

CHAPTER IV RESEARCH METHODOLOGY



4.1 Study design:

This research is cross-sectional descriptive study

Data was collected to describe the socioeconomic characteristics of people and willingness to pay for HIV/AIDS counselling-testing service and knowledge about HIV/AIDS. Use regression analysis to estimate the relationship between these variables.

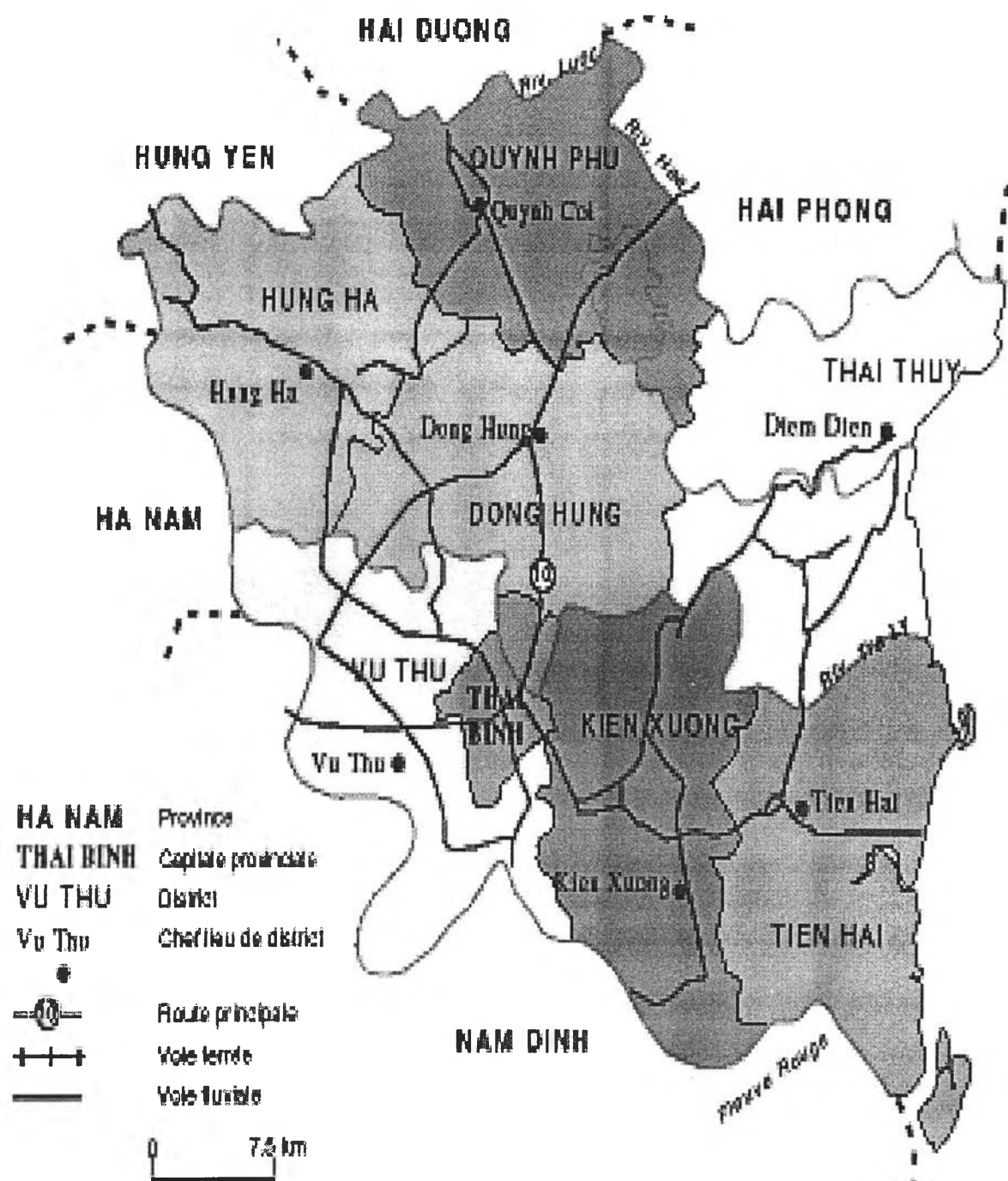
The time of study: Feb. 2005

4.2 Study area:

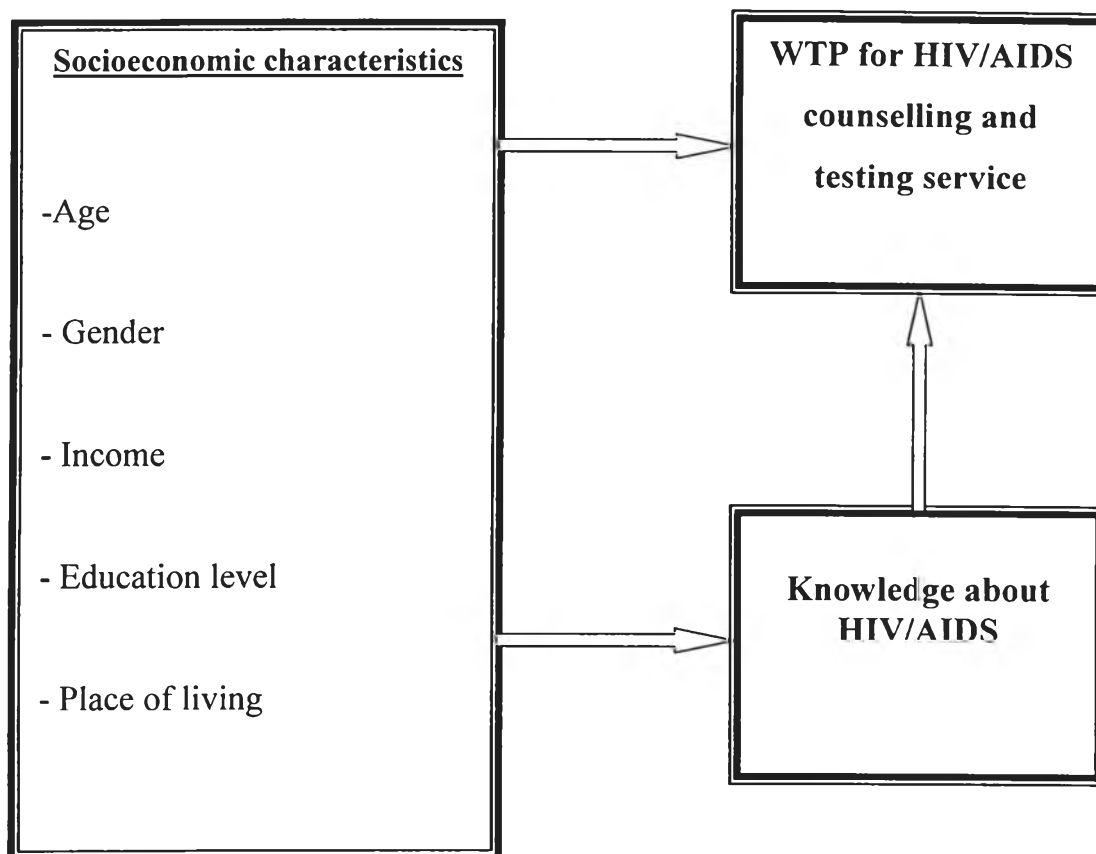
Present Thaibinh city was found and developed in close connection with promotion of the Red River Civillisation. The former name of the City is KyBo set up since 10th century. Over historical ups and downs, with traditional working selflessly and fighting with fortitude, the City resident have been and are approaching to the pinnacle of economic development and social and political stability. Thaibinh city is an economic and political centre of the province and has rapidly become a busy trading place with day by day changes.

