# CHAPTER 3

# RESEARCH METHODOLOGY

## INTRODUCTION

This chapter describes the methodology used in this study. The focuses of this chapter are:

Introduction

Research hypothesis

Description of the population

Research design and sampling procedure

Research instruments, modification and limitations

Data collection procedures, and

Statistical treatment of data

## RESEARCH HYPOTHESIS

This study attempts to find the customers' perception and the determinants of service quality for one-stop payment centres at both TNB and POS Malaysia. This study started in August 1995 and ended in February 1996. Due to the constraints of time and financial resources, the sampling locations were geographically selected according to TNB zoning. The POS Malaysia one stop payment centres were chosen, normally from the vicinity where TNB one-stop payment centres were surveyed.

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The primary data was collected personally by the researcher and with the help of his research assistants. The questionnaires were administered by means of personal interviews to respondents who paid utilities bills at the one-stop payment counters of both TNB service centres and POS Malaysia post offices. This will ensure good response rate and reduce errors during the survey.

The SERVQUAL instruments that had been developed by researchers had been tested to have high validity and reliability.

## POPULATION OF STUDY

The population of study is composed of public who paid utilities bills at both TNB and POS Malaysia counters in Kuala Lumpur only. The total number of customers, for each zone for the 1994/95 financial year ending 31st. August 1995 is shown in the table below:

Table 3.1 - Number of TNB Kuala Lumpur Customer as of June 1995

| | ZONE 1 | ZONE 2 | ZONE 3 | ZONE 4 | TOTAL |
|---|---|---|---|---|---|
| NUMBER OF CUSTOMERS | 120,403 | 156,514 | 126,737 | 167,762 | 571,788 |

(Souse: TNB Wilayah Persekutuan - Business Operation)

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For TNB, the service centres are strategically located in and around Kuala Lumpur, even though the total number of service centre own by TNB may not be comparable to POS Malaysia due to historical reasons. Following is the table of service centres of TNB divided according to zones for TNB Kuala Lumpur.

Table 3.2 - Listing of TNB One-Stop Payment Service Centres

| | | |
|---|---|---|
| ZONE 1 | 1) Pusat Perkhidmatan Pengguna Zone 1<br>Jalan Masjid India | 3) Pusat Khidmat Pengguna TTDI<br>Jalan Burhanuddin Helmi,<br>Taman Tun Dr. Ismail |
| | 2) Pusat Khidmat Pengguna Bangsar<br>Jalan Maarof, off Bangsar Baru,<br>Bangsar | 4) Pusat Khidmat Pengguna Kepong<br>Desa Jaya Kepong |
| ZONE 2 | 1) Pusat Perkhidmatan Pengguna Zone 2<br>Hulu Kelang,<br>Ampang Ulu Kelang | |
| | 2) Pusat Khidmat Pengguna Setapak<br>Taman Setapak,<br>Gombak | |
| ZONE 3 | 1) Pusat Perkhidmatan Pengguna Zone 3<br>Jalan Walter Grenier, off Jalan Imbi,<br>Pudu | 3) Pusat Khidmat Pengguna Pudu<br>Jalan Pasar Baru,<br>Pudu |
| | 2) Pusat Khidmat Pengguna Ampang Park<br>Ampang Park Shopping Centre,<br>Jalan Ampang | 4) Pusat Khidmat Pengguna Pekan - Ampang,<br>Jalan Besar Ampang,<br>Pekan Ampang |
| ZONE 4 | 1) Pusat Perkhidmatan Pengguna Zone 4<br>Bedfort Business Park,<br>Jalan Kelang Lama | 3) Pusat Khidmat Pengguna Sungai - Besi (*),<br>Jalan 3/108C,<br>Taman Sungai Besi |
| | 2) Pusat Khidmat Pengguna Taman Midah<br>Jalan Midah Satu,<br>Taman Midah | 4) Pusat Khidmat Pengguna Puchong - Jaya,<br>Jalan Merak Dua,<br>Puchong Jaya |

