

# Research method for big five personality project psychology essay



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Research methodology is an orderly approach and systematic way to solve a research problem. It is used for the collection and analysis of data. The research methodology is planned, scientific and value-neutral. It is a science of studying how research is to be carried out. Essentially, the procedures by which researchers go about their work of describing, predicting and explaining phenomena are called research methodologies. This chapter provides comprehensive details on how this research has been carried out in terms of research design, data collection method, sampling design, data collection techniques, measurement scale, fieldwork, and data analysis.

### **3. 1 Research Design**

A research design provides the basic directions or “ recipe” for carrying out the project. Researcher should select a design that will provide the needed and relevant information on the research questions or hypotheses and will help researchers complete the job most efficiently. Two approaches can be undertaken, either qualitative or quantitative. In this study, the quantitative approach is being used.

The research designs have been grouped into three types. Researchers generally choose from among exploratory, descriptive or casual design.

### **3. 2 Data Collection Methods**

Data collection is an important step in conducting a research study. The type and amount of data to be collected depends upon the research objectives.

Data collection is data collected by using postal, electronic mailing, fieldwork, written questionnaire hand-delivered to respondents and personal interview. There are two types of data collected in this study which is

primary data for the purpose of statistical analysis and secondary data for the purpose of literature review. By using both data, it is effective to achieve the objectives of the research as more reliable result could be obtained.

### **3. 2. 1 Primary Data**

Primary data collection is necessary when a researcher cannot find the data needed in secondary sources. According to Zikmund (2003), primary data or quantitative data are data gathered and assembled specifically for the project on hand. Thus, they refer to the original works of research or raw data without interpretation or pronouncements that represent an official opinion or position (Cooper & Schindler, 2001). In this study, the data collection instrument being used is questionnaire.

Examples of primary data are observation, questionnaire, personal interview, etc. In this research report, researchers collect data through questionnaire which are distributed to the respondents. Researchers will then run the statistical analysis test in order to generate findings and report results in the following chapters. This data collection method is generally more expensive and difficult to acquire. However, there is a high reliability and validity. According to air et al. (2003), primary data are collected for the purpose of completing the current research project. Thus, the researcher has been involved in every aspect of turning the data into knowledge. This includes designing the data collection device, collecting the data, coding it, checking it for errors and then analyzing and interpreting the data.

Questionnaire is chosen as the primary data collection method to conduct this project, so that information that has been collected is appropriately

analyzed. A total number of 100 questionnaire forms were distributed to the specific respondents. We had distributed those questionnaires to the lecturers in Univeristy Tunku Abdul Rahman. The questionnaires were distributed from 30 June 2010 to 1 June 2010.

### **3. 2. 1. 1 Questionnaire Design**

Questionnaire is chosen as the primary data collection method to conduct this project. The questionnaire is designed based on the hypothesis formed in previous chapter. Each independent variable questions were designed according to the areas found in literature review. It is extremely important that questionnaire has to be understandable and free of bias. Mindful review and testing is necessary to weed out minor mistakes that can cause great changes in meaning and interpretation. If these criteria are met, the questionnaire can become a useful and cost-saving data collection method.

The questionnaire consisted of closed-ended questions. Close-ended questions allow the respondents to choose their answer from a list of option provided and to make quick decisions. It also helps the researchers to code the data easily. The research questionnaire was divided into three sections- Section A, Section B and Section C.

Section A is generally about collecting the respondent's demographic information such as gender, age, religion, education level, income per month etc. There are a total of seven questions under this section. Meanwhile, Section B consists of questions about the Big Five personality factors affecting the job performance. The questions under this section are tested on independent variables, which are Neuroticism, Extraversion, Openness to

experience, Agreeableness, and Conscientiousness. It consists of 50 questions which divided into 5 parts. Each part has ten questions respectively. Under this section, researchers used 5-point Likert scale to ease respondents in selecting answer which is closest to their personal viewpoints. The Likert Scale is an ordered, one-dimensional scale from which respondents choose one option that best aligns with their view (Likert, 1932). Likert scale is the most suitable to be used to assess the validity and reliability of the research. Each point on the scale represents the intensity of the respondent's feelings (Hair, et. al., 2007). The responses are ranging from 1 (strongly disagree) to 5 (strongly agree). Section C consists of questions to determine whether Big Five personality affect job performance. There are 15 questions under this section.

