CHAPTER III

RESEARCH METHODOLOGY

This chapter deals with the design of the present research. The chapter consists of seven main parts: objectives of the study and research questions; research approaches; sampling procedures; data collection method and procedures; data analysis; reliability, validity, and generalisability of the research methods and findings; and ethical considerations.

Objective of the Study and Research Questions

This study attempted to examine the needs of English language skills improvement of the Government Savings Bank staff and the English language problems that occur during their work. This study intends to answer two main research questions: 1) To what extent do the Government Savings Bank staff in different departments need to use English in their work? And 2) What problems in using English do these staff encounter during their work? It is anticipated that the findings resulted from this research will be beneficial to the training course designers of the bank in order to prepare and provide training material to suit the employees' needs.

Research Methods

According to Cohen and Manion (1994: 38), methods are an assortment of approaches employed in the process of data-collecting which are to be used as a basis for inference and interpretation, for explanation and prediction. Research is typically divided into two main categories: qualitative research and quantitative research.

Quantitative Research

Quantitative research is traditionally associated with the positivistic model (Cohen and Manion 1994: 38). Ernest (1994: 22), states 'the positivism research paradigm is concerned with objectivity, prediction, replicability, and the discovery of scientific generalizations or laws describing the phenomena in question'. Hence, the aim of this paradigm is to discover universal laws that govern the external world. As most quantitative research is carried out by researchers who endorse the positivist epistemology, those researchers define their subjects of interest in terms of observable behaviour, they attempt to define that behaviour in terms of the specific operations used to measure it and they are also concerned about the probability that what they discover in a research sample would occur in the larger world from which that sample was presumably drawn (Gall et al 2005: 14). Moreover, quantitative research is usually classified as structured approach, in that the components of the research process (objective, design, sample, and the questions asked to respondents) are predetermined.

Qualitative Research

Qualitative research is associated with the interpretative paradigm which is concerned with human understanding, interpretation, intersubjectivity, and lived truth (Ernest 1994). As humans are active and conscious beings, interpretivism does not therefore concern itself with the search for universal laws and rules, but rather seeks to produce interpretive understandings of social phenomena. Consequently, most researchers who carry out qualitative research consider that scientific inquiry must concentrate on the study of the different social realities that individuals in a social situation construct as they participate in it. Thus, they usually study single individuals or situations (cases) and case findings are generalized by comparing cases with other cases (Gall et al 2005: 14). The two main characteristics of qualitative approaches are that, first, those methods concentrate on "real world" phenomena and, second, they take into account all the aspects of those phenomena. The researcher's ability to

interpret and make sense of what they see is then seen as crucial for understanding any social phenomenon (Leedy and Ormrod 2005: 133).

In conclusion, quantitative research aims to show what is happening while qualitative research, on the other hand, sets out to tell why it is happening. It is all about developing a detailed understanding of individuals' views, attitudes and behaviour. The approaches to collecting qualitative data are much less structured and formal than the techniques used for gathering quantitative data. The aim is to allow respondents to talk, often at great length, about their feelings, and about their underlying attitudes, beliefs and values.

The differences between quantitative and qualitative research are presented in Table 3.1.

Table 3.1 Features of Qualitative & Quantitative Research

Qualitative	**Quantitative**
"All research ultimately has a qualitative grounding" - Donald Campbell	"There's no such thing as qualitative data. Everything is either 1 or 0" - Fred Kerlinger
The aim is a complete, detailed description.	The aim is to classify features, count them, and construct statistical models in an attempt to explain what is observed.
The researcher may only know roughly in advance what he/she is looking for.	The researcher knows clearly in advance what he/she is looking for.
Recommended during earlier phases of research projects.	Recommended during latter phases of research projects.
The design emerges as the study unfolds.	All aspects of the study are carefully designed before data is collected.
The researcher is the data gathering instrument.	The researcher uses tools, such as questionnaires or equipment to collect numerical data.