* Newly open on 1/11/1995

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| [illegible] | [illegible] | [illegible] |
| | [illegible] | [illegible] |
| [illegible] | [illegible] | [illegible] |
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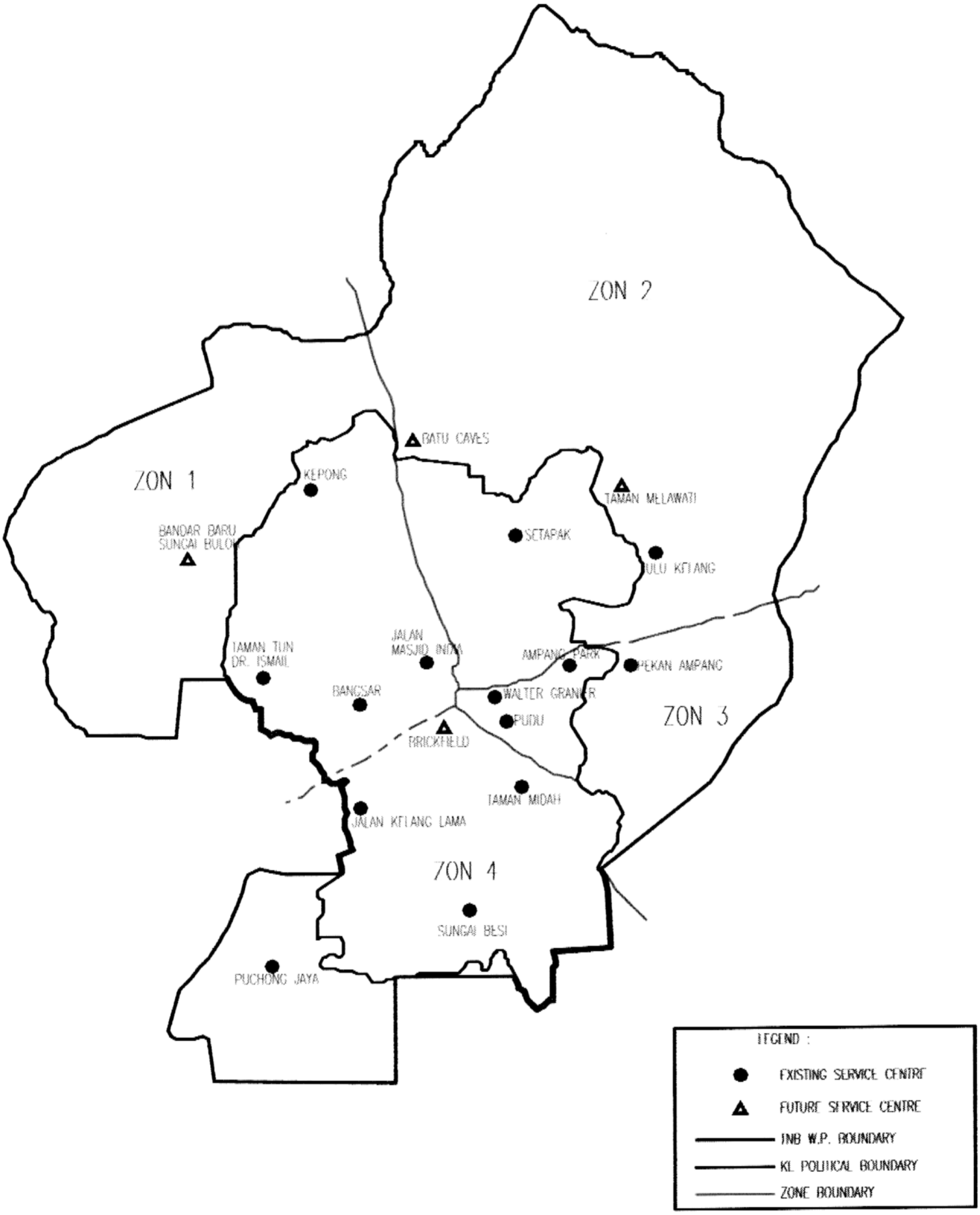
There is a total number of fifty-three (53) POS post offices in Kuala Lumpur alone (source: 1995 Telephone Directory). Thus, POS post offices are about 3.7 times more than TNB service centres. It is not the intention of TNB local management compete for a large number of service centres. The most important issue here is the strategic service quality that TNB service counters could and should provide. The following page is the location map of TNB service centres for Wilayah Persekutuan Kuala Lumpur.