The City of Thaibinh is divided into two different regions: the internal region of the city includes 6 quarters, occupying one-third of the whole province's area and is home for 100,000 residents; the external region comprises 5 communes with 95,000 residents. Locating on an area of 43,300 sq.km and being home for 195,000 people. Thaibinh city become one of third level urban cities of the whole country. Further more, all the elements of economy, culture, education and health sectors are also developing very strongly and rapidly.

The map of Thaibinh Province



4.3 Conceptual framework:



4.4 Operational definitions:

4.4.1 Definition of dependent variables:

Willingness to pay for HIV/AIDS counselling and testing service:

This variable is defined as the amount of money that people are willing to pay in order to be counselled and tested HIV/AIDS. The price or amount of money that someone is willing to give up or pay to acquire HIV/AIDS counselling-testing service. Willingness to pay is the source of the demand price of HIV/AIDS counselling and testing service and it is an important basis for setting price in order to expand HIV/AIDS counselling-testing service in Thaibinh City.

Knowledge of HIV/AIDS:

Knowledge of HIV/AIDS is defined as basic knowledge that can help people to prevent the transmission of HIV through three main transmitted ways including sexual relation, injecting drug use and transmission from mother to child. People's knowledge of HIV/AIDS depends on various factors including socioeconomic factors of people and society, the quality of communication campaign on HIV/AIDS, the quality of intervention programs, quality and availability of counselling-testing service etc.

This variable is gathered from a survey through a questionnaire including basic questions related to HIV/AIDS and it is illustrated by a ratio between right answers and total questions.

$$\text{(Proportion of correct knowledge = Correct answers / Total questions)}$$

In this study, individual socioeconomic characteristics are focused on in order to describe the relationship between these variables and basic knowledge about HIV/AIDS of people.

4.4.2 Definition of independent variables

General characteristic

- Age of respondents will vary from 19-49 years. This population can assure that they start attending the labour force and in the sexual active group- the targeted group of HIV transmission. Age was divided into three groups. Group 1 included people in the age from 19 to 29 yrs. Group 2 included people from 30-39 yrs and group 3 was people in the age from 40-49 yrs.
- Gender: Male or female
- Place of living, it referred to urban or rural area.
- Individual income: was assessed based on income of individual per month. Income was summed up from major items: rice, cereal crops, industrial plants/

fruit tree, forest, livestock, fish/ shrimp hatching, business, salary, hired-labor, supplementary benefit, and other resources.

Income was divided into three groups. Group 1 included people with monthly income under 400,000 VND, Group 2 included people with monthly income from 400,000 to 700,000 VND and Group 3 was people with monthly income more than 700,000 VND.

- Education level: refer to highest educational attainment of the respondents according to the educational system in Viet Nam as primary level, secondary level, high level, and professional level. In this study, education level is a continuous variable, and it is classified the years of schooling of person interviewed.

4.5 Sample size estimation:

$$N = \frac{Z_{1-\alpha/2}^2 PQ}{d^2}$$

Of which:

N : is the estimate sample size

$Z_{1-\alpha/2}$: is the standard normal deviation set at 1.96 corresponding 95% confidence interval (α equal to 0.05).

P : is proportion of people having knowledge about HIV/AIDS, which is estimated equal to 0.75.