Table 3.1 (Continued)

Qualitative	Quantitative
The data is in the form of words, pictures or objects.	The data is in the form of numbers and statistics.
Subjective - individuals' interpretation of events is important ,e.g., uses participant observation, in-depth interviews etc.	Objective – seeks precise measurement & analysis of target concepts, e.g., uses surveys, questionnaires etc.
Qualitative data is more 'rich', time consuming, and less able to be generalized.	Quantitative data is more efficient, able to test hypotheses, but may miss contextual detail.
The researcher tends to become subjectively immersed in the subject matter.	The researcher tends to remain objectively separated from the subject matter.

Source: Miles & Huberman (1994: 40)

Research Method in this Study

In this research a quantitative approach employing quantitative techniques was utilized in order to study the English language needs of the Government Savings Bank staff. The main method of the study was a survey. The subjects of the study were selected from a process of probability sampling procedures (See Section 2). A questionnaire, consisting of a rating scale, was used as the only instrument for data collection, since the results were based on large size samples that were representative of the population. The data were then analyzed based on statistical techniques. As a result, the findings were objectively interpreted. With a high participation rate in a sample selected randomly from a population, the estimate of the relationship will not be biased. Accordingly, the interpretation of the findings of the present study can also be generalized to the whole population.

Sampling Methods

Types of Sampling Methods

Sampling is 'the process of choosing a representative portion of a population' which differs from the process of complete numbering, in which every member of the defined population is included (Parel et al n.d.: 1). Trochim (2006) also defines *sampling* as 'the process of selecting units (e.g., people, organizations) from a population of interest so that by studying the sample the results may fairly generalized back to the population from which they were chosen'. As gathering data from the entire population is not always possible due to the expanse, time and accessibility, sampling procedures therefore aim to find appropriate samples that will be representative from the whole target population (Cohen & Manion 1994). Sampling methods are categorized into two types: *probability sampling* and *non-probability sampling*.

Probability Sampling

According to Trochim (2006), in a *probability sampling* method, a sample is selected in such a way that each unit within the population has a known chance of being selected and the method of sampling utilizes some form of random selection. There are five different probability sampling methods. First, *simple random sampling* is to select the number of cases in the sample out of the number of the accessible population that has an equal chance of being selected. Even though this method is simple to carry out, its statistically efficiency depends upon the draw. Second, *stratified random sampling*, also called *proportional* or *quota random sampling*, involves dividing the population into homogeneous subgroups and then taking a simple random sample in each group. Third, *systematic random sampling* requires the population to be listed in a random order. The number of the total population is then divided by the number of the sample size and the result is the interval size (k). A number is then randomly selected between 1 to k. This number is the starting point (the first sampling unit to be selected). From this starting point, every kth unit is then

selected as part of the sample until n units are selected (n is the sample size). Fourth, *cluster random sampling* is used for a population that is scattered across a wide geographic region. To start with, the population is divided into clusters (usually along geographic boundaries) and sample clusters are randomly chosen. Then all units within sampled clusters are measured. Fifth, *multi-stage sampling* is a combination of the methods described earlier used to address the sampling needs in the most efficient and effective manner possible.

Non-probability Sampling

In a *non-probability sampling* method, a sample is selected in such a way that each unit within the population has an unknown chance of being selected and the method does not involve random selection. *Non-probability sampling* methods can be divided into two broad types: *accidental or convenience sampling* (this sampling technique is not purposive and makes no attempt to achieve representativeness, but chooses subjects based on convenience and accessibility); and *purposive sampling* (this sampling technique is purposive and researchers have one or more specific predefined sampled groups). The purposive sampling method can be subcategorized into three methods. First, *modal instance sampling* considers the most frequent case or the typical case. Second, in *expert sampling* the sample is constituted of people with known or demonstrable experience and expertise in some area. Third, in *quota sampling* people in the sample are chosen non-randomly according to some fixed quota or criteria in two different systems: *proportional* and *non-proportional*. The former represents the major characteristics of the population by sampling a proportional amount of each category. The later requires researchers to specify the minimum number of sampled unit in each category. Non-proportional quota sampling can be divided into *heterogeneity* or *diversity sampling*: this method is normally used to include a wide and divers range of participants in order to get broad spectrum or ideas, and *snowball sampling*: identifying a small group of people who meet the criteria and these people recommend others who also meet the criteria (ibid).