Figure 3.1 - TNB One-Stop Bills' Payment Centres Location Map


ZON 1
ZON 2
ZON 3
ZON 4
BATU CAVES
KEPONG
TAMAN MELAWATI
BANDAR BARU SUNGAI BULOH
SETAPAK
ULU KELANG
TAMAN TUN DR. ISMAIL
JALAN MASJID INDIA
AMPANG PARK
PEKAN AMPANG
BANGSAR
WALTER GRANER
PUDU
BRICKFIELD
TAMAN MIDAH
JALAN KELANG LAMA
SUNGAI BESI
PUCHONG JAYA
LEGEND :
● EXISTING SERVICE CENTRE
▲ FUTURE SERVICE CENTRE
TNB W.P. BOUNDARY
KL POLITICAL BOUNDARY
ZONE BOUNDARY

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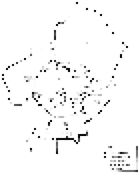

## SAMPLING SIZE

Since there are more POS post offices than TNB service counters, the sample data collected for TNB is based on zones. A minimum of one service centre is randomly chosen from each zone. As for POS Malaysia, the data was collected by-the-way when TNB data was being collected. Usually, where TNB service centre is located, a nearby POS office will be included in the survey. For Zone 1, TNB branches selected were, Taman Tun Dr. Ismail branch (newly opened), Bangsar branch (Jalan Telawi), Jalan Masjid India branch. In Zone 2, TNB branches selected was the Gombak/Setapak branch. In Zone 3, TNB branches selected was the Jalan Walter Greener branch. Finally, Zone 4 TNB branches were the Jalan Klang Lama branch and Puchong Jaya branch.

As for POS Malaysia, the branches where surveys were done are as follows: Bangsar, Old Klang Road, Taman Tun Dr. Ismail, Gombak and Jalan Semarak.

The categories of the branches cover housing estate area, commercial or shopping complexes area, and township area.

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## THE SURVEY INSTRUMENT

The instrument used in this study was through the use of questionnaire administered by means of personal interview. The format of the questionnaire is taken from the SERVQUAL of Gap Model developed by Parasuraman, Zeithaml and Berry (1988). SERVQUAL has already been discussed in Chapter 2. For the purpose of this study, the questionnaire was modified and reduced from the original model of 22 questions to 17 questions. This is to prevent boredom of the respondents during the process of being interviewed as well as to cater for relevancy of the variables to one-stop payment centres.

## MODIFICATION OF THE ORIGINAL SERVQUAL

To overcome certain inherent weakness of the instruments, the questionnaire was modified to make it more applicable for the organisation under study. The questionnaires are administered on a one-to-one basis by the researcher where clarification of any queries from the respondents could be made on the spot. This is to eliminate potential errors when some respondent not be able to complete the questionnaires. Also, this administration method will ensure good response rate followed by high data validity and reliability.

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The core of this research is found in two sections, namely Section A and Section C of the questionnaire. The first section (Section A) focuses on the customer's expectation on the service quality of the one stop payment centre over five dimensions, namely tangibles, reliability, responsiveness, assurance and empathy. Three to four questions are being asked under each dimension. The respondent is required to circle the number that his or her feelings towards the feature as described on the Likert scale of 1 to 5. The original Likert scale is from 1 to 7. Again, modification to the Likert scale is done for the ease of the respondents to choose. The Likert scale is classified as follows, 1 = Strongly Disagree, 3 = Neutral, 5 = Strongly Agree. The scale of 2 is between Strongly Disagree and Neutral, and finally, 4 is between Neutral and Strongly Agree.

