

EVALUATING THE QUALITY SERVICE OF INTER – STATE COACHES: A CROSS – SECTIONAL STUDY CONDUCTED AMONG PASSENGERS AT MAJOR TERMINALS IN KUALA LUMPUR

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Abstract

This research aims to evaluate the quality of the interstate bus service based on the passengers' perception at four major bus terminals in Kuala Lumpur. Rapid urbanization has encouraged migration of people and increase in internal migration from rural to urban areas. The level of public transport quality service between various demographic need to be quantify. The survey includes on quality service of interstate coaches and a cross sectional study among passengers. The study expected to propose the best suggestion towards quality of service, reliability, safety, security, comfort and value of money for passenger, bus operators and government spending.

Keywords: *Bus service, operators, quality, terminal, passengers, safety and security*

Introduction

1.1 Background

Rapid urbanization has encouraged migration of people. This scenario is also prevalent in a developing nation like Malaysia. (Norhaslina Hassan, 2009). The number of inter city movements of people and vehicles has increased tremendously (Rodrigue et al., 2009). *The increase in internal migration from rural areas to urban ones like Kuala Lumpur has resulted in an increased in the number of migrants in the low-income group, who compete for jobs, and more importantly, for a place to live. Again(Hamzah Sendut ;1972) . The main reason for this migration is to increase their status of living and gain more income to cope with the demands in developing nation.*

The mass migration of population, that leads to rapid urbanization and growth of metropolitan cities in Malaysia has resulted in a continuous cycle of fluid and massive movement of people between states which further impacts major social activities of the citizens , and results in increment of the economic growth and sustainability. (Ho, 2008). Since the movement of people between states are supported by major public transportation that includes inter-state coaches, major stakeholders such as policy makers and bus operators will be pressured to provide adequate and quality public transport to meet the passengers perception of quality coach services. (URBANIZATION AND URBAN GROWTH ISSUES FOR THE NEXT

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1.2 Gap In The Literature

The current literature on the poor quality level of coach services in Malaysia only focused on rural areas such as Ipoh -Lumut (Suwardo), pocketed areas such as Klang Valley, (National Key Performance Indicators,2010;)Putrajaya, (Md. Nor, Md Nor and Abdullah , 2006;) Melaka ([Safiza Suhana et.al](#)),and Greater KL(Kuala Lumpur City Hall.Kuala Lumpur Structure Plan 2020.(2004), Johor Bahru , Penang (10th Malaysia Plan).

It is uncanny that there are no definitive studies examining the quality criteria of inter state coaches in Peninsular Malaysia, even though, the massive fluid migration of population between states is saliently supported by major public transportation that includes inter-state coaches. (*URBANIZATION AND URBAN GROWTH ISSUES FOR THE NEXT MALAYSIA CENSUS 2010*)

It is this mass interstate migration of population, that leads to rapid urbanization and growth of metropolitan cities in Malaysia which further impacts major social activities of the citizens , and results in increment of the economic growth and sustainability. (Ho, 2008).

Also, in the wake of these massive interstate people movement, the number of fatal accidents involving interstate coaches, also increased tremendously. In a research report conducted by the Malaysian Institute of Road Safety Research stated that “... for the five-year period (2000 – 2005), there was a 25.35% increments in accidents involving commercial vehicles especially inter state buses and lorries with interstate buses experiencing more than a 100% increment (from 1,040 in 2000 to 2,405 in 2005). Tragically, most of the interstate bus crash victims are innocent victims such as the passengers and other third party road users “. (Osman MR et al 2009). In one of the worst accidents in the Malaysian, on the 25th of September 2013, three passengers on board of a interstate coach were killed when the double decker bus rammed into the lorry that carrying wooden planks at the North-South Expressway, both vehicle were on the left side of the road when the collision took place and police were still trying to find out if either of the drivers was speeding. *The STAR, Wednesday 25 September 2013.*

There are no definitive study conducted among passengers of interstate bus coaches. Passengers are key informers on the efficiency of the PT, but in Malaysia, studies on the factors that affect the satisfaction of PT from the interstate passengers’ perspectives are very rare.