The Sampling classification is presented in Figure 3.1.

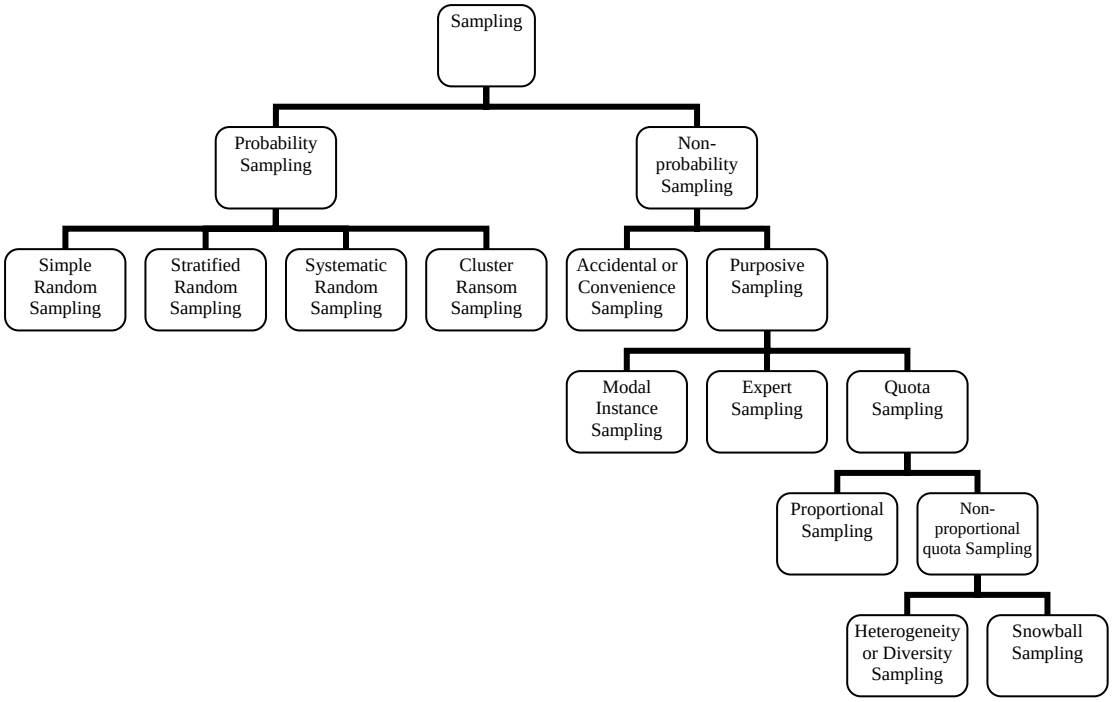

Figure 3.1 Sampling classification

Sampling Method in this Study

Parel et al (n.d.: 1) state that 'if the survey's respondent sample is not properly drawn, the findings cannot legitimately be generalized to the population under study'. This statement implies that sampling is a crucial research step and it is important to apply the most appropriate sampling method to a particular study. The population in this study was the 2,165 employees who worked in 48 departments in the Government Savings Bank head office. The sampling method used in this study was *stratified random sampling* for a number of reasons: the population was already divided into homogeneous subgroups; this sampling method could assure that not only the overall population would be represented, but also key subgroups of the population, especially small minority groups; and this technique generally had statistical precision because the variability within-groups was lower than the variability for the population as a whole.

In stratified random sampling, according to Parel et al (n.d.), there are two general steps that should be followed in sample-size determination and allocation: determination of the overall sample size and allocating the sample size in each stratum. The sampling procedure was explained as follow. First, the researcher obtained the numbers of the personnel in each department from the human resources department. Then the population was stratified into 12 strata based on the working lines of the bank organization (See Table 3.3). Next, to determine the overall sample size (n), the researcher used Yamane's formula (Yamane 1973: 1088) to calculate the appropriate sample size. In this formula, n represents the total sample size, N is the size of the total population, and e represents the rate of error, which was chosen to be 5 percent (0.05).

$$n = \frac{N}{1 + Ne^2}$$

Putting the corresponding values in the formula:

$$\text{n} = \frac{(2165)}{1 + (2165)(0.05)^2} = 337.62$$

Therefore, the minimum sample size is 338.