Section C focuses on the customer's perception on the service quality of that particular one-stop payment centre that the respondent had just performed the bills' payment transaction. The total number of questions in this section is the same as in Section A, which is 17. Table 3.3 below shows the modification done to SERVQUAL.

Table 3.3 - Modification Tabulation of SERVQUAL

| No. | ORIGINAL SERVQUAL ITEM | RELEVANT TO THIS RESEARCH | REMARK | ITEM USED IN THIS STUDY |
|---|---|---|---|---|
| Q1 | modern looking equipment | relevant | Both Q1 and Q2 are merged into one. | Q1 |
| Q2 | physical facilities | relevant | | |
| Q3 | employees neat appearance | relevant | No modification | Q2 |
| Q4 | materials associated with the services | relevant | No modification | Q3 |
| Q5 | company keep up promises | relevant | No modification | Q4 |
| Q6 | sincere interest to solve custom problems | Not used | dropped from study | |
| Q7 | perform service right the first time | relevant | No modification | Q6 |
| Q8 | provide service at promised time | relevant | No modification | Q5 |
| Q9 | company insist of error free record | not applicable | dropped from study | - |
| Q10 | tell customers exactly when services will be performed | not applicable | dropped from study | - |
| Q11 | employees give prompt service | relevant | "Customer will not have to wait long" is used and "the counter staff to process transactions quickly" is important. | Q7, Q8 |
| Q12 | employees willing to help customers | relevant | "service with a smile" is added. | Q10 |
| Q13 | employees not too busy to respond to customer request | relevant | No modification | Q9 |
| Q14 | behaviour of employees will instil customers' confidence | Not applicable | Not used because bad behaviour employees will not be employed in the first place. | - |
| Q15 | customer feel safe in their transaction | relevant | "Error free transaction is stressed here." | Q13 |
| Q16 | employees consistently courteous with customers | relevant | No modification | Q12 |
| Q17 | employees have knowledge to answer customer questions | relevant | No modification | Q11 |
| Q18 | give customers individual attention | relevant | This means "approachable" | Q15 |
| Q19 | operating hours convenient to all customers | Not used | Not used | - |
| Q20 | employees give customers personal attention | relevant | No modification | Q14 |
| Q21 | company will have customers' best interest at heart | relevant | No modification | Q16 |
| Q22 | company understands the specific needs of customers. | relevant | No modification | Q17 |

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In Section B, the respondents are asked to rank the five quality dimensions (tangibles, reliability, responsiveness, assurance and empathy) according to the "Most Important" to the "Least Important". A rank of 1 is given to the "Most important" and 5 is given to the "least important". Weighting is not used in this case because during the test survey it is found that the public respondents find difficulty to give the weightage in terms of percentages. Thus, weightage scale was modified to ranking instead. This is found to be much simpler to the respondents.

Section D asked the respondents to give his opinion on that particular branch level of service. It also probed whether the respondent would recommend to his friends to the branch based on to the services he received from the branch. Lastly, his feeling of satisfaction towards the way his problems being solved by the branch, if any, is being investigated.

Finally, Section E is contain some demographics' questions for the purpose of frequency distribution and analysis with respect to the quality grading.

In order to reach the population that may only communicate in Bahasa Malayu the questionnaires were translated into Bahasa Malayu. It was done with the consultation of Kamus Dewan latest 1994 edition. Samples of the questionnaires both the English version and the translated Bahasa Melayu version are found in the Appendix.

## LIMITATION OF SERVQUAL INSTRUMENT

1. One weakness of the instrument is the restriction of customers' response to a seven-point scale that may mask subtle variation in their expectation and perception. Thus, a five-point Likert scale is used in order to provide a greater degree of variation thus improves accuracy.

