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Changes in well-being level of households in Hanoi and Ho Chi Minh City: Trends and implications for pro-poor policies

[Changements dans le niveau de bien-être des ménages à Hanoi et Hô Chi Minh Ville :
Tendances et implications pour les politiques en faveur des pauvres]



LÊ HỒ Phong Linh

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Décembre 2012

Photos 1, 2, 3, 4 (from left to right, above to below):
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ABSTRACT

Having a good life, a life with a high level of well-being, is not only a dream but also an aim of humans. To improve the well-being level of the population is both the goal and the responsibility of the government. Yet, it is not easy to define and to measure well-being. People often identify well-being with economic well-being, an aspect which is easier to measure. This simplification is dangerous since it over-assesses the role of economic factors but neglects other components of a good life.

During the transition process, Vietnam has focused on economic growth and neglected many socio-environmental aspects of life. The negative impacts of growth is becoming visible all over the country, especially in Hanoi and Ho Chi Minh City, the two most important urban agglomerations of the country. However, up to now, there are very few studies about the well-being level of households in the cities. This thesis, therefore, attempts to study the changes in the well-being level of households in these cities.

Specifically, the study consists of three main parts. Part one studies theoretical and empirical issues related to the measurement of households' well-being. Part two compares the living standards and the living environment of households in the two cities. In part three, two household indexes were constructed, the well-being index and the well-being deprivation index. The well-being index was applied to measure the changes in the well-being level and the disparities in the well-being level of households in the cities by time. The well-being deprivation index, however, was used to calculate changes in the deprivation level of groups of households. It was also applied to identify characteristics of the poor in the cities. The findings from the study were synthesized and analysed to introduce the implications for pro-poor policies.

Key words: living standards, well-being, poverty, deprivation, households, Ho Chi Minh City, Hanoi

RÉSUMÉ

Avoir une vie agréable, une vie dotée d'un niveau élevé de bien-être, n'est pas seulement un rêve, mais aussi un but de l'homme. L'amélioration du niveau de bien-être de la population est à la fois le but et la responsabilité du gouvernement. Pourtant, il n'est pas facile de définir et de mesurer le bien-être. Souvent, les gens identifient le bien-être avec le bien-être économique, un aspect qui est plus facile à mesurer. Cette simplification est dangereuse car elle surévalue le rôle des facteurs économiques, mais néglige les autres composantes d'une vie agréable.

Au cours du processus de transition, le Viêt-nam a mis l'accent sur la croissance économique et il a négligé de nombreux aspects socio-environnementaux de la vie. Les impacts négatifs de la croissance deviennent visibles dans tout le pays, surtout à Hanoi et à Hô Chi Minh-Ville, les deux plus importantes agglomérations du pays. Cependant, jusqu'à présent, il existe très peu d'études sur le niveau de bien-être des ménages dans les villes. Cette thèse tente par conséquent d'étudier les changements dans le niveau de bien-être des ménages dans ces villes.

Plus précisément, l'étude se compose de trois parties principales. La première partie étudie des questions théoriques et des études de terrain liées à la mesure du bien-être des ménages. La deuxième partie compare le niveau de vie et le cadre de vie des ménages dans les deux villes. Dans la troisième partie, deux indices ont été construits pour les ménages, l'indice de bien-être et l'indice de privation de bien-être. L'indice de bien-être a été appliqué pour mesurer les changements dans le niveau de bien-être et les disparités dans le niveau de bien-être des ménages dans les villes dans le temps. Cependant, l'indice de privation de bien-être a été utilisé pour calculer les changements dans le niveau de privation des groupes de ménages. Il a également été appliqué pour identifier les caractéristiques des pauvres dans les villes. Les résultats de l'étude ont été synthétisés et analysés afin de présenter les implications pour les politiques en faveur des pauvres.

Mots clés : niveau de vie, bien-être, pauvreté, privation, ménage, Hô Chi Minh Ville, Hanoi

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ACRONYMS

CMEPSP	The Commission on the Measurement of Economic Performance and Social Progress
EA	Enumeration Area
PSU	Primary Sampling Unit
GSO	General Statistics Office
HCMC	Ho Chi Minh City
HN	Hanoi
MPUES	Migration, Poverty and Urban Environment Survey
OWB	Objective well-being
SWB	Subjective well-being
UNDP	United Nations Development Programme
VHLSS	Vietnam Household Living Standards Survey
WB	Well-being

Quality of life is one of the most important issues facing the world today

and is central to the development of social policy.

Very little, however, has been written on this crucial topic.

David Phillips¹

INTRODUCTION

0.1. Context of the study

Vietnam officially transformed its economy from a central economy” to a “market oriented economy” in 1986 when the nation was in the middle of a deficit crisis. At that time the internal production could not fulfil domestic demand while the national population was increasing at a very high rate². In such a harsh condition, how to increase the production to meet the demand of people was one of the crucial aims of the country. Having high economic growth rate became a priority of all provinces and of the nation as a whole. To achieve the target, several socio-environmental factors were neglected and sometimes were sacrificed for the economic purposes. Hanoi and HCMC were strongly influenced by this orientation and the negative impacts of the neglectfulness in the cities which are easy to observe.

¹ Phillips David, 2006, page xiii.

² The population growth rate in Vietnam were 2.32% in 1986, 2.5% in 1987, and 2.4% in 1988. Population growth annual (%), <http://data.worldbank.org/indicator/> (accessed March 16th 2012).

The two cities – Hanoi in the North and Ho Chi Minh City in the South – are the most important centres of the country. Thanks to their great nature and nurture advantages, the cities have achieved remarkable successes and have become the engines of national development. Yet, besides the impressive achievements, these cities are facing many socio-economic problems. The economic growth rates of the cities are high, but the efficiency of the growth is reducing. The growth is accompanied with many socio-environmental problems such as pollution, inequality, overdensity, traffic congestion, infrastructure deteriorated, cultural declination, declination of green spaces etc...

Moreover, the high inflation rate, which is combined with the slowdown of the economy in recent years have impoverished the life of low-income families. They also prevent the poor from accessing basic services and reduce their chances to overcome the poverty vicious circle. The poor become more and more vulnerable while the rich become richer.

One of the main causes of the accelerating of social, economic and environmental problems comes from the fact that in the past three decades, the cities have focused too much on economic growth. They have forgotten that socio-environmental factors are the essentials for a balanced and sustainable development. Growth is important for the development of countries. Without growth, it would be very hard to improve the living standards of the people. However, the economy is just a mean

to achieve a better life, it is not an end in itself. The final aim for people is to have a good life, which is more meaningful than just being rich.

Most people wish to have a good and happy life, a life with high level of well-being but it is not easy to define what well-being is. It is commonly accepted that the well-being of a person is a multi-face concept which consists of both the “well” and the “being” of his or her life. However, the content of this concept is very general. The “well” and the “being” themselves are ambiguous and vague concepts. There is no unified definition of well-being and it is not easy to measure the well-being level of individuals or households. To avoid this complexity, people often equalize well-being with material well-being, living standards, or income since these aspects are much more easy to measure.

The equalization is especially popular in Vietnam where the economic indicators play a dominant role in the determination of development goals. They are also used to represent the quality of life or well-being of people and to determine if a household is poor or not. This simplification is dangerous because it not only oversimplifies the constitution of a good life but also over-evaluates the role of economic factors in human’s life. This misleading is a precondition for the acceleration of socio-economic problems that the cities are facing. They are also impediments for sustainable development of the cities.

Besides, the achievement of poverty elimination policies of Vietnam in the past two decades was remarkable but the security for future success of the policies is not stable. It is anticipated that the number of poor households in urban areas will increase though poverty rate still decreases due to high-density of population in the areas. In addition, the sharp changes of social-economic conditions and the development of market economy would make poverty elimination policy become much harder. Practically, it is difficult to establish effective pro-poor policies without a deep understanding of the changes in the quality of life of the citizens, the disparities among groups of population, the level of deprivation, as well as the characteristics of the poor and non-poor.

In the year 2010, at “The workshop on Vietnam’s Statistical Development Strategy” in Bac Ninh, Ms. Setsuko Yamazaki, UNDP country director in Vietnam stated that:

“If we don’t know how to measure progress towards our goal, it is difficult to assess achievements towards the goal. With Vietnam as a middle-income country, it is time to measure “quality of growth” for its people and the society. These measurements will help policy makers formulate more targeted policies for the country that Vietnam aspires to become, and help the state implement the policies through concrete actions, as well as help citizens participate in making progress toward the national goals.” (Yamazaki 2010)

It is obvious that a good understanding of the concept and measurement methods is important. They are basic for the establishment of the development goals as well as the assessment and monitoring of policies. Without good development indexes, it would be hard for policy makers to identify goals, priorities, steps and the necessary resources for the goals. However, up to now, there is no unified well-being index or multidimensional poverty index for Vietnam. There are still very few studies about well-being and multidimensional poverty of households in Vietnam.

0.2. Objectives of the studies

This thesis aims at exploring both material and non-material aspects of households' life to provide a general picture about well-being and deprivation level of households in the cities. Besides, trends and disparities in level of well-being and deprivation of groups of households are examined to find out changes in the level of well-being of groups of households. Specifically, the thesis focuses on three purposes: to introduce basic knowledge on well-being concepts and findings from studies about well-being of households; to present an overview about the actual living standards, living environment as well as changes in the life of the people in the cities; and to formulate a simple well-being index to measure changes in well-being level of households in the cities. Besides, a well-being deprivation index is used to measure disparities in the life of the poor and non-poor. All findings from

the study are then considered to find out possible recommendations for pro-poor policies in the cities.

0.3. Research questions and hypotheses

To achieve the mentioned objectives, the study focuses on answering the following research questions:

- Is it possible to measure changes in the well-being level of households in Hanoi and HCMC? If yes, which method is appropriate for this measurement?
- Which are possible indicators for the well-being index of households in Hanoi and Ho Chi Minh City?
- How does the well-being level of groups of households in the cities change by time?
- Which are the differences in the characteristics of the poor and non-poor? How does the level of well-being deprivation of the poor and non-poor households in the cities changes by times?

0.4. Approaches of the studies

Well-being and poverty are multidimensional concepts and are explained by different theories. In the study, “The Theory of Human Needs” is applied as the foundation theory for the construction of the well-being index of households. It is

also applied to determine determinants of the well-being index of households. Then a derivative index of the well-being index is established to measure the levels of deprivation of households, or the levels of multidimensional poor of households.

Both of the indexes use the Vietnam Household Living Standard Survey (VHLSS) data to find out possible information about disparities and changes in well-being and deprivation level of households in the cities. Besides, the data from the Migration, Poverty and Urban Environment Survey (MPUES) was used to evaluate the living standards and living environment of households in the cities.

0.5. Outline of the study

The thesis is structured in three parts corresponding to the three main purposes of the study. The introduction is continued by part one: “Well-being Studies: Theories and Empirical Findings.” This part consists of two chapters. Chapter one, “Well-being and Well-being Studies: from Philosophy to Reality,” aims at studying historical context and theories of well-being. Whereas, chapter two, “Well-being Measurement: an Overview of Literature and Empirical Studies,” focuses on findings from empirical studies about well-being of households in other developing countries and in Vietnam.

Part two consist of only one chapter, chapter three which is named “Living Standards and Living Environment of Households in Hanoi and HCMC: a

Comparative Overview.” The chapter provides information about the current living conditions and changes in living conditions of households in the two cities. The living standards, living environment, the assessment of people about life in the cities, as well as the disparities among groups of households in the cities are analyzed and compared.

Part three is entitled “Well-being and Well-being Deprivation of Households in the Cities: Trends and Implications for Pro-poor Policies”. This part consists of three chapters (4-6). Chapter four focuses on data and technical methods to construct a well-being index of households. The index is then applied to explore changes in well-being level of households. The trends and disparities in well-being level of the households in the cities are examined in chapter five. Finally, in chapter six, the well-being deprivation index is applied to measure the level of deprivation of the poor and non-poor. The well-being deprivation index is also used to identify characteristics of the households groups.

The thesis ends with the conclusions and implications which summarizes the main findings of the thesis. It also introduces suggestions and possible implications for pro-poor policies in the cities.

PART ONE:
WELL-BEING STUDIES:
THEORIES AND EMPIRICAL FINDINGS

Not life, but good life, is to be chiefly valued.

Socrates

Chapter 1:

Well-being and well-being studies:

From philosophy to reality

Nowadays, well-being is used widely both in daily life and scientific studies. However, despite its popularity, up to now, we still do not have a unified definition of the notion. In spite of endless efforts by scholars we still do not have a general agreement about components of well-being. Therefore, an overview of the historical context of the notion and theories of well-being may be useful for the implementation of practical studies and analysis of well-being. This chapter deals with four main tasks. First, we begin with an introduction about the historical foundation of the concept of well-being. Then, the second section focuses on exploring the main theories of well-being. The third section deals with the evolution of the concept of well-being while the fourth one presents challenges for studies in the field.

1.1. Historical context of well-being studies

Though people often think about well-being as a kind of fashionable word, which was developed in the last few decades, the notion itself has a long history and has interested scholars from the dawn of science. Having a good life is not only an aim but also a dream of humans. Therefore, questions about features of a good life and how to achieve it receive special attention by philosophers.

Studies about well-being began very early, around the year 500 BC, though back then it might have been called by different names such as good life, well living, happiness, eudaimonia, etc. More than 2,500 years ago, Buddha left his family to seek for a method that helps humans overcome suffering and achieve true happiness (Rinpoche 1998). Buddhism's ideology proposes that human suffering in life is caused by craving. Thus, we can get over this by giving up useless cravings. Perfecting ourselves, developing good habits and spreading love are keys of true happiness (White 1993).

Other two great philosophers in Asia, Confucius and Lao Tzu, also searched for ways to achieve a good life. According to Confucius, to live a good life one has to study extensively to have a firm and sincere aim. One has to reflect his own life with self-application and seriousness. Happiness is possible if one embraces life, learns and makes efforts (Zhang and Veenhoven 2007). Confucius stresses that "right-living" is the most important aim of all purposes and practice. It is also the

true art of living. Li Ki, the Book of Ceremonies of Confucius, stated that “The practice of right-living is deemed the highest, the practice of any other art lower. Complete virtue takes first place; the doing of anything else whatsoever is subordinate” (Dawson 2005: 6). Whereas, Lao-Tzu believes that a simple life is the best life. Happiness is possible only if one is wise enough to realize that there are not many things a person can do. One is happy when he or she stops trying to make things better for him- or herself. Despite the differences among the ideologies of these three great philosophers, they all deal with the question of how one should act to have a good life. They all equalize the terms “living a good life” and “living a happy life” (Zhang and Veenhoven 2007).

In western nations, it is believed that the question about the nature of a good life might have appeared before the ancient Greeks (Diener 2009). Hundreds of years before Christ, founders of philosophy like Plato, Socrates, Aristotle, Epicurus mentioned good life and the factors that contribute to a “well lived” life in their works. The common belief of these philosophers is the important role of morality and virtue in a happy life. According to them, the principal concern of moral studies is to perceive the nature of human well-being and to improve life (Kraut 2010).

In his study about ethics, Plato stated that human well-being is the highest aim of moral thought and conduct. He believes that happiness is a high state of perfection and is hard to understand. Thus, training about theory and science is a principal prerequisite to understanding what is good for life (Frede 2008). Whereas, Aristotle

believes that well-being is much more general than happiness: “Human beings have more faculties than just feeling of happy, pleasure or pain; notably they are creatures of reasoning and of meaning-making, of imagination, and of intra- and inter- societal links and identities” (Gasper 2004: 1). He also believes that there is no common rule for all particular situations. Everybody must actively acquire good understanding about well-being and how to apply this “practical wisdom” into suitable situations. According to him, the understanding and appreciation of the ways good things in life, which consist of both immaterial and material factors, get along well with each other are the basis of a good life (Kraut 2010). Generally, ancient philosophers believe that the well-being of humans comes from what they believe and what they do, not what they have.

Although they appeared more than two thousand years ago, these ideas have contributed greatly to the development of well-being science and they are still the foundations for evolutions in the field. However, in later stages, studies about well-being did not receive much interest by scholars. Up to the first half of XXth century, there are relatively few studies about happiness or well-being. This helps to explain why the notion well-being has just become popular during the late twentieth century despite its long historical context (Schimmack 2008).

Though questions such as “what are the determinants of well-being” and “how to improve human well-being” are principal concerns of studies in the field, the focus of scientists has been widened. In this stage, scholars devoted great effort to clarify

concepts, to create new concepts and to study the interrelations among them (Liu 1975; Gasper 2004; Hupper, Baylis and Keverne 2005; Crisp 2008; Schimmack 2008; and Diener 2009). Though there are still challenges, the efforts have shed some light on the concepts and components of a good life. They also helped to systemize the theories about well-being and to improve the methods to measure well-being level (Frank et al. 1997; McGillivray and Farhad 2004; Gasper 2004; and Crisp 2008).

The special interest by modern intellectuals concerning well-being comes from the practical needs of societies. From the 1930s, and especially in the 1960s, the role of GNP as an indicator of how a nation is flourishing had been strongly criticized. Despite fast increases in the GNP indicator and impressive praises from specialists about economic achievements of nations, many people do not feel happy about their life. They are neither satisfied with the method with which GNP is calculated nor the role of this indicator as the representative of national well-being. This leads to a pressing need of developing new social indicators of the real development of countries. Well-being or quality of life seems to be the brightest candidates for a new indicator of social progress (Liu 1975).

The increase of social concerns about well-being studies, which is combined with the development of theories and the availability of data, have contributed greatly to remarkable achievement of studies in the field during the last few decades. Studies which seek to measure well-being have been increasing very fast both in quantity

and quality. Though studies that aim at measuring well-being level based on objective indicators still play a dominant role, the number of studies about subjective well-being has been increasing fast in the last three decades. Scholars also tried to measure contribution of both subjective and objective indicators to well-being level as well as the interrelation among them.

Nowadays, well-being is no longer an independent field of study. It has become an interdisciplinary area of research, which receives contribution from many sciences (Schimmack 2008). It has also become one of the primary concerns in philosophy, economics, political science, psychology, medical science, sociology and other social sciences. This fact, combined with the limitlessness of the well-being concept, has lead to the abundance and diversity of literature in the field. They also help to explain the popularity of the term “well-being” in both daily life and science studies.

1.2. Well-being theories

Since well-being is an abstraction that is used to refer to any “well evaluated” aspects of life, literature about well-being and well-being science are abundant and diverse. Practically, studies about well-being encounter a “bewilderingly diverse” family of concepts and approaches (Gasper 2004). This part focuses on main theories of well-being, which are hedonism, desire theory, objective list theory, and subjective theory. Since each of these theories consists of many related theories,

components and critics, we will not go into details of the theories, but an overview of the main points.



Figure 1. 1: Well-being theories

1.2.1. Hedonism

Hedonism is a doctrine which believes that the human being is governed by two “sovereign masters,” pain and pleasure. This is the reason why pleasure and pain play a central role in the ideology of this school of thought³. Pleasure, according to hedonists, is all pleasant feelings or experiences while pain is all unpleasant feelings or experiences. Hence, a good life is a pleasurable life, which can be understood as a life that has more pleasure than pain (Heathwood 2006). This school of thought was established and developed by many philosophers and thinkers, among whom, principal contributors are Socrates, Protagoras, Plato, Aristotle, J. S. Mill, G. E.

³ The name of the school, “hedonism”, comes from the Greek word Hēdonismos, which is combined of hēdonē meaning “pleasure” and suffix “-ismos” meaning “ism” The American Heritage® Dictionary of the English Language, Fourth Edition. (Copyright 2009 by Houghton Mifflin Company).

Moore, J. Bentham, H. Sidgwick, W. D. Ross and C. D. Broad (Crisp 2008; and Moore 2008).

There are various forms and versions of hedonism⁴. Here, we only discuss about motivational hedonism and normative hedonism, the two main forms of this school. Motivational hedonism claims that humankind is motivated by pleasure or pain. Thus, humans act in the ways that would give them the greatest balance of pleasure over pain (Moore 2008). This kind of hedonism is criticized for the fact that we sometimes are motivated by things that do not maximize our pleasure and/or by things that are not only related to pleasure or pain.

Different from motivational hedonists, normative hedonists state that only pleasure has instrumental value and only pain has non-instrumental value. The values, which are caused or prevented by them, are independent of each other. Hence, actions, social relations, achievements, and friendship can have value only through the pleasure or pain they create. Thus, one thing cannot have both instrumental and non-instrumental values (Moore 2008). However, in reality, things can have both positive and negative aspects. Therefore, they can create both pleasure and pain. And although pleasure is an essence of human life, there are other kinds of values which may be considered as more valuable.

⁴ Forms and versions of hedonism can be listed as value hedonism, welfare hedonism, psychological hedonism, evaluative hedonism, prudential hedonism, explanatory hedonism, substantive hedonism...

According to this school, well-being is equivalent to pleasure and hence, can be valued based on the balance of pleasure and displeasure (Gasper 2004; and Schimmack 2008). The identifications and claims of this school have oversimplified the reality. Philosophers have pointed out limitations of hedonism, among which the most famous criticisms are the unity of pleasure⁵, the deceived businessmen objection⁶, and the experience machine⁷. However, the view of this school is still considered as plausible and well rooted (Crisp 2008). It has contributed greatly to the development of subjective well-being (Crisp 2003). It is also believed that the theory might have wider significance, and hence is worth receiving serious philosophical attention (Moore 2008).

1.2.2. Desire theory

Desire theory or desire satisfaction theory of well-being is developed to explain issues that hedonism fails to do. It comes from the fact that people do not always act in a way which would give them maximum pleasure (Foley 1978). This school believes that the drive of this manner is not the pleasure but the desire of the person.

According to the theory, well-being of a person increases when his or her desires

⁵ According to this school it does not matter what experience gives you pleasure as long as you maximize your pleasure.

⁶ Roughly speaking, this objection comes from an example about two dying businessmen. Both of them believe that they have had a very great life and they are fully satisfied with their life. However, one of them, before death, knows the truth that all his beliefs were wrong. His wife cheats him, his children only pretend to love him, people in the community secretly hate him, his business will go bankrupt soon... This means that all of his beliefs were wrong and he has had nothing but deception. Whereas, the other one has all that he has believed. The question is who has had a better life? According to hedonism, both of them have had the same level of quality of life.

⁷ Suppose that there is an “experience machine” which can create all kinds of experiences that people think enjoyable or valuable. Would someone accept to stay inside the machine for the rest of his or her life?

are satisfied and decreases when his or her desires are not fulfilled. This view is the most general form of desire theory and is called “*unlimited desire satisfaction*” or “*simple desire satisfaction*”. However, the desires of humans are diverse and this statement faces several problems that might hinder its authenticity. Generally, the four main problems that the *unlimited desire satisfaction* theory has to face (Heathwood 2006) are:

- *The problem of changing desires.* Desire of humans is unstable and is subject to changes. To handle the problem philosophers state that only fulfilled *ideal desires* –rational desires or desires that are established when the agent is fully informed– contribute to well-being. Another way to handle the problem is the statement about “*concurrent desire*” which means that a state of affair is a desire satisfaction only if the desire is satisfied at the same time with the want of that person.
- *The problem of remote desires.* Sometimes we desire something that is remote from our affairs or desire something that has no contribution to our well-being. This leads to the objection of *remote desire* that states that only fulfilment of desires of which the agent is aware contribute to his or her well-being.

- *The problem of desiring not to be well off*⁸. In specific cases, a person may want to be badly off. At first, it seems implausible that the life of this person will be better if this desire comes true. However, this is not a real problem since the person only feels that his or her life is arduous and/or boring only if he or she has frustration about the present state. This means that only one desire of the person becomes true while he or she has many desire frustrations. Hence, his or her life is not better-off but worse-off.

- *The problem of defective desires*. In specific cases, a person may desire something that is bad for him or her. There are many examples for this kind of desire, the desire for heroin of a drug user, the desire to harm oneself to revenge other people or the desire of being rich by illegal means, etc. If a desire of a person is ill-informed or irrational, the fulfilment of this desire might worsen the life of the person. However, this problem can be partly solved if the statement of *ideal desire* is applied.

Despite devoted efforts, there are still challenges to the completion of desire theory. The assumptions of ideal desire -there is no asymmetric information, the agent is fully informed about issues that relate to his desire or the desire is rational- are hard to get. Even if the assumptions are satisfied, a person may still desire irrational

⁸ This problem is illustrated by an example about a miserable man, who feels guilty for his past crimes. So, he really wants to have a bad life in return for his mistakes. He realizes this desire by taking an arduous, boring and insignificant job. It seems that he has succeeded in making his desire become true. Is the life of this man better? According to desire satisfaction theory, the well-being of this person has increased.

things even though he or she has been fully informed. Besides, it is hard to accept the view about *concurrency desire* as human desire often has a strong relation with time (Arneson 1999). However, the mentioned criticisms do not debase the value of desire theory. The theory contributes greatly to the development of methodologies to measure well-being, especially through the development of utilitarianism.

1.2.3. Subjective theories and Objective List theories

1.2.3.1. Subjective theories

Subjective theories focus on the mental state of agents. These theorists think that what is good for a person depends on his or her mental state. Positive mental states such as happiness, pleasure, satisfaction, contentment, joy, delight, etc. or negative affections like pain, distress, suffering, etc. are states of mind. Hence, a good life is a life that has more positive mental states than negative ones (Harrison 2002).

Different from *objective theories*, *subjective theories* believe that things have values in virtue of being desired. Therefore, it is possible to state that a person has a good life if he or she is happy about it even though his or her happiness is enhanced by wrong beliefs. A person, who has very few items in the optimal objective list⁹, might still have a very high level of quality of life, according to subjective theory.

⁹ The list of objective items which are good/or are belived to be good for the well-being of humans. They consist of material items such as money, accommodations, foods, clothes, comforts...

The theories believe that well-being of a person, at least in several aspects, is constituted by their virtue or the exercise of virtue. The greatest ancient philosopher, Aristotle, has established this view of well-being. He thinks that virtue is likely to promote the good of others and to advance the agent's own good. Virtue, itself, is not only morally good but also good for individuals (Crisp 2008).

Hedonism and *desire theory* belong to the group of subjective theories. According to Brock, these theories are subjective as they are based on the assumption that a thing is good for a person if it is what he or she desires, or it makes him or her happy (Brock 1989: 5). The *subjective theory* is plausible as human beings are varied. A standard of well-being cannot be the same across persons but is relative to individuals (Arneson 1999). Generally, objective indicators attempt to measure the evaluation or experience of an individual's life rather than the condition of his or her life.

However, in reality, the boundary between subjective and objective theories is not clear. The good of life can be objective even though it is relatively related to the individual's attitude. There exist both subjective and objective sides in welfare theories. Thus, it is necessary to consider both the subjective and objective accounts of good life.

1.2.3.2. Objective List theory

The objective list theory is developed based on innovations suggested by the ideal desire theory. According to the theory about ideal desire, only rational desires are good for a human's well-being. However, if a desire is rational, this means that the desire is not determined by the agent himself but by external factors. Then, we can conclude that things are good or bad for a person depending on external reasons and facts, not on his or her own judgment. This idea about the role of external factors leads to the development of the *objective list theory*. The theory states that there are things that are objectively good for the agent.

This theory assumes that things such as friendship, beauty, knowledge, virtue, happiness, health, etc. are good for the agent despite his or her mental state. These things are good because of their own sake and are independent from subjective attitude of the agent. Hence, these theorists try to create a list of possible indicators of well-being. The two central questions of this theory are “How to decide factors that should be added into the list?” and “What are good indicators of well-being?” According to Arneson (1999) and Sirgy et al. (2006) things that are basically good for an individual – good per se or good as an end, not as a means for other good things– are intrinsically good and can be introduced into the list. And “the more that one gets or achieves the listed goods over the course of one's life, the better for oneself is the life that one has lived” (Arneson 1999: 9). The view of Griffin about components of the list is clearer. He stated that many values, including ones that belong to basic needs and non-basic needs, are objective. Hence, whenever “they

appear in a person's life, then whatever his state, attitudes or interest, his life is better" (Griffin 1986: 54).

Generally, an *objective list* consists of items that have intrinsic value which belong to the living environment of the agent. Typical objective indicators refer to three aspects: economic, physical/environmental, and social (Rettig and Leichtentritt 1998: 310). Although an objective list does not consist of a subjective evaluation of the agent about their living environment, there is no pure objective list and no pure objective measurement of well-being either (Gasper 2009). All quantitative approaches contain elements of qualitative aspects (Camfield, Crivello and Woodhead 2008). Hence, the distinction between subjective and objective has a relative meaning. An objective list, according to this theory, may belong to both hedonism and desire theory.

The main objection to this theory is whether the access to items in the list increases well-being of the person even if he or she hates them. It proposes that, even in this case, the *objective list theory* is still preferable than other theories. Suppose that there is a person, who really does not want to be successful, to be loved or to be respected, but he or she has them all. Standing from the view of hedonist and subjective theorists it could be concluded that his or her well-being has been worsened. The desire theorists would suggest that his or her well-being is unchanged as he or she does not desire the mentioned things. However, it seems

plausible to conclude that his or her well-being has been increased, though this increase may not be as high as it could be.

1.2.3.3. Objective versus Subjective theories

There are still disagreements about the ideal theory of well-being, nevertheless, it is widely accepted that a plausible ideal theory of well-being must consider both subjective and objective aspects of a human's welfare (Buchanan and Brock 1990; Camfield, Crivello and Woodhead 2008). Hence, the question concerning the role of subjective versus objective theory in well-being studies needs to be considered.

It is obvious that some good elements are good for their own sake but “some components of a good life are good because they are means to get other good” (Arneson 1999: 2). It is not complete if we consider only objective or subjective aspects of the “good”. The “good” cannot be determined totally by the agent's attitude or perspective. It cannot be evaluated solely by external factors either.

It is noteworthy to remember that in *Objective List* theory, the items that belong to the list are independent to the agent's mental state. However, the theory does not deny partial influence of individual attitude toward things that are good for his or her life (Arneson 1999). According to Harrison (2002), there are two possibilities for subjectivity to be presented in the objective list. First, the objective elements in the list are subjective as people who realize the list is different. Secondly, many components of the list contain subjective elements which are depended on and

influenced by the individual's desire. Hence, it is important to avoid confusions about subjective and objective well-being as well as their contributions to a good life. Actually, there is no clear distinction between subjective and objective list components. It is possible that objective attributes of a good life are included in subjective aspects of well-being and vice versa.



Busts in the Philosophers Room. *Source: Cd140072*
www.fotosearch.com



Boy holding spoon, finger on forehead. *Source: crf01099*
www.fotosearch.com



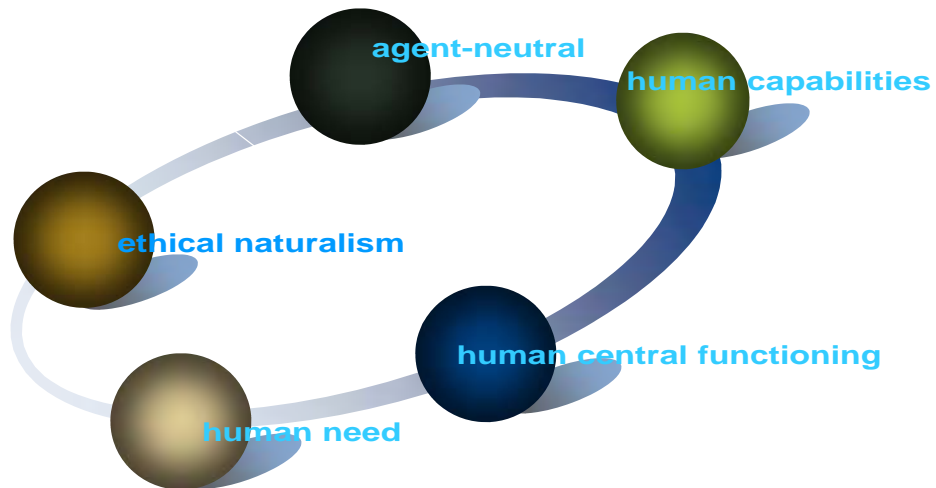
Young philosopher *Source: k4114830*
www.fotosearch.com

1.3. Well-being: Definitions and evolutions

Since there are many definitions of well-being, we will not focus on listing definitions of well-being but important evolutions of the well-being conceptualization process. This part begins with one of the most ancient ideas of well-being which was stated by Aristotle. Then, contribution of G.E. Moore to well-being studies, through the challenges he posed to the notion, will be studied. Following, contributions of current typical theorists to the conceptualizing of human well-being includes Amartya Sen, Martha Nussbaum, Len Doyal and Ian

Gough are examined. Some representative definitions of well-being and quality of life are also presented.

Evolutions of well-being concept



Contributors to well-being studies

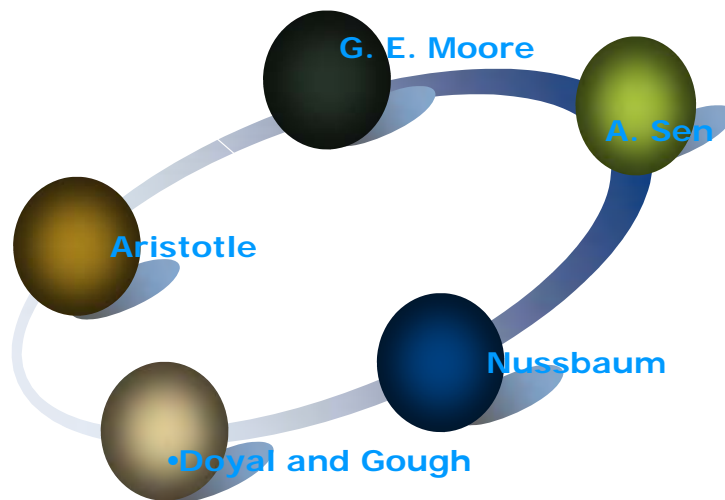


Figure 1. 2: Evolutions and contributors to the development of well-being concept¹⁰

¹⁰ Theories about well-being and/or quality of life are various. There are many different opinions about well-being concepts and well-being theories. Besides, people who have contributed to the development of well-being studies are numerous. Therefore, in this chapter the author only

The question “what a good life is?” plays a central role in the studies of Aristotle about ethics and happiness. According to him “Every art and every inquiry, and similarly every action and pursuit, is thought to aim at some good; and for this reason the good has rightly been declared to be that at which all things aim” (Aristotle 350 B.C.E., book I.1). The “good” and the “well” reside in the function of things and they are the same for humans. However, humans differ from things as they have a soul and their activities follow rational principles, which are in accordance with virtue or excellence (Aristotle 350 B.C.E., book I.7). Hence, human well-being consists in man’s capability to fulfil functions and to perform activities that define the being of human life. Like most ancient philosophers, Aristotle believes that ethics plays a principal role in the pursuit of a good life and a good life is a virtuous life.

Moore criticizes this belief of ethics philosophers. He thinks that they have mistaken the role of virtue in goodness, which is called “ethical naturalism.” He calls this belief “naturalistic fallacy” as goodness is indefinable (Baldwin 2008). According to Moore, only the notion of “good” is necessary to make all evaluative judgments we might wish to make. A thing has a value if it is good for at least one person. “There is in fact nothing of value in this world than what is good for the individual” (Crisp 2008). A thing has a value if it is good for me regardless of the

introduces some theories, concepts, and contributors, which are relevant to the concerns of the study. These choices are based on subjective opinions of the author and may not be in concurrence with other views.

fact that this thing is morally good or not. In the book “What is good and why: the ethics of well-being” Kraut (2007) goes deeper into the concept of “good”.

“Good” is a linguistic relatives (“better,” “best,” “well”), their opposites, and corresponding terms in other languages pervade the vocabulary of everyday life. With their help, we arrive at conclusions about what to choose and what to do. We want not just to eat, but to eat good food; not just to make plans, but to make good plans; not to just have friends, but to have good friends...

For when we use “good” as a grader of members of a kind (good food, plans, friends), we are guided by our ideas about what is good *for* this person or that. Food is good by being good for the person who eats it. Plans are good when their results are likely to be good *for* those affected by them. A good friend is good *for* the person to whom he is a friend (Kraut 2007: 1-2).

The idea of “good” is a base for people to make decisions. The “good” is also a guide for our activities. Although, there are still limitations in Moore’s statement, his view helps well-being studies move forward to an “agent-neutral” definition of well-being. It also lays an initial foundation for the development of objective definitions of well-being.

Later, Amartya Sen, a distinguished scholar of the XXth century on welfare, has developed a theory about human capabilities. The theory has strongly influenced current studies in the field. According the theory, “the well-being of a person may plausibly be seen in terms of a person’s functioning and capabilities: what he or she is able to do or to be e.g., the ability to be well-nourished, to avoid escapable morbidity or mortality, to read, to write and communicate, to take part in the life of

the community, to appear in public without shame (Sen 1987: 8).” In the definition, the “functioning represents part of the state of a person -in particular, the various things that he or she manages to do or to be in leading a life” while the “capabilities of a person reflect the alternative combinations of functioning the person can achieve, and from which he or she can choose one collection” (Sen 1993: 31).

In his studies on human well-being, Sen has made a distinction between the objective and subjective indicators of well-being. He also separates the “agent” and “well-being”. The theory about human capability also advocates personal and/or interpersonal evaluations of quality of life based on people’s functionings and capabilities (Robeyns 2005: 191). However, Sen did not give precise guidelines for these evaluations. The theory provides a broad perspective for quality of life assessment but it does not specify which capabilities and which functionings should be selected. Thus, it is criticized that Sen’s capabilities approach is an “open and underdeveloped” framework for quality of life assessment (Robeyns 2005: 192). His definition about functionings and capabilities is also criticized “welfare-centric”. The definition does not focus on autonomy factors of agents and underestimates the quest for being, self-development, and self-realization of the actors (Giri 2002; and Robeyns 2005). Therefore, it does not emphasize enough the role of effort on well-being of individuals.

In spite of mentioned criticisms, the works of Sen has greatly contributed to the development of studies about quality of life and well-being. The approach has

received great attention from researchers and policy makers. It has provided a broad perspective for several fields of study such as poverty, inequality, social justice and quality of life (Robeyns 2005). Although Sen has just given us a glimpse of his own conception on human well-being, which is centred on functioning and capabilities, the evolution has inspired further developments of many studies in the field.

Based on the capability approach of Sen, Martha Nussbaum has developed an objective list of conceptions of well-being. However, different from Sen, she believes that there are universal norms of human capabilities. According to her, criteria for the “well”, in well-being of humans, are standard measures for essential capabilities to live a minimally decent level with dignity (Gasper 2004). Hence, she focuses on the functioning which make up a good life to create a list of human central functioning, which is based on Aristotelian notions of practical reason and affiliations (Phillips 2006: 21). The list covers ten “central human functional capabilities”, which are: Life; Bodily health; Bodily integrity; Senses, imagination and thought; Emotions; Practical reason; Affiliation; Other species; Play; And control over one’s environment (Gough 2003: 6-7)¹¹.

These aspects are considered as the needs for a person to have a dignified life. She also notes that they are separated needs and all of them are centrally important for humans (Gough 2003). Nussbaum’s efforts to build a base for the ‘core rights’ provided initial guidelines to establish a “priority set” for concerns agents. The list

¹¹ Detail of this theory is presented in chapter 2.

also provides the “substantive language” to speak about multidimensional concerns of people, which is necessary for establishing perceptions concerning the needs of life (Gasper 2004: 27). The generality of the list makes it possible to examine how various capabilities are typically manifested in a society. It also helps to avoid “excessive cultural relativism” in studies about social minimum (White 2008). However, the list also has weaknesses. It is criticized that Nussbaum’s approach is more relevant to philosophical theory than a framework to measure quality of life (Robeyns 2005). Besides, the mentioned aspects of the list do not have a good theoretical foundation (Gasper 2004, 26).

The list of Doyal and Gough is established based on the Theory of Human Need. Different from Nussbaum’s list, the basic needs theory of Doyal and Gough argues that human beings have both “basic needs” and “autonomy” (White 2008a). The basic needs are important for physical and mental health whereas, the “autonomy” is “the ability to make informed choices about what should be done and how to go about doing it” (Doyal and Gough 1991: 53 *cited in* White 2008a). First, they draw up an objective list of implications of autonomy commitment. Then, they integrate the initial list with elements that were found by other quality of life studies. The list is divided into five groups, which are universal goals; basic needs; universal satisfier characteristics; social preconditions; and others (Gough 2003). This structure allows the possibility to determine several lists of well-being elements at difference level of well-being (Gasper 2004)¹².

¹² Detail of this theory is presented in chapter 2 of the thesis.

The presented theories point out that there are obvious differences among studies about the definition and components of well-being (Wish 1986; Dasgupta 2001; Gasper 2004; and Liu 1976). Actually, it is not easy to determine the components of a well-lived life. However, the works of scholars and researchers have provided some common understandings about the concept (Camfield et al. 2008: 6). Despite the differences among studies, their findings have proved that there are common “basic features” of a well-lived life (Dasgupta 2001: 13) and it is possible to form a consensus on the conceptual definition for quality of life (Wish 1986: 94).

**Box 1.1: Some examples of well-being and quality of life
conceptions and definitions.**

“Well-being is not merely a sensation of happiness. Human beings have more faculties than just feeling happiness, pleasure or pain; notably they are creatures of reasoning and of meaning-making, of imagination, and of intra-and inter-societal links and identities (Aristotle’s viewpoint in Dasgupta 2001: 1).”

“Quality of life is a ‘subjective name for well-being.’ Quality of life of the individual is a ‘set of wants’ which after being supplied, when taken together, makes the individual happy or satisfied (Liu 1975: 1).”

“The term quality of life is ambiguous. Quality of an individual’s life is a reflection of how well his life is going. Whereas, in a broader concept, it also captures the quality of the living conditions around an agent, which are independent of how well the agent’s own life goes.... The quality of an individual’s life is affected by the quality of his environment and culture, and that these are in part a function of how well the lives of agents in the society go (Megone 1990: 28-29).

“The well-being of a person can be seen as an evaluation of ‘the wellness’ of the person’s state of being rather than, say, the goodness of her contribution to the country, or her success in achieving her overall goals (Sen 1993: 36).”

“Quality of life is both objective and subjective, each axis being the aggregate of seven

domains: material well-being, health, productivity, intimacy, safety, community, and emotional well-being. Objective domains comprise culturally relevant measures of objective well-being. Subjective domains comprise domain satisfaction weighted by their importance to the individual (Cummins 1997: 6)."

"Well-being is more than just happiness. As well as feeling satisfied and happy, well-being means developing as a person, being fulfilled and making a contribution to the community (Nef 2004: 2)."

"Well-being consists of three inter-related elements: welfare -provision of food, drink, shelter, medical care, and other requirements for "bodily flourishing;" contentment –an enduring and stable sense of satisfaction with one's life; and freedom– the right to choose one's destiny and the ability to live a life one chooses (Stutz 2006: 3-4)."

"Well-being is a concept or abstraction that refers to the state of a person's life. It reflects the various activities or achievements that constitute a good form of life (Clark and McGillivray 2007: 1)."

"Wellbeing is a state of being with others, where human needs are met, where one can act meaningfully to pursue one's goals, and where one can enjoy a satisfactory quality of life (WeD 2008: 1)."

"Wellbeing is a composite term and has several meanings". It can refer to a positive state of being, a person's overall state of health and wellness, an overall level of satisfaction and feelings about life, or the contentment and fulfilment a person experiences with his or her life circumstances. "Wellbeing is said to be experienced when a person's individual, relational, and collective needs are fulfilled (Abeyasekera, Amarasuriya and Ferdinando 2008: 11)."

"Personal well-being measures people's experiences of positive and negative emotions, satisfaction, vitality, resilience and self-esteem and sense of positive functioning in the world (Michaelson et al. 2009: 4)."

"The concepts of well-being and quality of life refer to evaluative judgments about selected aspects or the entirety of a life situation or life-path, for an individual, group or society (Gasper 2009: 21)."

Source: Author's compilation

Although there may exist differences between the terms “well-being” and “quality of life”¹³, the presented definitions indicate that the concept “quality of life” and “well-being” are often used interchangeably. Despite differences in the ways well-being is defined, there are some common points among the presented definitions. Firstly, well-being is a multi-face concept, which covers many aspects of life. Therefore, it cannot be measured by any single indicator. Secondly, well-being consists of both subjective and objective domains. The “well” of one’s life not only depends on available resources, surrounding environment, culture, social relations but also his or her perception of life.

Thanks to the endless efforts of researchers in the field, studies about well-being have achieved considerable advances. The notion of well-being becomes clearer and the list of principal elements contributing to human well-being is being realized. These improvements not only lay the foundation for this field of study itself but also help to advance the development of measurements about human well-being and policy efficiency.

¹³ The concepts are often used interchangeably, though there might exist some differences between the two notions. According to (Gasper 2009: 5) the term “well-being” refers more to individual’s level and to actual experience. It is also more relevant to psychology while “quality of life” is more relevant to sociology and social policy. The term “quality of life” is also more associated with the context and environment. Therefore, it is used more often to talk about communities, localities and societies. Yet, there is not a standard for the use of the terms (Gasper 2004: 2) and the terms overlap in many aspects. And they can be used alternatively.

1.4. Challenges for well-being studies

The studies about well-being have developed much in the last five decades. Nowadays, researchers are equipped with a better theoretical foundation, data and technical support, yet there are still challenges that studies in the field have to face. The challenges can be grouped in five groups as follow:

Firstly, up to now we do not have a coherent and universally applicable definition of well-being. This is an impediment for both empirical research and theoretical development in the field (Levy and Guttman 1975; McGillivray and Clarke 2006). A lack of a basic definition also leads to everlasting controversies in the field. Besides, the way that well-being is measured depends on the way it is defined (Clarke 2006). This is also the cause of mismeasurement and misinterpretation of findings about well-being.

Secondly, human life is very complex and it is not easy to specify criteria to evaluate an entire life. Components of a good life are unlimited and unstable. Human wants and needs are widely different among persons, among cultures, and are changed by time. Several researchers have established lists of well-being criteria and though there are agreements about what is good for human life, there is no common list for well-being. Although the list of well-being criteria is regularly prolonged, we still do not have a completed list of well-being indicators.

Thirdly, the difficulties of well-being studies also come from the evaluation method. The quality of a whole life is not the sum or the weighted sum of indicators. Thus, how to evaluate the level of importance of the components and how to integrate the components are the obstacles for studies in this field.

The fourth difficulty of studies about well-being comes from the fact that this concept is used to refer to “whatever is assessed in an evaluation of a person’s situation” and its practical applications in reality are diverse (Gasper 2004: 2). It can be used to mention any valued aspects of life, which may be partial or total (Gasper 2009). Hence, it is easy to mismeasure and misinterpret the findings of well-being studies. Besides, the findings from studies about personal well-being may be very different because they are influenced by the categorized variables, controlled factors, and scope of studies.

Finally, we are having more and more available resources for human well-being studies, yet the data that necessary to study well-being in developing countries is scarce. Although we all agree that the well-being consists of both objective and subjective components, it is extremely hard to find subjective data about well-being of people in developing countries. This is the common limitation of most of the studies in developing countries, including Vietnam.

1.5. Chapter remarks

Although the approaches and definitions of well-being are diverse, there is some consensus that can be drawn out from well-being studies. The concept well-being consists of both objective and subjective aspects of human's life. The level of well-being of an individual has an interrelation with that of people around him or her, with the environment in which he or she lives, and his or her own perception about life. Thus, efforts which aim at measuring well-being must accept certain levels of generalization and simplification. However, any ideal aggregate index of well-being must cover both objective and subjective aspects of life. In this thesis, well-being level of household is simplified as a state at which the basic needs of it is fulfilled. The needs consist of main aspects of life such as supportive relationships, good health, education, moderate living standards and financial security.

The empirical study of well-being is more than an intellectual exercise.

Ed Diener and Eunkook Suh¹⁴

Chapter 2:

Well-being measurement:

An overview of literature and empirical studies

Although there is a general agreement about what is good for life, there is no optimal list about components of well-being. Normally, the lists are established based on the specific purposes of the study, socio-economic conditions and available resources. Therefore, an attentive examination on research methodology, theoretical indicators and practical application of well-being measurement is useful for the study. The chapter consists of three main parts. The first section examines studies on determinants of well-being. Then, section two provides an overview of findings from studies about individual and household well-being in Algeria and Thailand. The third section explores findings from studies on well-being, quality of life in Vietnam.

¹⁴ (Diener and Suh 1997: 191).

2.1. Components of well-being: Universal and specific lists

This part focuses on the studies of Nussbaum, Doyal and Gough, the Commission on the Measurement of Economic Performance and Social Progress (CMEPS), and Developing Countries Research Group of the Centre for Development Studies (WeD) about components of well-being. The work of Nussbaum and that of Doyal and Gough introduce “universal general” lists of human capabilities or needs. The CMEPS and WeD, whereas, introduced lists of components which should be considered in well-being measurement studies.

2.1.1. The social minimum: Nussbaum’s capabilities list

To live and to participate in society people must have a “minimally decent standard of living”, the standard that is sufficient for people to fulfil certain needs. The bundle of resources that are necessary for a person to lead a minimally decent life in his or her society is called the “social minimum standard” (White 2008). According to Nussbaum, people must have certain “good things” to ensure the ten “central human functional capabilities” to live a truly human life. This implies that the required resources for a minimally decent life must ensure the following human capabilities (Nussbaum 1999):

- i. Being able to live to the end of a normal length of human life.
- ii. Being able to have good health, to have adequate shelter and nutrition.

- iii. Being able to move freely; to have sovereignty over self-bodily boundaries, to be protected from assault, violence and abuse; and to have opportunities for sexual choices.
- iv. Being able to use the senses for imagination, to think and reason in a “truly human” way. To be able to express one’s mind freely, to be able to pursue a meaningful life, and to have the capability to achieve pleasure and avoid unnecessary pain.
- v. Being able to have feelings, sentiments for things and people. Being able to be protected from or to overcome extreme emotional blights such as overwhelming fear, anxiety, or traumatic events.
- vi. Being able to shape one’s own perception of “the good” and to connect it with one’s own life.
- vii. Being able to live with and to live for others; having social foundations for self-respect, in order to not be humiliated or discriminated against, and for meaningful relationships as well as mutual recognitions.
- viii. Being able to live in harmony with nature including animals, plants, and natural environment.
- ix. Being able to participate, to enjoy and to express emotions through/by means of amusement and recreational activities.
- x. To have the right to and to be able to participate effectively in political choices, to create property, to have property rights, to have equal rights in seeking for an employment, and to have freedom from unwarranted search and seizure.

The list of Nussbaum is formulated at an abstract level. Therefore, it can act as a general list (or is a universal list) for studies about well-being. But, it can be also translated into a more specific list based on the practical context of a community or a country (Nussbaum 2000). Actually, there are many potential factors, which may influence the level of well-being of the agents. It is, therefore, not easy to determine which factors are real determinants of his or her well-being.

Though the list of Nussbaum can help to determine principle criteria to measure well-being, it is too general and vague. The mentioned capabilities can be interpreted in very different ways. Thus, it is difficult to determine indicators that represent them (Robeyns 2005).

2.1.2. Doyal and Gough's list

Different from Nussbaum, the theory of human need, which is developed by Doyal and Gough identifies basic determinants of a good life. The list is built on a hierarchical approach of human needs. It begins from the universal goals of humans. Based on these goals, the authors determine the basic and intermediate needs, and the preconditions to achieve the goals. The establishment process of the list can be summarized into a four-step as following (Gough 2003).

Step 1: Identifying universal/general goals

The arguments are based on the belief that needs refer to a particular category of goals that can be universalized and the deficiency of these needs would result in serious harms to some objective kinds. These harms might be fundamental disablements, which prevent individuals from successfully participating in the society and/or pursuing the good of life. Hence, the capability to participate in some forms of life without “serious arbitrary limitation” is the “most basic human interest” in this theory (Gough 2003: 8).

Step 2: Basic needs

Individuals must have both physical and mental capabilities to act and to be responsible for his or her own life. It means that they must be alive and have the mental ability to think and to make decisions. Physical health ensures that an individual can undertake tasks that make his aims come true. Whereas, to formulate aims, to make decisions an individual must have “personal autonomy” which allows him or her to make choices in life. Therefore, health and autonomy¹⁵ are the two “most basic” human needs. Besides the mentioned autonomy, there is a higher level of autonomy, which is called “critical autonomy”. This kind of autonomy allows

¹⁵ According to Doyal and Gough, the existence of a minimum level of autonomy would allow individuals to be able to:

- formulate aims and beliefs common to their form of life;
- act and participate in some forms of social life;
- do and communicate with others about aims and beliefs;
- perceive that their actions are done by them and not by someone else;
- understand the empirical constraints on the success of their actions;
- be capable of taking responsibility for what they do (Gough 2003:9-10).

individuals the capacity to compare cultural rules, to think about these rules and to work with others to change them when it is necessary (Gough 2003).

Step 3: “Satisfiers and intermediate needs”

The basic needs of individuals for physical health and autonomy are universal. Yet, specific goods and services necessary for these needs are determined by cultural factors. In the theory, the authors call all factors -which might be objects, or activities, or relationships- that help to satisfy human basic needs “satisfiers”. Then, they identify a subset of “universal satisfier characteristics”, characteristics of satisfiers that help to enhance physical health and autonomy of humans of all cultures.

The categories of universal satisfiers characteristics help to connect universal human needs, the “socially relative satisfiers” as well as to provide a foundation for the establishment of intermediate needs. These needs are grouped into eleven categories. The first six categories contribute to physical health while the last five categories contribute to autonomy.

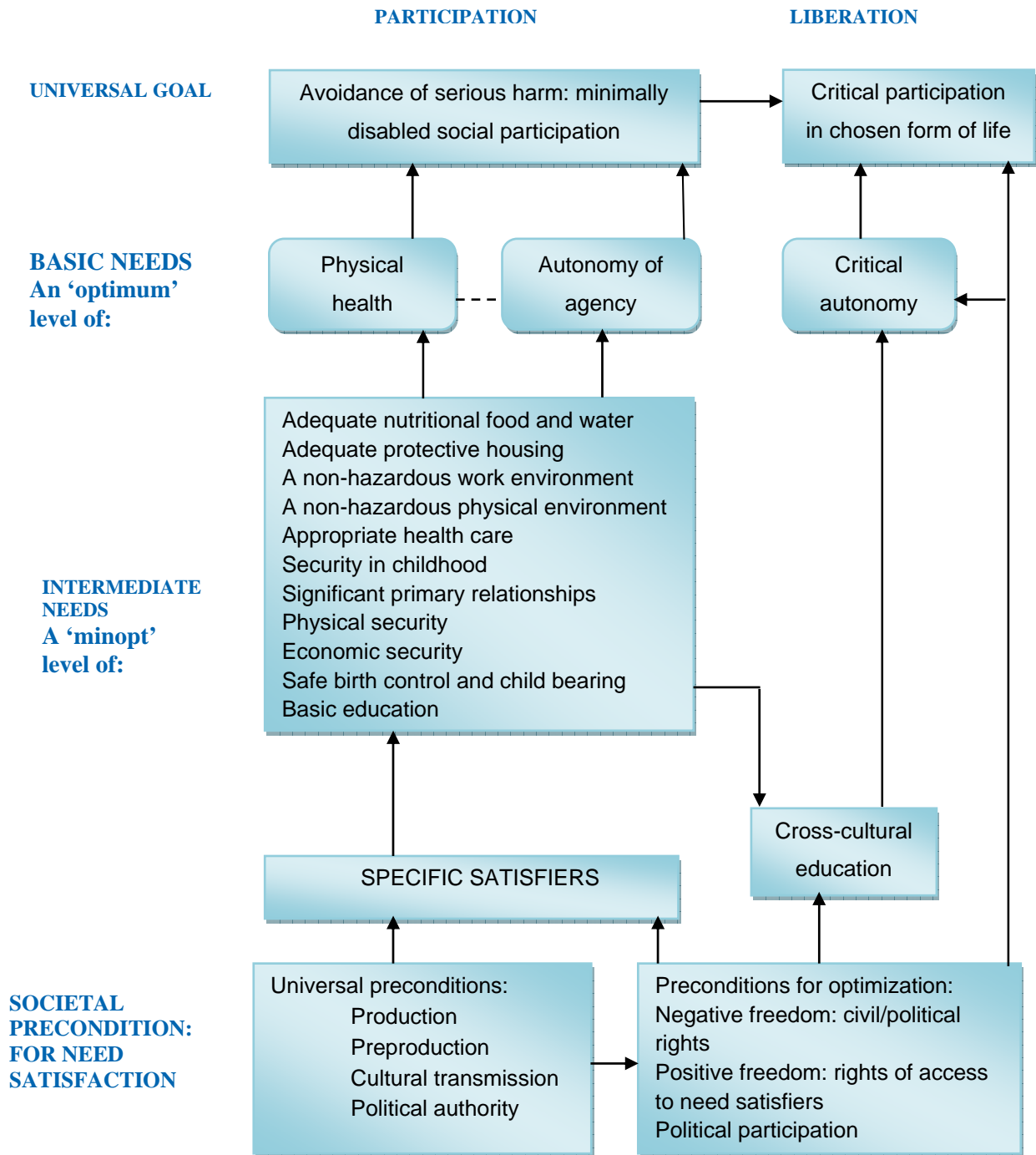


Figure 2. 1: The outline of listing process

Source: Gough 2003

Step 4: Societal preconditions

The study determines four societal preconditions to satisfy human needs, which are production, preproduction, cultural transmission, and political authority. Besides, it also identifies two kinds of freedom, the positive freedom and negative freedom. The freedoms are prerequisite for the exercise of critical autonomy (Gough 2003).

The theory is criticized in that it is considered both an “over-reach” and “parsimony” (Gasper 1996: 24-27). However, in some aspects, this flexibility is a strength of the theory. This capability allows the theory a possibility to extend and to contract to be suitable for a wide range of nations.

The theory is named “A theory of human needs”, yet its scope of study is not limited to the basics needs of humans. The theory endorses a broad view of human flourishing and simultaneously determines minimal standards of a good life. The theory concerns low standards of basic needs, the minimal standards that ensure the avoidance of serious harms and social exclusions. However, it also discusses higher levels of human needs such as critical autonomy, freedom, and flourishing.

Besides, the categories of basic needs are well defined. They are neither too broad, as the list of Nussbaum’s capabilities, nor too narrow to measure well-being (Gough 2003). The theory is suitable for studies about well-being of different groups of countries: developed and developing ones (Jongudomkarn and Camfield 2005).

Therefore, the theory is applied as a principle framework to measure well-being level of households in this thesis.

2.1.3. The recommended list of well-being determinants of the CMEPSP

In February 2008, the President of the French Republic, Nicolas Sarkozy, asked Joseph Stiglitz, Amartya Sen and Jean Paul Fitoussi, to create “The Commission on the Measurement of Economic Performance and Social Progress” (CMEPSP). The aims of this Commission are to identify limitations and possible improvements for the measurement of economic and social progress. It also aims at addressing the rising concern about the inadequacy of economic indicators and misleading information that is caused by the overemphasis on economic indicators.

