2013* = RM _____

M) Pengusaha dusun/ Orchard

- (i) Dalam kawasan hutan simpan/ *Forest reserve land*
- (ii) Luar kawasan hutan simpan/ *Outside forest reserve*

1. Jenis spesies tanaman & harga jual (RM/kg)- *Type of species and sales price*

_____ RM _____ kg , _____ RM _____ kg

_____ RM _____ kg , _____ RM _____ kg

_____ RM _____ kg , _____ RM _____ kg

_____ RM _____ kg , _____ RM _____ kg

_____ RM _____ kg , _____ RM _____ kg

2. Kos operasi satu musim/ *Operation cost per season*

- a. Bayaran permit/ *permit fee* RM _____/musim
- b. Alatan kerja/ *Tools* RM _____
- c. Beli racun rumput / *Herbicides* RM _____/liter x _____ liter RM _____
- d. Beli racun serangga/ *Pesticides* RM _____
- e. Beli baja (tambahan)/ *Fertilizer* RM _____
- g. Lain-lain/ *Others* RM _____

3. Anggaran pendapatan/ *Estimated income*

- a. Harga jualan RM _____/kg (*Price sales*)
- b. Anggaran hasil _____/kg semusim (*Estimated Product per season*)

4. Jenis kenderaan yang digunakan/ *type of vehicle* : _____
5. Lokasi pengambilan hasil/ *Location*
 - a) Tempat (nyatakan): _____ (*Specify name of place*)
 - b) Jarak dari tempat tinggal _____ km (*Distance from home*)
6. Pekerja yang terlibat untuk satu-satu trip/ *No. Of workers per trips*
 - a. Ahli keluarga/ *family members* _____ orang/ *person*
 - b. Bukan ahli keluarga/ *non-family members* _____ orang/ *person*
7. Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip:
If non-family members, how much is their wages per trip
 RM _____ / seorang/ *person*

N) Nelayan Tasik/Sungai

1. Jenis spesis tangkapan & harga jual (RM/kg) / *Species of catches and Price if sell*
 _____ RM _____ kg , _____ RM _____ kg
 _____ RM _____ kg , _____ RM _____ kg
 _____ RM _____ kg , _____ RM _____ kg
 _____ RM _____ kg , _____ RM _____ kg
 _____ RM _____ kg , _____ RM _____ kg
 _____ RM _____ kg , _____ RM _____ kg
 _____ RM _____ kg , _____ RM _____ kg
2. Jenis alat tangkapan yang digunakan/ *Type of tools used*
 - a) Selambau b). Pukat, jenis (nyatakan) _____
 - c.) Jala d). Pancing
 - e) Lain-lain _____ (nyatakan)
3. Kos alatan / *Cost of tools*
 - a. Selambau termasuk rumah/ pondok (*selambau include floating hunt*)
 - a1. harga bina RM _____ a2. jangka umur _____ thn
 (*Building cost*) (*Lifespan*)
 - b. Pukat/ *trawl* b1. harga beli (*Price*) RM _____
 b2. Jangka umur (*Lifespan*) _____ bulan @ tahun
 - c. Jala/ *net* c1. harga beli (*Price*) RM _____
 c2. jangka umur (*Lifespan*) _____ bulan @ tahun

- d. Pancing (Fishing rod) d1. harga beli(*price*) RM _____
d2. jangka umur(*Lifespan*) _____bulan @ tahun
4. Jumlah pengambilan hasil _____ kg/trip/bulan
(*Number of catches*)
5. Jenis kenderaan yang digunakan : _____
(*Mode of transportation*)
6. Lokasi pengambilan hasil (*Fishing location*)
a. Tempat (Htn. Simpan, Tnh. Kerajaan atau Hakmilik): _____
Location (PRF/Stateland/Alienated land)
b. Jarak dari tempat tinggal _____ km
(*Distance from house*)
7. Bilangan pekerja yang terlibat untuk satu trip (*Number of workers per trip*)
1. Ahli keluarga (*Family*) _____ orang
2. Bukan ahli keluarga (*Non-family*) _____ orang
8. Jika bukan ahli keluarga berapakah upah yang dibayar untuk satu-satu trip:
(*If non-family, how much the wages per trip*)
RM _____ / seorang (*person*)
9. Jangkamasa kerja ketika pengambilan hasil (untuk setiap trip)
(*Fishing duration per trip*)
1. Keluar menangkap ikan (*Time start*) (jam) _____
2. Balik (*Time end*) (jam) _____

O) SUMBER-SUMBER PENDAPATAN PURATA BULANAN SEMUA AHLI ISIRUMAH (IAITU SEMUA PENDAPATAN AHLI-AHLI YANG TINGGAL BERSAMA SAHAJA).
(*Average household monthly income sources*)

- | Pendapatan Tunai
(<i>Cash income</i>) | | Purata Pendapatan Sebulan Bagi 2013
(<i>Average monthly income for 2013</i>) |
|---|---|---|
| 1. Makan gaji
(<i>Received Salary</i>) | (a) Kerja resort (<i>Resort</i>) RM_____Sebulan/month
(b) Pekerja kilang lain (<i>Factory</i>)RM_____Sebulan
(c) Kakitangan kerajaan (<i>Gov</i>)RM_____Sebulan
(d) Kakitangan swasta (<i>Private</i>)RM_____sebulan
(e) Pekerja kontrak (<i>Contract</i>) RM_____Sebulan
(f) Lain-lain (<i>Others</i>) RM_____Sebulan | |
| 2. Hasil jualan/
kerja sendiri | (a) Mencari hasil hutan (<i>forest resources</i>) RM_____Sebulan
(b) Jualan hasil kraftangan (<i>handcraft</i>)RM_____Sebulan | |

- Bussines*
- (c) Pengusaha chalet (*Chalet operator*) RM ____sebulan
 - (d) Pengusaha homestay(*homestay operator*) RM____sebulan
 - (e) Pemandu bot(*Boatman*) RM ____sebulan
 - (f) Pemandu pelancong (*tourguide*)RM____sebulan
 - (g) Kedai runcit/ makan(*grocery/restaurant*)RM____sebulan
 - (h) Berniaga (*bussines*) RM_____sebulan
 - (i) Lain-lain (*others*) RM_____Sebulan
3. Hasil Pertanian (setelah tolak kos)
- Agriculture*
- (a) Penanam tanaman kontan (*cashcrop*)RM____Sebulan
 - (b) Tanaman padi (*paddy*)RM_____Sebulan
 - (c) Penoreh getah (*rubber tapper*)RM_____Sebulan
 - (d) Pengusaha kelapa sawit (*oilpalm*)RM_____Sebulan
 - (e) Hasil dusun(*orchard*) RM_____Sebulan
 - (f) Menghasil ikan (*fisherman*)RM_____Sebulan
 - (g) Hasil ternakan(*cattles*)RM_____Sebulan
 - (h) Lain-lain(*others*) RM_____Sebulan
4. Kiriman wang oleh ahli keluarga yang bekerja di tempat lain.
(*Remittances from family members*)
RM_____Sebulan/ Month
5. Lain-lain pendapatan (berniaga, bonus, sewa, faedah dan lain-lain)
(*Others income sources (bussiness, bonus, rent, interest, etc.)*)
RM_____Sebulan/ Month

Pendapatan Bukan Tunai. (*Inkind income*)

6. Makanan ikan / udang / ketam yang dihasilkanRM _____
Food catches (fish, shrimp, crab)
(Nilai wang jika beli di pasar tolak kos) / *Price if we sale, deducted cost*
7. Makanan dari hasil tanaman / ternakan RM _____
(Food from rearing/ own farm)
(Nilai wang jika beli di pasar tolak kos) / *Price if we sale, deducted cost*
8. Tinggal di rumah sendiri (*Live own house*) RM _____
(Nilai bulanan jika di sewa)/ *Value if rented*
9. Guna air bukit/ perigi (*well/hill water supply*) RM _____
(Nilai wang jika guna saluran paip kerajaan)/ *price if piped*
(2-4 orang =RM10, 5-8=RM15, >8=RM20)
10. Lain-lain(*others*) RM _____

P) Pemilikan Harta Isirumah (*household property ownership*)

(1)	Kereta/ <i>Car</i>	1 = Ada/Yes 0 = Tiada/No
(2)	Motorsikal/ <i>Motocycle</i>	1 = Ada/Yes 0 = Tiada/No
(3)	Radio	1 = Ada/Yes 0 = Tiada/No
(4)	T.V	1 = Ada/Yes 0 = Tiada/No
(5)	Video	1 = Ada/Yes 0 = Tiada/No
(6)	Astro	1 = Ada/Yes 0 = Tiada/No
(7)	Peti sejuk/ <i>Referigerator</i>	1 = Ada/Yes 0 = Tiada/No
(8)	Mesin basuh/ <i>washing machine</i>	1 = Ada/Yes 0 = Tiada/No
(9)	Telefon/ <i>telephone</i>	1 = Ada/Yes 0 = Tiada/No
(10)	Telefon bimbit/ <i>handphone</i>	1 = Ada/Yes 0 = Tiada/No
(11)	Kipas eletrik/ <i>electric fan</i>	1 = Ada/Yes 0 = Tiada/No
(12)	Bot/ <i>boat</i>	1 = Ada/Yes 0 = Tiada/No

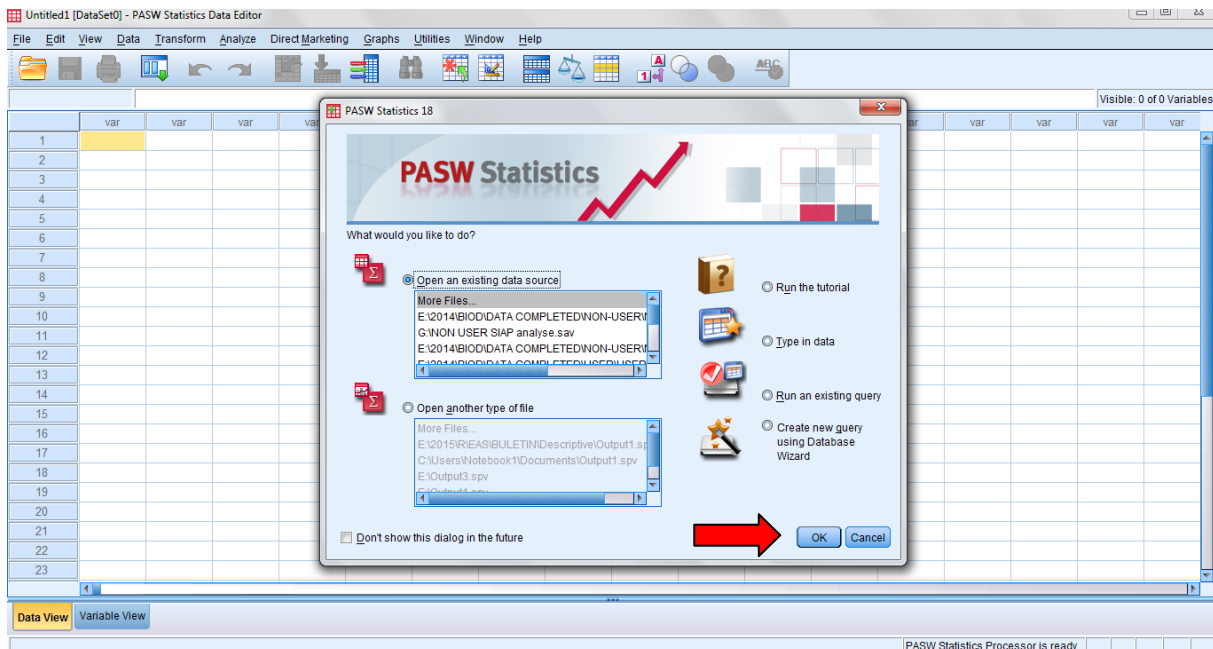
Note 7 – Using SPSS software

1.0 GETTING STARTED WITH SPSS

The SPSS package is a powerful and user-friendly statistical analysis tool . It provides a simple point and click or drag interface for statistical analysis. It has a DATA EDITOR, which is a spreadsheet that allows you to enter data easily. Statistical analysis results are displayed in the OUTPUT window and tables and charts can be copied and paste easily into other programs such as Word or Power-point for documents and presentations.

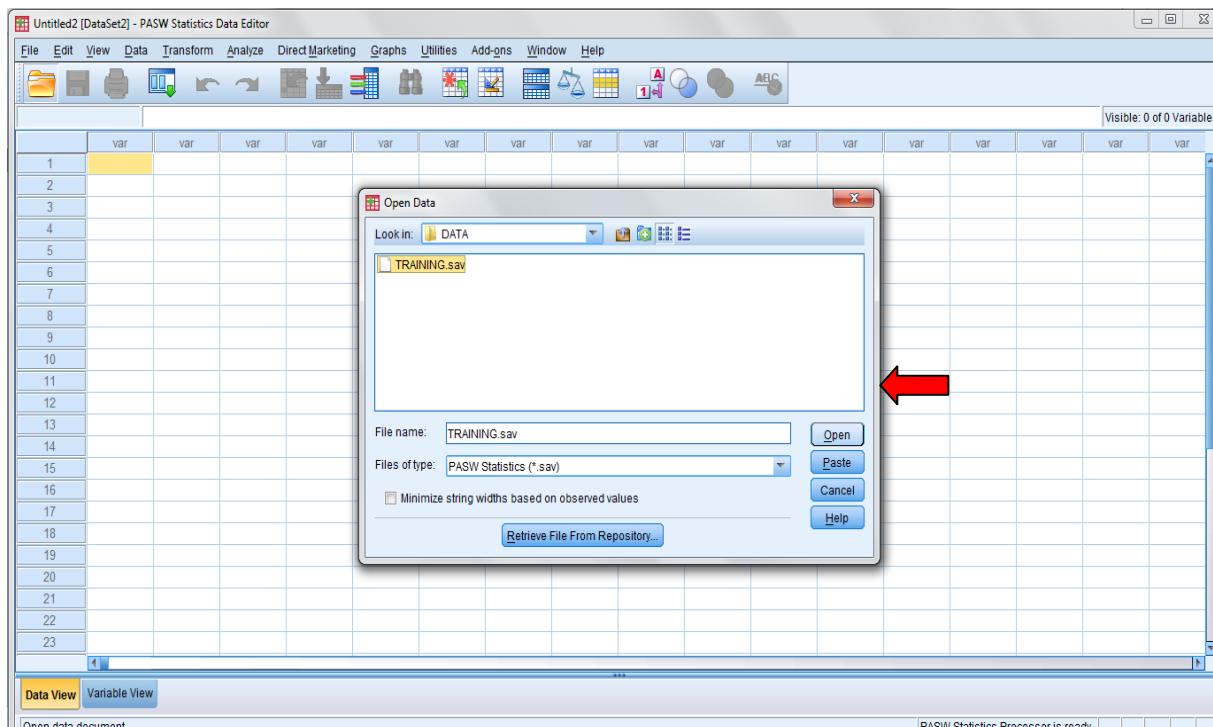
To start SPSS, left click on the **Start** button (at the lower left corner), select **Programs**, **SPSS for Windows** and **SPSS 18.0 for Windows**.

The SPSS windows dialogue appears and provides a list of tasks that you can do. By default, the task is set as “Opening an existing data source” .

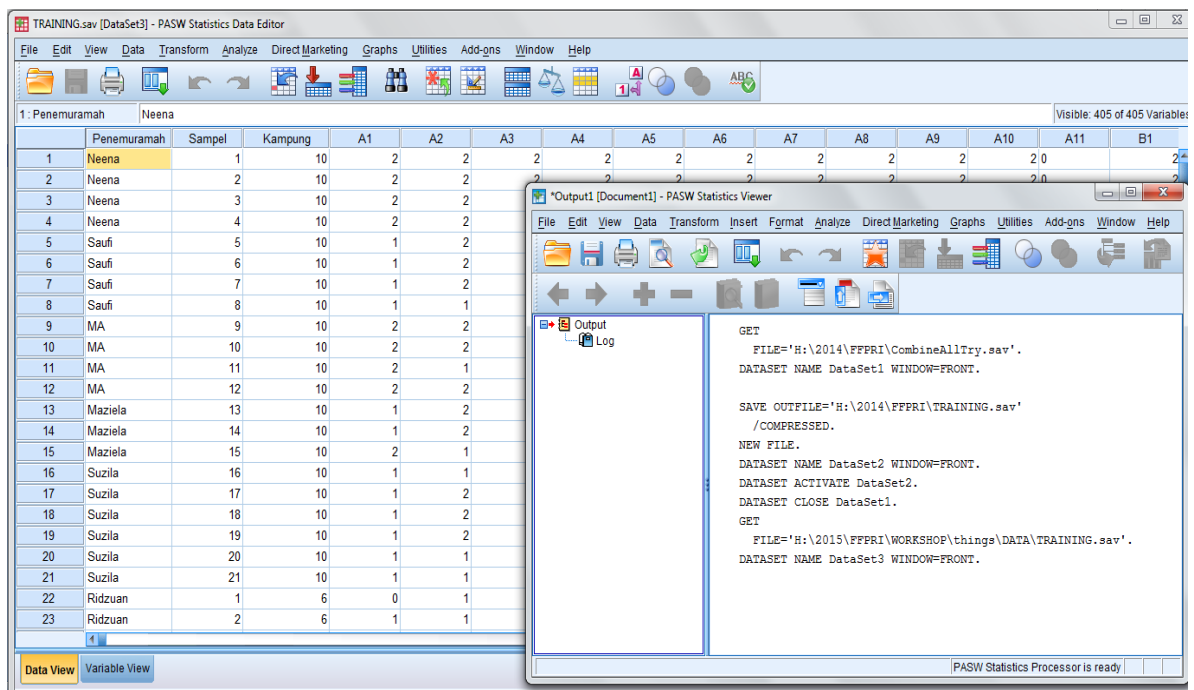


Click on the **OK** button and the Open Data dialogue box appears and provides a list of available SPSS data sets in the SPSS folder.

Select required data example the “TRAINING “ from the list of SPSS files and click on the **Open** button. If the data is save in SPSS format, it will appear extension “.sav”.



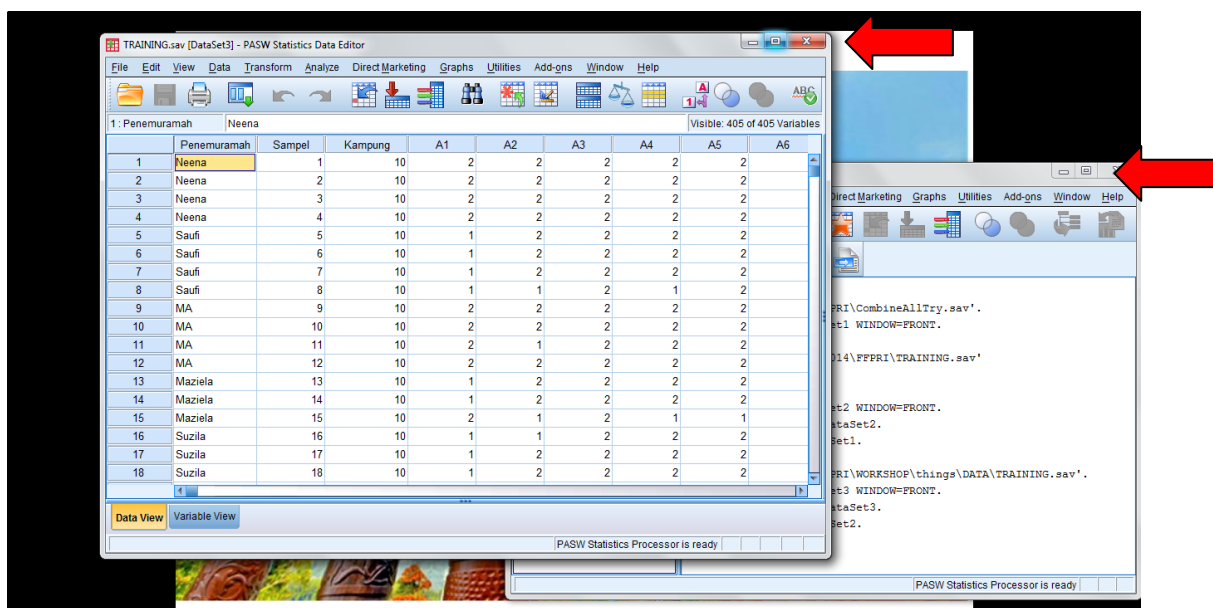
The **DATA EDITOR** and the **OUTPUT** windows will appear. Select the **DATA EDITOR** window.



At the top right corner of the DATA EDITOR window, there are three buttons for the following tasks:

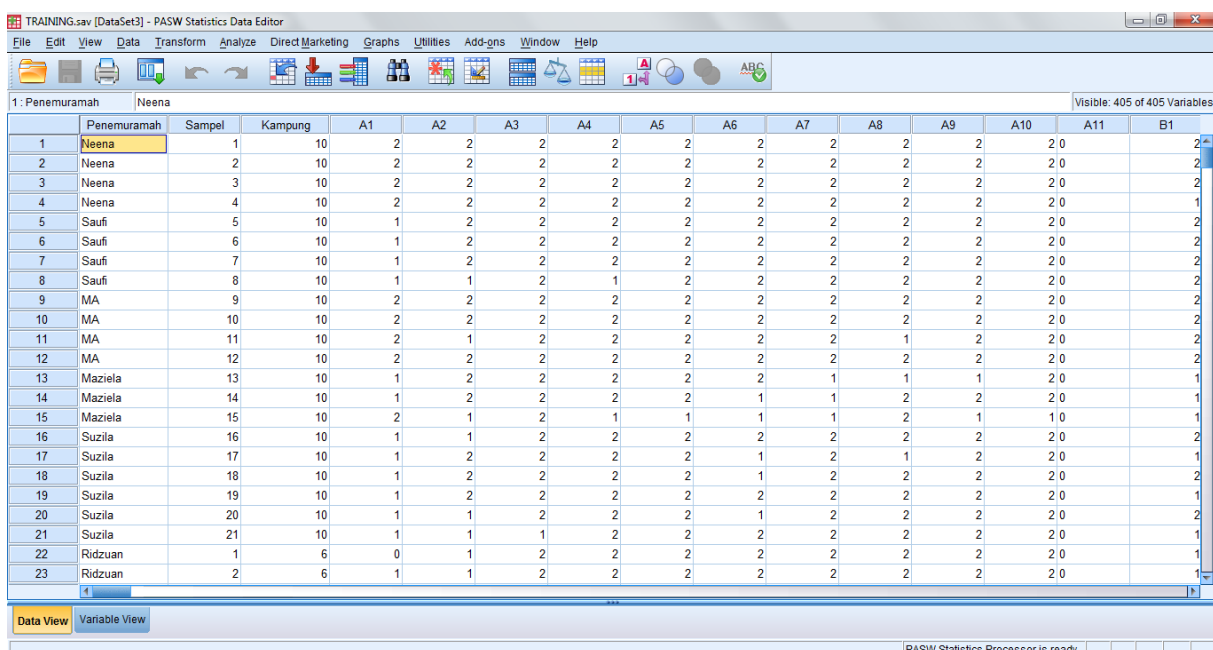
- Minimize Left button with a dash (-)
- Maximize Middle button with a square (□)
- Close Right button with a cross (x)

Maximize the data window by clicking on the middle button with a square.



You can now get a full view of the data in the Employee data file.

SPSS data files are saved with the extension ".sav"

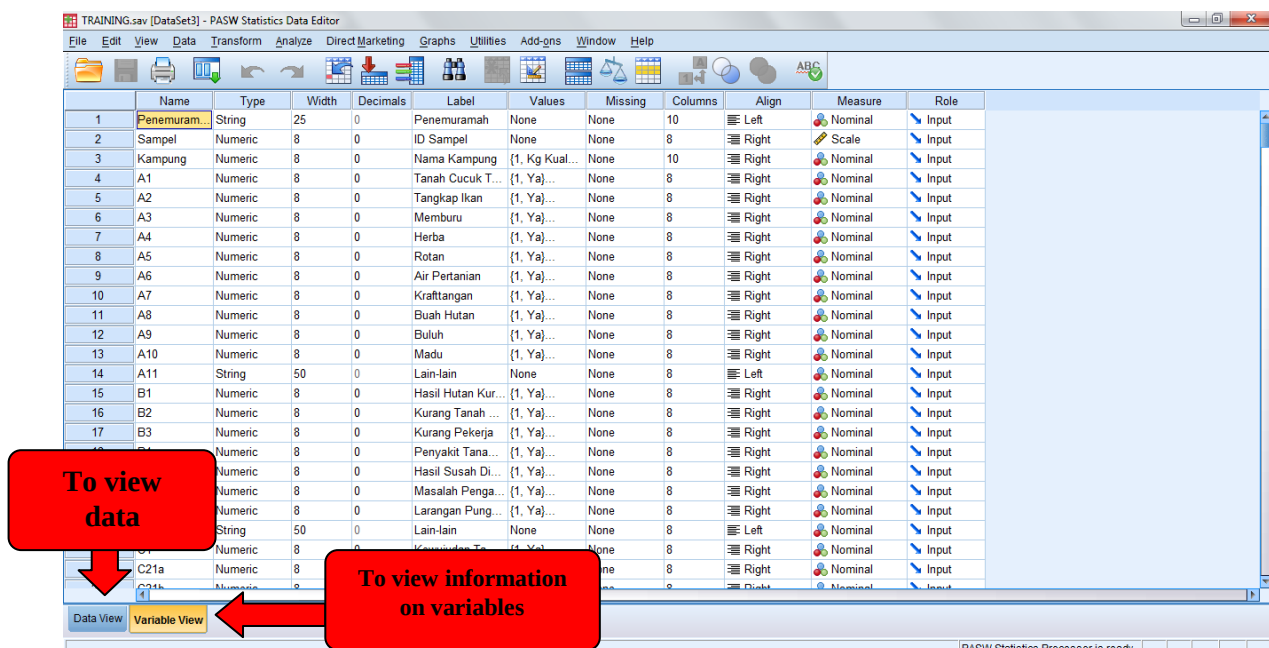


The SPSS main windows are listed below:

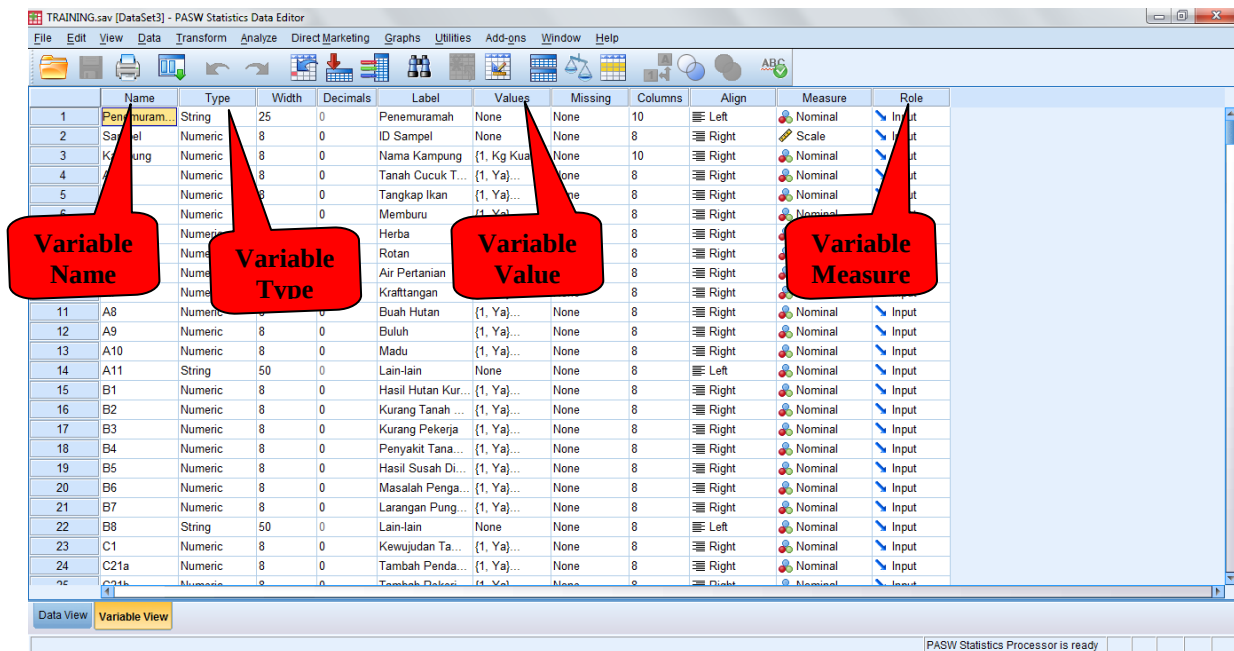
Data Editor	A spreadsheet for defining variables, entering and editing data.
Output Viewer	Displays statistical results, tables and charts. Output can be saved as an output file for later use. Output can be copied and paste into other programs such as Word and Power-point.
Pivot Table Editor	Output displayed in tables can be edited. Rows and column can be interchanged.
Chart Editor	Charts can be edited. Allows changes such as colour, font and chart types.
Text Output Editor	Allows text in output viewer to be edited.
Syntax Editor	Allows saving SPSS syntax and running syntax commands during an SPSS session.
Script Editor	Allows advanced users to customize and automate SPSS tasks by creating and modifying scripts within the program.