### **3. 2. 2 Secondary Data**

Secondary data, or historical data, are data previously collected and assembled for some project other than the one on hand (Zikmund, 2003). According to Hair et al. (2003), secondary data are data that have been collected for some other research purpose. For this research, secondary data were used especially on the part of literature review. Besides that, secondary data is also needed to formulate the questionnaire. Majority of secondary data was accessed from online academic's database such as EMERALD, PRO-QUEST, Directory of Open Access Journals, and UNITAR e-journals. Furthermore, in the process of collecting information, search engine such as GOOGLE and YAHOO played a very important role.

In addition, researchers also gather data from journals, articles and reference books that are available in UTAR library. The two key advantages  
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of secondary data are saving money and saving time (Hair et al., 2003).

Besides, it also has provided a bundle of information in the literature review and it serves as a useful guideline. With these secondary data, researchers are able to study several other researchers' finding and identify the trends of the topic. It is useful to support this research project.

### **3. 3 Sampling Design**

Sampling design is part of the basic business research process. According to Hair et al. (2007), a sample is a representative of the population being drawn. It is a relatively small subset of the population. Besides, it is also a process of selecting a sufficient number of elements from the population (Sekaran, 2003). Since it is generally impossible to study an entire population (every individual in a country, all college students, every geographic area etc.), researchers typically rely on sampling to acquire a section of the population to perform an experiment or observational study.

There are several compelling reason for sampling, including (1) lower costs, (2) greater accuracy of results, (3) greater speed of data collection and (4) availability of population elements (Cooper & Schindler, 2006). Target population refers to the complete group or elements relevant to the research project. The target population determined for this research study is all lecturers in UTARs. Researchers would have a sample size of 100 respondents to participate in this survey. The respondents are from University Tunku Abdul Rahman in Kampar.

#### **3. 3. 1 Sampling method**

got 2 => probability sampling or non-probability sampling

### **3.3.2 Target population**

Target population is the complete group of specific population element relevant to the research project. They are relevant because they possess the information the research project is designed to collect (Hair et al., 2003). The target population determined for this research is all lecturers in private higher education institutions. The samples or respondents from the target population are located within Malaysia.

### **3.3.3 Sample Size**

Sample size refers to the number of elements to be included in the research. The important factors that need to be considered in determining the sample size are the importance of the decision, the nature of the research, the number of factors, the nature of the analysis, sample size used in similar studies and resources constraints. We found that a sample size of approximately 100 would be sufficient and appropriate to yield an accurate and consistent result due to cost and time constraints.

### **3.4 Data Collection Techniques**

Data collection techniques allow researchers to systematically collect information about the objects of study (i. e. people, objects, phenomena) and about the settings in which they occur. Data is being gathered by researchers through a carefully developed instrument (questionnaire) administered to individuals identified via a sampling procedure. This is because, if data are collected haphazardly, it will be difficult to answer the research questions in a conclusive way.

Prior to the release of the questionnaire, researchers conducted a pilot test to refine the questions being used. Questionnaires were given to thirty (30) lecturers from both genders within the targeted pool of respondents. This is done to check whether the respondents could understand all the questions. Comments and feedbacks given were gathered and some items considered vague by these respondents were later reworded before the final data collection.