After that, a proportional allocation method was used to calculate each stratum sample size since the stratum total number of sampling units N_h varies from stratum to stratum (Parel et al n.d.: 25). Therefore, the following formula was used.

$$n_h = \frac{N_h}{N} \cdot n$$

Using the obtained value of the sample size *n* (see Table 3.2).

Table 3.2 Sample size of each stratum

Strata (n_h)	$\frac{N_h}{N} \cdot n$	Sample size
n_1	$\frac{308}{2165} \cdot 338$	48
n_2	$\frac{159}{2165} \cdot 338$	25
n_3	$\frac{90}{2165} \cdot 338$	14
n_4	$\frac{69}{2165} \cdot 338$	11
n_5	$\frac{65}{2165} \cdot 338$	10
n_6	$\frac{67}{2165} \cdot 338$	10
n_7	$\frac{139}{2165} \cdot 338$	22
n_8	$\frac{304}{2165} \cdot 338$	47
n_9	$\frac{343}{2165} \cdot 338$	54
n_{10}	$\frac{216}{2165} \cdot 338$	34
n_{11}	$\frac{107}{2165} \cdot 338$	17
n_{12}	$\frac{298}{2165} \cdot 338$	47

Table 3.3 Summary of Sample Size

Strata	Working lines	Total no. of sampling units in the stratum N_h	Sample taken from the stratum n_h
1	Management	308	48
2	Corporate Policy and Strategy	159	25
3	Investment	90	14
4	Financial Management	69	11
5	Metropolitan Credit	65	10
6	Regional Credit	67	10
7	Community Affairs	139	22
8	Deposit and Banking Service	304	47
9	Information Technology	343	54
10	Finance	216	34
11	Credit Support	107	17
12	Operational Support	298	47
	Total	2,165	339

Then, the researcher added up 10 % to each stratum sample size to guarantee that it would cover the minimum number of the sample size in case some questionnaires were not returned to the researcher. Once the sample size of each stratum was determined, the researcher randomly picked out the according number of participants in each stratum in order to hand out the questionnaires. Finally, 370 copies of the questionnaire were spread out to the subjects.

Methods of Data Collection

There are two major methods to gathering information about a situation, person, problem or phenomenon: *extraction* and *collection*. The former is used when the information required is already available and need only be extracted. When the information is not available, it must be collected. Based upon these broad approaches

to information gathering, data are categorized as: *primary data* and *secondary data*. Information gathered using extraction is said to be collected from *secondary sources* (articles, journals, magazines books, and periodicals to obtain historical and other types of information), whereas the sources used in the collection approach are called *primary sources* (observation, interviewing, and questionnaire) (Kumar 2005: 118).

Choices of Methods

Various methods can be employed in carrying out needs analysis. As can be seen in the "review of previous studies" compiled in Chapter II, the most frequently used techniques for conducting needs analysis are questionnaires, interviews, and observations, respectively.

Questionnaires

A questionnaire is a written list of questions, the answers to which are recorded by respondents. The aim is to collect data about the informants' attitudes, thoughts, behaviors, and so forth. The researchers bring together the answers of the participants in the sample in order to know how the group as a whole thinks or behaves (Lanthier 2002). Nunan (1992:143) claims 'the questionnaire is a relatively popular means of collecting data' and is particularly well adapted to quantification. Questions can be relatively closed or open ended. A closed question is one in which the range of possible responses is determined by the researcher while an open question is one in which the subject can decide what to say and how to say it (ibid). The main advantages of questionnaires are that data can be collected from a large number of participants within a short period of time, and that the results obtained can be generalized to the target population. The responses are gathered in a standardised way, so questionnaires are objective. However, there are not many chances for researchers to explain any points in the questions that respondents might misinterpret. Open-ended questions can produce large amounts of data that can take a long time to process and analyse. Participants may also answer superficially and might not wish to reveal the information.