The **DATA EDITOR** allows you to define variables, enter or edit data easily.

At the left bottom corner of the **DATA EDITOR** window, there are the **Data View** and the **Variable View** tabs.

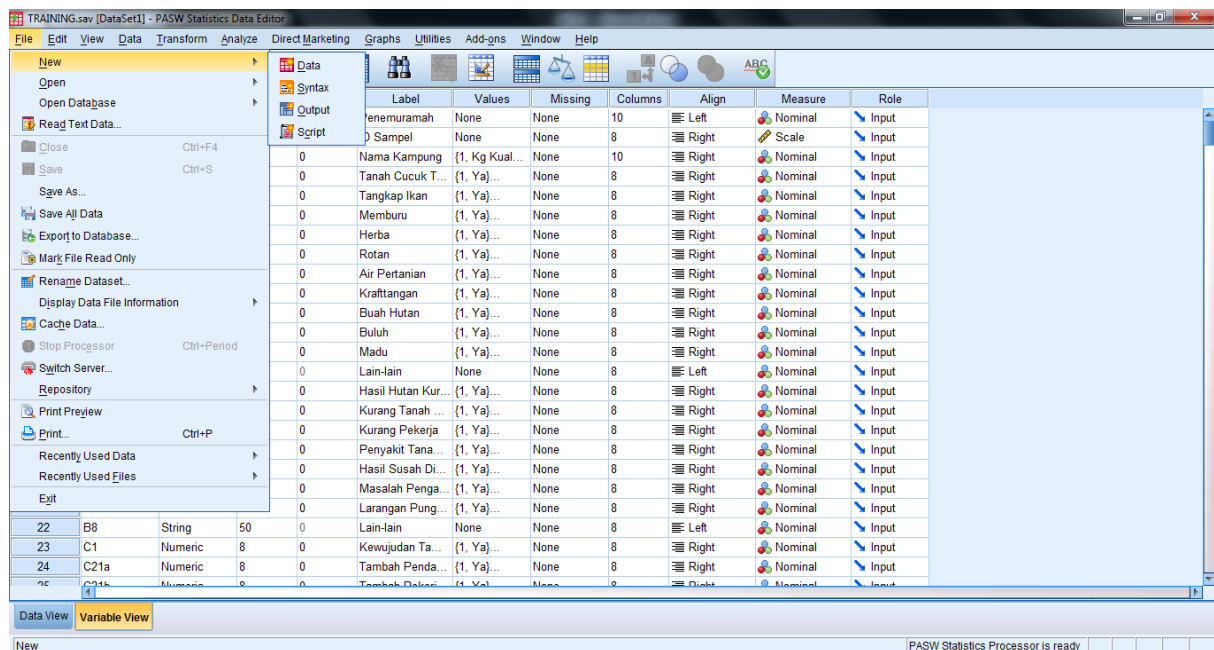


Click on the **Variable View** tab and information such as variable name, type, label and declaration of missing values are displayed.

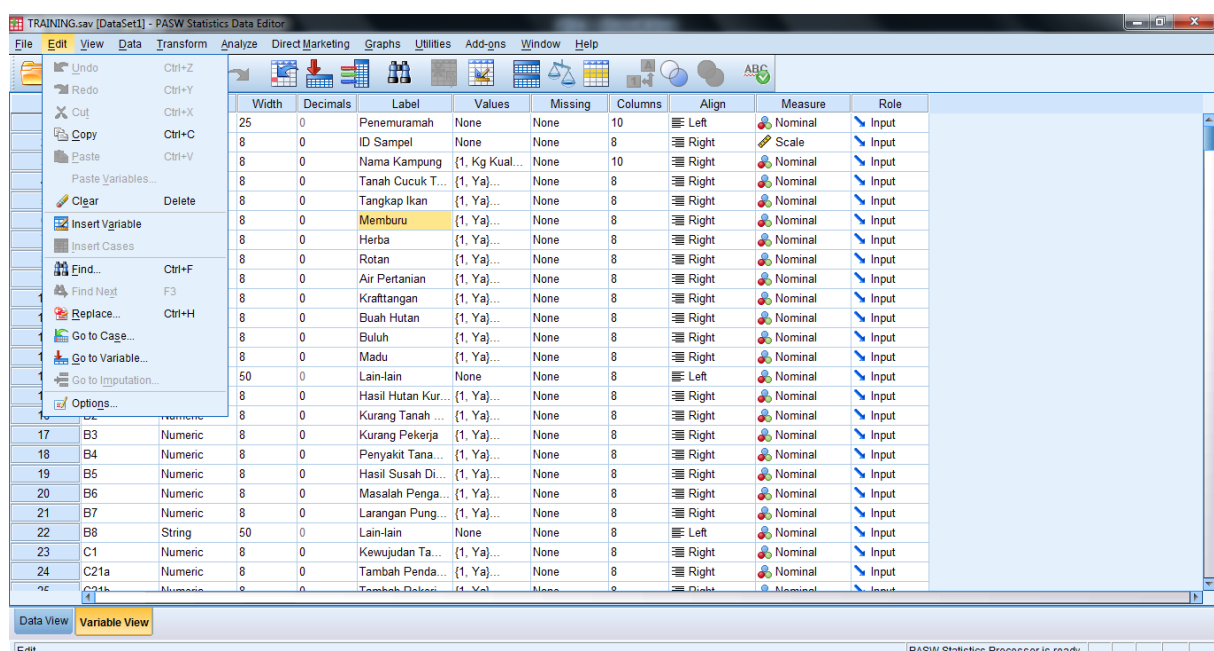


Click on the **Data View** tab to return to the **DATA EDITOR** Window.

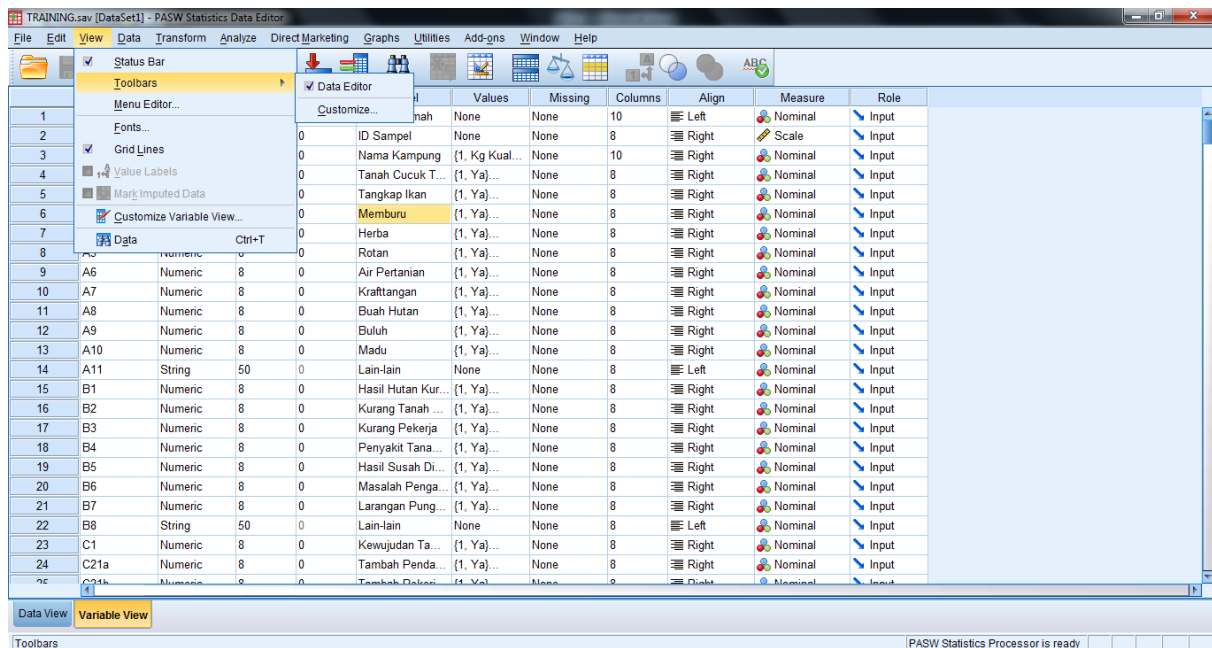
The **File** menu in **DATA EDITOR** has a list of tasks such as creating **New** (Data, Syntax, Output or Script), **Open** (Data, Syntax, Output or Script), **Close**, **Save**, **Save As** (to different location), **Export to Database** (dBase, Excel or MS Access), and listing of **Recently Used Data** or **Recently Used Files**.



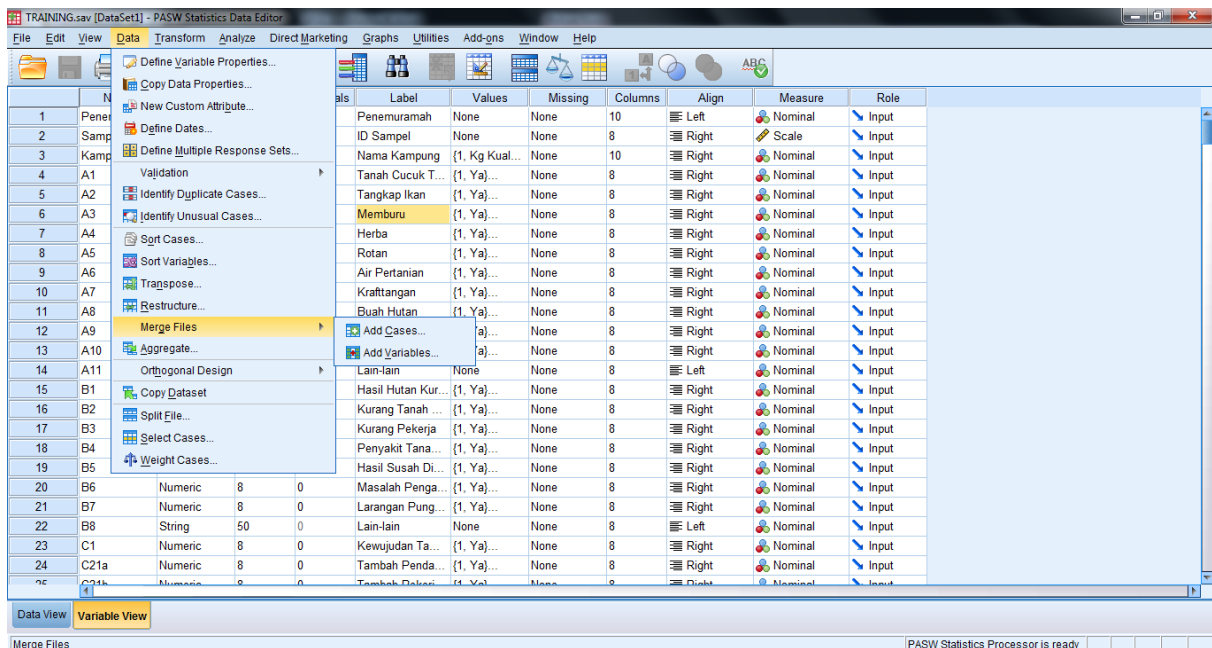
The **Edit** menu provides tasks such as **Cut**, **Copy**, **Paste**, **Clear**, **Insert Cases**, **Insert Variable**, **Find** (to find data for a particular variable), **Go to Case** (to locate certain Case Numbers or observations) and **Options** (to change default settings)



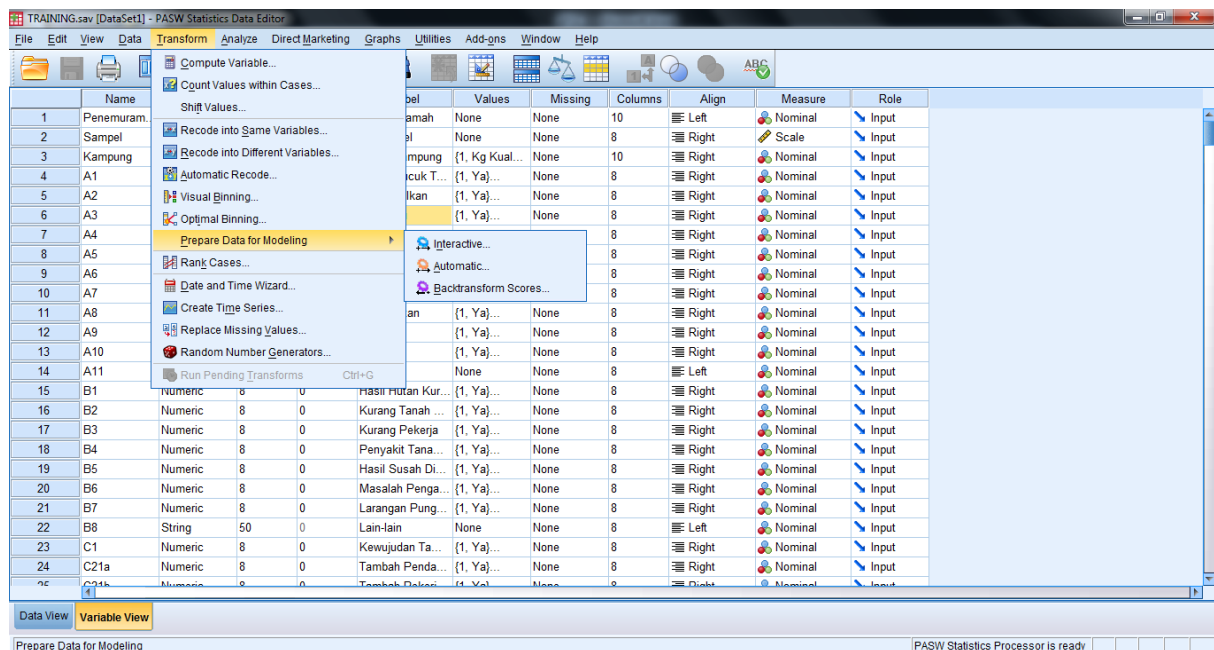
The **View** menu allows changing the **font** style, remove grid lines and display **variables** or **value labels** for coded variables (such as f = Female, m = Male).



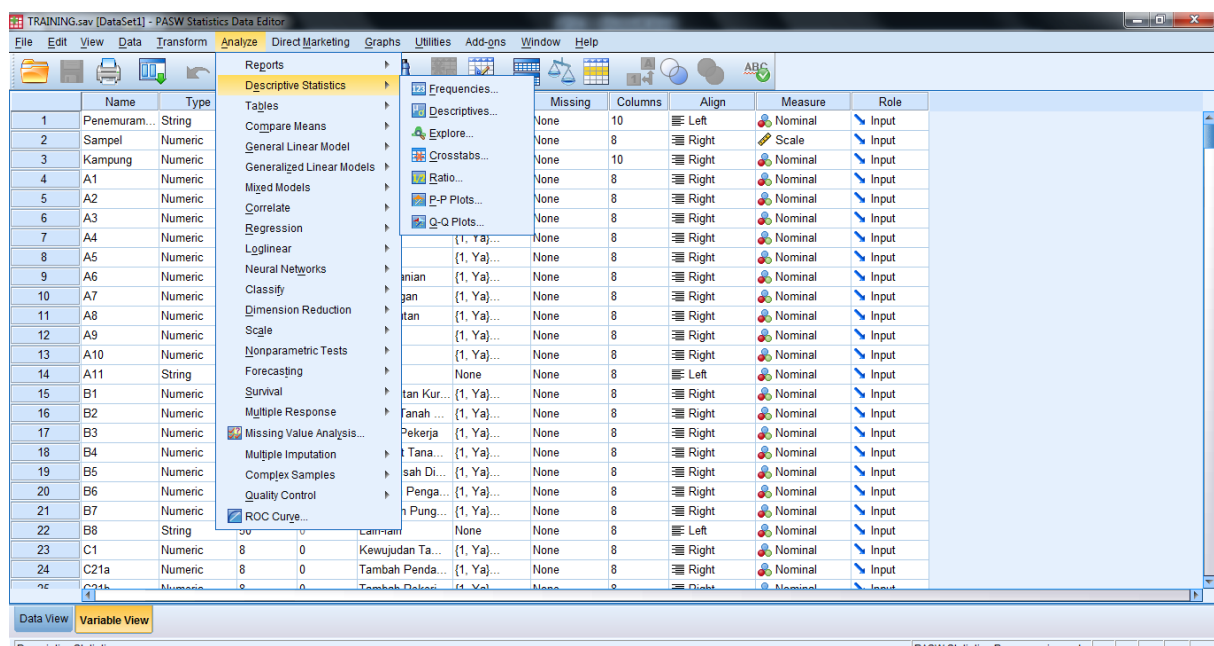
The **Data** menu provides a list of tasks such as **Copy Data Properties** (copy selected variable and data from other data sets), **Sort Cases**, **Merge Files**, **Split File** and **Select Cases**.



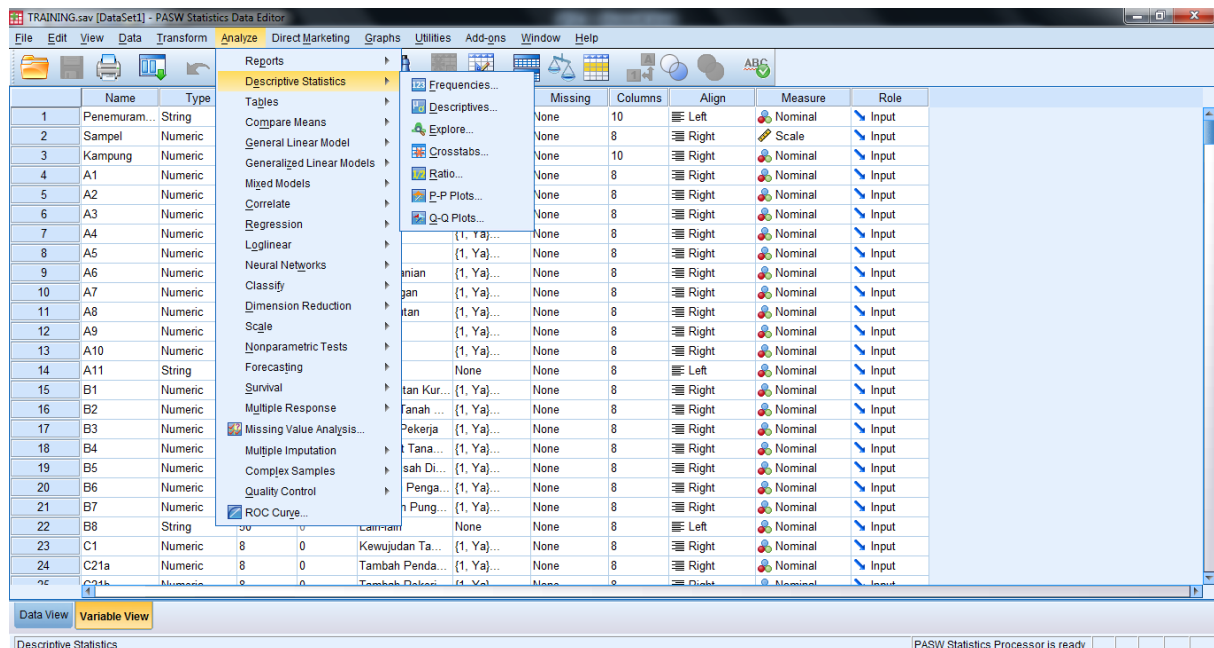
The **Transform** menu allows you to **Compute** (create new variables such as sum, ratio or log), **Recode**, **Automatic Recode** (recode several variables at once), **Visual Binning** (create bins for interval variables), **Rank Cases** and **Replace Missing Values**.



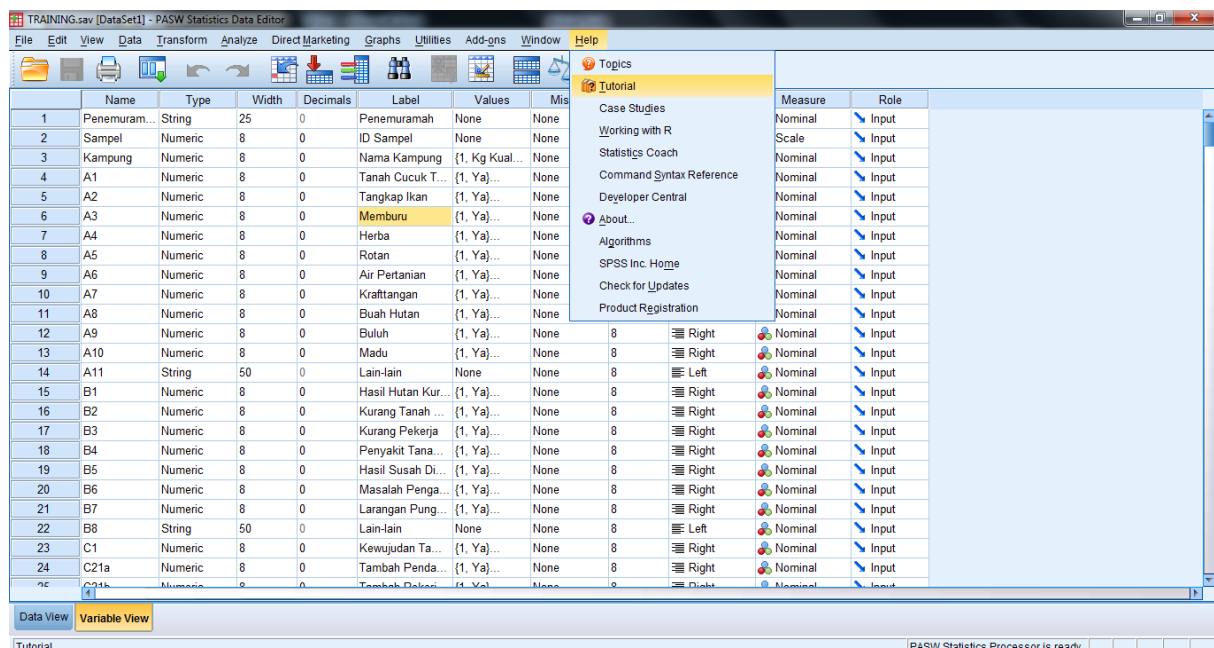
The **Analyze** menu provides a list of statistical analysis such as **Descriptive Statistics** (frequencies and cross-tabulations), **Compare Means** (Independent-Samples T-test, Paired-Samples T-test, ANOVA), **General Linear Model**, **Correlation**, **Regression** and **Non-parametric Tests**.



The **Graph** menu enables you to create bar charts, pie charts, line charts, boxplots and histogram using **Chart Builder**, **Interactive** or **Legacy Dialogs**.



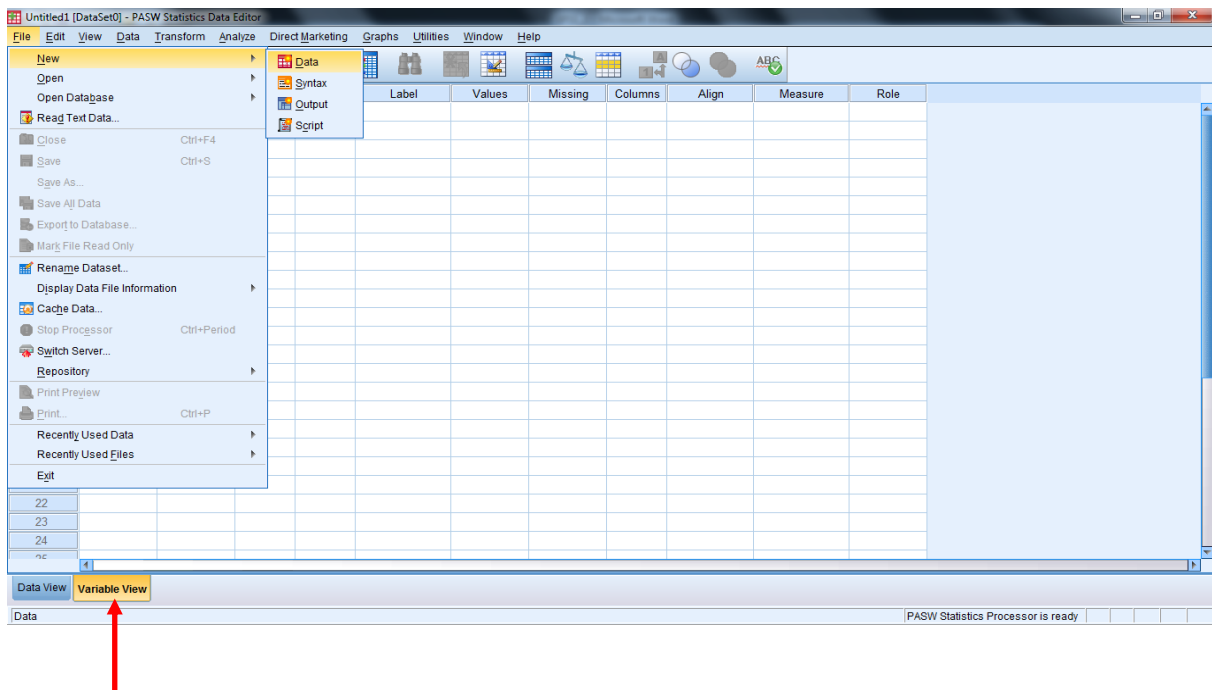
The **Help** menu allows you to search information under **Topics**, learn more on how to use SPSS using **Tutorial**, **Case Studies** or **Statistics Coach**.