1.3 Problem Statement

Therefore the aim of this pilot study, with respect to the lack of studies exploring the efficiency of the public transport from the interstate passengers’ point of view , is to study the satisfaction level of passengers of interbus services. It is hoped that the results from this study will be a point of reference to and serve as a pressure to relevant stakeholders, such as researchers, policy makers, bus operators, and societies at large to improve the level of quality service of interstate coaches in Peninsular Malaysia for the benefit of the passengers.

1.4 Significance Of Research

Studies exploring the efficiency of the inter PT from the passengers' point of view are rare in Malaysia even though, the massive fluid migration of population between states is saliently supported by major public transportations that includes inter-state coaches. Also, in the wake of these massive interstate people movement, the number of fatal accidents involving interstate coaches, also increased tremendously.

Also the current information on the level of quality of coaches in Malaysia is derived from passengers that commute on intercity coaches. PT travel in Malaysia which not reliable and after known as "bad" which also necessitates the sharing of service with other strangers (Mohamad & Kiggundu, 2007).

With the growing movement of people interstates due to the rapid urbanization, this study is therefore timely, as the perception of satisfaction from the passengers' point of view has not been explored. The passengers are the key informers that will provide the necessary data to the major stakeholders for policy implementations.

1.5 Research Objective

1.5.1 Main objective

This research aims to evaluate the quality of the interstate bus service based on the passengers' perception at four major bus terminals in Kuala Lumpur; Putra East-Coast Terminal, South-Gateway Terminal, North-Gateway Terminal, and Pekeliling Terminal.

1.5.2 Specific Objective

To compare the level of public transport quality service between various demographic profiles i.e; gender, age, education, social and economic income.

1.6 Definition

Intercity bus has been defined by the Federal Transit Administration (FTA) as follows: Regularly scheduled bus service for the general public which operates with limited stops over fixed routes connecting two or more urban areas not in close proximity, that has the capacity for transporting baggage carried by passengers and that makes meaningful connections with scheduled intercity bus service to more distant points, if such service is available.....The definition of intercity bus does not include commuter service (service designed primary to provide within the local commuting area). Intercity bus does not include air, water and rail service. (FTA, 2007)

1.6.1 Quality of Service

Quality of service is the overall measured or perceived quality of transit service from the passenger's point of view. (TCQSM, Alan R.Danaher). Quality of service includes the transit service measure, transit performance measure and level of service.

Transit service measure is a quantitative performance measure that the best describes a particular aspect of transit service and represents the passenger's point of view.

Transit performance measure is a quantitative and qualitative factor used to evaluate a particular aspect of transit service.

Level of service is a six designated ranges of value for a particular service measure graded from “A” (best) to “F” (worst), based on transit passenger’s perception of a particular aspect of transit service.

Variables

1.6.1.1 Reliability

Reliability of a bus service is defined the ability of the bus system adhere to a scheduled arrival or departure time, or maintain regular headways and consistent travel time (Chen,2009). Some studies defined reliability as a key performance measure of a transport service provider that will affect passengers point of view based on their experience (TCQSM). Factors that influenced passengers choose mode of transportation is Reliability (Abkowitz et al. 1978) The unreliability will increase operating cost (Bowman and Turnquist 1981).

The most common reliability measures used in TCQSM (2004) by transit operators include these factors:

- a. Vehicle and maintenance quality
- b. Vehicle and staff availability
- c. Scheduled achievability
- d. Evenness of passenger demand

1.6.1.2 Safety and Security

Safety and security is define as the condition of being safe from undergoing or causing hurt, injury. (<http://www.merriam-webster.com/dictionary/safety>)

1.6.1.3 Comfort

Comfort is a term often associated with well-being. (Johansson (1989, p.2) defines comfort in public transport as; “*The level of a persons’ experienced well-being during a trip.*” Johansson also divides comfort into the following three parts; comfort during boarding/alighting, comfort when changing transport mean and comfort during the trip. Kottenhoff (1999, p.243) describes comfort on board as an important factor and that it is one out of three attributes that influence how passengers experience quality.

1.6.1.4 Value for money.

In the context of procurement, value for money has been defined as, the optimum combination of whole of life costs and quality (or fitness for purpose) of the good or service to meet the user’s requirement. (HM Treasury, U.K).

