Chapter 3

Methodology

3.1 Introduction

Cuddington (1993) and Cuddington and Hancock (1994) used the standard neo-classical model to explore the effects of AIDS on economic growth. According to their study, AIDS related morbidity and mortality decreases the size of the labour force. In addition, AIDS related medical expenses lowers public and private savings leading to reduced investment in physical capital and lower productivity.

Mann, Tarantola and Netter (1992:195) write, "The adverse impacts of the AIDS epidemic will reduce the potential for economic growth. AIDS is distinct and its impact can be expected to be quite severe". Similarly, Cohen (1993:32) concludes that the economic and social costs of the HIV are truly colossal. The epidemic, if unchecked, could transform the developmental performance of many countries. In the Panos Institute (1992:16), the authors claim that HIV/AIDS has the capacity to seriously undermine the development prospects of many nations.

The UNDP also argues that the AIDS epidemic imposes large costs on individuals and their families that will be translated into aggregate costs that could become large enough to create national economic crisis. Michael Mersons, the former head of WHO's global program on AIDS contend, "The deaths of millions of able-bodied adults will rob society of their education, skills and experience. The resulting

productivity losses will threaten the very process of development". (Mersons 1992:2)

3.2 Research Methodology

Several methods were employed in collecting materials for this research. The primary data for this paper has been obtained mostly from interviews or informal conversations with PWAs, heath care volunteers and formal questionnaires specially prepared for the PWHAs. Whereas the secondary data has been obtained form the Ministry of Health and the Malaysian AIDS Council. A library research was carried out to review the existing literature on the Economics of AIDS. The available literature that has been consulted is included in the bibliography. The reader will notice that almost all the reports and books referred give the experience of other countries. Besides that, secondary data were also collected from the Ministry of Health's HIV and STD Unit. These data comprises mainly of the government's expenditure on the treatment and prevention costs involved in the HIV/AIDS combat. Data on reported cases on HIV and AIDS were also obtained from the same source

3.3 Sample Size and Criteria for choosing Sample

The sample size is 25 respondents currently with HIV/AIDS. This study was confined to the PWHAs living in Klang Valley who are currently seeking treatment for opportunistic illnesses and who come in for counseling in drop-in centers or live-in centers.

The main survey tool employed was a three-page structured questionnaire, which also included a few open-ended questions to obtain some qualitative information.

The interviews and questionnaires covered a broad spectrum of areas ranging from perception and knowledge to services provided and socio-economic background of the respondent. The PWAs were selected from various counseling centers, hospitals and drop -in centers.

3.4 Questionnaires

The questionnaires were self- administered and each question was carefully explained to the respondents so as to ensure a full understanding of what is asked. The writer made trips to the various centers in the Klang Valley to conduct interviews.

3.5 An Overview of the secondary data on reported cases of HIV/AIDS cases.

This section aims to discuss the rate and number of HIV/AIDS cases reported in Malaysia during the period from 1986 to 1999. An analysis of the breakdown of the reported cases is also done on the ethnic composition; occupation, age- group and modes of transmissions are also discussed.

3.6 Overview of the Survey of PWHAs

This section will look at the survey carried on PWAs and analyses the responses given by the said respondents. Issues such as age, employment, coping strategy, costs of treatment and other related areas is being discussed here.

3.7 The Variables to be tested

3.7.1 The Increased Cost and expenditure of the household and its impact on economic growth.

A household is expected to make decisions regarding its consumption, saving and investment in physical and human capital, labour force participation of its members and family size within its own constrain and the common environment in which it lives (Freedman, 1994). In order to understand the economic consequences of AIDS, a useful starting point is to examine the costs associated with the disease. These costs fall into four main categories. The first includes a personal medical cost that is

costs of detecting, treating and caring for PWAs. The second category are the prevention costs comprising of cost of blood screening, costs of information, education and communication and the costs of basic research on AIDS. In the third category is the cost of lost output and lost income because of AIDS morbidity and mortality. The fourth consists of the psychological costs associated with the epidemic such as pain and suffering caused by AIDS and the cost imposed upon people who must behave differently to avoid contracting or transmitting HIV.