In the CMEPSP 2009 report, the commission emphasized that it is time to shift the emphasis of the statistical measurement system “from measuring economic production to measuring people’s well-being” (Stiglitz et al. 2009:12). This shift is important since there is an increasing gap in current aggregate data and factors that constitute well-being of the general population. The commission also assigns one of the three working groups to work on issues that relate to the evaluation and measurement of well-being and quality of life of the people. The report outlines approaches, indicators, methods and recommendations relating to well-being measurements, which are useful for studies in the field.

According to the commission, well-being or quality of life has broader meaning than living standards. “It [well-being] includes the full range of factors that influences what we value in living (Stiglitz et al. 2009: 41).” The factors that are necessary to take into account while measuring well-being are grouped into eight groups as follow:

- i. Material living standards: The most popular and most widely used in well-being measurement or evaluation.
- ii. Health: The basic factors that influencing both the length and the quality of people’s life.
- iii. Education: Education is strongly influenced by both objective and subjective quality of life of the people. It is not only strongly associated with income, competence, health, social connection but also attitude and capability of the people.
- iv. Personal activities, including work: Work plays a special role in the life of humans. It influences not only economic indicators of well-being but also non-material ones. The way a person spends time has a close relationship with his or her well-being even when impacts of income have been controlled.
- v. Political voice and governance: These are indispensable aspects of life, which not only influence material aspects but also other crucial aspects of life such as freedom, the ability to participate fully as citizens.
- vi. Social connections and relationships: It is obvious that people with more social connections and relationships often have higher levels of well-being. Social

relations improve the quality of life of people in many different ways. Having more social relationships mean that the agent has more chances of getting a good job and receiving beneficial information. People who have good social relationships also have better health and benefit more from social activities.

- vii. Environment (including present and future conditions): Environment has both direct and indirect influences on well-being of people. Environment factors such as pollution, temperature, space, green areas etc. have a direct influence on physical and mental health as well as the quality of life of people.
- viii. The security of economic and physical nature: Security is one of the most basic needs of human beings. Hence, the level of security has a very strong influence on well-being of people, especially the emotion and behaviour of the people.

The commission suggested that these groups of elements should be considered simultaneously in well-being measurement studies. Although the components of an objective list are diverse, there is a consistency among numerous studies across countries and areas about elements of the list. This remark confirms the principle argument of the Theory of Human Needs of Doyal and Gough that there are ‘universal needs’. The list also provides a framework and useful guidelines for studies about well-being measurement. However, in reality indicators and factors that are taken into account to measure well-being are often subjectively determined by the purposes of the study and the availability of data.

2.1.4. Well-being in developing countries: A framework for practical lists

Wellbeing¹⁶ in Developing Countries Research Group of the Centre for Development Studies (WeD), University of Bath, is a pioneer in the study of well-being in developing countries. The principle aim of the group is “to develop a conceptual and methodological approach for understanding the social and cultural construction of wellbeing in developing countries” (WeD 2008). From 2002 to 2007, within the framework of WeD program, researchers in different countries and disciplines have worked together to improve understanding on theoretical issues and the construction of well-being. The program has offered a simple definition of well-being. It also figures out basic dimensions of well-being and elements of these dimensions (McGregor 2008, WeD 2008, White 2009a, White 2009b).

According to WeD, well-being of an individual is “something that happens in relationship” (White 2009b:11) since “people become who and what they are in and through their relatedness to others” (White 2009a: 9). In this prospect, well-being is defined as “a state of being with others, where human needs are met, where one can act meaningfully to pursue one’s goals, and where one enjoys a satisfactory quality of life” (WeD 2008). The definition identifies the interrelationship among the three components of well-being, which are relation, material, and subjective.

¹⁶ In WeD papers, “well-being” is written as “wellbeing”

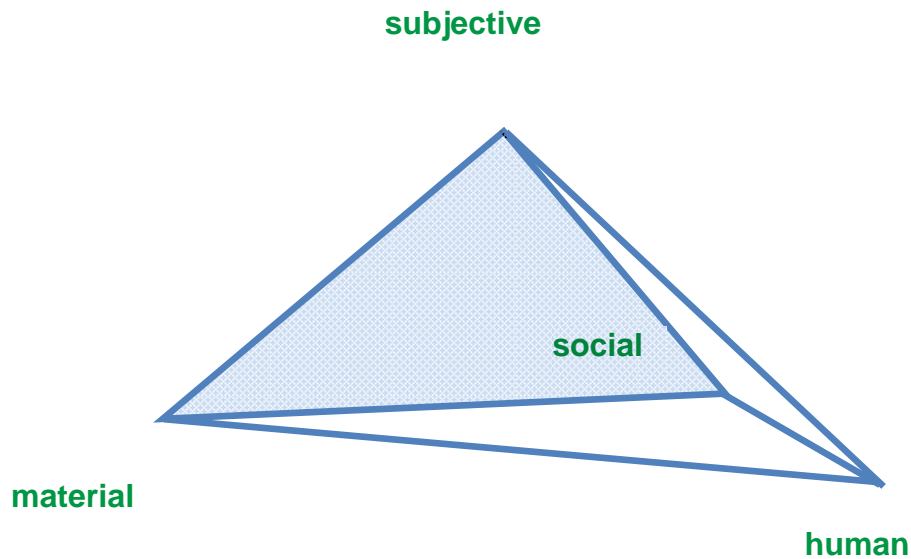


Figure 2. 2: The pyramid of well-being

Source: White (2009a: 5)

Though the material, the relation and the subjective are different aspects of life, they are interconnected with each other. The available resources under the command of a person influence his or her capability to achieve needs and goals in life. Then, the sense of achievements and engagements determine her subjective perception about her well-being (McGregor 2006; White 2009b). Specifically, the material refers to the “stuff” of well-being, which relates to what a person has or does not have. They cover factors such as income, assets, foods, body, shelter, and physical environment. Whereas the ‘relational’ relates to social interactions such as rules and norms, which determines power, identity, connections, and differences between

people. These factors can be grouped into two fields, the social and the human. The social consists of “social relation and access to public goods” while the human concerns “capabilities, attitudes to life and personal relationships” (White 2009a: 5). The subjective dimension also has two aspects, people’s perception of their life and values, such as ideologies, beliefs. The factors influence subjective feeling and thinking of the people (White 2009a; White 2009b: 10).

Table 2.1: Well-being dimensions explained

<i>The material concerns practical welfare and standards of living:</i>	
Objective aspects include:	<ul style="list-style-type: none"> -income, wealth and assets -employment and livelihood activities -level of consumption
Subjective aspects include:	<ul style="list-style-type: none"> -satisfaction with income and wealth -assessment of one's standard of living compared with others -assessment of present standard of living compared with past
<i>The social concerns social relations and access to public goods:</i>	
Objective aspects include:	<ul style="list-style-type: none"> -social, political and cultural identities -violence, conflict and (in)security -relation with the state: law, politics, welfare -access to services and amenities -networks of support and obligation -environmental resources
Subjective aspects include:	<ul style="list-style-type: none"> -perceptions of safety, respect and discrimination -(dis)satisfaction with access to services -assessment of treatment/support given or received -perceptions of environmental quality
<i>The human concerns capabilities, attitudes to life and personal relationships:</i>	
Objective aspects include:	<ul style="list-style-type: none"> -household structure and composition -education, information and skills -physical health and (dis)ability -relations of love and care
Objective aspects include:	<ul style="list-style-type: none"> -(dis)satisfaction with levels of health, information, skill, education -self-concept and personality -sense of competence, (in)capability and scope for influence -trust and confidence -religious faith

Source: White (2009a: 7-8)

The interpretation of the material, social and human aspects in analyzing well-being level of the individual or household are explained in table 2.1. The framework considers both subjective and objective aspects of the domains of well-being. The material aspect of well-being concerns not only a standard of living but also a self-assessment of the person about his or her material status. The objective dimension of social aspects of well-being considers social capital, physical environment, amenities, and security of the people. On the other hand, the subjective dimension of the social aspect concerns satisfaction of the person about the access to services, treatment or support and her perception of safety, respect, physical environment. The human aspect has a close relation with family characteristics, familiar relations, capabilities and attitude of the person. Being a people-centred approach, the program emphasizes the centre role of relationship in well-being analysis. The dimensions and indicators of each dimension explained are a useful guide for studies about well-being in developing countries as they are built based on both theoretical and practical studies in the field.

2.2. Findings from empirical studies

The study focuses mostly on well-being at the micro level of studies in developing countries. The reason is that the principle concern of the thesis is the well-being level of households. Besides, there are differences in components and important levels of components of well-being in developing and developed countries.

2.2.1. The studies of Dolan, Peasgood and White

In an effort to determine potential indicators of personal well-being and possible influences of the indicators to individual well-being, Dolan, Peasgood and White (2006) have reviewed 153 relevant studies. Within each study, they examine aims, data, methodology, variables, and findings of the research. Then, they compare and synthesize the results of the studies. Finally, based on the syntheses results, the authors classify the possible indicators of well-being into seven groups. They are income, personal characteristics, socially developed characteristics, time using, attitudes and beliefs, relationships, and environment.

**Table 2.2: Potential indicators of personal well-being
and their possible influences**

Heading	Potential indicator	Possible influence
Income	Absolute income	Increase in income, particularly for high earners, are unlikely to increase SWB ¹⁷
	Relative income	Have a significant negative relationship
	Wealth	May have positive relationship
	Debt	Associated with low SWB
	Expectations and perceptions	Expectation and subjective assessments of financial position might influence SWB
Personal characteristics	Age	A U-shaped relation, lowest around 35-50
	Gender	Women tend to have lower mental health measures than men but there is a wide degree of within-gender variance
	Ethnicity	Depends on nation, might have limited evidence
	Personality	Might partly determine how we assess our lives but there is not much data
	Physical characteristics	Limited evidence
Socially developed characteristics	Education	Indeterminate
	Health	Strong relation, particularly psychological health
	Type of work	Limited evidence
	Unemployment	Highly detrimental to SWB

¹⁷ SWB means subjective well-being

How we spend our time	Hours worked	Limited evidence
	Commuting	Lower level of satisfaction and mood
	Housework	Limited evidence
	Caring for others	Informal care givers for long periods have consistently lower levels of SWB than non-careers
	Community involvement and volunteering	Generally, there exists a positive relation but not in all studies
	Sleep	Limited evidence
	Exercise	Limited evidence
	Religious practice	Church attendance is associated with higher SWB
Attitudes and beliefs towards self/others/ life	Attitudes towards our circumstances	May be an important determinant of SWB
	Trust	Degree of trust in others seems to be positively correlated with life satisfaction but evidence is limited
	Political persuasion	Limited evidence
	Religious beliefs	Belief in god is associated with SWB
Relationships	Marriage	Being in an intimate relationship is associated with higher level of SWB and dissolution of the relationship is detrimental to SWB
	Having children	The effect is indeterminate
	Seeing family and friends	Positively associated with SWB
Economic, social and political environment	Income inequality	Indeterminate
	Unemployment rates	Limited evidence
	Inflation	Limited evidence
	Welfare and public insurance	Limited evidence
	Democracy	Limited evidence
	Climate and quality of natural environment	Limited evidence
	Security of local environment (crime rates/ risk)	Living in an unsafe area is associated with lower life satisfaction and mental health
	Urbanization	Some evidence that SWB is lower in more densely populated areas

Source: Synthesis from Dolan, Peasgood and White 2006

The findings provide valuable information for the studies about well-being. Up to now, a crucial problem that most of the studies in the field have to face is that there are numerous measures to estimate well-being. In addition, the studies that apply difference concepts and methods could give very difference findings. The study of Dolan and others have identified the socio-economic and environmental determinants of changes in well-being level, which were used in practical studies.

Though the results cannot confirm the causality influence of elements to well-being, it provides a means to assess the robustness of indicators. Besides, the study confirms elements that have a consistent relationship with well-being such as payment problems, having negative evaluations of health status or chronic sickness, being unemployed, being divorced or separated and living alone, and rarely talking to or communicating with neighbours. These factors have a negative relationship with well-being level. However, the study emphasizes that we should be careful while interpreting the influences of the indicators on well-being level.

Because the dependent variables of the reviewed studies are subjective well-being, the findings are useful for our study since the information about subjective well-being of individuals is extremely rare in Vietnam. The findings, therefore, provide a guideline for the selection of determinants that would represent subjective well-being. However, the authors did not distinguish findings from developed and developing countries while reviewing the studies. Besides, most of the reviewed studies are carried out in developed countries¹⁸. The findings might not be applicable to actual conditions in developing countries. Therefore, a review of other studies in developing countries is necessary.

¹⁸ In an examination of 153 summaries of relevance studies presented in appendix C of Dolan et. al. 2006, less than 1/10 of the studies were realized in developing countries. Most of the presented studies were organized in the European Union, The United States, The United Kingdom, and Australia.

2.2.2. Studies in Algeria and Thailand

In this section, we focus on the aim of studies, applied data, methodology, variables, and results of some typical studies in developing countries. The principle concern of the review is to find out the basis of the variables selection process and methodology to measure well-being in developing countries.

2.2.2.1. The case of Algeria

Algeria is a large and resource abundant nation in Africa. It achieved independence in 1962 after a fierce war with French colonists and became a socialist nation right afterward. During the independence stage up to the mid-1980s, the country had achieved prosperity with an average growth rate around 6% per year. However, the oil shock in 1986, when the price of oil declined around 50%, ended this stage of prosperity of the nation. The riots in 1988 forced the nation to shift to a democratic regime. Besides, internal shortcomings of the nation like heavy external debt, a resources-based economic structure, political instability, corruption, and the domination of an illegal market regime have weakened the frail economy of the nation. Though the increase in the price of oil from the year 2001 helped the nation improve some of its economic indicators, there are still many challenges the nation has to face (Tiliouine et al. 2006). These facts urge social scientists to study the level of satisfaction of the people and changes in their well-being level.

To measure subjective well-being of Algerians, Tiliouine et al. (2006) has applied the research framework and methodology to measure well-being from the Australian Unity Wellbeing Project, to the actual context of Algeria (Tiliouine et al. 2006). Originally, the index was developed to perceive wellbeing of Australians but later, it was developed as a scientific tool that can be applicable in other countries¹⁹. The index consists of two subscales, Personal Wellbeing Index (PWI) and National Wellbeing Index (NWI). According to Cummins, it is possible to formulate quality of life as a concept that has two axes: objective and subjective. Each axis has seven domains, which are: material wellbeing, health, productivity, intimacy, safety, community, and emotional well-being' (Cummins 1997: 8). Each objective domain of wellbeing is measured by three relevant objective indices while the subjective domains are evaluated by the questions about the level of importance and the level of satisfaction of the agent concerning the domains (Cummins 1997a).

The two surveys of Algeria only focus on evaluating subjective well-being of Algerians. The first one was carried out in 2003 with a sample of 1417 usable observations. The two purposes of this survey are to test the psychometrical of the IWI and to study the attitudes of Algerians about their lives and their nation (Tiliouine et al. 2006). Eighteen months later, a second survey was organized to examine the change and stability of Algerians' well-being level. This survey also uses the same sample selection and analytical method as the first one but the number of observations is doubled. There are 2909 usable replies (Tiliouine,

¹⁹ Australian Centre on Quality of Life website. <http://www.deakin.edu.au/research/acqol/index.php>

2009a). In both surveys, the respondents reply to questions about their satisfaction in seven domains, which are standard of living, personal health, achievement in life, personal relationships, personal safety, community connectedness and future security.

The in-depth analysis of the two databases proves that IWI is suitable to measure the level of satisfaction of people in Algeria. The index has a good level of sensitivity, validity and reliability. Overall, findings from the surveys show that well-being level of Algerians is much lower than the 'Gold standard' of developed nations for both PWI and NWI. The studies also prove that demographic indicators such as age, gender, education, marital status, income, and number of children might have a significant relation with the subjective well-being level of the people. However, the relations might not be stable and might be influenced heavily by the socio-economic context of the nation (Tiliouine et al. 2006; Tiliouine 2009a; Tiliouine 2009b).

The data also prove that the NWI of both surveys are lower than the PWI. This finding is consistent with that of other developed countries. The relatively low level of NWI in comparison with that of PWI reflects a low level of satisfaction of the people about national issues such as weak government, corruption, poor provision of goods and services, insecurities, and worry about the future. In both surveys, the people who have a higher education level also have a higher level of personal satisfaction. And the people who have a higher income level also have a higher

level of IWI. What's more, young people are the group of citizens that have the most favourable well-being scale and are least affected by the social context of the nation (Tiliouine 2009a). The survey also points out that there is a significant relation between health status and personal wellbeing. Healthier people, people who do not have chronic health conditions, have a higher personal wellbeing level. These people also report a higher level of satisfaction in marriage, friendship, and family relations (Tiliouine 2009b).

Generally, the findings prove that development in Algeria is “wrongly presented by many official [indicators]” (Tiliouine et al. 2006: 28). The development of the country has been misinterpreted as the increase in economic figures such as the amount of hard currency reserves, wealth accumulation, and other economic indicators, factors that cannot represent the true development of a nation. Other than the augmentation in economic indicators, it is necessary to improve security conditions, factors that help the people avoid the political-economic disasters that the nation was and is facing. Development in a human-centre process hence, is important to use well-being indicators to evaluate the development of both developed and developing countries (Tiliouine et al. 2006).

In conclusion, the findings prove limitations of official indicators in measuring development of nation. Economic indicators of economic growth, wealth and macroeconomic balance have misinterpreted the national progress. Therefore, the application of well-being indexes would provide important information for the

establishment of appropriate policies for the nation. The well-being level of people has relation with demographic characteristic (such as age, gender, education and relationship), health status and security. Besides, it is also influenced by political, social and economic issues of the nation.

2.2.2.2. The case of Thailand

Thailand is amongst the most successful transition economies in Southeast Asia. Within a short period of time the nation has transformed from a poor nation to a Newly Industrialized Economy with GDP by Purchasing Power Parity (PPP) rank the 25th biggest economy and GDP per capita by PPP estimated at 8800 USD (The World Factbook 2009). Yet, the transition, itself, creates intrinsic challenges. Economic development is accompanied with sharp socio-cultural change and social division. Thailand is becoming a “fascinating kaleidoscope of modern and traditional; the rural and the urban; the affluent and the impoverished” (McGregor 2008: 2).

Even before the financial crisis in 1997, when the nation achieved all indicators of a successful economy, most of Thai households had a budget deficit or no savings. The environment is deteriorated. Many young adults have become economic migrants. Many rural communities have only elders and children, who have to live with very small remittances. Several Thai women think that to get married with a foreign husband is a means to have “a better life and wealth”. This kind of marriage

is no longer a stigma but a pride (Jongudomkarn and Camfield, 2005). These challenges are not specific issues of Thailand but are popular in other transition economies, including Vietnam. An attentive review of studies about well-being, development and social change in Thailand, therefore, provides important lessons for other emerging countries.

To develop a fundamental definition and a suitable method to develop well-being in Thailand, the WeD has conducted the phase 1, the exploratory phase of WeD's quality of life (QoL) research in five rural and peri-urban rural sites in the third quarter of 2004. To collect necessary data, the research group applied three techniques: focus group discussions; semi-structured interviews; and the Personal Generated Index. These survey techniques provide spaces so that people can tell about what they evaluate as important factors for their well-being, how they feel, and how satisfied they are about life (Jongudomkarn and Camfield 2005). Things that matter to well-being in the surveys are:

Table 2.3: Wellbeing categories from phrase 1 QoL research

Security and stability	Physical & Psychological WB	Family relationships	Community, resources, and environment
1. Living conditions	1. Health and longevity	1. Family relationships	1. Good friends, neighbours & community relationships
2. Housing			
3. Material and “convenience” goods	2. Spirituality, religious practice and morality	2. Intimacy	2. Natural environment (especially water supply)
4. Educational attainment			
5. Skill training and knowledge			
6. Job	3. Good appearance		3. Infrastructure and public services
7. Salary and income			
8. Assets, savings and inheritance	4. Hope and dreams		4. Local administration & government
9. Financial investments			
10. Debt	5. Independence		5. Support from outsiders and welfare
11. Land for farming (with a title deed)			
12. Food security			
13. Access to market & good prices for produce			
14. Personal security			

Source: WeD primary data, Jongudomkarn and Camfield 2005

Among the 26 items mentioned in table 2.3, the five most important indicators are family relationships, health, money, occupation and housing. Family relations that encompass social norms, mutual relationships, care and support are the most important factors of all social groups. Health is highly evaluated since poor health creates inconvenience, treatment costs, and other indirect expenses. Health also influences chances and occupation of the agent and other family members. Lack of money is considered a serious problem for all age groups. Without money, it is hard

to have a good life. Occupation is also important since it has a direct relation with socio-economic status of the agent. Besides, most respondents said that they want to own a house.

In August 2005, WeD QoL program carried out a survey at seven sites, within which there are three sites in the rural, two sites in the peri-urban and another two sites in the urban area. Three hundred and sixty nine respondents were asked to rate level of necessity of goals and their satisfaction about the goals to the individualized measure of quality of life in Thailand (WeDQoL-Goals-Thailand). The initial list of goals was established based on findings in Peru and the results of the previous survey of WeD QoL in 2004. Then, the Principal Component Analysis method was applied to determine goals that are necessary for Thai households. Finally, the WeD retained 44 items to analyze household's well-being.

Table 2.4: The retained items in the WeD QoL-Goals of Thailand

Item number	Full item wording
c1	Attending celebrations & activities within the community
c2	Having clothes
c3	Keeping your faith & practicing your religion
c4	Having sufficient food everyday
c5	Education for children
c6	Knowledge & education for yourself
c7a	Having electricity
c7b	Having sewage system
c7c	Having water
c8	Having friends
c9	Good family relationships
c10	Good relationship with your neighbors and other community members
c11	Having children
c12	Good health
c13	Having basic household goods like pots, plates
c14	Improving the community
c16	Having a vehicle for yourself
c17	Participating in neighbourhood activities
c19	Personal progress, coming out ahead
c20	Public transport
c21	Having a room or house to live in
c22	Being able to own a business, a shop, to buy and sell your products
c23	Being recognized as a community member
c24	Behaving well
c25	Having public spaces for recreation (e.g. park, stadium)
c26	Living in a clean and beautiful environment
c27	Transferring what you know to others
c28	Peace in your community, without delinquency
t1	Partner
t2	Having a telephone
t3	Accessibility of health care/ services
t5	Having accessories
t6	Having convenience goods (e.g. television, fan)
t7	Being able to provide for your family
t8	Being able to travel to other places for pleasure
t10	Family members are able to come together for special occasions
t11	Groups in your community are compatible, without conflict/political violence
t12	Having a beautiful house
t13	Having a small number of children
t15	Having 'loving-kindness', an important practice of Buddhism for others
t16	Well-behaved children
t17	Satisfied with what you have
t18	Spending money wisely
t19	Having a spacious house

Source: WeD QoL-Goals-Thailand

Then, Thai Individualized Goal Attainment (TIGA) and Thai Unweighted Goal Satisfaction (TUGS) were calculated based on the established goals and weights. The WeD QoL-Goals of Thailand shows that both TIGA and TUGS have very high psychometrics properties (including frequency distribution, PCA, Cronbach's alpha). All of them show a high reliable level of internal consistency of the items. The scores are sensitive to changes in characteristics of subgroups. Besides, TIGA and TUGS provides relatively similar findings. However, the calculation of TIGA involves more complicated techniques than that of TUGS. Therefore, TIGA will not be calculated in the future (Woodcock et al. 2009).

Finally, based on inter-related components of the WeD research projects -including the community and household profiles, findings of relevant research and the structure of wellbeing- McGregor introduces general judgments about the interrelation among well-being, development and social change in Thailand. He proves that living place is an important determinant of wellbeing level and perception about wellbeing of the people. The "unequal development" among areas leads to differences in opportunities, resources, and awareness of people about wellbeing and capability to improve their wellbeing (McGregor 2008).

Though most people think that the development provides chances for them to achieve the expected level of need satisfaction, they also reported a lower level of satisfaction about obtained achievement. The urbanization process also creates

“frustrated achievers” who are disappointed about the gap between expectation and reality. People in urbanized communities are more likely to perceive that they are poorer than five years ago. The urban households achieve higher human and material resources but they also experience a lower level of social, cultural and environmental resources. Besides, social identities such as wealth, gender, and age strongly influence the perceptions and aspirations of the people about well-being (McGregor 2008).

McGregor (2008) also suggests that we should not aggregate the winning and losing aspects of development process. It is better to identify the winner and loser as well as the winning and losing of groups of agents. The policy-makers, therefore, must consider carefully the trade-offs among visions of wellbeing since they determine what types of economic growth Thailand would have and how the society of Thailand would be.

2.2.3. Findings from studies in Vietnam

Up to now, we do not have a systematic and well-planned study about well-being of households in Vietnam as that of other developing nations such as Thailand, Peru, Algeria, South Africa, or Bangladesh. Therefore, this part reviews the evaluations of international institutions about Vietnam’s well-being level and findings from works about quality of life, well-being, and multidimensional poverty that were carried out in Vietnam.

The level of happiness of Vietnamese in the international ranks

In the last few years, Vietnamese have received heartening news such as the Vietnamese are among the happiest people in the world. Within three years, from 2006 to 2009, Vietnam has moved from 12th to number 5th in the list of nations that have the highest level of Happiness Planet Index (HPI) (Nef 2009). Though the very high ranking leads to an overall optimism in the national media, there is curiosity about the implication and interpretation about the index and its meaning.

HPI is calculated based on the three indicators, which are life expectation, life satisfaction, and footprint²⁰. According to the data of Nef, Vietnam has a high rank because the level of footprint of the nation is very low in comparison with that of other nations and life expectation of Vietnamese is relatively high. However, having a high level HPI does not imply that the level of life satisfaction of Vietnamese is high. It is not appropriate to interpret this rank as the level of happiness of Vietnamese.

²⁰ Level of footprint of a nation is the amount of land, energy, water, resources, etc. that the nation uses for living and other activities.



Source:<http://tuoitre.vn/Chinh-tri-Xa-hoi/421858/Cho-tet-cong-nhan.html>

The picture shows the worried faces of sellers at a cheap market in an industrial zone of HCMC before the Tet holidays. There, sellers sell low quality products at a cheap price for workers. It opens from 5pm to 21pm and the peak time is around 7 pm when workers finish their working day.



[http://www.trekearth.com/gallery/Asia/Vietnam/South East/Ho Chi Minh/Ho Chi Minh/photo870463.htm](http://www.trekearth.com/gallery/Asia/Vietnam/South%20East/Ho%20Chi%20Minh/Ho%20Chi%20Minh/photo870463.htm) Morning snack by Panbue
Date Taken: 2009-02-24

Photo 2.1: Life challenges

Besides, there are other sources of information that show a different trend in the changes in quality of life of Vietnamese. The information in the two surveys, which were conducted by the World Database of Happiness²¹, a website that was established by Professor Ruut Veenhoven of Erasmus University of Rotterdam, interprets a different story. In the surveys, the participants were asked if taking all things together, they would say that they are “not happy at all,” “not very happy,”

²¹ <http://www1.eur.nl/fsw/happiness/>

“quite happy,” or “very happy.” The results show a down turn in the general level of happiness of Vietnamese during 2001-2005 period.

Table 2.5: Level of happiness of Vietnamese

Unit: %

Taking all things together, would you say you are...?	Year	
	2001*	2005**
1. Not happy at all	0.6	0.5
2. Not very happy	6.9	7.1
3. Quite happy	42.6	69.0
4. Very happy	48.7	22.5
Do not know	1.1	-
Total	99.9	99.1

Note: The totals are different from 100 due to rounding process
The information about people who stated that they “do not know” does not exist in the 2005 survey

Sources: *Veenhoven 2004

**Inglehart 2008

Though there is not an obvious change in the number of people who stated that they are “not happy at all” or “not very happy”, the number of people who think that they are “very happy” has reduced sharply. In 2001, nearly 50% of the participants reply that they are “very happy”. Four year later, the corresponding number reduces by more than 54%, less than one fourth of the participants reply that they are very happy²². Unfortunately, the surveys did not require the respondents give explanations for their classifications. It is, therefore, hard to explain such an abrupt change in the happiness level of the people. However, the findings propose

²²It is noteworthy to recall that the year 2005 is a good year for Vietnam. GDP growth rate is 8.4% (0.9% higher than that of the socio-economic plan of the 2001-2005 periods), unemployment rate in urban area is 5.3% (reduces 0.3% in comparison with that of the year 2004), investment increase, and socio-political conditions of the nation are stable (Tong cuc thong ke 2005).

questions about the relation between economic growth and improvement in quality of life of the people in Vietnam. The quality of life of the people may not increase, but reduce in the 2001-2004 period.

Table 2.6: Quality of life in Vietnam

Indicator	Year			
	2007	2008	2009	2010
Cost of living	73	48	-	54
Leisure & culture	59	56	-	53
Economy	43	36	30	44
Environment	77	71	67	71
Freedom	17	17	17	33
Health	63	61	54	58
Infrastructure	31	38	38	36
Risk & safety	57	57	-	64
Climate	69	67	68	67
Total	54	49	49	53

Source: Internationalliving.com, several years

Another international evaluation about quality of life in Vietnam is the classification of International Living, a monthly magazine, which was founded in 1979. The organization has offices and writers all over the world to evaluate the quality of living of nations. According to the classification of this organization, the quality of living in Vietnam reduced sharply in 2008 and 2009. In 2010, the quality of living improved but the indicators that have a direct relation with the quality of life of the people such as the environment, leisure and culture, and health are worse than those of the year 2007. Particularly, the leisure and culture indicator has reduced continuously in the 2007-2010 periods despite the improvement of some other indicators in 2010.

During the last three decades, the achievements of Vietnam development have been highly evaluated by international organizations. From 1985 to 2007, the Human Development Index (HDI) score of Vietnam increases 1.16% annually. In 2007, the national HDI rank is 116th out of 182 countries. And Vietnam is evaluated as a developing country that has a medium level of human development though its GDP still belongs to the group of poor countries. However, a closer look at the components of HDI proves that there are impediments that need to be examined.

Table 2.7: HDI indicators of Vietnam

Indicator	Value	Rank
Life expectancy at birth (years)	74.3	54
Adult literacy rate (% , age 15 and above)	90.3	69
Combined gross enrolment ratio (%) ²³	62.3	126
GDP per capita (PPP US\$)	2,600	129
HDI	0.725	116

Source: UNDP 2009

The high HDI rank of Vietnam mostly comes from a high level of life expectancy and a high ratio of adult literacy rate. Yet, the gross enrolment rate of Vietnam is very low, only 62.3%. Besides, GDP per capita of Vietnam is also lower than that of others regional nations.

²³ The number of students enrolled in primary, secondary and tertiary levels of education, regardless of age and gender, as a percentage of the population of theoretical school age for the three levels

The life expectancy at birth in Vietnam is high but the quality of population²⁴ is low. In 2008, the life expectancy of Vietnam is 72.1 years but the expected healthy years of Vietnamese is 60.2 years only. This means that on average, a Vietnamese has 12 unhealthy years, very high in comparison with other nations. However, the worst is that this number tends to increase by time (Duong Quoc Quyen 2009).

Table 2.8: Development indicators of Vietnam

Year	Life expectancy at birth (years)	Adult literacy rate (%)	Combined gross enrolment ratio (%)	Expected years of schooling of children (years)	GNI per capita (2008 US\$ PPP)	HDI value
1980	57.4	83.8	54.1	8.6	-	-
1990	65.4	87.6	48.6	7.8	915	0.407
2000	72.1	90.3	63.4	10.3	1,704	0.505
2005	73.8	90.3	62.3	10.5	2,273	0.540
2006	74.1	90.3	62.3	10.5	2,426	0.547
2007	74.3	90.3	62.3	10.5	2,578	0.554
2008	74.5	90.3	62.3	10.5	2,695	0.560
2009	74.7	90.3	62.3	10.5	2,838	0.566
2010	74.9	90.3	62.3	10.5	2,995	0.572

Source: International Human Development Indicators²⁵, several years

The time series data of several development indicators of Vietnam in table 2.7 prove that GNI per capita has increased gradually from the year 1990. Similarly, life expectancy at birth of the people has increased from 57.4 years in 1989 to 74.9 years in 2010. However, the other indicators like adult literacy rate, combined gross

²⁴ In Vietnam, the “quality of population” implies level of physical and mental health, and education level of the population.

²⁵ <http://hdr.undp.org/en/statistics/>

enrolment ratio, and expected years of schooling of children have not improved much in the 1980-2010 periods.

There is no improvement in adult literacy rate in the 2000-2010 periods. During this period, ratios of adult literacy remain at 90.3%. The expected years of schooling of children also has the same trend. After a down turn in 1990, the indicator increases from 10.3 years to 10.5 years in 2005 and remains at this value until 2010. The case of gross enrolment indicator is even worse. The gross enrolment ratio reduces from 54.1% in 1980 to 48.6% in 1990. Then, it achieves the highest value in the year 2000 and reduces again in a later stage. The indicator reduces from 63.4% in 2000 to 62.3% in 2005 and this ratio remains in the 2005-2010 period.

Generally, the economic indicator (in this case is Gross Nation Income) and life expectancy of the people in Vietnam have increased considerably in the 1980-2010 period but several other indicators of quality of life have not been improved. Vietnam has achieved definite improvement in living standards of the mass population but there are still considerable impediments. The data concerning education in table 2.6 and 2.7 are good examples for the unsustainable development of Vietnam. The economy has developed but the quality of human resources, which is presented by education, one of the most important resources for development, has not improved.

Studies about well-being and quality of life in Vietnam

To examine “*contribution of fish production to farmers’ subjective well-being*”, Nguyen Minh Duc (2009) analyses a database of 120 fish farmers in Binh Phuoc, Tay Ninh and Long An provinces to explore the role of fish earning and fish culture to farmers’ happiness. In the study, a logistic regression with a backward selection was applied to discover the effects of determinants on probability of life satisfaction and happiness of the small scale fish-farmers. Findings from the regressions confirm that the demographic characteristics of farmers such as age and education level have a relation with their level of satisfaction. Besides, the income per capita is also an important determinant of improvement in the quality of life. It is interesting that earnings from wild fish have a significant contribution to the well-being of the fish farmer while the income from non-farm activities has a negative impact on the well-being level of the farmers. This finding proves that culture might have an influence on the level of happiness of the farmers. Their happiness not only comes from the earnings but also the satisfaction of their work on the farm. Findings from this study confirm that the economic elements are important determinants of quality of life but the non economic factors are important as well.



Photo 2.2: Sun bathing²⁶

In 2006, the General Statistic Office of Vietnam (GSO 2006a) introduced a study about '*The 2004 Vietnam Migration Survey: Quality of Life of Migrants in Vietnam*'. This study focuses on the differences, the difficulties and dissatisfaction about aspects of life of the migrants. Based on the database of the 2004 Migration Survey in Vietnam, GSO proves that the factors like type of registration, age, gender, ethnicity, education, occupation, migrant status, marital status, working sector (working for private, foreign or government), migrant purpose, and social network have a relation with difficulties the migrant has to face. Most of the

²⁶ *Source:* Le Ho Phong Linh. The author took this photo at 7:10 am on 27th July 2010 on Nguyen Tri Phuong street, district 10, HCMC, Vietnam.

migrants report that there is improvement in terms of work, income, professional skill at destination. However, there is a considerable ratio of migrants who are dissatisfied with housing conditions, health care services and living environment in the new dwelling (GSO 2006a). Though the study does not aim at measuring well-being level of migrants, findings from the study provides preliminary suggestions about elements that should be considered in studies about well-being of people in Vietnam.

In an attempt to examine *the contribution of economic growth to improvement of well-being of Vietnamese people during the 1990s*, Edmonds (2004) applied data of the Vietnam Living Standard Survey in 1993 and 1998 into a decomposition function. The function considers how the improvement in economic status influences educational attainment, child labour, child nutrition, and health of the people. The study proves that economic improvement is the strongest predictive of changes in educational attainment. It is also an important indicator to explain the reduction of child labour as well as the improvement in nutrition status of children of the poorest households in 1993. However, the improvement in economic status could not adequately explain the improvement in nutrition or the declination in child labour of wealthy households. It also fails to explain improvement in health status of adults.

To notice that economic integration might create negative impacts on vulnerable groups of the population, Nguyen Anh and Jones (2007) analyzed data from the first

wave of Young Lives Vietnam survey on childhood poverty to find out *the possible impact of trade liberalization on Child Well-being*. The study discovers that the well-being of children in poor communities -represented by child work, educational attainment, health status, and vulnerability- is influenced by characteristics of the child, of his family and of the commune where he is living. The indicators like age, gender, order in the family, ethnicity, parental education, household head, number of siblings, wealth status, level of vulnerability, and family composition might influence child well-being level. Besides, the economic conditions and infrastructure of community may have an influence on child well-being as well. Actually, the level of generalization of findings from this study is limited due to the bias of sample selection process and the lack of a pre-dataset for comparison. The study, however, provides valuable hints for the selection of indicators to measure well-being of households in Vietnam.

Recognizing that poverty is a multidimensional concept and monetary indicators cannot be representative of the problems the poor have to face. Asselin and Vu Tuan Anh (2005) accomplished a study about “*Multidimensional Poverty Monitoring: A Methodology and Implementation in Vietnam*”. In the study, the authors built a composite indicator to measure poverty so that it could better identify poor households. Based on a community-based monitoring survey and the VLSS data, the Vietnam Living Standard Survey data, the authors have identified eight indicators to measure multidimensional poverty.

Table 2.9: Set of indicators to measure multidimensional poverty

No.	Indicator	Description	
		Individual level	Household level
1	Underemployment	Not having work for at least 3 months	At least one main worker is underemployed
2	Chronic sickness	To be sick for at least 1 month a year	At least 1 household member is chronically sick
3	Adult illiteracy	Is 15+ years and cannot read, write and do simple calculation	At least 1 adult is illiterate
4	Under schooling	A child 6-15 not attending school	At least 1 child is not going to school
5	Without radio, TV	There is neither a TV set nor radio	
6	Type of dwelling	Category of house	
7	Drinking water	Type of main sources of drinking water	
8	Sanitation	Type of toilet used by the household	

Source: Asselin and Vu Anh Tuan 2005

These indicators have aggregated into a composite index by the Multiple Correspondence Analysis method. According to the authors, the indicators prove a strong analytical potential for multidimensional poverty analyses. However, it is possible to add other indicators to better represent non-monetary aspects of a households' life.

In order to assess the depth of urban poverty and characteristics of the poor in Hanoi and HCMC, UNDP, the Statistics Office of Hanoi, and the Statistics Office of HCMC accomplished a survey in 2009 about urban poverty in the cities. The principle findings from the survey were synthesized in the “*Urban Poverty Assessment: in Hanoi and HCMC*” report in 2010 (UNDP 2010). Based on data of

1,748 households and 1,601 individuals in the cities, the report proves that the proportion of migrants in HCMC and Hanoi are 20.6% and 11.4% respectively.

The common characteristics of migrants can be listed as young, less likely to be married, change residence often, have low level of education, have lower level of income, and live in cramped places. They are also less likely to benefit from social policies while they have to pay a higher price for basic services. The ratio of economically active members in the migrant group is high (85% in comparison with 59% in non-migrant group). The migrants are more likely to work in an informal sector with low job security and longer working time. And most of child labourers are migrants.

Besides, in the cities, only 97.3% of the children from 10-14 years old are literate. The households in Hanoi have a higher level of education and higher ratio of people who have health insurance than that of households in HCMC. In addition, the ratio of households that have a private tap and the ratio of households that own the current dwellings in Hanoi are much higher than that of households in HCMC.

The report utilizes eight deprivation dimensions, which are income, education, health, social security, housing services, housing quality, physical safety, and social inclusion to measure multidimensional poverty of people in the cities. For all social dimensions, people in HCMC have a higher level of deprivation than that of the people in Hanoi. The four top deprivations of the cities are access to social security,

access to proper housing services, access to housing with proper quality, and access to education services. Level of deprivation index is extremely high for migrants in the cities.

2.3 Chapter remarks

Literature review shows that well-being level can be measured at various levels. There are general and specific lists which act as guides for the choice of determinants of well-being. The theory of human needs and its determinants are applied as the general guide for the selection of indicators of well-being index of this study. The main reason of the choice is that the structure of the theory is suitable for the practical conditions of Vietnam and the availability of data for in depth analyses. Besides, the needs which were determined in the theory are supported by findings from other studies about well-being.

Vietnam has received heartening praises from international organization about impressive achievement in poverty alleviation during the last few decades. However, the actual improvement in the quality of life of the citizens might be not high. The level of happiness of people seems to be reduced despite improvement in economic development. The living standards of the mass population have improved but are still low. The chance to access basic services such as education, health care, clean water, appropriate housing are still out of reach of many people, especially the poor migrants while the living environment is deteriorating at alarming rate.

PART II:

LIVING STANDARDS AND LIVING ENVIRONMENT

OF HOUSEHOLDS IN HANOI AND HO CHI MINH CITY:

A COMPARATIVE OVERVIEW

Statistics is human beings with the tears wiped off.

Paul Brodeur²⁷

Chapter 3:
Living standards and living environment
in Hanoi and Ho Chi Minh City: A comparative overview

The chapter utilizes the database from the “Migration, poverty and urban environment survey” (MPUES) from 2007 to compare living standards and living environment of households in the cities. It consists of seven sections. Section 1 is a general introduction concerning the two cities. Next the characteristics of MPUES are described in section 2. Section 3 and 4 focus on exploring the living characteristics, living environment and changes in living environment of households in the cities. Section 5 examines migration status and changes in the living

²⁷ Paul Brodeur in *Outrageous Misconduct*. <http://www.quote garden.com/statistics.html>

standards of households. Section 6 studies the differences in well-being level of groups of households in the cities by groups of districts and migration status. The chapter ends with section 7, the chapter remarks.

3.1. Introduction to the cities: Hanoi and Ho Chi Minh City

Hanoi, in the North and Ho Chi Minh City (HCMC), in the South, are the two biggest cities in Vietnam. Hanoi is the capital of Vietnam while HCMC is considered the economic capital. The cities, together, contribute to more than 45% of the national economic growth and are the most important socio-economic centres in the country.



Source: <http://upload.wikimedia.org/wikipedia/commons/7/75/Bandovietnam-final-fill-scale.svg> (accessed 17 Feb 2011)

Figure 3. 1: Map of Vietnam

Hanoi is not only a political centre but has also been a multi-faced centre of the nation for 1,000 years. After the extension in 2008, Hanoi covers an area of 3,324 km² and is the biggest city of Vietnam in terms of area. It is also the second most populated city: At 2009 Population Census, after the extension of the administrative limits of Hanoi in 2008, Hanoi has 6.5 million inhabitants, among which 2.6 millions only are urban (41.0%) and the rest rural (Central Population and Housing Census Steering Committee 2010). Thanks to advantages in geography, political, economic, and human resources, the city has relatively high living standards. It is the province that has the highest Human Development Index in Vietnam. In 2007, the GDP per capita of the city is 31.8 million VND, nearly 2.5 times the average GDP per capita of the country.

Hanoi is located in the heart of the Northern region. It has a diverse and relatively good transportation system, including air, water, rail, road and highway. The high quality labour force is another advantage to the city. It is not only the place which has the best educational system but also the place with the highest ratio of educated work force in the country. Besides, being the capital of the nation, Hanoi has favourable conditions for development. It is one of the cities which has the best infrastructure systems. From the “*Renovation*” or “*doi moi*” in 1986, the city has always been present in the list of provinces which have the highest economic growth rates. Recently, it is not only a political centre of the nation but also an important economic centre of the North. It is also the second most important economic centre in the country (Hanoi portal 2010).

HCMC (formerly Saigon) is about 1,700 km from Hanoi. This is a newer city, which was formed in the 17th century. Despite its young age, the city has developed very fast and soon became the most important political-economic centre of the South. It was the capital of Cochinchina during the French colonization and later the capital of the Republic of Vietnam (South Vietnam). The city was once named “the Pearl of the Far East” (Wikipedia 2011).

The city has a strategic position and favourable conditions for development. It is located in the centre of Southeast Asia and is at the crossroads of an international maritime route. Thanks to its strategic location, the transportation system, including the biggest airport and the largest port system of the country, the city currently is the most important national transportation hub in Vietnam. It is thus the main door to the world for Vietnam. Besides, it is not only the biggest economic centre but also an important centre for education, science and technology for the South (Ho Chi Minh City portal 2011).

HCMC is one of the most dynamic cities of the country. It is also an important engine for regional and national development. At 2009 Population Census, HCMC has 7.2 million inhabitants, among which 6.0 million are urban (83.3%) and the rest rural (Central Population and Housing Census Steering Committee 2009). The city has achieved very high economic growth in the last two decades. The average GDP

growth rate of the city in 1991-2007 was 11.4% (Nguyen Van Phuc et al. 2008: 78). The city, therefore, is one of the most attractive destinations for investors and labourers. It is also the most popular destination for international tourists in Vietnam. Though the city occupies only 0.6% of the national land and 7% of the national population, it contributes nearly to one third of the national GDP (Ho Chi Minh Portal 2011).

High economic growth helps to improve living standards of the population in the cities. It also creates opportunities for the people in others provinces who come to the cities to study, to work or to look for opportunities. From '*doi moi*', Hanoi and HCMC have attracted a huge inflow of people from other provinces. Population in the cities has increased fast. In the 1999-2009 period, the average population growth rates in Hanoi and HCMC were 2.0% and 3.5% respectively while the average rate of the country was only 1.2%²⁸. The growth of population which is combined with the weaknesses of urban management and changes in living style have contribute to the deterioration of infrastructure, living environment, social conditions, culture, and the awareness of the people about community life in the cities. Disparities among groups of people and changes in social values lead to the development of social problems. Overcrowding, congestion, increases in living expenses and the price of real estate are daily problems city inhabitants have to face. It is believed that living standards of households in the city have increased but the quality of life of the people in the cities has decreased (Le Cuong 2011, Thanh Phuong 2011).

²⁸ Cuc thong ke Thanh Pho Ho Chi Minh 2009.

Box 3.1: Opinions of long-time residents in Ho Chi Minh City

***Nghi Nguyen**, an inhabitant of Saigon-HCMC for nearly half a century, working in social sciences studies.*

It is easy to observe that the availability of food, accommodation and clothing... in the city are increasing every day. Houses are bigger, higher and more comfortable. The clothing is more beautiful... The food is variety

Ironically, behind, beside or outside these increasing, there are plenty of things which make life becoming more difficult to live. Safe food is a worry of families. The sidewalks where elders can walk comfortable are reduced. This lessens living space while the city is continuously enlarged. The noise is unbelievable, everywhere and at any time, even near the hospital and during the night.

***Huy Nam**, an economic and financial expert, who has been living for 47 years in Saigon-HCMC.*

I want to mention the constant fear of the people whenever they travel on the streets since there are so many traps above the head and under the legs which "ambush" for people. There is no need to say more about the pressing annoys in the street. It is worrisome that there are signs, advertising panels, traffic signs... which are put so low that everybody can easily become victim if they does not careful enough. People travel on the street must be very susceptible that they may be watered by water (may be dirt water) from above... In our city, the motto "pavement is for pedestrians" is said for fun!

***Le Hieu Dang**, deputy chairman of the Advisory Council on democracy and law - the Central Committee of Vietnam Fatherland Front, former Vice Chairman of Vietnam Fatherland Front Committee of HCMC.*

HCMC becomes more and more overcrowded, the components of dwellers are more and more variety while it does not have sufficient capability to take care of its habitants. This

creates a chaotic city and leads to the severe degradation of living environment, even in the subsistence needs.

The so-called urban development in HCMC has actually going against the original wills. I remember from more than 20 years ago, the Resolution of the People Committee of the city has determined that the population of the urban areas of the city would be limited at three million habitants, and the development of satellite cities would be promoted. But the orientation had to face a great obstacle which is the lack of commitment of the leaders...

On the other hand, the development, which is somewhat arbitrary, dense, inconsistency with strategic planning, has not only incapable to solve the basic requirements of urban development but also creating many problems such as traffic congestion, accidents, pollution... Particularly, the development ideal is heavily influenced by commercial thinking, the rich benefits while the poor remain lagging behind. For example, many skyscrapers have been made but the housing program for low-income people still not implemented yet. The gap between the rich and the poor, the unreasonable distribution of social welfare are premises of social instability.

Source: Author translates from Thanh Phuong 2011

3.2. Migration, poverty and urban environment survey (MPUES)²⁹

The survey has been implemented within the framework of FSP2S programme, which was supported by the French Embassy in Hanoi. Inside the FSP programme, the AId16 project focuses on “Migration, Poverty and Urban Environment”; it was carried out by three institutions: the Institute of Research for Development (IRD) in

²⁹ In this thesis, the migration, poverty and urban environment survey is called MPUES.

France; the Institute of Population and Social Studies (IPSS) at the National Economics University of Hanoi; and the Ho Chi Minh City Institute for Development Studies (HIDS). The field works were made in 2007 with the cooperation of the three institutes³⁰.

The principal aims of the survey were to collect information about migration status, living standards, and environmental problems of households in Hanoi and HCMC, the two biggest cities of Vietnam.

To improve the level of representativeness of the collected data, the survey follows a specific sampling method.

- Firstly, the list of all *phuong* and *xa* (administrative units immediately lower than districts, respectively “urban” and “rural”) is established;
- Secondly, the number of “*to dan pho*” (blocks) within all *phuong* and *xa* is collected at the level of the local People’s Committees.
- Thirdly, a shorter list of 180 *to dan pho* in Hanoi and 260 *to dan pho* in HCMC, is randomly drawn based on a constant step method with the help of a computer programme.
- Fourthly, interviewers visit the selected *to dan pho* and list all available households in the areas with the help of the heads of the *to dan pho*.

³⁰ Seven researchers were involved in the project: Nguyen Thi Thieng, Pham Thuy Huong, Vu Hoang Ngan (IPSS), Le Thi Huong, Tran Thi Thanh Thuy, Le Ho Phong Linh (HIDS), Patrick Gubry (IRD). Temporary staff were recruited for field survey and data entry.

- Finally, 1,000 households in Hanoi and 1,500 households in HCMC are randomly drawn based on the households' list. There are two different constant steps for two groups of households in the cities, the non-migrant and the migrant households. Due to this sampling method, all non-migrant households in each city have the same weight; similarly, all the migrant households also have the same weight.

Since the lists of households in the *to dan pho* are collected directly by interviewers based on the list of the households which are actually living in the area and the duration of the survey is short, the sampling bias is minimized. Besides, the random selection method helps to reduce the cluster effect of the sample. Another advantage of the database is that there are both subjective and objective questions in the questionnaire. Out of the common objective questions about living standards of the households, a significant part of the questionnaire is devoted to subjective information. The questionnaire includes questions about living environment, reasons why households have changed the living places, subjective opinions of households about changes in living conditions, as well as the influence of these factors on their lives. These kinds of information are valuable since there are very few available subjective information of households about their lives in the cities.

Because the main purpose of the project is to collect information about “migration, poverty and urban environment”, all the urban districts of both cities were selected, including both the central and peripheral districts. All the rural districts were

included except district Soc Son in Hanoi, and districts Cu Chi and Can Gio in HCMC (almost entirely rural). Therefore, only the information that is collected in urban districts can represent the characteristics of the households which are living in the urban area. The information on rural districts doesn't completely represent the households that live in rural area. Because of this confinement, the analyses in this chapter focus entirely on the urban districts of the cities³¹. Thus, the words “households”, “inhabitants”, or “people” in the following parts of this chapter imply “urban households”, “urban inhabitants”, or “urban people”, respectively.

3.3. Living standards and living accommodations of households in Hanoi and HCMC: A comparative overview

3.3.1. General characteristics of inhabitants in the cities

Birthplace, registration status and changes in living place of inhabitants in the cities

The MPUES proved that the ratio of people who were born and are currently living in Hanoi is higher than that of HCMC. Nearly 30% of people who are currently living in Hanoi were born in other provinces while the corresponding ratio of HCMC is about 33%.

³¹ It is noteworthy to mention that all comparisons between MPUES data and other databases of Hanoi and HCMC must be considered with special concerns: the MPUES data are representative of the cities while the VHLSS data for example are representative of their whole administrative units (provinces); the sampling methods are also different.

Table 3.1: Ratio of inhabitants in the cities by birthplace

Unit: %

Birthplace and living place	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
People born and living in the city	71.3	68.6	70.1	66.9	67.8	67.2
People living in the city but born in other provinces	28.7	31.4	29.9	33.1	32.2	32.8
Total	100	100	100	100	100	100

Source: MPUES-2007

Although Hanoi has a higher ratio of people who were born and are currently living in the city, there are no considerable differences in the registration status of inhabitants in the cities. Overall, the ratio of people who are registered in HCMC is slightly higher than that of Hanoi (table 3.1).

Table 3.2: Ratio of inhabitants in the cities by registration status

Unit: %

Place of registration and living place	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Live and registered in the same <i>phuong</i>	79.5	78.4	79.1	86.8	79.4	84.6
Registered in other <i>phuong</i> in the city	7.6	1.3	4.9	3.6	2.0	3.1
Registered in other districts	7.4	11.5	9.2	5.2	9.9	6.6
Registered in other province	5.4	8.2	6.6	4.4	8.4	5.6
Not-registered	0.0	0.4	0.2	0.1	0.3	0.1
Total	100	100	100	100	100	100

Source: MPUES-2007

The ratio of people who are living and are registered in the same *phuong* in HCMC is about 5.5 percentage points higher than in Hanoi. The ratio of people, who are not registered in Hanoi, although very low, is two times higher than the corresponding ratio of HCMC. It is interesting that in both cities, the ratios of people who are not registered in the peripheral districts are much higher than that of the central districts. The ratios of people who are registered in other provinces in the peripheral districts are also much higher than that of the central districts.

These disparities can be explained by differences in the characteristics of groups of districts in the cities. The urbanization process in peripheral districts of the cities has been fast during the last two decades. This leads to sharp development of the informal economic sector in the peripheral areas. Moreover, many industrial zones are located in the areas and have created many opportunities for job seekers. The price level in these areas is also much lower than that of the central areas. Therefore, they are obviously attractive destinations for migrants. Besides, other factors like the high gap in the price of land between the groups of districts, the overcrowded status of central areas, and the differential development level between the groups of districts have encouraged city inhabitants to move from the centre to the peripheral areas to get better living conditions.

Age and gender of inhabitants in the cities

In average, the population of HCMC is younger than the population of Hanoi. The average age of inhabitants in HCMC is 33.2 while that of Hanoi is 34.6. In both

cities, people who live in the peripheral districts are younger than people who live in the central districts. The average age of people who live in peripheral districts of HCMC and Hanoi are 31 and 33, respectively.

Table 3.3: Age and gender of inhabitants in the cities

Age and gender structure	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Average ages (year)	35.6	33.3	34.6	34.1	31.0	33.2
Ratio of people younger than 18 (%)	24.8	23.8	24.4	23.2	26.1	24.1
Ratio of working-age people, from 18-60 (%)	60.2	65.5	62.5	67.3	67.5	67.4
Ratio of people older than 60 (%)	15.0	10.7	13.1	9.5	6.4	8.6
Total	100	100	100	100	100	100
Ratio of males (%)	48.3	49.6	48.8	47.5	48.1	47.7
Ratio of females (%)	51.7	50.4	51.2	52.5	51.9	52.3
Total	100	100	100	100	100	100

Source: MPUES-2007

Table 3.3 points out that the cities have a “golden” population structure, the ratios of people who are at the working-age are high in both cities. In HCMC, the ratio of people who are between 18 and 60 is 67.4% and the corresponding ratio of Hanoi is 62.5%. Though the ratios of people who are younger than 18 in the cities are nearly the same, around 24%, the ratio of people who are older than 60 in Hanoi is much higher than that of HCMC. More than 13% people in Hanoi are older than 60 while the corresponding ratio of HCMC is less than 9%. Having high ratios of people at working-age is an advantage of the cities. However, the abundant of labour reduces the incentive for industrial upgrading and long term development of the nation.

Level of education and professional training of inhabitants who are 18 years old or more

Overall, the level of education and professional training of people in HCMC is lower than that of Hanoi. The disparities in education level between groups of districts in Hanoi are much lower than in HCMC. In average, the number of the completed school years of a person who is 18 years old or more in Hanoi is 0.5 year higher than in HCMC. The gap in the general education level between the central and peripheral districts in Hanoi is 0.1 year while the corresponding gap in HCMC is 0.3 year.

Similarly, the disparity in ratios of unskilled worker between the central and peripheral districts in Hanoi is 4 percentage points while the corresponding ratio of HCMC is nearly 14 percentage points. The disparity in ratios of people of those who have a university degree or above in the central and peripheral districts of Hanoi is 13 percentage points while that of HCMC is 51 percentage points.

Table 3.4: Educational and professional level of people aged 18 or more

Education and professional level	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Average completed school years (year)	9.5	9.4	9.5	9.1	8.8	9.0
<i>Level of professional education</i>						
Unskilled (%)	49.9	47.9	49.1	72.9	83.1	75.9
Technical workers (%)	8.7	14.0	11.0	3.3	3.3	3.3
Professional secondary school (%)	10.3	10.2	10.2	3.9	3.1	3.7
College (%)	2.8	3.5	3.1	3.3	2.6	3.1
University or above (%)	28.2	24.5	26.6	16.5	8.0	14.0
Total	100	100	100	100	100	100

Source: MPUES-2007

Besides, the disparities in professional education between the cities are extremely high. The ratio of people who are 18 years old or more that are unskilled workers in HCMC is much higher than in Hanoi, the ratios are 75.9% and 49.1% respectively. Moreover, people in Hanoi have a much higher level of professional education. For every 100 people who are 18 years old or more that are currently living in Hanoi, 49 people are unskilled, 11 people have a technical certificate, 10 people have a vocational certificate, 3 people have a college degree, and 27 people have a bachelor's degree or above. Whereas, the corresponding scales in HCMC are 76:3:4:3:14. In detail, the percentages of people who are technical workers, have a vocational degree, or have a university degree in Hanoi are more than twice that of the corresponding ratios of HCMC.

Working status of inhabitants in the cities

The ratio of people who are working in HCMC is slightly higher than Hanoi while Hanoi has a higher ratio of people who are studying than HCMC. The ratio of unemployment people in Hanoi is also higher than that of HCMC. When staying at home, the inhabitants in HCMC are more likely to state that they are doing homework than the inhabitants in Hanoi, 11.5% and 3.2% respectively. However, when the percentage of people who are doing domestic work and who do not work because of old age or health problems in the cities are combined, the totals are nearly the same in both cities, 24.4% in Hanoi and 23.8% in HCMC.