2.0 CREATING SPSS DATA FILES

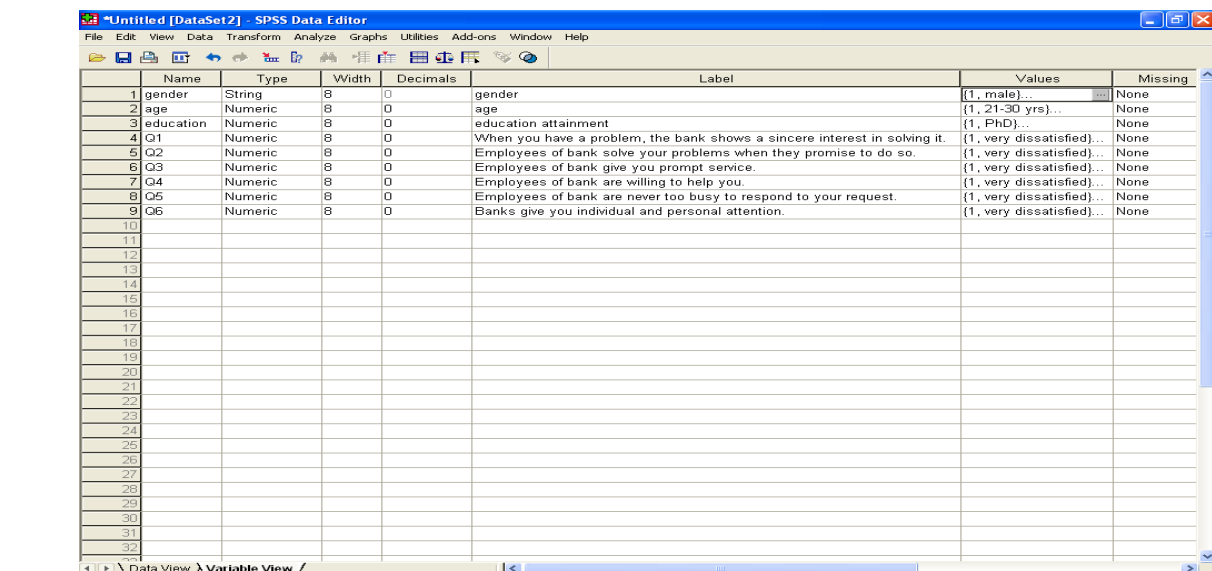
The **SPSS DATA EDITOR** is a spreadsheet that allows you to enter data easily.

Click on the **File** menu, select **New** and **Data** and the **SPSS DATA EDITOR** window appears. The **Untitled1[DataSet]** at the top left corner indicates that this is a new file and no filename has been given.



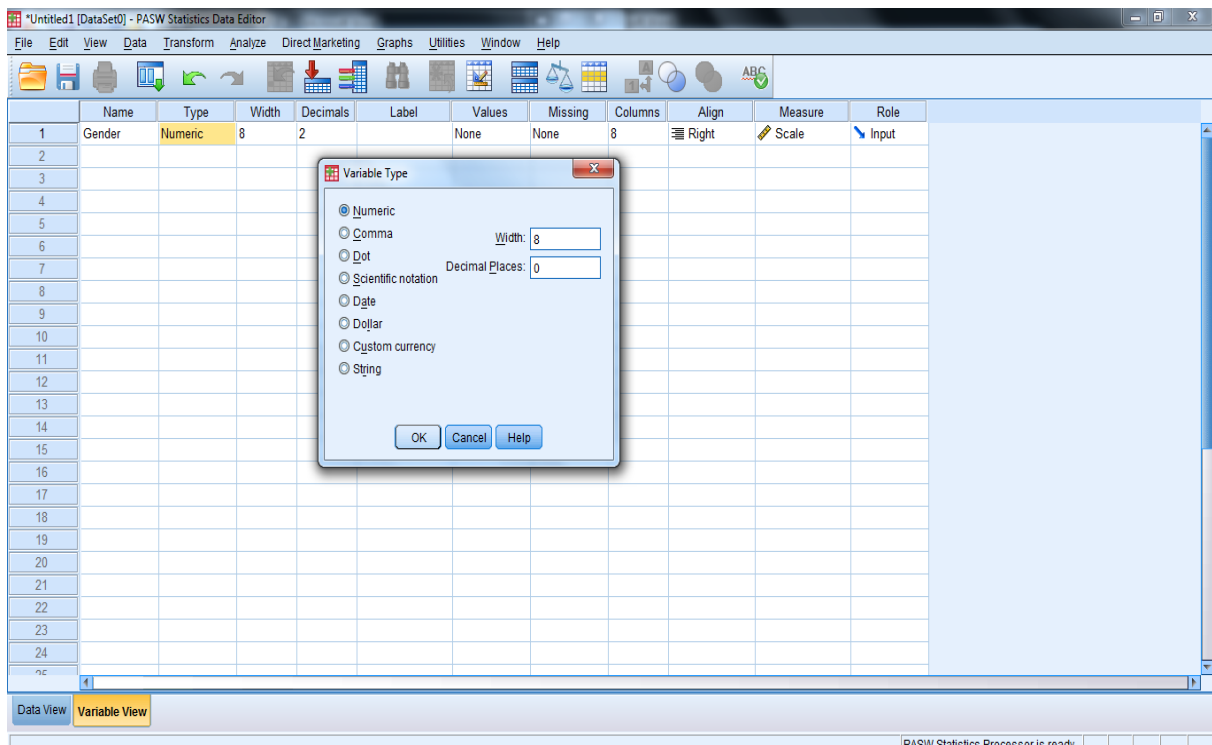
Click on **Variable View** tab to define the variables.

To define the first variable (*i.e.* gender), left click on the first column in the first row under the **Name** column and type in *gender*.



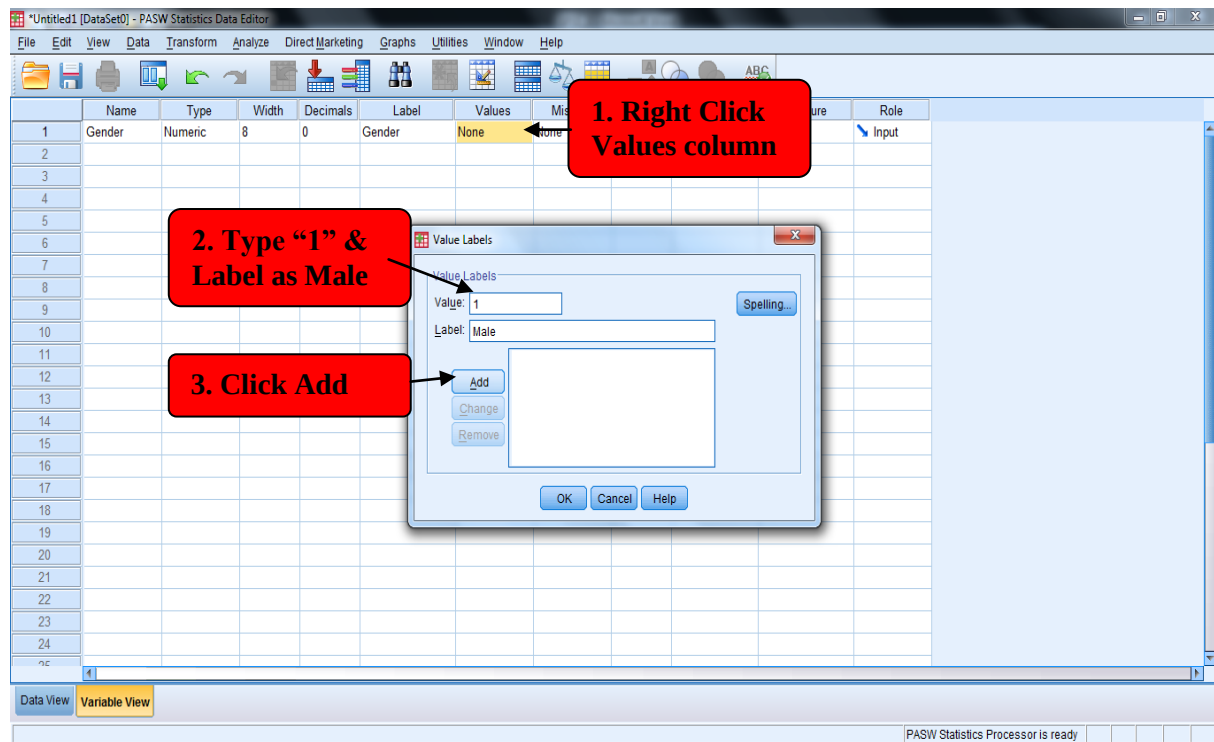
Move the cursor using the left arrow → on the keyboard to the **Type** column.

Since gender is coded as “1” and “2”, it can be declared as *Numeric*. If gender is coded as “m” and “f” then you will need to select **String**. Use the default *Numeric* type and click on **OK**.



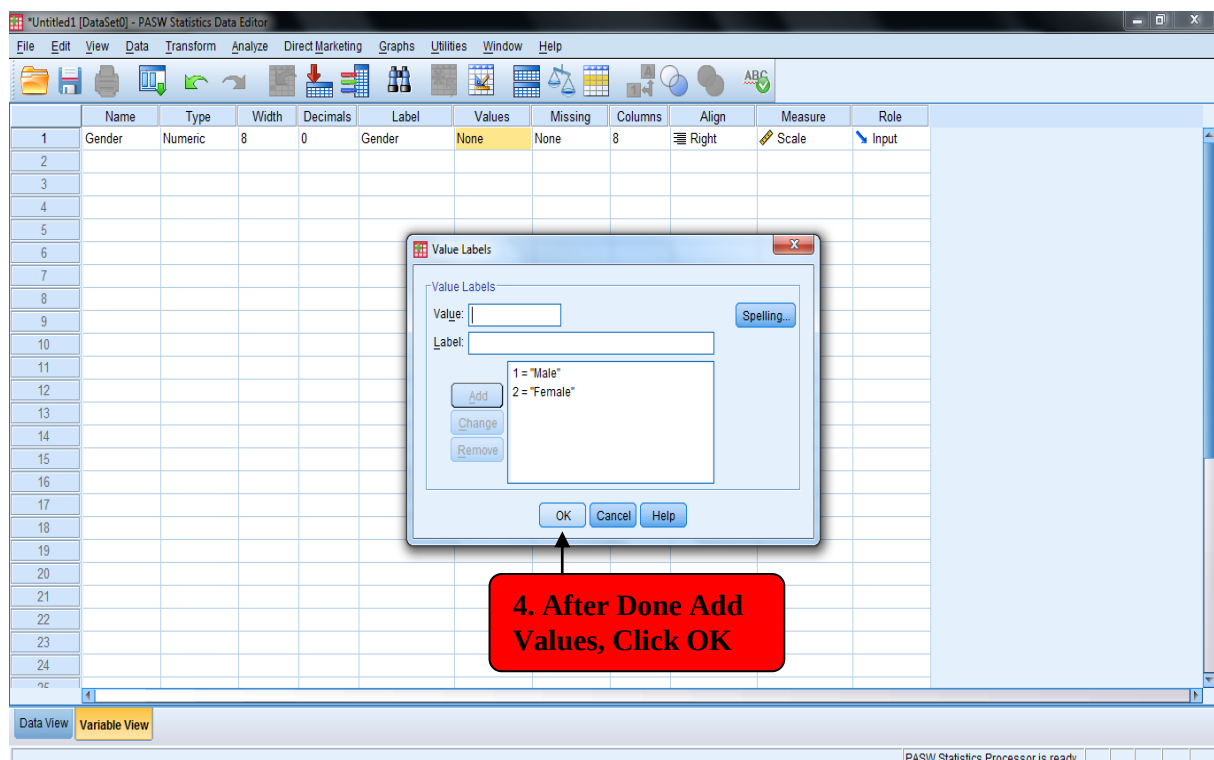
We will use the default setting for **Width**.

In the **Decimals** columns, the default decimal place is 2. Decrease the decimal to **zero** as gender is a categorical variable and not measured on a continuous scale. Move the cursor using the left arrow → on the keyboard to the **Label** column and type **gender**. Next, move the cursor using the left arrow → on the keyboard to the **Values** column. Click on the small grey square button and the Value Labels dialogue window appears. Type **1** in the **Value** box. Next, type **male** in the **Label** box and click on **Add** button.



Repeat and Type 2 in the Value box.

Then, type *female* in the **Label** box and click on **Add** and OK



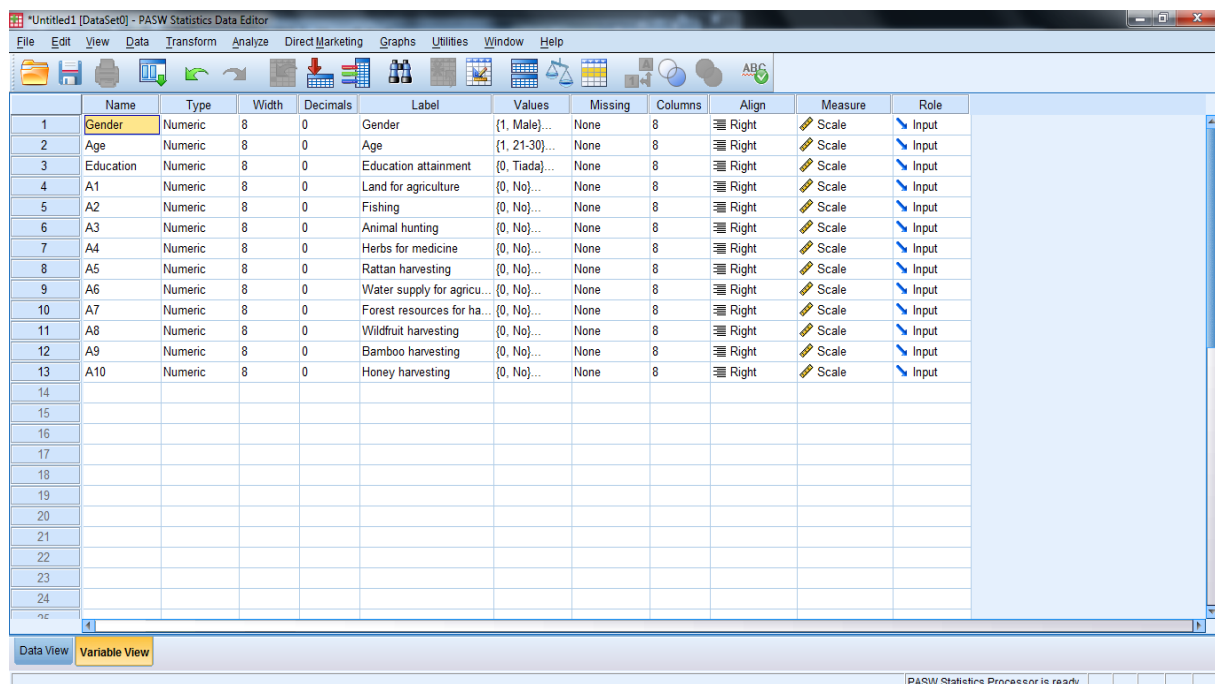
Continue defining the other variables as listed below.

Name	Type	Label	Values
gender	numeric	Gender	1=male 2=female
age	numeric	Age	1=21-30 2=31-40 3=41-50 4=above 50
education	numeric	Education attainment	0=Tiada 1=Sek Ren 2=Sek Men 3=Tgkt 6 4=Kolej &U
A1	numeric	Land for agriculture	1=Yes 0=No
A2	numeric	Fishing	
A3	numeric	Animal hunting	
A4	numeric	Herbs for medicine	
A5	numeric	Rattan harvesting	
A6	numeric	Water supply for agriculture	
A7	numeric	Forest resources for handcraft	
A8	numeric	Wildfruit harvesting	
A9	numeric	Bamboo harvesting	
A10	numeric	Honey harvesting	

2.1 Defining Variables Rules

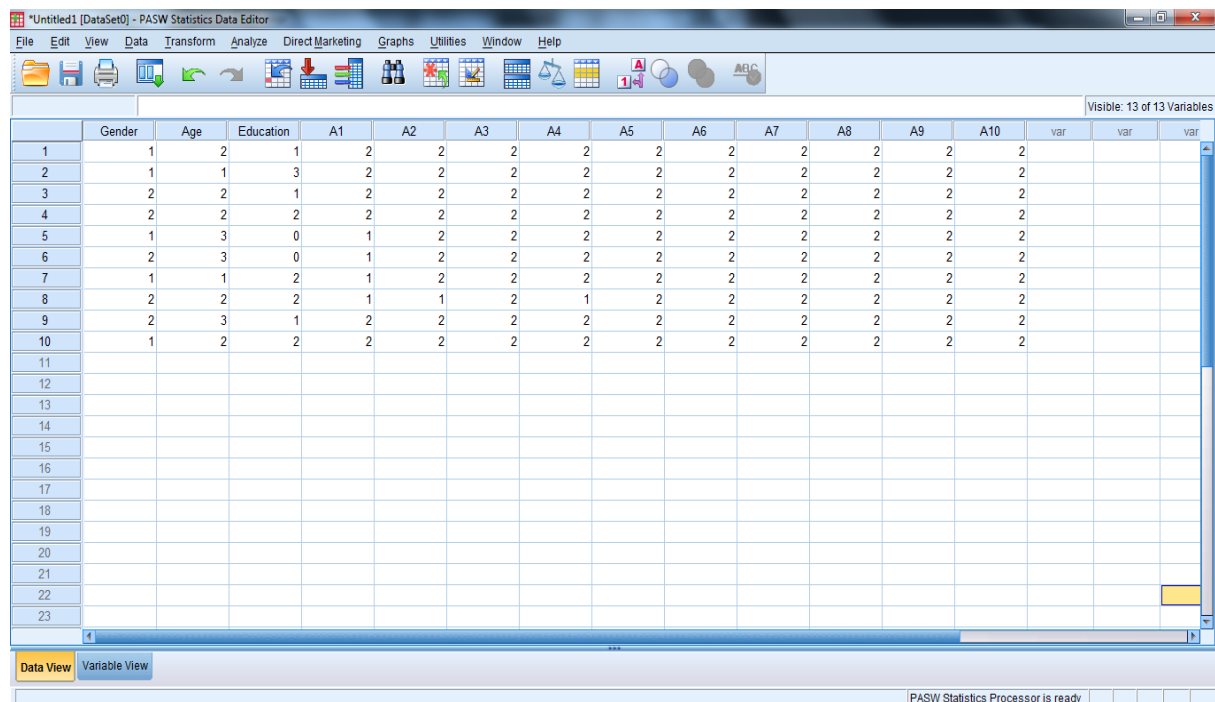
- Must begin with a letter
- Cannot end with a full stop or underscore
- Blanks, space and special characters (such as ?, “ .!, *) cannot be used.
- Duplication of variable names is not allowed.

The **Variable View** window with all variables defined is shown below:



Click on the **Data View** button at the lower left corner to get back to the **DATA EDITOR** window.

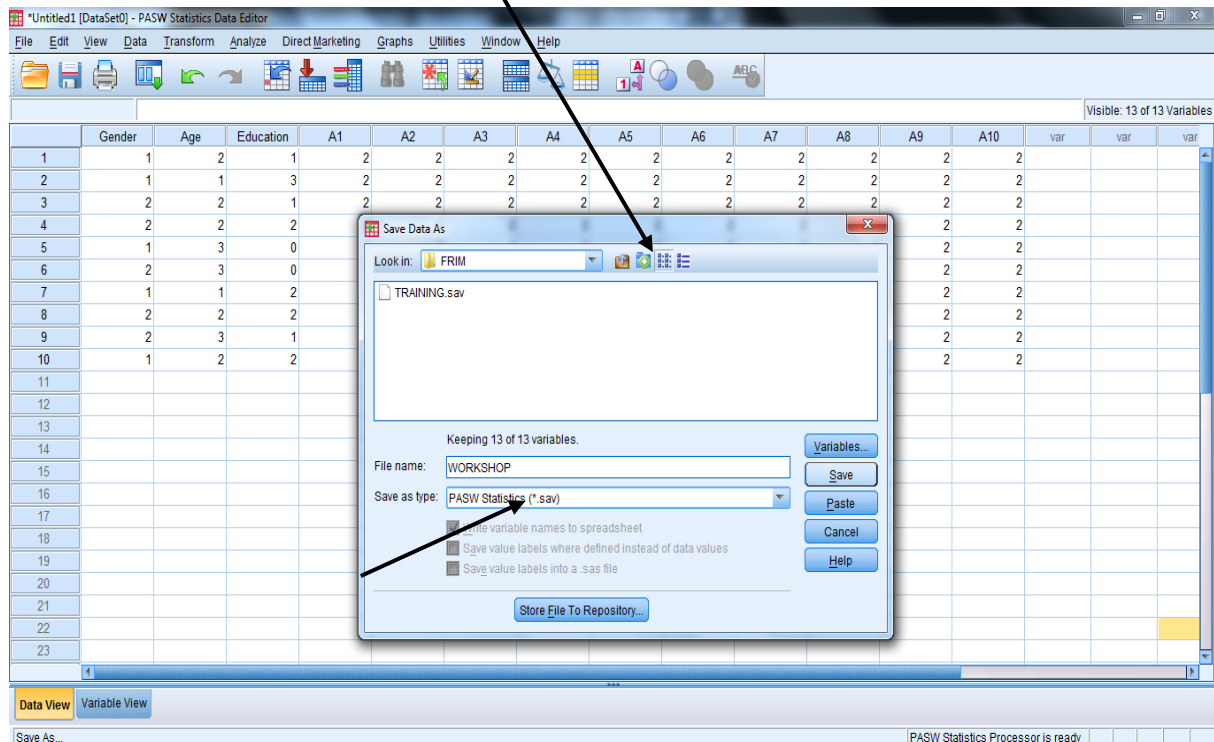
Enter the data for the first five respondents as shown below:



Click on the **File** menu and select **Save As**.

The **Save Data As** dialogue window appears

Under **Save in**, select the location (or folder) where you want to save your file by clicking on the down arrow ▼.



Type in *survey* in the **File name** box below the list of SPSS data files.

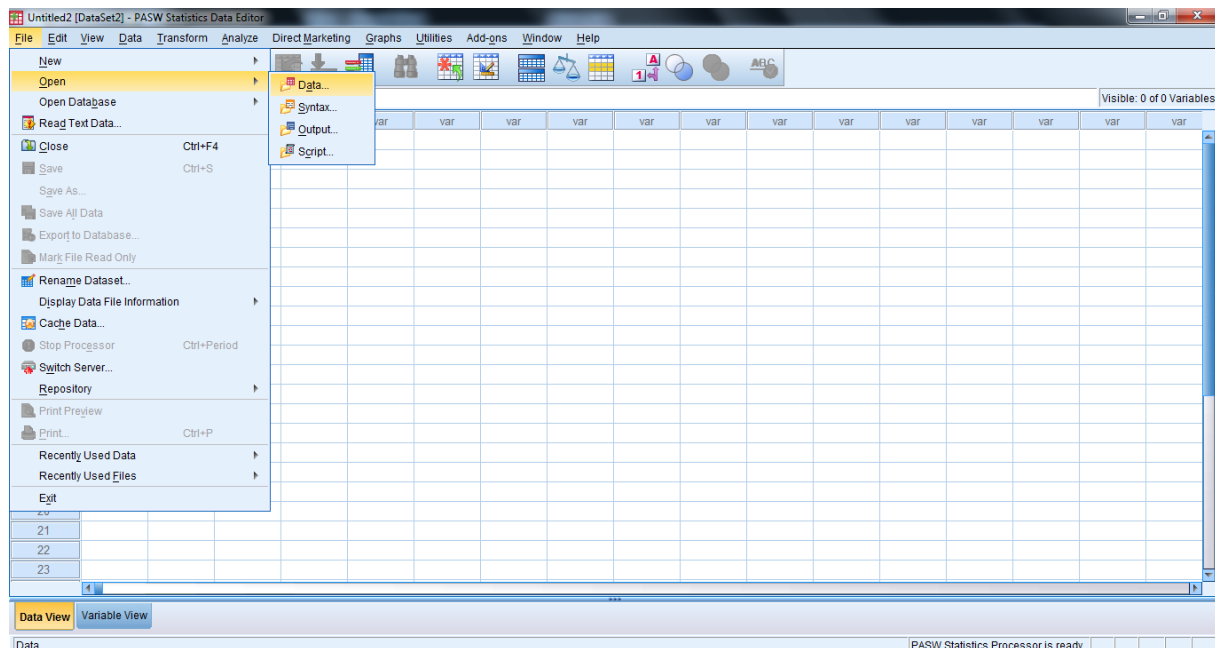
By default, the **Save As** type is SPSS (*.sav) for SPSS data file.

In this example, the *survey.sav* data is saved in the **FRIM** folder.

2.2 Importing Excel Files

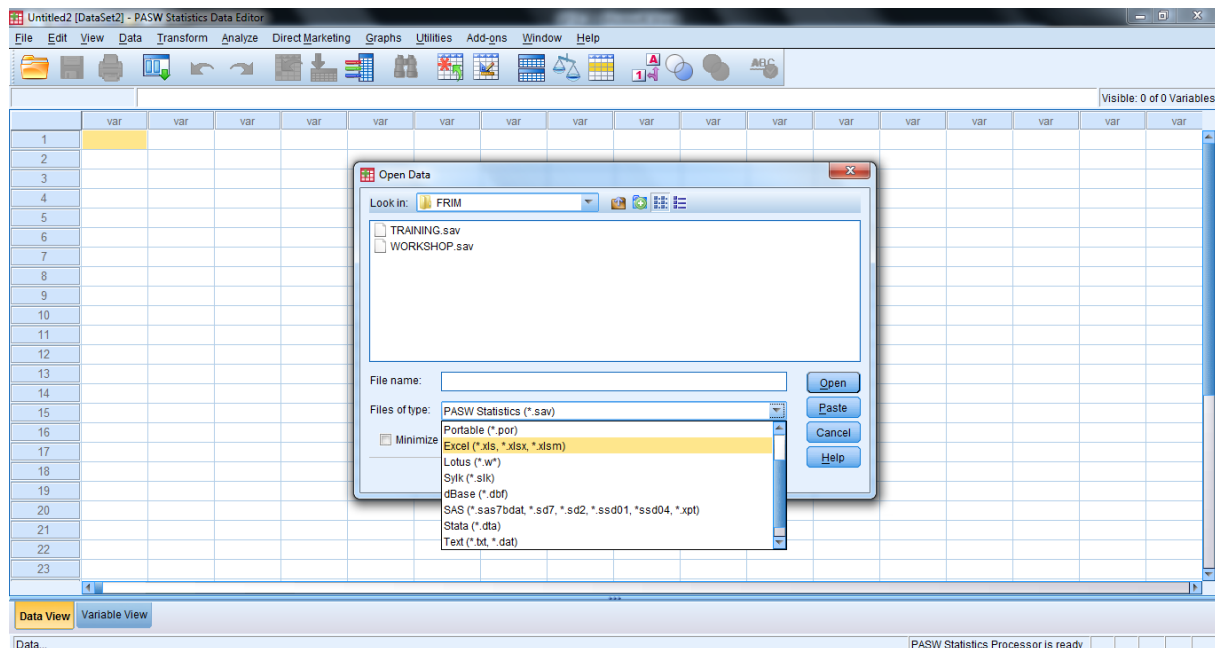
This section illustrates how to import Excel data files into SPSS.