The first two categories of the AIDS costs jointly make up the direct cost of the epidemic, so named because they involve a direct diversion of the scarce resources from other uses.

The third category is referred to as the indirect cost, as it is not an out-of-pocket cost like medical expenses on AIDS patients. It is what economist term as an opportunity cost as it reflects the lost opportunity to work and produce the goods and services whose consumption yields satisfaction. The epidemic's psychological costs are rarely discussed, as it is difficult to quantify.

The focus of this study is on the socio-economic impact of HIV/AIDS on households and economic growth at the national level, highlighting in particular the effects on

1. The calculation of the direct and indirect costs of HIV/AIDS on the individual or household

2. The investigations into the individual or households coping strategy

3. The increase on the government expenditure on treatment and prevention measures taken to contain the epidemic.

Direct and Indirect Costs of HIV/AIDS

The direct cost of HIV/AIDS included a direct medical cost comprising of

i)   immunity test and AZT prescription

ii)   transportation costs

The indirect costs also known as the forgone earnings due to HIV/AIDS morbidity and mortality are calculated by taking the number of lost years of work by subtracting the age of the deceased from the average age of retirement which is assumed to be 60. Then using a 6.5 percent discount rate multiplied by the annual earnings by the number of lost working years to obtain total foregone earnings.

The macroeconomic impact of HIV/AIDS is seen theoretically as an indirect impact as it affects the labour supply and productivity and hence, the GDP growth. On the other hand the increased expenditure of the individual and the government sector due to the costs of medication and foregone income will create an reduction in savings and investment and hence a reduction in economic growth. A simple regression analysis is also carried out to test if HIV has an influential impact on economic growth.

The independent variable will be the HIV/AIDS cases whereas GDP is the dependent variable. Again, we reverse the situation and take HIV/AIDS as the dependent variable and GDP as the independent variable. The GDP is a measure of the economic performance of a nation. The GDP data is derived from the Bank Negara economic reports

The hypothesis is as follows:

Ho: there is no significant relationship between HIV and GDP

Ha: There is a significant relationship between HIV and GDP

And again,

Ho: There is no significant relationship between GDP and HIV cases

Ha: There is a significant relationship between GDP and HIV cases

3.7.2 Government Expenditure and effort in containing the epidemic

This section examines the government's expenditure on the prevention and treatment for HIV/AIDS over the period from 1993 to 1999.Government expenditure refers to the amount of public spending and the data is collected from the Bank Negara Reports

A simple regression analysis is performed to see the significance of the government's budgetary effort in this area.

As the disease is a unique one in the sense that it presents itself in a number of opportunistic illnesses, the demand for treatment for these illnesses will increase. Besides that, to mitigate the widespread effect of the HIV/AIDS epidemic, the government would have to intervene by means of prevention measures for example, to maintain sterility medical practices, blood testing procedures, education for prevention campaigns and basic research on AIDS. A simple regression analysis is carried out to test the significance of government expenditure and the level of HIV/AIDS cases. The hypothesis is as follows:

Ho: There is no significant relationship between Government expenditure and HIV

Ha: There is a significant relationship between Government expenditure and HIV

The dependent variable in this case will be the number of HIV/AIDS cases and the independent variable will the government expenditure.

3.8 Statistical Analysis Used

The simple regression analysis is used to measure the significance of the HIV/AIDS on the economic growth and to see the impact on the governments' attempt to curtail the disease.

By regressing the data, a simple regression equation is formed as shown below:

$Y = a + bX$

Where Y is the independent variable

And X is the dependent variable

In order to test the level of significance, the calculated t should be > than the critical t. To find the critical t, the degrees of freedom must be computed by taking the number of observation minus the number of variables minus the constant.

To test the hypotheses, whether there is evidence to support the hypothesis that X has an influence on Y

For a null hypotheses, where Ho = 0, there is no relationship between the dependent and independent variables.

Whereas there will be no relationship between the variables if Ha ≠ 0 hence rendering it to be an alternative hypotheses.

The adjusted R square shows how well the variables explain the validity of the equation.

Hence, the adjusted R square explains the goodness of fit of a given equation.

The SEE explains the variance between the estimated and the actual valves that is being regressed. The lower the SEE, the more statistically valid is the equation.