Table 3.5: Working status of people who are 13 years old or more

Unit: %

Working status	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Working (%)	54.4	59.1	56.4	57.8	58.6	58.0
Unemployed (%)	3.6	3.3	3.5	3.2	2.7	3.0
Studying (%)	13.9	15.5	14.6	13.9	14.8	14.2
Homework (%)	3.6	2.7	3.2	11.6	11.4	11.5
Does not work because of old age or health problem (%)	23.7	17.9	21.2	13.0	10.6	12.3
Does not need to work, annuitant, idle (%)	0.8	1.5	1.1	0.5	2.0	1.0
Total	100	100	100	100	100	100

Source: MPUES-2007

It is interesting to notice that the ratio of people who work in the public sector in Hanoi is more than twice the corresponding ratio of HCMC, 38.6% and 19.1%

respectively. Hanoi also has a higher ratio of people who work for the cooperative sector than that of HCMC. However, the ratios of people who work in other economic sectors, such as private companies, individual or family enterprises, and foreign companies in HCMC are higher than in Hanoi. The ratio of people who work for private companies in HCMC is nearly double the corresponding ratio in Hanoi. These differences come from the fact that Hanoi is an administration centre while HCMC is rather an economic centre.

Table 3.6: Ratio of working people in the cities by working sector

Economic sector	Unit: %					
	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Public sector	40.0	36.9	38.6	19.6	17.8	19.1
Cooperative sector	2.6	2.9	2.8	2.1	1.6	2.0
Private company	22.1	20.3	21.3	36.8	40.9	38.0
Individual or family enterprise	30.3	34.8	32.3	37.6	29.6	35.3
Foreign company	4.9	5.1	5.0	3.9	10.1	5.7
Total	100	100	100	100	100	100

Source: MPUES-2007

3.3.2. Living standards of people in the cities

Income and expenditures of households in the cities

In both cities, all the sources of income of household members are classified into three groups, income from work, other income, and remittances from relatives. The average income of the household members is the mean of the total income of the

household. In both cities, the income from work is the most important source of income of households.

Table 3.7: Average income per capita of people in the cities

Unit: 1,000 VND

Type of income	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Income from work (1,000 VND)	14,748	13,148	14,062	14,522	12,353	13,873
Others income (1,000 VND)	2,517	1,254	1,976	1,300	1,992	1,507
Remittances from relatives (1,000 VND)	628	403	532	875	573	784
Total	17,893	14,804	16,570	16,697	14,918	16,165
Income from work (%)	82.4	88.8	84.9	87.0	82.8	85.8
Others income (%)	14.1	8.5	11.9	7.8	13.4	9.3
Remittances from relatives (%)	3.5	2.7	3.2	5.2	3.8	4.8
Total	100	100	100	100	100	100

Source: MPUES-2007

In average, the income per head is slightly higher in Hanoi than in HCMC. In both cities, the average income of people who live in the central districts is higher than that of people who live in the peripheral districts. Overall, people who live in Hanoi have higher income from work and other incomes than that of people in HCMC. However, people who live in HCMC have a higher income from remittance of relatives (table 3.7).

Due to the complexity of the household expenditures and the difficulties in calculation of the expenses of households in the last 12 months (problem of memory over a long period), the MPUES only collects information on five types of household expenditures. They are expenses for health care, education, durable assets, remittance, and land tax. The expenses are chosen because they are good representatives of households' expenditures and are easy to recall. Therefore, the total expenses, in this chapter are the total expenses of the listed expenses. They are not the total of all expenditures of households in the last 12 months.

Table 3.8: Average expenditures per capita of inhabitants in the last 12 months

Unit: 1,000 VND

Type of expenses	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Health care	1,254	1,247	1,251	752	679	730
Education	1,063	1,119	1,087	930	981	945
Buying durable assets	845	833	840	347	755	469
Remittance	340	327	335	240	174	220
Land tax	26	42	33	36	42	38
Total	3,528	3,569	3,546	2,305	2,631	2,403

Source: MPUES-2007

On average, people in Hanoi spend more money on health care, education, durable goods, and remittances than that of people in HCMC. However, people in HCMC spend more on land tax than people in Hanoi. Overall, the average expenditure of a people in Hanoi is 48% higher than that of a people who lives in HCMC.

It is interesting that people who live in the peripheral districts spend more on education than those who live in the central districts. The total expenses of people who live in the peripheral districts are also higher than that of people who live in the central areas while the average income of people who live in the peripheral areas is smaller.

Financial shortage and supplement sources of finance of households in the cities

More than 80% of households in the cities reply that the total income is enough to cover household's expenditures. Though the average income per capita in Hanoi is higher than in HCMC, the ratio of households which reply that the income is not enough to cover households' expenditures in the last 12 months in Hanoi is higher than HCMC. This paradox might come from the fact that the expenditures of households in Hanoi are much higher than that of households in HCMC.

Table 3.9: Financial balance of households in the last 12 months

Unit: %

Is total income of your household in the last 12 months enough to cover household's expenditures?	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Yes	82.2	85.3	83.6	87.6	84.9	86.8
No	17.7	14.7	16.4	12.4	15.1	13.2
Total	100	100	100	100	100	100

Source: MPUES-2007

A proportion of 16.4% of households in Hanoi and 13.2% in HCMC stated that the total income is not enough to cover household's expenditures. In Hanoi, the ratio of households, which stated that they could not earn enough to cover household's expenditures in the peripheral districts are lower than in the central districts. In HCMC, the relative relation is opposite. The ratio of households which earnings is not enough to cover expenditures in the central districts is lower than that of the peripheral districts.

**Table 3.10: Sources of supplement finance that households
used in the last 12 months**

Sources of finance	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Saving (1.000 VND)	6.789	5.416	6.263	2.076	1.418	1.850
Sold assets (1.000 VND)	4.127	1.090	2.963	1.000	1.015	349
Loans from relative (no interest) (1.000 VND)	4.784	3.823	4.416	2.118	2.231	2.157
Loans with interest (1.000 VND)	2.440	3.366	2.795	2.010	2.682	2.241
Others (1.000 VND)	1.873	5.089	3.105	1.477	812	1.249
Total (1.000 VND)	20.013	18.784	19.542	8.681	8.158	7.846
Saving (%)	33.9	28.8	32.0	23.9	17.4	23.6
Sold assets (%)	20.6	5.8	15.2	11.5	12.4	4.4
Loans from relative (no interest) (%)	23.9	20.4	22.6	24.4	27.3	27.5
Loans with interest (%)	12.2	17.9	14.3	23.2	32.9	28.6
Others (%)	9.4	27.1	15.9	17.0	10.0	15.9
Total (%)	100	100	100	100	100	100

Source: MPUES-2007

The level of financial shortage and the sources of the supplement finance that households used to cover the shortage in the cities are widely different. The amount of financial shortage of households in Hanoi is much higher than in HCMC. In case there is a shortage in income, the households in Hanoi tend to rely on saving or loan from relatives (without interest) to cover the shortages. In contrary, the households in HCMC depend more on loans to cover the shortages. The loans with interest are the most important source of the supplement finance of the households in HCMC. The loans, which consist of loans with and loans without interest, have helped to cover more than 50% of the financial shortage of households in HCMC. The disparities prove that the way the households compensate financial shortage in Hanoi is relatively cheaper than in HCMC. The households in HCMC mostly depend on external sources of finance while the households in Hanoi rely more on internal sources.

Ratio of poor households in the cities

Table 3.11: Ratios of households which stated that their family is poor

Unit: %

Is your household classified as poor?	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
Yes	3.7	2.9	3.3	8.2	5.6	7.4
No	96.3	97.1	96.7	91.8	94.4	92.6
Total	100	100	100	100	100	100

Source: MPUES-2007

When being asked “Is your household classified as poor?” 3.3% of the households in Hanoi stated that the household is poor while the corresponding ratio in HCMC is 7.4%. The findings are surprising since the official source of data from the GSO (2007) indicated that in 2006, the ratios of poor households in Hanoi and HCMC are 3.0% and 0.5% respectively. The ratio of poor households at national poverty line in HCMC is much lower than in Hanoi. The disparity in poverty rate between the MPUES and GSO data is partly caused by the differences in sampling methods. It is also caused by the fact that the households may think that they are poor though their income are higher than the national poverty line³². Another reason of the disparity is that each city also has its own poverty lines³³.

3.3.3. Living accommodation of households in the cities

Housing characteristics of households in the cities

Most households in Hanoi live in compartment houses (also called ‘tube houses’ in Vietnamese). The ratio of households, which live in compartment houses, is 71.8%. The second popular type of housing in Hanoi is apartment. More than 18% of the households in Hanoi live in this kind of accommodation. In HCMC, nearly 50% of the households live in compartment houses and more than 40% of the households

³² The national poverty lines of Vietnam in 2007 were 260.000 VND per person per month for the urban areas and 200.000 VND per person per month for the rural areas. However, the provinces may have different poverty lines

³³ In 2007, the poverty line of HCMC were 6.000.000 VND per person per year for both rural and urban areas, the poverty lines of Hanoi were 6.000.000 VND per person per year for urban area and 3.960.000 VND per person per year for rural area.

live in independent houses. The ratio of households that lives in independent houses in HCMC is about four times higher than the corresponding ratio of Hanoi.

Table 3.12: Housing characteristics of households in the cities

Housing characteristics	Unit: %	
	Hanoi	HCMC
<i>Housing type</i>		
Compartment house	71.8	49.4
Apartment	18.2	5.4
Independent house	9.7	40.2
Others	0.3	5.0
Total	100	100
<i>Type of accommodation</i>		
Residential property	87.0	91.8
Accommodation rented from private	5.2	4.0
Accommodation rented from the State	3.8	1.5
Free accommodation provided by the State	2.0	0.7
Free accommodation provided by a 3 th party	0.9	1.7
Free accommodation provided by employer	0.4	0.0
Others	0.7	0.3
Total	100	100
<i>Average area per capita (m²)</i>		
Smaller than 5m ²	3.8	3.9
From 5m ² to below 10m ²	16.6	14.2
From 10m ² to below 25m ²	44.4	48.0
From 25m ² to above	35.2	33.9
Total	100	100

Source: MPUES-2007

The ratio of households that live in their own home in HCMC is higher than the corresponding ratio in Hanoi, 91.8% to 87%. Meanwhile, the ratio of households that live on accommodations for rent or free accommodations that are provided by the State in Hanoi are much higher than in HCMC. In Hanoi, for every 100 households, there are two households that live on free accommodations and four

households that live on rented accommodations which are provided by the state. In HCMC, the respective figures are much lower. There are about two households over one hundred in HCMC is living on State provided accommodations, around one third of the corresponding figure of Hanoi. Another difference is that in HCMC, there is no surveyed household, which live on accommodation that is provided by employers while this type of accommodation is present in Hanoi: 0.4% of households in Hanoi are living in free accommodations which are provided by employers.

The data about the average living area of people in the cities proves that living area per capita in the cities is low (table 3.13). There are still nearly 4% of the households in each city which have an average living area per capita lower than 5m² (3.8% in Hanoi and 3.9% in HCMC). The ratio of households that have an average living area per capita from 5 to less than 10m² are 16.6% in Hanoi and 14.2% in HCMC. There are 44.4% of households in Hanoi and 48% of households in HCMC which have an average living area from 10 to less than 25m². Therefore, most of the households in the cities, 64.8% of households in Hanoi and 66.1% of households in HCMC, live in houses with an average living area per capita lower than 25m². Only 35.2% of households in Hanoi and 33.9% of households in HCMC have an average living area per capita equal to or larger than 25m².

Table 3.13: Housing material of households in the cities

Housing characteristics	Unit: %	
	Hanoi	HCMC
<i>Main material of the wall</i>		
Brick, stone	92.5	78.1
Concrete	7.3	19.7
Mud	0.2	0.1
Wood, wooden planks	0.0	0.8
Bamboo, straw	0.0	0.1
Sheet metal, steel, aluminum	0.0	1.2
Others	7.3	19.7
Total	100	100
<i>Main material of the roof</i>		
Concrete	83.3	23.6
Tiles	7.4	2.4
Metal sheet	7.0	73.5
Plastic, PVC	1.2	0.1
Tarred cardboard, tarpaulin	0.2	0.0
Wood	0.2	0.0
Straw, bamboo, leaves	0.0	0.3
Others	0.7	0.1
Total	100	100

Source: MPUES-2007

The housing material is another matter of concern in the cities. It is necessary to remind that in this chapter we only study households that live in urban districts of these cities. If the information about living standards of households which live in the rural districts is included, the average living standards of households in the cities may be lower because the living conditions in the rural districts of these cities are much lower than that of the urban districts.

Most of the surveyed households in the cities live in concrete, brick or stone houses. However, in Hanoi, there are still 0.2% of the households living in houses which have a mud wall. Moreover, another 7.3% of households live in houses that are made by other materials. The other materials in this case are any temporary material the households used to make the wall of their houses such as cardboard box, nylon sheet, waste clothes, etc.



Photo 3.1: Contrast³⁴

³⁴ *Source:* Le Ho Phong Linh, 2010. The author took this photo in district 10, a central district of HCMC in August 2010. The family which lives in the middle house earn a living by buying and selling the recycle things.

The wall materials of the low income households in HCMC are even worse than that of the households in Hanoi. There are 1.2% of households in HCMC that live in houses made by metal sheet wall and 0.2% of households live in houses which are made by bamboo, straw or mud wall. Moreover, another 19.7% of households in urban districts live in houses that are made by other temporary materials.

There are considerable differences in the characteristics of the roof of houses between the cities. 83.3% of households in Hanoi live with concrete roofs. In contrary, most of the households in HCMC live in metal sheet roof houses: 73.5% of the households in the city live in metal sheet roof houses and 23.6% live in concrete roof houses.

Housing compositions of households in the cities

Most of the households in the cities, 65.9% of households in Hanoi and 67.4% in HCMC, have a private kitchen. It is interesting to notice that the housing conditions of households in Hanoi are better than in HCMC, but the percentages of households which have to share a kitchen with other households or do not have a kitchen are much higher in Hanoi than in HCMC.

Table 3.14: Housing composition of households in the cities

Housing composition	Unit: %	
	Hanoi	HCMC
<i>Type of main kitchen</i>		
Independent private kitchen inside the house	65.9	67.4
Individual kitchen incorporated in another room	16.1	28.8
Individual kitchen outside the house	10.2	2.5
Kitchen shared with other households, inside or outside	1.4	0.3
No kitchen	6.4	1.0
Total	100	100
<i>Type of main bathroom or shower-bath</i>		
Independent private bathroom or shower-bath inside	87.1	89.2
Private bathroom or shower-bath outside the house	8.6	4.1
Bathroom or shower-bath shared with other households	3.6	0.9
No bathroom or shower-bath	0.7	5.8
Total	100	100

Source: MPUES-2007

In contrast, 5.8% of the households in HCMC do not have a bathroom or a shower-bath while the corresponding ratio in Hanoi is only 0.7%. Besides, 3.6% of the households in Hanoi and 0.9% in HCMC have to share a bathroom with other households. Though, 87.1% of the households in Hanoi and 89.2% in HCMC have a bathroom inside, still 8.6% of the households in Hanoi and 4.1% in HCMC have to use a bathroom outside.

Table 3.15: Type of toilet of the households in the cities

Unit: %		
Main toilet	Hanoi	HCMC
Type of main toilet		
Private toilet in bathroom or shower-bath inside	70.8	77.0
Independent private WC inside the house	15.2	18.7
Private toilet outside, independent or not	7.7	3.4
Toilet shared with other households	5.9	0.5
No toilet	0.4	0.5
Total	100	100
Type of comfort ³⁵		
Modern flush toilet	97.1	96.3
Double vault	1.0	0.0
Septic bucket	0.9	0.0
Cemented latrine	0.4	2.9
Public toilet	0.4	0.1
River, lake, pond	0.0	0.5
No installation	0.2	0.1
Total	100	100

Source: MPUES-2007

Most of the households, 99.5%, in both cities have a toilet. However, still 0.4% of the households in Hanoi and 0.5% in HCMC have no toilet. Besides, 5.9% of the households in Hanoi and 0.5% in HCMC have to share toilet with other households. A proportion of 97.1% of households in Hanoi and 96.3% in HCMC have a modern flush toilet. Yet, 0.4% of households in Hanoi and 0.1% in HCMC have to use public toilets. Besides, it exists also other traditional types of toilets which are not convenient and/or not safe for the users and the environment. There are also significant differences among traditional types of toilets between the cities.

³⁵ For more detail information about the types of toilet, please consult (Brikké and Bredero 2003)

Though the double vault and septic bucket toilet do not exist in HCMC, 1.9% of households in Hanoi use these kinds of toilet. In contrary, in Hanoi, there is no household in the survey which has a toilet over a river, a lake, or a pond, but 0.5% of households in HCMC use these kinds of toilet, obviously in the suburbs. The worst, however, is 0.2% of households in Hanoi and 0.1% in HCMC have no installation.

Durable assets of households

Generally, most households in Hanoi and HCMC have several kinds of durable assets. More than 80% of households have at least one kind of these popular assets such as TV, fixed telephone, gas and/or electric stove, electric cooker or pressure cooker, and motorbike... However, several kinds of other useful machines like desktop computer, vacuum cleaner, water heater, washing machines are not so popular in the cities. The assets which are considered as luxury goods such as car, laptop computer, plasma or LCD TV, air conditioner are still too expensive in 2007 for most of the households. Only 11.8% of the households in Hanoi and 7.6% in HCMC have a laptop; only 4.2% of the households in Hanoi and 4.1% in HCMC have a plasma or LCD TV.

Table 3.16: Durable assets of households in the cities

Durable assets	Unit: %	
	Hanoi	HCMC
Electric cooker, pressure cooker	96.5	93.1
Regular TV (black & white or colour)	96.3	96.8
Fixed telephone	89.4	83.9
Gas stove, electric stove	88.7	91.6
Motorcycle	87.6	93.7
Refrigerator, deep freezer	86.5	78.0
VCD or DVD reader	79.8	76.0
Mobile phone	74.6	71.4
Electric water heater	63.2	26.7
Washing machine	57.6	52.2
Bicycle	55.2	45.4
Desktop computer	45.9	40.3
Air conditioner	44.6	18.3
Radio, radio cassette	40.0	45.2
Stereo chain	37.2	40.5
ADSL Internet connection	28.6	18.1
Microwave oven	26.0	14.2
Photo camera, digital camera	21.4	20.1
Vacuum cleaner	17.2	5.3
Electric oven	14.3	12.9
Laptop computer	11.8	7.6
Camera, video camera	5.3	5.3
Plasma TV, LCD TV	4.2	4.1
Car	3.3	1.8
Dishwasher	1.1	0.6

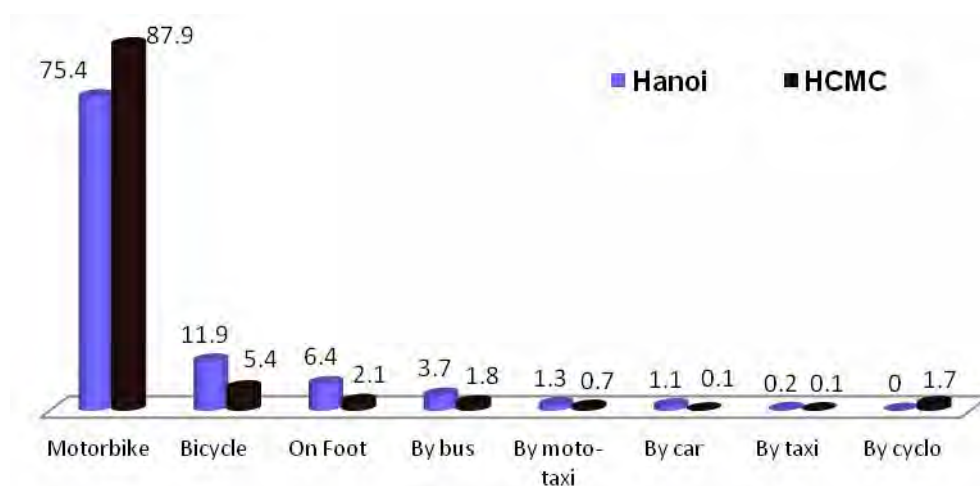
Source: MPUES-2007

Comparing the two cities, on average, the households in Hanoi have more durable assets than the households in HCMC, for both electronic appliances and high-tech products. This partly comes from the differences in climate of the cities. In Hanoi, the gaps of temperature among seasons are much higher than that of HCMC. Therefore, Hanoi has much higher ratios of households which have air conditioner,

and water heater than HCMC. Besides, the difference in spending habit is another explanation. Households in Hanoi spend more on durable assets than the households in HCMC (table 3.8). Hanoi also has a higher ratio of households with an Internet connection than HCMC.

Principal means of transport of interviewees in the cities

When being asked about the most frequently used means of transportation to go around in the cities, motorbike is used by most of the interviewees in both cities, the ratios are 75.4% in Hanoi and 87.9% in HCMC. Only 12.1% of interviewees in HCMC and 24.5% in Hanoi use other means of transportation to travel around in the cities.



Source: MPUES-2007

Graph 3.1: The most frequently used means of transport of interviewees

Overall, people in Hanoi are more likely to use public means of transportation than in HCMC. The percentages of people whom walk or use bicycle in Hanoi are also higher than in HCMC. One of the main reasons of these differences is that the surface of urban area of Hanoi is smaller than that of HCMC. The landscape, climate, environment and infrastructures in Hanoi are also more suitable for walking and cycling than in HCMC.

3.4. Living environment and changes in living environment of households in the cities

3.4.1. House location and intra-house environment issues

The ratios of households in these cities which live near at least one source of pollution such as heavy traffic roads, large factories, construction sites, garbage dumps, workshops, rails, etc. are considerable. More than 30% of households in Hanoi and 25% in HCMC live near a road with heavy traffic. Although the ratios of households that have to live near other sources of pollution in the cities are lower, the possibility that a household has to live near at least one source of pollution is high. On the contrary, the ratios of households that live near a park or wooded area are very low, 15.2% in Hanoi and 9.1% in HCMC.

Table 3.17: House location of households in the cities

House location	Unit: %	
	Hanoi	HCMC
Near a road with heavy traffic	30.4	25.2
Near a river	14.7	10.9
Near small manufacture or repair workshops	14.6	12.9
Near a pond	14.5	2.6
Near a large factory	11.7	4.5
Near a construction site	8.0	3.5
Near a park	8.0	2.1
Near a wood	7.2	7.0
Near a garbage dump	6.6	2.7
Near a cemetery	6.1	1.2
Near a rail	4.2	1.2
Near rice fields, farms, or fallows	3.4	3.2
Near an airport, aircraft crossing	0.3	1.5
Nothing special to report	30.4	48.5

Source: MPUES-2007

Most households in the cities, 81% in Hanoi and 76% in HCMC, live along lanes. Within which, the houses of 59% of households in Hanoi and 53% in HCMC are located along lanes which are smaller than 4m. The type of street surface in the cities is really a matter of concern: 22.3% of households in Hanoi and 39.6% in HCMC live along streets in tarmac; the ratios of households that live along concrete or cement lanes in Hanoi and HCMC are 74% and 43.8% respectively. Besides, 2.8% of households in Hanoi and 16.6% in HCMC live along gravel or ground lanes.

Table 3.18: Type of street along which houses are located

Unit: %		
Type of street	Hanoi	HCMC
Along a street	13.2	20.0
Along a large lane (larger than 4m)	22.2	23.7
Along a small lane (smaller than 4m)	59.0	53.0
Others	5.6	3.3
Total	100	100
Type of surface of the street		
Tarmac	22.3	39.6
Concrete or cement	74.9	43.8
Gravel	1.2	4.7
Ground	1.6	11.9
Total	100	100

Source: MPUES-2007.

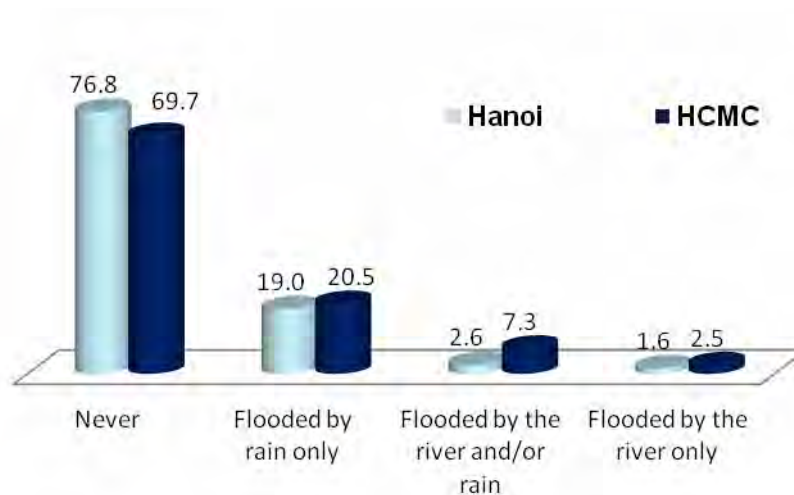
The proportions of interviewees who experienced at least one kind of congestion on the street which goes home are 40% in Hanoi and 34% in HCMC. Trading activities and parking (on streets and/or sidewalks) are the most frequent sources of congestion in the cities. Besides, the wastes on the streets or sidewalks are also causes of congestion.

Table 3.19: Kinds of congestions on the street going to home

Unit: %		
Kinds of congestions	Hanoi	HCMC
No congestion	59.8	76.1
Small traders on the street or sidewalk	27.6	15.6
Parking on the sidewalk	18.8	12.8
Parking on the street	18.0	10.2
Waste on the street or sidewalk	14.7	5.9
Small shops on the street or sidewalk	6.1	3.3
Total	100	100

Source: MPUES-2007

When being asked if the house is “flooded by water?” 76.8% of the households in Hanoi and 69.7% in HCMC stated that their house has never been flooded. However, 23.2% of households in Hanoi and 30.3% in HCMC have been flooded by rain and/or river. Rain is the most frequent cause of house flooding. In these cities, nearly 20% of houses are flooded by rain and about 2% are flooded by river. In addition, around 3% of households in Hanoi and 7% in HCMC live in houses that are flooded by both rain and river.



Source: Data MPUES-2007

Graph 3.2: Flooding status of houses in the cities

Overall, the flooding status of households in HCMC is more serious than in Hanoi. The floods not only create losses for the economy as a whole but also worsen the financial status of households. It also creates discomfort for the people in the cities and increases sanitary risks. The degradation of the infrastructure system, the

weaknesses of diseases prevention, and the pollution of living environment are potential risks of the spread of epidemics.

Actually, the floods happen both in houses and in the streets. The number of houses and streets which are flooded by river and/or rain is increasing. The area and level of the floods are widening and deepening in both cities.



“A newly invented” mean of transport in flooded streets of people in Hanoi. Phạm Quang Huy.
<http://vnexpress.net/gl/xahoi/2008/11/3ba080ff/>



Tran Hung Dao street, a main street in the centre of Ho Chi Minh City
<http://vnexpress.net/gl/xahoi/2009/04/3ba0df3d/>

Photo 3.3: Flooded streets in the cities

Other basic services of households in the cities

There are considerable differences in the main sources of cooking and drinking water between the cities. 86% of households in Hanoi and 53.8% in HCMC have

running tap water in their house. Besides, 5% of households in Hanoi and 12.9% in HCMC use public tap water as the main source of drinking and cooking water.

Table 3.20: Main sources of drinking and cooking water of households

Main sources of drinking and cooking water	Unit: %	
	Hanoi	HCMC
Tap in the house	86.0	53.8
Public tap	5.0	12.9
Drilling well	7.6	31.3
Well	0.2	0.0
Rain water	0.8	0.6
Others	0.3	1.4
Total	100	100

Source: MPUES-2007

In HCMC, 31.3% of the households have to use water from drilling wells to cook and to drink. This source of water is not safe as the system of deep water in HCMC has been polluted for several years. Besides, the overuse of groundwater in HCMC has reduced the stock of ground water and depresses the land base of the city. Moreover, 2% of the households in HCMC and 1.3% in Hanoi have to use different sources of water which may be dangerous for their health such as rain, rivers, lakes, ponds, etc. Overall, 9% of households in Hanoi and 33% in HCMC have to use different sources of cooking and drinking water, which are not safe for them.

Table 3.21: The most popular way to dispose garbage of households

The way households dispose garbage	Unit: %	
	Hanoi	HCMC
Garbage collected at home	41.9	91.9
Garbage brought to a collection site	58.1	5.7

Garbage destroyed by themselves (composting, burying, burning)	0	1.4
Garbage thrown somewhere	0	1.0
Total	100	100

Source: MPUES-2007

In Hanoi, 41.9% of the households use garbage collecting service and the other 58.1% bring garbage to a collection site. No household has to dispose the garbage by itself or throw the garbage somewhere else. In HCMC, though 91.9% of the households have someone to collect their garbage, still 1% of the households throw their garbage somewhere. The other 1.4% of households in the city dispose the garbage by themselves.

Table 3.22: The way households discharge wastewater in the cities

The way households discharge wastewater	Unit: %	
	Hanoi	HCMC
In drains (underground pipe)	94.6	86.0
River, canal, lake, pond	3.8	9.3
Rejection in the garden	0.6	1.3
Rejection on the street	0.9	3.4
Total	100	100

Source: MPUES-2007

The case of waste water discharge is the same. 94.6% of households in Hanoi and 86% in HCMC dispose waste water into drains. The ratios of households that discharge wastewater into rivers, lakes, ponds, canals are 3.8% in Hanoi and 9.3% in HCMC. The ratios of households which reject wastewater into gardens or on the streets in Hanoi and HCMC are 1.5% and 4.7%, respectively.

Table 3.23: Popular sources of energy for cooking of households in the cities

Popular sources of cooking energy	Unit: %	
	Hanoi	HCMC
Gas	78.6	90.2
Coal	19.3	1.3
Electricity	1.0	1.7
Wood	0.4	1.6
Kerosene	0.4	4.9
Others	0.3	0.3
Total	100	100

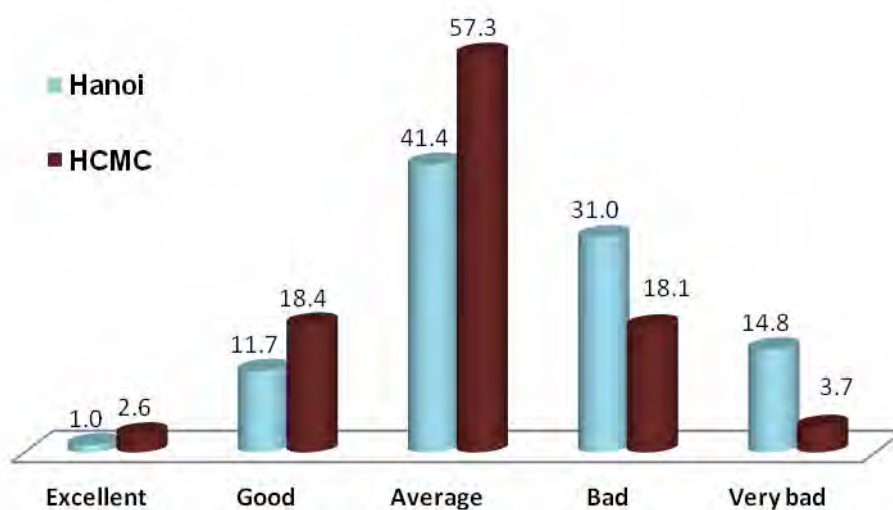
Source: MPUES-2007

In these cities, gas is the most popular source of energy for cooking. A proportion of 78.6% of the households in Hanoi and 90.2% in HCMC use gas as the main source of cooking energy. The ratios of households that use electricity as the main source of cooking energy are low in both cities, 1% in Hanoi and 1.7% in HCMC, because this source of energy is more expensive than other ones. Though electricity and gas are considered as clean sources of energy for in-house use, only 79.6% of the households in Hanoi and 91.9% in HCMC use these kinds of energy as the main sources of energy for cooking. Thus, more than 20% of the households in Hanoi and 8% in HCMC use other sources of energies such as coal, wood, and/or kerosene for cooking despite the possible inconveniences and dangers they may create.

3.4.2. Air pollution in the cities

Overall, the households in HCMC are more likely to state positively about air quality in their residential area than the households in Hanoi. The ratios of households which stated that air quality in their residential area are “excellent”,

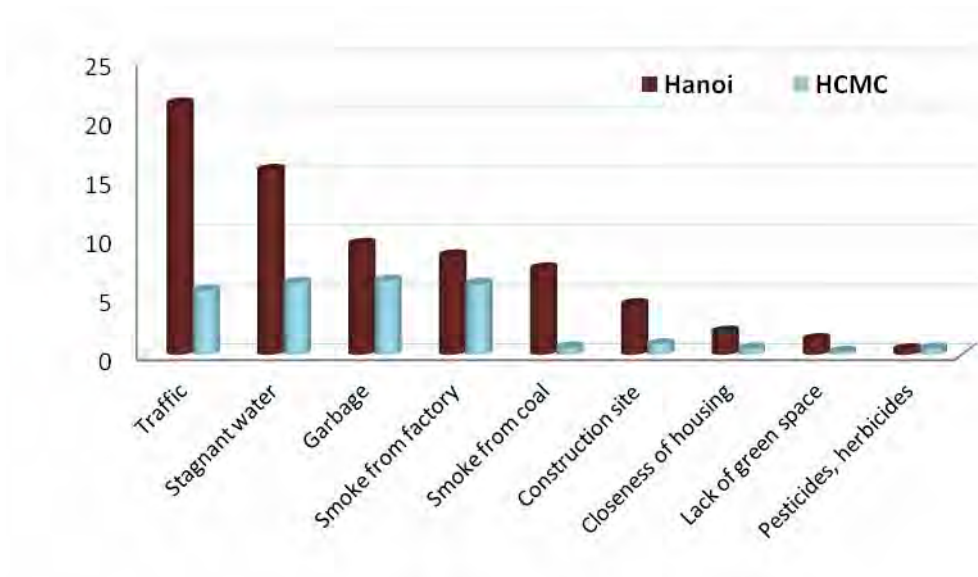
“good”, and “average” in HCMC are higher than the corresponding ratios in Hanoi and reciprocally.



Source: MPUES-2007

Graph 3.3: Air quality in residential areas in the cities

On average, the ratios of households which think that the air quality in the residential areas is “average” are 41.4% in Hanoi and 57.3% in HCMC. Besides, only 12,7% of households in Hanoi stated that the quality of air is “good” or “excellent” while the ratio of households which stated that the quality of air is “bad” or “very bad” in the city is 45.8%. Therefore, the responses of the households in HCMC are much more positive.



Source: MPUES-2007

Graph 3.4: Sources of air pollution in the residential areas

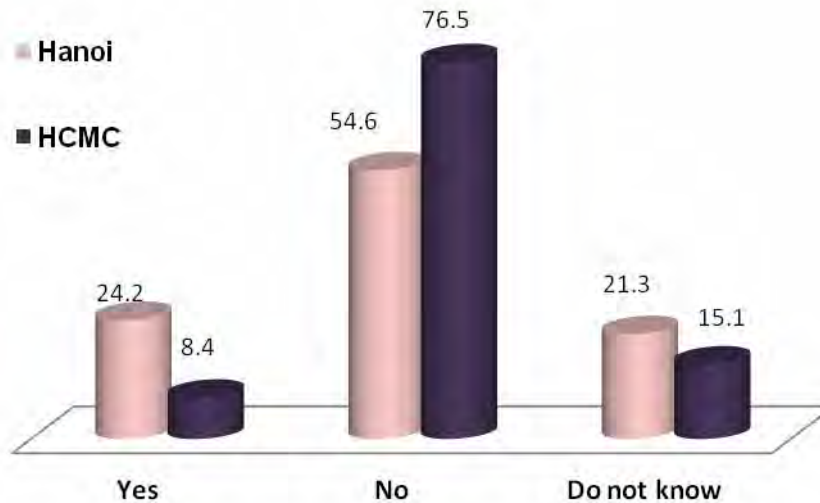
When being asked about sources of air pollution in the area, the possibility to be confronted with all sources of air pollution in Hanoi are higher than in HCMC. However, this does not mean that the environmental problems in Hanoi are more serious than that of HCMC. The people in Hanoi tend to concerns more on environment issues hence they are more likely to notice sources of pollution in the living area. In both cities, the three most popular sources of pollution are traffic, stagnant water, and garbage. Besides, smoke (from factories and coal) and dust (from construction sites) are also popular sources of air pollution.



Photo 3.4: Tan Hoa-Lo Gom canal³⁶

Though more than 50% of the interviewees in both cities think that air pollution has no influence on the household members' health, 24.2% of the interviewees in Hanoi and 8.4% in HCMC stated that the household members' health is influenced by air pollution. Besides, the ratios of interviewees who do not know if the health of household members is influenced by air pollution are relatively high, 21.3% in Hanoi and 15.1% in HCMC.

³⁶ Le Ho Phong Linh 2012. The author took the photo at 1pm (April 2012). The canal has been covered by garbage. There is very little water in the canal (under the big tree is the dense black water).



Source: MPUES-2007

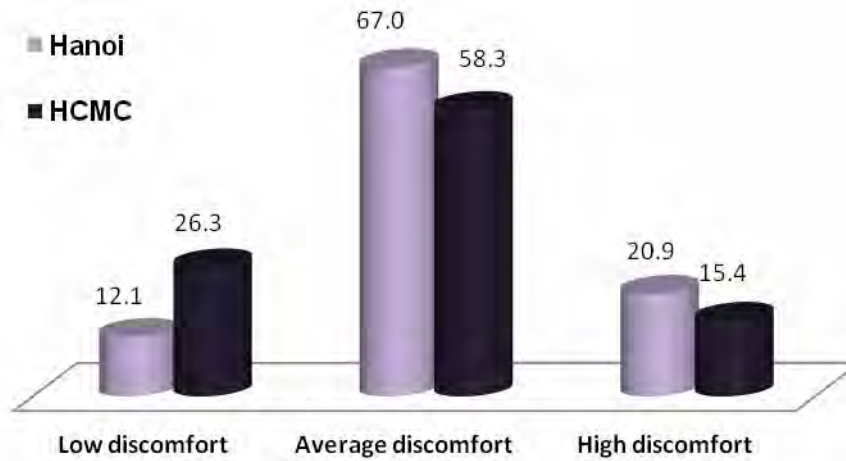
Graph 3.5: Influence of air pollution on health of household's members

In detail, 21.4% of the interviewees in Hanoi think that air pollution has created respiratory diseases and 5% believe that the pollution has created other diseases such as flu, eyes disease, recurrence diseases, etc. for household members. The corresponding ratios in HCMC are much lower, 7.8% and 0.6% respectively. In short, air pollution is a matter of concern for households in the cities though people in HCMC tend to think more positively about it.

3.4.3. Noise problem

The interviewees were asked to classify the level of noise discomfort in their residential area based on a 0-10 scale, the higher the point is, the more uncomfortable the noise is. The answers are then grouped into three groups by the

level of discomfort: low discomfort (1-3)³⁷, average discomfort (4-7), and high discomfort (8-10). Overall, people in Hanoi tend to have more problems with noise than people in HCMC.

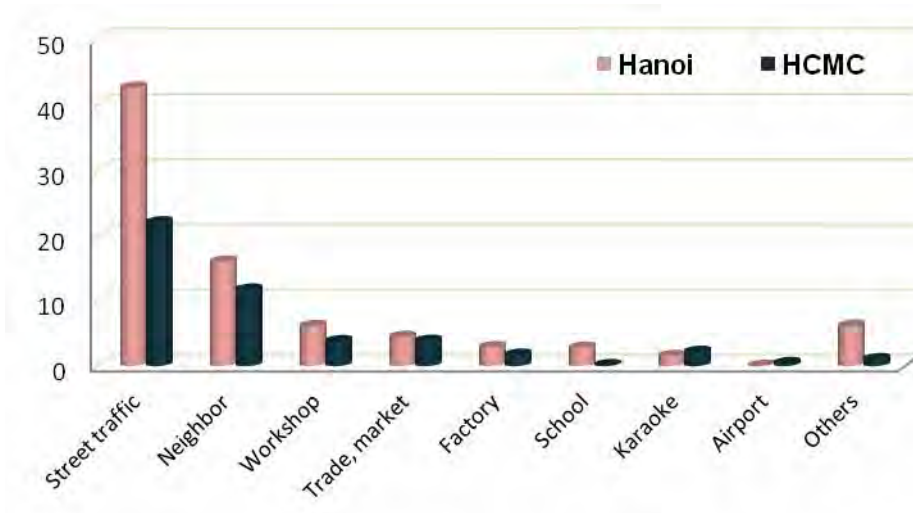


Source: MPUES-2007

Graph 3.6: Level of noise discomfort in the cities

The ratios of interviewees who rank the noise by level of discomfort as “low discomfort,” “average discomfort,” and “high discomfort” in Hanoi are 12.1%, 67%, and 20.9% respectively. The corresponding ratios of HCMC are 26.3%, 53.8%, and 15.4%. It is obvious that the interviewees in HCMC think more positively about the level of noise problem in their living area.

³⁷ None of the surveyed households in the database chose level 0 on the 0-10 discomfort scale.



Source: MPUES-2007

Graph 3.7: Sources of noise discomfort in the cities

The three most frequent sources of noise discomfort in the cities are street traffic, neighbours and workshops. A proportion of 42.7% of the interviewees in Hanoi and 22% in HCMC interpreted that street traffic is a source of noise in their living area. The ratios of interviewees who mentioned other sources of noise are much lower: 16% of interviewees in Hanoi and 11.7% in HCMC mentioned the noise from neighbours; about 5% of the interviewees in both cities mentioned workshops as a source of noise discomfort.

Table 3.24: The most uncomfortable sources of noise in the cities

The most uncomfortable sources of noise	Unit: %	
	Hanoi	HCMC
Traffic	60.8	51.5
Neighbours	15.8	25.2
Workshop	8.4	8.0
Trade, market	3.3	6.4
Factory	2.9	2.0
School	1.5	0.1
Karaoke	1.1	3.2
Airport	0.4	1.3
Others	5.8	2.4
Total	100	100

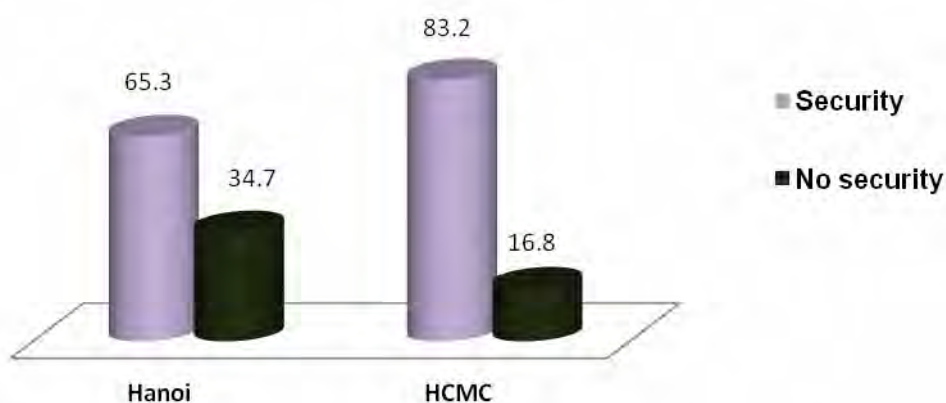
Source: MPUES-2007

When being asked to choose only one kind of noise which is the most uncomfortable, most of the interviewees have chosen the noise from traffic, neighbours or workshops. Therefore, they are not only the most frequent but also the most uncomfortable sources of noise problems. About 85% of the interviewees have chosen one of the three mentioned sources. Among these sources, traffic is the leading cause of noise discomfort and is followed by noise from neighbours. The ratio of interviewees who stated that traffic is the most discomfort source of noise is very high in both cities: 60.8% in Hanoi and 51% in HCMC.

3.4.4. Security problems

When being asked “Do you think that your residential area is safe in term of aggressions and thefts?” 65.3% of the interviewees in Hanoi and 83.2% in HCMC

replied “yes” to the question. The ratio of interviewees who thinks that the residential area is not safe in Hanoi is more than twice the corresponding ratio in HCMC: 34.7% to 16.8%.

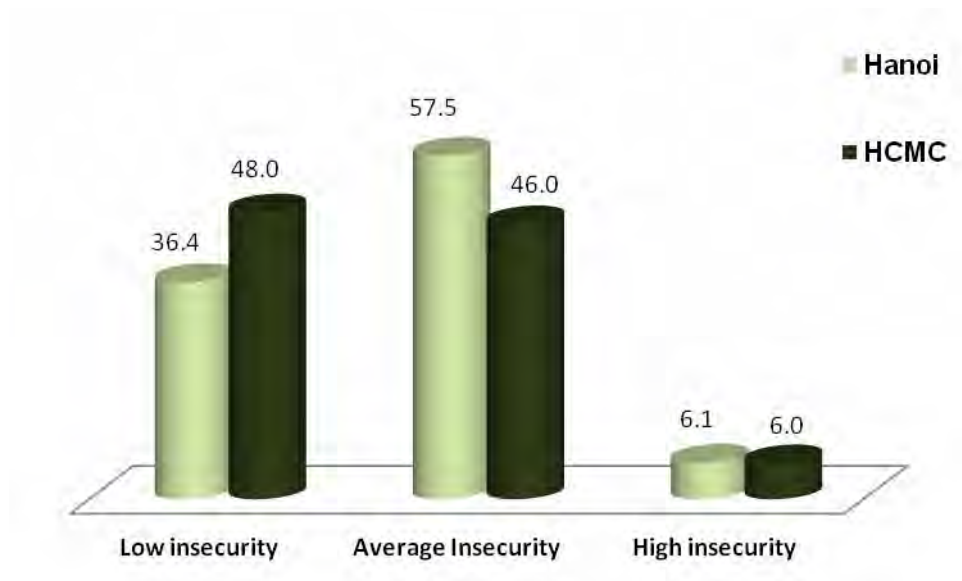


Source: MPUES-2007

Graph 3.8: Security of residential areas in the cities

To evaluate the opinion of the residents about the level of insecurity in their residential area, the interviewees were asked to rate a level of insecurity (danger) based on a 0-10 scale. The opinions are then grouped into three groups: low insecurity (1-3)³⁸, average insecurity (4-7), and high insecurity (8-10). The ratio of the interviewees who stated that the residential area has an “average insecurity” accounts for 57.5% of the interviewees in Hanoi and 46% in HCMC. There are also about 6% of interviewees in these cities who think that the residential area is highly insecure.

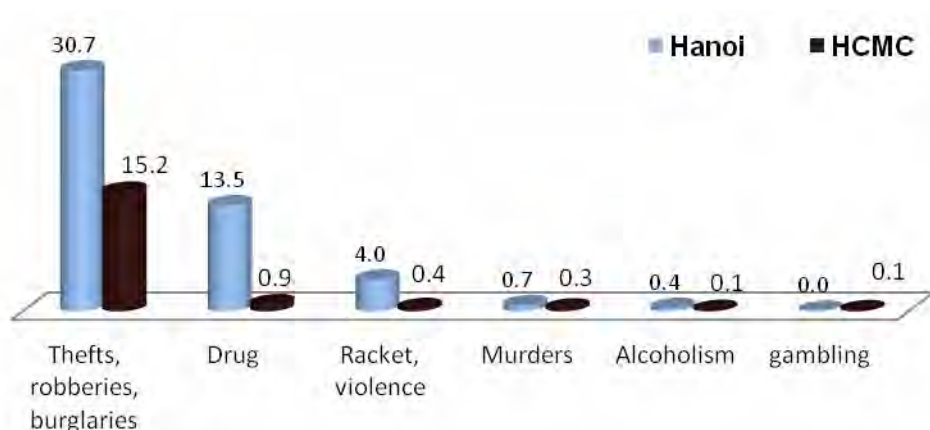
³⁸ None of the surveyed households in the database chose level 0 on the 0-10 insecurity scale.



Source: MPUES-2007

Graph 3.9: Security level of residential areas in the cities

The most popular types of insecurity in these cities are thefts, robberies, and burglaries. More than 30% of the interviewees in Hanoi and 15% in HCMC consider they are the causes of insecurity in their area. The second and the third most frequent types of insecurity in residential area in Hanoi are drug, racketeering and violence: about 17% of the interviewees in Hanoi mentioned them. However, these types of insecurity are much less frequent in HCMC. The other types of insecurity in the residential areas of the households include murder, alcoholism, and gambling. In common, the frequencies of all types of insecurity, except gambling, are higher in Hanoi than in of HCMC.

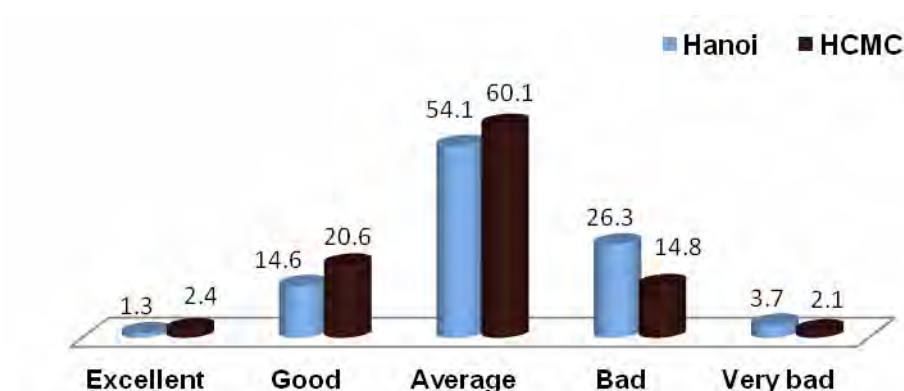


Source: MPUES-2007

Graph 3.10: The nature of insecurity in the residential areas

3.4.5. General living environment

When being asked to rank the quality of the living environment in their residential area as “excellent”, “good”, “average”, “bad” or “very bad”, more than 50% of interviewees give an it average rating. The ratios of interviewees who think that the quality of living environment in their residential area is either “very good” or “very bad” are low.



Source: Data MPUES-2007

Graph 3.11: General living environment in the residential areas

In Hanoi, 14.6% of the interviewees stated that the quality of living environment in their residential area is “good”. Another 26.3% stated that the living environment in the area is “bad.” The corresponding ratios of HCMC are 20.6% and 14.8% (graph 3.11). Overall, the percentages of interviewees who think that the living environment in their area is “excellent,” “good” or “average” in HCMC are higher than in Hanoi.

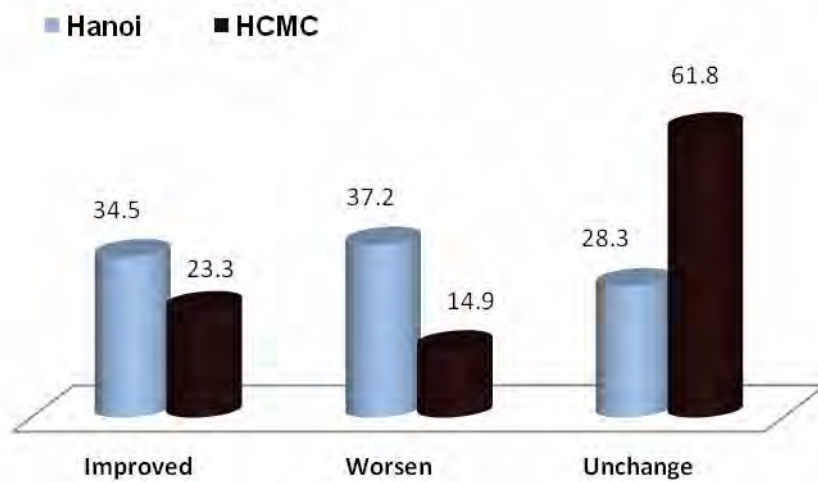
The interviewees, who stated that the living environment in their residential area is “bad” or “very bad”, are then requested to list the types of problems that they have to face. Once again, the pollution from vehicle exhaust and noise from street traffic are the most frequent sources of pollution in both cities. Besides, other kinds of pollution such as sewer odour, smoke, dust and overcrowding are also frequent types of obstacles the households are facing.

Table 3.25: Type of nuisance observed in residential areas

Types of observed nuisance	Unit: %	
	Hanoi	HCMC
Pollution from exhaust gases of vehicles	7.7	2.7
Sewer odour	7.5	3.2
Pollution from smoke, dust	6.4	0.9
Pollution from factories	5.4	2.1
Overcrowded population	4.6	0.8
Noise from road traffic	2.8	1.0
Odours from stagnant water	2.6	1.2
Water pollution	1.9	0.8
Noise from factory	0.9	0.5
Occupancy of pavement	0.8	0.0
Unsanitary conditions	0.7	1.2
Wandering pets	0.5	0.8
Smell of pesticides	0.2	0.2
Insecurity	0.1	0.2
Others	10.6	7.5

Source: MPUES-2007

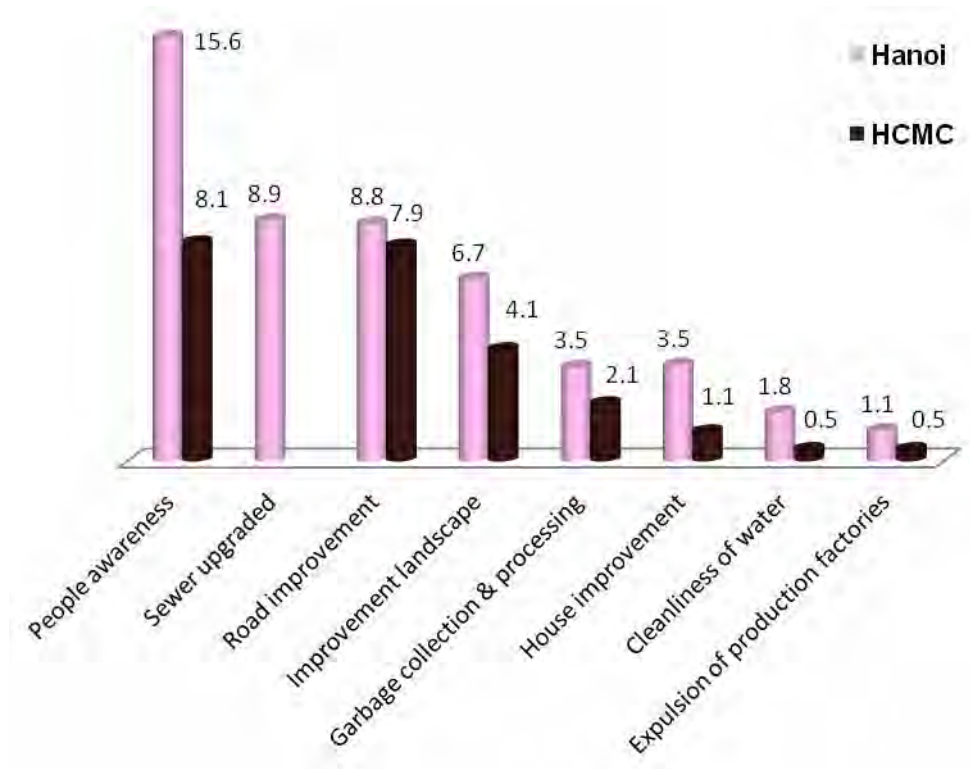
The subjective opinions of interviewees about the evolution of living environment in the cities are divergent. Most people in HCMC stated that the quality of living environment has worsened, only 23.3% interpreted that the quality of living environment in their area has improved. On the other side, 34.5% of the people in Hanoi stated that the quality of the living environment has improved. Another 37.2% of people in Hanoi believed that the quality of living environment in their area has worsened. Either the ratios of people who believed that the quality of the living environment has been improved or worsened in Hanoi are higher than in HCMC.



Source: MPUES-2007

Graph 3.12: Changes in living environment in the cities

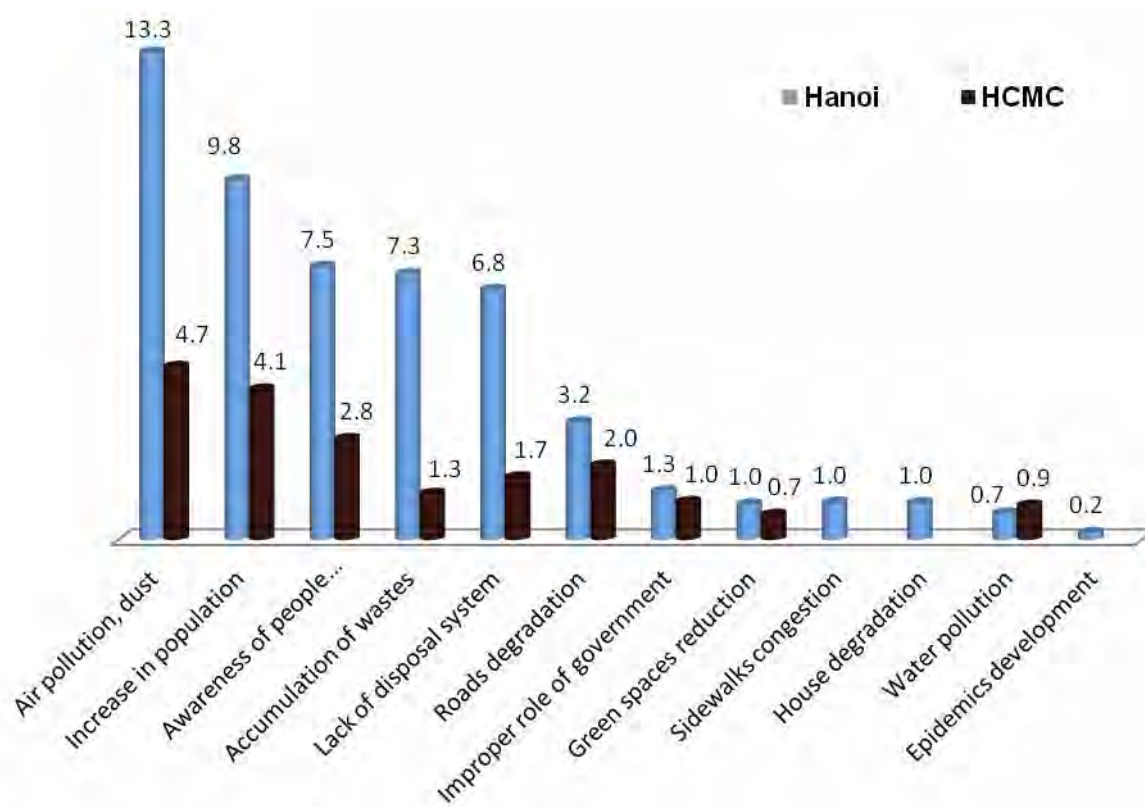
According to the interviewees, those who stated that the living environment in the area is “better,” “people awareness,” “road improvement,” “improvement of landscape” and “sewer upgrade” are the most frequently mentioned contributors to the improvement. It is interesting to notice that no interviewee in HCMC has mentioned the upgrading of the sewer system as a contributor to the improvement despite the fact that the city has invested a lot of funds on sewer upgrading programmes. In contrary, nearly 9% of interviewees in Hanoi mentioned that the upgrading of the sewer system is a contributor to the improvement of living environment.