### **3. 4. 1 Pilot Test**

Pilot test can be defined as preliminary test or study of the program or evaluation activities to try out procedures and make any needed changes or adjustments (Zikmund, 2003). A preliminary trial or pilot test of the study is a very helpful way to identify problems. There are some specific aspects of the research that always want to look at when do a pilot test: believable description of the study, the amount of time it takes to complete the study, problems with the data collection process, whether the participants guessed the hypothesis of the study, and any questions the participants have about the research. The most critical issue to address in a pilot study is the effectiveness of the experimental manipulation. If experimental procedures do not work correctly, any data that gathered are worthless.

Pilot testing is usually conducted after the preliminary version of questionnaire has been set up but before the large-scale survey is being carried out. One of the advantages of conducting a pilot study is that it might give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed



methods or instruments are inappropriate or too complicated (Edwin & Vanora, 2001).

Researchers distributed 30 sets of pre-tested questionnaires to lecturers in UTARs. Upon the collection of these questionnaires, Statistical Package for Social Science (SPSS) had been constructed in order to test the reliability. One of the most popular reliability statistics in use today is Cronbach's alpha (Cronbach, 1951). This is because the reliability of scales measured all variables is investigated by Cronbach's alpha. Cronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability. Higher reliability is due to higher frequency of similar answer being selected by the respondents. The rule of thumb for evaluating alpha coefficient which is more than 0.9 is considered excellent, more than 0.8 is good, more than 0.7 is acceptable, more than 0.6 is questionable, more than 0.5 is poor, and less than 0.5 is unacceptable (George & Mallery, 2003).

Each construct was being tested separately. The outcome is shown below. All the construct generate more than 0.7 except for Openness to experience (0.583). The problematic item was being identified and eliminated. Amendment was done by eliminating Openness to experience- Question number 1, 6, 8, 9, 10 (L1, L6, L8, L9, L10). The reliability test for Openness to experience was re-run and a new score of 0.734 was obtained. Now, the questionnaire is said to achieve the stated level or reliability. This follows on by the distribution of 100 copies of questionnaires to the lecturers who are in different faculty.

Table ? : Reliability test

Variables

Number of items (N)

Cronbach's Alpha

Emotional Stability

Extraversion

Openness to experience

Conscientiousness

Agreeableness

10

10

10 [old]

5 [new]

10

10

0. 721

0. 719

0. 583

0. 734

0. 754

0. 440

Thereafter, researchers did some corrections and amendments on the previously set questionnaire based on the feedback received in order to get a more reliable and accurate data.

### **3. 5 Measurement Scales**

A scale is any series of items that are progressively arranged according to value or magnitude into which an item can be placed according to its quantification. It is a continuous spectrum or series of categories. The purpose of scaling is to represent, usually quantitatively, an item's, a person's or an event's place in the spectrum. There are four types of scale in business research which are nominal, ordinal, interval and ratio scale (Zikmund, 2003).

#### **3. 3. 1 Nominal Scale**

Nominal scale represents the most unrestricted assignment of numerals. It is one that allows the researcher to assign subjects to certain categories or groups (Sekaran, 2003). Nominal scale also is the simplest type of scale. The numbers or letters assigned to objects serve as labels for identification (Zikmund, 2003). For example, the questionnaire questions of nominal scale

that we are using are gender, race, and highest education level of the respondents in private higher education institutions.

### **3. 3. 2 Ordinal Scale**

Ordinal scale arranges objects or alternatives according to their magnitude (Zikmund, 2003). In addition, it not only categorizes the variable in such a way as to denote differences among the various categories, it also rank-orders the categories in some meaningful way. With any variable for which the categories are to be ordered according to some preference, the ordinal scale would be used. The preference would be ranked and numbered 1, 2, and so on (Sekaran, 2003). For instance, our questionnaire use of ordinal scale is age.

### **3. 3. 3 Interval Scale**

Interval scale allows us to perform certain arithmetical operations on the data collected from the respondents (Sekaran, 2003). It does not only indicate order, it measures order (or distance) in units of equal intervals. The location of the zero point is arbitrary (Zikmund, 2003). It helps us to compute means and standard deviations of the response on the variables. In other words, interval scale not only groups individuals according to certain categories but it also measures the magnitude of the differences in the preferences among the individuals. For example, interval scale found in our questionnaire is Likert scale.