Interviews

Kumar (2005: 123) defines an *interview* as a 'person-to-person interaction between two or more individuals with a specific purpose in mind'. Interviews can generate a large amount of useful information such as facts, people's beliefs and perspectives about facts, feelings, motives, present and past behaviours. (Leedy and Ormrod 2005: 146). Nunan (1992: 149) states 'the oral interview has been widely used as a research tool in applied linguistics'. Interviews can be categorized into three types: *unstructured, semi-structured,* and *structured*. In an *unstructured interview*, the interviewer does not use a specific set of questions and allows the interviewee to guide the conversation. Thus, the direction of the interview is relatively unpredictable. In a *semi-structured interview*, the interviewer does not use a list of predetermined questions but has an overall idea of the expected direction and outcome of the interview. In a *structured interview*, the interviewer decides of the agenda of the interview and uses a specific set of questions asked in a predetermined order. Interviews have various advantages: they are useful for collecting in-depth information, information can be added, and questions can be explained. On the other hand, interviewing is time-consuming and expensive. The quality of data depends upon the quality of the interaction and the interviewer (Kumar 2005).

Observations

According to Kumar (2005: 119-121), observation is 'a purposeful, systematic and selective way of watching and listening to an interaction or phenomenon as it takes place'. Observations can be made under two conditions: natural and controlled. *Natural observation* means that a group is observed in its natural operation with no outside intervention whereas *controlled observation* means that a stimulus to the group is introduced and the reaction is observed. There are two types of observations: *participant observation* (a researcher participates in the activities of the group being observed as one of its members, with or without their knowing that they are being observed) and *non-participant observation* (a researcher does not get involved in the activities of the group but remains a passive observer, watching and listening to its

activities and drawing conclusion from this). Observation is well-adapted to situations where, for a number of reasons (for example, lack of cooperation or inability of the respondents to detach themselves from the interaction), full or accurate information cannot be extracted by questioning. In contrast, the use of observation may suffer from a number of problems such as observer bias, incomplete observation, and observation interpretations varying from observer to observer. Individuals or groups may also change their behaviour when they become aware that they are being observed.

In sum, the choice of a method depends upon the purpose of the study, the resources available and the skills of the researcher. Kumar (2005) also points out that in some circumstances the method most appropriate to achieve the goals of a study cannot be used because of constraints such as a lack of resources or required skills.

The Method Used in this Study

The main instrument used to evaluate the English language needs of the Government Savings Bank staff was a questionnaire. As shown in the related studies, questionnaires are the most common data collecting method in performing needs analysis. In this research questionnaires were used for different reasons: they could be sent at ease to a large number of respondents; they were not time consuming and expensive to handle; and finally the data collected were relatively easy or straightforward to analyse. Several methods in constructing the questionnaire for this study were applied in order to ensure its reliability and the validity of its outcomes.

The Construction of the Questionnaire

The procedures of constructing and developing the questionnaire used in this study were as follows. First, the researcher examined a number of research studies related to needs analysis and English for Specific Purposes (ESP). Second, in order to determine an appropriate questionnaire structure, the researcher went through several examples of questionnaires. Then, taking the purpose of the study and the research

questions into consideration, the draft questionnaire was constructed in Thai. Next, this questionnaire was checked for facts and relevance by the thesis adviser and one of the researcher's colleagues in the MA/ESP program. A pilot study was then conducted to ensure the reliability of the questionnaire, and to guarantee that the respondents completely understood the questions and gave valid answers. The respondents were asked to give comments and suggestions while filling out the questionnaires. Their opinions were taken into account to alter certain questions and modify the organisation of the questionnaire. Last, the final version of the questionnaire was drawn up and then translated into English in order to be presented in this thesis.

The questionnaire used in this study consisted of four main sections: general information; general opinions; the English language needs of the Government Savings Bank staff; and problems of the Government Savings Bank staff in using English. The respondents had to tick checkboxes to answer most questions.

Section I General Information

This section contained seven questions concerning the Government Savings Bank staff personal information: gender, age, educational background, duration of work in the bank, and the department they were working in; the importance of English in their job; and their English proficiency level.