Source: MPUES-2007

Graph 3.13: Contributors to improvement in living environment

It is worth mentioning that the contributors to the improvement of living environment in these cities are also causes of its declination. The lack of “people awareness” about environment, the “road degradation” and the “green spaces reduction” were mentioned as common causes of the deterioration of living environment.



Source: MPUES-2007

Graph 3.14: Caused reasons of environmental deterioration

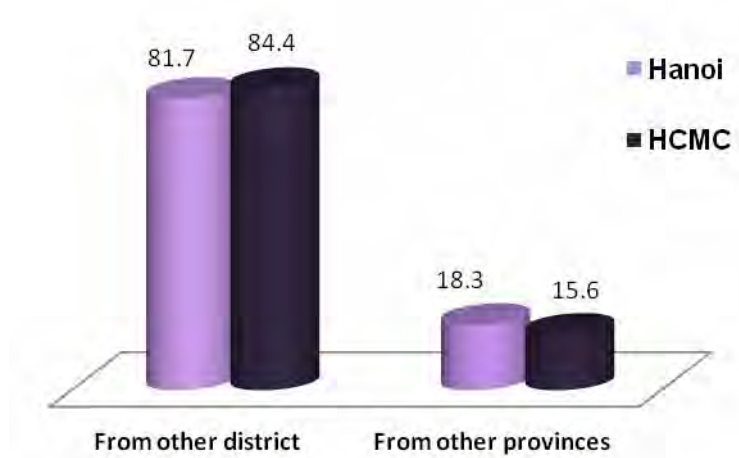
Overall, the ratio of the interviewees who mentioned the improvement of environment in their area in Hanoi is much higher than in HCMC. However, people in Hanoi are more likely to mention the deterioration of living environment than people in HCMC. As can be seen in graph 3.14, both the number and frequencies of the causes of the deterioration of living environment in Hanoi are much higher than in HCMC.

3.5. Moving status and changes in living conditions of the households in the cities

3.5.1. Moving of the households and reasons of moving

Changes in living place and housing conditions of the households in the cities

When being asked if the household had moved into the current dwelling after 1st January 2002, 16.2% of households in Hanoi and 15.7% in HCMC stated that they had moved after that day. This shows that about 16% of households in both cities have changed their living place within the previous 5 years and a half.

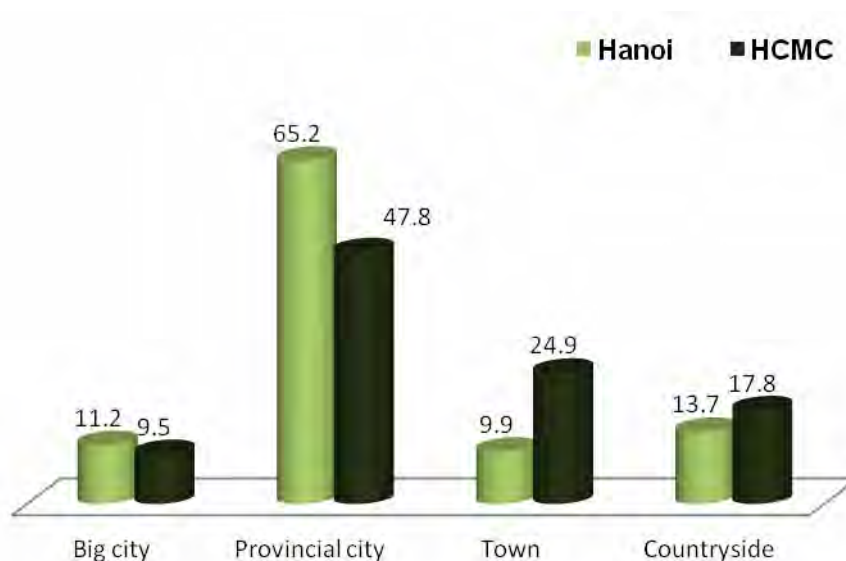


Source: MPUES-2007

Graph 3.15: Location of previous dwelling

Most of the people whom have changed their living place within the previous 5 years and a half (from 1st January 2002 to mid of 2007) are intra-urban migrant households, households that moved into the current dwelling from other areas inside

the cities. This group of households represents 81.7% of the migrant households in Hanoi and 84.4% in HCMC.



Source: MPUES-2007

Graph 3.16: Type of previous living place of outer migrant households

It is interesting to notice that most of the outer-migrant households³⁹, the households which had come to the cities from urban areas of other provinces. Within this group, more than 80% of the households used to live in the urban areas such as big cities, provincial cities or towns before moving. Only 13.7% of the migrant households in Hanoi and 17.8% in HCMC used to live in rural areas of other provinces before moving.

³⁹ Outer-migrant households are the households that come to Hanoi and Ho Chi Minh City within the last 5 years and a haft (at the time of the survey).

Table 3.26: Reasons of moving of households by city

Reasons of moving	Hanoi			HCMC		
	From other districts	From other provinces	Total	From other districts	From other provinces	Total
Better infrastructures	35.0	23.6	58.7	20.6	22.5	43.1
Better or cheaper housing	31.8	11.2	43.0	33.2	7.1	40.3
Better environment	23.3	26.1	49.4	15.8	14.2	30.1
Access to property or heritage	15.4	3.7	19.1	20.9	14.2	35.2
Living near relatives, family reunification	9.3	7.5	16.8	6.5	13.0	19.5
Better location to conduct business or workshop	8.4	6.2	14.7	11.4	15.0	26.5
Looking for work or a higher income	7.4	29.8	37.2	14.7	66.0	80.7
Studies	7.3	45.3	52.5	3.3	19.8	23.0
Marriage, divorce	5.9	5.0	10.8	5.0	2.4	7.3
Official relocation	4.7	-	4.7	7.8	4.3	12.1
Other reasons	19.6	16.2	35.7	6.1	-	6.1

Source: MPUESS-2007

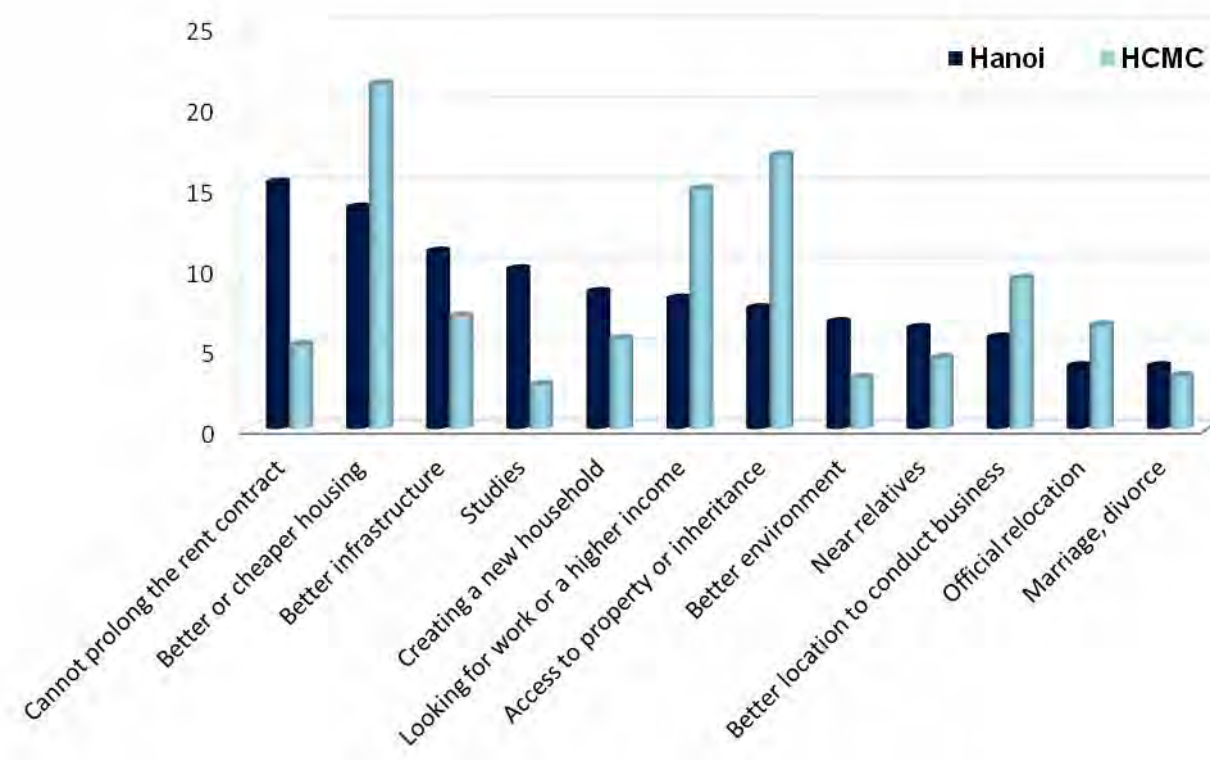
All the reasons for moving of the households which were collected from the survey are grouped into 12 groups in table 3.26. Overall, there are considerable differences in the reasons of moving between groups of moving households in the cities and between the cities.

Comparing the two cities, the reasons for the moving of people in Hanoi are much diverse than in HCMC. The three most frequent reasons, the reasons that are chosen by at least 40% of the moving people, in HCMC are ‘to look for work or a higher income’ (80.7%), ‘for better infrastructures’ (43.1%), and ‘for a better or cheaper housing’ (40.3%). In Hanoi, the four most frequent reasons for the moving are to look for better infrastructure (58.7%), for studying (52.5%), to have a better

environment (49.5%), and for a better or cheaper house (43%). 'To look for a job or a higher income' is the most frequent reason for moving in HCMC but it is only chosen by 37% of the migrant households in Hanoi. On contrary, more than 52% of the moving households in Hanoi have chosen 'studying' as a reason of moving while the corresponding ratio in HCMC is 23% only.

It is interesting to notice that the reasons to move of the groups of households in the cities are also different. Generally, studying and working are the two most frequent reasons for moving of the outer-urban migrant households. In Hanoi, 29.8% of the outer-urban migrant households had moved to look for a job or a higher income while that of the intra-urban migrant households is only 7.4%. The respective ratios of HCMC are 66% and 14.7%. In addition, the ratios of outer-urban migrant households which have chosen studying as a reason of moving in Hanoi and HCMC are 45.3% and 19.8% respectively. The corresponding ratios of the intra-urban migrants are much lower: 7.3% in Hanoi and 3.3% in HCMC.

On the contrary, the intra-urban migrant households are more likely to move to have a more suitable living place. The ratios of the intra-moving households which have moved to have a more suitable living place constitute 31.8% of the households in this group in Hanoi and 33.2% in HCMC. The corresponding ratios of the outer-urban migrant households are much lower: 11.2% in Hanoi and 7.1% in HCMC. However, for the other reasons of moving, the differences between the two groups of households and between both cities are much lower.



Source: MPUES-2007

Graph 3.17: Main reasons for moving by city

When being asked to select only one reason for moving, most of the interviewees chose reasons which are relevant to housing, work, or environment. The three most common reasons for moving, chosen by at least 10% of the moving households in HCMC, are to have “a better or cheaper housing”, to “access to property or inheritance”, and to “look for a work or a higher income”. The three most popular reasons in Hanoi are to be not able to “prolong the rent contract”, to “look for a better or cheaper house”, and to look for a “better environment.”

In detail, the main reasons for moving of the households are different by city. The possibilities that a household in Hanoi had moved because of reasons such as “cannot prolong the rent contract”, to “study”, to have “better infrastructures” or to get married in the city are higher than in HCMC. The households in HCMC, however, are more likely to move because of the inheritance, finding more suitable housing, and working. The ratio of the households which had to move because of official relocation in these cities is relatively high, around 4-6%.

The mentioned reasons proved that housing is the priority which concerns most households. More than 15% of the migrant households in Hanoi and 5% in HCMC had to move because they could not prolong the house contract. Besides, 14% of the migrant households in Hanoi and 21% in HCMC moved to have a better or a cheaper living place. On the other hand, only 18% of the migrant households in Hanoi and 10% in HCMC moved to have better infrastructures or a better environment.

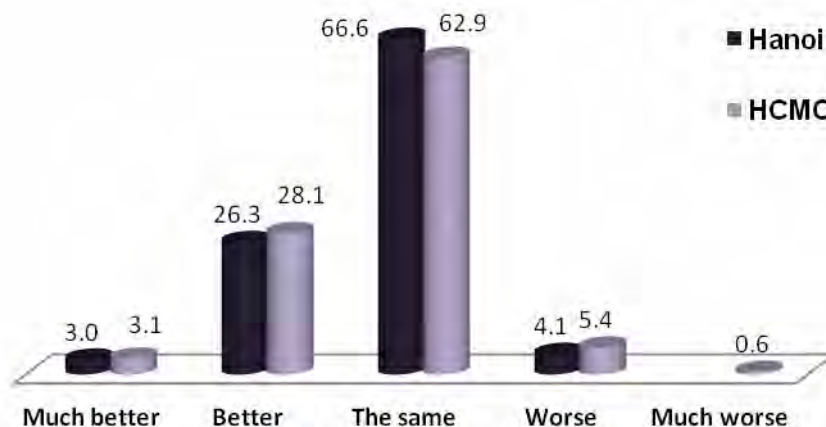
3.5.2. Changes in living standards of the migrant households in the cities

The moving households in both cities were requested to compare the current and the previous living places. All the replies about the aspects of life, which are work and income, housing, basic services, and living environment, were analyzed. Overall, the ratio of households which stated that the current living place is better is higher than that of those who stated a declination. This is true for all the mentioned aspects

of life. In detail, the answers of the households about the individual aspects of life are described in graphs 3.20-3.25.

Changes in work and income of moving households

When being asked if the work and income of the household at the current living place is “much better,” “better,” “the same,” “worse,” or “much worse” than the previous one, most of the interviewees replied that the work and income of their families have remained unchanged after moving. However, 26% of the households in Hanoi and 28% in HCMC have got a better job and/or income after moving. In addition, 3.0% of households in Hanoi and 3.1% in HCMC said that the work and income of the family are much better after moving. Generally, the ratios of households which stated an improvement in work and income were much higher than that of those which stated a declination.

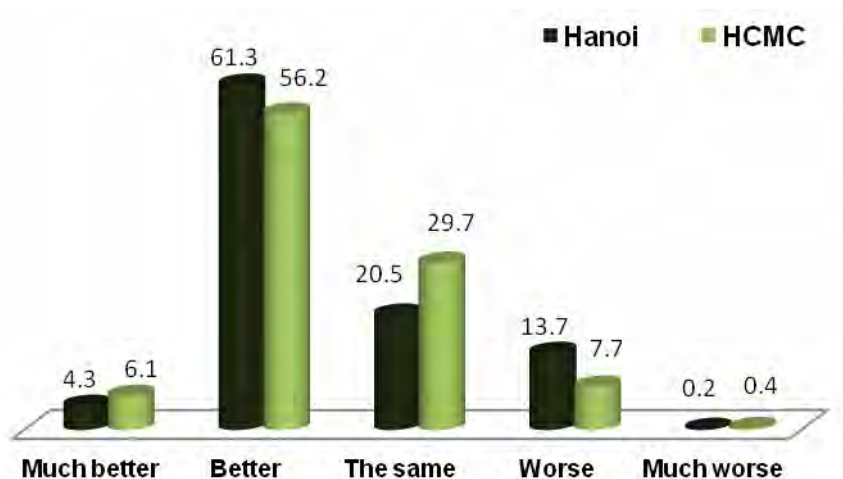


Source: MPUES-2007

Graph 3.18: Work and income of household members after moving

Changes in housing conditions of migrant households

Most of the interviewed households consider that the housing conditions of the current dwelling are “better” than that of the old one. There are 61% of the households in Hanoi and 56% in HCMC stated that the housing conditions are “better”. Besides, 4% of the households in Hanoi and 6% in HCMC stated that the housing conditions are “much better”. On the contrary, only 14% of the households in Hanoi and 8% in HCMC stated that the housing conditions are “worse” or “much worse.”



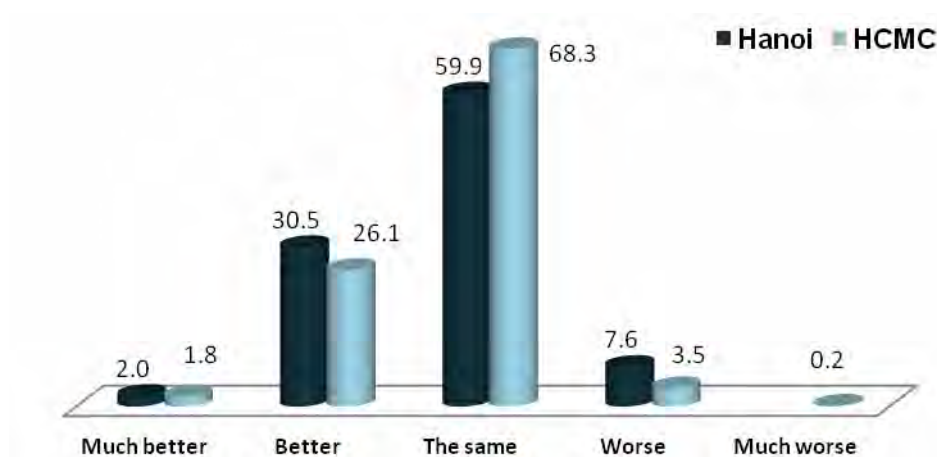
Source: MPUES-2007

Graph 3.19: Changes in housing conditions of households after moving

Changes in children education and training conditions of migrant households

Though most of the migrant households stated that there is no change in the schooling conditions of their child or children after moving, the ratios of households

which stated that the schooling conditions of their child or children are “better” or “much better” in the cities are high.



Source: MPUES-2007

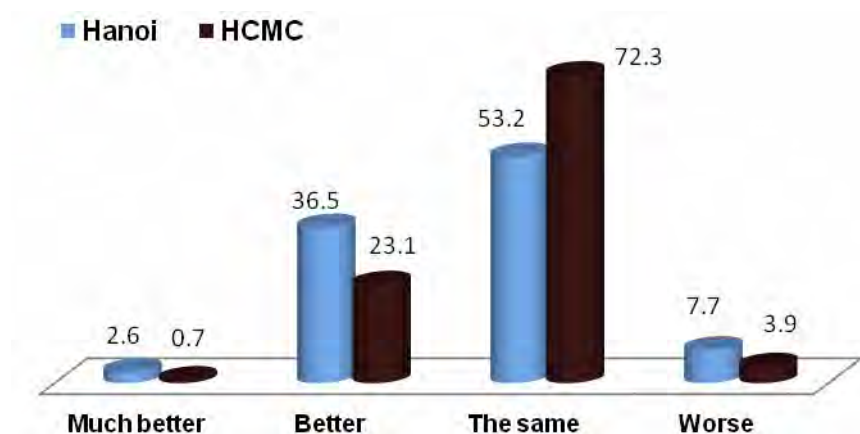
Graph 3.20: Changes in schooling conditions of children after moving

More than 32% of the households in Hanoi and 28% in HCMC stated that the schooling condition has improved. Besides, 60% of the households in Hanoi and 68% of households in HCMC stated no change in schooling conditions. However, there are about 8% of households in Hanoi and 4% of households in HCMC stated that the schooling conditions at current living place are “worse” or “much worse” than before.

Changes in quality of health care services of the migrant households

Most of the households in the cities stated no change in the quality of health care services. However, the ratios of households which stated that there is an improvement in the quality of health care service are high: 39% in Hanoi and 24%

in HCMC. Besides, no household stated that the quality of health care services in the current living place is much worse than before.



Source: MPUES-2007

**Graph 3.21: Changes in the quality of health care service
of households after moving**

Changes in the quality of social environment, security and relations with neighbours of the migrant households

The ratio of the households which stated an improvement in the quality of social environment, security and relations with neighbours in the current living place is higher in Hanoi than in HCMC: more than 50% of the households in Hanoi think that the social environment in the current living place is “better” while the ratio in HCMC is only 30%. The ratio of the households which stated no improvement in HCMC is 63%, nearly the double the ratio in Hanoi, 34%. The ratios of the households which stated that the quality of social environment in the current living place is “worse” or “much worse” are low, around 6-8%.



Source: MPUES-2007

Graph 3.22: Changes in the quality of social environment, security and relations with neighbours of households after moving

Changes in the quality of the natural environment and the green spaces of migrant households

There is a considerable proportion of households in the cities stated that the quality of natural environment in the living area has decreased, 26% in Hanoi and 20% in HCMC. However, the ratios of households which stated that the quality of natural environment in the current living place is “better” or “much better” are much higher. There were 46% households in Hanoi and 28% in HCMC which have stated that the natural environment in the living area is “better”. In addition, 3.9% of households in Hanoi and 1.8% in HCMC stated that the natural environment in the current living areas is “much better”.



Source: MPUES-2007

Graph 3.23: Changes in quality of the natural environment after moving

In conclusion, the living conditions of migrant households have improved after moving. The ratios of households which stated an improvement in mentioned aspects of life are higher than that of those which experienced a declination. However, a significant proportion of migrant households has experienced degradations in living conditions after moving. The percentages of households which have experienced an improvement in the analyzed aspects of life after moving in Hanoi are much higher than in HCMC.

3.5.3. Difficulties that migrant households have to face after moving

The difficulties that moving households in the cities encountered are various. When being asked to select one or several types of difficulties that the migrant households have to face after moving, the common chosen difficulties were housing, basic services, environment, and safety issues. The migrants, who come from other

provinces, were more likely to stated difficulties in the new living place than the intra-urban migrant households.

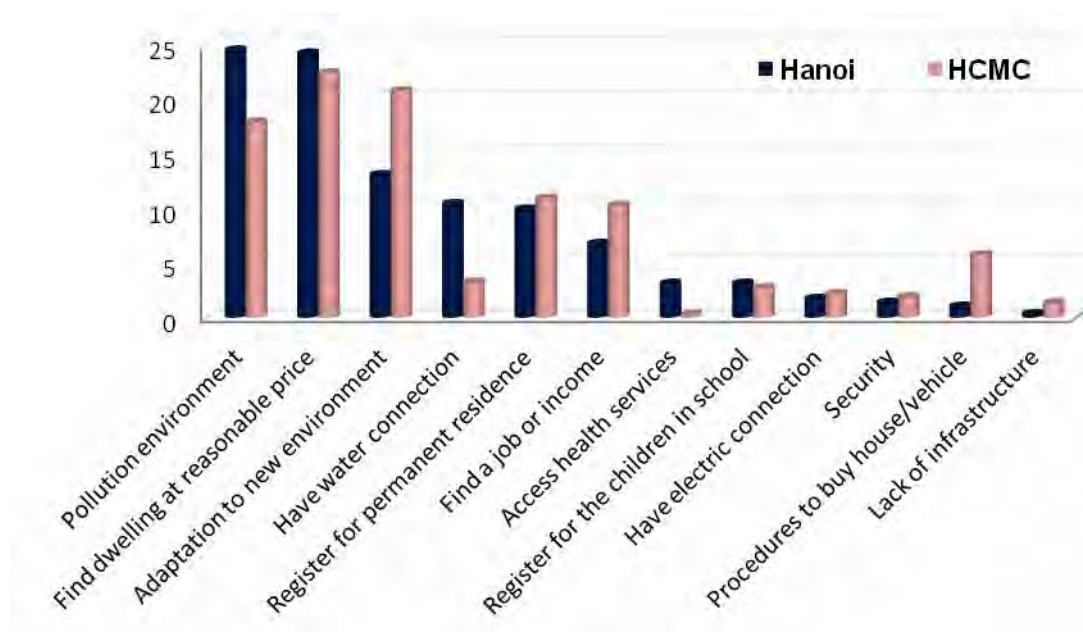
Table 3.27: Difficulties that migrant households in the cities have to face

Types of difficulties	Unit: %					
	Hanoi			HCMC		
	From other districts	From other provinces	Total	From other districts	From other provinces	Total
To access health services	35.0	23.6	58.7	20.6	22.5	43.1
To complete the procedures to buy a dwelling or a vehicle	31.8	11.2	43.0	33.2	7.1	40.3
To register the children in school	23.3	26.1	49.4	15.8	14.2	30.1
Lack of infrastructures	19.6	16.2	35.7	6.1	-	6.1
Security problems	15.4	3.7	19.1	20.9	14.2	35.2
Adaptation to the new environment	13.9	2.5	16.3	9.1	2.4	11.5
To get a water connection	9.3	7.5	16.8	6.5	13.0	19.5
To register for a permanent residential permit	8.4	6.2	14.7	11.4	15.0	26.5
To find a dwelling at a reasonable price	7.4	29.8	37.2	14.7	66.0	80.7
To get an electric connection	7.3	45.3	52.5	3.3	19.8	23.0
To find a job or income	5.9	5.0	10.8	5.0	2.4	7.3
Pollution of the environment	4.7	-	4.7	7.8	4.3	12.1

Source: MPUES-2007

Besides, the levels of concern for the mentioned difficulties of groups of migrant households are also different. Finding a dwelling at a reasonable price is the most common difficulty of the migrant households in HCMC. More than 80% of the migrant households in the city mentioned this kind of difficulty while the ratio in Hanoi is only 37.2%. The other difficulties mentioned in HCMC are ‘to access to health services’, and ‘to complete formalities to buy a house or a vehicle’. In Hanoi, the four most frequent difficulties, the difficulties that are stated by at least 40% of the migrant households, consist ‘to get an electric connection’, ‘to access to health

services', 'to register for children in school' and 'to complete formalities to buy a dwelling or a vehicle'.



Source: MPUES-2007

Graph 3.24: Main difficulties of migrant households

However, when being required to choose only one difficulty, the obstacles stated by the interviewees in the cities are similar. The three most popular difficulties of the migrant households in these cities include 'to find a dwelling at a reasonable price', 'to adapt to the new environment', and 'to bear environmental problems'. Nearly 25% of the interviewees in Hanoi and more than 17% in HCMC considered that environment pollution is the main difficulty that they have to face. In addition, about 10% of the interviewees stated that 'to register for a permanent registration permit' is the main difficulty they have to face. Generally, the main difficulties of the households can be grouped into three main categories: infrastructures, environment and formalities.

3.6. Well-being level of the inhabitants in the cities

In order to compare the quality of living conditions of inhabitants in these cities, a well-being index was established. The indicators of the well-being index were selected based on the MPUES data. The index consists of three main domains which are demographic characteristics, living standards, and living environment of the households. Each domain includes several indicators and each indicator encompasses one or several elements.

Points are subjectively assigned to the elements of each indicator. They are determined based on the relative price, level of popular, and/or level of impacts of the elements to the quality of life of households. In case a household satisfies simultaneously several elements of an indicator, the point of the indicator equals to the point of the element which has the highest value. The detailed description of the indicators, elements, and points of the elements are described in appendix 3 (3a), Key features of the core groups.

The K-mean Clustering method was applied to classify inhabitants in these cities into groups that have a high, medium, or low level of well-being. The results of the K-mean Clustering of the index are illustrated in appendix 3 (3b): Key features of the final core groups. The criteria to classify the households into these groups are described in appendix 4: Groups of households by level of well-being.

Well-being level of inhabitants in the cities by groups of districts

Overall, the households in HCMC have a higher level of well-being than in Hanoi. This result seems strange because the findings from section 3.3 and 3.4 show that the households in Hanoi have a higher educational status, better housing conditions and living accommodation, higher income, and better system of living infrastructure than in HCMC. The households in Hanoi also have a lower ratio of poor households than that of HCMC. However, the households in HCMC have more positively evaluations about the living environment as well as the influence of environmental problems on health. The households in HCMC are also more likely to use a cleaner type of energy for cooking. They also have a lower ratio of households that have at least one smoker. These factors help to explain why the ratio of households which has a high level of well-being in HCMC is higher than that of Hanoi.

Table 3.28: Well-being level of households by groups of districts

Unit: %

Well-being level	Hanoi			HCMC		
	Central districts	Peripheral districts	All urban districts	Central districts	Peripheral districts	All urban districts
High	14.2	17.4	15.6	23.3	13.6	20.4
Average	57.7	55.8	56.9	54.7	49.3	53.1
Low	28.1	26.8	27.5	22.0	37.1	26.5
Total	100	100	100	100	100	100

Source: MPUES-2007

A proportion of 20.4% of the households in HCMC have a high level of well-being while the corresponding ratio in Hanoi is 15.6%. Besides, the ratio of households which have a low level of well-being in HCMC is 26.5%, slightly lower than the

corresponding ratio of Hanoi, 27.5%. Hanoi has a higher ratio of households with an average level of well-being, 56.7% of households in Hanoi and 53.1% in HCMC belong to this group.

However, the actual differences in the well-being level of the inhabitants between the cities may not be so high. The findings of the well-being index may be influenced by non-observed aspects such as culture or characteristics of the inhabitants in the cities. The positive opinions of the dwellers in HCMC about social and environmental issues may come from non-observed aspects. In average, the inhabitants in Hanoi have a higher level of education. They also concerned more about environmental issues than the inhabitants in HCMC⁴⁰.

Within each city, there are considerable differences in the well-being level of inhabitants that live in peripheral and central districts. In Hanoi, the households that live in peripheral districts have the highest level of well-being. On the contrary, in HCMC, the central districts are places that have the highest level of well-being. The ratios of inhabitants which have a high level of well-being in the central districts of HCMC is nearly the double the corresponding ratio of the peripheral districts. The disparities between groups of districts in Hanoi are also lower than that of HCMC. This helps to explain why rich families in Hanoi are more likely to move to peripheral areas to have better living conditions.

⁴⁰ When being asked “Are you concerned about environment?” More than 96% of the people in Hanoi reply “yes” while the corresponding ratio in HCMC is 66% only. This helps to explain why environmental problems in HCMC are less likely to be considered as serious as that of Hanoi.

Well-being level of inhabitants in the cities by migratory status

A detailed examination of the level of well-being of the non-migrant and migrant inhabitants in these cities proves that the non-migrants have a higher level of well-being than the migrants. The disparities between the two groups of households are high, especially in the highest well-being level groups. In Hanoi, the ratio of inhabitants which have a high level of well-being of the non-migrants is nearly twice of that of the migrants: 26% and 14% respectively. The disparity between these two groups in HCMC is lower: 31% and 18%.

Table 3.29: Well-being level of inhabitants in the cities by moving status

Unit: %

Well-being level	Hanoi			HCMC		
	Non migrants	Migrants	Total	Non migrants	Migrants	Total
High	26.4	13.5	15.6	31.0	18.4	20.4
Average	47.6	58.7	56.9	45.9	54.5	53.1
Low	26.0	27.8	27.5	23.0	27.1	26.5
Total	100	100	100	100	100	100

Source: MPUES-2007

Besides, the ratios of the inhabitants who have a low level of well-being of the non-migrant groups in these cities are also lower than that of the migrant groups. However, the gaps between these groups are not high. Therefore, the percentages of dwellers in these cities that have an average level of well-being of the non-moving groups are lower than that of the moving.

Well-being level of the poor and non-poor in the cities

Table 3.30: Well-being level of the poor and non-poor in the cities

Well-being level	Hanoi		HCMC	
	Poor	Non-poor	Poor	Non-poor
High	0.0	16.2	0.4	22.0
Average	25.0	58.9	18.2	55.9
Low	75.0	25.9	81.4	22.1
Total	100	100	100	100

Unit: %

Source: MPUES-2007

It is obvious that the poor inhabitants in the cities also have a low level of well-being. Most of the poor in these cities belong to the low level of well-being groups. There are 75% of poor inhabitants in Hanoi and 81.4% in HCMC which have a low level of well-being. In addition, in Hanoi, no poor dweller has a high level of well-being. The ratio of the poor inhabitants who have an average level of well-being in Hanoi is only 25%, less than half of that of the non-poor group. The ratio of poor households which have a low level of well-being in the city is about three times higher than that of the non-poor.

The disparities between the poor and non-poor groups are higher in HCMC. The ratio of the poor who has a low level of well-being is nearly four times higher than that of the non-poor. Similarly, the ratio of the poor who have an average well-being level is less than one third of that of the non-poor, 18% to 56%. It is interesting to notice that there is one poor household in HCMC which belongs to the high level of well-being group. The reason is that in Vietnam, income is used as the

most important indicator to classify the poor and non-poor. The well-being index is different. It covers several aspects of life, both material and non-material. Therefore, it is possible that a household is officially poor but has a high level of well-being and vice versa.

This case is a good example for the relative relation between the poor status, which was determined officially by the poverty elimination officers or subjectively by the households, and the actual level of well-being of households. The detailed data of the households in HCMC provides interesting information about the relative relation between the poor status and the level of well-being.

This household lives in district one and it owns the current dwelling. The dwelling is made in beton and has all basic compositions for daily activities of the household members such as kitchen, bathroom, and toilet. It has also a private tap water, motorbikes, and some other durable goods. The family uses gas as the main source of cooking energy and has no smoker. These factors help to explain why it belongs to the group of households that have a high level of well-being.

In addition, many households which are non-poor but they have a low level of well-being. The ratios of the non-poor who belong to the groups of inhabitants that have a low level of well-being are 26% in Hanoi and 22% in HCMC. The findings, therefore, prove that income is just one aspect of life and it cannot represent the actual living conditions of households in these cities. A multi-faced index such as

the well-being index is useful to provide precise information about the quality of life of the households.

3.7. Chapter remarks

Comparing the two cities, the households in Hanoi have a higher level of education, a more stable job, a higher income and better housing conditions than that of HCMC. The households in Hanoi also have a higher expenditure per capita and a lower ratio of households with financial shortage. In case there are financial shortages, the households in Hanoi are more likely to have better ways to compensate the deficits. The people in Hanoi are more likely to use means of transportation which are more friendly with environment than in HCMC.

In contrary, the households in HCMC are more likely to use a clean source of energy for cooking. They are also less likely to smoke than the people in Hanoi. Though ratio of households which are influenced by flood water in HCMC is much higher than in Hanoi, the people HCMC have a more positive assessment of the environmental issues. They are less likely to blame on possible influence of pollution on health.

The ratio of working population and level of mobility of people in Hanoi and HCMC are high. More than half of the migrant to Hanoi and HCMC come from other big cities or provincial cities. However, HCMC has a much higher ratio of

migrants who come from towns or rural areas. On average, the gaps in the living standards between the non-migrant and migrant households are smaller in HCMC than in Hanoi. In both cities, the non-migrant groups of households have higher living standards and a higher level of well-being than that of the migrant groups. Whereas, the disparities between the groups of districts are lower in Hanoi than in HCMC.

Though Hanoi and HCMC are amongst the cities which have the highest level of income per capita in Vietnam, the living standards and living quality of people in these cities are not high⁴¹. The ratios of households which have tap water in these cities are low. There are considerable proportions of households which have to use inappropriate sources of drinking and cooking water and/or cooking energy. Moreover, there are still households in the cities which have no toilet, bathroom, and/or kitchen. Most of the households in these cities are located close to at least once source of pollution. The lack of infrastructures for basic services such as housing, schooling, health care, clean water, and the deterioration of the living infrastructures are the main concerns of the inhabitants in these cities. Besides, pollution and deterioration of the living environment are challenges that households in the cities are facing.

To “look for a better or cheaper housing”, “for work or a higher income”, for better infrastructure and/environment are the most popular reason of moving of the people

⁴¹ This chapter is only devoted to the households who live in the urban districts of Hanoi and HCMC; if the households who live in rural districts were included, the real living standards would be much lower.

in the cities. Overall most of moving households in the cities think that the work, income, living conditions and living environment of their households are unchanged after moving. Though the ratios of households which experience improvement in these aspects of life after moving are higher than that of those who experience degradation, there is still a considerable proportion of households which said that their lives have been worsened. The difficulties that the migrant households have to face after moving are variety. However, they can be grouped into three domains which are housing and infrastructure, environment and formalities.

The ratios of the inhabitants who mentioned urban problems such as congestion, pollution, insecurity, difficulties to access basic services, difficulties to get necessary papers etc. are high. These problems, however, are not presented in the economic indicators which are currently used to assess the living standards of the households. Therefore, the need to apply multidimensional indexes to assess the level of well-being or quality of life of the people is urgent. If being used efficiently, these indexes would be a useful tool for the assessment and monitoring of the actual living conditions of inhabitants. They are also useful for policy-makers and people to draw out suitable orientations for the development of these cities.

PART 3:
WELL-BEING AND WELL-BEING DERIVATION
OF HOUSEHOLDS IN THE CITIES: TRENDS AND IMPLICATION
FOR PRO-POOR POLICY

Though not everything worth doing can be measured

What is not measured may not be done at all.

(Human Development Report Unit 2010)

Chapter 4:

Formulating the well-being index of households:

Indicators, available data and technical method

This chapter focuses on determining indicators and technical issues relevant to the construction of a well-being index of households for the two cities, Hanoi and HCMC. It consists of five sections. Section one outlines the general process of index construction. Section 2 describes the characteristics of the database which are applied for the tabulation of well-being index. Section 3 and 4 determines the dimensions, indicators, techniques, and methodology for the well-being index. Section 5 evaluates the validity and usefulness of the household well-being index to public policy. The chapter ends with remarks relevant to the tabulation of well-being index.

4.1. Construction process of well-being index

The process is initiated with the main purpose of the study, measuring changes in the well-being level of households. Based on defined purposes, the applied theory of the study and empirical findings relevant to the choice of well-being indicators are examined. Besides, methodological issues about the construction of well-being index are also considered. Then the theoretical findings and available data are used to identify the preliminary indicators of the well-being index.

These potential indicators are evaluated and classified into corresponding domains of well-being. Then, descriptive characteristics of indicators and correlations among indicators are explored to find out if they are suitable for further analysis. Finally, the retained variables are modified so that they are fit with for the aggregate well-being index. These indicators and domains are also tested to find whether changes of indicators of well-being index are meaningful. The process is illustrated in figure 4.1.

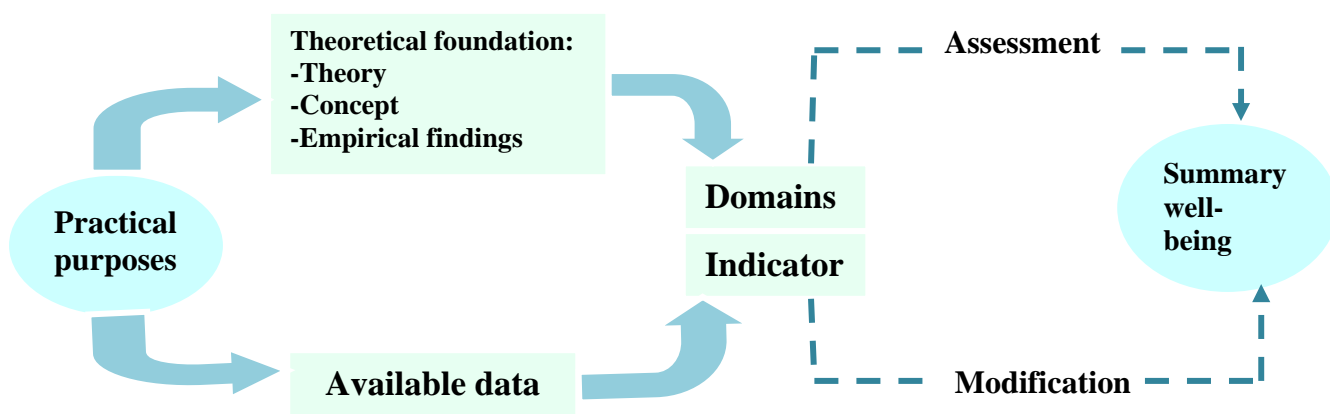


Figure 4. 1: Index construction process

4.2. The Vietnam Household Living Standards Surveys

From 2002, every two years GSO -General Statistics Office of Vietnam, implements a national survey, which is named Vietnam Household Living Standard Survey (VHLSS). These biennial surveys aim at collecting systematic information about living standards of households and necessary data for the computation of consumer price index.

The surveys' samples are selected from the database of the 1999 Population Census by a three steps process. First, primary sampling units (PSUs) are selected. Each PSU is identified with a *xa*, *thi tran* or *phuong*⁴². Then, enumeration areas (EAs) are selected within PSUs. Finally, a sample of households is selected based on the list

⁴² The terms can be translated into English as commune, district town and ward, correspondingly.

of households in the EAs (GSO 2002, GSO 2004, GSO 2006, Phung Duc Tung and Nguyen Phong 2006, and GSO 2008)⁴³.

For every survey, there are two types of questionnaires: the household and the commune questionnaire. The commune questionnaire focuses on information about socio-economic infrastructure of the survey area. Local officials fill this questionnaire. The household questionnaire is answered by households. There are two versions of the household questionnaire: the “long” one and the “short” one. Both the “long” and the “short” versions have the same content, yet the “short” one does not include questions about household expenditures. Hence, the “long” one is also called “the income-expenditure questionnaire” and the “short” one is called “the income questionnaire”. This study relies entirely on data of the households which replied to the “long” questionnaires⁴⁴.

The household questionnaire has two modules: the core and the extension. The core module covers eight domains, namely demography, employment, health, income, expenditure, durable goods and assets, housing and accommodation, and the participation in poverty reduction programs⁴⁵. These domains are repeated in all surveys. Although there are often changes in the number and content of the questions, especially between the 2002 questionnaire and the later ones,

⁴³ The work of Phung Duc Tung and Nguyen Phong (2006) provides a very detailed description about the sampling method of VHLSSs.

⁴⁴ GSO does not officially release the database of households responding to the short questionnaire though sample size of the “short” questionnaire is much bigger than that of the “long” one. For example, in 2004, the number of households that replied to the “long” questionnaire and the ‘short’ questionnaire of Vietnam are 9,188 and 36,756, respectively.

⁴⁵ The order and title of the sections in the questionnaires may be different but the core module always focuses on the mentioned aspects of household life.

modifications are kept at a rational level to ensure the compatibility among surveys. The extension modules, however, are changed in every survey (GSO 2004, GSO 2006, and GSO 2008). Hence, they are not used in this study, except some special cases.

Recently, the VHLSSs are considered as one of the most important sources of data for social studies in Vietnam. They are also the most exploited data for studies about living standards, poverty, social deprivation, and policy evaluation. The surveys, however, contain several problems related to the sample selection process (Pettersson 2005; Pincus and Sender 2008). Pincus and Sender proved that a large number of ‘mobile households’ and ‘mobile individuals’ were excluded in the sample selection process (Pincus and Sender 2008: 113). This problem may be serious in focal economic zones, especially in leading economic centres like Hanoi and HCMC. The mid-term census of HCMC in 2004 proves that 71% of the city dwellers are KT1 and KT2⁴⁶ but the corresponding ratio of VHLSS 2004 is 91%⁴⁷ (UNDP 2010: 23). Findings from this thesis, once again, confirm the statement of Pincus and Sender that the sampling process may neglect a considerable portion of the population, especially migrants in the cities.

⁴⁶ People who have permanent resident permit in these cities.

⁴⁷ According to Thanh Luan, Dai Doan Ket newspaper in 08/01/2010 about ‘Thanh Pho Ho Chi Minh: Nghich ly cua phat trien va “ngheo do thi” [*HCMC: Paradox of development and “urban poverty”*], ratio KT3 and KT4 population of HCMC is 28.9%. This ratio, however, does not include temporary dwellers and migrant manual workers. If the ‘floating population’ is included, the ratio of migrants in the city may be higher than 28.9%.

The mentioned sampling biases may lead to a misinterpreting about characteristics and living standards of households in the cities because migrants, especially “floating population”⁴⁸, are not only have lower living standards but also face more difficulties than resident households (Nguyen Quoi 1996; Dang Nguyen Anh 2005; Hy Van Luong 2007; Locke Catherine, Nguyen Thi Ngan Hoa, Nguyen Thi Thanh Tam 2009; Locke Catherine, Nguyen Thi Thanh Tam, Nguyen Thi Ngan Hoa 2010a; Locke Catherine, Nguyen Thi Ngan Hoa, Nguyen Thi Thanh Tam 2010b; UNDP 2010).

In addition, studies of McCaig (McCaig 2008a, McCaig 2008b) proved that there are significant differences in means of net income between the “long” and the “short” samples of VHLSS 2002 and 2004. This, somehow, shows that the “short” samples may not well represent households in the cities. And, the absolute values of household income may not precise.

Second, the number of selected PSUs and EAs of VHLSSs is much smaller than the number of actual administrative units⁴⁹ and “*to dan pho*”⁵⁰ in the cities. For example, numbers of surveyed PSUs and EAs of HCMC of VHLSS in 2006 are 100 and 300, respectively⁵¹. Whereas, the actual administrative units of HCMC in 2006

⁴⁸ “Floating population” or “temporary movers” are migrants who declare that they are not residents in the cities. They are often moving between city and countryside, while they spend most of the year in the city. The problem is caused by different in the use of the concept “*residence*” between the promoters, the interviewers and the interviewees of the survey.

⁴⁹ Administrative unit here implies *xa*, *phuong* or *thi tran* [commune, ward or district town]. A PSU may be a commune, a ward or a district town.

⁵⁰ “*to dan pho*” is not an administrative unit, yet, it is the smallest management unit in Vietnam. An EA may consist of several “*to dan pho*”.

⁵¹ Author’s calculations from the VHLSS database.

are 317 and the number of “*to dan pho*” are 24,483⁵². This sampling method, therefore, may increase the cluster effect of VHLSS database.

Thirdly, there are several authors who mentioned mismatches of observation among surveys. Several repeated surveyed households do not match with others ones (McCaig 2008, Le Dang Trung and Pham Thai Hung 2009). However, there are also mismatches within the individual survey as well. Because each VHLSS consists of many files which can be merged with each other by identifiers of the sample. Yet, there are cases observations among files are unmatched.

Finally, the sample size of the surveys is relatively small. Therefore, they do not enable analysis at the administrative level lower than a region (except Hanoi and HCMC, the cities which have a relatively large survey sample than other provinces) such as a province or district⁵³. There are also limits for some kind of in-depth analysis, especially analysis on indicators that are not popular or indicators that contain many categories.

The problems are impediments for the findings about changes in well-being level of households because the data may not well represent the actual living conditions of people in the city. Besides, it may overstate the living conditions of the city

⁵² Author's calculations from information of FSP project about “Migration, poverty and environment in Hanoi and HCMC”.

⁵³ There are authors whom applied the database for smaller administrative units. In these cases, the VHLSS database must be combined with other database. An example for this kind of study is the program about ‘poverty mapping’. VHLSS database is combined with census data by ‘small area estimation’ method that is introduced in 2003 by Minot, Baulch, and Epprecht (Minot, Baulch, and Epprecht 2003).

dwellers because there is a big gap between living conditions, social characteristics, and social deprivation of the migrants and non-migrants. Findings from several studies have proved that the migrants are not only have a more fragile financial status, poorer living condition, more sensible to shocks but also has a lesser chance to access basic social services than the non-migrants (GSO 2006a, UNDP 2010). The findings of this study, therefore, must be understood within this context to avoid misunderstanding and misinterpreting about the level of well-being level of households. Sampling bias, however, also helps to explain some strange findings in the result of the study.

Despite the mentioned limitations, the VHLSS possesses advantages that very few other surveys in Vietnam have. First, the questionnaires are consistent and cover important aspects of the households' life. The database is the richest source of information available about households in Vietnam. Secondly, this is the only biennial national survey about household living standards in Vietnam. Moreover, the field works were implemented by both the central and local statistics bureaus. The survey, hence, receives plenary support from local authorities. Third, several households which had participated in previous surveys were re-interviewed in later one(s) in a follow-up process. This allows both time series and panel analyses.

Now, results of four surveys in 2002, 2004, 2006, and 2008 are available. They are the only sources of available data that allow a comparison of changes in household well-being level in Hanoi and HCMC in the 2002–2008 period. In addition, despite

the mentioned limitations, they are, in many aspects, the most suitable sources of data for this study. These are the reasons why the author uses this database to measure changes in well-being of households.

Normally, it requires relatively long duration to observe changes in well-being level. Yet, Vietnam is a developing nation which is amongst the transition nations that have the highest growth rate in the world. The two cities, Hanoi and HCMC, are the cities that have the highest growth rate in Vietnam. Changes in social-economic aspects happen very fast, especially in focal economic centres like Hanoi and HCMC⁵⁴. Hence, it is expected that the level of well-being of households may be changed in a shorter period of time⁵⁵. The study period is relatively short, only 06 years from 2002 to 2008⁵⁶, yet it is hope that the database may shed some light on changes in well-being level of household in the cities. A general description of the four data sets of Hanoi and HCMC are described in table 4.1

⁵⁴It is noteworthy to mention that the data of Hanoi and HCMC do not implies the urban areas but the whole cities. Thus it is difficult to compare Hanoi and HCMC which contain a different proportion of rural population. The result of the census in 1999 shows that the rural population in Hanoi was 47.5% while the corresponding ratio of HCMC was 18%

⁵⁵The fluctuation of Vietnam's order in international ranks is an example for shape changes in social-economic life. The rank of Vietnam in Happiness Planet Index in 2006 and 2009 are 12th and 5th respectively. Similarly, Vietnam is ranked 49th in 2009 and 53th in 2010 by International Living Magazine.

⁵⁶In 2008, the administrative limit of Hanoi was enlarged. However, in this thesis the data of Hanoi in 2008 concerns the former limit of the city, not the new one.

Table 4.1: General characteristics of the database of the cities

Information of VHLSS	Hanoi				HCMC			
	2008	2006	2004	2002	2008	2006	2004	2002
Number of districts in dataset	14	14	14	12	22	22	22	22
Number of commune/ward/district town in the dataset	80	80	80	57	100	100	100	67
Number of surveyed households	240	240	240	740	300	300	300	775
Field work time (by order of month)	6-10	5-11	5-11	5-11	6-10	5-10	5-11	5-11

Sources: Author's calculation from VHLSS 2002, 2004, 2006, and 2008

The number of households surveyed in 2002 is much higher than that of other surveys due to modifications in sampling method. From 2004, the number of surveyed households is reduced to 240 households in Hanoi and 300 households in HCMC. These numbers are kept constant in later surveys.

An important technical issue relevant to VHLSSs is the sampling weight. Each VHLSS has at least three weights: the household size weight, the sampling weight for households with income-expenditure questionnaire, and the sampling weight for households with income questionnaire. If the sampling weights associated with sampling units were neglected, the results of estimates would be biased. This may lead to serious errors in conclusions (Abeyasekera 2003; StataCorp 2009).

Therefore, analyses in the thesis apply the sampling weight of households that reply to the income-expenditure questionnaire⁵⁷ (p-weight). Table 4.2 provides descriptive characteristics of the weight of households that reply to the long questionnaire. The table showed that there are obvious discrepancies in the level of representativeness of observations within each survey and the values of p-weight have increased very fast during the period. The sampling weight, therefore, is important for data computations.

Table 4.2: Descriptive characteristics of VHLSSs' sampling weight

	Hanoi				HCMC			
	2008 ⁵⁸	2006	2004	2002	2008	2006	2004	2002
N	240	240	240	740	300	300	300	775
Weighted N	858.2	758.5	663.3	212.2	1.221.2	1.051.3	923.8	323.0
Mean	3575.9	3160.3	2763.8	884.1	5088.2	4380.3	3849.0	1345.9
Standard deviation	874.6	221.5	235.7	721.5	1985.9	96.6	319.6	1191.7
Min	1922.0	2946.4	2517.0	318.5	2606.0	4321.4	3346.0	416.7
Max	8223.0	3995.1	3587.0	2736.1	12893.0	4637.6	4436.0	5475.7

Sources: Author's calculation from VHLSS 2002, 2004, 2006, and 2008

⁵⁷ The weight of the households that reply to the income-expenditure questionnaire is named wt30 in the VHLSS 2002 and wt9 in later surveys. The names are given after the number of household replies to the long questionnaire, about 30,000 households in 2002 survey and 9,000 households in later surveys.

⁵⁸ In 2008, the boundary of Hanoi was extended. Yet, the data of 2008 in this study is the data of the old Hanoi, not the new Hanoi.

4.3. Dimensions and choice of indicators

In chapter three, the application of Defra's definition of well-being and the theory of Human Basic Needs as the basic concept and foundation theory for measuring and evaluating well-being of household were addressed. Well-being, as defined by Defra, is not just the absence of ill-being but a positive physical, social and mental state. This is the state when the individual's basic needs are met, when the individuals have a sense of purpose, of sociality, and the capability to achieve personal goals. Therefore, the supportive personal relationships, good health, a rewarding job, financial and personal securities, and a healthy environment are important enhancement of well-being (Defra 2009).

The theory of Human Basic Needs goes into detail about the pre-condition for human needs satisfaction. According to the theory, to stay healthy and have autonomy, the individual needs to have a minimum optimal level of intermediate needs. They are sufficient food and water, protective housing, a non-hazardous work and physical environment, economic and personal security, basic education, and significant primary relationships. The theory also introduces 'societal conditions' for needs satisfaction and individual liberation such as freedom, civil and political rights, political participation, culture integration, etc. These conditions are important for the achievement of basic needs as well (Gough 2003), yet they are

not considered in this study⁵⁹. Factors that influence household well-being can be described in figure 4.2, components of household well-being.

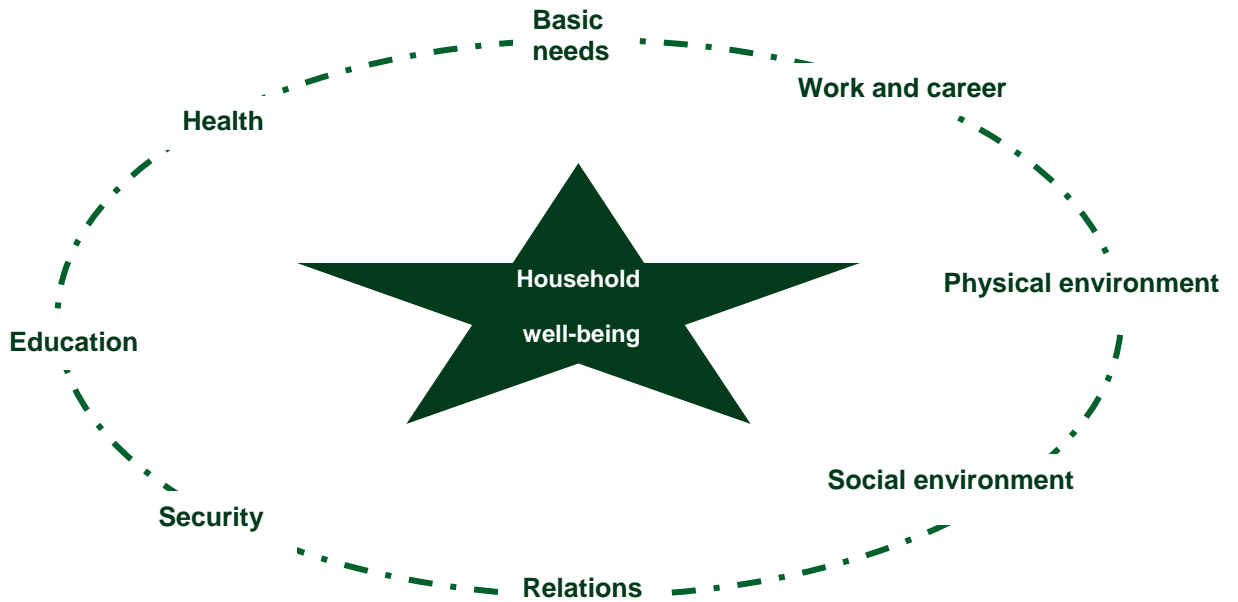


Figure 4. 2: Components of household well-being

Based on the theoretical components of household well-being and findings from empirical studies, the questionnaires of VHLSSs are examined to find out all potential indicators for well-being index. All variables that can be used to measure the well-being level of households of the questionnaires are listed. The selection of a variable depends on its coverage, its relevance to the well-being level of households, and the evidences about the role of the indicators in measuring well-being of households in previous studies. However, the relevant variables that do not

⁵⁹ In reality, components of well-being can be an endless list. In this study, components of well-being are limited at a minimum level. The name of foundation theory 'the Theory of Basic Human Needs' itself implies that the mentioned issues are the minimum requirements. Personal characteristics, culture, institution, freedom, are also components of well-being. These aspects, however, are not considered in the household well-being index due to limitation of available data.

have clear theoretical-grounds about their effects on the overall well-being index are excluded⁶⁰. A list of questions in the VHLSSs that might be used for the construction of a well-being index and further analyses are described in appendix 5, list of useable questions, codes, and names of the variables of the VHLSS⁶¹.

Since there are always some modifications in the questionnaires of the VHLSSs, the latest one, the VHLSS 2008 is chosen as a base. This choice comes from the fact that improvements and modifications of the latest questionnaire are mostly based on the questionnaire of the survey right before it. This choice, therefore, maximizes the possibility that the index can be applied for future evaluation.

The lists of possible variables of other questionnaires are compared with that of the VHLSS 2008. A variable is kept for later analysis if it is present in at least three continuous questionnaires from 2008 to 2004. Some variables are automatically compatible, yet the others require modifications⁶². Detailed description of the selection process of the variables is illustrated in figure 4.3.

⁶⁰ There are several indicators which belonging to this group. They may have relations with the well-being level of households but the signs of the impacts are not clear.

⁶¹ There may present differences in the order and codes of questions between the Vietnamese version and English version of the same questionnaire. In this case, priority is given to the Vietnamese version, as it is coherent with the information in the database.

⁶² It is worth noting that there may present minor discrepancies in the content of questions among questionnaires.