## **3. 6 Fieldwork**

The whole study took about five months to complete with the effort contributed by each members and guidance from research supervisor. First

of all, we took nearly one month to search for information before deciding on the research topic. We found relevant information from all kinds of sources such as online databases, journals and articles from university's library, internet web site and etc. Relevant information are then gathered and referred to our supervisor for clarification.

After confirming the research topic, several discussions have been held between team members and supervisor in refining the research topic, formed research objectives and hypotheses. Relevant information we gathered earlier are used in constructing chapter two which is literature review. After we determine on our target sample, questionnaire was formed in around one week time. 30 sets of pre-tested questionnaire are then distributed to lecturers in private higher education institutions. Before the respondents start filling up the questionnaires, the responsible team member gave a brief but precise explanation on the purpose of the study. This is to give the respondents an idea of what this research is all about, thus higher accuracy of data would be produced. The questionnaires were self-administrated with minimal assistance from the team members. Based on the feedback received from the 30 sets of pre-tested questionnaire, reliability test are then conducted and adequate amendments are made to the questionnaire.

In one month time, a total of 100 sets of questionnaire are distributed to private higher education institution. All answered questionnaires are collected and results are being keyed into statistical software that is Statistical Software Package for Social Science (SPSS). Lastly, analyses were reported based on the results obtained and conclusions are drawn towards <https://assignbuster.com/research-method-for-big-five-personality-project-psychology-essay/>

the study. Research report was successfully produced within the time frame as planned at earlier stage.

### **3. 7 Data Analysis**

According to Cooper and Schindler (2006), data analysis is defined as the process of editing and reducing accumulated data to a size that is manageable, easy to look for patterns in developing summaries and applying statistical techniques. As cited by Sekaran (2003), data analysis serves three objectives which are getting a feel for the data (descriptive analysis), testing the goodness of the data (scale measurement), and testing the hypotheses developed for the research (inferential analysis).

After completing the questionnaire survey and results are collected, the use of computer software to analyze the data is needed. The information collected from respondents will be edited and coded into useful to ensure the uniformity and completeness for data entry purpose. Malhotra and Peterson (2006) stated that data editing involves reviewing questionnaires to increase level of accuracy and precision. This can be done through screening completed questionnaires to ensure it is complete, consistent and legible.

Software Package for Social Sciences (SPSS) is the most widely used computer software to analyze data quickly and efficiently. Therefore, SPSS v16. 0 was used in this research study in completing data analysis part.

There are three types of analysis method to test on the research question of this study which are: (1) frequency analysis, (2) reliability analysis and (3) Pearson's correlation coefficient.

### **3. 7. 1 Descriptive Statistic**

Descriptive statistics are used to describe or summarize information about a population or sample. Descriptive analysis is applied in the research to illustrate the characteristics of sample for respondents and disclose and elicit the general pattern of responses. Descriptive statistics involves the gathering and collecting of quantitative information used to summarize or describes observations (David, 2003). Descriptive statistics can be categorized into three groups which are central tendency, dispersion and frequency distribution. From the respondents' descriptive study, the demographic profiles are classified as gender, age, race, position, educational level and marital status. In short, descriptive statistics are simply describing what is or what the data shows (Trochim, 2006).

### **3. 7. 2 Inferential Statistic**

Inferential statistics are used to make inferences or judgments about a population on the basis of a sample (Zikmund, 2003). Inferential statistics are statistics that permit researchers to draw inference from sample data. It includes the methods of generalizing, estimating, or predicting the characteristics of a population or universe based on a sample. Examples of inferential statistics we used here is Pearson correlation coefficient analysis. In short, inferential statistics are trying to reach conclusions that extend beyond the immediate data alone (Trochim, 2006).