Section II General Opinions

The second section consisted of two parts. In the first part, the subjects were asked to rate the degree of necessity of five English language skills (listening, speaking, reading, writing and interacting). In order to do so, the participants had to choose an item from a five-point Likert scale as follows:

5 = Extremely necessary

4 = Very necessary

3 = Necessary

2 = Rarely necessary

1 = Not necessary

The second part concerned the level of difficulty of those five English language skills. The participants were asked to rate the difficulty on a five-item Likert scale as follows:

5 = Extremely difficult

4 = Very difficult

3 = Difficult

2 = Rarely difficult

1 = Not difficult

Section III Needs of the English Language for the GSB Staff

The third section was about the needs of the GSB staff regarding the use of the five English language skills at work. The participants had to indicate their answers on a five-point Likert scale as follows:

5 = Most

4 = A lot

3 = Moderately

2 = A little

1 = Least

Within each skill, the questions were divided into sub-items which are clarified in the following data:

Listening Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills the staff needed in listening tasks. Four sub-

items were listed: following presentations, lectures, or talks; following instructions; following descriptions and explanations; and following training sessions.

Speaking Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills the staff needed in speaking tasks. Four sub-items were listed: giving a formal presentation; giving an informal presentation; giving instructions or demonstrating a task; and giving descriptions and explanations.

Reading Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills the staff needed in reading tasks. Three sub-items were listed: reading for detail in e-mails, letters, faxes, memos, and short reports; reading quickly for general information in professional journals and textbooks; scanning for specific points in long reports, contracts and legal documents, and technical specifications and manuals.

Writing Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills the staff needed in writing tasks. Four sub-items were listed: writing e-mails, letters and faxes, long reports and articles, and editing the letters or reports of others.

Interacting Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills the staff needed in speaking and listening tasks. Eight sub-items were listed: receiving visitors; visiting a company; participating in discussions and informal meetings; participating in formal meetings; chairing meetings; interviewing; negotiating; and telephoning.

Section IV Problems in Using English while Working

The fourth section concerned the problems encountered by the staff in using English during their work. The participants were asked to rate their problems on a five-item Likert scale as follows:

5 = Most
4 = A lot
3 = Moderately
2 = A little
1 = Least

Within each skill, the questions were divided into sub-items which are clarified in the following data:

Listening Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills they had problems with in listening tasks. Four sub-items were listed: following presentations, lectures, or talks; following instructions; following descriptions and explanations; and following training sessions.

Speaking Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills they had problems with in speaking tasks. Four sub-items were listed: giving a formal presentation; giving an informal presentation; giving instructions or demonstrating a task; and giving descriptions and explanations.

Reading Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills they had problems with in reading tasks. Three sub-items were listed: reading for detail in e-mails, letters, faxes, memos, and short reports; reading quickly for general information in professional journals and textbooks; scanning for specific points in long reports, contracts and legal documents, and technical specifications and manuals.

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sub-items were listed: writing e-mails, letters and faxes, long reports and articles, and editing the letters or reports of others.

Interacting Skills: in this item the respondents were asked to identify the kinds of specific English-related business skills they had problems with in speaking and listening tasks. Eight sub-items were listed: receiving visitors; visiting a company; participating in discussions and informal meetings; participating in formal meetings; chairing meetings; interviewing; negotiating; and telephoning.

The questionnaire ended with a yes/no question, the negative answer allowing the participants to express their problems and suggestions regarding the English language courses provided by the bank.

Pilot Study

At the beginning of April 2007, a pilot study was conducted to verify the questionnaire, and to enable the researcher to modify questions that might have been ambiguous or confusing to the respondents. After having asked permission from the head of department, questionnaires were handed out to 30 employees (eleven males and 19 females) of the Metropolitan Office One Department. The employees of this department were not involved in the main study conducted later on. The collection of the questionnaires took two days. The returned rate was 100% but only 29 questionnaires were completed. The participants encountered two kinds of problems. The first problem concerned the form of the questionnaire: they thought that circling choices was time consuming. The second problem concerned the wording: they judged that one of the questions was confusing and some possible answers were vague. The opinion of the participants prompted the researcher to clarify the ambiguous and imprecise terms in the final version of the questionnaire. The form of the questionnaire was also adjusted in order to allow the respondents to answer questions by ticking choices. Finally, the data provided by the pilot study were analysed in order to ensure the feasibility of the data analysis tool of the main study.