Review of the Literature

2.1 Review of the Literature

Rapid urbanization encourages migration of people to increase their status of living and gain more income to cope with the demands in developing nation. This scenario results in a major impact in the social activities of the citizens and increment in the economic growth and sustainability. (Ho, 2008) stated that “in terms of urbanization, there has been rapid growth of the population and the capital city”, and provided information on the increase of the urban population in Malaysia from 50.7% in 1991 to 62% in 2000. They further provided interstate data’s of increment in the rate of urbanization in most of the states throughout Malaysia. (Ho, 2008) This rapid urbanization, they further noted, has resulted in an exponential economic growth which has led further to increase in personal wealth (Ho, 2008). These factors have resulted in the fluid and massive movement of people between states.

The number of inter and intra city movements which includes people and vehicles has increased (Rodrigue et al., 2009) Under the 9th Malaysia Plan, 2006 – 2010, The Government has allocated a whopping RM31.8 billion in promoting PT utilization. Since the Government has allocated a large amount to increase and sustain the quality and efficiency of PT service in Malaysia, the assumption will be that the PT system in Malaysia is excellent. Surprisingly though, Kasipillai J, Chan P (2008) provided the information that Malaysians in general depends highly on private vehicles as a result of the poor management of the PT system. A study conducted by (Jayamaran et.al 2011) claimed that the PT travel in Malaysia as being not reliable and bad, which further necessitates the sharing of private vehicles, which eventually leads to a decrease in the usage of the PT, and opposing the increase in the private vehicles.

In a recent survey, the Ministry of Transport Malaysia, in its target to increase ridership for public transport services in the Klang Valley to 15% in 2010 and to 25% by end 2012 during the daily peak morning period, set seven NKPIs to measure reliability and journey time, comfort and convenience, accessibility and connectivity, as well as availability and capacity. The findings showed a mere 48% satisfaction rates among the respondents. (National Key Performance Indicators; 2010)

Md. Nor, Md Nor and Abdullah (2006) concurred with this statement by stating that “reliable studies on fares, services, and cross-elasticity’s from developed or third-world countries are rare”. They further conducted a survey research face-face to questionnaire, in Putrajaya, between September and October 2003, adopting the stated preference (SP) method to solicit the required information to model mode-choice behavior. The five sets samples (n =1943) were those who work commute within Putrajaya, work commute outside Putrajaya, on official business with the government, on social shopping and tourism. The aim of this study is to explore the factors that may increase the modal split of private/public transportation from the current 15:85 to 70:30. The findings showed that the reduced fare rates were still incapable of shifting the public’s mode of transportation from private to public. The PT still dominates the mode of transport in Putrajaya, even though the provision of high quality road network with large space is prevalent in Putrajaya.

Safety and security of the PT is a main concern among commuters, especially when the number of bus accidents is on the rise in Malaysia. A research report conducted by the Malaysian Institute of Road Safety Research stated that “.... for the five-year period (2000 – 2005), there was a 25.35% increments in accidents involving commercial vehicles especially buses and lorries with buses experiencing more than a 100% increment (from 1,040 in 2000 to 2,405 in 2005). Tragically, most of the bus crash victims are innocent victims such as the passengers and other third

party road users “. (Osman MR et al 2009). The attention and coverage highlighted by the media have alerted and alarmed relevant authorities, stakeholders, consumers alike.

In one of the worst accidents in the Malaysian, on the 25th of September 2013, three passengers on board of a interstate coach were killed when the double decker bus rammed into the lorry that carrying wooden planks at the North-South Expressway, both vehicle were on the left side of the road when the collision took place and police were still trying to find out if either of the drivers was speeding. *The STAR, Wednesday 25 September 2013.*

It has been well documented that passenger willingness to pay (WTP) for safety and their willingness to accept compensation (WTA) for increased risk. (Sillano, M. and Ortúzar, J. de D. ; 2005). Bus commuters need assurance from the service providers on the safety features of the coaches and the level of competency and expertise of the bus drivers.