### **3. 7. 3 Frequency Analysis**

Frequency analysis refers to the transformation of raw data into a form that will helps in understanding and interpreting, rearranging, ordering and

manipulating data to provide descriptive information. It is also used to calculate averages, frequency distributions and percentage distributions of the demographic information provided by the respondents (Zikmund, 2003). In this study, researchers used pie charts and bar graphs to analyze the demographic information of respondents such as gender, age, race, marital status, etc.

### **3. 7. 4 Reliability Analysis**

Reliability is to measure the degree of data free from errors and therefore yield consistent results. It provides information about the relationship between individual items in the scale (Zikmund, 2003). This study has selected the Cronbach Coefficient Alpha model to assess internal consistency. According to the Cronbach Coefficient Alpha model, more than 0. 9 is excellent, in between 0. 8 to 0. 9 is very good, in between 0. 7 to 0. 8 is consider good, in between 0. 6 to 0. 7 is moderate and below 0. 6 is unacceptable. Variables with the value that falls below 0. 6 reconsidered to be of poor reliability and unacceptable. Reliability analysis will be conducted for Section B and C of the questionnaire before proceeds to further data analysis.

Table 2: Rules of Thumb about Cronbach's Alpha Coefficient Size

Alpha Coefficient Range

Strength of Association

0. 9 and above



Excellent

0.8 – 0.9

Very Good

0.7 – 0.8

Good

0.6 – 0.7

Moderate

Less than 0.6

Poor

### **3.7.5 Pearson's Correlation Coefficient Analysis**

Pearson's correlation coefficient is used to analyze the nature, direction and significant of the bivariate relationship of the variables used in the study, that is, the relationship between any two variables among the variables tapped in the study (Sekaran, 2003). The correlation coefficient can be either positive or negative and can have values between -1.00 and +1.00, The higher value of coefficient correlation indicates the stronger level of association among the variables.

In this study, Pearson Correlation Coefficient was conducted on the five construct (i. e. Neuroticism (Emotional Stability), Extraversion, Openness to experience, Agreeableness, Conscientiousness) separately against job

performance (dependent variable). This is done to test the significance between the individual five constructs as to how they are related to lecturer's job performance.

The correlation coefficient is always between -1.0 and +1.0. There are three kinds of situation, correlation with the result +1.0 means that there is a perfect linear positive relationship, whereas -1.0 means a perfect linear negative relationship and 0 means that there is no relationship between the two variables. If  $r = \pm 0.91$  to  $r = \pm 1.0$  indicates a very strong relationship,  $\pm 0.71$  to  $\pm 0.90$  means strong relationship,  $\pm 0.41$  to  $\pm 0.70$  means moderate relationship,  $\pm 0.21$  to  $\pm 0.40$  means weak but definite relationship and  $\pm 0.01$  to  $\pm 0.20$  means slight or almost negligible relationship (Hair, Babin, Money & Samouel, 2005).

Table 3: Rules of Thumb about Pearson's Correlation Coefficient

Coefficient Range

Strength of Association

$\pm .91 - \pm 1.00$

Very Strong

$\pm .71 - \pm .90$

Strong

$\pm .41 - \pm .70$

Moderate

$\pm . 21 - \pm . 40$

Weak but definite relationship

$\pm . 01 - \pm . 20$

Slight or almost negligible

Note. Adapted from Hair, Babin, Money, Samouel, (2003). Essentials of Business Research Methods. Wiley Publishers.

### **3. 8 Conclusion**

In a nutshell, this chapter provides a view of how the research is being conducted and how the research instrument is being designed. Researchers first illustrate the “spinal” of the research by further elaborating on research approached, research techniques on data, and measurement scales. Then, it is followed by the determination of samples, data collection technique, questionnaire design and data analysis techniques. All data gathered from the questionnaire has been compiled and the resulting data and graphs placed in the next chapter. In the following chapter, the research results will be discussed. Tables and graphs are being used to present the results in a more effective manner.