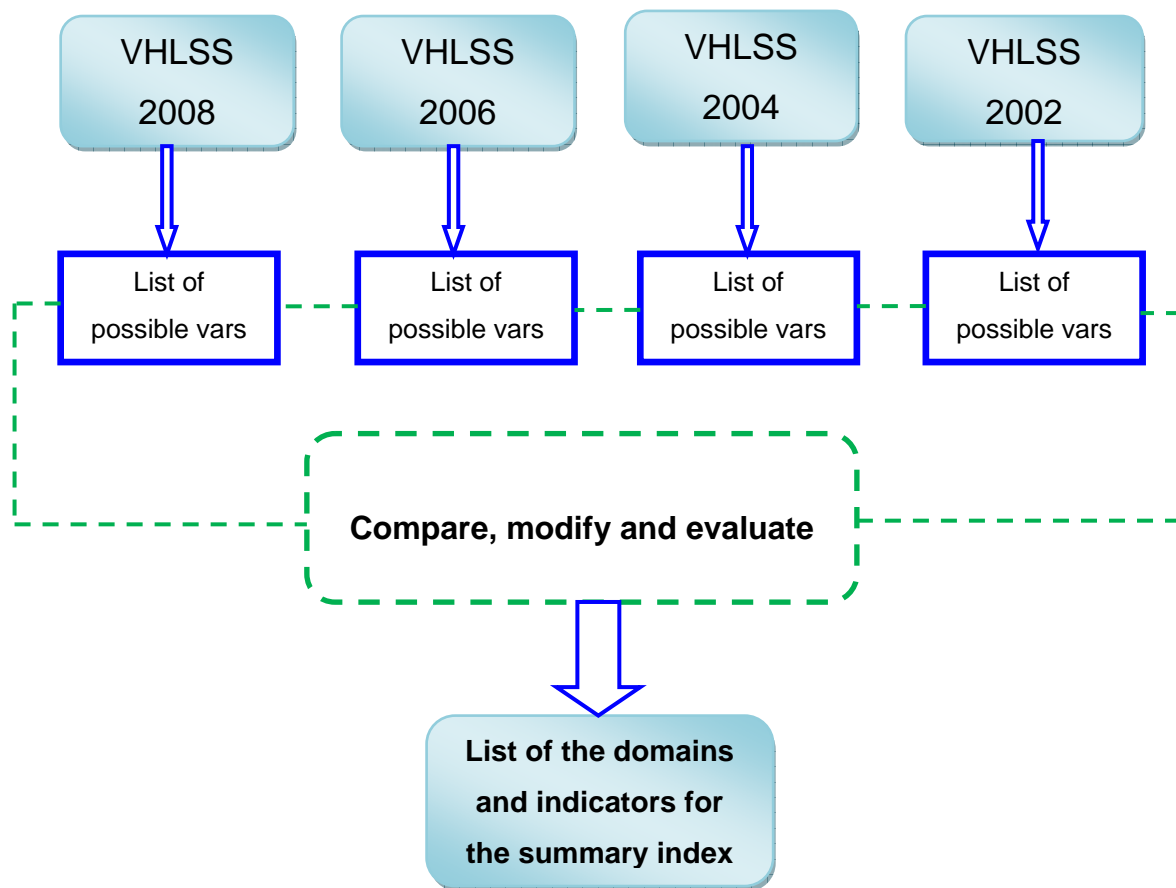


Figure 4. 3: The variables selection process

Selected variables are then grouped into 7 domains of well-being. Next, descriptive characteristics of variables and correlations between variables within each domain are examined. In addition, other relevant aspects like distribution of variables and level of coverage are also considered to determine whether a variable is good enough to be retained in the index. The list of indicators and their definitions are described in table 4.3.

Table 4.3: Indicators of household's well-being index

Indicator	Definition
1. Demographic and social characteristics	
non-single parent	Ratio of non-single parent households (households have father, mother and child/children)
non-single occupant	Ratio of non-single occupant households (households have at least two members)
KT1	Ratio of household members who have a permanent resident permit and live in this dwelling (members who live and register at the same place)
non-poor	Ratio of households which are not classified as poor [*]
life improvement	Ratio of households that states that life of household members currently is better than five years before ^{**}
2. Educational status	
schooling status	Ratio of households that states that there is no member from 6 to 18 years old who did not attend school in the last 12 months
literate	Ratio of households that states that there is no member equal to or older than 13 who does not know how to read and write
bachelor or above	Ratio of households that states that there is at least one member having a bachelor degree or above
3. Health and entertainment	
healthy	Ratio of household members which have not suffered from any illness or injury in the last 12 months
insurance	Ratio of household members who have had health insurance or free health care in the last 12 months
non-hospitalized	Ratio of household members who have not used in-patient treatment in the last 12 months
entertainment	Ratio of daily expenses for books, newspapers, magazines and entertainment over living expenditure of household in the last 12 months ^{***}
non-smoking	Ratio of households that have had no smokers in the last 12 months
4. Work and career	
working status	Ratio of households that states that there is no members who could not find a job in the last 12 months
leader	Ratio of households that states that there is at least one member who is a leader in any field in the last 12 months
professional	Ratio of households that states that there is at least one member who has a high or mid-level professional status in any field in the last 12 months.
working time	Ratio of households in which the average of time worked by working members was not higher than 56 hours per week in the last 12 months
5. Financial status	
excess income	Ratio of excess income over incomes of households (the excess income of the household is income minus living expenditure) ^{***}
health care coverage	Ratio of households not stating that they could not afford to cover health care expenses for all household members in the last 12 months
Unindebted	Ratio of households not having to borrow money or goods or being indebted in

	the last 12 months
6. Consumption and basic services	
non-food expenses	Ratio of non-food expenses over living expenditures of households in the last 12 months (non-food expenses is living expenditure minus expenditures for food and drink)
tap water	Ratio of households having tap water as a main source of drinking and cooking water.
non-rental payment	Ratio of non-rental payment expenses in total living expenditures of households in the last 12 months (the non-rental payment expenses is living expenditure minus house rent expense)
7. Ownership and living accommodations	
assets and appliances	Ratio of assets and durable goods that households have in the total of items listed in the questionnaire****
living space	Average living area of household member is equal to or larger than 25 m ²
Permanent house	Ratio of households which are located in a permanent house.
Safe toilet	Ratio of households having a safe and protected toilet (flush toilet with septic tanks sewage pipes).
house ownership	Ratio of households that own or partly own the dwelling in which they are living.
Internet connection	Ratio of households having an internet connection
<p>* The ratio of poor households in VHLSS 2008 is the ratio of poor household in 2007 as there is not information about the ratio of poor households in 2008 in the questionnaire.</p> <p>** The base years in VHLSSs for this question are different. Therefore, we equalized this indicator by choosing the 5 years before the time of survey as a base. Then, the values of this indicator were adjusted based on the assumption that the percentage of households that states that life of household members has improved after one year is constant in the period mentioned in the questionnaire (period from the real base to the year of survey).</p> <p>*** There are two income groups in the questionnaire, income which is considered as household income and income which is not considered as household income. In the index, household income does not include the second group of income. The case of household expenditure is the same. Expenditure in the study does not include the expenditures which are not considered as expenditure of households</p> <p>**** Number of listed items in the questionnaires may differ slightly and later surveys have a longer list than that of 2002. But there are not many changes in the items listed and the number of items.</p>	

4.4. Technical and methodological considerations in formulating well-being index

4.4.1. The form of well-being index

One of the primary issues that studies encounter while measuring multidimensional poverty or well-being is the choice between a set of indicators and a summary index⁶³ (Demombynes 2010). Controversies about the choices are still ongoing, yet interests about composite indexes have increased considerably (Ferriss 1988; Sharpe 1999; Noll 2004; Hagerty and Land 2004; Frones 2007). The constant development of data sources in social sciences in the last few decades not only encourages the development of composite indexes but also augments the need for synthetic indexes.

Policymakers become more and more dependent on social indicators in making decisions. Social activists and academics also need aggregate indexes for practical purposes. These demands come from the advantages of aggregate indexes. A single number is easy to understand, to observe and to monitor than a set of several individual indicators. Therefore, summary indexes help to alleviate the reporting

⁶³ In this study, the terms summary index, aggregate index, composite index, or synthetic index are used simultaneously.

and the tracking of social changes. They also help to bring up overall issues and to draw public concern to complex matters.

Besides, the indexes reduce the complexity of comparisons among subgroups such as regions, states, age, gender, ethnicity, etc. (Moore 2008). Hence, it is widely accepted that the need for composite indexes will increase sharply in the near future corresponding to the development of studies on social phenomena. There are more and more social phenomena which go beyond traditional economic concepts and economic indicators⁶⁴. Composite indexes, therefore, help to highlight complex social issues and to increase awareness of the public about social conditions. These facts help to explain the rapid development of social indexes. Well-being is a relatively new and complex concept, which covers all aspects of life. It also goes far beyond the scope of traditional economic indicators. Thus, measuring changes in the well-being level of households by an aggregate index may be preferable than using a set of individual indicators.

4.4.2. The household equivalence scale, the price index and mismeasurement

The issues concerning studies about living standards of households, an important component of well-being, are the intra-household allocation of resources, the adjustments for changes of price index, and the misstatement of financial resources.

⁶⁴ Multidimensional poverty, quality of life, happiness and well-being are popular examples for this kind of approach.

The first concern comes from the fact that the household members are living together and there exists an economy of scale. Members of large size families may achieve the same level of well-being at lower cost. Besides, a child often consumes a relatively smaller amount of resources than an adult does (Roelen, Gassmann and Neubourg 2008).

The second concern is related to differences in relative prices among places and years. Living conditions are different between rural and urban areas, city and province, the deltas and the highlands, hence price of goods and services are also different. Besides, the price of goods and services also change by time. It is, therefore, important to take into account regional price indexes and consumer price indexes while comparing income and/or expenditure of households.

The third concern is about the of absolute value of income and/or expenditure of households. There are several factors⁶⁵ that may lead to misstatement about real income and/or expenditure of the households during and after interview process⁶⁶. Therefore, the problem of preciseness may be considerable in developing countries like Vietnam.

⁶⁵ Factors such as culture, administration system, characteristics of interviewers, interview context, etc. may influence reply of the respondents. Generally, Vietnamese consider income as a sensitive subject, especially in the big cities. Besides, income of households in Vietnam is relatively complex and they are not well recorded. So, bias in interviewing process may be high.

⁶⁶ VHLSSs are complex databases. Number of components and questions relevant to income and expenditure of households are large. Hence, it is possible to have mistakes during and after the interview process such as the input of data and data analysis.

To mitigate impacts of the mentioned issues, the author does not apply absolute values but relative ratios of income and expenditure to measure the economic well-being of households. The use of relative ratios helps to reduce possible errors of indicators. It also helps to exonerate the index from complicate and uncertain technical issues while still utilize valuable information about the income and expenditure of households. Therefore, indicators relevant to economic well-being are converted into relative ratios, not direct indicators.

4.4.3. The mean of the index

There are three simple kinds of means: arithmetic, geometric and harmonic. Assume that there are n numbers $a_1, a_2, a_3, \dots, a_n$ (all a_i in geometric and harmonic means are supposed to be positive), means of these numbers are calculated as follows (Polya and Szego 1972: 57):

$$\text{Arithmetic mean: } \frac{a_1 + a_2 + a_3 + \dots + a_n}{n}$$

$$\text{Geometric mean: } \sqrt[n]{a_1 a_2 a_3 \dots a_n}$$

$$\text{Harmonic mean: } \frac{n}{\frac{1}{a_1} + \frac{1}{a_2} + \frac{1}{a_3} + \dots + \frac{1}{a_n}}$$

Recently, the arithmetic mean is the most commonly used method to compute an aggregate index. It is also the most transparent method for index construction (Salzman 2003; Smith et al., 2007). This method, however, has an important limitation. Arithmetic and harmonic means are very sensitive to outliers and skewed data, which are very common for aggregate indexes in social sciences.

According to Fisher (1987), the mean that is applied to compute indexes is important. To have self-consistency, the product of an index that follows a forward method and an index that follows a backward method, of the same data set, must be 1.00⁶⁷. The arithmetic mean and harmonic mean do not satisfy this requirement. The only mean satisfying this requirement is the geometric mean (Smith et al. 2007: 372-374). Moreover, the geometric mean is also more stable and less influenced by extreme values of individual indexes than other kinds of means. Therefore, Fisher “recommends the geometric mean as the best simple indexing method” and “averaging percent changes should always be done via geometric, not arithmetic mean”, especially when the deviations of values are high (Smith et al. 2007: 373).

⁶⁷ Assume that there are two series of data for 5 years as follow: 10, 15, 20, 12, 20 and 50, 90, 80, 100, 60 The arithmetic mean (AM), geometric mean (GM), and harmonic mean (HM) of these series of data by forward and backward methods are as follow:

Mean	Forward (1 st year base)					Backward (5 th year base)				
	1st	2nd	3th	4th	5th	5th	4th	3th	2 nd	1 st
AM	1	1.65	1.8	1.6	1.6	1	1.13	1.17	1.13	0.67
GM	1	1.643	1.79	1.55	1.55	1	1	1.15	1.06	0.65
HM	1	1.636	1.78	1.5	1.5	1	0.88	1.14	1	0.62

Taking the 5th value of the forward index multiplied by the 1st index value of the backward index for the three means we have the value of AM, GM, and HM are 1.07, 1, and 0.94 respectively. The values of GM are always higher than those of HM and smaller than those of AM. The longer the time series are, the higher the errors the values of AM and HM are while the values of GM are always equal to 1.

These qualities of the geometric means are confirmed by practical analysis of Smith et al. (2007). They applied practical data to calculate the National Index of Violence and Harm in the U.S. Based on findings from different techniques, they concluded that “applying the geometric mean directly to the indicator indexes (...) provides each year’s composite index not only more accurately but in a less cumbersome fashion than these methods⁶⁸” (Smith et al. 2007: 375).

From the year 2010, the Human Development Index has replaced arithmetic mean method by geometric mean method. The reason of this change comes from the fact that this method can better capture the performance of individual dimensions of the aggregate index. In specific, the geometric mean respects the differences across dimensions. It also reduces the level of substitutability between the dimensions (UNDP 2010). Therefore, the choice for the aggregation of the well-being index of households of this study is the geometric operation.

4.4.4. The weights and issues relevant to the construction of the well-being index

The study aims at measuring changes in the well-being level of households, not the absolute value of well-being of households for specific years. Therefore, our focus is to explore changes of household well-being level by time, not the well-being

⁶⁸ These methods, here, can be understood as aggregating methods like symmetric percent change, arithmetic average change, and harmonic average change etc.

level of household at a specific point of time. To make the comparisons, the year 2002 is chosen as the base year. The values of this year act as baselines for comparisons and are indexed at 100%. The differences between the current values and the base values are level of changes in well-being level of households.

The values of individual indexes (indexes of indicators) of other years are then adjusted relative to this base. However, there are several indicators which exist in all surveys except the 2002 survey⁶⁹. In this case, the values of the corresponding indicators of the year 2004 are chosen as base values to substitute for the values that were absent in the year 2002.

Since there is no persuasive evidence for an appropriate weighting scheme for the well-being index, equal weight will be applied. This technique is more favourable than other weighting schemes as it makes the choice of weight less subjective and minimizes the disagreements among individual indicators or domains (Hagerty and Land 2003; Salzman 2003, Smith et al. 2007; Decancq and Lugo 2008; Alkire 2010). The equal weight, in this case does not imply that there is no weight. It, indeed, is a weighting scheme without any partiality to components of the aggregate index. In the study, there are two aggregating steps. Firstly, indicators are grouped into domains. Secondly, the domains are assembled into an overall well-being index.

⁶⁹ This happens as there are major changes in the content of the VHLSS 2004, 2006 and 2008 questionnaires in comparison with that of the VHLSS 2002.

Therefore, the equal weight is only correct for domains and indicators within the domains. All domains have equal weight, one seventh of the summary well-being index of households. Yet, this fact is not applicable for indicators among domains. The weights of domains are equal but the numbers of indicators within the domains are different. Thus, indicators have to share relative weights. These weights depend on the number of indicators belonging to the domains and the weights of the domains. Indicators within each domain have equal weight, which are equal to $1/7$ divided by the number of indicators of the domain. A detailed description of the relative weight of components of the index is illustrated in figure 4.4, on the structure and weights of the well-being index.

Well-being Index	Demographic and social characteristics (1/7)	non-single parent (1/35)
		non-single occupant (1/35)
		registration (1/35)
		non-poor (1/35)
		Life improvement (1/35)
	Education (1/7)	schooling status (1/21)
		literate (1/21)
		bachelor or above (1/21)
	Health and entertainment (1/7)	healthy (1/35)
		insurance (1/35)
		non-hospitalized (1/35)
		entertainment (1/35)
	Work and career (1/7)	non-smoking (1/35)
		Working status (1/28)
		leader (1/28)
		professional (1/28)
	Financial status (1/7)	working time (1/28)
		excess income (1/21)
		health care coverage (1/21)
	Consumption and basic services (1/7)	unindebted (1/21)
		non-food expenses (1/21)
		tap water (1/21)
	Ownership and living accommodation (1/7)	non-rental payment (1/21)
		assets and appliances (1/42)
		living space (1/42)
		housing (1/42)
		toilet (1/42)
		house ownership (1/42)
		Internet (1/42)

Figure 4. 4: Structure and weights of the well-being index

The aggregate well-being index is established base on a three-step process. Firstly, individual indicators are indexed as a ratio of the base value. The base values of all indicators and domains are 100%. Secondly, the values of domains are computed by geometric mean of the indicators within them. The value of education domain for a specific year, for example, is the geometric mean of the three indicators: schooling status, literate and bachelor or above in that year. Finally, values of the aggregate well-being index are computed by geometric mean of the seven domains.

An important concern in the forming of an index is its significance. In this case, our concern is whether changes in the well-being level of households by time are real or if they just happen by chance. The Spearman test is applied to test this hypothesis as it is less sensitive to extreme values than the Pearson test (StataCorp 2009: 1769). The H_0 hypothesis is that the mean of indicators is unchanged by time. If this null hypothesis is rejected or the test is significant, we can conclude that there are real changes in the index values by time. Changes of means of indicators are not caused by sampling chance. This conclusion is reliable at 1%, 5% or 10%, depending on the level of significance of the test (Garson 2009).

4.5. Evaluation of well-being index

Hagerty et al. (2002) have developed fourteen-criteria to determine the validity and usefulness of quality indexes to public policy which are as follows:

- i. The index must have a clear practical purpose.
- ii. The index should help public policy-makers to develop and assess programs at all levels of aggregation.
- iii. The index should be based on time-series to allow periodic monitoring and control.
- iv. The components of the index should be reliable, valid and sensitive.
- v. The index should be grounded in well-established theory.
- vi. The index should be reported as a single number, but should be able to be broken down into components
- vii. The domains in aggregate must encompass the totality of life experience.
- viii. Each domain must encompass a substantial but discrete portion of the quality of life construct.
- ix. Each domain must have the potential to be measured in both objective and subjective dimensions.
- x. Each domain within a generic quality of life instrument must be relevant for most people.
- xi. The domain that is proposed for the non-generic instrument must contribute a unique variance to the quality of life construct beyond the generic domains for the target group.
- xii. The domains must be potentially neutral, positive or negative in contribution to the quality of life construction.
- xiii. The domains differ from the dimensions of personality, cognitive processes, and affect in that they cannot be measured objectively.

- xiv. The subjective dimension of each domain has both a cognitive and an affective component. They are measured by questions concerning “satisfaction”.

Applying the mentioned criteria into the actual well-being index of households, it turns out that the index satisfies quite well the standards for policy usefulness and validity. It has a clear practical purpose (i), which is to measure changes in well-being level of households; (ii) It is also useful for policy makers in developing and assessing programs at different levels of aggregation. It can be applied for households but also possibly for more aggregate levels; The index aims at measuring changes of households well-being by time, it therefore automatically satisfies the third criterion, being based on time series to allow monitoring and control (iii). Criterion (v) is also satisfied as variables selection and classification process is based on theoretical and practical findings in the field. Besides, it can be reported as a single number, the overall level of well-being of households as well as broken down into domains or indicators (vi).

As stated before, indicators and domains are chosen based on theoretical foundations, findings from practical studies and actual conditions in Vietnam, and are therefore relevant for most people (x). The domains cover important aspects of quality of life the households (viii). The indicators and domains also differ from the dimensions of personality (xiii). The chosen domains and selected indicators are potentially neutral, positive or negative in contribution to the index construction

(xii). Inter-correlations among domains in our study are quite low, mostly smaller than 0.5. Therefore, the possibility for redundancy is low. The index also satisfies criterion (xi).

The index, however, cannot fully satisfy criteria (iv) and (vii). It covers several important aspects of life but fails to encompass the totality of life experience, especially subjective aspects⁷⁰ (vii). Besides, the index is a data driven study. The choice of indicators and domains of the index are, therefore, limited by available data. The time series for analysis is short, only 6 years, and the data of the base year, the year 2002, are not complete. Thus, it is hard to prove the sensitivity and reliability of the index (iv) though the test prove that there are real changes in the values of the aggregate index, of several indicators and domains during the study period. The index is unqualified for criteria (ix) and (xiv); each domain must be able to be measured in both objective and subjective dimensions and the subjective dimension of each domain is cognitive, affective, and is measured by questions concerning 'satisfaction'. Lack of subjective information of well-being domains is also the principal limitation of our well-being index. This is also a common limitation of most data driven studies about quality of life, well-being and multidimensional poverty⁷¹. Overall, the self-evaluation about households' well-being index proves that the indexes satisfy quite well the requirements to be a sound and a meaningful index for public policy.

⁷⁰ There are very few indexes that fully satisfy this criterion. Among the 22 chosen indexes in the study of Hagerty et al., only the American Demographics index is graded excellent for criterion (vii). Other eight indexes are graded satisfactory while the other 13 indexes are not satisfactory (Hagerty et al. 2001)

⁷¹ Detailed information about criteria and index evaluation can be consulted in Hagerty et al. 2001.

4.6. Chapter remarks

The well-being index is constructed based on principle components of human needs that are recommended by the Theory of Human Needs. The concept well-being, herein, is considered at a very basic level. Besides, being a data driven study, the aggregate index is established based on seven domains only, which are demographic and social characteristics, educational status, health and entertainment, work and career, financial status, consumption and basic services, and ownership and living accommodations. Several other important aspects of human well-being, especially subjective aspects of human life, such as living environment, culture, political institution, social participation, etc. are not considered. This is the principle limitation of the constructed index since subjective aspects and social context are very important to human well-being.

In addition, due to the mentioned limitations of the database, findings from the index need to be interpreted with care. They cannot represent real well-being level of households in the cities but are informational references about some aspects of the households' life. Moreover, the findings may be more relevant to city dwellers, who have a permanent resident permit in the cities, rather than that of migrants.

*Do not put your faith in what statistics say
until you have carefully considered what they do not say.*

William W. Watt

Chapter 5:
Changes in well-being level of households
in Hanoi and Ho Chi Minh City

In this chapter, data of VHLSS 2002, 2004, 2006, and 2008 of Hanoi and HCMC are applied to measure changes in the level of well-being of households. The chapter focuses on both the changes within each city and differences in well-being level between the cities. It consists of four sections. Section one compares well-being status of households in the two cities. Section two studies the changes of the individual well-being indexes and differences in well-being level of the households in the cities. Changes of domain-specific indexes and summary indexes are

examined in section three. Section four concludes with the main findings of the chapter.

5.1. Descriptive characteristics of well-being indicators of households in the cities

In later parts we only focus on relative changes in well-being level of households, not changes in absolute values of the indicators, therefore, a close look at the value of indicators may be useful for a comprehensive coverage of the study. It is necessary to mention that out of issues relevant to the representativeness of the data⁷², sudden changes may be present in the values of surveys, especially between the surveys in 2002 and 2004. Some possible explanations for these disparities are changes in sampling method among surveys, the mismatch of data within and among files, and the presence of missing values and outliers. Besides, the surveyed households are chosen based on enumeration units. Cluster effect, therefore, may be considerable. Whereas, the time series is relatively short, only six years and the number of observations of the surveys are small, 240 households in Hanoi and 300 households in HCMC in the years 2004, 2006, and 2008. Therefore, values of some indicators, especially those which are not popular for the surveyed households, may vary substantially among surveys.

These are limitations for the preciseness of findings in the chapter. All findings relevant to well-being level of households in the study, therefore, must be

⁷² These issues are described in chapter 4.

interpreted within this context. Table 5.1 summarizes value of indicators by years.

A detailed description of well-being indicators of Hanoi and HCMC are presented in appendix 7 and appendix 8 (from table 7a to 7d and from table 8a to 8d).

Table 5.1: Original values of well-being indicators of households

					Unit: %	
	HCMC					
	2002	2004	2006	2008		
eristics						
	77.3	75.4	74.7	74.9		85.8
	94.5	95.1	93.7	96.6		97.6
	Na	85.4	88.0	88.3		Na
	90.3	93.5	92.3	91.2		96.1
	Na	68.5	71.4	53.4		Na
	90.7	90.0	92.3	94.2		92.7
	87.4	90.0	87.6	87.6		92.6
	18.2	20.4	18.6	23.4		28.2
	Na	29.2	57.4	53.2		na
	Na	34.9	49.4	55.8		na
	Na	78.5	93.1	86.6		na
	0.4	0.8	0.7	0.7		0.2
	29.5	51.5	41.6	30.9		11.7
	97.3	92.3	94.3	98.4		98.7
	3.0	2.3	3.0	5.1		3.9
	18.0	20.2	26.3	26.0		27.3
	81.4	73.9	76.0	78.2		89.7
	16.9	28.9	27.2	22.1		13.8
	Na	84.8	88.1	92.2		na
	Na	74.0	75.2	77.4		na
	53.2	48.8	51.6	50.3		53.4

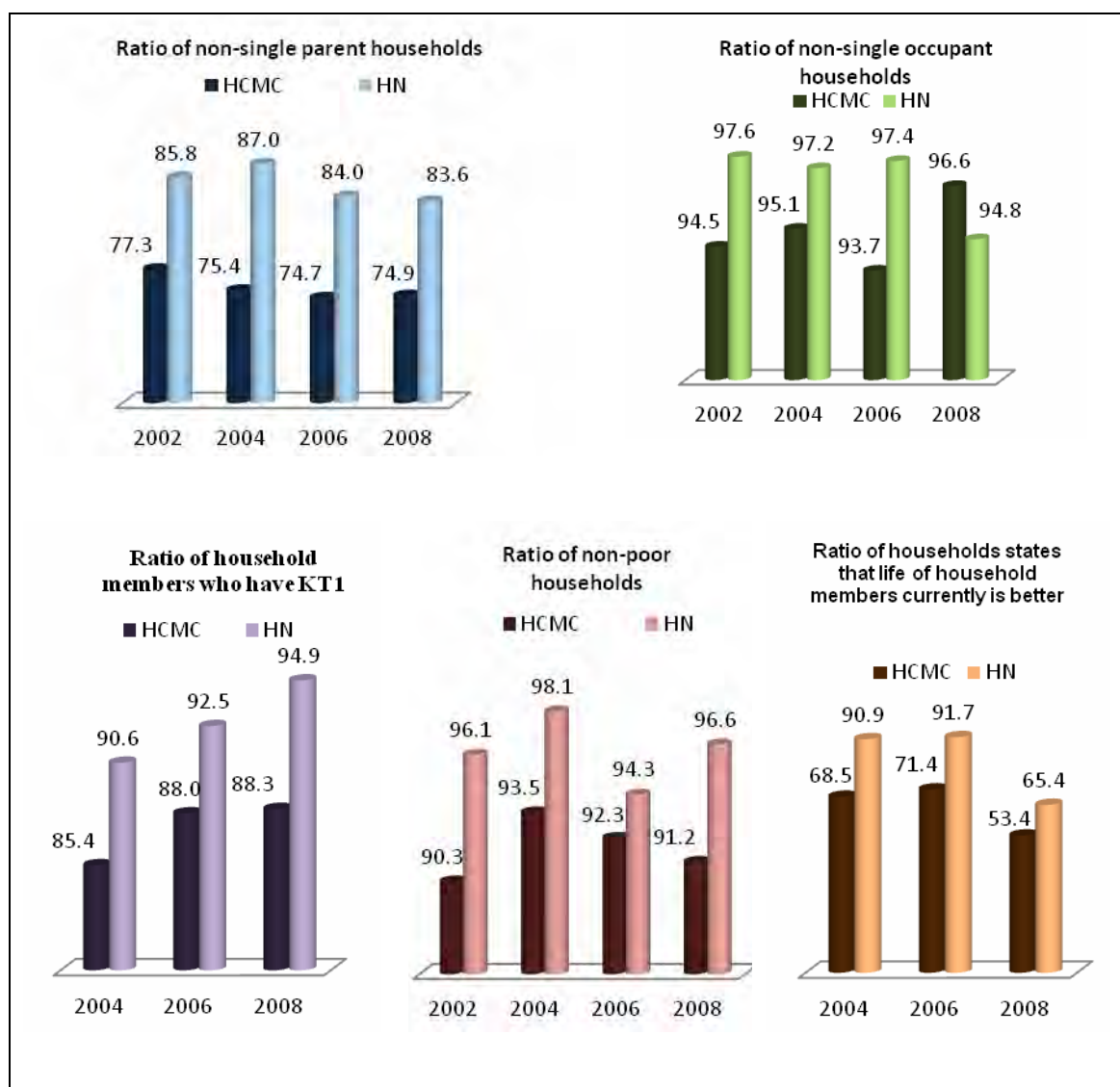
	52.9	56.6	65.0	63.5	57.6
	99.7	99.3	99.5	99.0	99.9
lations					
	18.9	19.8	20.5	21.9	21.9
	22.3	25.0	30.6	28.3	16.0
	24.5	34.0	42.4	53.9	63.5
	84.1	88.1	97.9	97.3	70.4
	87.9	87.5	93.4	90.7	92.9
	4.1	10.8	12.6	26.7	4.1

indicator in the year 2008 have been modified as time duration in the questionnaire is longer than that of other questionnaires. The modification

Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

5.1.1. Demographic and social characteristics of households in the cities

There is considerable difference in demographic characteristics of households in Hanoi and HCMC. In general, the demographic and social characteristics of households in Hanoi are better than that of households in HCMC. All values of the indicators in this domain of households in Hanoi are higher than the corresponding values of households in HCMC.



Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008.

Graph 5.1: Demographic characteristics of households

In both cities, ratio of non-single parent households tends to reduce by time. In 2002, 77.3% of households in Ho Chi Minh are non-single parent households. The ratio, however, reduces to 74.9% in 2008. Within six years, the ratio of single parent households in the city has increased 2.5%, from 22.6% to 25.1%.

The ratios of non-single parent households in Hanoi in the 2002-2008 period are higher than the corresponding ratios of HCMC. The reducing trend of non-single parent households in Hanoi is also slower than that of households in HCMC. In six years, from 2002 to 2008, the ratio of single parent households in Hanoi increase only 2.2%, from 14.2% in 2002 to 16.4% in 2008.

The ratio of non-single occupant households in Hanoi has fluctuated slightly around 97% in the 2002-2006 period. However, it reduces suddenly to 94.8% in 2008. In HCMC, the trend is different. The ratio of non-single occupant households has increased from 94.5% to 95.1% in the 2002-2004 period. It then reduces to 93.7% in 2006 and later, increases up to 96.6%, even higher than the corresponding ratio of Hanoi.

The strangest finding of this domain is that the ratios of household members living in and registering at the same dwelling (KT1)⁷³ in the cities have increased by time. This finding is contrary to the actual conditions of the cities since the mobility of the people in the cities is increasing. The ratio of people with KT1, therefore, may decline (Gubry and Le Ho Phong Linh, 2009, *Cuc thong ke Thanh pho Ho Chi Minh* 2009). In the 2004-2008 period, the ratios of household members who have KT1 in Hanoi have increased from 90.6% to 94.9%. The corresponding ratios of

⁷³ In Vietnam, there are four kind of registration, namely KT1, KT2, KT3, and KT4. Persons who have permanent resident permits at the same ward with the living place belong to KT1 group. Since infrastructure systems of cities in Vietnam are overloaded, the people who have KT1 often have priority to access basic public services. Other groups of residents often face barriers, both official and unofficial, to access basic services as education, electricity, water, etc.

HCMC also increase from 85.4% to 88.3% in the same period. This proved that sampling bias of the VHLSSs may be considerable.

The ratio of non-poor households in Hanoi increases from 96.1% in 2002 to 98.1% in 2004 while the corresponding ratios of HCMC are 90.3% and 93.5%. This abrupt change can be explained partly by changes in sampling method. Besides, the official poverty lines of Vietnam were placed at a very low level. This allows rapid reduction in poverty rate⁷⁴ but the reduction in poverty rates is sensitive to changes in poverty lines. In 2006, national poverty lines were adjusted⁷⁵ and the ratios of non-poor households in the cities were reduced sharply to 94.3% in Hanoi and 92.3% in HCMC.

In 2008, the ratio of non-poor household increases again in Hanoi but the corresponding ratio of HCMC continues to decrease to 91.2%. Overall, ratios of non-poor households in Hanoi are always higher than corresponding ratios of HCMC. However, these disparities partly come from differences in poverty lines of the cities. Poverty lines in HCMC have changed several times during the last two decades and are currently about twice that of the current lines of Hanoi.

⁷⁴ The national poverty line of Vietnam before 01/01/2006 is 960,000 VND/year/head for mountainous and island regions, 1,200,000 VND for rural areas and 1,800,000 VND for urban areas. These bases are much lower than the international base of World Bank 1 US dollar/day (the lowest base), which is about 5,660,000 VND (nominal exchange rate is 1 USD = 15,500 VND in 2005).

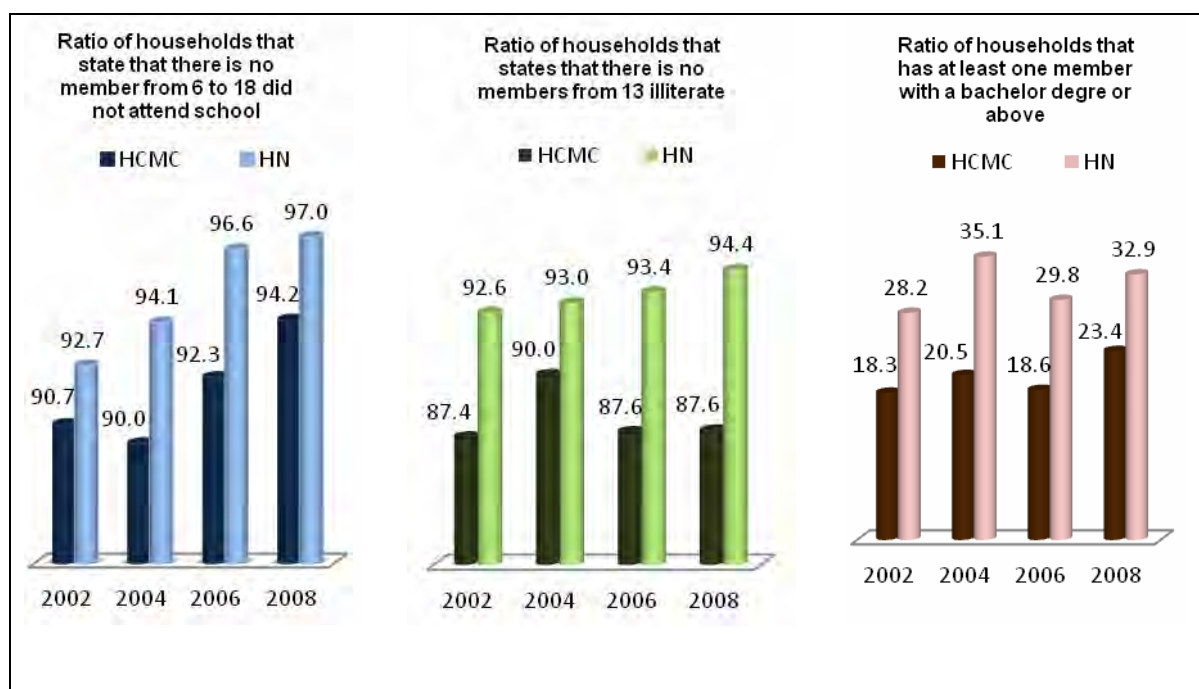
⁷⁵ From 01/01/2006, national poverty lines were adjusted to 2,400,000 VND/year/person for rural areas and 3,120,000 for urban areas.

The question “Compared with [year], has your household members’ life improved?” does not exist in the 2002 questionnaire. Hence, there is no information about ratio of households that states that life of household members recently is better than 5 years before in the VHLSS 2002. Besides, in the 2008 questionnaire, the duration for the question is 7 years, not 5 years as it is found in the other questionnaires. The ratio of this indicator in 2008, therefore, is modified to be comparable with others.

For the whole duration, the ratio of households which state that the life of household members has improved in Hanoi is higher than that of HCMC. The corresponding ratios of households that stated that the life of members has been improved in 2004, 2006, and 2008 are 90.9%, 91.7%, and 65.4% in Hanoi and 68.5%, 71.4%, and 53.4% in HCMC, respectively. There is a sharp reduction in the ratio of households stating that life of household members has improved in 2008.

5.1.2. Educational status of households in the cities

The graph 5.2 shows that the educational status of households in Hanoi is much better than that of HCMC. The values of the three indicators those who represent the educational status of households in Hanoi are higher than that of HCMC. The rising trends of the indicators of households in Hanoi are also clearer.



Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008.

Graph 5.2: Educational characteristics of households

The ratios of households that have no member who is from 6 to 18 years old and did not attended school in the last 12 months in Hanoi and HCMC were increasing gradually in the 2002-2008 period. They increased from 90.7 to 94.2% in HCMC and from 92.7 to 97% in Hanoi during the period. Thus, the ratio in HCMC rose by 3.5% over the time frame and that of Hanoi by 4.3%.

The percentage of households which stated that they have no member who is 13 or older and is illiterate has augmented from 92.6% in 2002 to 94.4% in 2008 in Hanoi. The ratio of HCMC has increased very little, rising from 87.4% to 87.6%. During this period the ratio of households in Hanoi has increased by 1.8 percentage points, nine times the rise of HCMC, which is only 0.2 percentage points.

Within six years, the ratio of households that have at least one member who has a Bachelor's Degree or above in Hanoi has increased from 28.2% in 2002 to 32.9% in 2008. The corresponding ratios in HCMC are 18.3% and 23.4%. It is strange that the ratios of households of those who have at least one member with a Bachelor's Degree or above in both cities has been reduced considerably in 2006 before increasing again in 2008. Actually, there is no possible explanation for such a change. It is hypothesized that this strange tendency may be caused by the small sample size of the data, sampling bias, and/or possible errors that may have happened during and after the surveys.

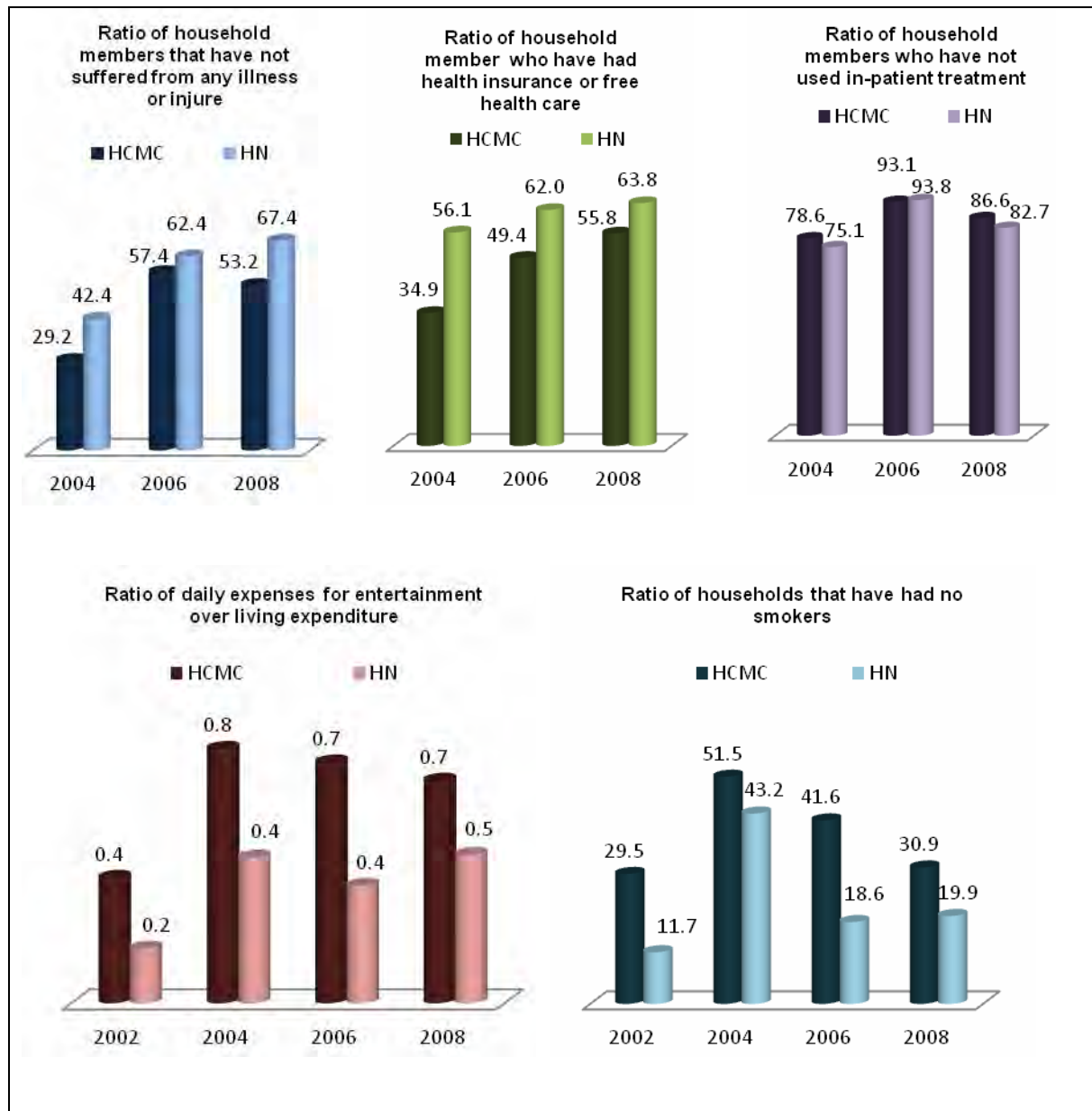
5.1.3. Health and entertainment characteristics of households in the cities

The values of indicators that represent health and entertainment levels of households in these cities are diverse. On average, the ratios of household members who have not suffered from any illness or injured in the last 12 months in the cities have augmented in the 2004-2008 period. Within four years, the ratio of household members who have not suffered from any illness or injure in Hanoi has increased by 25 percentage points, from 42.4% in 2004 to 67.4% in 2008. The respective ratios in HCMC are 29.2% and 53.2%. Although, the ratios of these cities have increased considerably during the period, the distance between the cities has also widened.

The ratios of household members that have a health insurance or free health care in these cities in the 2004-2008 period have improved substantially. In 2004, 51.6%

household members in Hanoi and 34.9% in HCMC had a health insurance or free health care. Four years later, the ratios increased to 63.8% in Hanoi and 55.8% in HCMC. The gaps between these cities, however, were reduced gradually.

Apart from the first two indicators of the domain, those that have an increasing tendency, the trend of the non-hospitalized indicator is not so consistent. The ratios of household members who have not used in-patient services in the last 12 months in these cities increased substantially in 2006 but then decreased in 2008. Though the values of this indicator in 2008 are still higher than that of the base years in 2004, they are lower than the peak values of the cities in 2006. The differences between the peak value and that of the year 2008 in Hanoi and HCMC are 6.5% and 11.1% respectively.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.3: Health and entertainment characteristics of households

In the 2002-2008 period, the ratios of daily expenses for entertainment (expenditure on newspapers, magazines, books, and other entertainment activities like cinema, music, video, sports, etc.) in total living expenditure of households in HCMC are higher than that of Hanoi. However, after reaching its peak in 2004, the ratio in

HCMC started to decline afterwards. On the contrary, the ratio in Hanoi achieved the highest value in 2008.

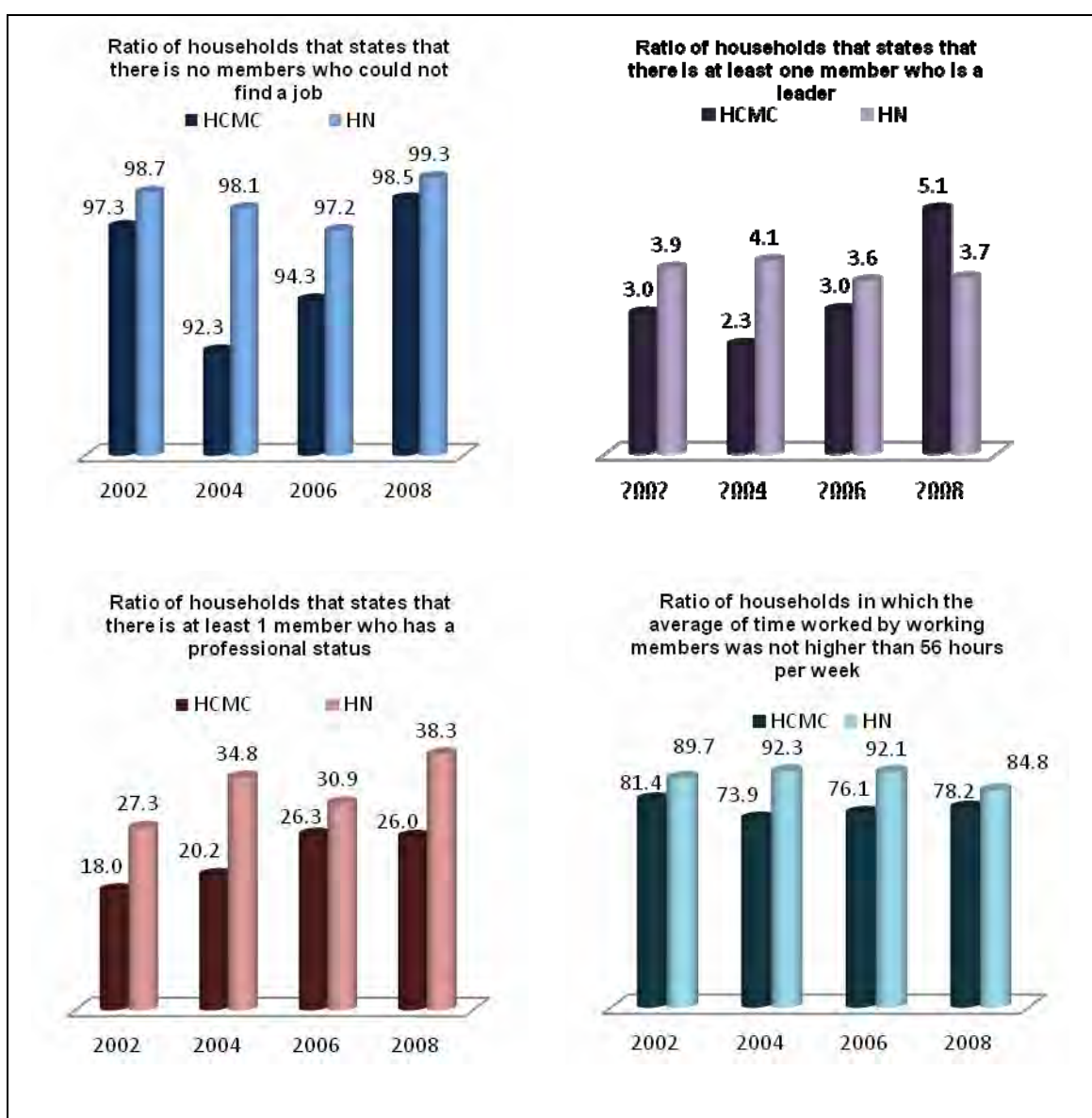
Overall, the households in HCMC have a higher ratio of expense for entertainment than that of Hanoi but the disparities are reducing. During the 2002-2008 period, the ratios in HCMC have increased from 0.4% to 0.7% while those of Hanoi are 0.2% and 0.5%. On average, the households in these cities spend less than 1% of their living expenditure for daily entertainment purposes. This ratio is too low. It is also a sign which proves that the real living standards of households in these cities are not high.

The ratios of households that have no smoker in Hanoi and HCMC are low. In 2002, 29.5% of households in HCMC and 11.7% in Hanoi had no smokers. Six years later, in 2008, the ratios in HCMC and Hanoi increased up to 30.9% and 19.9% respectively. Though, the ratio of HCMC is higher than that of Hanoi, the improvement trend of HCMC is slower. In the 2002-2008 period, the ratio of HCMC has only increased by 1.4 percentage points while that of Hanoi has increased by 8.2 percentage points.

5.1.4. Work and career characteristics of households in the cities

Generally, the households in Hanoi have better work and career status than that of HCMC. All the four indicators that are working status, leader, professional, and average working time of the households in Hanoi are better than that of HCMC.

The ratio of households which stated that they have no member who could not find a job during the last 12 months in Hanoi in 2002-2008 period have increased slightly from 98.7% to 99.3%. The ratios of HCMC have also increased from 97.3% to 98.5% during the period. However, the improvement trends of this indicator in the cities are not clear.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.4: Work and career characteristics of households

Similar to the “working status indicator,” the leader indicator do not have a consistent trend. The ratios of households that stated that there is at least one member who is a leader in Hanoi has decreased from 3.9% in 2002 to 3.7% in 2008 while the corresponding ratios of HCMC have increased from 3% to 5.1%. Though the ratio of households of those who have at least one member who is a leader in HCMC in 2008 is higher than that of Hanoi, the possibility that a household in Hanoi has at least one member who is a leader during the whole period is much higher.

In 2002, 18% of households in HCMC have at least one member who has a professional status while the ratio of Hanoi is 27.3%. Six years later, in 2008, the ratios in HCMC and Hanoi increased up to 26% and 38.3% respectively. The ratios of households that have at least one member who has a professional status in these cities have increased substantially during the period. The gaps between the cities also have also increased.

The average time worked by working members of households in these cities tends to increase in time. The ratios of households that have the average time worked by working members which is not higher than 56 hours per week of both cities have reduced during the 2002-2008 period. In Hanoi, after a brief increase in 2004, the ratio started to reduce gradually. In 2004, 92.3% of households in Hanoi have an average time worked by working members equal or less than 56 hours per week.

This ratio, however, reduced to 84.8% in 2008. Within 4 years, the ratio of Hanoi has reduced by 7.5 percentage points.

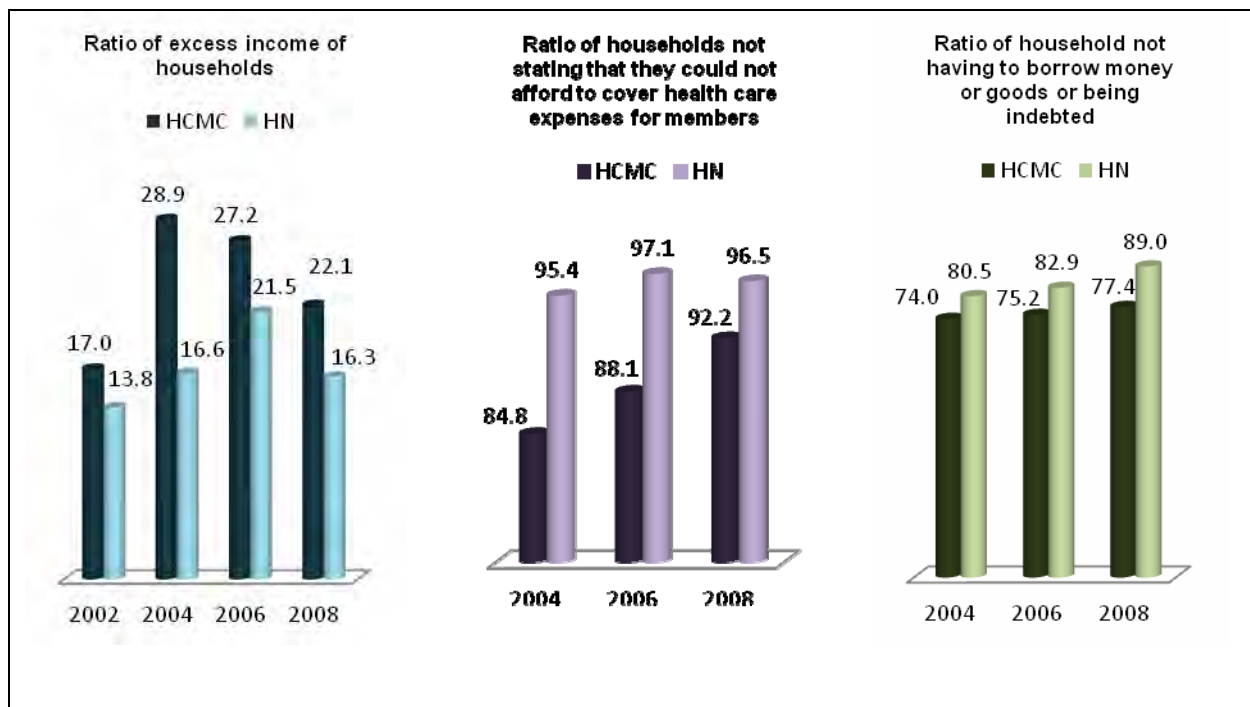
On average, the households in HCMC tend to have a longer time worked by working members than that of Hanoi. In 2002, 81.4% of households in HCMC have an average time worked by working members equal to or less than 56 hours per week. The ratio reduced considerably to 73.9% in 2004 and then increase up to 78.2% in 2008. Although, the improvement of the ratio is low, the trend showed a sign of improvement on the average working time of working people in HCMC.

Vietnam has implemented the decree 188/1999/QĐ-TTg about working time since October 02nd 1999. According to this decree, labourers work 40 hours per week instead of 48 hours per week as before. However, the ratios of households that have an average working time of working members higher than 56 hours per week are high. This fact is not good for well-being of households because the working members have so little time for their family and themselves.

5.1.5. Financial status of households in the cities

Commonly, the ratios of excess income of the households in these cities are low. The highest ratio of excess income of households during the 2002-2006 period in HCMC and Hanoi are 28.9% and 21.5%, respectively. At first, the ratios of these

cities increased gradually but after they reached the peak values, they reduced substantially.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.5: Financial status of households

It is interesting that the households in HCMC have a higher ratio of excess income, yet in Hanoi they have a higher ratio of households that can cover health care expenses and have no debt. In 2004, 95.4% of interviewed households in Hanoi did not state that they could not afford to cover health care expenses of household members while the ratio of HCMC is only 84.8%. Four years later, the ratios of the cities have increased up to 96.5% in Hanoi and 92.2% in HCMC.

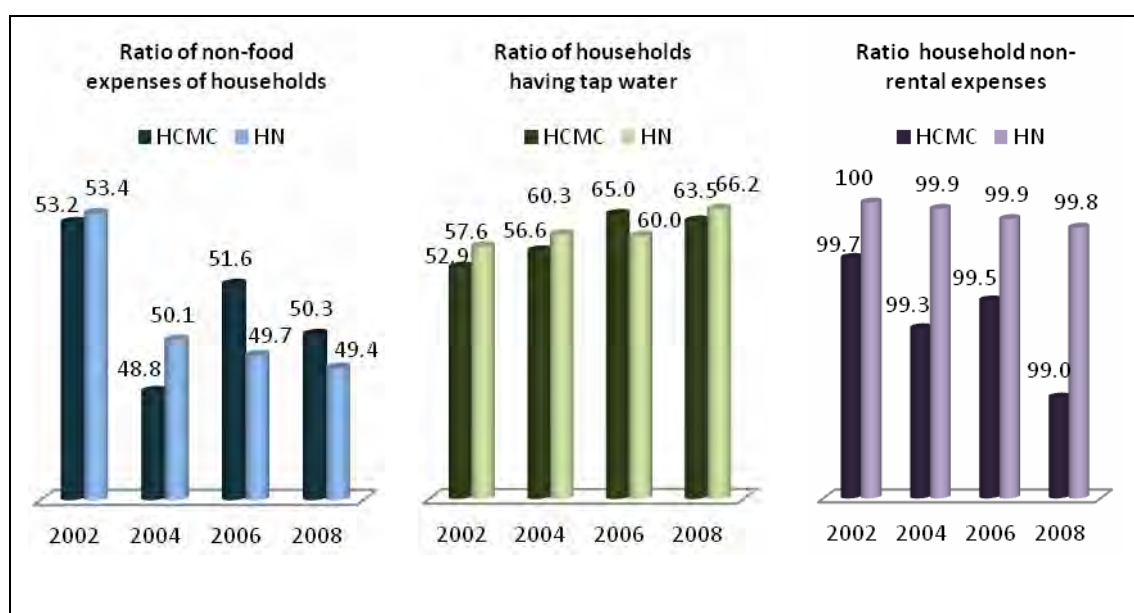
Similarly, the ratio of households that do not have to borrow money or goods in the last 12 months in Hanoi has increased from 80.5% in 2004 to 89% in 2008. The corresponding ratios of households in HCMC are much lower, 74.0% and 77.4%. Both the value and the improvement trend of Hanoi are higher than that of HCMC.

5.1.6. Consumption and basic services of households in the cities

The ratio of non-food expenses of households in Hanoi has reduced gradually from 53.4% in 2002 to 49.4% in 2008. The ratio of HCMC, however, has a very strange tendency. It first reduced sharply from 53.2% in 2002 to 48.8% in 2004. Then, it increased up to 51.6% in 2006 and decreased again to 50.3% in 2008. Normally, the share of non-food expenditures in total living expenditures of households increases hand in hand with the development of the economy. However, the data of the cities proved that the food expenses still keep a considerable share in total living expenditures of households. On average, about 50% of households living expenditures were used for foods. Moreover, the share of food expenses in living expenditures of households in the cities tends to increase by time. In the 2002-2008 period, the ratio of non-foods expenses of households in Hanoi has reduced from 52.3% to 49.4%. The respective ratios of HCMC are 53.4% and 49.4%.