Go to the **File** menu, select **Open** and **Data**.

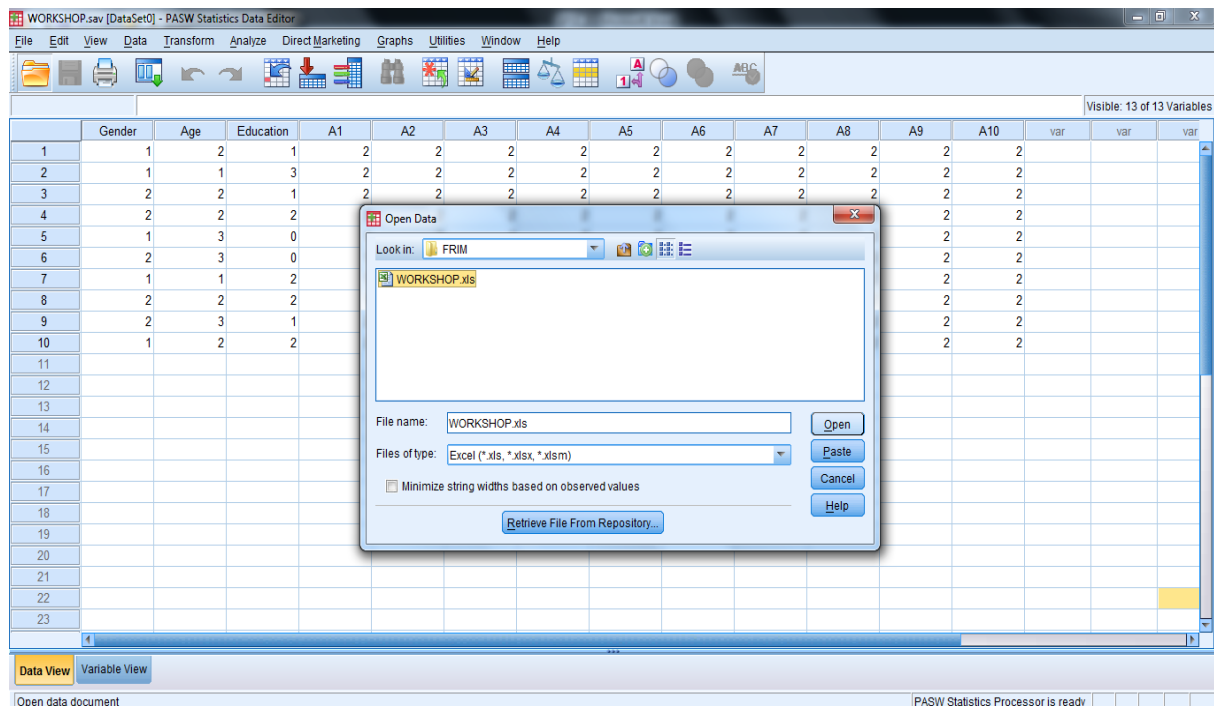


From the **Open Data** dialogue window, under **Look in**, click on the down arrow ▼ and select the folder **FRIM**.

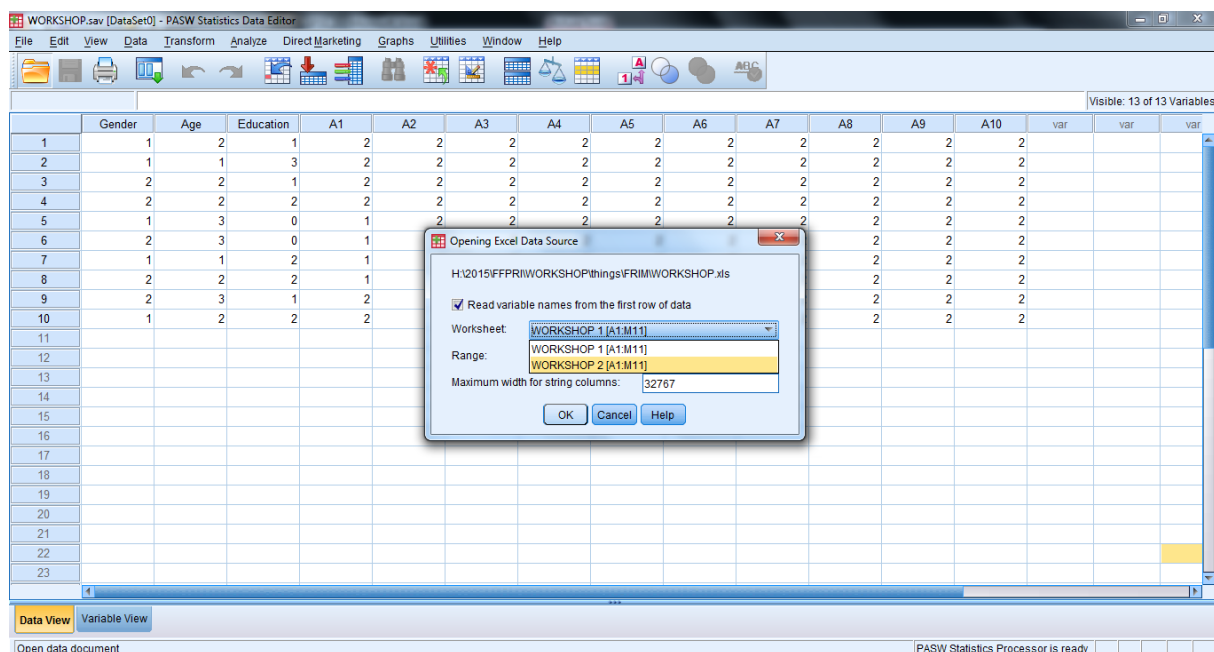
Next, under **File of type**, click on the down arrow ▼ and select Excel (*.xls).



Select the *WORKSHOP.xls* data in Excel format and click Open.

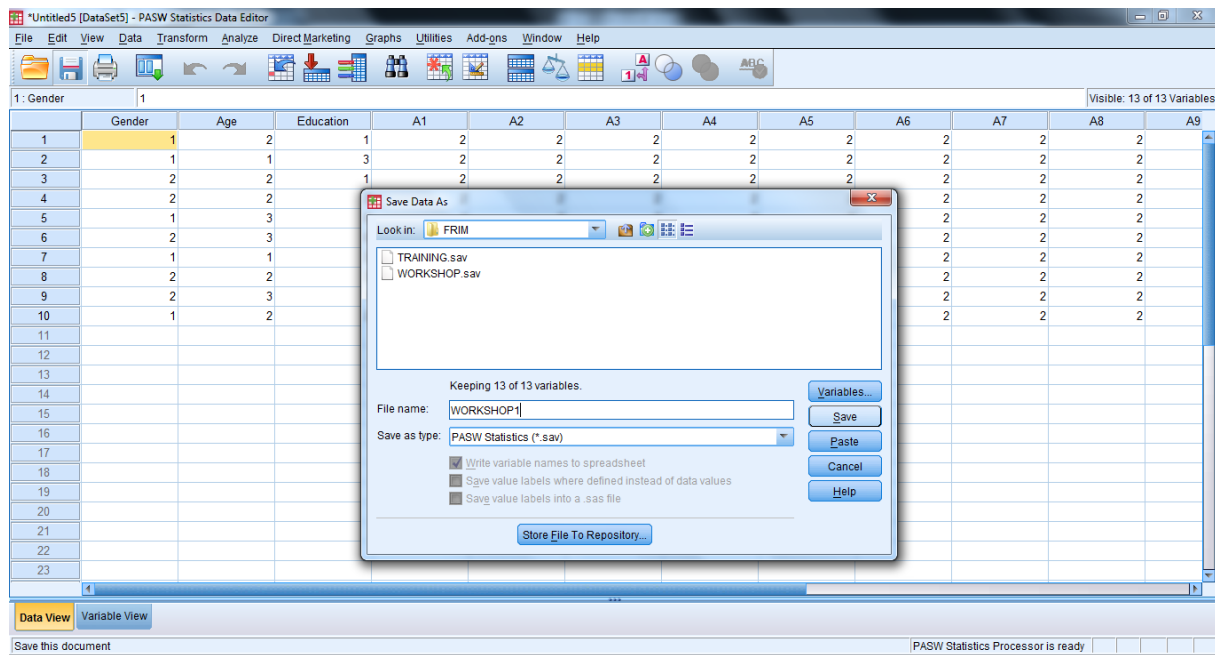


In the **Opening Data Source** dialogue window, under Worksheet window, click the down arrow ▼ and three Excel worksheets will be displayed. Select the first worksheet WORKSHOP ([A1:M1]).

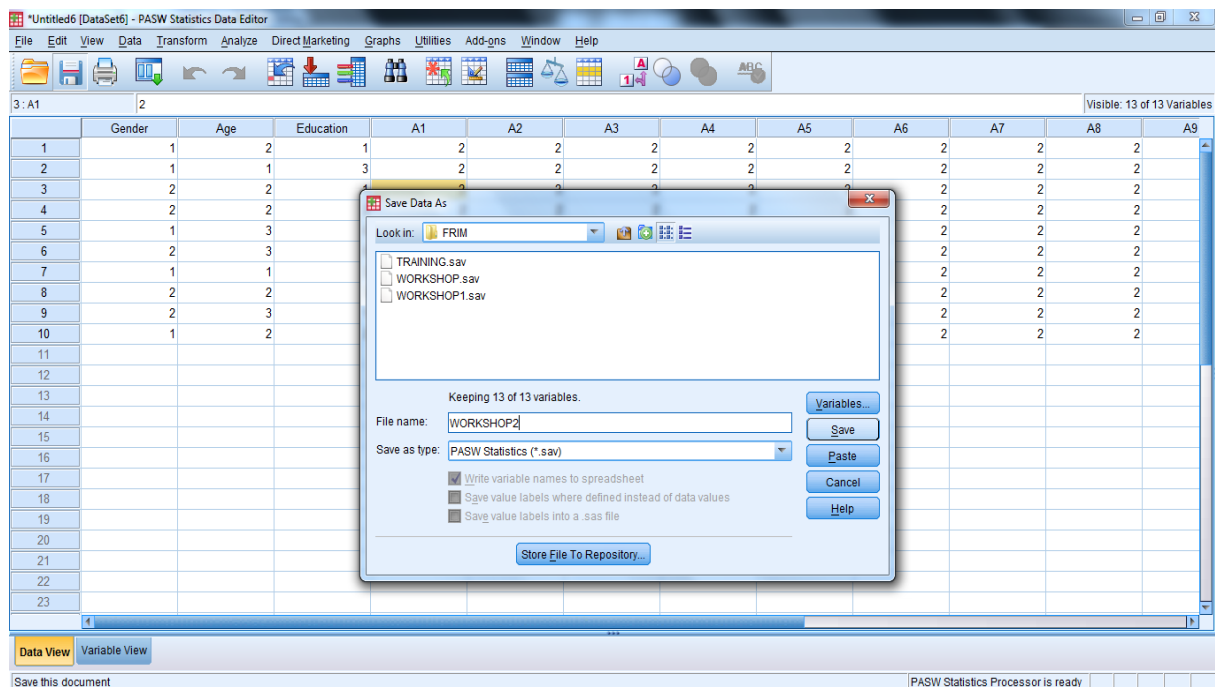


Click **OK** and the data appears in the **SPSS DATA EDITOR** window.

Click on the **File** menu, select **Save As**. In the **Save As In** dialogue window, under File name, type in *WORKSHOP1* and click **Save**.



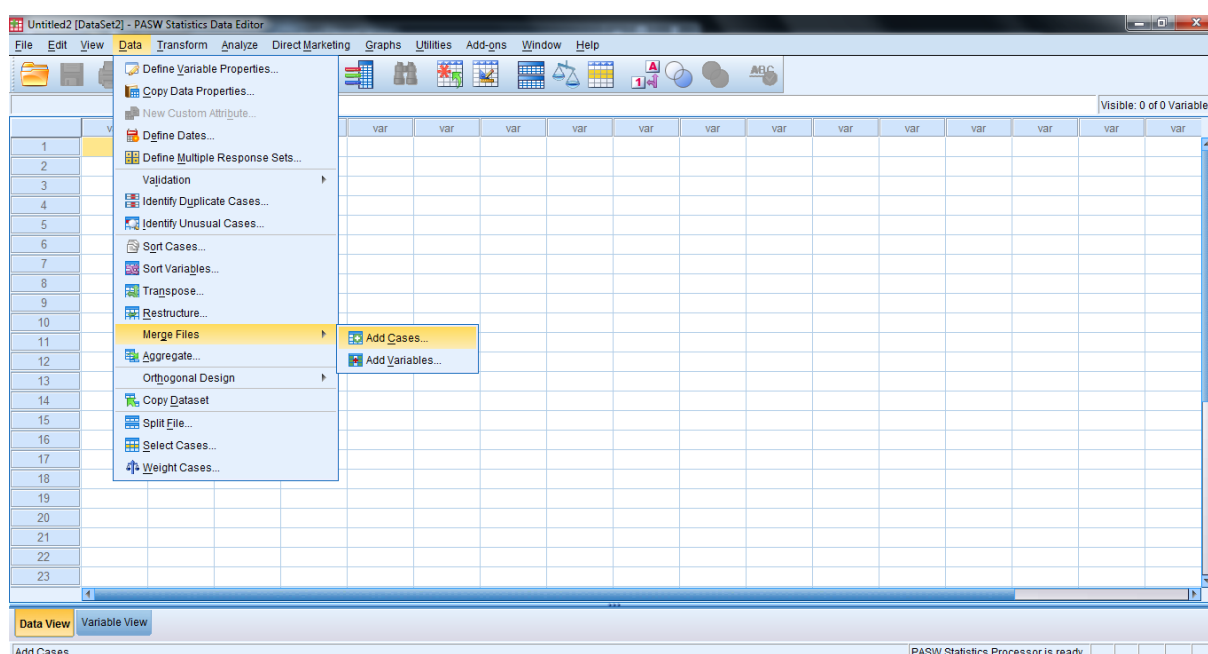
Repeat the whole process and import in the second Excel worksheet and save it as *WORKSHOP2*.

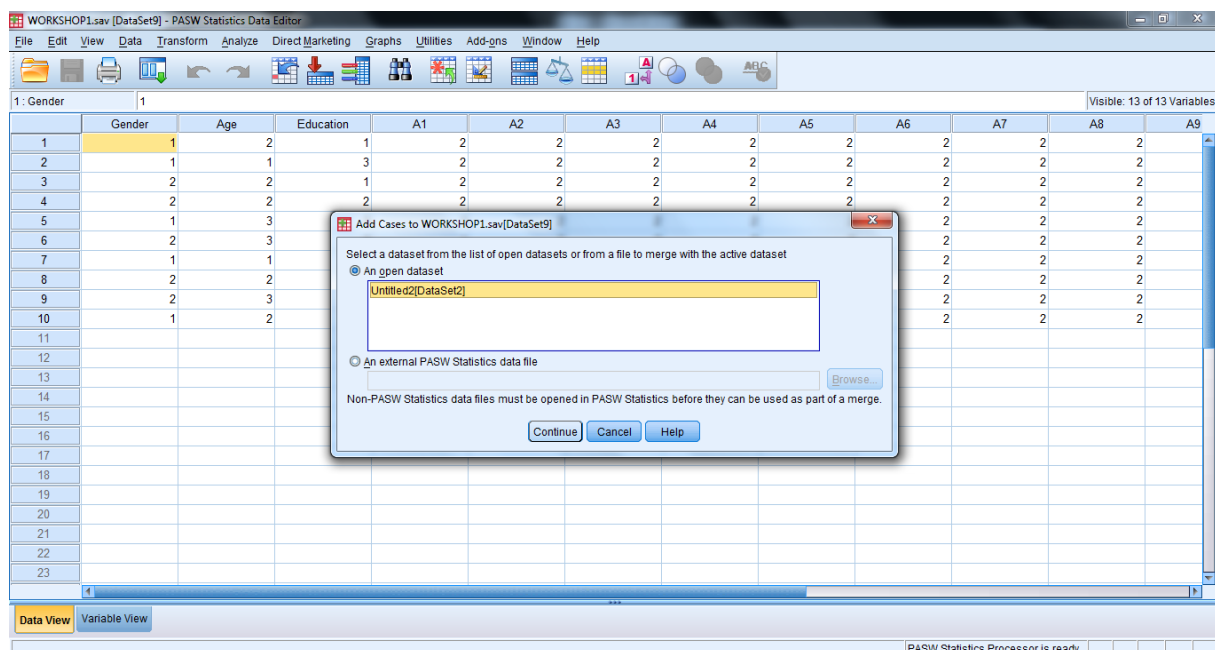
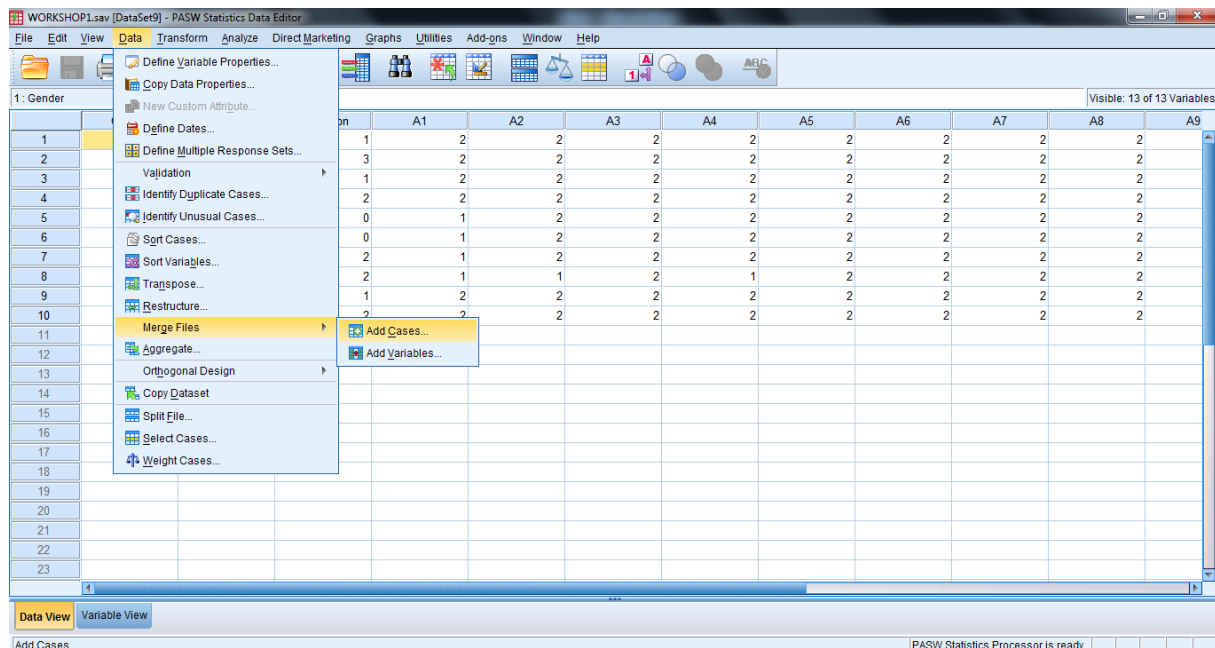


This section illustrates how to merge three SPSS data file into one file.

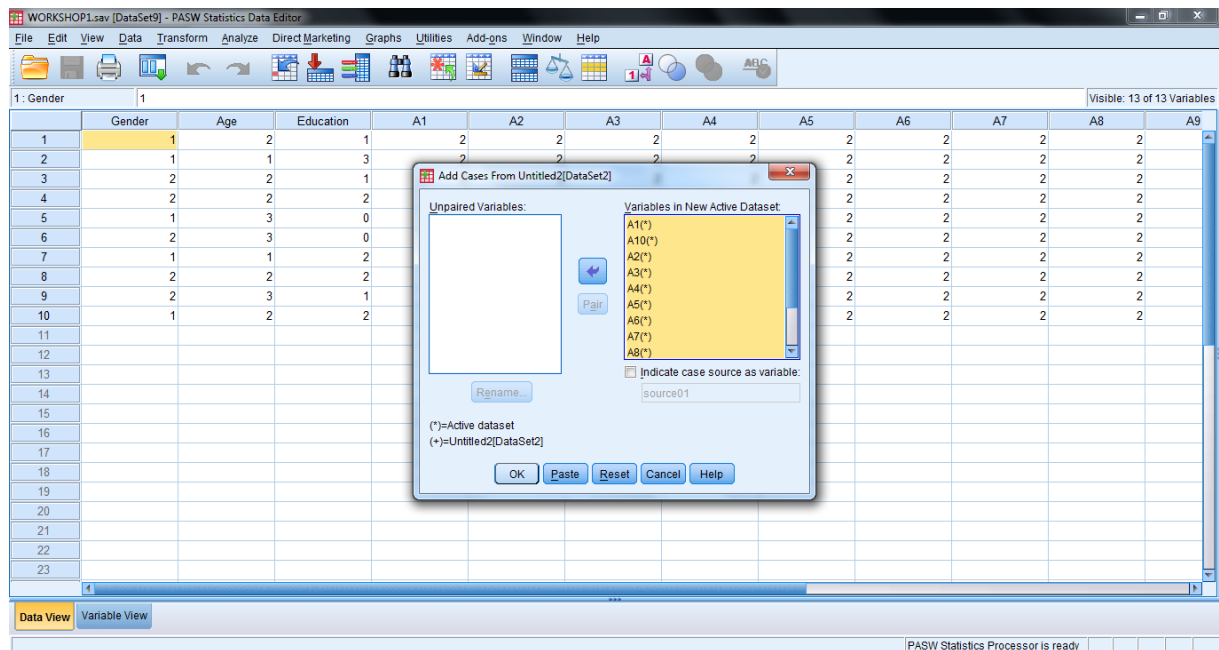
Open the *WORKSHOP1* SPSS data file using File, Open Data. From the **Data** menu, select **Merge files** and **Add Cases**. In the dialogue window **Add cases to WORKSHOP1**, under **An Open data set**, select *WORKSHOP2* and click **Continue**.

Note that you will have to click on the **An External SPSS data file** button and **Browse** to locate *WORKSHOP2* if it is not an open data set.





In the **Add Cases** from *WORKSHOP2* dialogue window, make sure that all the variables are listed in the **Variables in Active data set** box. Click **OK** and the 73 observations in *WORKSHOP2* will be included into the *WORKSHOP1* SPSS data set.



WORKSHOP1.sav [DataSet1] - PASW Statistics Data Editor

File Edit View Data Transform Analyze Direct Marketing Graphs Utilities Add-ons Window Help

1: Gender 1 Visible: 13 of 13 Variables

	Gender	Age	Education	A1	A2	A3	A4	A5	A6	A7	A8	A9
1	1	2	1	2	2	2	2	2	2	2	2	2
2	1	1	3	2	2	2	2	2	2	2	2	2
3	2	2	1	2	2	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2	2	2	2	2	2
5	1	3	0	1	2	2	2	2	2	2	2	2
6	2	3	0	1	2	2	2	2	2	2	2	2
7	1	1	2	1	2	2	2	2	2	2	2	2
8	2	2	2	1	1	2	2	1	2	2	2	2
9	2	3	1	2	2	2	2	2	2	2	2	2
10	1	2	2	2	2	2	2	2	2	2	2	2
11	1	2	1	2	2	2	2	2	2	2	2	2
12	1	1	3	2	2	2	2	2	2	2	2	2
13	2	2	1	2	2	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2	2	2	2	2	2
15	1	3	0	1	2	2	2	2	2	2	2	2
16	2	3	0	1	2	2	2	2	2	2	2	2
17	1	1	2	1	2	2	2	2	2	2	2	2
18	2	2	2	1	1	2	2	1	2	2	2	2
19	2	3	1	2	2	2	2	2	2	2	2	2
20	1	2	2	2	2	2	2	2	2	2	2	2
21												
22												
23												

Data View Variable View

PASW Statistics Processor is ready

Click on **File**, select **Save As** and type *WORKSHOP_merge* in the **File Name** box.
This SPSS data set contains observations from all three data sets.

3.0 DESCRIPTIVE STATISTICS AND CREATING CHARTS

Quantitative analysis should always start with some descriptive statistics and charts before moving on to inferential statistics which involves modeling and hypothesis testing. Simple descriptive statistics involve reporting the mean or median and standard deviation of continuous variables, and the frequency distribution and percentages for categorical variables. Charts are informative visual aids for summarizing results and makes report looks interesting.

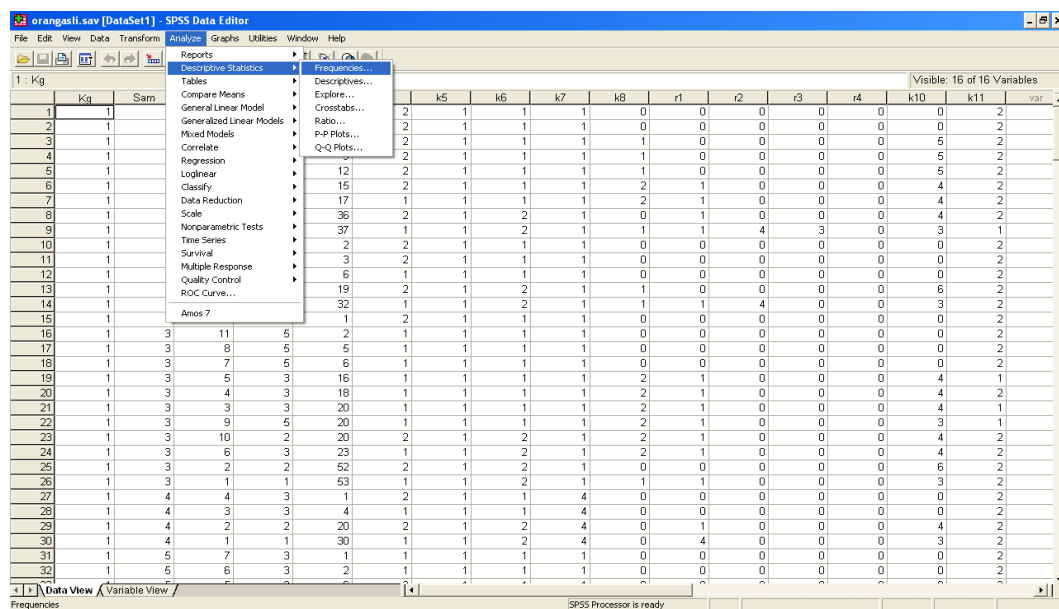
3.1 Descriptive Statistics

This section illustrates obtaining frequency distribution for categorical variables and descriptive statistics for continuous variables using SPSS.