Q = $1 - P = 1 - 0.75 = 0.25$

d = degree of accuracy set at 5%

$$N = \frac{(1.96)^2 (0.75)(0.25)}{(0.05)^2} = 288$$

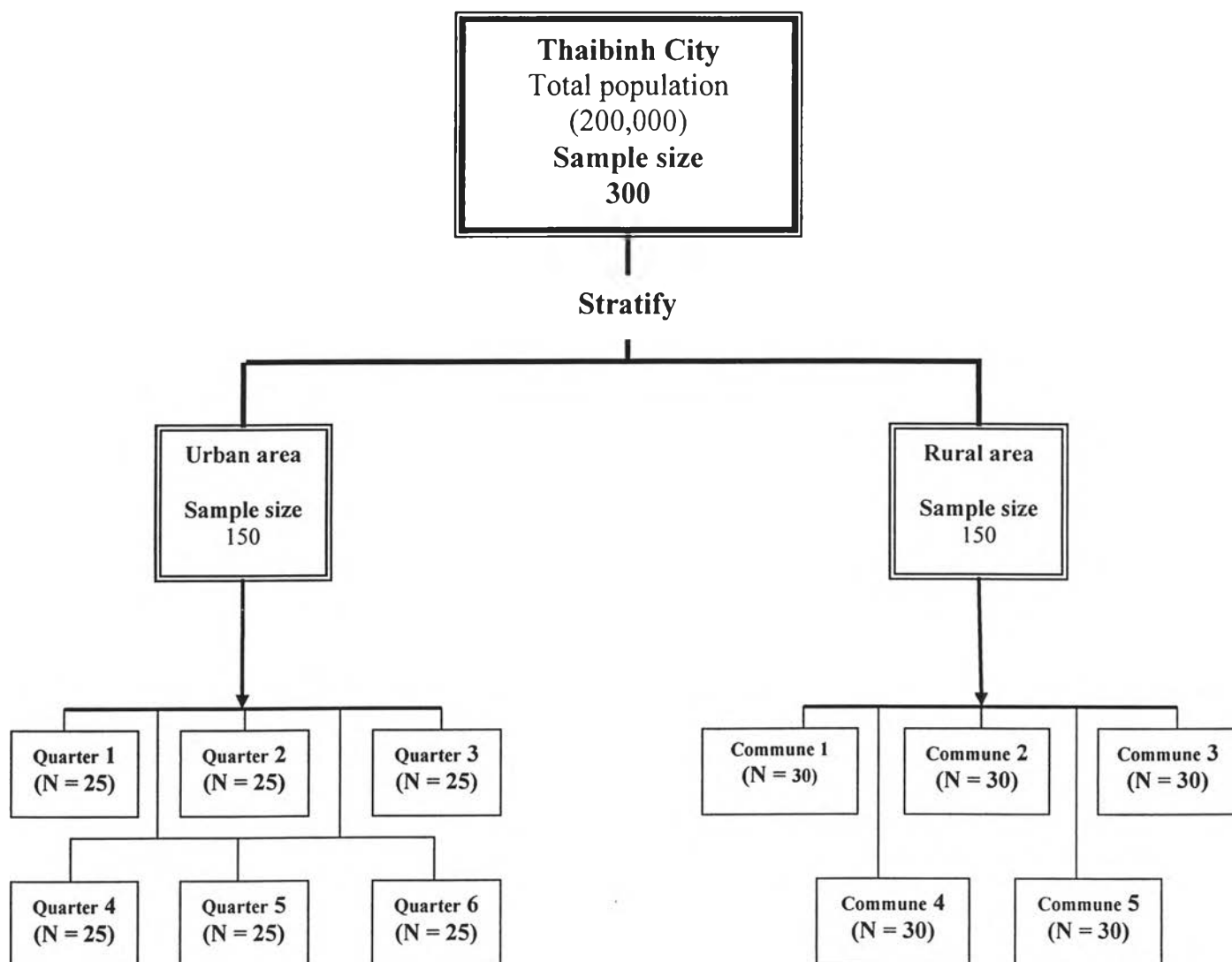
Sample size in this study is 300

4.6 Sampling procedure:

The area of Thaibinh city is divided into two regions urban and rural areas. Rural area has 5 communes, urban area has 6 quarters.

In this study, target population is the population of nearly 200,000 people who are living in Thaibinh City and sample size is 300.

The list of quarters and communes with population in age of 19-49 was prepared, at each commune in rural area has 30 individuals randomly selected to interview, each quarter in urban area has 25 individuals randomly selected to interview.



4.7 Data collection:

A team including 11 persons established to support for collecting data, these persons will attend as interviewers. Most of them are health personnel at grass-root level, they knew very well about household's situation in the area that they have undertaken. Before interviewing they will be trained to familiarize the purpose of study, questionnaire and how to interview individuals.