High inflation in recent years is an important cause of the strange tendency of the share of non-food expenses of households over the period. In 2000, the consumer price index of Vietnam is -1.6%, then, it increased to 4% in 2002. It continued to

increase to 7.8% in 2004, to 7.3% in 2006 and then it soared to 25% in 2008 (ADB, 2009). The inflation helps to explain the fluctuations of households' non-food expenses. They also pointed out that the living standards of households in these cities are not high and the expenses of the households are sensitive to external factors.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.6: Consumption and basic services of households

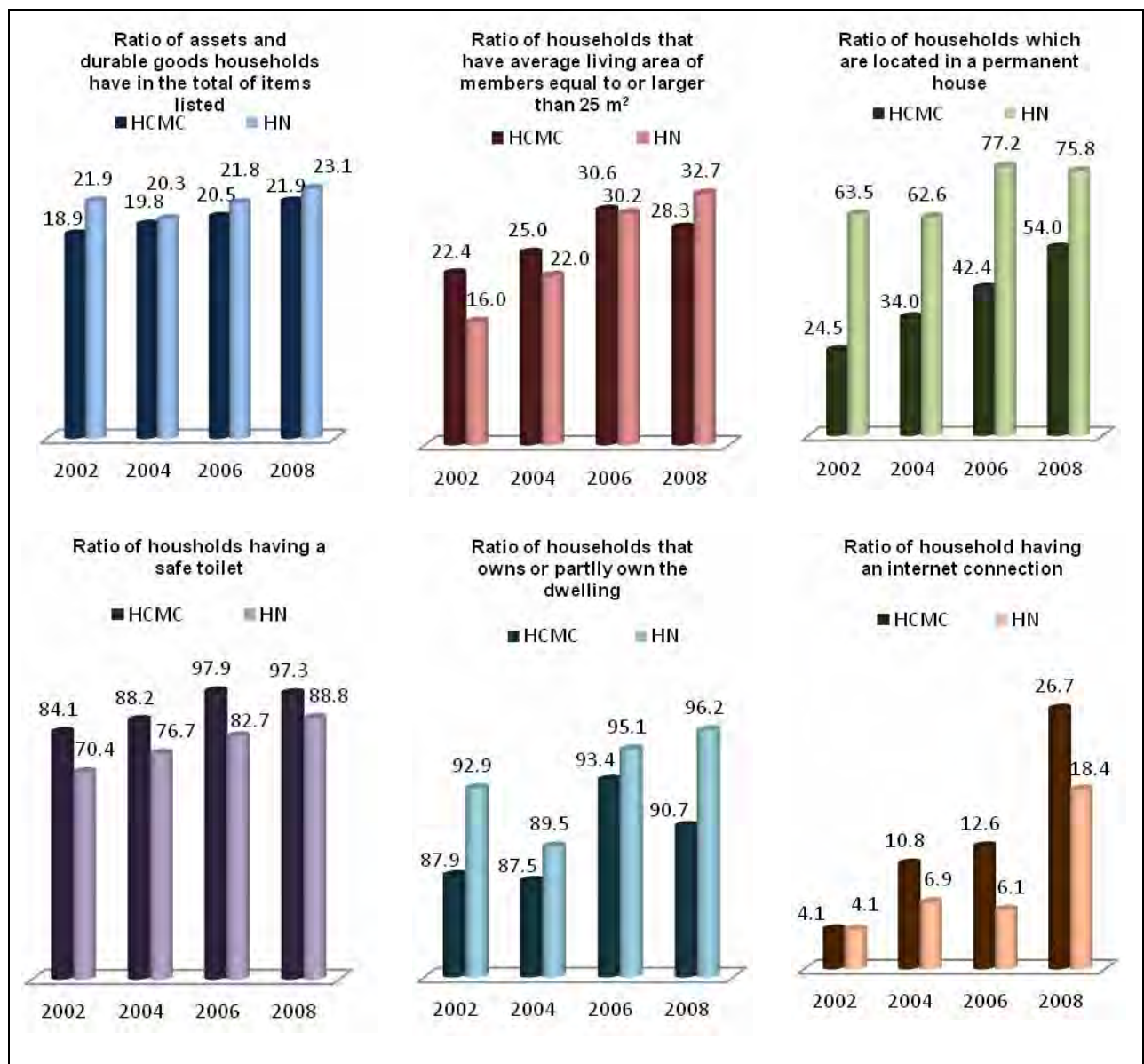
The ratios of households that have tap water as a main source of drinking and cooking water in the cities are relatively low. It is an evidence to prove that the actual living standards of households in the cities are not high. Hanoi and HCMC are the two most important cities of Vietnam, they are also the cities that have the highest level of income per capita of the nation, yet, in 2008, there are only 63.5% of households in HCMC and 66.2% in Hanoi that have tap water as a main source of drinking and cooking water. Besides, the ratios of households that have tap water

as a main source of cooking and drinking water in the cities have increased quite slowly. Within 6 years, from 2002 to 2008, the ratios have increased only 8.6 percentage points in Hanoi and 10.6 percentage points in HCMC.

It is interesting that the ratios of non-rental payment in total living expenditures of households in these cities are very high. The main reason is that the ratio of households which own or partly own the dwelling in the sample of the surveys are high. Therefore, there are very few households in these cities which had to rent a dwelling. In addition, the non-rental payment in this study is the average number of the whole city, not the average number of households that have to rent a dwelling. Generally, the share of rental payment in total expenditure of households in both cities has increased gradually over the 2002-2008 period.

5.1.7. Ownership and living accommodations of households in the cities

There is no considerable change in the ratio of assets and appliances that the households in the cities have in the total number of items listed in the questionnaires. On average, a household in these cities has about 12-15 items in the list of 61-62 items. Within 6 years from 2002 to 2008, the ratios of the items that households have over the listed items have increased slightly from 18.9% to 21.9% in HCMC and from 22% to 23.1% in Hanoi.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.7: Ownership and living accommodations of households

It is interesting that the ratio of households that live in a permanent house in Hanoi is much higher than that of HCMC. Yet, the ratio of households which have a safe toilet in HCMC is higher than that of Hanoi. This showed that the culture may have

a significant influence on housing characteristics of households. However, the gaps between the cities have declined by time.

In 2002, there are 24.5% of households in HCMC and 63.5% in Hanoi which live in a permanent house. The ratios in the year 2008 of HCMC and Hanoi are 54% and 75.8% respectively. Within six years, the ratio of HCMC has increased more than two times. This helped to reduce the gap between the cities from 39 percentage points in 2002 to 21.8 percentage points in 2008.

Similarly, the ratio of households that have a safe toilet in Hanoi has increased from 70.4% in 2002 to 88.8% in 2008. The corresponding ratios of households in HCMC are 84.1% and 97.3%. During the six years, the gap between the cities has reduced from 13.7 percentage points in 2002 to 9.5 in 2008.

The ratio of households that have an average living area of household members which is equal to or higher than 25m^2 in both cities increased considerably during the 2002-2008 period. In 2002, there are 22.4% of households in HCMC which have an average living area per head equal to or larger than 25m^2 . Then the ratio increased to 28.3% in 2008. In Hanoi, the corresponding ratios have increased from 16% in 2002 to 32.7% in 2008. The ratio in Hanoi has increased 16.7 percentage points within 6 years while that of HCMC is only 5.9 percentage points.

The ratios of households that own or partly own the current dwelling in which they are living in the cities have an upward trend. In 2002, 87.9% of surveyed households in HCMC and 92.9% in Hanoi owned or partly owned their dwellings. Six years later, the ratios have increased up to 90.7% in HCMC and 96.2% in Hanoi. Thus, most of the surveyed households owned or partly owned the dwelling that they are living in. This information helps to explain why the ratios of non-rental expenses of households in the cities are so high.

The indicator which has the highest increasing trend in this study is the internet connection. The ratios of households that have an internet connection in the cities have increased steadily. In the 2002-2008 period, the ratio in HCMC has increased from 4.1% to 26.7%. The corresponding ratios in Hanoi are 4.1% and 18.4%. The ratio of households which have an internet connection in the cities has increased more than four times during the study period. However, the increases are normal since they are accordant to the common trend of the world.

5.2. Individual well-being indexes of households in the cities: Trends and disparities

In this part, the trends of three groups of well-being indexes will be examined. They are the individual well-being indexes of households in Hanoi, the individual well-being indexes of households in HCMC, and the index of disparities in well-being level of households in Hanoi and HCMC. The method which was applied to

calculate the individual well-being indexes of the cities has been described in chapter 4 “Well-being Index of Households: Indicators, Available Data and Technical Method”.

Different from the well-being indexes of the cities, the Hanoi versus HCMC well-being indexes (Hanoi vs. HCMC well-being indexes) applies a multi-base method. The index value of an indicator in a specific year is the percentage of the value of this indicator of households in Hanoi divided by that of HCMC.

$$I_{ij} = 100 \frac{x_{ij}}{y_{ij}}$$

With:

I_{ij} : Index value of indicator i at time j

x_{ij} : Value of indicator i at time j of Hanoi

y_{ij} : Value of indicator i at time j of HCMC ($y_{ij} \neq 0$)

The values of the domains and the summary index of Hanoi vs. HCMC are calculated as that of Hanoi and HCMC. The value of a domain is the geometric mean of indicators within that domain. And the value of the summary well-being index of Hanoi vs. HCMC is the geometric means of the domains which belong to the index. The Hanoi vs. HCMC indexes shows the disparities in the well-being

level of households in Hanoi and in HCMC. The values of the individual well-being indexes of households are provided in table 5.2.

Table 5.2: Changes and disparities of the individual well-being indexes of households in the cities

	HCMC					Hanoi					Hanoi versus HCMC ⁽¹⁾				
	2002	2004	2006	2008	Corr.	2002	2004	2006	2008	Corr.	2002 ⁽²⁾	2004	2006	2008	Corr. ⁽³⁾
Demographic and social characteristics															
non-single parent	100	97.50	96.60	96.86	-0.02	100	101.46	97.95	97.42	-0.01	110.91	115.42	112.46	111.56	-0.12***
non-single occupant	100	100.64	99.14	102.18	0.01	100	99.60	99.85	97.13	-0.01	103.23	102.16	103.97	98.13	-0.04**
registration	na	100	103.11	103.38	0.07**	na	100	102.07	104.66	0.07*	100	106.15	105.08	107.46	-0.10***
non-poor	100	103.53	102.22	101.00	-0.04	100	102.08	98.09	100.49	-0.03	106.46	104.98	102.15	105.93	-0.09***
life improvement	na	100	104.17	77.96	0.06*	na	100	100.87	71.86	0.01	100	132.75	128.54	122.38	-0.25***
Educational status															
schooling status	100	99.29	101.75	103.90	0.04*	100	101.57	104.24	104.68	0.04	102.20	104.54	104.69	102.97	-0.07***
literate	100	102.99	100.25	100.32	0.01	100	100.42	100.93	101.95	0.04	105.97	103.33	106.69	107.68	-0.08***
bachelor or above	100	112.07	101.91	128.38	0.03	100	124.69	105.69	116.94	0.03	154.30	171.68	160.03	140.56	-0.12***
Health and entertainment															
health	na	100	196.62	182.47	0.23***	na	100	147.18	159.17	0.21*	100	145.20	108.70	126.66	-0.12***
insurance	na	100	141.38	159.77	0.26***	na	100	110.50	113.71	0.11***	100	160.52	125.46	114.25	-0.20***
non-hospitalized	na	100	118.52	110.26	-0.13***	na	100	124.90	110.19	-0.18***	100	95.57	100.71	95.51	0.06**
entertainment	100	202.62	191.76	177.25	0.15***	100	266.14	214.54	271.03	0.22***	43.6	57.30	48.81	66.70	0.14***
non-smoking	100	174.79	141.17	104.93	0.07***	100	368.55	158.45	170.18	0.08***	39.7	83.80	44.61	64.46	0.16***
Work and career															
working status	100	94.79	96.93	101.16	-0.02	100	99.33	98.43	100.61	-0.02	101.42	106.28	102.99	100.88	-0.07***
leader	100	77.66	102.38	173.58	0.04	100	104.08	93.14	94.91	-0.01	131.68	176.48	119.80	72.00	-0.02
professional	100	112.63	146.26	144.54	0.07***	100	127.64	113.39	140.16	0.09***	151.89	172.14	117.76	147.30	-0.10***
working hours	100	90.77	93.46	96.06	-0.05**	100	102.90	102.63	94.57	-0.01	110.24	124.98	121.05	108.53	-0.13***
Financial status															
excess income	100	170.74	160.71	130.14	-0.14***	100	120.03	155.58	117.80	-0.01	81.61	57.37	79.01	73.87	0.19***
health care coverage	na	100	103.82	108.64	0.11***	na	100	101.75	101.16	0.02	100	112.49	110.24	104.74	-0.13***

unindebted	na	100	101.56	104.62	0.05	na	100	103.00	110.56	0.09**	100	108.77	110.31	114.94	-0.10***
Consumption and basic services															
non-food expenses	100	91.80	97.00	94.57	-0.15***	100	93.88	93.14	92.53	-0.10***	100.43	102.71	96.43	98.27	0.03*
tab water	100	107.03	122.75	119.93	0.12***	100	104.70	104.19	114.95	0.09***	108.82	106.45	92.37	104.30	-0.01
non-rental payment	100	99.65	99.79	99.31	0.11***	100	99.97	99.92	99.88	0.02	100.27	100.59	100.40	100.84	-0.09***
Ownership and living accommodation															
assets and appliances	100	104.77	108.63	116.12	0.13***	100	92.50	99.28	105.35	0.12***	116.16	102.56	106.16	105.38	-0.10***
living space	100	112.03	137.00	126.59	0.07***	100	137.33	187.93	204.13	0.17***	71.77	87.97	98.45	115.73	0.04***
permanent house	100	138.67	172.94	219.92	0.24***	100	98.58	121.70	119.38	0.16***	258.71	183.91	182.07	140.44	-0.30***
safe toilet	100	104.85	116.44	115.70	0.20***	100	108.97	117.38	126.15	0.20***	83.76	87.04	84.43	91.32	0.18***
house ownership	100	99.63	106.25	103.23	0.10***	100	96.39	102.40	103.61	0.07***	105.70	102.27	101.87	106.10	-0.07***
Internet connection	100	264.81	308.03	652.67	0.23***	100	168.78	150.08	453.32	0.17***	99.32	63.30	48.39	68.99	0.07***

⁽¹⁾ Different from the individual indexes of Hanoi and HCMC, the individual Hanoi vs. HCMC indexes apply the ‘multi-base values’ method. The values of the indexes were calculated by using the value of the Hanoi indicators divide by that of HCMC.

⁽²⁾ In the year 2002, some indicators do not have a value. Therefore, the ‘na’ signs are replaced by “100”. This replacement helps to minimize the fluctuation of the Hanoi vs. HCMC aggregate indexes.

⁽³⁾ Different from The Spearman tests of Hanoi and HCMC, The Spearman tests of Hanoi vs. HCMC indexes aim at verifying if there are significant differences in the well-being level between the cities.

Corr. Represent the Spearman’s rank correlation coefficients of The Spearman tests. A (-) sign implies a downward trend of the index and vice versa, a (+) sign implies an upward trend of the index.

Sig. represent the significant level of the correlation.

*, **, and *** imply that The Spearman tests are significant at 10%, 5%, and 1% level.

Source: Author’s calculation from VHLSS 2002, 2004, 2006 and 2008.

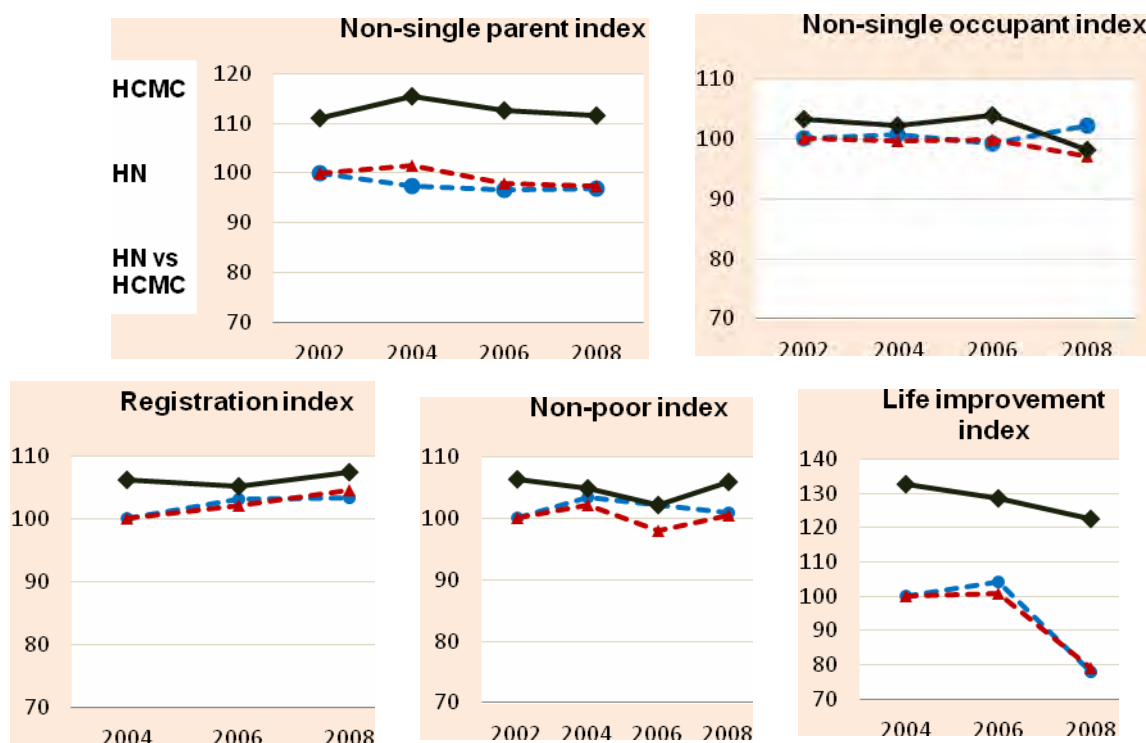
The corr. columns show the Spearman's rank correlation of the indicators and domains versus time. The correlation value of an indicator is the rank correlation of the raw values of the indicator by time. The correlation value of each domain, however, is the rank correlation value of the domain index versus time. A positive correlation shows an upward trend or an improvement of the index by time. In the contrary, a negative correlation shows a downward trend or a reduction of the index by time. The Spearman correlation of an indicator or a domain which is significant at 10%, 5% or 1% implies that there is real change in values of the indicator or domain over time at the level of confidence 90%, 95% or 99%.

Most of the individual and aggregate indexes have a significant upward or downward trend. It is necessary to emphasise that the correlation of an index is significant does not imply a consistent trend of the index by time. An indicator may have a significant upward or downward trend but the correlation value of the indicators is not significant. In the contrary, there are variables which have a significant rank correlation but do not have a consistent trend.

5.2.1. Households well-being: Demographic and social characteristics of households in the cities

Because the time series of the data are relatively short, from 4 to 6 years, it is difficult to observe the trend of changes in the well-being level of households. Among the five individual well-being indexes of the demographic and social

characteristics domain, there is only one index, the registration index, which has a consistent upward trend. The trends of the other indexes, however, are not so consistent.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.8: Trends and disparities of indicators of the demographic and social characteristics domain of households

The non-single parent index of households in HCMC has a continuous downward trend. The index of households in Hanoi increased slightly in 2004 but then diminished. Overall, diminishing is the principal trend of the non-single parent indexes in these cities in the 2002-2008 period. The index values of households in Hanoi are always higher than that of HCMC.

The non-single occupant indexes of households in Hanoi and HCMC follows two opposite directions. The index of HCMC has an upward trend while the index of Hanoi has a downward trend. The index of households in HCMC has increased in the 2002-2008 period while that of Hanoi has decreased.

The non-poor and life improvement indexes, however, do not have obvious tendencies. The non-poor index of households increased significantly in 2004 but then decreased in later stages. Though the index values of the year 2008 are still higher than the values of the base year, the improvement is trivial. The life improvement index increased slightly in 2006 but then decreased sharply⁷⁶.

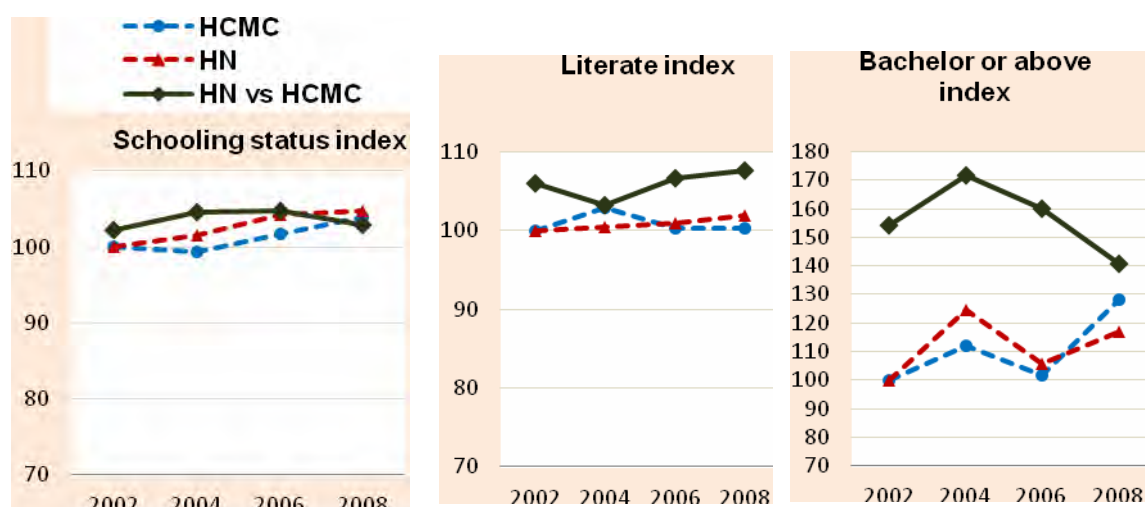
Concerning the disparities in the demographic and social characteristics of households between the cities, the values of all individual Hanoi vs. HCMC indexes are higher than 100%⁷⁷, except the “non-single occupant” index. This implies that the households in Hanoi have a higher level of “demographic and social characteristics” well-being than that of HCMC. Among the individual Hanoi vs. HCMC indexes, the life improvement is the index which has the highest value. The values of life improvement index of households in Hanoi are much higher than that of HCMC.

⁷⁶ The modification of this indicator may partly contribute to the sharp decrease of the life improvement index.

⁷⁷ Except the value of “non-single occupant” index in 2008, when the value of Hanoi versus HCMC index is smaller than that of HCMC.

5.2.2. Households well-being: Educational characteristics of households in the cities

In comparison with the base values, all individual well-being indexes of the educational domain have increased in the 2002-2008 period. This implies that the ratio of households that have no members from 6-18 year old who did not attend school in the last 12 months, that have no members equal to or older than 13 year old and are illiterate, and that have at least one member who have a Bachelor's Degree in both cities have increased. However, the trends of the indexes are diverse. The increasing trends of the indexes are not stable either.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

**Graph 5.9: Trends and disparities of the indicators
of the educational domain of households**

The schooling status index of households in Hanoi has increased gradually in the 2002-2008 period. However, the index of HCMC decreased in 2004 before it started

to increase in later stages. During the study period, the schooling status indexes of households in Hanoi and HCMC have increased by 4.7 percentage points and 3.9 percentage points respectively.

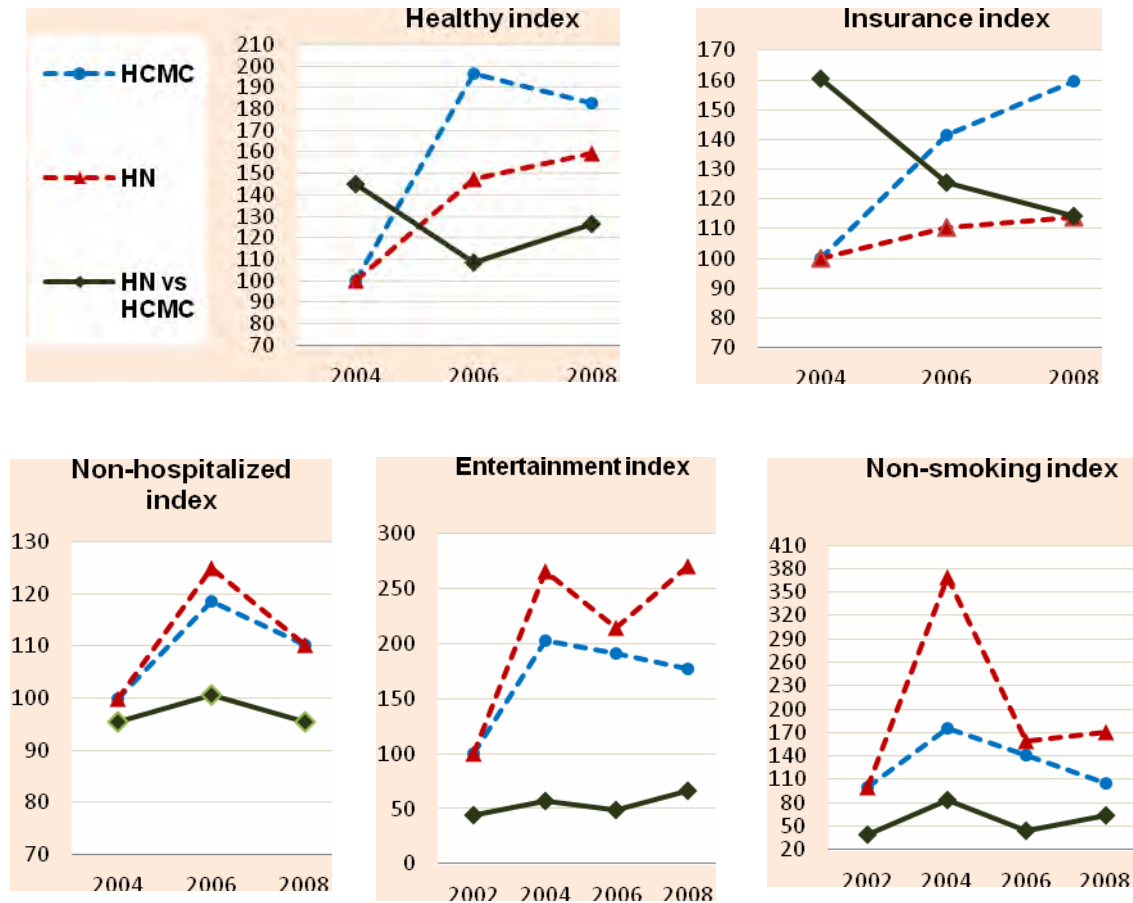
Similar to the schooling status index, the literate index of households in Hanoi has gradually increased during the six consecutive years. However, the improvement trend of the index in HCMC was strange. After a sharp increase in 2004, the index decreased steadily in 2006 before increased again in 2008. In comparison with the base year, the value of the literacy index of households in HCMC has increased by only 0.32 percentage points while that of Hanoi has increased by 1.9 percentage points.

Comparing the two cities, all values of the Hanoi vs. HCMC indexes are above 100%. It is obvious that the educational status of households in Hanoi is better than that of HCMC. The improvement trends of the indexes of households in Hanoi are not only clearer but also more consistent than that of HCMC. Although, there is a convergent tendency of the schooling status index and the bachelor or above index of households in the cities, the disparity of the literate index between the cities tends to increase by time.

5.2.3. Households well-being: Health and entertainment characteristics of households in the cities

Though values of all indicators that belong to the health and entertainment domain of households in these cities in the year 2008 are higher than that of the year 2002, the improvement trends of the indexes are diverse. There are several turning points in the study period. Besides, the indexes values of several indicators in the years 2008 are lower than the highest index values in the 2002-2008 period.

The values of the health index of households in these cities have increased, yet the improvement trend of the index in HCMC is not consistent. From 2006, the health index of households in HCMC began to decline while the value of Hanoi continues to increase. The disparities of the health index of households in the cities, therefore, were widened in the year 2008 after a sharp decline in 2006.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

**Graph 5.10: Trends and disparities of the indicators
of the health and entertainment domain of households**

The insurance indexes of households in both cities have a consistent upward trend. The values of the index have increased sharply during the 2004-2008 period, especially in HCMC. The disparity between the cities in the year 2008 has narrowed though the index value of Hanoi is still higher than that of HCMC. The firm improvement of the index in the cities partly comes from advancements in the regulations about health care insurance. The new regulation allows individuals to

have chance to buy a “voluntary health care insurance”⁷⁸. Moreover, the number of agents who can receive free health care from the government has also increased.

The non-hospitalized indexes of households in these cities have improved considerably in the year 2006. In comparison with the year 2004, the index values have increased by 18.5 percentage points in HCMC and 24.9 percentage points in Hanoi. However, there are down turns in the year 2008. In comparison with the base values in the year 2004, the value of the index of households in HCMC has increased by 10.3 percentage points and that of Hanoi has increased by 13.7 percentage points. Though the index values in the year 2008 are higher than that of the base year, they are lower than that of peak values in the year 2006. Generally, the non-hospitalized index of households in HCMC is better than that of Hanoi. The Hanoi vs. HCMC index has stayed below the 100% line during the study period.

The entertainment indexes of households in the cities have increased very fast in 2002-2004 period, yet they tend to reduce afterwards. In the beginning, the index value of households in Hanoi increased very fast, from 100% in 2002 to 261% in 2004. The index value of HCMC also increased considerably from 100% to 202.6% in the same period. Then, the index of households in HCMC reduced gradually. The index value of households in HCMC in the year 2008 is 177.2%, which equals to a reduction of 25.6 percentage points in comparison with that of the peak value in the year 2004. The index of households in Hanoi, however, achieves the highest value

⁷⁸ According to circular 14/2007/TTLT-BYT-BTC about voluntary health care, from 12/2007 individual can buy health care insurance. This is a considerable improvement in the regulation about health insurance in Vietnam.

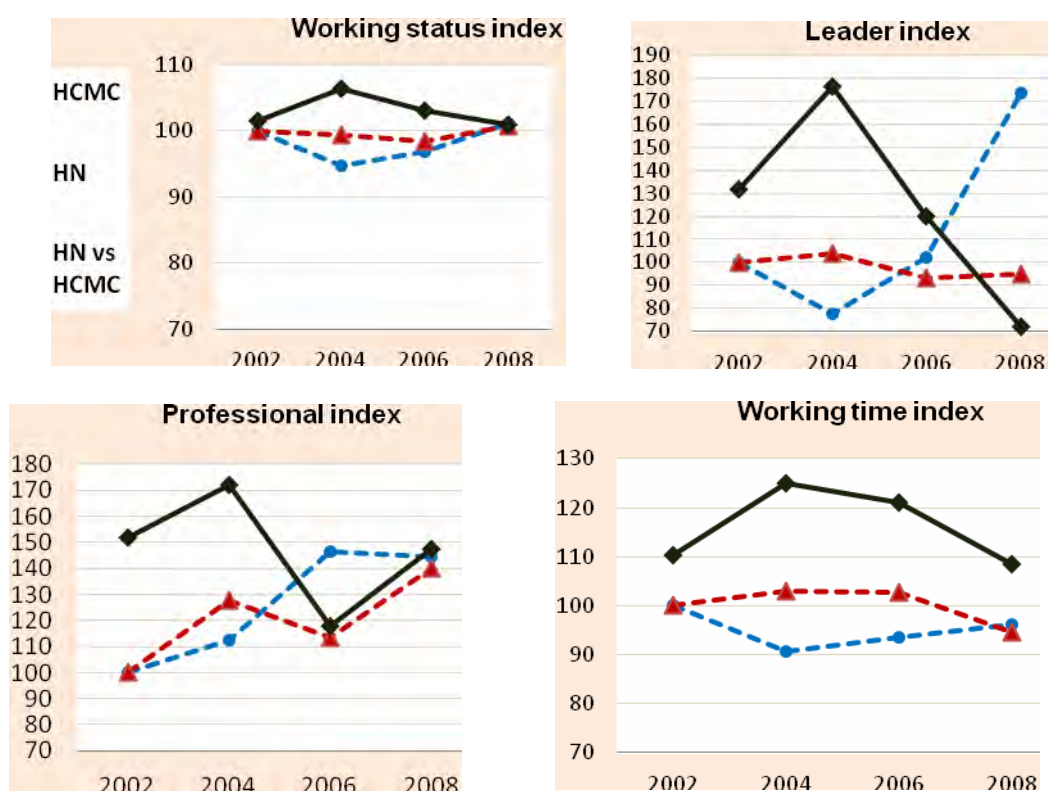
in 2008, which equals to 171 percentage points higher than that of the base value. Overall, the values of the entertainment index of households in Hanoi are lower than that of HCMC. However, the index of Hanoi has a higher rising rate. The rise of the index of Hanoi is also more persistent. The gap between these cities, therefore, has reduced in the 2002-2008 period.

It is strange that the non-smoking index of households in these cities increased sharply in the year 2004 and then reduced considerably in 2006. In reality, there is no persuasive explanation for such an abrupt change. The possible explanations may be the present of missing values in the 2002 database, the mismatch of data within the database, and the differences in sampling method between the VHLSS 2002 and 2004.

Generally, households in HCMC have higher values of non-smoking index than that of Hanoi. However, the values of this index of households in HCMC started to reduce from the year 2006. The households in Hanoi have lower non-smoking index values, yet the index began to increase from the year 2006. After 6 years, the value of the non-smoking index of households in HCMC has increased only by 4.9 percentage points while that of Hanoi has increased by 70.2 percentage points. The gap in non-smoking index between the cities, therefore, was reduced.

5.2.4. Households well-being: Work and career characteristics of households in the cities

The trends of the individual indexes of this domain are diverge and unstable. Among the four indicators, only the professional index has a significant improvement trend. In the 2002-2008 period, the value of the professional index of households in HCMC has increased by 44.5 percentage points and that of Hanoi by 40.2 percentage points. Although the improvement rate of households in HCMC was higher, the households in Hanoi have a much higher value of professional index.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

**Graph 5.11: Trends and disparities of the indicators
of the work and career domain of households**

The values of the working status indexes of households in these cities in 2004 and 2006 were lower than that of the base year. The index values in the year 2008 are higher than that of the base year but the improvement is trivial, 1.2 percentage points in HCMC and 0.6 percentage points in Hanoi.

The leader indexes of households in these cities have strange tendencies. In HCMC, after a reduction in 2004, the index increased firmly in the later stage. The index of households in Hanoi, however, increased lightly in 2004 but decreased in later stage. These changes may be explained partly by changes in economic environment in the cities. From the implementation of the Enterprise Law in 2002 and the Revised Enterprise Law in 2006, the number of new established enterprises in HCMC has increased very fast. The number of enterprises in the city in 2004, 2006, and 2008 were 23.670, 36.875, and 58.505⁷⁹. This helps to explain the sharp increase in value of the leader index in HCMC from the year 2006. However, there is no possible explanation for the decreasing trend of the index in Hanoi.

The working time indexes of households in HCMC and Hanoi have opposite trends. In HCMC, the index value decreased abruptly in 2004. Then, it increased gradually in the 2006-2008 period. However, the index value in 2008 is still lower than that of the base value by 3.9 percentage points. The index of households in Hanoi, however, achieved the highest value in 2004 and then started to decrease in later

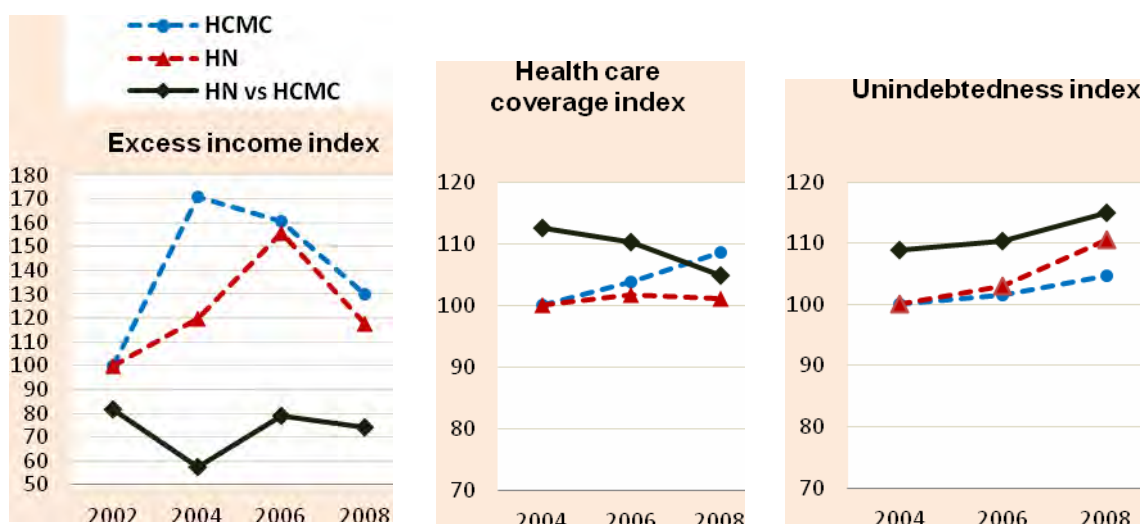
⁷⁹ Statistical office in HCMC 2009

years. The index value of Hanoi in the year 2008 was lower than that of the base value by 5.4 percentage points.

In comparison with the base year, the values of working time index in 2008 of the cities have decreased. These decreases imply that the ratio of households in which the average of time worked by working members are higher than 56 hours per week have increased. Thus, the ratios of households which has a high average working time of working members in the cities have increased despite the implementation of decision No. 188/1999/AD-TTg about 40-working hours in November 1999.

5.2.5. Households well-being: Financial characteristics of households in the cities

All the three financial indexes of households in the cities have improved in the 2002-2008 period. However, the improvement trends are not stable. The values of the excess income index of households in HCMC are higher than that of Hanoi, yet the values of the health care coverage and unindebtedness indexes of Hanoi are higher.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

**Graph 5.12: Trends and disparities of the indicators
of the financial status domain of households**

At first, the values of the excess income index of households in these cities increased. Then, they started to reduce. The downturn began in 2004 in HCMC and 2006 in Hanoi. The index values of households in the year 2008 are much lower than that of the peak values of the 2002-2008 period. The trends imply that excess income of households in these cities had decreased in recent years. This finding is suitable with the practical economic status of Vietnam over the period. The inflation rate of Vietnam has increased swiftly from the year 2004 and becomes uncontrollable in recent years. Within 6 years, from 2002 to 2008, the inflation has

increased nearly 60% while the economic growth has increased from 4% in 2002 to 9.5% in 2004. It then decreased to 6.6% in 2006 and soared up to 23% in 2008⁸⁰.

The unindebtedness index of households in the cities has improved during the 2004-2008 period despite the reduction in the excess income of households. The ratios of households that had to borrow or own money in the cities have regularly decreased. The improvement trend of households in Hanoi is stronger than that of HCMC. Over the period, the index value of households in HCMC has increased 4.6% while that of Hanoi has increased by 10.6%. Comparing the two cities, the households in Hanoi not only have a better unindebtedness index but also a higher improvement rate.

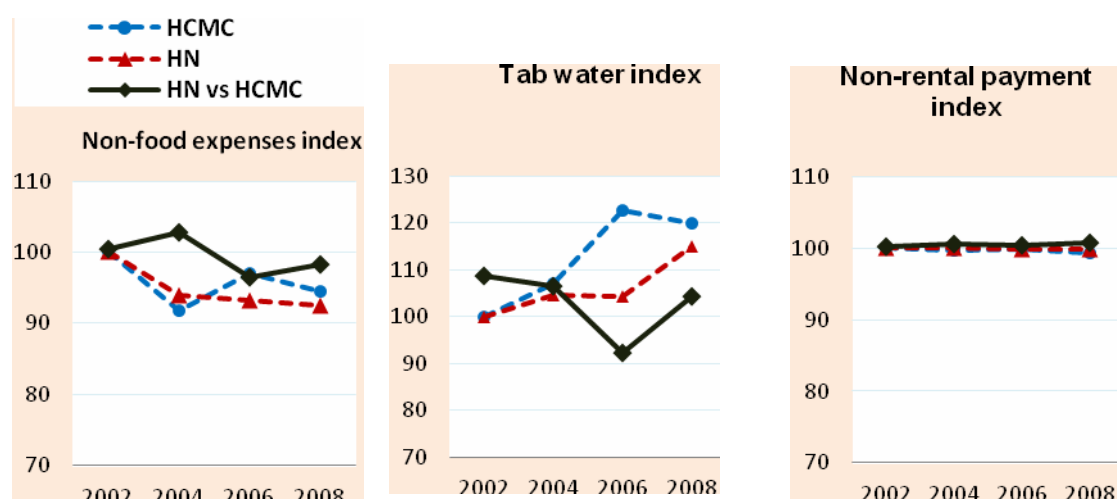
The health care coverage index of households in HCMC has increased considerably during the 2004-2008 period. Within four years, the index value of households in HCMC has increased by 8.6 percentage points whereas the value of Hanoi has increased by only 1.1%. The disparities in health care coverage index between the cities, therefore, were narrowed.

⁸⁰ The inflation rates were extracted from the Vietnam statistical year books which were published by GSO in several years from 2002 to 2008.

5.2.6. Households well-being: Consumption and the accession to basic services of households in the cities

Both the non-food expenses index and non-rental payment index of households in these cities have a downward trend. Since the demand for housing in big cities often increases faster than the supply, the rise of house rental may be faster than that of income. This increases the share of house rental in living expenditure of households. Therefore, the trend of the non-rental payment is suitable with the actual living conditions in these cities.

The reducing trend of the non-food expenditure of households in Hanoi and HCMC is strange. It is believed that these two cities have been developed very fast and so do the living standards of the people. However, in this study the share of non-food expenses of households in the cities has been reduced. In comparison with the base values in 2002, the values of the non-food expenses index in 2008 of households in Hanoi and HCMC have been reduced by 7.5% and 5.6%, respectively.



Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008.

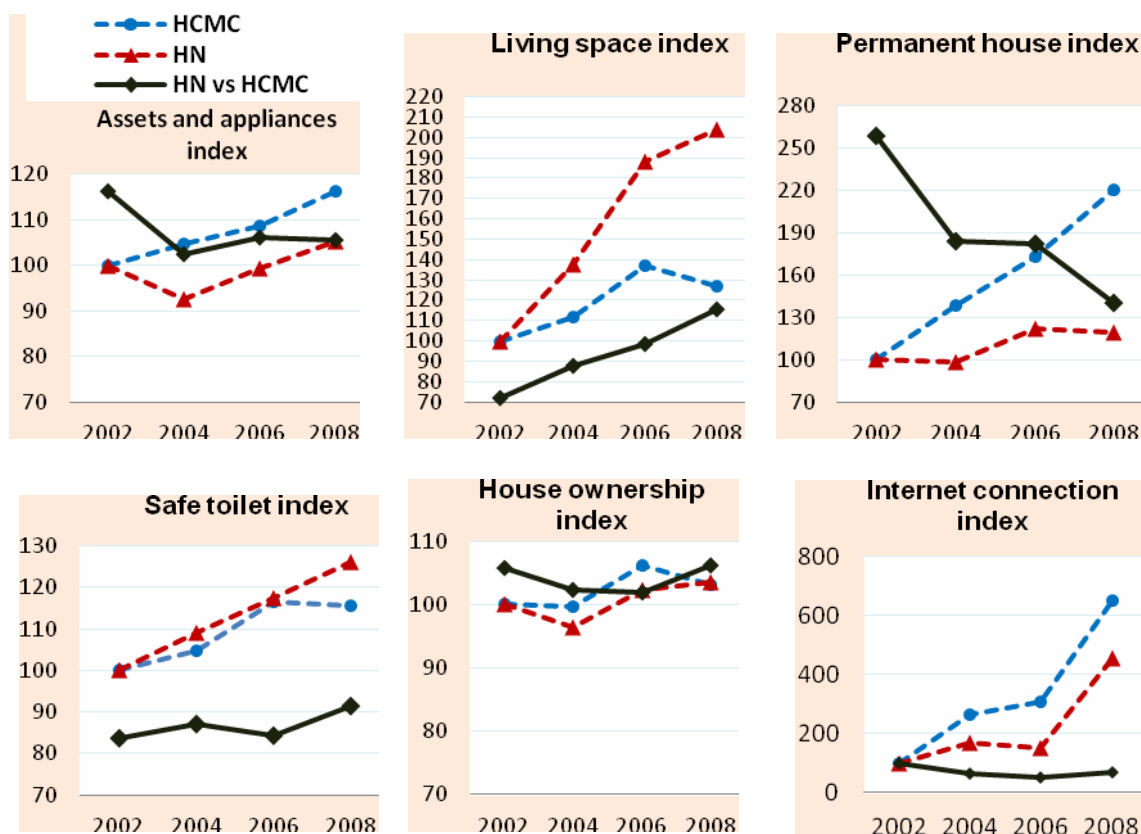
Graph 5.13: Trends and disparities of the indicators of the consumption and basic services domain of households

Although, the tap water indexes of household in these cities have an upward trend, the improvements are not stable. After reaching the highest value in 2006, the index value of HCMC began to reduce in 2008. During the period, the index values of both cities have increased by less than 20% despite the fact that safe water is an urgent need of the people.

5.2.7. Households well-being: Ownership and living accommodations of households in the cities

All the indexes of this domain have increased over the 2002-2008 period. However, some indexes have very strange tendencies. It is also hard to find convincing explanations for the abrupt down turns of the Internet connection index of Hanoi in

2006, the safe toilet index of HCMC in 2008, and the permanent house index of Hanoi in 2008.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

Graph 5.14: Trends and disparities of the indicators of the ownership and living accommodation domain of households

The Internet connection index of the cities has increased very fast. Within six years, the index value has increased by more than 600% in HCMC and 400% in Hanoi. The other indexes have not increased as fast although there is still considerable improvement in the living space index and safe toilet index of households in Hanoi.

The assets and appliances index and permanent house index of HCMC have also improved substantially during the time frame.

It is interesting that most of the indexes of the consumption and basic services domain of these cities have a convergent trend. The gaps of most indexes, except the house ownership index, between the cities have been narrowed down. The disparities in consumption level and basic services of households in the cities, therefore, have been reduced.

5.3. Aggregate well-being indexes of households in the cities: Trends and disparities

In previous parts, the trends and values of the individual well-being indicators and indexes have been analyzed. They provide a close look about the characteristics and components of the well-being index of households, which are the background for aggregate analysis. The information about the trends of the aggregate indexes, including both domain indexes and aggregate index, of households in these cities are presented in table 5.3.

Table 5.3: Trends and differences of aggregate well-being indexes of households in the cities

Index	HCMC					Hanoi					Hanoi versus HCMC (Hanoi vs. HCMC)				
	2002	2004	2006	2008	Corr.	2002	2004	2006	2008	Corr.	2002	2004	2006	2008	Cor. ⁽¹⁾
Summary index	100	109.77	117.87	121.14	1.00***	100	112.23	112.48	116.60	1.00***	101.89	108.67	101.43	102.31	0.16
Demographic & social characteristics	100	100.32	101.01	95.77	1.00***	100	100.62	99.75	93.52	0.00	104.04	111.77	110.04	108.81	0.49
Educational status	100	104.65	101.30	110.19	0.80	100	108.34	103.60	107.66	0.40	118.67	122.86	121.36	115.94	[-0.05]
Health & entertainment	100	128.78	154.90	142.99	0.80	100	157.88	147.18	155.87	0.40**	70.44	101.35	78.55	90.11	[-0.38]
Work & career	100	93.14	107.92	124.95	0.80	100	107.95	101.63	106.07	0.40	122.29	141.73	115.16	103.80	[-0.05]
Financial status	100	119.52	119.22	113.94	0.20	100	106.27	117.70	109.63	0.80	93.45	88.87	98.68	96.17	0.38
Consumption & basic services	100	99.30	105.91	104.04	0.60	100	99.42	98.98	102.04	0.20	103.10	103.22	96.35	101.11	0.38
Ownership & living accommodations	100	128.50	146.31	171.22	1.00***	100	114.22	126.49	157.41	1.00***	111.26	98.89	96.19	102.28	0.27

⁽¹⁾Different from Spearman tests of the indexes of households in Hanoi and HCMC, the Spearman test for Hanoi vs. HCMC indexes aims at testing if there are significant differences in values of well-being indexes of households in Hanoi and HCMC.

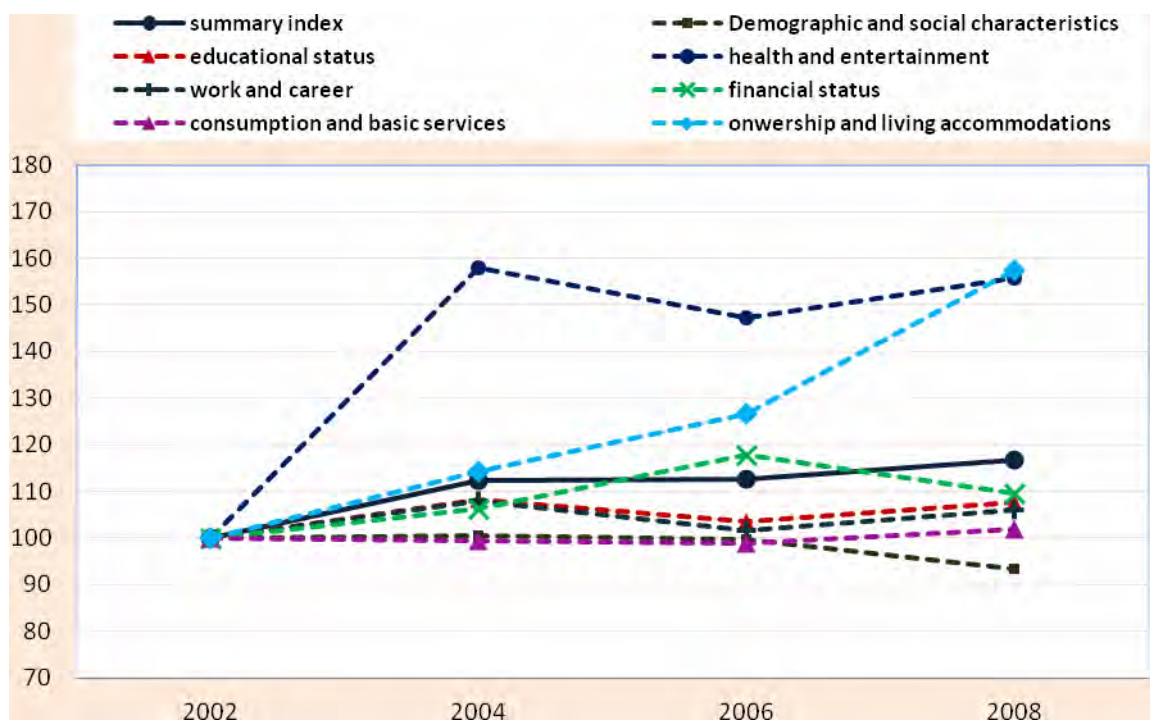
Corr. Represent the Spearman's rank correlation coefficient of Spearman test. (-) sign implies a downward trend of the index and vice versa.

*, **, and *** imply Spearman tests are significant at 10%, 5%, and 1% level.

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008.

5.3.1. Changes in well-being level of domain-specific indexes and summary index of households in Hanoi

The aggregate well-being index of households in Hanoi has increased during the six consecutive years, yet the trends of the domain indexes vary. Among the seven domain indexes, there is only the ownership and living accommodations index which has a consistent upward trend in the 2002-2008 period. All other indexes, except the demographic and social characteristics index, have an increasing trend. However, four of them have a down turn in the year 2006. Besides, their values in the year 2008 are not always the highest values of the indexes in the study period.



Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008.

Graph 5.15: Changes in the well-being level of households in Hanoi

Although the value of the summary well-being index of households in Hanoi has increased by 16.6% during the study period, there are only two of the seven domains which have increased by more than 10%. They are the ownership and living accommodations and the health and entertainment indexes. However, a detailed review about the components of the domains proved that the most important contributor for the increase of the ownership and living accommodations domain is the sharp increase of the internet connection index. Similarly, the fast increase of the entertainment index is the most important contributor for the improvement of the health and entertainment domain.

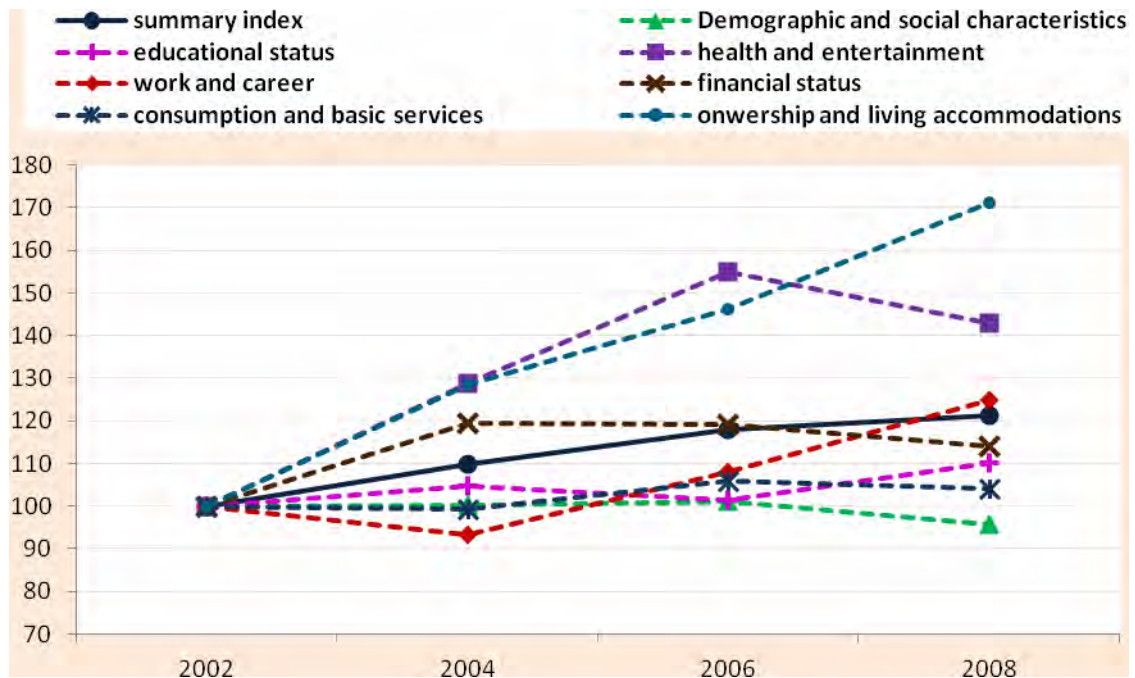
Besides, the improvement levels of the domains were highly fluctuated. Some domains have increased moderately during the period. They are the financial status, educational status and work and career domain, the respective increasing ratio were 9.6%, 7.7%, and 6.1%. The consumption and basic services domain, an important domain of households well-being, however, has increased by only 2%. The status of the demographic and social characteristics domain is even worse. It has decreased by 6.5% during the period.

These facts remind that the structure and relations within households, which are represented by the demographic and social characteristics domain, may be sensitive to changes in socio-economic conditions. And in spite of the high economic growth rate, the improvement in well-being level of households in the city is not high.

Several indicators of household well-being such as the non-poor, working status, and health care coverage, have been improved very slowly. The other indicators, which are single parent, single occupant, working time, leader, non-rental payment, non-food expense, have been reduced. These facts proved that these domains are sensitive and their improvement trends are not stable.

5.3.2. Changes in well-being level of domain-specific indexes and summary index of households in Ho Chi Minh City

Graph 5.16 illustrates changes of the domain indexes and summary well-being index of households in HCMC by time. Overall, most domain indexes of the households in HCMC have the same trend as in Hanoi. However, the level of changes and improvement of the indexes of households in HCMC are higher. The summary well-being index of households in HCMC has increased during the six consecutive years. In comparison with the base value, the index value in the year 2008 of HCMC has increased by 21.1%, higher than that of Hanoi 16.6%.



Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008.

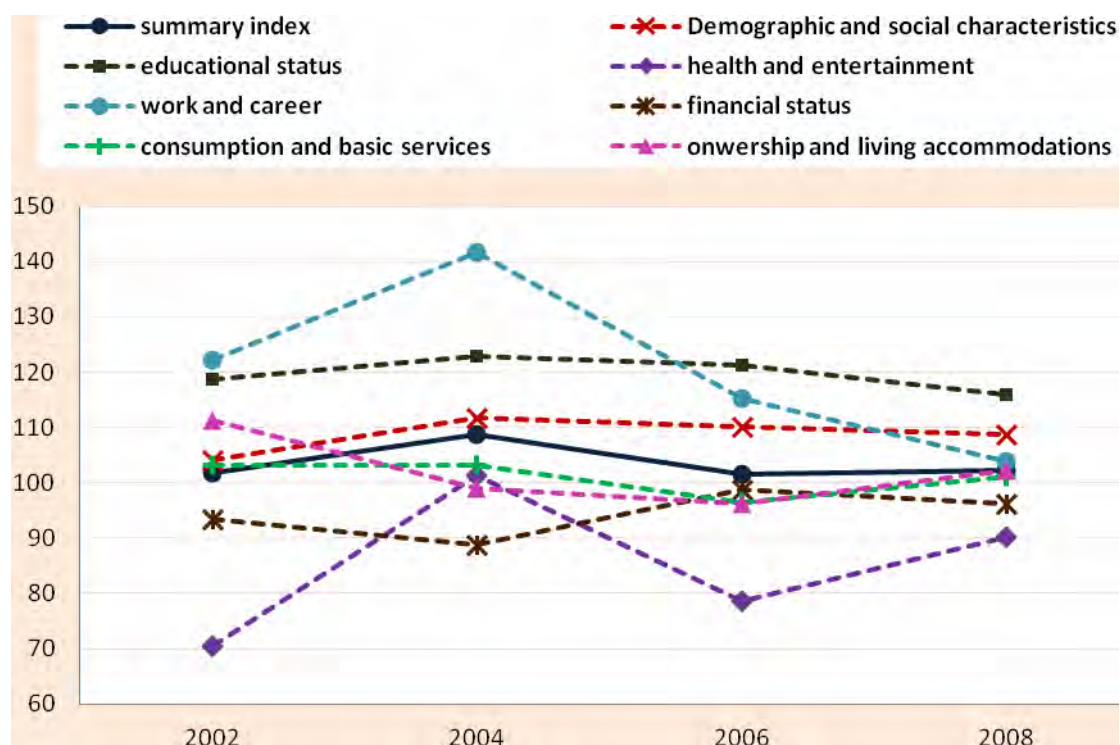
Graph 5.16: Changes in the well-being level of households in Ho Chi Minh City

In detail, there is only one domain, the ownership and living accommodations, which has increased in six straight years. The main reason for this continuous upward trend is the sharp increase of the Internet connection index. The other domains, except demographic and social characteristics, also have upward trends with down turns in specific years. Because the indexes have constant base values, it is expected that they would achieve the highest values in the year 2008. Yet, only three of the seven domains achieve the peak values in this year. This fact proved that the improvements of the well-being domains are not stable. It also pointed out the important role of the database.

The two domains that have contributed the most to the improvement of the summary well-being index are the “ownership and living accommodations” and “health and entertainment.” These domains have increased by 71.2% and 43% over the period. The improvement trends of other domains, however, are lower. Of the seven domains, the consumption and basic services is the domain which has the lowest growth rate. It has increased by only 4% during the period. The case of the demographic and social domain was even worse. The index value of this domain has decreased by 4.2% over the period.

5.3.4. Disparities in well-being level of households – the Hanoi versus Ho Chi Minh City well-being indexes

Generally, households in Hanoi have a higher level of well-being than that of HCMC. All values of the Hanoi vs. HCMC summary index are above 100% during the study period. However, the disparities between the cities change gradually. The index increased from 1.9% in 2002 to 8.7% in 2004. Then, it reduced to 1.4% in 2006 before increasing to 2.3% in 2008.



Source: Author's calculation from VHLSS 2002, 2004, 2006, and 2008.

**Graph 5.17: Disparities in the well-being level of the households
in Hanoi and Ho Chi Minh City**

From graph 5.17, it is easy to observe that the disparities in the level of well-being of households in these cities are diverse. The households in Hanoi have a higher level in educational status, demographic and social characteristics, work and career, ownership and living accommodation, and consumption and basic services. The households in HCMC, however, have a higher level of financial status and health and entertainment domains.

5.3.5. Summary of changes in well-being level of households in the cities

The trends and improvements in the well-being level of households in the cities are summarized in table 6.4. In this table, the index values of households in the year 2008 are compared with that of the base year. If the index value of the year 2008 is higher than the corresponding value of the base year, a “+” sign is placed in the column “2008 vs. base”. On the other hand, a “-” sign is put in if the 2008 values is smaller. Therefore, a “+” sign implies that the well-being level of households in the year 2008 is higher than that of the base year, and vice versa.