Main Study

The data collection process took about two weeks: the revised questionnaire was handed out in the last week of April 2007 and was then returned in the first week of May 2007.

The data gathering process was conducted as follows. First, the researcher submitted a covering letter, introducing the study, with a reference from the Graduate School of Kasetsart University, to the head of the human resources department of the GSB to ask for permission to conduct the study. Second, the researcher distributed 370 copies of the questionnaire to the Government Savings Bank staff in 12 working lines. Finally, the number of returned questionnaire was 354 (95.7%) but only 350 (94.6%) of them were completed and could be analysed.

Data Analysis

The questionnaires were computer-coded and analyzed with the help of statistical techniques (SPSS for Windows version 11.5). The statistical procedures in this study were as follows: frequency distribution, percentages (%), arithmetic mean (***X***), and standard deviation (S.D.). The data were analyzed using the following statistical procedures. First, *the frequency distribution and percentages* were used in the analysis of the answers, concerning the general background of the participants (Part I). Second, *a five-point Likert scale* was used to score the levels of necessity, difficulty, English language needs and problems of the Government Savings Bank staff (Part II, III, and IV). The criteria used for scoring were as follows.

Scale	**Necessity of English language skills**	**Mean Range**
5	Extremely necessary	4.21 - 5.00
4	Very necessary	3.41 - 4.20
3	Necessary	2.61 - 3.40
2	Fairly necessary	1.81 - 2.60
1	Not necessary	1.00 - 1.80

Scale	Difficulty of English language skills	Mean Range
5	Very difficult	4.21 - 5.00
4	Difficult	3.41 - 4.20
3	Fairly difficult	2.61 - 3.40
2	Not very difficult	1.81 - 2.60
1	Not difficult	1.00 - 1.80

Scale	Needs of English language skills	Mean Range
5	Most	4.21 - 5.00
4	A lot	3.41 - 4.20
3	Moderately	2.61 - 3.40
2	A little	1.81 - 2.60
1	Least	1.00 - 1.80

Scale	Problems of English language skills	Mean Range
5	Most	4.21 - 5.00
4	A lot	3.41 - 4.20
3	Moderately	2.61 - 3.40
2	A little	1.81 - 2.60
1	Least	1.00 - 1.80

Third, *Arithmetic Mean* (X) *and Standard Deviation Mean* (S.D.) were used to calculate the average level of necessity and difficulty of English skills and functions, and the language needs and problems of the Government Savings Bank staff, the former representing the central tendency of the scores and the later measuring the dispersion, that is the extent to which a set of scores varies in relation to the mean.

Last, the *Cronbach's Alpha Coefficient* was used to ascertain the reliability of the responses for the items which used a five-point Likert scale.

Verification Features

There are various features of verification but three following aspects are considered as the most common ones: reliability, validity and generalisability (external validity). For a research study to be accurate, its findings must be reliable and valid. Hence, researchers should take these three verification attributes into account to prove that their findings are true and correct. According to Cargan (2007), analysing data requires examination of the factors that assisted both the collection of the data and its interpretation. This examination includes: establishing confidence that the collected information is both valid and reliable and that the sampling method used was representative of the population from which it was selected, realizing that the type of information selected is dependent on the scale, and making sure that the responses are optimally coded and that proper statistics were used.

Definitions of Reliability, Validity, and Generalisability

Reliability is 'essentially a synonym for consistency and replicability over time, over instrument and over groups of respondents'. It emphasizes precision and accuracy. Reliable research must prove that similar results would be found if it were to be carried out on a similar group of respondents in a similar context (Cohen, Manion, and Morrison 2000:117). Scholars commonly identify two aspects of reliability. Nunan (1992) divides reliability into *internal reliability*, which refers to the consistency of the findings obtained from a particular study; and *external reliability*, which refers to the degree to which other researchers can replicate a study and obtain results similar to those obtained in the original research. Bryman and Cramer (1999) also highlight those two meanings of reliability. *External reliability* is the more common of the two aspects and refers to the degree of consistency of a measure over time. *Internal reliability*, usually associated with multiple-item scales, focuses on the consistency of the items that make up the scales.