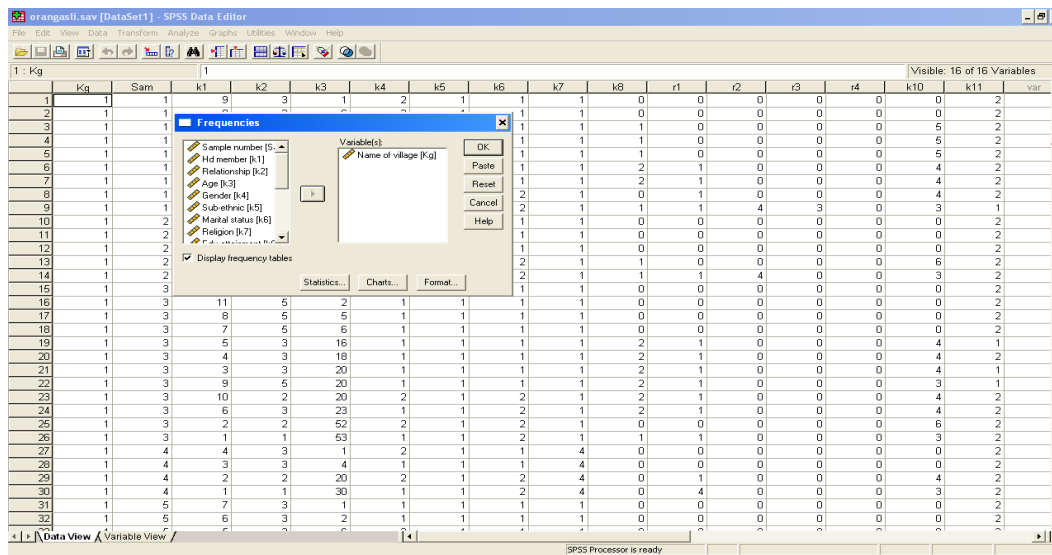
3.1.1 Obtaining frequency distribution

Open the *orangasli.sav* file

Click on **Analyze** and select **Descriptive Statistics** and then **Frequencies**.



The **Frequencies** dialogue box appears. Select the variable “*Name of Village*” and click on the middle button ► to move it to the **Variable(s)** box.



The SPSS output is shown below:

Statistics

Name of village

N	Valid	239
	Missing	0

Kg

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1 Sg Raba	78	32.6	32.6	32.6
	2 Sg Banun	39	16.3	16.3	49.0
	4 Desa Permai	52	21.8	21.8	70.7
	5 Desa Damai	42	17.6	17.6	88.3
	6 Ria	28	11.7	11.7	100.0
	Total	239	100.0	100.0	

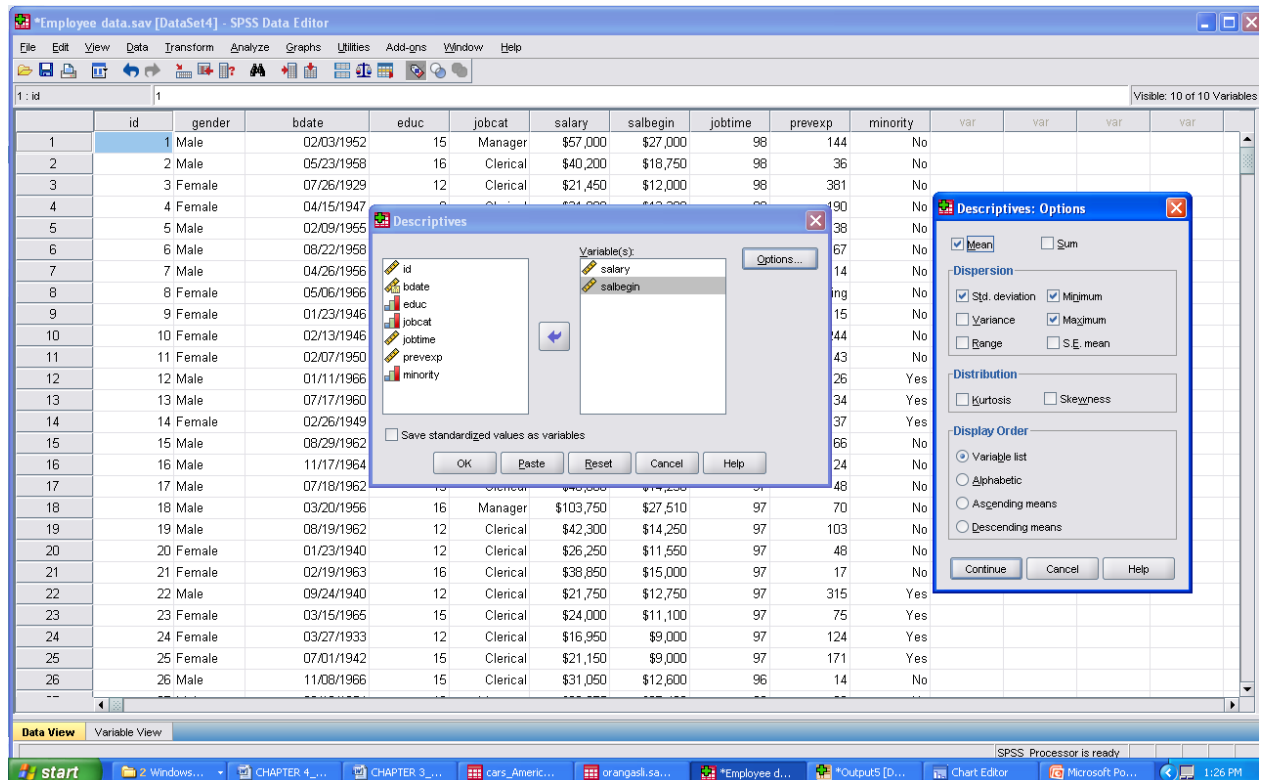
Note that since there are no missing values the Percent and Valid Percent values are the same.

3.1.2 Descriptive statistics

Open the *Employee Data.sav* file

Click on **Analyze** and select **Descriptive Statistics** and then **Descriptives**.

In the **Descriptives** window, select the variable 'salary' and 'salbegin' and move them into the **Variable(s)** box.



Click on the **Options** tab and the **Descriptive:Options** dialogue window appears.

By default the boxes for **Mean**, **Std. Deviation**, **Minimum** and **Maximum** are already checked. Under **Distribution**, click on the **Skewness** and **Kurtosis** boxes.

Then, click **Continue** and **OK**.

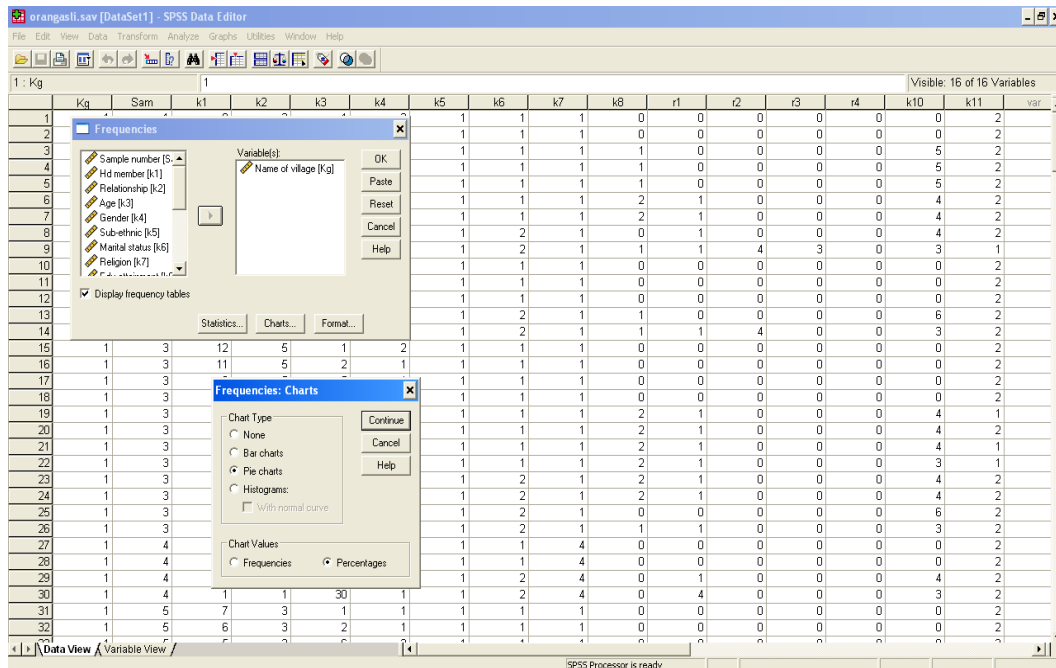
The descriptive statistics results will appear in the **OUTPUT** window.

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
Current Salary	474	\$15,750	\$135,000	\$34,419.57	\$17,075.661	2.125	.112	5.378	.224
Beginning Salary	474	\$9,000	\$79,980	\$17,016.09	\$7,870.638	2.853	.112	12.390	.224
Valid N (listwise)	474								

3.2 Creating Pie Charts

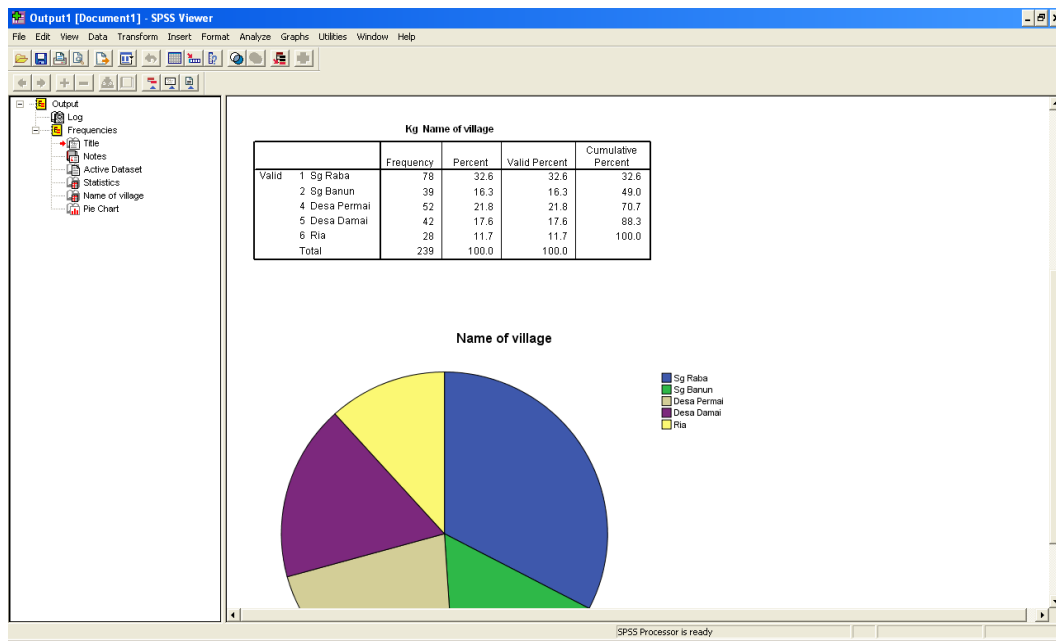
Click on the **Charts** button. Select **Pie Chart**. Under Chart Value, then select **Percentage**.



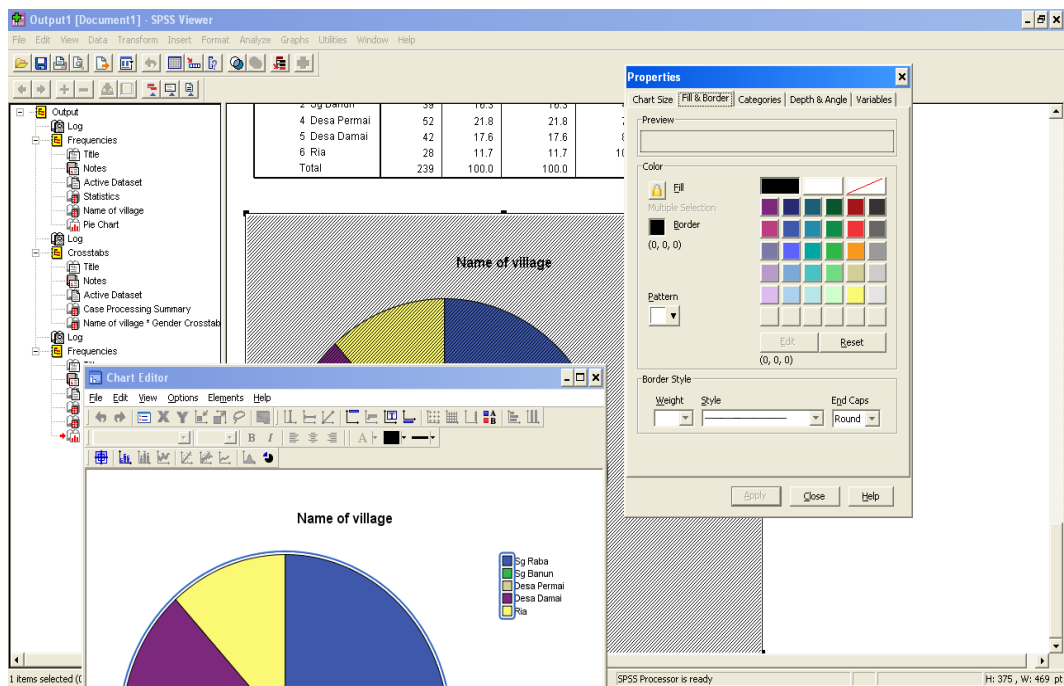
Click on **Continue** and then **OK**.

The pie chart will appear in the **OUTPUT** window.

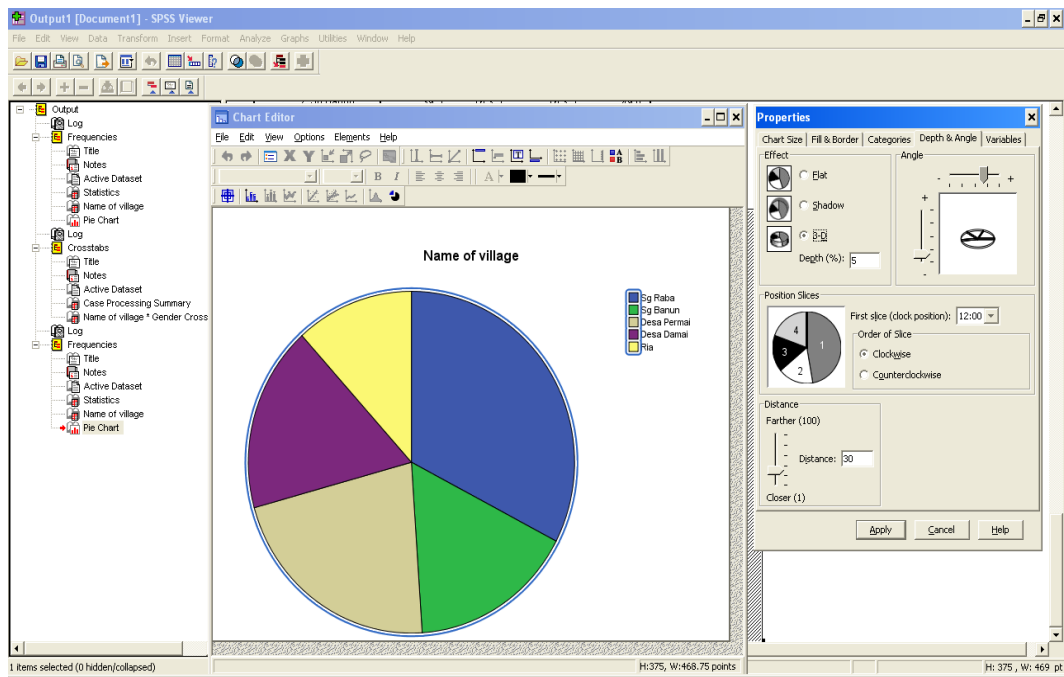
Double click on the pie-chart to activate the Chart editor



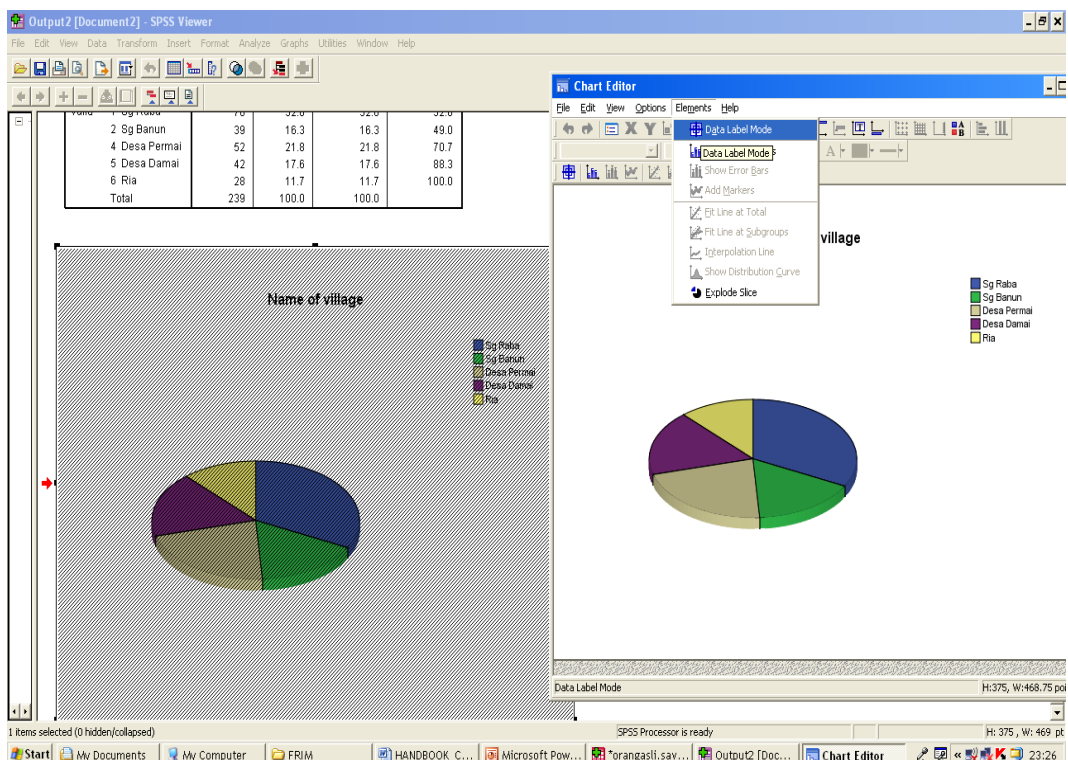
Double click again on the pie chart in the **Chart Editor** window and the **Properties** dialogue box appears. Click on **Depth & Angle**.



Click on the **3-D** radio button. Then, click on **Apply** and **Close**.

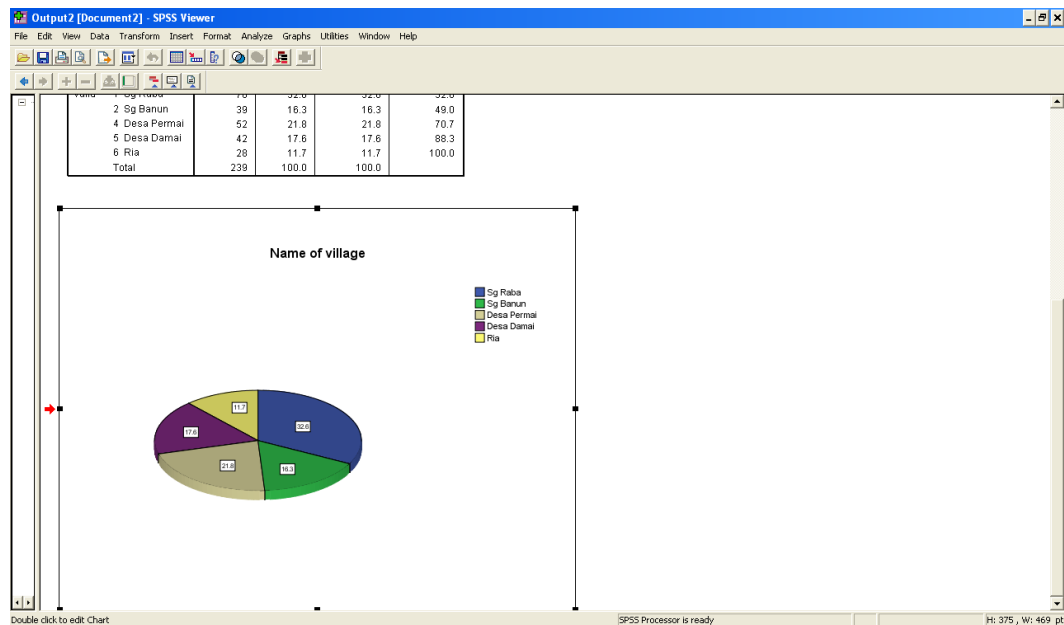


Double click on the 3-D pie-chart. From the **Elements** menu select **Data Label Mode** and click on each slice of the pie-chart to put in the percentage value.



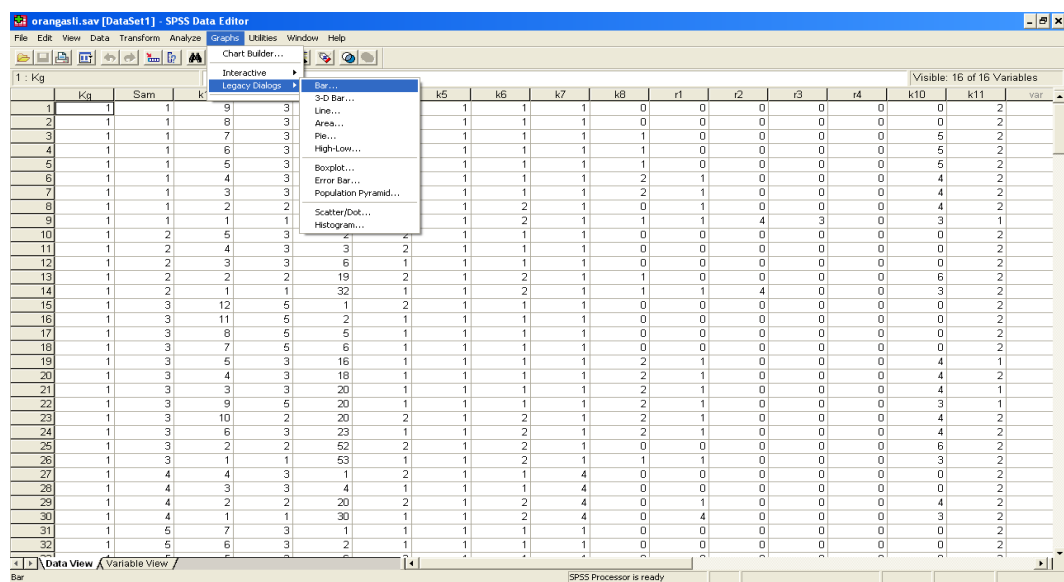
Click on **Elements** and **Data Label Mode** again to switch off the Data Label Mode.

Click on the **Minimize** button to return to the Output window. You have now created a 3-D pie-chart with percentage values for each segment.

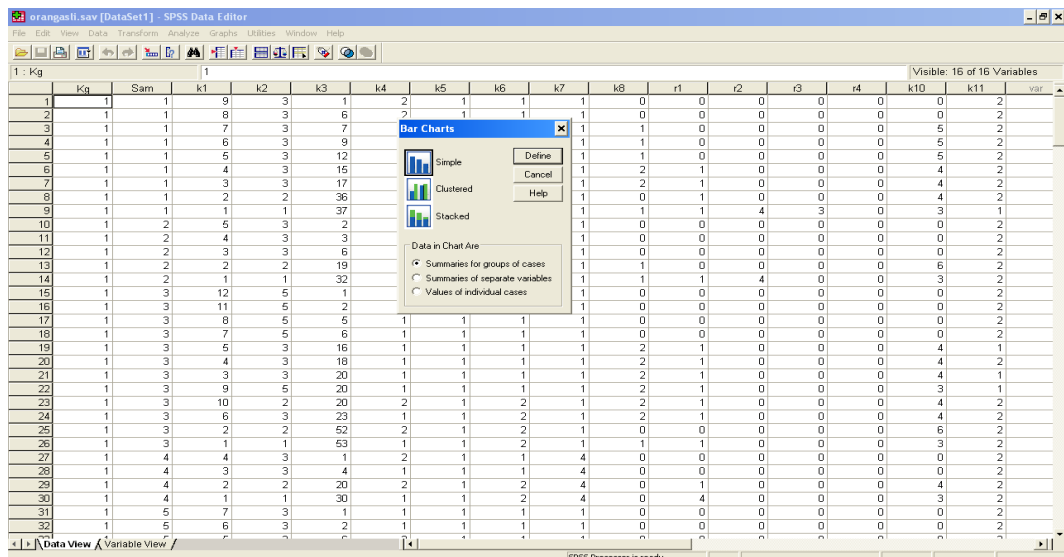


3.3 Creating Bar Charts

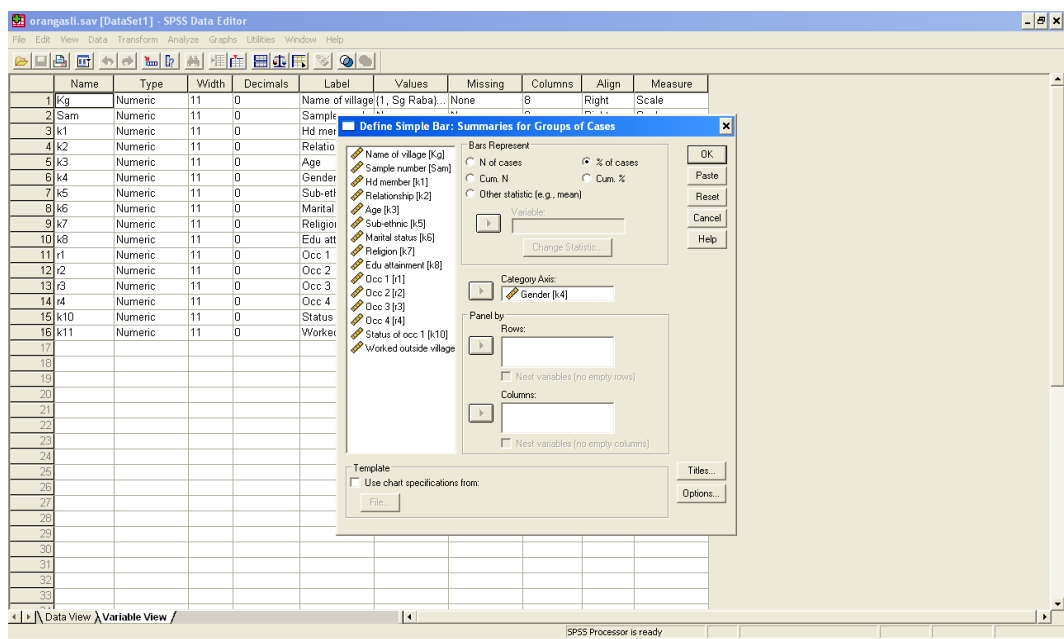
Click on **Graphs**, select **Legacy Dialogs** and **Bar**.