Table 5.4: Trends of the well-being indexes of households in the cities

Criteria	Hanoi		HCMC		HN vs. HCMC
	2008 vs. base	Trend in 2002-2008	2008 vs. base	Trend in 2002-2008	2008 vs. 2002
Aggregate index	+	Improving	+	Improving	+
1. Demographic & social characteristics	-	Diminishing (not successive)	-	No consequential trend	+
non-single parent	-	Diminishing (not successive)	-	Diminishing (not successive)	+
non-single occupant	-	Diminishing (not successive)	+	No consequential trend	-
registration (KT1)	+	Improving	+	Improving	+
non-poor	+	No consequential trend	+	Diminishing (not successive)	-
life improvement	-	No consequential trend	-	No consequential trend	+
2. Education	+	No consequential trend	+	No consequential trend	-
schooling status	+	Improving	+	Improving (not successive)	+
illiterate	+	Improving	+	No consequential trend	+
bachelor or above	+	No consequential trend	+	No consequential trend	-
3. Health & entertainment	+	No consequential trend	+	No consequential trend	+
healthy	+	Improving	+	No consequential trend	+
insurance	+	Improving	+	Improving	+
un-hospitalized	+	No consequential trend	+	No consequential trend	-
entertainment	+	No consequential trend	+	Diminishing (not successive)	+
smoking	+	No consequential trend	+	Diminishing (not successive)	+
4. Work and career	+	No consequential trend	+	Improving (not successive)	-
jobless	+	No consequential trend	+	Improving (not successive)	-
leader	-	No consequential trend	+	Improving (not successive)	-
professional	+	No consequential trend	+	No consequential trend	-
working hours	-	No consequential trend	-	Improving (not successive)	-

5. Financial status	+	No consequential trend	+	No consequential trend	+
financial balance	+	No consequential trend	+	Diminishing (not successive)	-
financial shortage	+	No consequential trend	+	Improving	+
unindebted	+	Improving	+	Improving	+
6. Consumption & basic services	+	No consequential trend	+	No consequential trend	-
food and drink	-	Diminishing	-	No consequential trend	-
water	+	No consequential trend	+	No consequential trend	-
rental payment	-	Diminishing	-	Diminishing (not successive)	+
7. Ownership & living accommodations	+	Improving	+	Improving	-
assets & appliances	+	No consequential trend	+	Improving	-
living space	+	improving	+	No consequential trend	+
housing type	+	No consequential trend	+	Improving	-
toilet	+	improving	+	No consequential trend	+
house ownership	+	No consequential trend	+	No consequential trend	+
Internet connection	+	No consequential trend	+	Improving	-

Source: Author's compilation

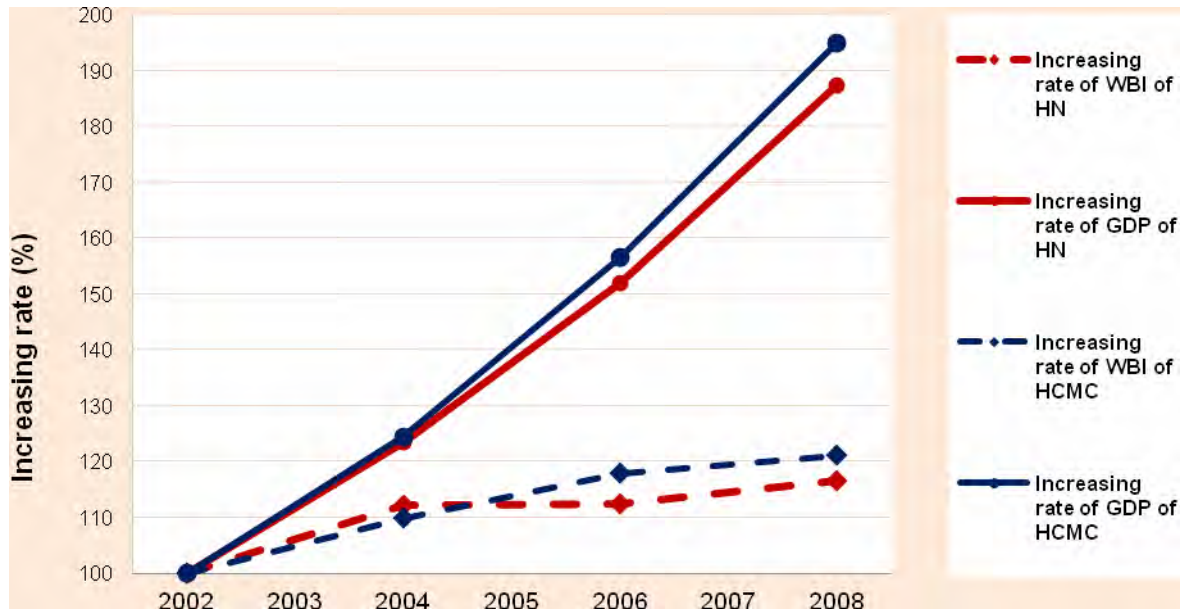
Though improvement is the dominant trend of the well-being indexes of households in these cities, there are signs of diminution in several individual indexes. In each city, there are five of the twenty-nine indicators and one of the seven domains which have a negative sign. This fact implies that the values of the indicators and domain have actually decreased during the time frame. Besides, there are seventeen individual indexes of household in Hanoi and twelve indexes of households in HCMC which have no consequential trend. In each city, there are only seven individual indexes which have a continuous improvement trend.

About disparities between the cities, the Hanoi vs. HCMC column compares the gaps in well-being level of households of these cities in the year 2002 and that of the year 2008. If the gap in 2008 is higher than that of the year 2002, a “+” sign is placed in this column, otherwise a “-” will be placed if the gap in the year 2008 is smaller. There are fifteen of the twenty-nine individual indicators which have a “+” sign. The summary index also has a positive sign. These facts imply that the gap in well-being level of the fifteen indicators and the aggregate well-being index have increased during the study period.

5.4. The increase of GDP and well-being level of households in the cities

Both cities have achieved very high GDP growth rates during the 2002-2008 period, more than 10% per year. Thus, the accumulate increase of GDP of the cities were

nearly doubled within 6 years. However, the increases of well-being level of households in the cities were much lower.



Source: The statistical year books, several years

**Graph 5.18: The increase of GDP of the cities
and of well-being level of households in the cities**

Graph 5.18 pointed out that the growth rates of well-being level of households in the cities tend to slow down despite the continuous increase of GDP. The gaps between the increase of GDP of cities and the increase of well-being level of households in the cities were widened by time. The trends show that the relation between GDP growth and well-being level of households in the cities might not high and might reduce by time.

5.5. Chapter remarks

Despite limitations of the data, these findings provided an overview about changes in the level of well-being of households in these cities. Generally, the levels of well-being of households have increased during the 2002-2008 period. However, the trends of the individual and domain indexes of households are diverse. The values of most indicators and domains have been improved, yet some of them have worsened.

There is a common belief in developing countries, which is also popular in Vietnam, that there is a close relation between economic development and quality of life of the people. However, the findings of the chapter show that this relation is not strong. Besides, several important indexes of the households' well-being including the non-single parent, life improvement, working time, non-food expenses, and non-rental payment, have been worsened. The values of the excess income index of households in the cities has increased lightly in the early stages but then reduced.

During the time frame of the study, the level of well-being of households in Hanoi has been higher than that of HCMC. However, the disparities between these cities were not even. The gap between the cities increased sharply in 2004, then it decreased at an even higher rate in the year 2006 before increasing again in 2008. Trends of the disparities in well-being level of the indicators and domains in these

cities are also irregular. Some indexes have strange tendencies for which there is hard to find convincing explanations.

These facts imply that the real improvement in the well-being level of households in the cities is not stable. They also highlight the need for a longer duration of the observed trend and a larger sample size since these factors are necessary to observe the actual changes in well-being level of households. It is also worth mentioning that the findings from the chapter must be interpreted with cautiousness due to the limitations of available data⁸¹.

⁸¹ The limitations have been mentioned in chapter 5.

The mother of revolution and crime is poverty.

Aristotle

Chapter 6:

Changes in the level of well-being deprivation of households in the cities:

Trends and implications for pro-poor policies

In this chapter, a derivative of the well-being index, the well-being deprivation index was established to measure the level of deprivation of the households, or the level of multidimensional poorness of the households. Then, the issues that are relevant to the poor status of households are analyzed to find out the features of the poor and non-poor. The findings are studied to find out the bases for recommendations of pro-poor policies in these cities.

6.1. The well-being deprivation index of households in the cities

Different from the well-being index, the well-being deprivation index⁸² measures the level of deprivation of households. Therefore, the indicators and domains of the well-being deprivation index have opposite meanings with that of the well-being index. Corresponding to an indicator or a domain of the well-being index, there is a deprivation indicator or domain of the well-being deprivation index. Each deprivation indicator has one or several cut-offs. If a household could not reach the cut-off level of an indicator, it is deprived of this aspect of life which is represented by the indicator. Thus, different from the level of well-being, which represents the level of goodness that the household has achieved, the level of well-being deprivation measures the level of exclusion or deprivation of the household from aspects of life.

The well-being deprivation indicators have the same weight with that of the well-being indicators. This method helps to retain the links and coherence between the two indexes. However, there are some minor modifications. The value of a deprivation indicator is the ratio of household member(s) who satisfies the definition or the possibility that the household satisfies the definition of the indicator. The names, definitions, and weights of the indicators are illustrated in table 6.1.

⁸² The “well-being deprivation index” may be called the “deprivation index”. The two names are used simultaneously here.

Table 6.1: Components of the well-being deprivation index of households

Indicator	Definition	Weight
1. Demographic and social characteristics		
single parent	The household has only a parent and child/children	1/35
single occupant	The household has only one member	1/35
no permanent residential permit	Ratio of household members who do not have a permanent residential permit	1/35
poor	The household is classified as poor	1/35
no improvement in life	The household does not state that life of household members is currently better than five years earlier	1/35
2. Educational status		
not schooling	The household has at least one member between 6-18 years old who did not attend school in the last 12 months	1/21
illiterate	The household has at least one member who is 13 years old or more which does not know how to read and write	1/21
no bachelor	The household has no member who has a Bachelor's Degree or above	1/21
3. Health and entertainment		
ill or injured	Ratio of household members who have suffered from any illness or injury in the last 12 months	1/35
no insurance	Ratio of household members who have no health insurance or free health care in the last 12 months	1/35
hospitalized	Ratio of household members who have got in-patient treatment in the last 12 months	1/35
no entertainment	The ratio of daily expenses for books, newspapers, magazines and entertainment over living expenditures of household in the last 12 months is 0% ⁸³	1/35
smoking	The household had at least one smoker in the last 12 months	1/35
4. Work and career		
unemployed	The household has at least one member who could not find a job in the last 12 months	1/28
no leader	The household has no member who is a leader in any field in the last 12 months	1/28
no professional status	The household has no member who has a high or mid-level professional status in any field in the last 12 months	1/28
over working	The household has an average of time worked by working members was higher than 56 hours per week in the last 12 months	1/28
5. Financial status		
no excess	The household has no excess income or negative excess	1/21

⁸³ Because there are many households which have a ratio of daily expenditures for entertainment equal to 0%, the study chose this value as a base to calculate the level of deprivation of this indicator.

income	income	
unable to cover health care	The household could not afford to cover health care expenses for all household members in the last 12 months	1/21
indebted	The household had to borrow money, goods or was indebted in the last 12 months	1/21
6. Consumption and basic services		
low non-food expenses	The ratio of non-food expenses over living expenditures of the household in the last 12 months is lower than 33% ⁸⁴	1/21
no tap water	The household has no tap water as a main source of drinking and cooking water	1/21
high rental payment	The ratio of rental payment expenses in the total living expenditures of the household in the last 12 months is higher than 30% ⁸⁵	1/21
7. Ownership and living accommodations		
few assets and appliances	The ratio of assets and durable goods of the household in the total of the listed items in the questionnaire is lower than 15% ⁸⁶	1/42
small living space	The average living area per household member is lower than 25 m ²	1/42
non permanent house	The household is not located in a permanent house	1/42
unsafe toilet	The household has no safe and protected toilet	1/42
not house owner	The household does not own or partly own the dwelling in which it is living in	1/42
no Internet	The household has no Internet connection	1/42

The level of deprivation of an indicator is the value of the indicator multiplied by its weight. The level of deprivation of a domain is the arithmetic sum of the level of deprivation of all indicators within the domain. Similarly, the value of the aggregate deprivation index is the arithmetic sum of the level of deprivation of all domains of the index. In case an indicator has no value in the year 2002, it will obtain the value

⁸⁴ This ratio is based on the findings of the study “Raising poverty and its causes in urban China” in Shi (2009). According to this study, the ratio of non-food in living expenditure of the urban poor is about 33.33%.

⁸⁵ The ratios of the rental payment in the total living expenditures in VHLSS are very low. Therefore, the study chose 30% as the level of deprivation.

⁸⁶ The ratio is based on the actual list of items and ratio items that households own. There are several items which are popular for daily life and it is assumed that lacking of these items may influence the well-being level of the household. Therefore, 15% is chosen as the cut-off of the deprivation index. This ratio is equal to the share of the basic items which are useful for households.

of year 2004 as the base value. The values of the indicators are presented in appendix 9.

6.2. The level of deprivation of households in the cities: Trends and implications

The aggregate levels of deprivation of the households in two cities have continuously downward trends. Within six years, the level of deprivation of households in Hanoi has substantially decreased from 35.8% to 30.3%. The corresponding ratios of households in HCMC are 40.5% and 33.6%. During this time frame, the level of deprivation of households in HCMC has decreased by 6.9 percentage points, faster than that of Hanoi, which has decreased by 5.5 percentage points.

**Table 6.2: Trends and disparities of the aggregate well-being deprivation indexes of households
in Hanoi and Ho Chi Minh City**

Unit: %

Index	Hanoi				Ho Chi Minh City				Hanoi versus HCMC*			
	2002	2004	2006	2008	2002	2004	2006	2008	2002	2004	2006	2008
Summary index	35.8	32.7	30.7	30.3	40.5	37.9	34.7	33.6	88.4	86.3	88.5	90.1
Demographic & social characteristics	1.1	1.0	1.1	1.1	2.4	2.3	2.3	2.1	46.5	43.9	50.1	52.1
Educational status	4.1	3.7	3.8	3.6	4.9	4.7	4.8	4.5	83.5	78.2	79.0	79.9
Health & entertainment	8.6	6.4	5.8	5.9	8.7	6.9	5.6	6.0	99.2	93.2	103.3	98.0
Work & career	6.4	6.1	6.3	6.2	7.2	7.5	7.2	6.9	89.8	80.8	88.0	90.4
Financial status	2.0	1.9	1.3	1.8	2.8	2.2	2.0	1.9	71.8	86.1	66.8	97.4
Consumption & basic services	7.1	7.2	7.0	6.8	7.2	7.4	6.9	6.9	97.6	97.1	101.7	99.2
Ownership & living accommodations	6.5	6.3	5.3	4.8	7.3	6.7	5.9	5.3	88.6	93.9	89.7	90.2

*The value of Hanoi versus HCMC index equals the value of Hanoi divided by the corresponding value of HCMC*100

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

Because households in Hanoi have a higher level of well-being, they also have a lower level of well-being deprivation. In 2002, the average level of deprivation of the households in Hanoi equals 88.4% to that of HCMC. In 2008, the value of the Hanoi vs. HCMC index has increase to 90.1%. The gap between these cities has decreased from 11.6 to 9.9 percentage points over the period.

**Table 6.3: Descriptive characteristics
of the aggregate well-being deprivation index of households**

Descriptive characteristics	2002	2004	2006	2008
Hanoi				
Observation	740	240	240	240
Mean	30.5	32.4	30.5	30.0
Min	7.6	8.3	9.0	11.2
Max	60.2	64.3	57.6	61.4
Standard deviation (with weight)	0.9	1.1	0.8	0.9
Ho Chi Minh City				
Observation	775	300	300	300
Mean	32.7	37.0	33.9	32.9
Min	7.6	11.2	12.9	10.2
Max	61.0	74.3	70.2	62.0
Standard deviation (with weight)	0.8	0.8	0.6	0.7

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The descriptive characteristics of the aggregate deprivation index of households in these cities shows that the average level of deprivation of the households in the cities has decreased in the 2004-2008 period. However, both the maximum and minimum levels of deprivation of the households in these cities in the year 2008 are higher than that of the year 2002.

6.3. Identifying the poor⁸⁷

6.3.1. The official poor and the multidimensional poor households

The officially poor households

The answers of the households about the question “Was your household classified as poor?” were presented in table 6.3. The households that replied “yes” to the question are called the officially poor households. The ratios of the poor households in the cities have changed considerably in the 2002-2008 period.

Table 6.4: Poor households in the cities

Groups of households		Hanoi		HCMC	
		Number of households	Percentage of households	Number of households	Percentage of households
2002	Poor	30	4.1	56	7.2
	Non-poor	710	96.0	719	92.8
2004	Poor	4	1.7	19	6.3
	Non-poor	236	98.3	281	93.7
2006	Poor	13	5.4	23	7.7
	Non-poor	227	94.6	277	92.3
2008	Poor	7	2.9	27	9.0
	Non-poor	233	97.1	273	91.0
Total	Poor	54	3.7	125	7.5
	Non-poor	1,406	96.3	1,550	92.5

Source: Author’s calculation from VHLSS 2002, 2004, 2006 and 2008

In Hanoi, the average ratio of the poor households in the survey samples of VHLSS during the 2002-2008 period is 3.7%; 54 households are present in the data base. The corresponding figures in HCMC are much higher, 125 households and 7.5%.

⁸⁷ Because the purpose of this part is to identify the poor and the characteristics of the poor households, both officially poor households and multidimensional poor households, the weights are not applied in this part. Households in each city are assumed to have the same weight.

Most of the poor households in the cities have high levels of deprivation. Overall, the numbers of officially poor households in the cities are too small for further analyses. Therefore, most of analyses in the chapter use the deprivation poor instead of official poor.

Table 6.5: Level of deprivation of poor and non-poor households in the cities

Groups of households	2002	2004	2006	2008	2004 vs. 2008
Hanoi					
Poor	45.2	51.2	47.0	47.4	108.0
Non-poor	29.9	31.7	29.2	29.1	109.1
Average	30.5	32.1	30.2	29.6	108.2
Poor vs. non-poor (%)	151.4	161.3	161.1	163.1	98.9
Ho Chi Minh City					
Poor	43.4	53.6	48.4	42.3	126.7
Non-poor	30.8	35.7	32.6	30.9	115.5
Average	31.7	36.8	33.8	31.9	115.3
Poor vs. non-poor (%)	140.9	150.1	148.4	136.8	109.7

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

On average, the poor households in the cities have a much higher level of deprivation than that of the non-poor. In Hanoi, the average level of deprivation of the poor households is about 61-63% higher than that of the non-poor. The disparities between the two groups of households in Hanoi have an upward trend though the rise is moderate. The disparities between the poor and non-poor households in HCMC have a different trend. The gaps between the two groups have gradually decreased from 50% in 2004 to 37% in 2008. Overall, there are improvements in the levels of deprivation of all groups of households in the cities.

The relations between poor status and levels of deprivation of the households in the cities by quintiles

The households in the cities are grouped into five quintiles, each quintile equals to one fifth of the households that were interviewed in each city. The levels of deprivation by quintiles are described in table 6.5.

Table 6.6: Level of deprivation of households in the cities by quintiles

Quintiles	2002	2004	2006	2008
Hanoi				
1 st quintile	17.0	15.9	16.4	15.9
2 nd quintile	25.3	24.8	24.3	22.4
3 rd quintile	30.4	31.7	30.1	29.4
4 th quintile	35.7	39.0	35.1	35.2
5 th quintile	44.0	48.9	45.1	45.2
Number of households per quintile	148	48	48	48
Ho Chi Minh City				
1 st quintile	19.6	21.7	20.1	17.9
2 nd quintile	27.6	31.0	28.4	26.1
3 rd quintile	32.1	36.4	33.5	32.2
4 th quintile	35.9	41.8	38.4	37.3
5 th quintile	43.4	53.1	48.8	46.1
Number of households per quintile	155	60	60	60

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

There are considerable differences in the deprivation level among group of quintiles in these cities. Moreover, an analysis about the relation between the official poor status and the level of deprivation shows that most of the poor belongs to the fifth quintile.

Table 6.7: Poor household by quintiles in Hanoi

Quintiles	2002	2004	2006	2008	Total
Number of households per quintile					
1 st quintile	0	0	0	0	0
2 nd quintile	0	0	0	0	0
3 rd quintile	1	0	0	0	1
4 th quintile	2	0	2	1	5
5 th quintile	27	4	11	6	48
Total	30	4	13	7	54
Percentages of poor households in the sample					
1 st quintile	0.0	0.0	0.0	0.0	0.0
2 nd quintile	0.0	0.0	0.0	0.0	0.0
3 rd quintile	3.3	0.0	0.0	0.0	1.8
4 th quintile	6.7	0.0	15.4	14.3	9.3
5 th quintile	90.0	100.0	84.6	85.7	88.9
Total	100	100	100	100	100

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The data in table 6.6 about poor status and level of deprivation shows that the relation is strong in Hanoi. Most of the poor households belong to the 4th or 5th deprivation quintile, the quintiles that have the highest level of deprivation. There is only one poor household in Hanoi which is in the 3rd quintile, the quintile that has the medium level of deprivation.

Table 6.8: Poor households by quintiles in Ho Chi Minh City

Quintiles	2002	2004	2006	2008	Total
Number of poor households in the quintile					
1 st quintile	0	0	0	0	0
2 nd quintile	0	0	2	2	4
3 rd quintile	4	2	2	3	11
4 th quintile	15	1	1	9	26
5 th quintile	37	16	18	13	84
Total	56	19	23	27	125
Percentages of poor households in the quintile					
1 st quintile	0.0	0.0	0.0	0.0	0.0
2 nd quintile	0.0	0.0	8.7	7.4	3.2
3 rd quintile	7.1	10.5	8.7	11.1	8.8
4 th quintile	26.8	5.3	4.3	33.3	20.8
5 th quintile	66.1	84.2	78.3	48.1	67.2
Total	100	100	100	100	100

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The case of HCMC is similar though the relations are not as strong as that of households in Hanoi. There are 67% and 20.8% of poor households in HCMC present in the 5th and 4th quintile respectively. It is interesting to notice that 8.8% and 3.2% of the poor households in HCMC are present in the 3rd and 2nd quintiles. Thus, there are poor households in HCMC which do not belong to the group of households that have a low or medium level of deprivation.

The multidimensional poor

To identify the characteristics of the multidimensional poor households, in this study, it is assumed that the households of those who belong to the 5th quintile, the quintile which has the highest level of deprivation are considered as the multidimensional poor. Therefore, the numbers of the multidimensional poor

households in Hanoi and HCMC are 292 and 335 respectively. As there is a close relation between the officially and multidimensional poor, this study focuses only on the characteristics of the multidimensional poor.

6.3.2. Characteristics of the poor

A Spearman test was applied to examine the relations between the level of deprivation of the indicators and the multidimensional poor status of households in these cities. The detailed results of the test are presented in appendix 10 (10a), “The Spearman correlations of the multidimensional poor and the level of deprivation of indicators⁸⁸.” At the 1% level of significance or at the 99% level of confidence, there are only five of the twenty-nine indicators which are not significant. Besides, the results of the Spearman correlations show that all correlation values are smaller than 0.5. Therefore, the possibility of autocorrelation of the indicators is not high. The level of correlation between the multidimensional poor status and the level of deprivation of indicators are illustrated in table 6.9.

⁸⁸ To check if the determinants of the official poor households are similar with that of the multidimensional poor households in the cities, a similar Spearman correlation was applied to the official poor households. The results are coherent with those of the multidimensional poor, though the levels of significance of the correlations are less sound. The results of the Spearman correlation of the official poor are presented in appendix 10b: The Spearman correlations among the official poor and the level of deprivation of the indicators. The finding helps to confirm the close relation between the official poor and the multidimensional poor status.

Table 6.9: The relations between multidimensional poor status and level of deprivation of the indicators

Multidimensional poor status and deprivation indicator	Corr.	Multidimensional poor status and deprivation indicator	Corr.
single parent	0.1125*	no professional status	0.3066*
one member	0.0531	over work	0.1127*
no permanent residential permit	-0.0170	no excess income	0.1604*
poor	0.3277*	unable to cover health care	0.3412*
no improvement in life	0.1433*	indebted	0.3572*
stop school	0.3161*	low non food expenses	0.3247*
illiterate	0.3394*	no tap water	0.3429*
no bachelor diploma	0.2990*	high rental payment	-0.0144
ill or injured	-0.0050	few assets and appliances	0.4585*
no insurance	0.1978*	small living space	0.1528*
hospitalized	0.0841*	temporary house	0.3794*
no expenses for entertainment	0.4498*	unsafe toilet	0.4315*
smoking	0.0871*	not house owner	-0.0092
jobless	0.0899*	no Internet connection	0.1884*
no leader	0.0972*		

**The correlation is significant at 1% level*

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The data show that the levels of deprivation of the indicators relevant to education, such as 'stop school', 'illiterate', 'no bachelor diploma', 'no professional status', have very close relations with the multidimensional poor status of households. Besides, other important indicators to identify multidimensional poor households are 'officially poor', 'having no expenses for entertainment', 'being indebted', 'unable to cover healthcare expenses', 'having no tap water', 'living in temporary house', 'having unsafe toilet', 'having few assets and appliances', and 'having low ratio of non-food expenses'. Several other indicators, though less important, that help to identify poor households are 'having no health insurance or free health

care', 'having no Internet connection', 'having no excess income', or 'having no improvement in life'.

6.2.3. Being poor, what does it mean?

A detailed examination about the changes and disparities in the levels of deprivation of the multidimensional poor and non-poor households proves that there are considerable differences between these groups of households. In both cities, the possibility that a multidimensional poor household is a single parent household is nearly twice of that of a non-poor household. Besides, the possibility that an officially poor household is also a multidimensional poor is extremely high. In Hanoi, in the year 2008, the possibility for an officially poor household to be also a multidimensional poor household is 36 times of that of a non-poor household; in HCMC, the corresponding possibility is lower, yet it is still very high. The multidimensional poor households are also less likely to state that the life of household members have been improved. During the time frame, the level of deprivation of the demographic and social characteristics domain of poor households is around twice of that of the non-poor.

**Table 6.10: Level of deprivation of demographic and social characteristics
of the households in the cities by poor status⁸⁹**

Unit: %

Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
single parent	Non-poor	0.35	0.31	0.45	0.39	2.86
	Multi-poor	0.71	0.60	0.54	0.77	2.86
poor	Non-poor	0.01	0.00	0.03	0.01	2.86
	Multi-poor	0.52	0.24	0.65	0.36	2.86
no improvement in life	Non-poor	na	0.19	0.18	0.22	2.86
	Multi-poor	na	0.48	0.48	0.30	2.86
demographic and social characteristics	Non-poor	0.44	0.72	0.76	0.65	14.29
	Multi-poor	1.43	1.01	1.50	1.62	14.29
Households in Ho Chi Minh City						
single parent	Non-poor	0.58	0.64	0.63	0.67	2.86
	Multi-poor	1.12	0.95	1.10	1.05	2.86
Poor	Non-poor	0.09	0.04	0.06	0.17	2.86
	Multi-poor	0.68	0.76	0.86	0.62	2.86
no improvement in life	Non-poor	na	0.75	0.74	0.61	2.86
	Multi-poor	na	1.48	1.14	1.14	2.86
demographic and social characteristics	Non-poor	0.82	1.21	1.17	1.23	14.29
	Multi-poor	1.94	2.34	2.66	2.03	14.29

**Maximum level of deprivation an indicator or a domain could attain*

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The disparities between the poor and non-poor groups of households in educational status are high. In Hanoi, the possibility that a poor household which has at least one member aged 6 to 18 years old who did not go to school in the last 12 months is ten times of that of a non-poor. In 2008, the possibility that a poor household which

⁸⁹ Indicators which have no significant relation with the poverty status of the households are not introduced in the table.

has at least one member who is illiterate is nearly eight times of that of a non-poor. Moreover, in the 2006 and 2008 surveys there was no poor household in this city has at least one member with a Bachelor's Degree.

Table 6.11: Level of deprivation of educational status of the households in the cities by poverty status

Unit: %

Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
stop school	Non-poor	0.12	0.10	0.00	0.05	4.76
	Multi-poor	0.84	0.99	0.79	0.60	4.76
illiterate	Non-poor	0.19	0.15	0.07	0.10	4.76
	Multi-poor	1.13	0.99	1.19	0.79	4.76
no bachelor	Non-poor	3.00	2.63	2.95	2.75	4.76
	Multi-poor	4.73	4.66	4.76	4.76	4.76
educational status	Non-poor	3.31	2.88	3.03	2.90	14.29
	Multi-poor	6.69	6.65	6.75	6.15	14.29
Households in Ho Chi Minh City						
stop school	Non-poor	0.22	0.20	0.22	0.04	4.76
	Multi-poor	1.23	1.51	0.95	1.03	4.76
illiterate	Non-poor	0.31	0.18	0.30	0.30	4.76
	Multi-poor	1.57	1.67	1.75	1.43	4.76
no bachelor	Non-poor	3.59	3.53	3.65	3.27	4.76
	Multi-poor	4.76	4.76	4.76	4.76	4.76
educational status	Non-poor	4.12	3.91	4.17	3.61	14.29
	Multi-poor	7.56	7.94	7.46	7.22	14.29

**Maximum levels of deprivation an indicator or a domain could attain*

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The case of HCMC is even worse. In four surveys from 2002 to 2008, there is no poor household, which has at least one member who has a Bachelor's Degree. The possibility that there is at least one member of a poor household aged 6 to 18 years

old who did not go to school in the last 12 months is five times of that of a non-poor household in the year 2002. The gap, however, increases up to 25 times in the year 2008. On average, the possibility that a poor household has at least one illiterate member is about five times higher than that of a non-poor household.

Table 6.12: Level of deprivation of health and entertainment domain of the households by poverty status

Unit: %

Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
no insurance	Non-poor	na	1.08	0.92	0.92	2.86
	Multi-poor	na	1.90	1.71	1.43	2.86
hospitalized	Non-poor	na	0.65	0.15	0.51	2.86
	Multi-poor	na	0.95	0.29	0.53	2.86
no entertainment expense	Non-poor	1.84	0.82	0.73	0.79	2.86
	Multi-poor	2.72	2.44	2.56	2.44	2.86
smoking	Non-poor	2.39	1.59	2.37	2.23	2.86
	Multi-poor	2.47	1.73	2.14	2.32	2.86
health and entertainment domain	Non-poor	4.23	5.79	5.33	5.43	14.29
	Multi-poor	5.19	8.74	7.46	7.41	14.29
Households in Ho Chi Minh City						
no insurance	Non-poor	na	1.84	1.37	1.16	2.86
	Multi-poor	na	1.97	1.75	1.64	2.86
hospitalized	Non-poor	na	0.51	0.19	0.37	2.86
	Multi-poor	na	1.00	0.24	0.45	2.86
no entertainment expense	Non-poor	1.51	0.71	0.77	0.73	2.86
	Multi-poor	2.60	2.10	2.29	2.14	2.86
smoking	Non-poor	1.94	1.25	1.58	1.85	2.86
	Multi-poor	2.30	1.95	2.00	2.33	2.86
health and entertainment domain	Non-poor	3.46	6.23	5.16	5.43	14.29
	Multi-poor	4.90	9.45	7.39	7.90	14.29

* *Maximum level of deprivation an indicator or a domain could attain*

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

Overall, the disparities between the poor and non-poor households about health and entertainment are not as high as that of the other domains. The possibility that a member of a poor household has neither health insurance nor free health care is 50% higher than that of the non-poor. The poor tend to have a higher possibility of being hospitalized than that of the non-poor, yet the differences are not high. However, the possibility that at least one member of the poor households is a smoker is much higher than that of the non-poor.

The indicator which has the highest disparity between the poor and non-poor of this domain is the 'no entertainment expense'. The possibility that a poor household has spent nothing for daily entertainment needs, such as magazines, books, cinema, etc. in the last 12 months is around three times higher than that of a non-poor household. The ratios of poor households, which have spent no money for daily entertainment in the last 12 months, are 85% in Hanoi and 75% in HCMC whereas the corresponding ratios of the non-poor are only 28% and 27% respectively.

**Table 6.13: Level of deprivation of work and career domain
of the households in the cities by poverty status**

Unit: %

Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
unemployed	Non-poor	0.03	0.04	0.09	0.02	3.57
	Multi-poor	0.07	0.22	0.15	0.07	3.57
no leader	Non-poor	3.39	3.39	3.40	3.40	3.57
	Multi-poor	3.57	3.57	3.57	3.57	3.57
no professional status	Non-poor	2.37	1.99	2.16	1.86	3.57
	Multi-poor	3.50	3.50	3.57	3.50	3.57
over-work	Non-poor	0.39	0.26	0.28	0.52	3.57
	Multi-poor	0.46	0.37	0.37	0.67	3.57
work and career domain	Non-poor	6.18	5.67	5.93	5.80	14.29
	Multi-poor	7.60	7.66	7.66	7.81	14.29
Households in Ho Chi Minh City						
unemployed	Non-poor	0.07	0.19	0.16	0.07	3.57
	Multi-poor	0.21	0.60	0.36	0.06	3.57
no leader	Non-poor	3.46	3.47	3.44	3.35	3.57
	Multi-poor	3.55	3.57	3.57	3.57	3.57
no professional status	Non-poor	2.67	2.69	2.41	2.34	3.57
	Multi-poor	3.53	3.45	3.51	3.57	3.57
over-work	Non-poor	0.59	0.82	0.74	0.63	3.57
	Multi-poor	0.76	1.49	1.31	1.19	3.57
work and career domain	Non-poor	6.78	7.17	6.76	6.38	14.29
	Multi-poor	8.04	9.11	8.75	8.39	14.29

* Maximum level of deprivation an indicator or a domain could attain

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

Though the level of deprivation of the 'unemployed' indicator is very low, the possibilities that a poor household has at least one member who was unemployed in the last 12 months are much higher than that of a non-poor household. The gap of the 'no leader' indicator between the two groups of households is extremely high.

The ratios of poor households that have at least one member with a professional status in the cities are low.

Besides, the possibilities that the average worked time of working members of the poor households is higher than 56 hours per week are also higher than that of the non-poor. This fact implies that low income may be the main cause of the high working hours of the poor.

**Table 6.14: Level of deprivation of financial status domain
of the households in the cities by poverty status**

Unit: %

Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
no excess income	Non-poor	0.68	0.55	0.30	0.89	4.76
	Multi-poor	2.41	1.39	0.69	2.28	4.76
unable to cover health care expenses	Non-poor	na	0.10	0.12	0.00	4.76
	Multi-poor	na	0.69	0.20	0.89	4.76
indebted	Non-poor	na	0.52	0.50	0.30	4.76
	Multi-poor	na	2.48	1.98	1.49	4.76
financial status domain	Non-poor	0.68	1.17	0.92	1.19	14.29
	Multi-poor	2.41	4.56	2.88	4.66	14.29
Households in Ho Chi Minh City						
no excess income	Non-poor	0.45	0.16	0.16	0.32	4.76
	Multi-poor	1.69	0.40	0.56	0.71	4.76
unable to cover health care expenses	Non-poor	na	0.36	0.18	0.10	4.76
	Multi-poor	na	2.06	2.06	1.11	4.76
indebted	Non-poor	na	0.77	0.87	0.63	4.76
	Multi-poor	na	3.02	2.38	2.38	4.76
financial status domain	Non-poor	0.45	1.29	1.21	1.05	14.29
	Multi-poor	1.69	5.48	5.00	4.21	14.29

* Maximum levels of deprivation an indicator or a domain could attain
na is "not available"

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The financial status is logically one of the domains which have the highest level of disparities between the poor and non-poor. The levels of disparities between these groups of households during the 2002-2008 period are around four times. In detail, the possibilities that a poor household has no excess income are more than twice of that of the non-poor. In Hanoi, in the year 2008, the possibility that a poor household could not cover health care for its members is eleven times higher than that of a non-poor. The possibility of the poor of being in debt is more than three times than that of the non-poor.

Table 6.15: Level of deprivation of consumption and basic services domain of the households in the cities by poverty status

		Unit: %				
Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
low non-food expenses	Non-poor	0.09	0.30	0.15	0.12	4.76
	Multi-poor	1.38	1.59	1.09	1.49	4.76
no tap water	Non-poor	1.50	1.29	1.22	0.94	4.76
	Multi-poor	4.50	3.87	4.17	3.67	4.76
consumption and basic services domain	Non-poor	6.35	6.35	6.13	5.83	14.29
	Multi-poor	10.65	10.22	10.02	9.92	14.29
Households in Ho Chi Minh City						
low non-food expenses	Non-poor	0.05	0.38	0.26	0.28	4.76
	Multi-poor	0.86	1.59	1.43	1.35	4.76
no tap water	Non-poor	1.80	1.75	1.41	1.21	4.76
	Multi-poor	3.69	3.10	2.62	2.62	4.76
consumption and basic services domain	Non-poor	6.60	6.88	6.43	6.21	14.29
	Multi-poor	9.31	9.44	8.73	8.73	14.29

* Maximum level of deprivation an indicator or a domain could attain

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The disparities between the poor and non-poor groups of households in the consumption and basic services domain are high. In Hanoi, in the year 2008, the possibility of the poor households that the non-food expenses in the living expenditures is lower than 33.3% is more than ten times of that of the non-poor; in HCMC, the corresponding gap is 5.5 times.

The worst thing, however, is that the disparities in the possibility of having a tap as a main source of drinking and cooking water between the poor and non-poor increased during the time frame. In Hanoi, the gaps between the two groups of households have increased from 3 times in the year 2004 to 3.43 times in the year 2006; it then continued to increase to 3.89 times in the year 2008; in HCMC the corresponding gaps of these groups of households were 1.77 times, 1.86 times and 2.16 times respectively.

Table 6.16: Level of deprivation of ownership and living accommodations
domain of the households by poverty status

		Unit: %				
Indicator	Groups of households	2002	2004	2006	2008	Max*
Households in Hanoi						
few assets and appliances	Non-poor	0.37	0.32	0.07	0.09	2.38
	Multi-poor	1.13	1.39	1.29	1.04	2.38
small living space	Non-poor	1.96	1.75	1.61	1.56	2.38
	Multi-poor	2.24	2.23	1.84	1.79	2.38
temporary house	Non-poor	0.70	0.55	0.25	0.32	2.38
	Multi-poor	1.98	2.08	1.59	1.44	2.38
unsafe toilet	Non-poor	0.43	0.20	0.10	0.05	2.38
	Multi-poor	2.11	1.79	1.64	0.94	2.38
no Internet connection	Non-poor	2.26	2.17	2.19	1.81	2.38
	Multi-poor	2.38	2.38	2.38	2.28	2.38
ownership and accommodations domain	Non-poor	5.93	5.27	4.35	3.92	14.29
	Multi-poor	10.02	10.02	8.83	7.59	14.29
Households in Ho Chi Minh City						
few assets and appliances	Non-poor	0.44	0.45	0.34	0.27	2.38
	Multi-poor	1.44	1.59	1.67	1.15	2.38
small living space	Non-poor	1.78	1.69	1.52	1.64	2.38
	Multi-poor	2.10	2.18	2.18	1.94	2.38
temporary house	Non-poor	1.61	1.39	1.17	0.76	2.38
	Multi-poor	2.37	2.18	2.14	1.83	2.38
unsafe toilet	Non-poor	0.18	0.17	0.00	0.03	2.38
	Multi-poor	1.21	0.67	0.32	0.20	2.38
no Internet connection	Non-poor	2.22	2.05	2.00	1.57	2.38
	Multi-poor	2.38	2.38	2.38	2.30	2.38
ownership and accommodations domain	Non-poor	6.58	6.03	5.19	4.45	14.29
	Multi-poor	9.92	9.37	8.85	7.58	14.29

* Maximum levels of deprivation an indicator or a domain could attain

Source: Author's calculation from VHLSS 2002, 2004, 2006 and 2008

The three indicators which have high level of disparity between the poor and non-poor households are the 'few assets and appliances', 'temporary house' and 'unsafe toilet'. In Hanoi, in 2008, the possibility that a poor household has less than 15% of the items that were listed in the questionnaire is more than eleven times higher than that of the non-poor. The corresponding gap in HCMC is nearly five times.

Similarly, in Hanoi and HCMC, in 2008, the possibilities that a poor household lives in a temporary house are respectively 4.5 times and 2.4 times higher than that of a non-poor. In HCMC, the possibility that a poor household is using an unsafe toilet is around seven times higher than that of a non-poor household; in Hanoi, the corresponding possibilities are around nineteen times higher. It is strange that the gaps between the two groups of households have continuously increased in Hanoi in the 2002-2008 period. The gaps on the possibility of having an unsafe toilet of the poor and non-poor in the Hanoi have increased from 4.94 times in 2002, to 9 times in 2004, to 16.5 times in 2006, and 19 times in the year 2008.

Moreover, the poor households in the cities also have a higher possibility of having a small living space and having no Internet connection than the non-poor. The differences between the two groups of households for the two indicators, however, are not as high as that of the other indicators in this domain.



Photo 6.1: Waiting...⁹⁰

⁹⁰ The author took this photo on July 2012. The woman earns a living by buying things for people in trains who do not want to leave his/her sit while the trains stop at the station. I took this photo when the train was leaving Dieu Tri station and she took a rest while waiting for the coming trains.

6.4. Conclusions and implications for pro-poor policies

The findings prove that poverty is a multi-faced concept. Being poor does not simply mean that the income of the household is below the official poverty line. Actually, being poor means much more than not having enough money. It means that the household has less chance to access to basic services and have a uncomfortable life. Being poor also implies that the household having less chance for social integration and is more vulnerable to social issues (such as over work, have no money for entertainment, being indebted, have no Internet connection, more likely to be illiterate and drop out early). The worst thing, however, is that being poor also means the household having a lower chance to improve the quality of its life.

There are gaps between officially poor and multidimensional poor households. Most of the officially poor households are also multidimensional poor but some of them are not. A household may have an average income lower than the official poverty line but having a low level of deprivation and vice versa, a non-poor household may have a high level of deprivation. Therefore, using income as the only indicator to evaluate the poverty status of a household is not suitable; it is like using GDP as the only indicator to evaluate the flourishing of a country. That is the reason why the application of a multidimensional poverty index would be more appropriate for the identification of the poor and non-poor household. Besides, the index can be used to measure the depth of poverty. It can also be used as a

complement index of the well-being index to evaluate and monitor changes in the level of deprivation of groups of households.

The results of the deprivation index confirm that poverty issues are complex and money is just a single aspect in the whole picture. The pro-poor policy, therefore, must concern important aspects of life of household simultaneously. It is important to ensure the right of citizens to access basic services and having a chance for self-development. Besides, the classification of the poor and non-poor household should be based on aggregate indexes which cover important aspects of life of the households. The multi-faced information about characteristics and actual living conditions of household is necessary condition for the orientation and the implementation of pro-poor policies. Actually, it is impossible to establish efficient policy without serious concern about the vulnerabilities and the opportunities for self-development of households.

The findings also prove that the gap between the rich and the poor in the two cities has steadily increased despite efforts to reduce poverty and inequality of the government. This fact is a challenge for policy-makers and the sustainable development of Vietnam. The increasing disparity among groups of household is not only a fertile land for the growth of social evils but also a hindrance for the development of the country. The development strategy of the country, therefore, must concern more on inequality issues. If there is no efficient policy, the issues will be obstacles for the development of the country.

CONCLUSIONS AND IMPLICATIONS

1. Research objectives and questions

Having a good life is the highest aim of human beings. However, the development process is easily misled by economic premises. Economic is just one aspect of life but it is often used to represent the quality of life of the people as a whole. This simplification is very frequent in Vietnam and is the origin of many socio-environmental problems of the country. To minimize development misleads, development organizations have encouraged the governments apply aggregate indexes to measure the progress of the country. However, the studies aiming at constructing aggregate indexes that can better represent improvements in the quality of life of the people are rare in Vietnam. Therefore, this study focuses on answering research questions such as:

- What is well-being? How is well-being measured?
- Is it possible to measure changes in the well-being level of households in Hanoi and HCMC?
- How does the well-being level of groups of households in the cities change by time?
- How does the level of well-being deprivation of the poor and non-poor households in the cities changes by time?

It is hope that the study could introduce issues which relevant to household well-being in a simple way. How to measure changes in well-being level of household is the main concern of the thesis. It studies aspects which help to formulate an aggregate well-being index of household and the application of the index in Vietnam. The available data of Hanoi and HCMC, the two biggest cities in Vietnam, was used to explore the trend and disparities of well-being level and well-being deprivation of groups of household. The information is then studied to raise possible implications for pro-poor policies in the cities.

2. Main findings

Well-being is a complex concept and it is hard to measure the level of well-being of an individual, a household or a country. However, it does not mean that we cannot measure the changes in the well-being level. In reality, several developed countries have calculated the well-being level of their citizens for several years. Some other

developing countries, such as South Africa, Nigeria, and Thailand, have implemented programmes to observe the trend and to measure the level of well-being of their people.

Despite the limitations and restrains of the available data, the study proved that it is possible to assess and monitor changes in the well-being level of households. The well-being indexes of Hanoi and HCMC have pointed out that there are substantial improvements in the level of well-being of households. However, the improvements are slow and do not stable. Several aspects of households' well-being have decreased. The findings also proved that there is a gap between economic growth and the actual improvements in the life of households.

The well-being deprivation index, derived from the well-being index, which aims at measure the level of exclusion of the households from some aspects of life (or the level of multidimensional poverty), pointed out that there is a big gap between poor and non-poor households in the two cities, Hanoi and HCMC. The poor households have a less stable financial status and more uncomfortable living conditions. The members of the poor households are more likely to be illiterate, to drop out earely and to over work. They also have less chances and resources for self-development and overcoming life obstacles. Despite of the continuous reducing trend of the well-being deprivation index, there is no sign of improvement in the level of deprivation of the poor. These are important aspects that pro-poor policies must take into account.

Besides, the in-depth analyses of the MPUES data have provided some in depth information about living conditions of households in Hanoi and HCMC. The two cities are among the provinces which have the highest level of development of the country; therefore, it is commonly believed that the living standards of their inhabitants are high. However, the data proved that the actual living conditions of the people in these cities are diverse. There are still considerable ratios of the dwellers which have to live in very unfavourable living conditions. Sometimes they have to change their living places because of environmental problems but the economic indicators did not interpret these facts.

3. Policy implications

Improving the level of well-being of the people is the priority of most of the countries. However, development is a very complicated process and the target is not easy to achieve. Therefore, finding efficient tools to measure the progress toward the goals is useful. The tools will help development agents identify the development level and development goals of the country. Besides, they also help to assess and monitor the efficiency of policies so that the authorities can make possible adjustments.

During the past three decades, Vietnam has achieved definite success in both social and economic development. Living conditions of the population have improved.

Nevertheless, the deterioration of the environment and the acceleration of social problems have reduced the quality of life and increased social costs. Without efficient policies the problems will become obstacles for sustainable development.

Although it is not easy to measure the level of well-being of households, it is possible for Vietnam to apply aggregate indexes to measure the changes in the quality of life of the people. The biggest challenge, however, is to select suitable indicators for the well-being index and to collect reliable data for the measurement, the selected indicators must properly represent the level of well-being of people and can be collected easily. A good well-being index would be useful for policy makers, researchers, and the people to assess and monitor the social improvement as well as the efficiency of the policies. They can also help the government to identify issues and priorities for development strategies.

Findings from the cities proved that the gap between the rich and the poor are high. The poor are not only excluded from basic services but also vulnerable to external factors. They have very few resources and chances to overcome their current status. Besides, the gaps in the deprivation level between the poor and non-poor have increased over times. Therefore, the priority of pro-poor policies must be providing the chance to access the basic services, which include education, health care, clean water, and housing of the poor. Especially, providing chance for self-development of the poor children must be the main concern of pro-poor policies. Without these

minimal conditions, it would be hard for the poor to break the vicious poverty circle and the gap between the rich and poor in the cities will be deepened.

Although there is a close relation between the officially poor and the multidimensional poor households, the study proved that the gaps between the two groups are considerable. An officially poor household may not be a multidimensional poor and vice versa. The multidimensional poverty can better represent the poverty status and the level of deprivation of households. Therefore, the deprivation index is useful for the identification of the poor. It is also useful for the monitoring of social progress and the efficient of pro-poor policies.

The social structure of the cities is becoming diverse. Each group of households has different characteristics and facing different problems. In the past, when most of the population had to struggle to fulfil the basic needs of the family, absolute poverty was the main concern. Nowadays, the poverty rates in the cities are very low but pro-poor policies have to face much more complex issues such as social exclusion, inequality and social evils. The pro-poor policies are therefore must be diversified and professionalized to suitable with the new context. The authorities should build set of indicators to classify the poor into certain groups that have similar characteristics and establish suitable policies for each group. This diversification is necessary to ensure the efficient of policies. Besides, the pro-poor programs should focus on providing chance for the poor rather than giving subsidies for their daily needs.

Though the inequality level, according to official data, in Vietnam is not high, the disparities in chances to access and benefit social welfare of the poor and the rich are extremely high. The poor account for a significant proportion of the total population but they have received very little from the official social welfare. The migrants, farmers and labours in informal sector are the people who have the highest risk but they have very few chances to access basic services and social welfare. This fact not only hinders chances but also increases the vulnerability of the poor. Social exclusion and vulnerability are the traps which keep the poor in the vicious circle of poverty. Despite the increasing in social disparities and their consequences, the issue has not received much attention of local authorities. The development policies in the cities should concern more on the matters. Social policies must ensure chance to access social welfare of all inhabitants since this is a crucial condition for the poor to break the circle of intergeneration poverty.

The official barriers which prevent the poor migrants to access basic services must be abolished since they are no longer efficient. The in-flow of migrants to the cities still increase despite of the regulations which prevent people whom do not have permanent resident permit from accessing basic services (such as water, electricity and schooling). The regulations, however, increase the vulnerable of the poor and worsen living condition of the migrant poor households. They are also pre-condition for the increasing of social problems and the inter-generations poor in the cities.

4. Limitations and future studies

The indexes in the study are limited by the availability of data. All the selected indicators and findings are constrained by the availability and reliability of the data. Although the VHLSS are a very good source of data for social studies about living standards of households, they were not carried out to measure the level of well-being of households. This is the reason why the thesis had to apply the lowest standards of the Theory of Human Needs to measure the level of well-being of households in these cities. Therefore, the well-being index in this study, can only measure the very basic need of the people. It could not take into account the subjective opinions of households about their life as well as the non-basic needs of humans, such as the need for the autonomy and self-development, though they are important aspects of human well-being. This is the main limitation of the study.

Determining a list of indicators, which is suitable to measure the level of well-being of the households in Vietnam, is an important task in measuring well-being. Without a good list of indicators it would be impossible to have a well-being index which can capture the important components of household well-being. Future studies might focus on both the subjective and objective aspects of well-being of households so that it can represent the overall level of well-being of Vietnamese. A better aggregate index, which covers both objective and subjective aspects of well-being of household, would provide more precise information about the actual life of household.

Besides, the well-being index must be general enough to covers important aspects of life but it must be also simple enough for practical applications and be understandable by the mass population. Though well-being is the main concern of people, it is still an abstract concept. Therefore, further studies which help to clarify the notion would be very helpful for the society.

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APPENDICES

Appendix 1: Questionnaire of the survey “Migration, Poverty and Urban Environment: Hanoi and Ho Chi Minh City”

(HCMC version)

Original Vietnamese version and French version downloadable at:

<http://recherche-iedes.univ-paris1.fr/membres/membres-permanents/gubry-patrick/article/recherches-350>

**National Economics
University
Institute of Population
and Social Studies
Hanoi**

**Institute for Economic Research
of Ho Chi Minh City**

**Institute of Research
for Development
Paris**

**SURVEY “MIGRATION, POVERTY AND URBAN ENVIRONMENT:
HANOI AND HO CHI MINH CITY”**

Responses will be used for scientific purposes only and will remain confidential

QUESTIONNAIRE

Number of the questionnaire (*Not to be filled by the surveyor*) _____|_____|_____|_____|_____|
 Full name of household head:
 City: **Ho Chi Minh City** _____|_2_|
 District (*Quan/ huyen*): _____|_____|
 Ward (*Phuong/ xa*): _____|_____|
 Block:|_____|_____|
 House number: Street:
 Surveyor number: _____|_____|
 Household number: _____|_____|
 Migration status of the household in the established list: _____|_____|
 (1. Non-migrant household; 2. Migrant household)

Minutes of interview, control and supervision
Name of surveyor:
Date of the interview: Date: Month:
Total number of sheets used in this household:
Serial number of the main respondent: _____ _____
Observations:
Remarks of controller:
Remarks of supervisor:

FSP Research Programme on Social Sciences - French Embassy in Vietnam

PART 1: GENERAL INFORMATION ON THE HOUSEHOLD

No	Name and given name <i>(Note the response of the interviewee)</i>	Relationship <i>(Choose a code)</i>	Sex 1=M 2=F	Year of birth <i>(Please write 4 digits, ex.: 1985)</i>	Age	Marital status <i>(Choose a code)</i>	Place of birth <i>(Choose a code)</i>	Place an (X) if the person is 13 or older
1	2	3	4	5	6	7	8	9

3. Relationship with household head

1. Household head
2. Spouse
3. Son or daughter
4. Father or mother
5. Grand-father or grand-mother
6. Grandson or granddaughter
7. Brother or sister
8. Other relative
9. No relationship

7. Marital status

1. Single
2. Married
3. Widow
4. Divorced, separated

8. CODES OF PROVINCES AND CITIES

01. Hanoi	12. Ha Giang	23. Dien Bien	34. Quang Nam	45. Binh Thuan	56. Vinh Long
02. Vinh Phuc	13. Cao Bang	24. Lai Chau	35. Quang Ngai	46. Binh Phuoc	57. Dong Thap
03. Bac Ninh	14. Bac Can	25. Son La	36. Binh Dinh	47. Tay Ninh	58. An Giang
04. Ha Tay	15. Tuyen Quang	26. Hoa Binh	37. Phu Yen	48. Binh Duong	59. Kien Giang
05. Hai Duong	16. Lao Cai	27. Thanh Hoa	38. Khanh Hoa	49. Dong Nai	60. Can Tho
06. Hai Phong	17. Yen Bai	28. Nghe An	39. Kon Tum	50. B.R.-Vung Tau	61. Hau Giang
07. Hung Yen	18. Thai Nguyen	29. Ha Tinh	40. Gia Lai	51. HCMC	62. Soc Trang
08. Thai Binh	19. Lang Son	30. Quang Binh	41. Dac Lac	52. Long An	63. Bac Lieu
09. Ha Nam	20. Quang Ninh	31. Quang Tri	42. Dac Nong	53. Tien Giang	64. Ca Mau
10. Nam Dinh	21. Bac Giang	32. Thua Thien-Hue	43. Lam Dong	54. Ben Tre	99. Foreign
11. Ninh Binh	22. Phu Tho	33. Da Nang	44. Ninh Thuan	55. Tra Vinh	

Have you already moved in another house? 1: Yes 2: No	If yes, in which year did you arrive in this house? 4 digits	Where are you registered? (Choose a code)	6 years or older	For the population aged 13 or older				
			General education level (Write the highest class or 0)	Level of professional qualification (Choose a code)	Working status (Choose a code)	Main work (Choose a code)*	Economic sector (Choose a code)*	Employment Status (Choose a code)*
10	11	12	13	14	15	16	17	18

* Only for those who are currently working

12. Where are you registered?	14. Level of professional qualification	15. Employment status	16. Main job	17. Economic sector	18. Working position
1. In this ward (phuong/xa) 2. In another ward (phuong/xa) within this district 3. In another district within the city 4. In another province 5. Unregistered	1. Without qualification 2. Technical worker 3. Vocational high school 4. University first cycle 5. University second cycle or higher	1. Employed 2. Unemployed 3. Studying 4. At home 5. Does not work because of old age or sickness 6. Does not need to work, annuitant, idle	1. Agriculture, forestry, livestock, aquaculture 2. Industry, handicraft 3. Construction, building 4. Transport 5. Trade 6. Services (except domestic and public services) 7. Domestic services 8. Public services: public administration, national defence, health, education, post, party, mass organization	1. Public sector 2. Cooperative, collective sector 3. Private company 4. Family or individual company 5. Foreign capital company	1. Employer 2. Permanent employee 3. Temporary employee 4. Self-employed person 5. Family helper

Codes		Quận/huyện, phường/xã	Codes		Quận/huyện, phường/xã	Codes		Quận/huyện, phường/xã	Codes		Quận/huyện, phường/xã
01		Quận 1	07		Quận 7	13		Gò Vấp	17		Phú Nhuận
	01	Tân Định		01	Phú Mỹ		01	Phường 01		01	Phường 02
	02	Đa Kao		02	Tân Thuận Đông		02	Phường 03		02	Phường 04
	03	Bến Nghé		03	Bình Thuận		03	Phường 04		03	Phường 05
	04	Bến Thành		04	Tân Thuận Tây		04	Phường 05		04	Phường 07
	05	Nguyễn Thái Bình		05	Tân Kiểng		05	Phường 06		05	Phường 09
	06	Phạm Ngũ Lão		06	Tân Phong		06	Phường 07		06	Phường 10
	07	Cầu Ông Lãnh		07	Tân Hưng		07	Phường 09		07	Phường 12
	08	Cô Giang	08		Quận 8		08	Phường 10		08	Phường 14
	09	Nguyễn Công Trứ		01	Phường 01		09	Phường 11		09	Phường 17
	10	Cầu Kho		02	Phường 02		10	Phường 12	18		Thủ Đức
02		Quận 2		03	Phường 03		11	Phường 14		01	Linh Đông
	01	Thảo Điền		04	Phường 04		12	Phường 15		02	Hiệp Bình Chánh
	02	An Khánh		05	Phường 05		13	Phường 16		03	Hiệp Bình Phước
	03	Bình An		06	Phường 06		14	Phường 17		04	Linh Xuân
	04	An Lợi Đông		07	Phường 07	14		Tân Bình		05	Linh Chiểu
	05	Bình Trưng Tây		08	Phường 08		01	Phường 01		06	Trường Thọ
	06	Cát Lái		09	Phường 09		02	Phường 02		07	Bình Chiểu
03		Quận 3		10	Phường 10		03	Phường 04		08	Bình Thọ
	01	Phường 01		11	Phường 11		04	Phường 05		09	Linh Trung
	02	Phường 03		12	Phường 12		05	Phường 06	19		Bình Tân
	03	Phường 04		13	Phường 14		06	Phường 07		01	Bình Hưng Hòa
	04	Phường 05		14	Phường 15		07	Phường 08		02	Bình Hưng Hoà A
	05	Phường 06		15	Phường 16		08	Phường 09		03	Bình Hưng Hoà B
	06	Phường 08	09		Quận 9		09	Phường 10		04	Bình Trị Đông
	07	Phường 09		01	Phước Long A		10	Phường 11		05	Bình Trị Đông A
	08	Phường 10		02	Tăng Nhơn Phú		11	Phường 12		06	Bình Trị Đông B
	09	Phường 12		03	Long Trường		12	Phường 13		07	Tân Tạo
	10	Phường 14		04	Phước Bình		13	Phường 14		08	Tân Tạo A
04		Quận 4		05	Tân Phú		14	Phường 15		09	An Lạc
	01	Phường 02		06	Long Thạnh Mỹ	15		Tân Phú		10	An Lạc A
	02	Phường 03		07	Long Bình		01	Tân Sơn Nhì	20		Hóc Môn
	03	Phường 05		08	Phú Hữu		02	Tây Thạnh		01	Thị trấn Hóc Môn
	04	Phường 08	10		Quận 10		03	Tây Thạnh		02	Tân Thới Nhì
	05	Phường 10		01	Phường 02		04	Sơn Kỳ		03	Tân Hiệp
	06	Phường 13		02	Phường 03		05	Tân Quý		04	Thới Tam Thôn
	07	Phường 15		03	Phường 05		06	Tân Thành		05	Đông Thạnh
	08	Phường 18		04	Phường 07		07	Phú Thọ Hoà		06	Nhị Bình
05		Quận 5		05	Phường 09		08	Phú Thạnh		07	Xuân Thới Sơn
	01	Phường 01		06	Phường 11		09	Phú Trung		08	Trung Chánh
	02	Phường 03		07	Phường 12		10	Hoà Thạnh		09	Xuân Thới Thượng
	03	Phường 05		08	Phường 13		11	Hiệp Tân		10	Xuân Thới Đông
	04	Phường 06		09	Phường 14		12	Tân Thới Hoà		11	Bà Điểm
	05	Phường 08		10	Phường 15	16		Bình Thạnh	21		Bình Chánh
	06	Phường 09	11		Quận 11		01	Phường 02		01	Bình Hưng
	07	Phường 11		01	Phường 02		02	Phường 03		02	Phong Phú
	08	Phường 13		02	Phường 03		03	Phường 05		03	Đa Phước
	09	Phường 14		03	Phường 05		04	Phường 07		04	Hưng Long
06		Quận 6		04	Phường 06		05	Phường 11		05	Tân Quý Tây
	01	Phường 01		05	Phường 07		06	Phường 12		06	Bình Chánh
	02	Phường 02		06	Phường 09		07	Phường 13		07	Vĩnh Lộc A
	03	Phường 03		07	Phường 11		08	Phường 14		08	Vĩnh Lộc B
	04	Phường 05		08	Phường 13		09	Phường 15		09	Phạm Văn Hai
	05	Phường 06		09	Phường 14		10	Phường 17		10	Lê Minh Xuân
	06	Phường 08		10	Phường 16		11	Phường 21		11	Tân Nhựt
	07	Phường 09	12		Quận 12		12	Phường 22		12	Thị trấn Tân Túc
	08	Phường 10		01	Tân Thới Nhất		13	Phường 24		13	Tân Kiên
	09	Phường 11		02	Đông Hưng Thuận		14	Phường 25		14	An Phú Tây
	10	Phường 12		03	Tân Hưng Thuận		15	Phường 26	22		Nhà Bè
	11	Phường 13		04	An Phú Đông		16	Phường 27		01	Thị trấn Nhà Bè
	12	Phường 14		05	Tân Chánh Hiệp		17	Phường 28		02	Phú Xuân
				06	Thanh Lộc					03	Phước Lộc
				07	Thanh Xuân					04	Hiệp Phước
				08	Hiệp Thành				23		Củ Chi
				09	Tân Thới Hiệp				24		Cần Giờ

PART 2 : INFORMATION ON THE MOBILITY OF THE HOUSEHOLD

(To be completed one time per household, if possible by the household head)

Name of the household head:

City: **Ho Chi Minh City** _____ |_2_|

District: _____ |__|__|

Ward (*Phuong/ xa*): _____ |__|__|

Block (*to dan pho*): |__|__|__|

Number of the surveyor: _____ |__|__|

Number of household: _____ |__|__|

2.1. Did your household move into this dwelling since 1st January 2002?

(It is a group of people who moved into an empty house; check column 11 in the household sheet, circle the number of the answer)

1. Yes
2. No (*go to part 3*)

2.2. If yes, in which year did you move into this dwelling? _____ |__|__|__|__|

(Write the year)

2.3. Where is your previous house located?

District (*if it is in this city*) |__|__|

Province (*if it is elsewhere in Vietnam*) |__|__|

Country (*if it is abroad*) |__|__|

2.4. What type of place was it?

(Check with question number 2.3. and circle the number of the answer)

1. Large city (dependent on central government) [*Thanh pho*]
2. Small provincial town [*Thanh pho truc thuoc tinh*]
3. County town [*Thi tran*]
4. Countryside [*Nong thon*]
5. Abroad [*Nuoc ngoai*]

2.5. Which are the reasons of your move to the current living place?

(Several possible answers; circle the numbers of the responses)

- 01. Looking for work or a higher income
- 02. Marriage, divorce
- 03. Studies
- 04. Back in the family, being closer to the family
- 05. Better infrastructures
- 06. Better environment
- 07. Better location for business, commercial or craft activities
- 08. Better or cheaper housing
- 09. Access to property or inheritance
- 10. Creating a new household
- 11. Official organized relocation
- 12. Other reason *(to specify)*.....