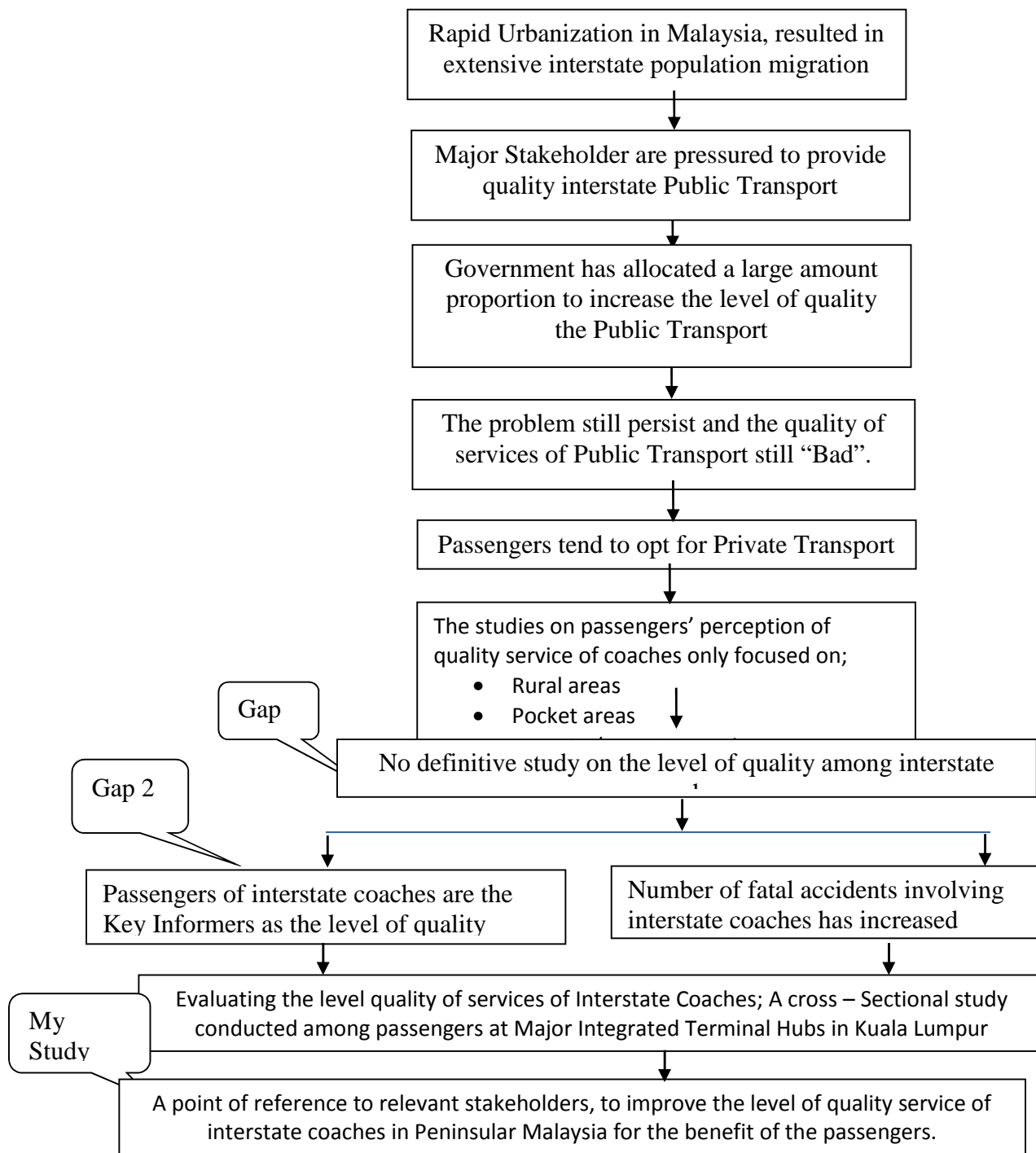
The inefficiency of PT reported by commuters is not only happening in Malaysia, but also in developed countries. In a recent Bus Passenger Satisfaction Survey (BPSS) conducted at 198 fixed sampling points (bus stations or stops) across England outside London, conducted between 30 October and 26 November 2010, by the Manchester-based Passenger Focus, a face to-face questionnaire was administered on samplings from across England (n=3087), Metropolitan (n=1426), and Shires (n=1661). The full average satisfaction score for this survey of KPIs is 100. The reliability has the lowest score of any of the KPIs, with an average satisfaction score of 68 out of 100 in quarter 4. Reliability is also the second highest influencer of overall satisfaction. Satisfaction with reliability has fallen significantly since last quarter. Value for money is the second lowest KPI, scoring 74 out of 100. Value for money is also an important driver of overall satisfaction. Safety and security involves an average score of 2 questions, “How satisfied are you with: Your feeling of personal safety at the bus stop (81 of 100) and your feeling of personal safety during the journey (91 of 100).” The average score for Satisfaction with safety and security remains fairly high at 84 out of 100. With regards to the question on personal comfort, which includes air-conditioning, the total score was 83 out of 100. The Gothenburg study have stated that one factor why people shy away from PT and used private vehicle as the main reason for travelling is comfort. The centre of attention of this study is to analyze passenger’s point of view to valuate comfort on intercity and interstate PT coaches. This study showed most passengers on board of the intercity coaches think that comfort is important while passengers on board of the regional bus route think that the comfort standard is higher, as well as more important that the respondent on the local bus route. (JENNY KARLSSON AND EMELIE LARSSON, 2010)