Validity is crucial to research as it embodies the credibility of the study. Careful sampling, appropriate instrumentation and appropriate statistical treatments of the data are common means used to improve validity in quantitative research. However, there is always a measure of standard error which is inbuilt and which has to be acknowledged. Types of validity differ from authors to authors. Cohen, Manion, and Morrison (2000: 107-109) identify *internal* and *external validity* in both qualitative and quantitative methods. *Internal validity* is concerned with proving that the explanation of a phenomenon provided by a study can be sustained by the data. In other words, the event being researched must be accurately described by the results of the study. *External validity* refers to the extent to which the outcomes can be generalized. According to Bryman and Cramer (1999: 68-69), different aspects of validity can be considered by researchers. The *face validity* of a measure indicates that this measure apparently reflects the content of the concept it purports to measure. The '*concurrent validity*' of a concept is evaluated by using a criterion on which people are known to differ and which is relevant to the concept in question. Correspondence between the two measures is expected. Similarly, '*predictive validity*' can be evaluated by employing a future criterion, not a contemporary one. The '*construct validity*' of a measure means that the researcher is incited to deduce hypotheses from a theory that is relevant to the concept. All of these approaches to the investigation of validity are designed to form '*convergent validity*' (Campbell and Fiske: 1959), that is, that the measure harmonizes with another measure. It is worth noting that some authors also advocate '*discriminant validity*'*:* in this case, low levels of correspondence between a measure and other measures that are supposed to represent other concepts are expected.

Generalisability is the extent to which the results of a study can be generalised from the specific sample that was studied to a larger group of subjects. As something occurring frequently is expected to continue to do so in the future, once researchers have collected sufficient data to support a hypothesis they formulate a proposition regarding the behaviour of that data, making it generalisable to similar circumstances. However, such a generalisation cannot be regarded as conclusive or exhaustive.

Reliability, Validity, and Generalisability in this Study

Reliability

Internal reliability was considered to measure the consistency of the present study results in order to confirm that the most appropriate research design (questionnaire) was used for what the researcher was studying. According to Byeman and Cramer (1999: 65) Cronbach's alpha is currently the most frequent instrument used to calculate the average of all possible split-half reliability coefficients. Therefore, the questionnaire employed in the pilot study was estimated by using the Cronbach's Alpha Coefficient method computed in SPSS for Windows 11.5. As a result, the reliability coefficient of the questionnaire was .8978, which was accepted with high reliability of 89.78%.

Validity

In order to ensure the truthfulness of the findings, the validity measured in this study was *face validity*. The questionnaire content was constructed based on the objectives of the study and the research questions in order to cover the entire framework. The first draft of the questionnaire was constructed and revised based on recommendations from the thesis advisor in order to attest that the items measured what they were intended to measure. The researcher also asked a colleague in MA/ESP program to check whether the questions in the questionnaire were understandable. Moreover, the validity of the questions was also checked by the participants in the pilot study.

Generalisability

The interpretation of the results of the present study can also be generalised to the whole population since the respondents constitute a fairly accurate representation of the Government Savings Bank staff. Indeed, the number of the respondents having completed the questionnaire was 350 which is more than the required minimum sample size (338). Moreover, statistical techniques were utilized to analyze the responses of the participants.

Ethical Concerns

Researchers have a responsibility to their profession and also to the participants of their studies. In this study, ethical concerns were taken into account by adopting the following steps. First, the researcher asked for permission from the organization and the participants. A formal letter was addressed to the Government Savings Bank, requesting association in the study. Second, before starting the study, the bank staff were informed of the methodology and rights of the participants. Third, the privacy of the participants was protected as the data was anonymous and the whole data set will be kept confidential. Lastly, the researcher never added or changed the data formally conducted in order to understand the authentic needs of the subjects and also provide accurate data set for any further studies.

This chapter has pointed up the research methodology and design of the present study. The objectives of the study and research questions, research methods, sampling, data collection methods and procedures, data analysis, verification features of research methods and findings, and ethical concerns of the present study have been discussed. The results of the study will be presented in the next chapter.