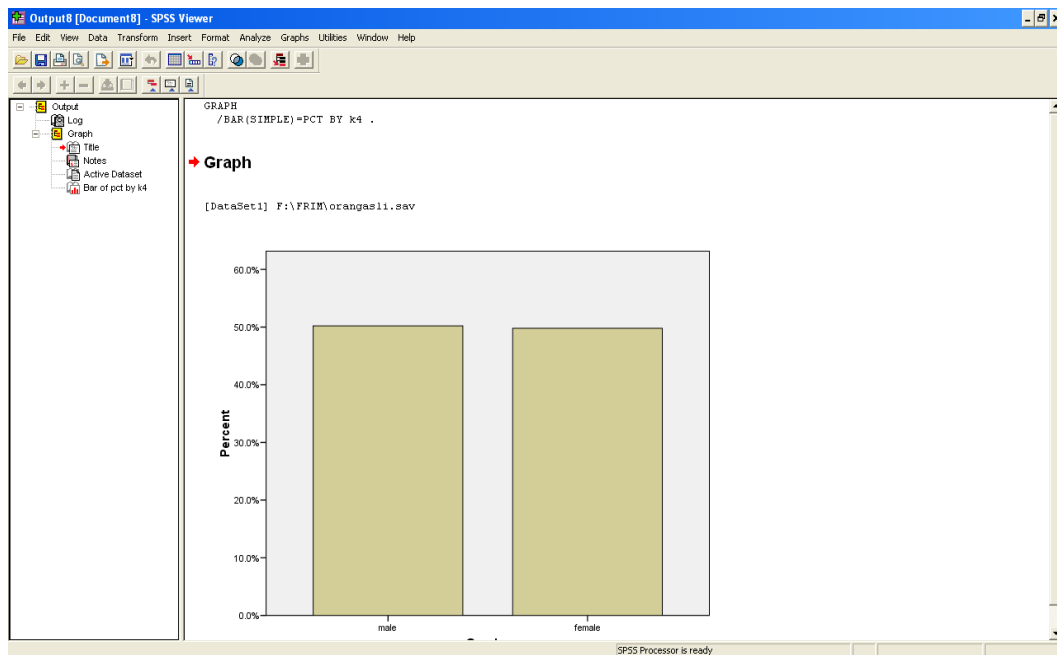
The **Bar Charts** dialogue window appears. Click on **Simple** and under *Data in Chart* use the default *"Summaries for groups of cases"*. Click on **Define**.



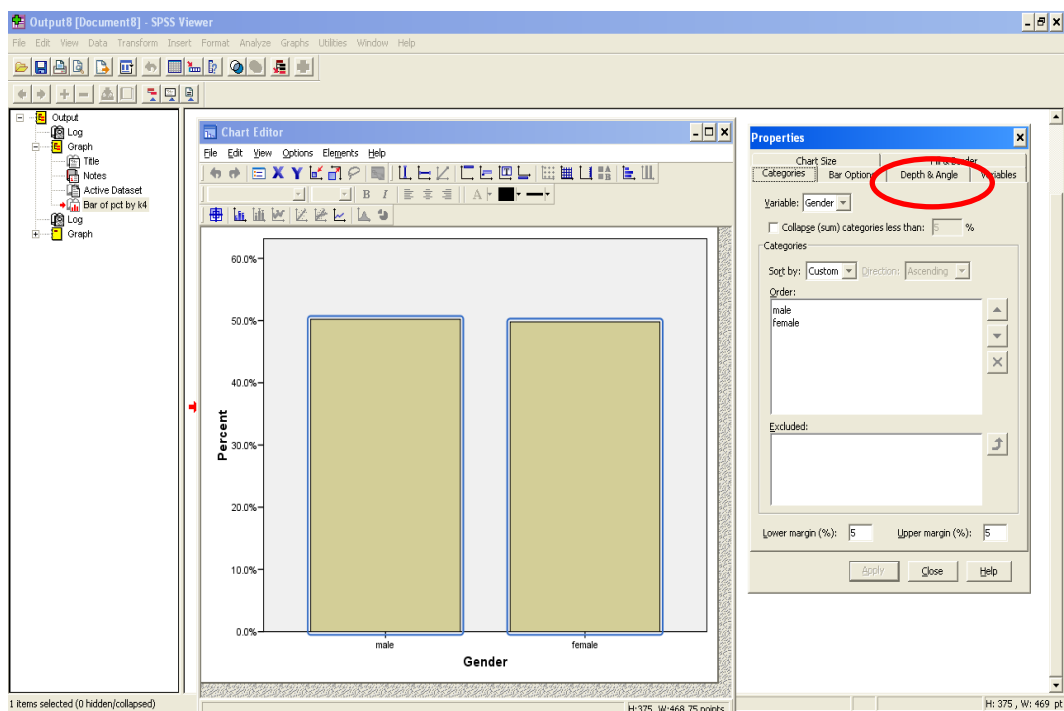
In the **Define Simple Bar:Summaries for Groups of Cases**, select **Gender** and move it to the **Category Axis** box. Click on the **% of cases** radio button and then click **OK**.



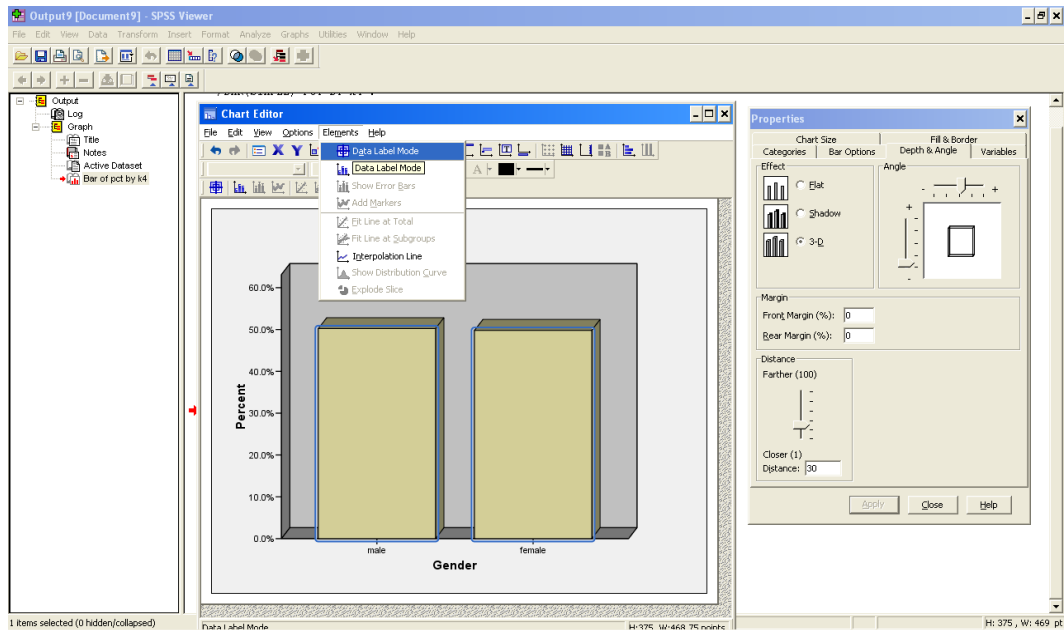
The simple bar chart for gender will appear in the **OUTPUT** window.



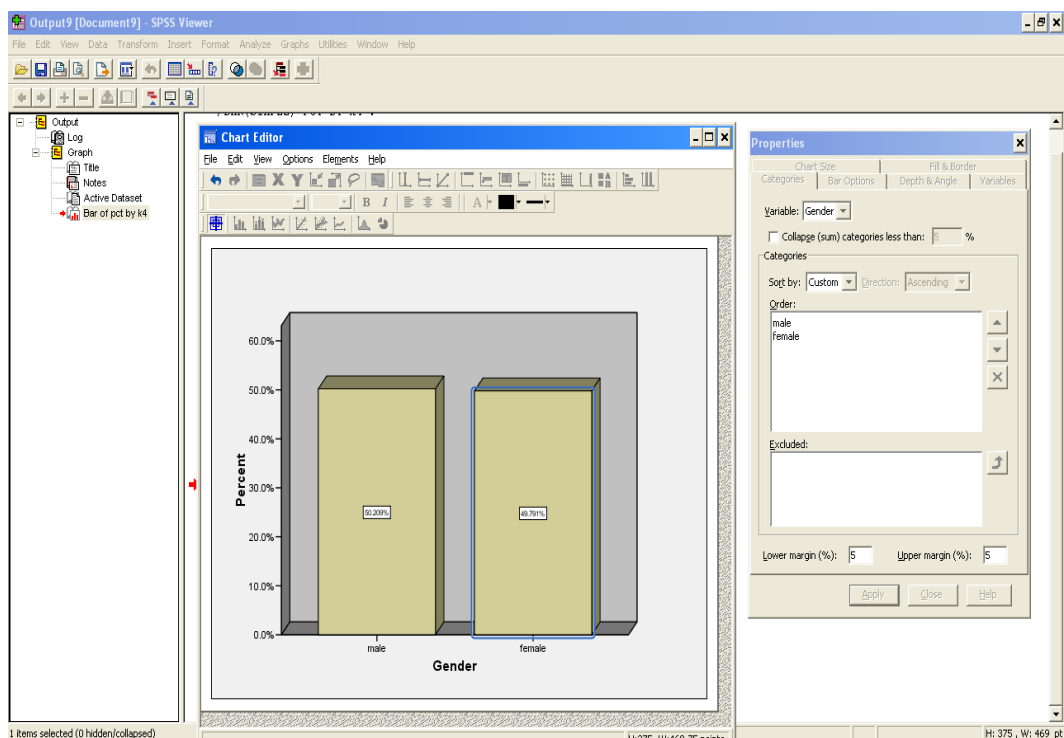
To create a 3-D simple bar chart, double click on the bar chart and the **Chart Editor** window appears. Double click on one of the bars and from the **Properties** dialogue box, click on **Depth & Angle**. Click on the **3-D** radio button and then click **Apply**.



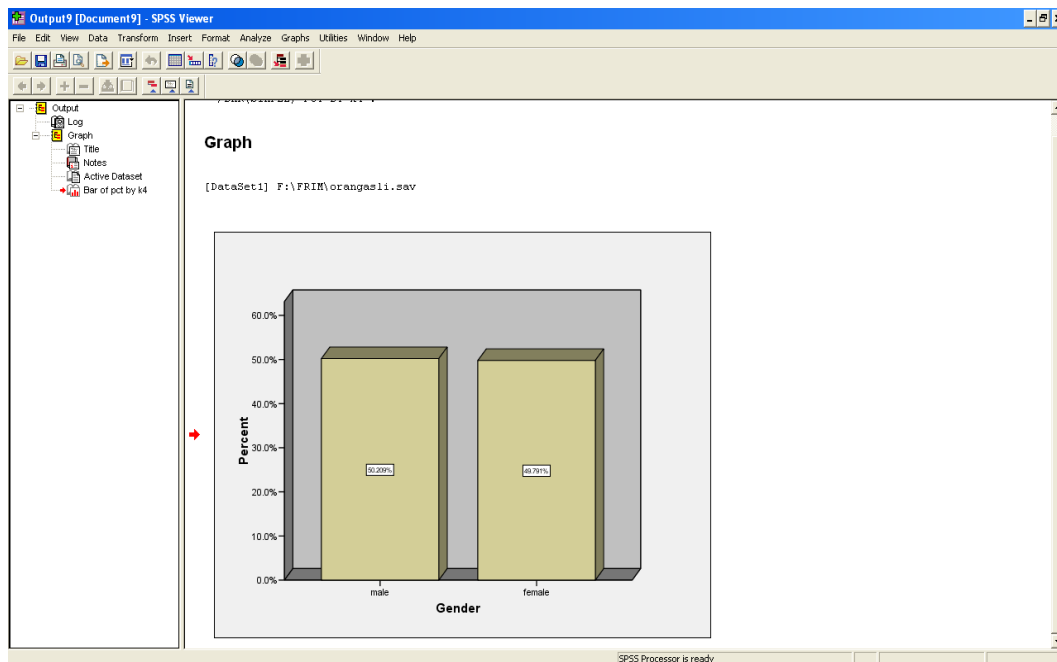
The 2-D simple bar chart changes to a 3-D chart. Click on **Elements** and select **Data Label Mode**.



Click on each of the bar and the percentage value will appear.



Close the **Chart Editor** window by clicking on the **Minimize** button. to view the 3-D bar chart in the **OUTPUT** window.



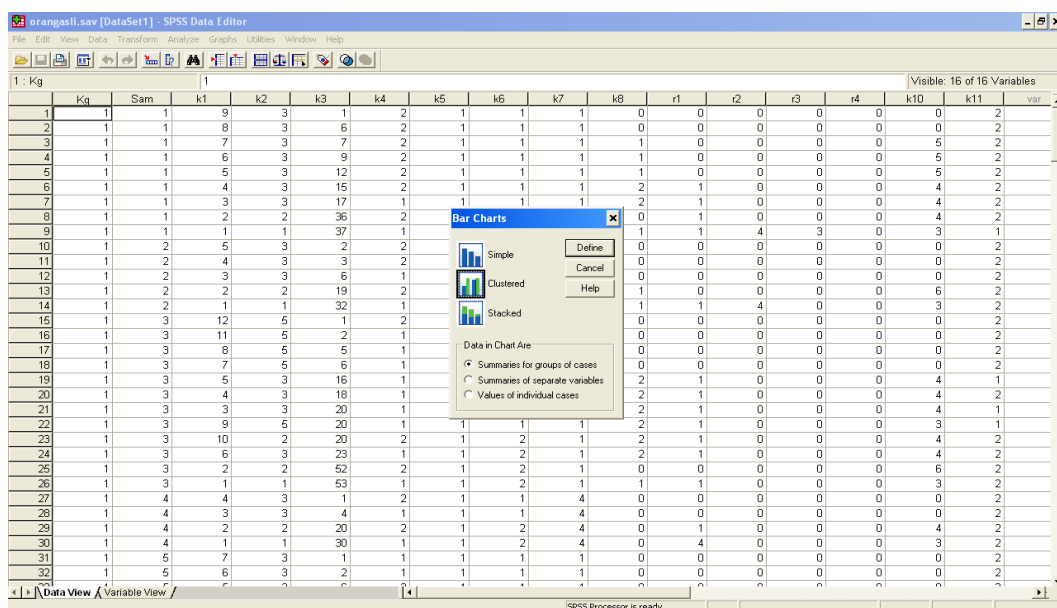
You can click on the bar chart in the Output window to select it.

Then, click on the **Edit** menu, select **Copy** and **Paste** the bar chart into a Word document or power-point slide.

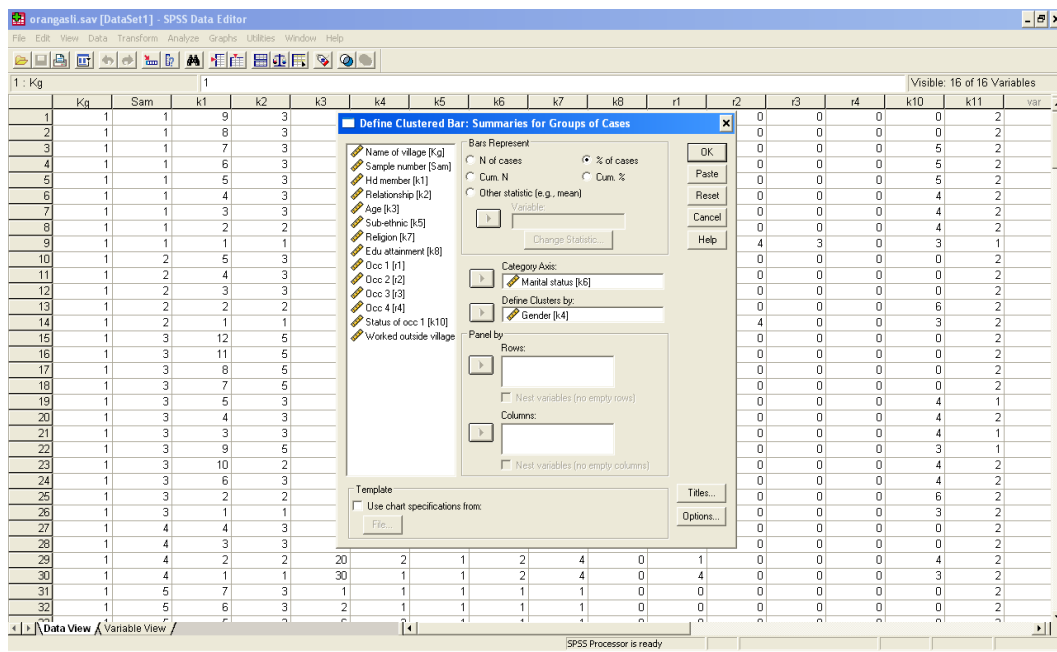
3.4 Creating Clustered Bar Charts

Click on **Graphs**, select **Legacy Dialogs** and **Bar**.

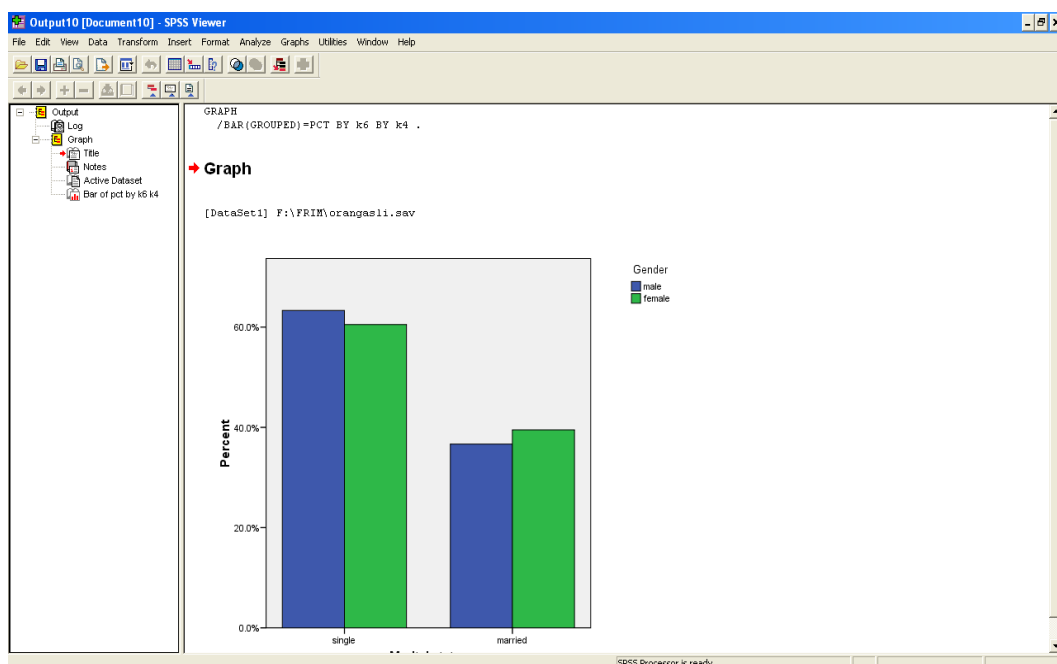
The **Bar Charts** dialogue window appears. Click on **Clustered** and under Data in Chart use the default *“Summaries for groups of cases”*. Click on **Define**.



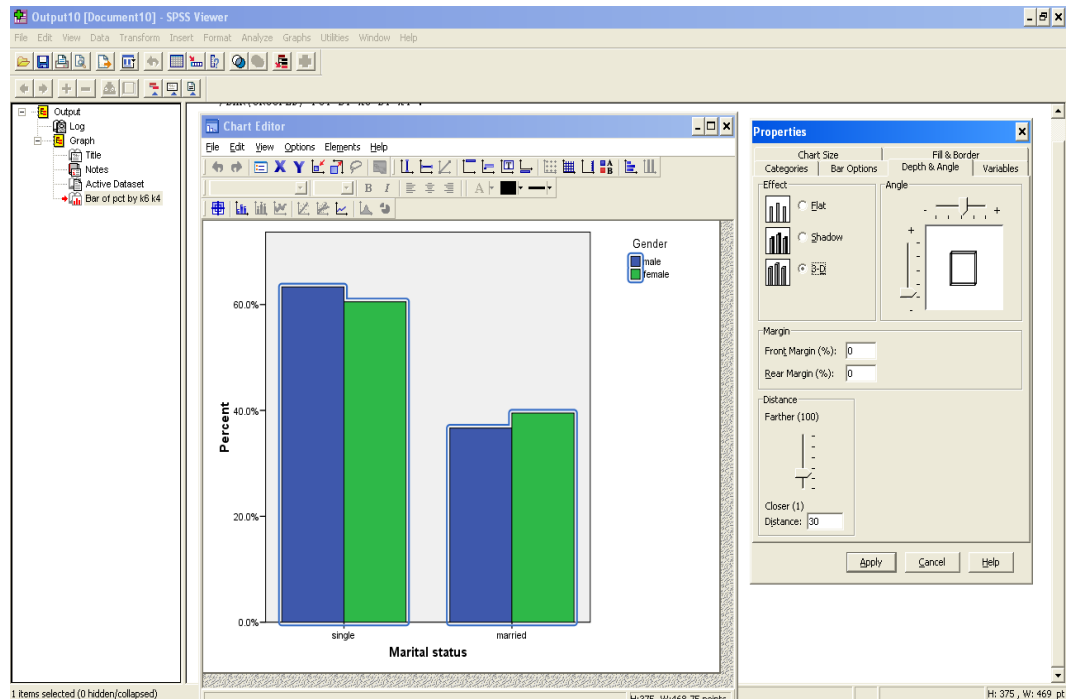
In the **Define Clustered Bar:Summaries for Groups of Cases**, select *Marital Status* and move it to the **Category Axis** box. Then, select *Gender* and move it to the **Define Clusters by** box. Click on the **% of cases** radio button and then click **OK**.



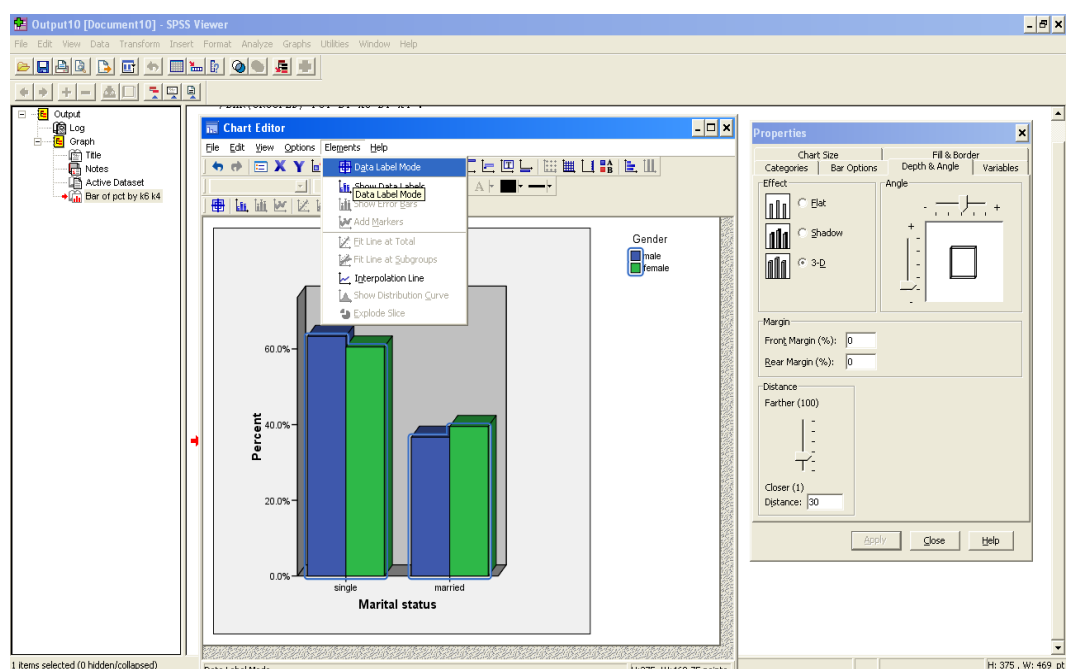
The clustered bar chart for *gender* clustered *by marital status* appears in the **OUTPUT** window.



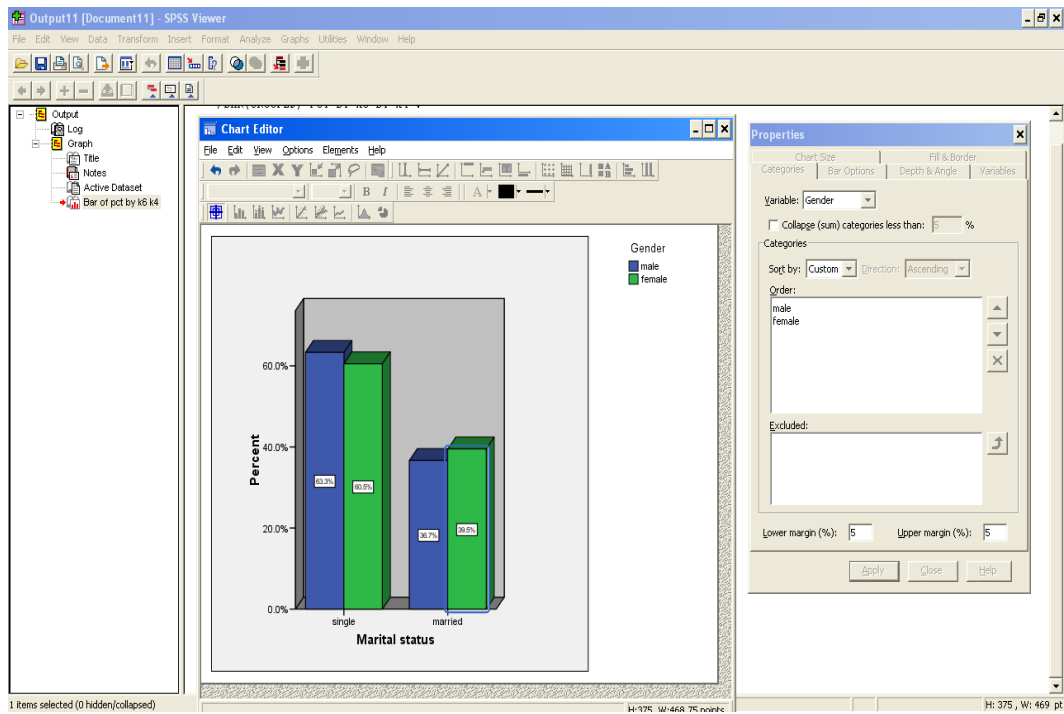
To create a 3-D clustered bar chart, double click on the bar chart and the **Chart Editor** window appears. Double click on one of the bars and from the **Properties** dialogue box, click on **Depth & Angle**. Click on the **3-D** radio button and then click **Apply**.