This eventually leads to the question of why passengers shy away from the PT, when the Government has done tremendous action to improve its services and qualities. Passengers are key informers on the efficiency of the PT, but in Malaysia, studies on the factors that affect the satisfaction of PT from the passengers’ perspectives are very rare. Therefore the aim of this study, with respect to the lack of studies exploring the efficiency of the public transport from the passengers’ point of view and the large intra movement of vehicles, is to study the satisfaction level of passengers of intra bus services, being key informers throughout Malaysia.

2.2 Research Question

Are the interstate coach passengers satisfied with the quality service of the coaches?

2.3 Conceptual Frame Work



Research Methodology

3.1 Introduction

This chapter introduces the procedure and methodology used for the purpose of this research. Procedures for data collection and methods of analyzing data are provided in order to gather accurate results.

3.2 Research Design, Methods, Techniques

This study will use a survey approach and will focus on descriptive cross sectional study. Survey approach come in a wide range of forms and can be classified into three types: written, oral and electronic. Written survey is most appropriate to predetermined issue that are practically access the survey by the potential respondents. Self-administered survey is one of the more common survey employed in transport practice research. There are two types of self-administered questionnaires: supervised and unsupervised. The former involves people answering in the presence of the surveyor and the latter permits the respondents to complete the questionnaires by themselves. The advantages of self-administered or group-administered questionnaires are numerous, which include the lower cost compared to other survey methods. They also allow wider geographical coverage, larger samples and wider coverage within a sample population. Furthermore, self-administered questionnaires are much easier to implement than other kinds of surveys because fewer personnel are required for data collection since there is no need for interviewers. The researcher is able to collect the survey results in a short space of time, ensuring a very high response rate. People too, are more likely to give complete and truthful information on sensitive topics in self-administered surveys rather than in interviews. One of the disadvantages of this approach is the time and effort involved in delivering and collecting the questionnaire. However, the benefits of being able to access potential respondents, cost effectiveness and ability to yield a high response rate supersede the limitations when compared to other survey methods. Multiple Choice Closed-ended questions limit respondents' answers to the survey. The participants are allowed to choose from either a pre-existing set of dichotomous answers, such as yes/no, true/false, or multiple choice with an option for "other" to be filled in, or ranking scale response options. The advantages of using Multiple Choice Closed-ended questions are more easily analyzed. Every answer can be given a number or value so that a statistical interpretation can be assessed. Closed-ended questions are also better suited for computer data system analysis SPSS 20.0.

3.3 Study Population and Sampling

3.3.1. Sampling Method

This study will utilize random stratified sampling strategy.

3.3.2 Sample Size

The estimate sample size for this study is 400 respondents. Using Stratified sampling strategy which the population is divided into subgroups or "strata," and a random sample is then selected from each subgroup. For example in this study sample will be divide into three (3) subgroup, northern region in Puduraya Terminal Hubs, Terminal Bersatu Selatan (TBS) southern region and Hentian Putra Terminal Hubs for coast-east region. The average population by each group will be divided by estimate sample size to get the percentage for each

subgroup. The percentage is used to get the fraction for each subgroup and the number of sample that represent the subgroup population.

3.3.3 Inclusion and Exclusion Criteria

Passengers who are aged eighteen and above, who are literate, able to understand English and Bahasa Malaysia and have experienced using the mode of interstate PT prior to this study will be included in this study. Those who do not meet these criteria will be excluded from this study.