4.8 Data analysis:

4.8.1 Descriptive analysis:

Using descriptive method to describe frequency, mode, median, mean, variance, standard deviation of independent variables and define the proportion of people who have knowledge about HIV/AIDS.

4.8.2 Regression analysis:

4.8.2.1 To estimate the relationship between socioeconomic characteristics of individual and knowledge about HIV/AIDS, following model is used to describe by using two-stage least squares method to estimate:

$$\text{Knowledge}_i = \lambda_0 + \lambda_1 \text{Log(Inco}_i) + \lambda_2 \text{Edu}_i + \lambda_3 \text{D}_{1i} + \lambda_4 \text{Age}_i + \lambda_5 \text{D}_{2i} + u_i$$

Where:

Knowledge: Knowledge about HIV/AIDS (ratio between right answers and total questions)

Inco: Income (Unit: thousand VND)

Edu: years of schooling

$D_1 = 1$ if gender is male

= 0 otherwise (female)

Age: Age of person interviewed

$D_2 = 1$ if place of living is urban area

= 0 otherwise (rural area)

Expectation the sign of coefficients

Independent variables	Expected sign of Coefficients
Income	+
Level of education	+
Gender (Male)	+
Age	+
Place of living (Urban)	+

4.8.2.2 Using regression analysis to express the relationship between socioeconomic characteristics of individual and willingness to pay for HIV/AIDS counselling and testing service, semi-log linear regression is used and estimated by using Two-stage least squares method (TSLS). In this model knowledge was used in expected value ($\hat{\text{Knowledge}}$), which was automatically estimated in the software application.

$$\text{WTP}_i = \beta_0 + \beta_1 \text{Log}(\text{inco}_i) + \beta_2 \text{Edu}_i + \beta_3 \text{D}_{1i} + \beta_4 \text{Age}_i + \beta_5 \text{D}_{2i} + \beta_6 \hat{\text{Knowledge}} + e_i$$

where:

WTP: willingness to pay for HIV/AIDS counselling and testing service in thousand Vietnamese Dong (VND)

Inco: Income (Unit: thousand VND)

Edu: years of schooling

$D_1 = 1$ if gender is male

= 0 otherwise (female)

Age: Age of person interviewed

$D_2 = 1$ if place of living is urban area

= 0 otherwise (rural area)

Knowledge : Expected knowledge of people about HIV/AIDS

Expectation the sign of coefficients

Independent variables	Expected sign of Coefficients
Income	+
Level of education	+
Gender (Male)	+
Age	-
Place of living (Urban)	+

In order to test the significance of coefficients, F test and T test and p values can be used.

We set a null-hypothesis as following:

$$H_0: \beta_i = 0 \quad (i=1,2,3\dots)$$

$$H_a: \beta_i \neq 0 \quad (i=1,2,3\dots)$$

If the value of F test is greater than critical value or p value less than 0.05 that means we reject null-hypothesis and accept alternative hypothesis, in this case all coefficients are not equal to zero simultaneously, then using T test and p value to check the significance of each coefficient. If coefficients are significant that means independent variables can affect dependent variables or WTP depends on characteristics of individual.

If the value of F test is less than critical value or p value less than 0.05 that means we have to accept null-hypothesis or in other word all coefficients are equal to

zero simultaneously. In this case we can conclude that WTP does not depend on characteristics of individual.

Interpretation the result of regression:

Regression coefficients: Allow us to make predictions for the dependent variable based on the values of the independent variables, in terms of the original units of measurement. Suppose in this case the sign of β_1 is positive we can conclude that if income of individual increases one percent, WTP increases one unit.

R-squared (R^2): Indicates the amount of variation in the dependent variable explained by the combination of independent variables in the model, thereby indicating whether the model is good predictor of the dependent variable. We expect that the value of R^2 would be high enough in this case.

Correlation Coefficients (r): Indicate the strength of association between two variables