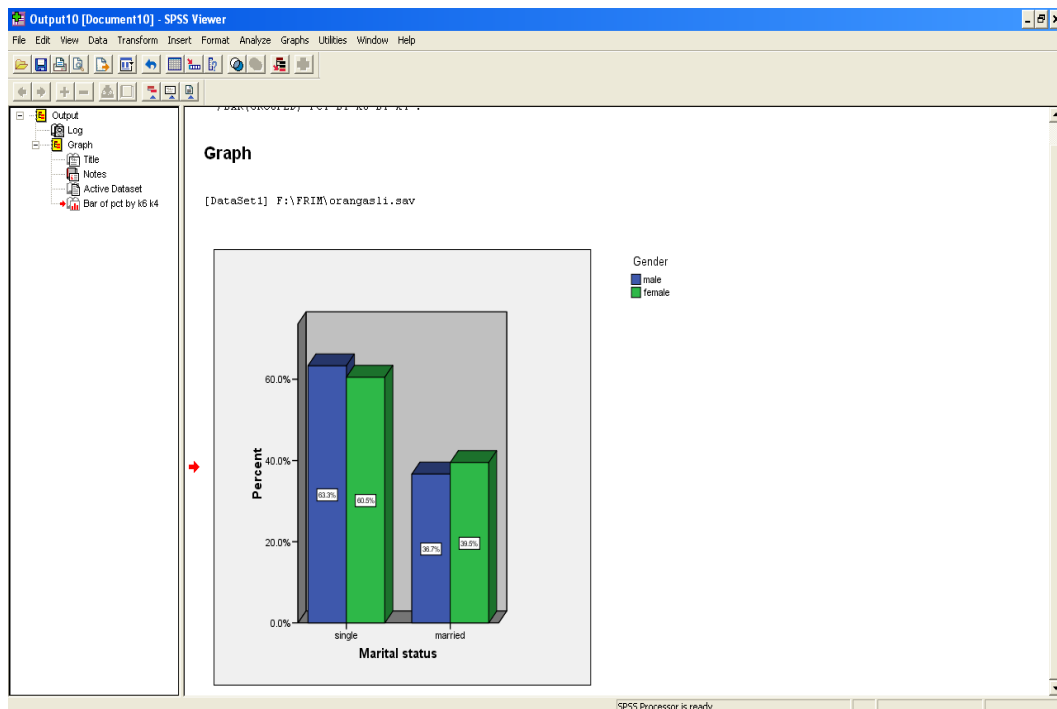
The 2-D simple bar chart changes to a 3-D chart. Click on **Elements** and select **Data Label Mode**.



Click on each of the bar and the percentage value will appear.



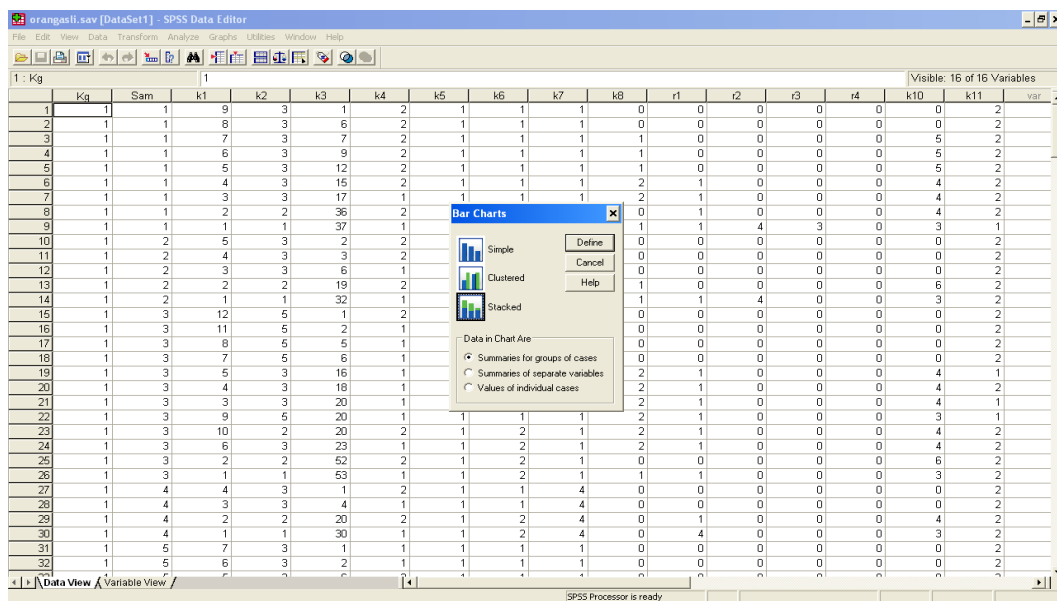
Close the Chart Editor window by clicking on the **Minimize** button to view the 3-D bar chart in the **OUTPUT** window



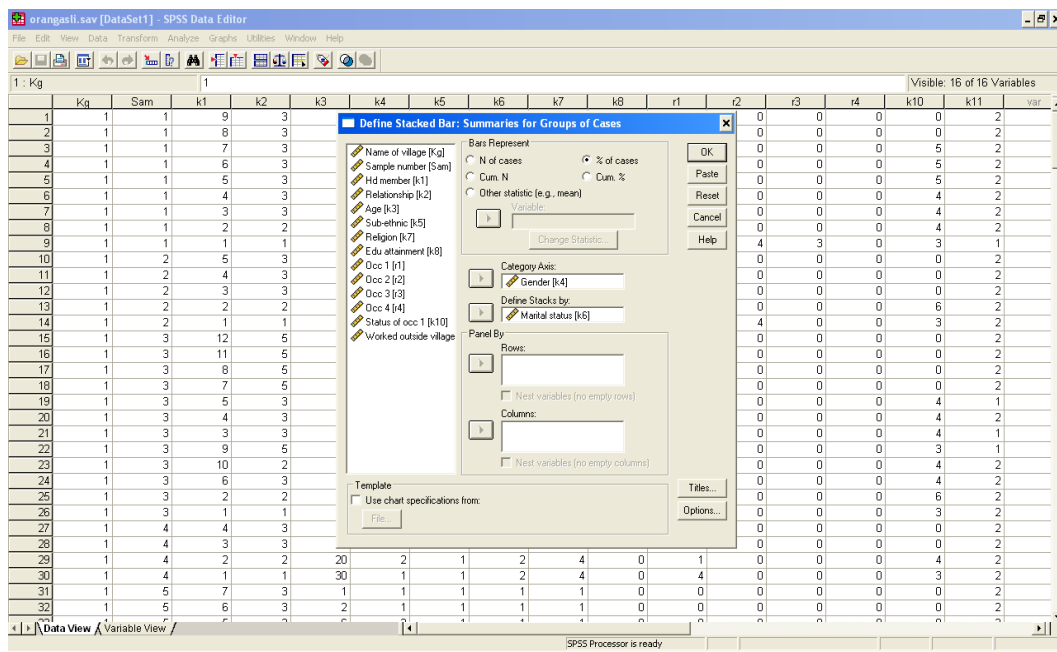
3.5 Creating Stacked Bar Charts

Click on **Graphs**, select **Legacy Dialogs** and **Bar**.

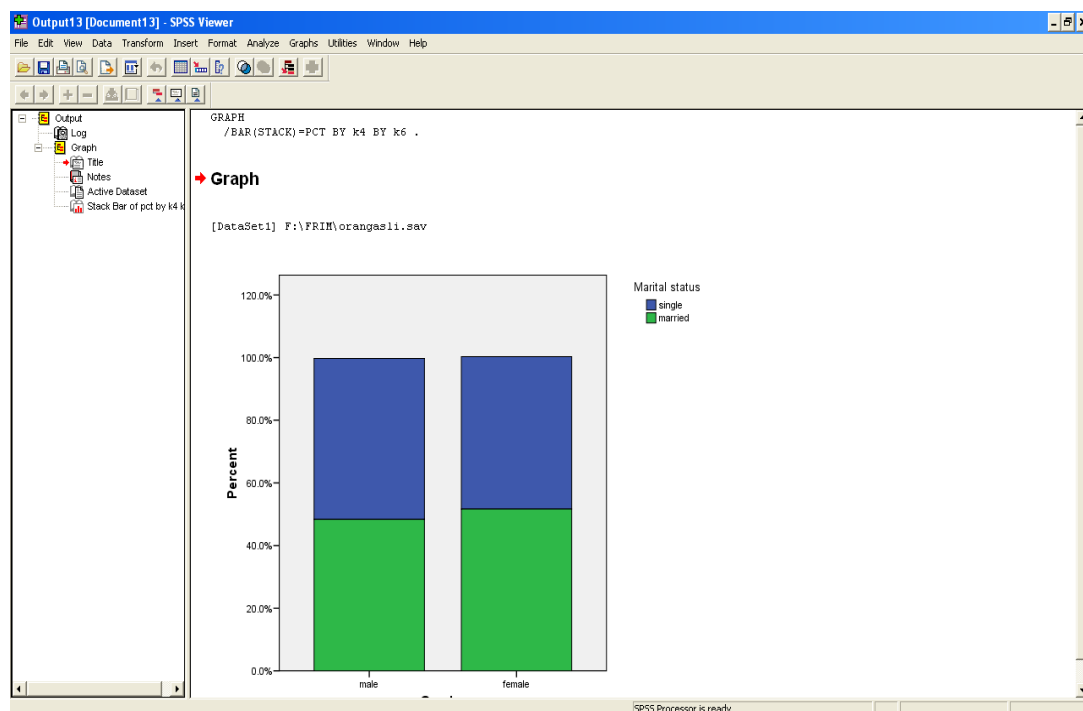
The **Bar Charts** dialogue window appears. Click on **Stacked** and use the default *"Summaries for groups of cases"*. Click on **Define**.



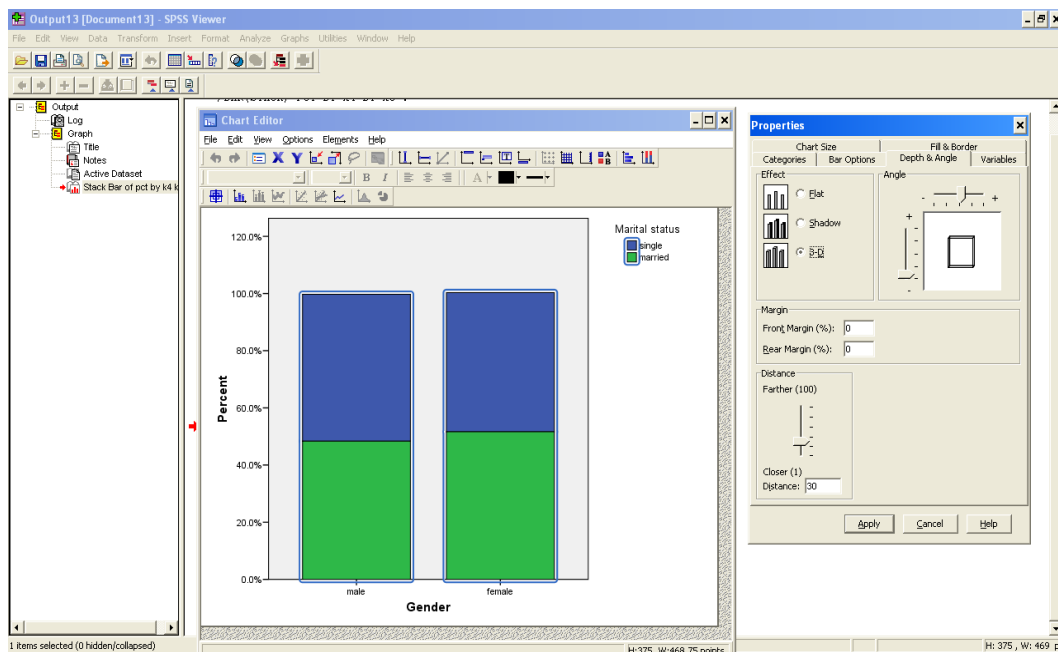
In the **Define Stacked Bar:Summaries for Groups of Cases**, select *Gender* and move it to the **Category Axis** box. Then, select *Marital Status* and move it to the **Define Stacks by** box. Click on the **% of cases** radio button and then click **OK**.



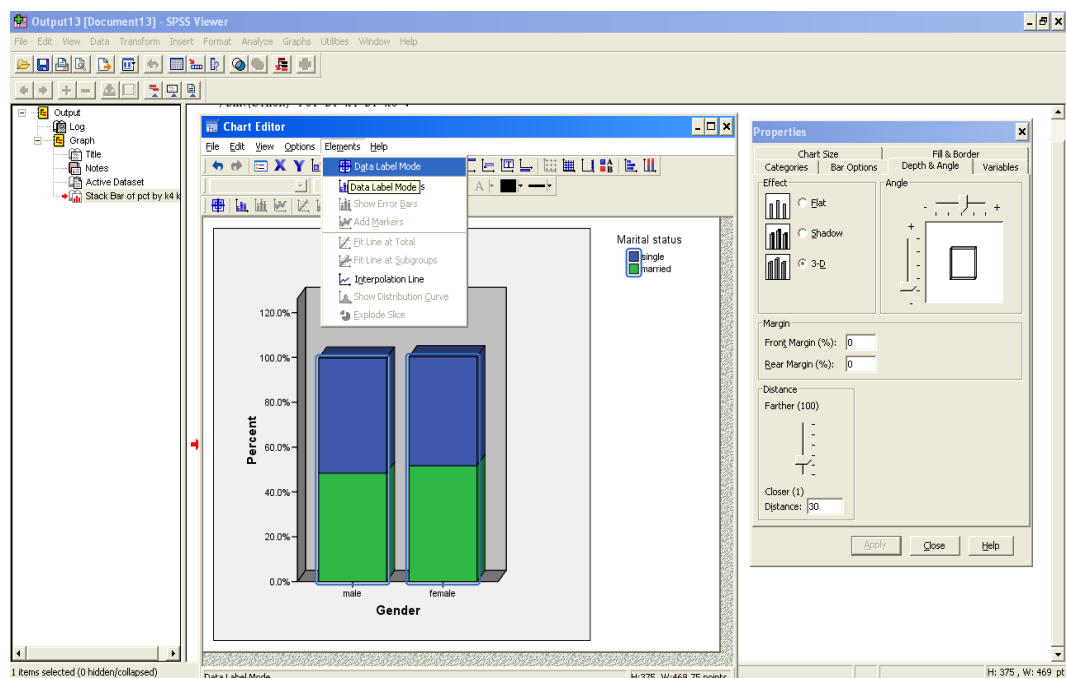
The bar chart for *gender* stacked by *marital status* appears in the **OUTPUT** window.



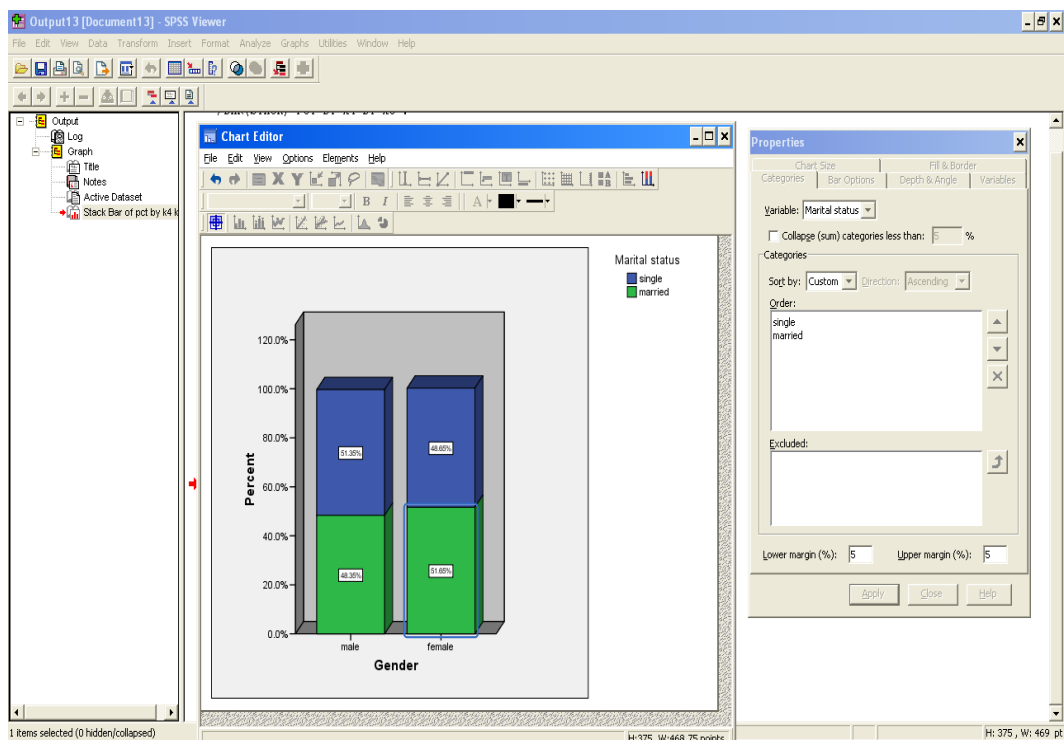
To create a 3-D clustered bar chart, double click on the bar chart and the **Chart Editor** window appears. Double click on one of the bars and from the **Properties** dialogue box, click on **Depth & Angle**. Click on the **3-D** radio button and then click **Apply**.



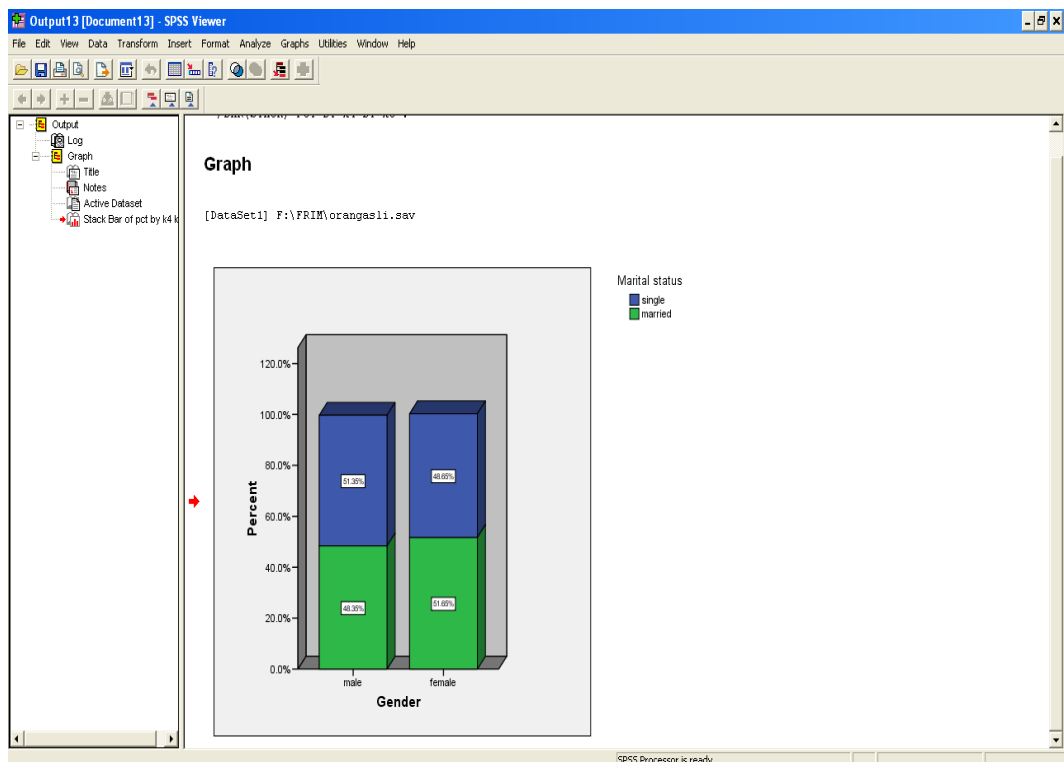
The 2-D simple bar chart changes to a 3-D chart. Click on **Elements** and select **Data Label Mode**.



Click on each of the bar and the percentage value will appear.

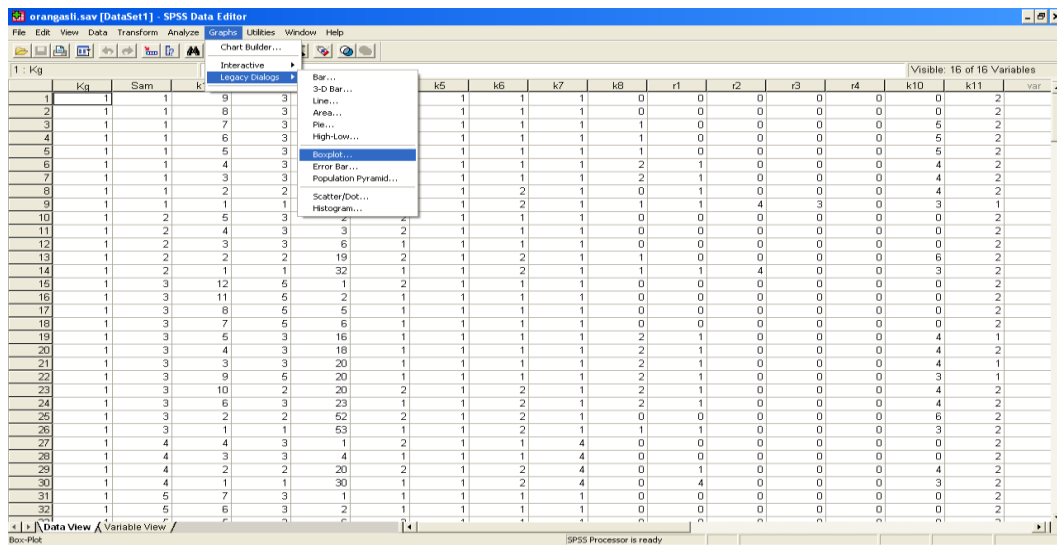


Close the **Chart Editor** window by clicking on the **Minimize** button to view the 3-D bar chart in the **OUTPUT** window.

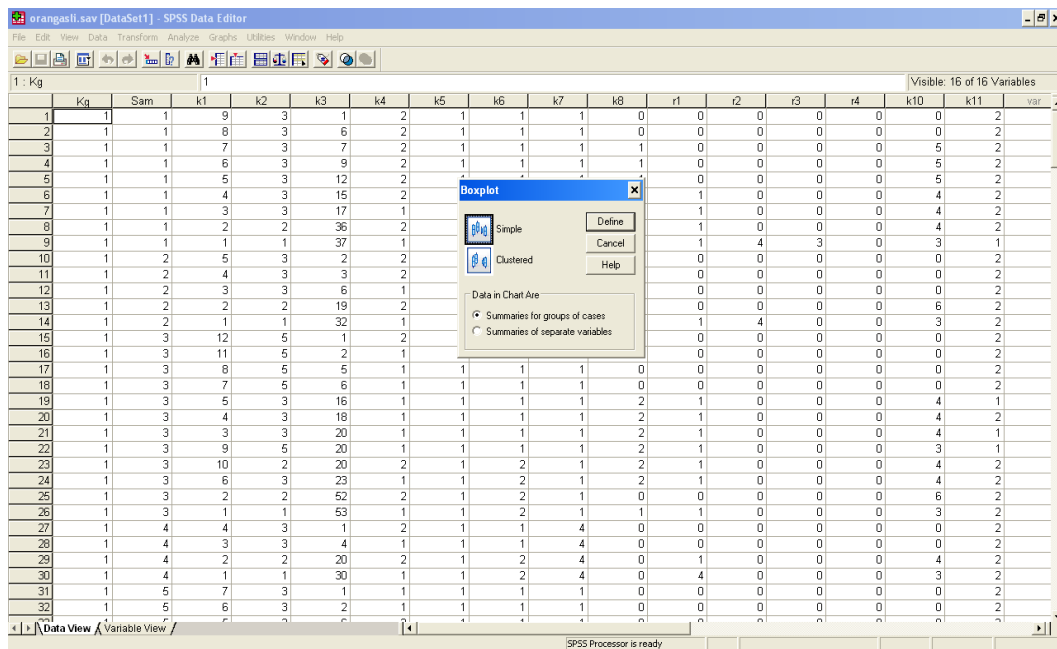


3.6 Creating Simple Boxplots

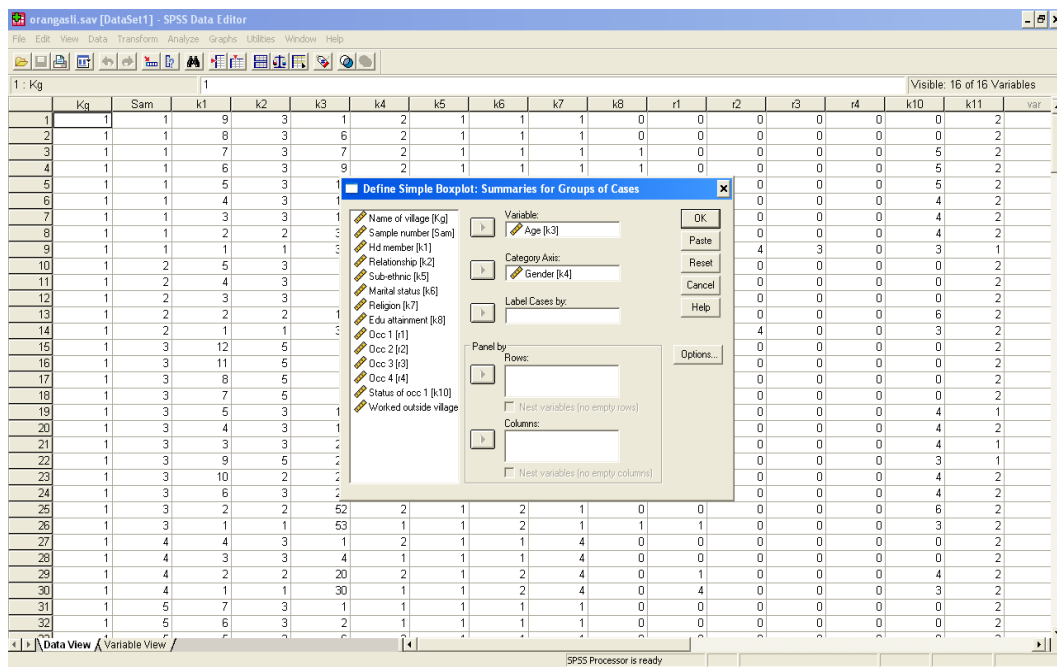
Click on **Graphs**, select **Legacy Dialogs** and **Boxplot**.