2. Another problem lies in the adjectives used in the statements. For example, if one strongly agrees "up to date" equipment is provided by the firm does that mean the equipment is futuristic equipment or equipment that may be seen as before its time? Conversely, if the respondent chooses strongly disagree with "up to date" equipment does that mean that the equipment is out of date for a few years or antiquated? Hence, the choice of adjectives is crucial.

3. It is strongly felt that the originality of English term could not be easily represented in other language, even though the equivalent terms were based on the Kamus Dewan dictionary.

The questionnaire is rather long, consisting of thirty-four (34) statements for Section A and Section C, a section for the ranking for each dimension, some general questions and also some demographics' questions. Respondents' interest may wane as the questions were repeated about the same from Section A to Section C, thus may result in response error. The statement for expectation and perception are rated at different time and the

respondent may forget how they have rated expectations when completing their performance statements. Comparing the two at the same time may give a more accurate reflection of the gap in the respondent's mind.

## DATA COLLECTION PROCEDURE

The researcher personally went to all the locations shown in table 3.4 and administered the survey together with four research assistants in order to get the good response rate. It was done for a duration of five days, between 23/12/1995 to 29/12/95. Potential respondents were first identified by them holding utilities' bills in their hands going into the one-stop payment centres. The respondents were randomly selected. The researcher and four assistants would wait for the potential respondents to first completed their transactions. After coming out from the one-stop payment service centre, the potential respondents were approached for their willingness to be surveyed. From the survey only one set of the questionnaire was not fully completed. It was later rejected from the analysis of this study.

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Table 3.4 - Sampling Location of Survey

| **TNB** | | **POS MALAYSIA** | |
|---|---|---|---|
| LOCATION | QUANTITY | LOCATION | QUANTITY |
| TAMAN TUN DR. ISMAIL | 2 | JALAN GURNEY | 9 |
| JALAN MASJID INDIA | 4 | GOMBAK | 15 |
| BANGSAR | 17 | TAMAN TUN DR. ISMAIL | 30 |
| GOMBAK | 23 | JALAN KELANG LAMA | 8 |
| JALAN KLANG LAMA | 6 | BANGSAR | 20 |
| JALAN WALTER GREENER | 13 | | |
| PUCHONG JAYA | 18 | | |
| TOTAL = | 83 | TOTAL = | 82 |

## STATISTICAL TREATMENT OF THE DATA

The returned questionnaires were manually checked for accuracy of completion by the researcher. Answers for the questionnaires were coded or scored and transferred into the computer for analysis by using the Statistical Package for Social Science (SPSS/PC+) program. The program is available at the faculty's computer facility.

A summary statistic showing frequency distribution of the mean, standard deviation and percentages concerning the demographic variables will be shown. The data for both TNB and POS Malaysia were treated separately as well as pooled together. The data were computed for reliability and internal consistency for Cronbach alpha 0.5 (Nunnally, 1967). This is because reliability coefficient below 0.5 cannot justify the

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findings of the study. Subsequently, factor analysis was performed. Paired t-test was used to determine the deviation between the means of expected and perceived service quality.

Ranking of the five dimensions was analysed for both the "Most Important Dimension" as well as, the "Least Important Dimension" sequences. This is followed by crosstabulation analysis for, crosstabulation between "location of survey done" and "grading of the level of service"; and also for, crosstabulation between "location of survey done" and "respondent recommendation".

Finally, Analysis of Variance (ANOVA) was used to test differences amongst the demographics that are considered relevant and have high influence in service quality.

SERVPERF instrument which measures only the performance of the service organisation is used for cross checking purposes. Furthermore, the perception part (Section C of questionnaires) of the modified SERVQUAL is consistent with the SERVPERF measurement scale developed by Cronin and Taylor (1992), the data were then treated for SERVPERF analysis as well. T-test were performed for the two organisations and analysed separately.