3.4 Data collection procedure

These passengers will be surveyed at four major bus terminals in Kuala Lumpur; Putra East-Coast Terminal, South-Gateway Terminal, North-Gateway Terminal, Pekeliling Terminal. Prior to the survey, the principal researcher will obtain written consent from the Management of the four Major Terminal Hubs in K.L to get their permission to conduct the survey and collect data from passengers at their respective terminal. This survey will be conducted from Monday to Thursday in the month of October 2013. This method is taken to avoid the peak period especially during the weekends which commences from Friday and public holidays. It is quite common that during peak period and public holidays, to accommodate the increase in the number of passengers, bus operators will tend to liaise with inappropriate and privately-run service providers, which may compromise on the standard quality of PT services. Should the questionnaires be distributed to this group of passengers, the findings of this study may not be accurate.

Sample will be approach and asked whether they have used the interstate coaches prior to this study. If the answer is “Yes”, the sample will then be briefly explained about the research objectives. Should they be willing to participate, verbal and written ethical consent will then be obtained, and the questionnaires will be distributed. Each of the samples will be given twenty minute times to complete the questionnaires. The respondents will be assured of confidentiality and that the results will be purely used for research purposes only.

3.5 Data Analysis Procedure

SPSS computer software will be utilized in this part. The MANOVA, ANCOVA and multiple regression analysis tests will be employed.

3.6 Pretest

Every questionnaire should be pretested, no matter how skilled the researcher. Virtually every questionnaire could be changed in some way to make it easier for the respondents and interviewers to meet the researcher’s objectives. Fowler. Pretest will be conducted by prefield methods through methodological expert reviews and field method through respondent debriefing .

Pre-field

The first draft of a questionnaire in this study will be examined by methodological expert reviewer which have extensive exposure to either theoretical or practical aspects of questionnaire design This method is necessary to this study to make sure that the content of this study is valid and meet the researcher’s objective. Fowler (1993)

Field

After the draft questionnaire have been reviewed by the methodological expert, the researcher will select randomly respondent to test the questionnaire. No matter how much developmental and pre pre-testing work is done on a questionnaire, the instrument must still be tested under field conditions. (Converse & Pressor, 1986; Oksenberg et al. 1991; Fowler, 1993;

Czaja & Blair , 1996). For the purpose of this field study, five respondent will be randomly selected that fits the study sampling inclusion and exclusion criteria. Respondents assume the role of informants, by connecting and elaborating on their interview experience. Elizabeth Martin. A set of respondent debriefing questionnaire that examined the respondent understanding towards the instructions, terminology, questions and responses of the draft questionnaire will then, be provided by the principal researcher to the respondent. The draft questionnaire will then be reviewed with the resulted inputs from this respondent. Adjustment will be made with the assistant of the methodological expert reviewer.

3.7 Pilot Study

A pilot study will be conducted on 20 samples that fit the inclusion and exclusion criteria. The purpose of pilot study, not so much to test research hypotheses, but rather to *test protocols, data collection instruments, sample recruitment strategies, and other aspects of a study in preparation for a larger study.*" Abstracted from *Nursing Research: Principles and Methods, 7th Edition (2004) by Denise F. Polit, Cheryl Tatano.*

A pilot study should be viewed as an early study to test **the logistic feasibility of the procedures** that will take place in the during the data collection and data analysis stages of the definitive study. Abstracted from "Guidelines for clinical trials in Helicobacter pylori infection" (1997). Working Party of the European Helicobacter Pylori Study Group. Gut 1997;41(Suppl 2)SI-S9

3.7 Ethical considerations and Responsibilities

Approval is required from the authorities of this Discipline, and the University, the Ministry of Transport and the respective Terminals. The authenticity, relevancy, and accuracy of the information derived from documents will be verified by prospective and relevant validated authorities. For accuracy of reporting, all raw data will be kept for a period of five years, all shortcomings and limitations will be accounted for. Methods to overcome pitfalls will also be suggested and their success and failures documented. Confidentiality of the documents will be upheld and all data will remain solely with the researchers'. Any storing, access, usage or destruction of data other than the researchers', the Ministry of Transport and the respective Terminals will not be allowed.

Expected Results

The end results will be presented using pie charts, histograms, line graphs and tables. The findings of this research will be disseminated through attendance at local, regional or international conferences, seminars and workshops; through publications in peer-reviewed journals; and holding of a dissemination seminar.

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