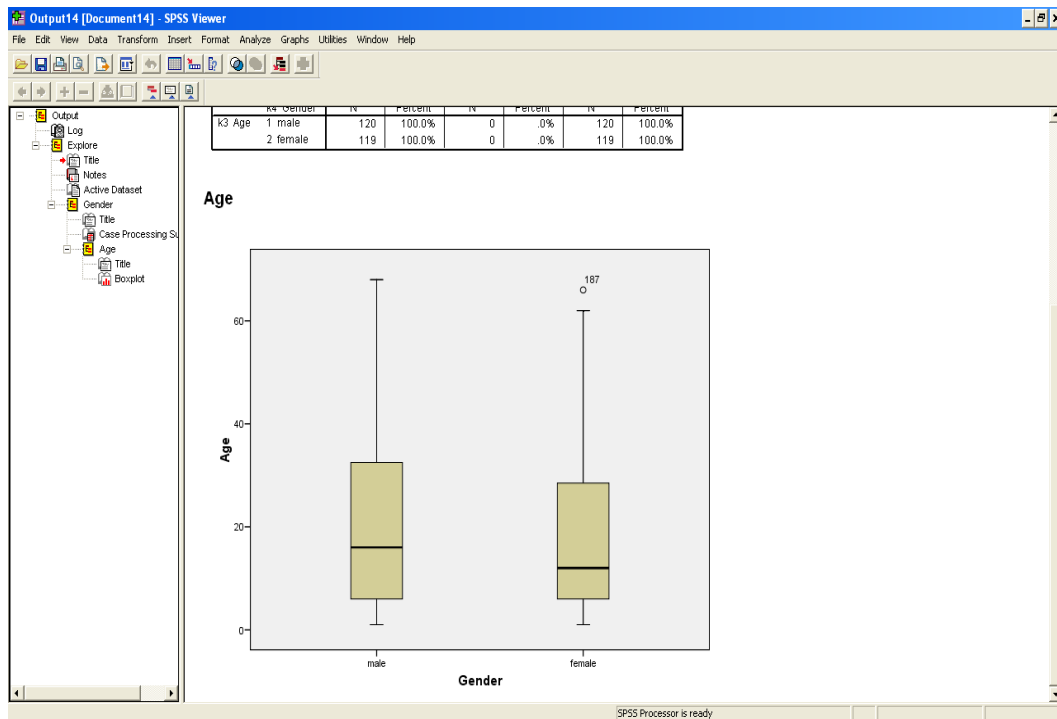
The **Boxplot** dialogue window appears. Click on **Simple** and use the default *"Summaries for groups of cases"*. Click on **Define**.



In the **Define Simple Boxplot:Summaries for Groups of Cases**, select *Age* and move it to the **Variable** box. Then, select *Gender* and move it to the **Category Axis** box. Then, click **OK**.



The simple boxplot for *Age* appears in the **OUTPUT** window.

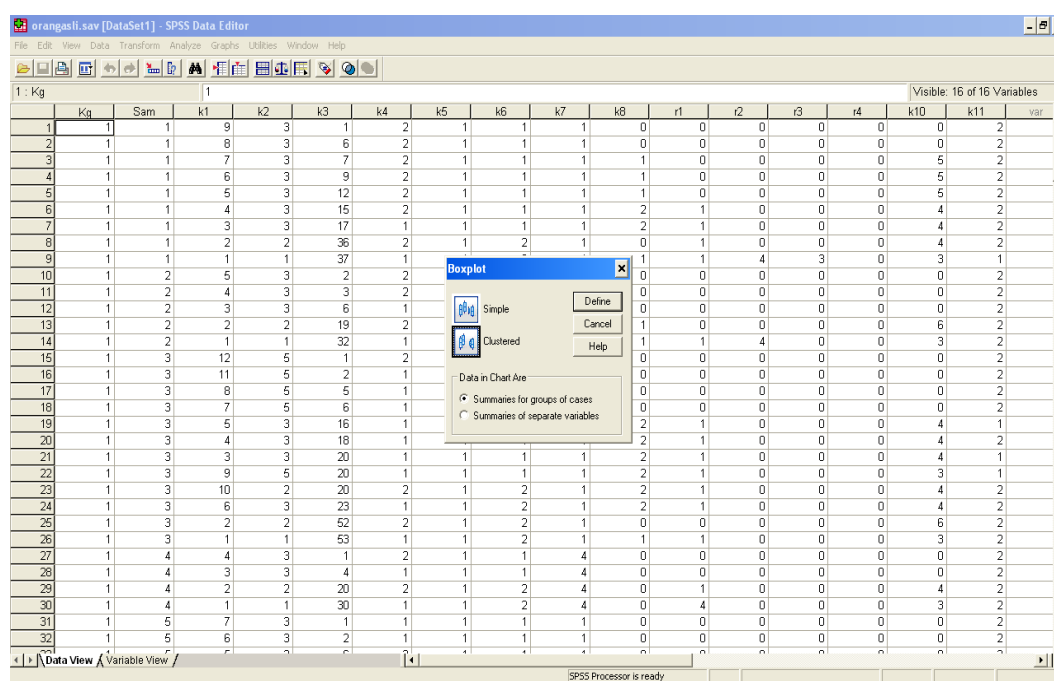


The dark horizontal line in the box, represents the median of age for each gender. The boxplots show that the median age for male is higher than female. The long whiskers indicate that the distribution of age is skewed to the right for each gender. The small white circle indicates there is an outlier in the female group.

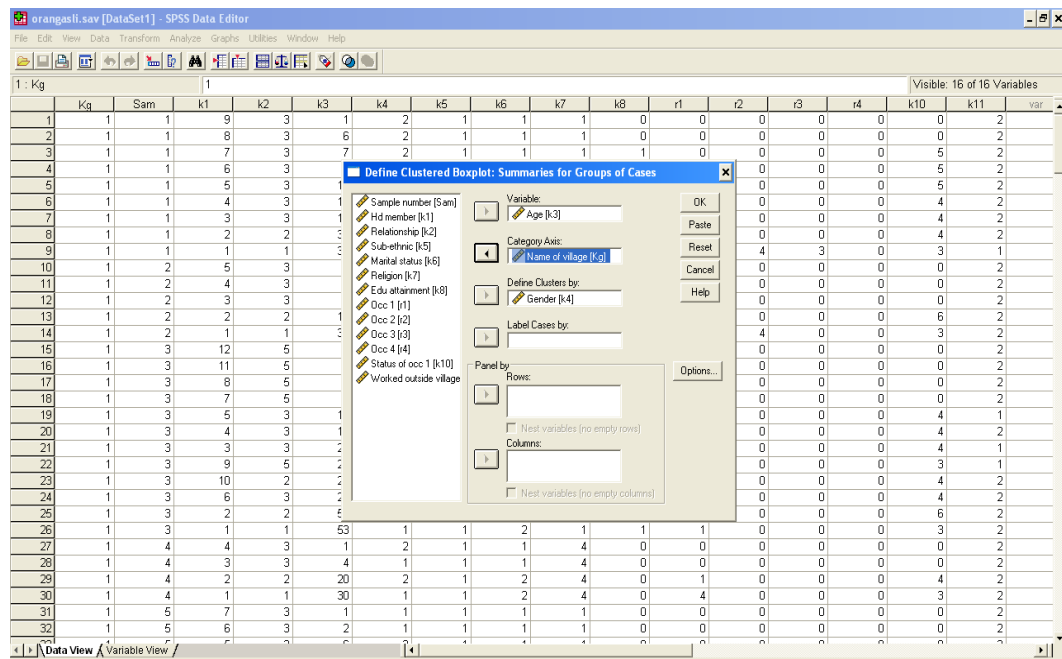
3.7 Creating Clustered Boxplots

Click on **Graphs**, select **Legacy Dialogs** and **Boxplot**.

The **Boxplot** dialogue window appears. Click on **Clustered** and use the default *"Summaries for groups of cases"*. Click on **Define**.

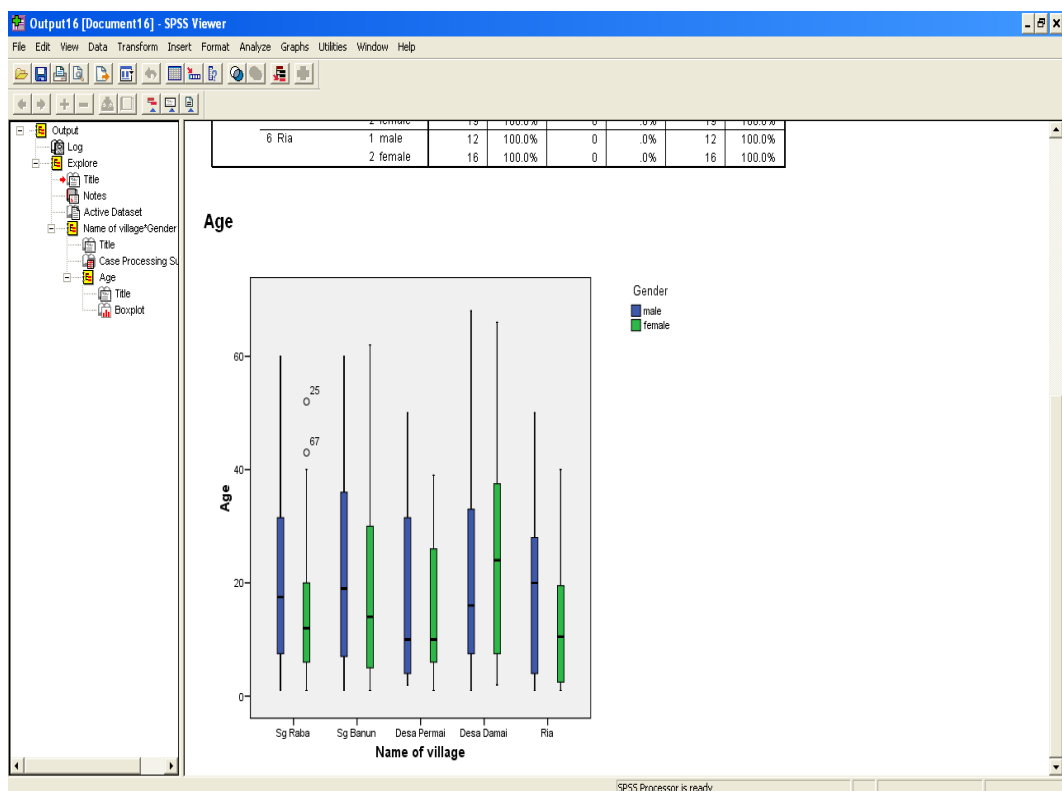


In the **Define Clustered Boxplot: Summaries for Groups of Cases**, select **Age** and move it to the **Variable** box. Then, select **Name of Village** and move it to the **Category Axis** box. Then, select **Gender** and move it to the **Define Clusters by** box and click **OK**.



- The basic R system, and contributed packages, are available from the **Comprehensive R**
- Home page for R: <http://www.R-project.org/>

The clustered boxplot of **Age** for every village will appear in the **OUTPUT** window.



Note 8 – Using R software

Outline

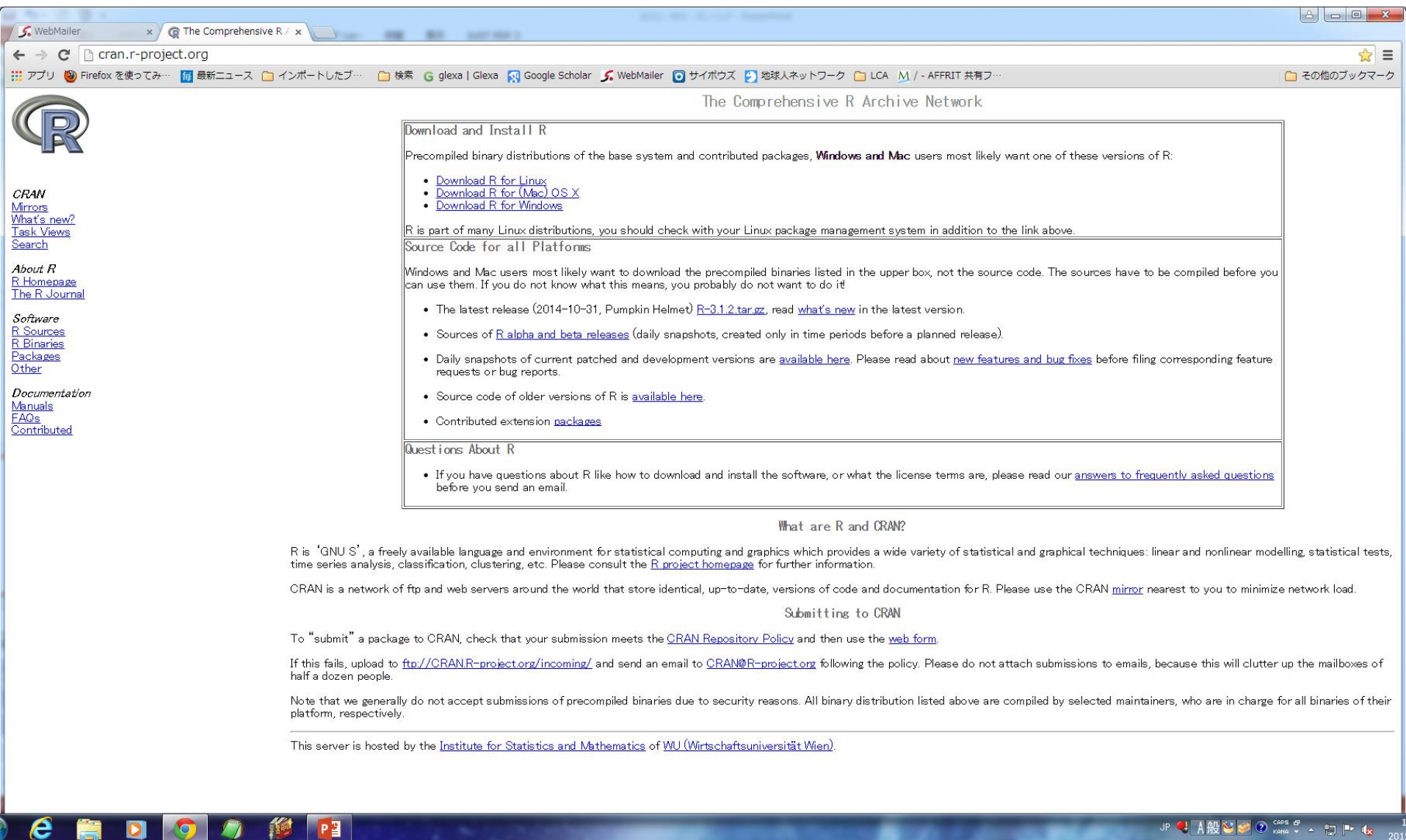
- What is R and Why use R
- Installation of R
- Start R
- How to use R
- Some of my applications
- Try using R now

What is R and Why use R

- R is a language and environment for statistical computing and graphics. It is superior to many other graphics and analysis packages commonly used, and has a very wide range of statistical analysis and data plotting functions.
- R is free.
- R is used in academia, business & industry
- It was said that there are at least 2 million users.
- R is effective and an independent platform. R can run in Windows, Mac, Linux. This is very important for communicating with different system users.
- Open source. Bugs found, reported and corrected. You can write your own packages.
- Highly extensible, with over 3500 user-contributed packages available and still growing.

- R has many help resources. That is absolutely unique. There are many online help resources both from r-project.org and from many specific lists and interest groups, even though sometimes it seems difficult to choose.
- R makes excellent graphics.
- The command-line interface is much better for using, learning and teaching. Users can post, reproduce and save the commands exactly.
- R is command-oriented. Users normally type commands, and the R responds interactively to these commands. And many packages are developed by about 20 core team members and many other contributors.
- Unlimited possibilities.
- The basic R system, and contributed packages, are available from the **Comprehensive R Archive Network (CRAN)** at <http://cran.r-project.org/>
- Home page for R: <http://www.R-project.org/>

Installation of R



The screenshot shows a web browser window displaying the CRAN (Comprehensive R Archive Network) website. The browser's address bar shows "cran.r-project.org". The website has a blue header with the R logo and the text "The Comprehensive R Archive Network". The main content area is titled "Download and Install R" and contains the following information:

Download and Install R

Precompiled binary distributions of the base system and contributed packages, **Windows and Mac** users most likely want one of these versions of R:

- [Download R for Linux](#)
- [Download R for \(Mac\) OS X](#)
- [Download R for Windows](#)

R is part of many Linux distributions, you should check with your Linux package management system in addition to the link above.

Source Code for all Platforms

Windows and Mac users most likely want to download the precompiled binaries listed in the upper box, not the source code. The sources have to be compiled before you can use them. If you do not know what this means, you probably do not want to do it!

- The latest release (2014-10-31, Pumpkin Helmet) [R-3.1.2.tar.gz](#), read [what's new](#) in the latest version.
- Sources of [R alpha and beta releases](#) (daily snapshots, created only in time periods before a planned release).
- Daily snapshots of current patched and development versions are [available here](#). Please read about [new features and bug fixes](#) before filing corresponding feature requests or bug reports.
- Source code of older versions of R is [available here](#).
- Contributed extension [packages](#)

Questions About R

- If you have questions about R like how to download and install the software, or what the license terms are, please read our [answers to frequently asked questions](#) before you send an email.

What are R and CRAN?

R is 'GNU S', a freely available language and environment for statistical computing and graphics which provides a wide variety of statistical and graphical techniques: linear and nonlinear modelling, statistical tests, time series analysis, classification, clustering, etc. Please consult the [R project homepage](#) for further information.

CRAN is a network of ftp and web servers around the world that store identical, up-to-date, versions of code and documentation for R. Please use the CRAN [mirror](#) nearest to you to minimize network load.

Submitting to CRAN

To "submit" a package to CRAN, check that your submission meets the [CRAN Repository Policy](#) and then use the [web form](#).

If this fails, upload to [ftp://CRAN.R-project.org/incoming/](#) and send an email to [CRAN@R-project.org](#) following the policy. Please do not attach submissions to emails, because this will clutter up the mailboxes of half a dozen people.

Note that we generally do not accept submissions of precompiled binaries due to security reasons. All binary distribution listed above are compiled by selected maintainers, who are in charge for all binaries of their platform, respectively.

This server is hosted by the [Institute for Statistics and Mathematics](#) of [WU \(Wirtschaftsuniversität Wien\)](#).



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	http://mirror.lau.edu.lb/	Lebanese American University, Byblos
Mexico	http://cran.itam.mx/ http://www.est.colpos.mx/R-mirror/	Instituto Tecnológico Autónomo de México Colegio de Postgraduados, Texcoco
Netherlands	http://cran.xl-mirror.nl/ http://cran-mirror.cs.uu.nl/	XL-Data, Amsterdam Utrecht University
New Zealand	http://cran.stat.auckland.ac.nz/	University of Auckland
Norway	http://cran.uib.no/	University of Bergen
Philippines	http://cran.stat.upd.edu.ph/	University of the Philippines and PREGINET
Poland	http://r.meteo.uni.wroc.pl/	University of Wrocław
Portugal	http://cran.dcc.fc.up.pt/	University of Porto
Russia	http://cran.gis-lab.info/	GIS-Lab.info
Singapore	http://cran.stat.nus.edu.sg/	National University of Singapore
Slovakia	http://cran.fyxm.net/	FYXMnet, Bratislava
South Africa	http://radu.org.za/ http://cran.mirror.ac.za/	University of Cape Town TENET, Johannesburg
Spain	http://ftp.cixug.es/CRAN/ http://cranes.r-project.org/	Oficina de software libre (CIXUG) Spanish National Research Network, Madrid
Sweden	http://ftp.sUNET.se/pub/lang/CRAN/	Swedish University Computer Network, Uppsala
Switzerland	http://stat.ethz.ch/CRAN/	ETH Zuerich
Taiwan	http://ftp.vzu.edu.tw/CRAN/ http://cran.csie.ntu.edu.tw/	Department of Computer Science and Engineering, Yuan Ze University National Taiwan University, Taipei
Thailand	http://mirrors.psu.ac.th/pub/cran/	Prince of Songkla University, Hatyai
Turkey	http://cran.pau.edu.tr/	Pamukkale University, Denizli
UK	http://www.stats.bris.ac.uk/R/ http://mirrors.ebi.ac.uk/CRAN/ http://cran.ma.imperial.ac.uk/ http://mirror.mdx.ac.uk/R/ http://star-www.st-andrews.ac.uk/cran/	University of Bristol EMBL-EBI (European Bioinformatics Institute) Imperial College London Middlesex University London St Andrews University
USA	http://cran.cnr.berkeley.edu/	University of California, Berkeley, CA University of California, Los Angeles, CA

WebMailer x The Comprehensive R / x

cran.stat.nus.edu.sg

アプリ Firefox を使ってみ… 最新ニュース インポートしたブ… 検索 G glexa | Glexa Google Scholar WebMailer サイボウズ 地球人ネットワーク LCA M / - AFFRIT 共有ブ… その他のブ…

R for Windows



Subdirectories:

- [base](#) Binaries for base distribution (managed by Duncan Murdoch). This is what you want to [install R for the first time](#).
- [contrib](#) Binaries of contributed packages (managed by Uwe Ligges). There is also information on [third party software](#) available for CRAN Windows services and corresponding environment and make variables.
- [Rtools](#) Tools to build R and R packages (managed by Duncan Murdoch). This is what you want to build your own packages on Windows, or to build R itself.

Please do not submit binaries to CRAN. Package developers might want to contact Duncan Murdoch or Uwe Ligges directly in case of questions / suggestions related to Windows binaries.

You may also want to read the [R FAQ](#) and [R for Windows FAQ](#).

Note: CRAN does some checks on these binaries for viruses, but cannot give guarantees. Use the normal precautions with downloaded executables.

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[Contributed](#)

cran.stat.nus.edu.sg/bin/windows/

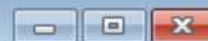
JP 100% CAGS Kana

Start R

- Go to cran.r-project.org;
- Under “Download and Install R”, click on the “Download R for Windows” link;
- Under “Subdirectories”, click on the “base” link;
- Save R file somewhere and start it;
- To Install R by clicking “next”
- When asked 32-bit or 64-bit, you need check your computer operating system (os);
- After finishing the installation, check if there is an “R” icon on the desktop of the computer. If so, start it by double-clicking;
- Or, start it from the start menu of programs.



R Console



R version 3.1.2 (2014-10-31) -- "Pumpkin Helmet"
Copyright (C) 2014 The R Foundation for Statistical Computing
Platform: x86_64-w64-mingw32/x64 (64-bit)

R is free software and comes with ABSOLUTELY NO WARRANTY.
You are welcome to redistribute it under certain conditions.
Type 'license()' or 'licence()' for distribution details.

Natural language support but running in an English locale

R is a collaborative project with many contributors.
Type 'contributors()' for more information and
'citation()' on how to cite R or R packages in publications.

Type 'demo()' for some demos, 'help()' for on-line help, or
'help.start()' for an HTML browser interface to help.
Type 'q()' to quit R.

> |

How to use R

- We can write commands and calculate directly at R Console, but editing “script” is convenient.
- Simple output is prefixed by [1].
- <- is the assignment operator; in the illustration, `c <- 1:3`, the vector of integers from 1 to 3 is assigned to a variable named x.
- lower- and upper-case letters are different.
- To download and install a package:
`install.packages("")`
- Packages are introduced by *library()*, and this introduction needs to be done every time before using.

Sorting or Ordering Vectors

Description

Sort (or *order*) a vector or factor (partially) into ascending or descending order. For ordering along more than one variable, e.g., for sorting data frames, see [order](#).

Usage

```
sort(x, decreasing = FALSE, ...)

## Default S3 method:
sort(x, decreasing = FALSE, na.last = NA, ...)

sort.int(x, partial = NULL, na.last = NA, decreasing = FALSE,
         method = c("shell", "quick"), index.return = FALSE)
```

Arguments

x for sort an R object with a class or a numeric, complex, character or logical vector. For `sort.int`, a numeric, complex, character or logical vector, or a factor.

decreasing logical. Should the sort be increasing or decreasing? Not available for partial sorting.

... arguments to be passed to or from methods or (for the default methods and objects without a class) to `sort.int`.

na.last for controlling the treatment of NAs. If TRUE, missing values in the data are put last; if FALSE, they are put first; if NA, they are removed.

partial NULL or a vector of indices for partial sorting.

method character string specifying the algorithm used. Not available for partial sorting.

index.return logical indicating if the ordering index vector should be returned as well; this is only available for a few cases, the default `na.last = NA` and full sorting of non-factors.

Details

`sort` is a generic function for which methods can be written, and `sort.int` is the internal method which is compatible with S if only the first three arguments are used.

The default `sort` method makes use of [order](#) for classed objects, which in turn makes use of the generic function [xtfrm](#) (and can be slow unless a `xtfrm` method has been defined or `is.numeric(x)` is true).

Complex values are sorted first by the real part, then the imaginary part.

The sort order for character vectors will depend on the collating sequence of the locale in use: see [Comparison](#). The sort order for factors is the order of their levels (which is particularly appropriate for ordered factors).

If `partial` is not NULL, it is taken to contain indices of elements of the result which are to be placed in their correct positions in the sorted array by partial sorting. For each of the result values in a specified position, any values smaller than that one are guaranteed to have a smaller index in the sorted array and any values which are greater are guaranteed to have a bigger index in the sorted array. (This is included for efficiency, and many of the options are not available for partial sorting. It is only substantially more efficient if `partial` has a handful of elements, and a full sort is done (a Quicksort if possible) if there are more than 10.) Names are discarded for partial sorting.

Method "shell" uses Shellsort (an $O(n^{7/4})$ variant from Sedgewick (1986)). If `x` has names a stable modification is used, so ties are not reordered. (This only matters if names are present.)

Method "quick" uses Singleton (1969)'s implementation of Hoare's Quicksort method and is only available when `x` is numeric (double or integer) and `partial` is NULL. (For other types of `x` Shellsort is used, silently.) It is normally somewhat faster than Shellsort (perhaps 50% faster on vectors of length a million and twice as fast at a billion) but has poor performance in the rare worst case. (Peto's modification using a pseudo-random midpoint is used to make the worst case rarer.) This is not a stable sort, and ties may be reordered.

Factors with less than 100,000 levels are sorted by radix sorting when `method` is not supplied: see [sort.list](#).

Value

Objects

- All variables (scalars, vectors, matrices, etc.) created by R are called objects. In R, we assign values to variables using an arrow “less than” + “minus”: “<-”.
- There are several possible different types of objects in R, including scalars, vectors, matrices, arrays, data frames, tables, and lists.
- List objects: `ls()`
- Remove objects: `rm(“object”)`
- Object, function, arguments

Help for R

- `help(package="base")` # List package contents
- `?data.frame` # help on a specific task
- `?Syntax` # help on a general topic
- `news(package="ggplot2")` # details of recent changes
- `demo("graphics")` # demonstrate graphics
- `browseVignettes()` # view index of vignettes in web browser
- See documentation links at <http://www.r-project.org> for manuals,
- wiki, R journal, books etc.
- CRAN task views: <http://cran.r-project.org/web/views/>
- Many R bloggers, aggregated at <http://www.r-bloggers.com/>

Some applications of R

- Wherever there is a calculation, data analysis, graphics.....

- Some of our experiences:

Panel data analysis

Cluster analysis

Mixed model estimations

Dealing with demand elasticities of GDP and price on forest products, drivers of deforestation, forecasts of forest areas and forest carbon stock, etc.

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Thanks for the great contributions from R developers and all other contributors!