2.6. Among the cited reasons, which is the main reason? _____ |__|__|

(Write the number of the reason)

2.7. Who is the person who mainly decided to migrate?

(Circle the number of the answer)

- 1. Household head (yourself)
- 2. Wife/husband
- 3. Child
- 4. Parent (father or mother)
- 5. Other relative
- 6. Other non-relative person
- 7. Do not know

2.8. With whom did you migrate?

(Circle the number of the answer)

- 1. Alone
- 2. With another or several other members of the household

2.9. Can you tell us if any of your household members has encountered difficulties after moving, in the following aspects:

(Several possible answers; circle the numbers of the responses)

- 00. No difficulty
- 01. To find accommodation at a reasonable price
- 02. To find work or income
- 03. To connect to electricity
- 04. To connect to water
- 05. To access health services
- 06. To enrol children in school
- 07. To register on residential booklet
- 08. To complete the procedures to buy a house or a vehicle
- 09. In terms of security
- 10. To adapt to the new living environment
- 11. Others *(to specify)*:.....

2.10. Among the cited reasons, which is the main reason? _____ |__|__|

(Write the number of the reason)

2.11. In comparison with the previous living place what do you think about the current living place: is it much better, better, the same, worse or much worse?

(Choose a code and write it into the appropriate box)

- 1. Work, income _____ |__|
- 2. Housing _____ |__|
- 3. School attendance, training _____ |__|
- 4. Health services _____ |__|
- 5. Social environment, security, relation with neighbours _____ |__|
- 6. Natural environment, green spaces, pollution _____ |__|

Codes: 1 = Much better;
 2 = better;
 3 = the same;
 4 = worse;
 5 = much worse.

PART 3: INFORMATION ON EMPLOYMENT AND INDIVIDUAL MOBILITY

(For the persons aged 13 or older who arrived since January 1st 2002; check with column 11 in the household questionnaire; if no person satisfies the criteria, go to part 4)

Full name of the household head:

City: _____ |__|

District: _____ |__|__|

Ward (*Phuong/ xa*): _____ |__|__|

Block (*to dan pho*): |__|__|__|

Surveyor number: _____ |__|__|

Household number: _____ |__|__|

Question	Pers. 1	Pers. 2	Pers. 3	Pers. 4
3.1. Serial number in the household questionnaire				
3.2. Did you find a job after arriving here? <i>(Choose a code)</i> 1. Yes 2. Not yet <i>(go to question 3.7.)</i> 3. Do not need a job <i>(go to question 3.7.)</i>				
3.3. After how many months, did you find a job? <i>(Write the number of months)</i>				
3.4. To which sector does your first job belong? <i>(Choose a code)</i> 1. Public 2. Cooperative, collective sector 3. Private 4. Family or individual business 5. Foreign invested sector				

Question (following)	Pers. 1	Pers. 2	Pers. 3	Pers. 4
3.5. Advantages or facilities in looking for a job? <i>(Multiple choices)</i> 0. No advantage 1. Easy to find work 2. Higher income 3. The local authorities create favourable conditions 4. Simplified administrative procedures 5. Others (<i>specify</i>)				
3.6. Inconveniences or difficulties in looking for a job? <i>(Multiple choices)</i> 0. No inconvenience 1. Difficult to find a job 2. Lower income 3. Local authorities create difficulties 4. Complicated administrative procedures 5. Others (<i>specify</i>):				
3.7. Do you intend to move again in the future? <i>(Choose a code)</i> 1. Yes, definitely 2. Yes, perhaps 3. Do not know (<i>go to part 4</i>) 4. No, definitely not (<i>go to part 4</i>)				
3.8. For which reasons do you intend to move again?				

PART 4: INFORMATION ABOUT LIVING STANDARDS

To be completed for every household head

Full name of the household head:

City: **Ho Chi Minh City** _____ |_2_|

District: _____ |__|__|

Ward (*Phuong/ xa*): _____ |__|__|

Block (*to dan pho*):..... |__|__|__|

Surveyor number: _____ |__|__|

Household number: _____ |__|__|

4.1. Income of household members during the last 12 months

(Ask the income of all household members aged 13 years or more)

Code	Type of income	Incomes during the last 12 months (1 000 VND)				
		1 st person	2 nd person	3 rd person	4 th person	Total
1	Serial number on the household sheet in part 1 (column 1)					
2	Monthly salaries and income from work					
3	Other income (leasing house or land, interests, shares...)					
4	Remittances (received from family in Vietnam or abroad)					
5	Total income					

4.2. Some household expenditure during the last 12 months

Code	Type of expenditure	Expenditure during the last 12 months (1 000 VND)
<i>Health care</i>		
01	Consulting medical doctor, dentist, nurse (modern or traditional)	
02	Purchasing medicines (modern or traditional)	
03	Hospital or clinic costs	
<i>Education</i>		
04	School fees	
05	Fees for extra lessons, evening courses...	
<i>Purchase durable goods</i>		
06	Motorcycle	
07	Refrigerator, deep freezer	
08	Laundry washing machine	
09	Air conditioner	
<i>Remittances</i>		
10	Remittances sent to parents or family	
<i>Tax</i>		
11	Property tax	

4.3. Has the total income of your household been sufficient to cover the total household expenditures during the last 12 months or did you need to find supplementary money? (Circle the number of the answer)

- Yes, the total income was sufficient to cover the expenditures (go to question 4.5.)
- No, you had to get supplementary money

4.4. If not, how did your family compensate the difference?

Code	Source of money	Amount of money (1 000 VND)
1	Saving money	
2	Selling property	
3	Borrowing money (without interest) from parents or friends...	
4	Borrowing money (with interest)	
5	Other (specify).....	
Total		

4.5. Please let us know if you own the following durable goods; if yes, what is the amount of each item?

(Do not take into account the items which are no longer used or have been replaced by new ones)

Code	Type of good	Quantity
01	Radio, radio cassettes	
02	Ordinary television (black & white/colour)	
03	Plasma TV	
04	Stereo set	
05	VCD/DVD reader	
06	Desktop computer	
07	Laptop computer	
08	ADSL Internet connection	
09	Fixed telephone	
10	Mobile phone	
11	Camera, digital camera	
12	Camera, video camera	
13	Gas stove, electric stove	
14	Electric oven	
15	Microwave oven	
16	Electric cooker, pressure cooker	
17	Refrigerator, deep freezer	
18	Electric water heater	
19	Air conditioner	
20	Vacuum cleaner	
21	Laundry washing machine	
22	Dish washing machine	
23	Bicycle	
24	Motorcycle	
25	Car	

4.6. Did your family get any aid from local authorities, organization, association... during the last 12 months?

(Circle the number of the answer)

1. Yes
2. No *(go to question 4.8.)*

4.7. Which kind of aid did your family get during the last 12 months? How do you assess this aid?

Codes: 1. Not important, 2. Important, 3. Very important

Code	Type of aid	Number of times	Level of importance
1	Subsidized credit		
2	Free health care		
3	Exemption or reduction of education fees		
4	Looking for a job		
5	Looking for housing		
6	Other (<i>specify</i>).....		

4.8. Is your household classified as poor?

(Circle the number of the answer)

1. Yes
2. No

PART 5: INFORMATION ON ENVIRONMENT

(These questions are asked to the household head or his representative)

I. Conception of environment

5.1. How would you define the term “environment”?

.....

.....

5.2. According to you, do the following words have a relation with the notion of environment? *(For each row, circle the number of the suitable answer)*

N°	Words	Answer		
01	Planet	1. Yes, much	2. Yes, a little	3. No
02	Climate	1. Yes, much	2. Yes, a little	3. No
03	Nature	1. Yes, much	2. Yes, a little	3. No
04	Vegetation	1. Yes, much	2. Yes, a little	3. No
05	Countryside	1. Yes, much	2. Yes, a little	3. No
06	Agriculture	1. Yes, much	2. Yes, a little	3. No
07	Animals	1. Yes, much	2. Yes, a little	3. No
08	Water	1. Yes, much	2. Yes, a little	3. No
09	City	1. Yes, much	2. Yes, a little	3. No
10	Road	1. Yes, much	2. Yes, a little	3. No
11	House	1. Yes, much	2. Yes, a little	3. No
12	Factory	1. Yes, much	2. Yes, a little	3. No
13	Neighbour	1. Yes, much	2. Yes, a little	3. No
14	Noise	1. Yes, much	2. Yes, a little	3. No
15	Dust	1. Yes, much	2. Yes, a little	3. No
16	Smoke	1. Yes, much	2. Yes, a little	3. No
17	Pleasant smell	1. Yes, much	2. Yes, a little	3. No
18	Unpleasant smell	1. Yes, much	2. Yes, a little	3. No
19	Disease	1. Yes, much	2. Yes, a little	3. No
20	Danger	1. Yes, much	2. Yes, a little	3. No

5.3. Do you feel personally concerned with the environment?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No
3. Do not know <i>(go to question 5.5.)</i>

5.4. If *Yes* or *No*, why?

.....

.....

II. The household environment

Housing characteristics

5.5. What is the type of your housing?

(Choose one answer; circle the number of the answer)

- | |
|---|
| 1. Compartment house
2. Detached house
3. Apartment
4. Other (<i>specify</i>)..... |
|---|

5.6. Which is the type of tenure of your house?

(Choose only one answer; circle the number of the answer)

- | |
|--|
| 1. Owned house
2. House rented from the State
3. House rented from private
4. Free accommodation provided by the State
5. Free accommodation provided by employer
6. Free accommodation provided by another
7. Other (<i>specify</i>)..... |
|--|

5.7. Which is the main material of the walls of your house?

(Choose only one answer; circle the number of the answer)

- | |
|--|
| 1. Concrete
2. Brick, stone
3. Metal sheet, steel, aluminium
4. Wood, wood planks
5. Bamboo, straw
6. Mud
7. Other (<i>specify</i>)..... |
|--|

5.8. Which is the main material of the roof of your house?

(Choose only one answer; circle the number of the answer)

- | |
|--|
| 1. Concrete
2. Tile
3. Metal sheet
4. Plastic, PVC
5. Roofing felt, tarpaulin
6. Wood
7. Straw, bamboo, leaves
8. Other (<i>specify</i>)..... |
|--|

5.9. What is the composition of your house?

(Write the number of rooms that you have in whole or partially, if they are inside the house)

Composition	Number of rooms
1. Independent kitchen (in a single room)	
2. Bathroom or shower (with or without WC)	
3. Separate WC (in a single room)	
4. Other habitable rooms (dining room, living room, bedrooms...)	

5.10. What is the type of your main kitchen?

(Choose only one answer; circle the number of the answer)

1. Independent individual kitchen in the house
2. Individual kitchen integrated with another room in the house
3. Individual kitchen outside the house
4. Kitchen shared with another household, inside or outside
5. No kitchen

5.11. What is the type of your main bathroom or shower?

(Choose only one answer; circle the number of the answer)

1. Independent individual bathroom or shower in the house
2. Individual bathroom or shower outside the house
3. Bathroom or shower shared with other households, inside or outside
4. No bathroom or shower

5.12. How is the main toilet of your house arranged?

(Choose only one answer; circle the number of the answer)

1. Independent individual WC in the house
2. Individual WC in the bathroom inside the house
3. Individual WC outside the house, independent or not
4. WC shared with other households, independent or not, inside or outside
5. No WC

5.13. What is the main kind of WC of your house?

(Choose only one answer; circle the number of the answer)

1. Modern WC with water flush
2. Double box
3. Single box
4. Cement latrine
5. Latrine in the ground
6. Public toilet
7. River, lake, pond
8. No installation

5.14. What is the total living space of your house (m²)?

Total living space (Total area of all rooms and corridors)	
---	--

Water management

5.15. What is your main source of water supply for consumption (cooking and drinking)?

(Choose only one answer; circle the number of the answer)

1. Tap in the house 2. Public tap 3. Drill 4. Well 5. Rain water 6. River, canal, lake 7. Other (<i>specify</i>).....

5.16. How do you use this water for drinking?

(Choose only one answer; circle the number of the answer)

1. I use it as it is 2. I boil it 3. I use a filter 4. I add a disinfectant product 5. I only drink bottled water

5.17. Do you think that this water is drinkable?

(Choose only one answer; circle the number of the answer)

1. Yes 2. No 3. Do not know (<i>go to question 5.19.</i>)

5.18. If *Yes* or *No*, why?

.....
...

5.19. Do you think that the health of a member of your household has been affected by water pollution?

(Choose only one answer; circle the number of the answer)

1. Yes 2. No (<i>go to question 5.21.</i>) 3. Do not know (<i>go to question 5.21.</i>)

5.20. If *Yes*, which affections were incurred?

.....

.....

.....

5.21. How is used water discharged?

(Choose only one answer; circle the number of the answer)

1. Modern sanitation (underground pipe)
2. River, canal, lake, pond
3. Discharge in the garden
4. Discharge in the street

5.22. Do you think that this way of discharge causes pollution?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No *(go to question 5.24.)*
3. Do not know *(go to question 5.24.)*

5.23. If *Yes*, what is the nature of this pollution?

.....

Waste management

5.24. How do you the most often treat the garbage of your household?

(Choose only one answer; circle the number of the answer)

1. Collecting system at home
2. You take your garbage to a collection site (dump, landfill)
3. You treat the garbage yourself (compost, bury, burn...)
4. You throw it somewhere

5.25. Do you think that this type of treatment causes pollution?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No *(go to question 5.27.)*
3. Do not know *(go to question 5.27.)*

5.26. If *Yes*, what is the nature of this pollution?

.....

Energy management

5.27. What is your main source of lighting?

(Choose only one answer; circle the number of the answer)

1. Public electric system
2. Generator, battery, accumulator
3. Gas or oil lamp, candle
4. Other (*specify*):.....
5. No lighting

5.28. Which kind of energy do you often use to cook?

(Choose only one answer; circle the number of the answer)

1. Electricity (*go to question 5.30.*)
2. Gas (*go to question 5.30.*)
3. Coal
4. Wood
5. Kerosene (*go to question 5.30.*)
6. Cooking alcohol (*go to question 5.30.*)
7. Other (*specify*)..... (*go to question 5.30.*)

5.29. For those using *coal* or *wood* (answer 3 or 4):

Are you sometimes bothered by the smoke?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No

5.30. Out of the smoke from cooking, does any member of your family often smoke inside the house?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No

Means of transportation

5.31. What means of transportation do you most often use to travel in the city?

(Choose only one answer; circle the number of the answer)

1. On foot
2. By bicycle
3. By motorcycle
4. By car
5. By taxi
6. By bus
7. By three-wheeled motor vehicle (*lambro*)
8. By cyclo
9. By motorcycle taxi (*Honda-ôm*)

III. Environment of the area

General assessment

5.32. Would you say that the environment in your area is excellent, good, fair, bad, very bad? (*Choose only one answer; circle the number of the answer*)

1. Excellent (*go to question 5.34.*)
2. Good (*go to question 5.34.*)
3. Fair (*go to question 5.34.*)
4. Bad
5. Very bad

5.33. If the environment in your area is *bad* (answer 4) or *very bad* (answer 5), which are the nuisances?

.....

.....

.....

.....

.....

5.34. Do you think that the environment in your area is improving, worsening or remains unchanged? (*Choose only one answer; circle the number of the answer*)

1. Improving
2. Worsening
3. Unchanged (*go to question 5.36.*)

5.35. Why?

.....

.....

Location of the house

5.36. Which are the visible characteristics of the house environment?

(*Several possible answers; choose the answers without asking and circle the corresponding numbers*)

01. Near a large factory
02. Near a manufacturing or repairing workshop
03. Near a construction site
04. Near a garbage dump
05. Near a main road with heavy traffic
06. Near a railway line
07. Near an airport, airplanes passage
08. Near a park
09. Near a cemetery

- | |
|--|
| 10. Near a pond
11. Near a river
12. Near rice fields, fields or fallows
13. Near a wood
14. Nothing special to report |
|--|

5.37. What is the location of the house?

(Choose only one answer; circle the number of the answer)

- | |
|--|
| 1. In a street
2. In a large alley <i>(which is larger than 4 m)</i>
3. In a small alley <i>(which is smaller than 4 m)</i>
4. In an alley along the bank of a river, canal or lake laid out
5. In an alley along the bank of a river, canal or lake not laid out
6. Other <i>(specify)</i> |
|--|

5.38. What is the coating of the street (alley) on which your house is located?

(Choose the answer without asking; circle the number of the answer)

- | |
|---|
| 1. Bitumen
2. Concrete or cement
3. Gravel
4. Soil |
|---|

5.39. Do you observe any congestion of the street going to your house?

(Several possible answers; choose the answers without asking and circle the corresponding numbers)

- | |
|--|
| 1. No congestion
2. Small vendors on the street or pavement
3. Small workshops on the street or pavement
4. Parking on the pavement
5. Parking on the street
6. Waste on the street or pavement |
|--|

Periodic floods

5.40. Is your house occasionally affected by water?

(Choose the main answer; circle the number of the answer)

- | |
|--|
| 1. Yes, flooded by river and/or rain depending on the moments
2. Yes, flooded by river only
3. Yes, flooded by rain only
4. No, never |
|--|

Air pollution

5.41. What do you think about the air quality in your area?

(Choose only one answer; circle the number of the answer)

1. Excellent (go to question 5.43.)
2. Good (go to question 5.43.)
3. Fair (go to question 5.43.)
4. Bad
5. Very bad

5.42. For those who think that the air in the area is *bad* or *very bad* (answer 4 or 5), which are the reasons of the air pollution?

.....

.....

.....

5.43. Do you think that the health of a member of your household has been already affected by air pollution?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No (go to question 5.45.)
3. Do not know (go to question 5.45.)

5.44. If *Yes*, which diseases have been contracted?

.....

.....

.....

Noise pollution

5.45. Do you think that there is too much noise in your area?

(Choose only one answer; circle the number of the answer)

1. Yes
2. No (go to question 5.49.)

5.46. If *Yes*, at what level would you rate the nuisance caused by noise, on a scale from 0 (no discomfort) to 10 (very high discomfort)?

(Circle the number of the answer)

0___1___2___3___4___5___6___7___8___9___10

5.47. Which are the sources of the noise?

(Several possible answers; circle the numbers of the appropriate answers)

- | |
|---|
| 1. Traffic on the street
2. School
3. Trade, market
4. Handicraft workshop
5. Factory
6. Karaoke
7. Neighbour
8. Airport
9. Other (<i>specify</i>): |
|---|

5.48. Among these types of noise, which is the most harmful? _____ |__|

(Write the number of the most harmful type of noise)

Opinions of the stakeholders on the resolution of the pollution problems

5.49. For those who faced a pollution problem: What are the measures you might propose to the public authorities to solve this problem?

For the others, go to question 5.50

.....

.....

.....

.....

Security problems

5.50. Do you think that the security of your area is good vis-à-vis aggressions and robberies? *(Choose only one answer; circle the number of the answer)*

- | |
|---|
| 1. Yes (<i>end of the questionnaire</i>)
2. No |
|---|

5.51. If not, at what level would you rate the danger, on a scale from 0 (no danger) to 10 (very dangerous)? *(Circle the number of the answer)*

0___1___2___3___4___5___6___7___8___9___10

5.52. What is the nature of this insecurity?

.....

.....

5.53. What could you suggest to improve the security in your area?

.....

.....

Appendix 2: Criteria and notes apply for the households' well-being index

Criterion	Note
1. Household characteristics	
1. Households that have at least 01 person who has finished high school	10
1. Households that have at least 01 person who has tertiary education	20
2. Households that have a residential permit in the city where he lives (Hanoi or HCMC)	10
3. Households that have no member who cannot work due to old age or disability	5
4. Households that have no member who is unemployed	10
2. Living standards of household	
1. Households that have an average income per head over 6,250,000 VND/ yr	5
1. Households that have an average income per head over 10,000,000 VND/ yr	10
1. Households that have an average income per head over 15,000,000 VND/ yr	15
1. Households that have an average income per head over 24,000,000 VND/ yr	25
2. Households is not a poor family	5
3. The income of household is sufficient to cover its expenses	20
3. The household balances its budget deficit by savings or loans from relative (without interest)	10
4. The household has an automobile	40
4. The household has a motorcycle	10
4. The household has a bicycle	5
5. The household has a refrigerator	5
6. The household has a washing machine	5
3. Living environment of households	
1. Households that own their dwellings	30
1. Household live in houses provided by government or employers, no rental payment	20
1. Rented house from government	15
1. Rented house from private	10
1. Live in the house of other people	5
2. Have a separate kitchen inside the house	15
2. The kitchen is associated with other functions, inside the house	10
2. Separate kitchen outside house	7
2. Share kitchen with other households within or outside the house	4
3. Reinforced concrete wall	15
3. Stone wall	10
3. Plate / wood wall	5
4. Reinforced concrete roof	15
4. Roof tiles	10
4. Tin roof	5
5. Average living area per head is over 10 m ²	5
5. Average living area per head is over 15.33 m ²	10
5. Average living area per head is over 22.5 m ²	15
5. Average living area per head is over 34 m ²	20

6. Household has a separated toilet or a toilet which is associated with a separate bathroom inside the house	10
6. The household has a separate toilet outside house	6
6. The household uses a common toilet with other households	4
7. Household has a private tap water in the house	20
7. Household uses water from a public tap	15
7. Household uses water from a drill well	10
7. The household uses well water which is collected by manual drawing	5
8. The household has no member who health is affected by poor quality of the water	5
9. The garbage of household is collected at home	10
9. The household must bring their waste to a public repository	7
9. The household has to discharge the waste itself	4
10. Household uses electricity or gas as cooking energy	10
10. Household uses oil or alcohol as cooking energy	5
11. Household has no smoker	5
12. The environment of the residential area is very good	20
12. The environment of the residential is good	15
12. The environment of the residential area is normal	10
12. The environment of the residential area is bad	5
13. The surface of the roads is made of bitumen	20
13. The surface of the road is made of concrete or cement	10
13. The surface of the road is covered with gravel	5
14. The house has never flooded	5
15. Air quality is very good	20
15. Air quality is good	15
15. Air quality is normal	10
15. Air quality is a not very good	5
16. The household does not have a member who health is affected by air pollution	5
17. Level of annoyance by noise (Inversely proportional to the score of the scale in the questionnaire)	0-20
18. Level of safety and security (Inversely proportional to the score of the scale in the questionnaire)	0-20

Notes: An indicator may contain several elements. The elements that have the same order belong to an indicator.

Appendix 3: Key features of score groups

Table 3a: Key features of the original core groups

Criterion	Note of the initial core groups		
	Group 1	Group 2	Group 3
1. Permanent residence permits	10	10	10
2. Education level	20	0	20
3. Household with an unemployed	10	10	10
4. Household with an elderly or disabled	0	0	5
1. Household income	5	0	20
2. Income-expenditure balance	20	20	10
3. Have means of transportation	10	10	40
4. Have a refrigerator	5	0	5
5. Have a washing machine	5	0	5
6. Household is not a poor family	5	5	5
1. Ownership of the house	0	30	30
2. Type of the house wall	0	10	10
3. Type of the house roof	0	15	15
4. Type of kitchen	0	10	15
5. Type of bathroom	0	4	10
6. Average space per head	0	0	20
7. Source of water for daily use	0	20	20
8. Effects of water pollution	5	0	5
9. Type of waste collection	10	7	10
10. Type of energy for cooking	10	0	10
11. Household have no smoker	5	5	0
12. Environment in residential area	10	0	10
13. Type of street surface in front of the house	10	10	20
14. The house has never flooded	0	0	5
15. Air quality of residence	15	0	5
16. Effects of air pollution	5	0	5
17. Noise	20	0	20
18. Safety and security	20	0	20
Total score	200	166	360

Table 3b: Key features of the final core groups

Criterion	Note of the initial core groups		
	Group 1	Group 2	Group 3
1. Permanent residence permits	9	9	9
2. Education level	19	3	19
3. Household with an unemployed	9	9	10
4. Household with an elderly or disabled	3	3	4
1. Household income	5	8	15
2. Income-expenditure balance	17	18	19
3. Have means of transportation	9	9	12
4. Have a refrigerator	3	3	5
5. Have a washing machine	2	1	4
6. Household is not a poor family	5	5	5
1. Ownership of the house	27	28	28
2. Type of the house wall	10	10	11
3. Type of the house roof	8	8	12
4. Type of kitchen	12	12	14
5. Type of bathroom	9	9	10
6. Average space per head	5	11	15
7. Source of water for daily use	15	15	18
8. Effects of water pollution	4	4	4
9. Type of waste collection	9	9	9
10. Type of energy for cooking	8	8	10
11. Household have no smoker	3	3	3
12. Environment in residential area	10	10	11
13. Type of street surface in front of the house	10	11	15
14. The house has never flooded	4	4	4
15. Air quality of residence	9	10	10
16. Effects of air pollution	3	4	4
17. Noise	16	16	16
18. Safety and security	18	18	18
Total Score	261	258	314

Appendix 4: Groups of households by level of well-being

Category	Note	Number of households in HCMC	Number of households in Hanoi
High level of well-being	Higher than 314	311	185
Average level of well-being	From 261 to under 314	761	520
Low level of well-being	Under 261	428	295
Total		1,500	1,000

Appendix 5. List of useable questions, codes, and names of variables of the VHLSS

Question in VHLSS 2008	Code	Name of variable in VHLSS				Notes
		2008	2006	2004	2002	
Household identifier						
Province/city	Hanoi: 101 HCMC: 701	tinhh	tinhh	tinhh	tinhh	
District/Provincial town	XX	huyen	huyen	huyen	huyen	
Commune/ward/district town	XXX	xa	xa	xa	xa	
Location	XXX	diaban	diaban	diaban	diaban	
Household number	XX	hoso	hoso	hoso	hoso	
Did household participate in VHLSS 2006?	Yes...1 No...2	m1dc1	m1bc1	m1bc1	Not available	participated in previous VHLSS
Id code in VHLSS 2006		m1dc3	m1bc3	m1bc3	Not available	Id code in previous VHLSS
1. Demographic and social characteristics						
Sex of ...[Name]...?	Male...1 Female...2	m1ac2	m1ac2	m1ac2	m1c2	
Relationship of ...[Name]... with the household head?	Head...1 Wife/husband...2 Child...3 Parents...4 Grandparents...5 Grandchild...6 Other relations...7	m1ac3	m1ac3	m1ac3	m1c3	Codes may be difference among questionnaires
How old is ...[Name]...?		m1ac5	m1ac5	m1ac5	m1c5	
What is the current marital status of ...[Name]... ?	Never married...1 Married...2	m1ac6	m1ac6	m1ac6	m1c6	

	Widowed...3 Divorced...4 Separated...5					
In the last 12 months, how many months have ...[Name]... been staying in this dwelling?		m1ac7	m1ac7	m1ac7	Not available	
Reasons why...[Name]... staying in this dwelling less than 6 months?	Pupil go to school within country ...1 Staff participate in training within country ...2 Treatment within country or abroad ...3 Newborn, new comer...4 Household head work far away from home ...5 Others...6	m1ac7a	m1bc9	m1bc9	Not available	Codes may be difference among questionnaires
Where does ...[Name] ... register for residency?	At this dwelling within this commune/ward ...1 Other place within this province ...2 Another province ...3 Others ...4	m1ac8	m1ac8	m1ac8	Not available	
How long has ... [Name] ... been living in this province/city?	Year and month	m1ac10	m1ac10	m1ac9	Not available	
Was your household classified as a poor one of the commune/ ward in the following years?	Yes... 1 No... 2	m8c1 (2004-2007)	m8c1 (2004-2006)	m8c1 (1999) m8c10(2003)	m9c3 (in 2002)	Years are difference among questionnaires
Compared with 2001, has	Yes, very much... 1	m8c5	m8c5	m8c8	Not available	Years are

your household member's life been improved?	Yes, a little... 2 Unchanged... 3 Worse... 4	(2001)	(2001)	(1999)		difference among questionnaires
If unchanged or worse, please let us know why?	Negligible aid...1 Sick people in the household... 2 Natural disasters or risk in production ... 3 Too much expenditure on a funeral in the household...4 Others...5	m8c6	m8c6	m8c9	Not available	
Was your household involved in classifying poor households of the commune/ward in recent years?	Yes...1 No... 2	m8c2	m8c2	Not exits	Not available	Use for analysis only, not for the index
2. Education and training						
Which grade has ...[Name]... finished?		m2c1	m2ac1	m2c1	m2c1	
Can ...[Name]... read and write?	Yes... 1 No... 2	m2c2	m2ac2	m2c2	m2c2	
What was the highest diploma...? [Name]... has obtained?	No degree... 0 Primary school... 1 Lower secondary school... 2 Upper secondary school... 3 Short-term technical worker ... 4 Long-term technical worker...5 Professional secondary school...6 Vocational college... 7 College... 8 University... 9	m2c3	m2ac3	m2c3	m2c3	

	Master ... 10 PhD... 11 Other ... 12					
What type of school is ...[Name]... attending?	Public...1 Semi-public...2 Sponsored...3 Private...4 Other... 5	m2c4	m2ac4	m2c7	Not available	
Is ... [Name]...currently attending school?	Yes...1 Summer holiday...2 No...3	m2c5	m2ac5	m2c4	Not available	
In the past 12 months has ... [Name]... attended school?	Yes...1 No...2	m2c6	m2ac6	m2c5	m2c4	
Why did ... [Name]... not attend school? Only ask those under the age of 15	Illness/disability...1 No permanent residence...2 Failure to pay tuition...3 Work...4 Other...5	m2c7	m2ac7	Not available	Not available	
Does ... [Name]... enjoy exemption and reduction of tuition or other contribution?	Yes...1 No...2	m2c10	m2ac10	m2c8	m2c6	
What is the cost for ... [Name] ...'s attendance during the last 12 months for subjects in regulation curriculum?	a. Tuition b. Additional attending school permanent residence c. Contribution to school, class d. Parents' fund e. Uniform according to regulations f. Textbooks, reference books g. Other educational material h. Attending extra courses for	m2c13 (k) total	m2c13 (k) total	m2c11 (h) total	m2c5 (h) total	Codes may be difference among questionnaires

	subjects in regulation curriculum i. Other education cost k. Total					
Other spending for education-training		m2c16	m2c16	m2c14	m2c11	
Other educational subsidies received sponsors?		m2c14	m2c14	m2c11	Not available	
What is the value of the scholarship or award received during the past 12 months?		m2c15	m2c15	m2c13	m2c10	
3. Health, health care and entertainment						
In the past 4 weeks has...[Name] ... suffer from any illness or injuries?	Yes... 1 No... 2	m3c1	m3ac1	m3c1	Not available	
In the past 12 months has ... [Name] ... suffered from any illness or injuries?	Yes... 1 No... 2	m3c2	m3ac2	m3c2	Not available	
Does...[Name]... have health insurance or free health care certificate?	Yes... 1 No... 2	m3c4	m3ac4	m3c4	Not available	
In the past 12 months, has any member of your household gone to health care centres or invited practitioner at home for diagnosis or treatment?	Yes... 1 No... 2	m3c6	m3ac6	m3c6	m4c1	
In the past 12 months, due to illness or injuries, for how many days did... [Name]... have to...?	Days Code: a. be absent from school/work or not be able to carry out regular activities?	m3c3a	m3ac3a	m3c3	Not available	
Times and expenses of	Thousand VND	m3c10	m3c10	m3c10	m4c5	

...[Name]... outpatient treatment in the last 12 months?		3CT1				
Times and expenses of ... [Name]'s in-patient treatment in the last 12 months?	Thousand VND	m3c12 3CT2	m3c12	m3c11	m4c6	
How much have your household spent on non-prescribed medicines for self-treatment of for reserve for the last 12 months?	Thousand VND	m3c16	m3c16	m3c14	m4c7	
How much has your household spent on medical tools for the last 12 months?	Thousand VND	m3c17	m3c17	m3c15	m4c8	
How much has your household members spent on voluntary and student's insurance or pooled money with other organizations/people to buy health insurance in the last 12 months?	Thousand VND	m3c18	m3c18	m3c16	m4c10	
3CT. Health expenditure	Thousand VND	3CT	3CT	3CT	m4c4c and m4c9	
Expenditure on daily consumption	Thousand VND Code 215.Books, newspapers, magazines 217.Entertainment	m5b1c1, m5b1c4, and m5b1c5	m5b1c1, m5b1c4, and m5b1c5	m5b1c1, m5b1c4, and m5b1c5	m6b1c1, m6b1c4, and m6b1c5	
Annual consumption expenditure.	Thousand VND Code:	m5b2c1, m5b2c2,	m5b2c1, m5b2c2 and	m5b2c1, m5b2c2 and	m6b2c1, m6b2c2 and	

4. Work and career						
In the last 12 months, have you a. Worked for wage/salary b. Self-employed in agriculture, forestry, fisheries c. self-employ in production other than agriculture, forestry and fisheries	Yes... 1 No... 2 For all household member aged 6 and older	m4ac1	m4c1	m4ac1	m3c1	
Do you work?	Yes... 1 No... 2	m4ac2	m4c2	m4ac2	m3c2	
Why hasn't... [Name]... work in the last 12 months?	Small/at school... 1 Do housework... 2 Too old, retired... 3 Disable... 4 Ill... 5 Couldn't find a job...6 Other... 7	m4ac3	m4c3	m4ac3	Not available	There is only data for the last 7 days in VHLSS 2002
What is the most time-consuming job in the last 12 months?	Occupation code 11-19.leaders in all fields and levels 21-34.high and mid-level professionals at all fields 41-79.skilled staff, workers, handicraftsmen 81-93.assemblers and unskilled worker 00. armed forces	m4ac4	m4c4	m4ac4	m3c6	
For how many months has... [Name]... done it in the last 12 months?	months	m4ac6	m4ac6	m4ac6	Not available	

On average how many days did... [Name]... usually work per month?	days	m4ac7	m4ac7	m4ac7	m3c10	
On average how many hours did... [Name]... usually work per day?	hours	m4ac8	m4ac8	m4ac8	m3c11	
Is...[Name]... is a state employee?	Yes...1 No...2	m4ac10b	m4ac10	m4ac10	m3c8	The question may not be the same
Has... [Name]... done any other job in the past 12 months?	Yes...1 No...2	m4ac13	m4ac13	m4ac13	m3c12	
For how many months has... [Name]... been doing this job for the last 12 months?	Months	m4ac16	m4ac16	m4ac16	m3c13	
For how many days has... [Name]... been doing this job per month on average?	Days	m4ac17	m4ac17	m4ac17	m3c14	
For how many hours has... [Name]... been doing this job on average?	hours	m4ac18	m4ac18	m4ac18	m3c15	
Apart from the 2 above-mentioned works, has... [Name]... done any other work in the last 12 months?	Yes... 1 No... 2	m4ac23	m4ac23	m4ac23	m3c18 m3c19	Codes may not be the same
Was this work for wage/salary?	Yes... 1 No...2	m4ac24	m4ac24	m4ac24	Not available	
Do you have to work in your house?	Yes...1 No...2	m4ac26	m4ac26	m4ac26	m3c16	
How many hours a day in the last 12 months you did this	hours	m4ac27	m4ac27	m4ac27	m3c17	

kind of work on average?						
5. Income, sources of income and financial status						
Other educational subsidies received sponsors	Thousand VND	m2c14	m2c14	m2c14	Not available	
What is the value of the scholarship or award received during the past 12 months?	Thousand VND	m2c15	m2c15	m2c15	m2c10	
Did household afford to cover all those expenses for...? [Name]...?	Yes, enough...1 Yes, not enough...2 No...3	m3c14	m3c14	m3c12	Not available	
What did the household do or from what source did it enjoy if it did not have enough or did not have money to cover health care expenses?	Sold products made by household...1 Sold assets... 2 Non-interest loan...3 Loan with interest...4 Quit the treatment...5 Exempted/reduced by hospital...6 Health care insurance ...7 Free health care certificate ...8 Others ...9	m3c15	m3c15	m3c13	Not available	
Total health expenditure	Thousand VND	3CT	3CT	3CT	HO.M4C4C	
How much did... [Name]... receive from this work in cash and in kind in the last 12 months (most time consumed work)?	Thousand VND	m4ac11	m4ac11	m4ac11	m5ac6	
Apart from salary/wage, how much did... [Name]... receive from this work in cash and in kind in from the following things (most time consumed	a. Public holidays b.Social allowances c.Maternity allowance d.Allowance for domestic and overseas business trips	m4ac12	m4ac12	m4ac12	m5ac7e	

work)?	e.Others f.Total					
For the last 12 months, how much did... [Name]... receive from this work in cash and in kind (2 nd time consumed work)?	Thousand VND	m4ac21	m4ac21	m4ac21	m5ac9	
Apart from salary/wage, how much did... [Name]... receive from this work in cash and in kind in from the following things (2 nd time consumed work)?	a.Public holidays b.Social allowances c.Maternity allowance d.Allowance for domestic and overseas business trips e.Others f.Total	M4ac22	M4ac22	M4ac22	Included in m5ac9	
How much did... [Name]... receive from this work (from the 3 rd and so on)?	Thousand VND	m4ac25	m4ac25	m4ac25	Included in m5ac9	
Total income from wages and salary	Thousand VND	4atn	4atn	4atn	m5ac6+m5ac7 + m5ac9	
For the last 12 months, have your household used or managed land for agriculture and forestry or water surface for aquaculture?	Yes...1 No...2	m4b0c1	m4b0c1	m91c1	m5bc2	Use extension module of VHLSS 2004
What is the payment in cash and in kind for land rent or auction in the last 12 months?	Thousand VND	m4b0c7	m4b0c7	m92c6a	m5b1c10	
What is amount in cash and in kind obtained from land rental in the last 12 months?	Thousand VND	m4bc11	m4bc11	m93c6a	mb1c8a and mb1c8b	
Have you harvested any	Yes...1	m4b1c1a	m4b1.1c1	m4b1c1	m5b2c1	

products from planting activities for the last 12 months?	No...2					
Income from planting		4b1tn	4b1tn	4b1tn	5B2T-5B2C	
Income from livestock breeding	4B21TN	4B21TN	4B21TN	4B21TN	5B3T-5B3C	
Income from hunting, trapping and domesticating forest animal and birds	4B22TN	4B22TN	4B22TN	Part of 4B22TN	(5B5T-5B5C) + (m5b5c12-m5b5c13)	
Income from agriculture services		4B3TN	4B3TN	4B3TN	5B4T-5B4C	
Income from forestry		4B41TN	Part of 4B42TN	Part of 4B42TN	Part of m5b5	
Income from raising, catching aquaculture products		4B5TN	4B5TN	4B5TN	5B6T-5B6C	
Total income from these activities the household received		4CTN	4CTN	4CTN	5CT-5CC	
Value of other incoming money which is considered as income of household		4D1TN	4D1TN	4D1TN	5D1T	
Value of other incoming money which is not considered as income of household		4D2T	4D2T	4D2T	5D2T	
In the last 12 months, how much have you earned from land or house/flat leasing?		m7c15	m7c15	m7c15	m8c14	
Is there anyone in your	Yes...1	m8c7	m8c7	m8c17	Not available	

household who has borrowed or owned money or goods in the last 12 months	No...2					
6. Consumption and basic services						
Total cost for attending school of household member?		2CT	2CT	2CT	m2c5+m2c11	
Expenditure on foods and drinks during holidays?		5A1CT	5A1CT	5A1CT	6A1(m6a1c2b+ m6a1c3b)	
Daily expenditure on foods and drinks		5A2CT	5A2CT	5A2CT	6A2(m6a2c6 + m6a2c10)	
Expenditure on daily consumption		5B1CT	5B1CT	5B1CT	6B1(m6b1c4 + m6b1c5)	
Annual consumption expenditure		5B2CT	5B2CT	5B2CT	6B2(m6b2c2 + m6b2c3)	
Other spending that is considered as household expenditure		5B3CT	5B3CT	5B3CT	6B3(m6b3c2)	
Other spending that is not considered as household expenditure		5B4C	5B4C	5B4C	6B4(m6b4c2)	
What is the main source of cooking/drinking water of your household?	a.tap(code 1-3) b.Well (code4-6) c.Tank (10-12) d.Unsafe (7-9, 13-14)	m7c26	m7c26	m7c26	m8c23	
Do you use a filter or chemicals to purify your cooking/drinking water?	Yes...1 No...2	m7c27	m7c27	m7c27	m8c24	
Does your household often boil drinking water?	Yes. Always...1 Yes, usually...2 Yes, sometimes...3	m7c28	m7c28	m7c28	Not available	

	Yes, occasionally...4 Never...5					
What is the main source of water for daily use in your household	a.tab(code 1-3) b. well (code4-6) stank(10-12) d. unsafe (7-9, 13-14)	m7c29	m7c29	m7c29	Not available	Codes may be difference among questionnaires
Expenditure on foods and drinks (both daily and holidays)		5A1CT+5A2CT	5A1CT+5A2CT	5A1CT+5A2CT	6A1+6A2	
Does your household have to pay rent for this dwelling?	Yes...1 No...2	m7c7	m7c7	m7c7	m8c8	
How much has your household have to pay for renting this dwelling in the last 12 months?		m7c9	m7c9	m7c9	m8c10	
Does your household have to pay for water?	Yes...1 No...2	m7c31	m7c31	m7c31	m8c25	
How much has your household pay for water in the last 12 months?		m7c32	m7c32	m7c32	m8c26	
Does your household have to pay for electricity?	Yes...1 No...2	m7c35	m7c35	m7c35	m8c29	
How much has your household have to pay for electricity in the last 12 months?		m7c36	m7c36	m7c36	m8c30	
Does your household have to pay for garbage collection?	Yes...1 No...2	m7c37	m7c37	m7c37	m8c31	
how much has your household have to pay for garbage collection		m7c39	m7c39	m7c39	m8c33	

Health expenditure		3CT	3CT	3CT	m4C4C	
How much did you purchase or were given in the last 12 months?		m5b2c4+ m5b2c5	m5b2c4+ m5b2c5	m5b2c4+ m5b2c5	m6b1c1/4/ (215, 217) + m6b2c1/2/3 (321-8, 330-1)	Expenditure for entertainment and loisir
7. Ownership, production basis and living accommodations						
Fix assets and durable appliances	1.perennial crop gardens 2.aquaculture farms 3.fish/shrimp-rearing cages/rafts 3.land for doing other business 13.workshops 14.shops 15.other production bases	m6c1(1,2,3,4,13,14,15)	m6c1(1,2,3,4,13,14,15)	m6c1(1,2,3,4,13,14,15)	m7c1(1,2,3,13,14,15)	
All assets and durable appliances?		m6c1	m6c1	m6c1	m7c1	
What is total living area sqm?		m7c2	m7c2	m7c2	m8c2	
What type of structure your household belong to?	Villa...1 Houses with a private kitchen and bathroom/toilet...2 Houses with a share kitchen or bathroom/toilet...3 Semi-permanent houses...4 Temporary and other types of houses...5	m7c3	m7c3	m7c3	m8c3	
Does your household own or partly own this dwelling?	Yes, fully...1 Yes, partly...2 No...3	m7c6	m7c6	m7c6	m8c7	
Apart from this accommodation, do you have any other land or house, flat?		m7c13	m7c13	m7c13	m8c12	

What type of toilet does your household have?	Flush toilet with septic tanks sewage pipes...1 Suilabh...2 Double vault compost latrine...3 Toilet direct over the water...4 Others...5 No toilet...6	m7c33	m7c33	m7c33	m8c12	
How has your household disposed garbage in the last 12 months?	Collected...1 Dumped in river/lake...2 Dumped in a site nearby...3 Buried...4 Burn...5 Other...6	m7c37	m7c37	m7c37	m8c31	
Is your household computer has been connected to internet?		m7c42	m7c42	m7c42	m8c47	

Source: author compilation from VHLSS 2002, 2004, 2006 and 2008

Appendix 6. Spearman correlations of indicators of well-being index

6a. Spearman correlation of variables of VHLSS 2002

	var101	var102	var103	var201	var202	var203	var304	var305	var401	var402	var403
var101	1.0000										
var102	-0.106	1.0000									
var103	0.1021	0.0304	1.0000								
var201	0.0224	-0.060	0.0852	1.0000							
var202	0.1446	-0.006	0.1105	0.0698	1.0000						
var203	0.1079	0.0560	0.1403	0.1364	0.1220	1.0000					
var304	0.0119	0.0271	0.1139	0.0575	0.0399	0.2139	1.0000				
var305	-0.106	-0.220	-0.050	0.0425	0.0045	0.0155	-0.005	1.0000			
var401	0.0065	0.0181	0.0299	0.0938	0.0040	0.0330	0.0221	-0.054	1.0000		
var402	0.0274	0.0402	0.0300	0.0382	0.0617	0.2076	0.0421	-0.005	-0.001	1.0000	
var403	0.0492	0.0978	0.1172	0.1148	0.1068	0.5830	0.1646	0.0147	0.0308	0.0158	1.0000
var404	0.0009	-0.033	0.0208	-0.013	0.0028	0.0608	-0.040	-0.001	0.0132	0.0247	0.0979
var501	0.0274	-0.004	0.1274	-0.003	0.0568	0.0647	0.0443	0.0049	0.0403	0.0333	0.0820
var601	0.0200	0.0942	0.1481	0.0748	0.1539	0.2888	0.1803	0.0412	0.0247	0.0825	0.2700
var602	-0.039	-0.026	0.1057	0.1006	0.0810	0.2505	0.3220	0.0674	-0.015	0.0506	0.2147
var603	0.0567	0.0301	-0.032	-0.0383	0.0126	0.0057	-0.326	-0.069	-0.006	0.0443	0.0023
var701	0.1810	0.2524	0.2571	0.0665	0.1236	0.3973	0.2051	-0.127	0.0276	0.1413	0.3586
var702	0.0430	-0.272	0.0677	0.0705	0.0297	0.1654	-0.007	0.1158	0.0289	0.0872	0.0655
var703	0.1149	0.0620	0.1826	0.1125	0.1098	0.3196	0.0555	-0.046	0.0588	0.0983	0.2765
var704	-0.012	0.0067	0.1891	0.0926	0.1099	0.2607	0.2529	0.0837	-0.019	0.0708	0.2350
var705	0.0664	0.0871	0.0397	-0.0029	0.0061	0.0297	-0.180	-0.063	-0.021	0.0246	0.0184
var706	0.0084	0.0481	0.0548	0.0506	0.0530	0.2324	0.1229	0.0270	0.0076	0.0443	0.2537
	var404	var501	var601	var602	var603	var701	var702	var703	var704	var705	var706
var404	1.0000										
var501	0.0227	1.0000									
var601	-0.010	-0.070	1.0000								
var602	-0.072	-0.038	0.1059	1.0000							
var603	0.0653	-0.037	-0.011	-0.245	1.0000						
var701	0.0564	0.0514	0.3980	0.1209	0.0693	1.0000					
var702	0.0552	0.0828	0.1260	-0.031	0.0528	0.0968	1.0000				
var703	0.0087	0.0006	0.2110	0.2129	0.0667	0.3621	0.1899	1.0000			
var704	-0.068	0.0366	0.2624	0.4561	-0.133	0.2930	0.1341	0.2847	1.0000		
var705	0.0194	0.0017	0.0841	-0.197	0.5347	0.1507	0.0406	0.0956	-0.057	1.0000	
var706	-0.022	-0.002	0.2044	0.1641	0.0358	0.2410	0.0978	0.1652	0.1257	0.0546	1.0000

Source: Author's calculation from VHLSS 2002

6b. Spearman correlation of variables of VHLSS 2004

	var101	var102	var103	var104	var105	var201	var202	var203	var301	var302	var303	
var101	1.0000											
var102	-0.101	1.0000										
var103	-0.095	-0.022	1.0000									
var104	0.0817	-0.043	-0.026	1.0000								
var105	0.1445	0.0987	-0.021	0.1591	1.0000							
var201	-0.006	-0.060	0.0791	0.1073	-0.036	1.0000						
var202	0.0680	0.0042	-0.020	0.1327	0.0681	0.1308	1.0000					
var203	0.0625	0.0434	-0.093	0.1302	0.1086	0.1663	0.1290	1.0000				
var301	0.0055	0.0326	0.0726	0.0001	0.0573	0.0570	0.0559	0.0881	1.0000			
var302	0.1032	0.1176	0.0094	-0.149	0.1066	0.1317	0.1152	0.3954	0.1222	1.0000		
var303	-0.001	-0.023	0.0005	-0.006	0.1139	-0.079	0.0700	0.0218	0.1679	0.0047	1.0000	
var304	0.0565	0.0302	-0.107	0.1726	0.0609	0.1594	0.1690	0.3202	0.0181	0.1008	0.0880	
var305	-0.148	-0.178	0.0005	0.0732	-0.054	0.1170	0.0927	0.1477	0.0870	0.0876	0.0286	
var401	0.0750	-0.005	-0.075	0.0748	0.0008	0.1472	0.0184	0.1444	-0.004	0.1065	0.0113	
var402	0.0618	0.0372	-0.051	0.0380	0.0420	0.0530	0.0550	0.1022	0.0241	0.1032	-0.002	
var403	0.0797	0.0208	-0.066	0.0466	0.1149	0.1338	0.1270	0.6556	0.0596	0.3745	-0.071	
var404	0.0091	-0.049	0.0725	0.0423	0.0692	0.1081	0.0269	0.1319	0.0348	0.2146	-0.042	
var501	-0.049	-0.014	-0.037	0.0148	0.0418	0.0096	0.0312	0.0428	0.1235	-0.045	0.0672	
var502	0.1130	-0.007	0.0011	0.2322	0.1838	0.0593	0.1604	0.1394	0.0790	-0.002	0.1655	
var503	-0.021	-0.111	0.0037	0.2790	0.1381	0.1665	0.1190	0.1673	0.1003	0.0143	0.1444	
var601	0.0847	-0.034	-0.034	0.1987	0.0215	0.1620	0.0947	0.2482	-0.008	0.1762	-0.102	
var602	-0.051	-0.074	0.0754	0.0507	-0.050	0.1484	0.1681	0.2377	0.0388	0.1278	0.0174	
var603	0.0858	-0.001	0.0347	0.0001	0.0412	-0.022	-0.048	0.0015	0.0321	-0.022	0.0101	
var701	0.1550	0.1813	-0.091	0.2607	0.1925	0.1086	0.1513	0.4692	-0.001	0.2540	0.0545	
var702	0.0229	-0.258	0.0157	0.0752	-0.016	0.0846	0.0932	0.1691	0.0099	0.0257	0.0890	
var703	0.0408	-0.008	-0.017	0.1658	0.1463	0.1044	0.1203	0.2781	0.0454	0.1919	0.0482	
var704	0.0036	0.0127	-0.088	0.2089	-0.003	0.1524	0.1391	0.2234	-0.053	0.1051	0.0030	
var705	0.1094	-0.017	0.0684	0.0645	0.0752	-0.044	0.0113	-0.042	0.0635	-0.034	0.0314	
var706	0.0278	0.0012	-0.008	0.0674	-0.005	0.0940	0.0975	0.3459	0.0884	0.0917	0.0529	
	var304	var305	var401	var402	var403	var404	var501	var502	var503	var601	var602	
var304	1.0000											
var305	0.0247	1.0000										
var401	0.0204	-0.010	1.0000									
var402	0.0822	-0.002	0.0422	1.0000								
var403	0.2574	0.1230	0.1055	0.0803	1.0000							
var404	0.0017	0.0029	0.1050	0.0032	0.1715	1.0000						
var501	0.1165	0.0854	0.0158	-0.018	-0.028	-0.081	1.0000					
var502	0.1996	-0.008	0.1145	0.0256	0.0959	-0.017	-0.006	1.0000				
var503	0.1953	0.1040	0.0522	-0.028	0.1040	0.0508	0.0530	0.2551	1.0000			
var601	0.1910	0.1118	0.0017	0.0423	0.2789	0.0527	-0.215	0.0244	0.0364	1.0000		
var602	0.2958	0.0843	-0.073	0.0187	0.1725	-0.077	-0.096	0.0848	0.1471	0.1017	1.0000	
var603	-0.068	-0.029	-0.044	-0.047	-0.030	0.0328	0.0391	0.0888	-0.051	-0.025	-0.164	
var701	0.3877	0.0328	0.1320	0.1554	0.4233	0.0147	0.0077	0.2380	0.2002	0.4429	0.1532	
var702	0.1657	0.1423	0.0331	-0.001	0.1159	0.0634	0.1160	0.0451	0.0868	0.1253	0.0095	
var703	0.2694	0.0538	0.0406	0.0604	0.2456	0.0142	-0.123	0.1640	0.2209	0.2134	0.3064	
var704	0.3166	0.0110	-0.010	0.0785	0.1980	-0.062	-0.007	0.0375	0.2222	0.2465	0.3330	
var705	-0.083	0.0181	-0.034	-0.032	-0.084	-0.025	0.0799	0.1228	0.0604	-0.043	-0.161	
var706	0.2679	0.0654	-0.011	0.0156	0.2927	-0.013	0.0417	0.1076	0.1126	0.2163	0.1456	
	var603	var701	var702	var703	var704	var705	var706					
var603	1.0000											
var701	0.0226	1.0000										
var702	0.1324	0.1730	1.0000									
var703	-0.006	0.3513	0.2097	1.0000								
var704	-0.120	0.3385	0.1014	0.3571	1.0000							
var705	0.6938	0.0114	0.1114	0.0195	-0.112	1.0000						
var706	-0.029	0.2989	0.1806	0.1793	0.1390	-0.041	1.0000					

Source: Author's calculation from VHLSS 2004

6c. Spearman correlation of variables of VHLSS 2006

	var101	var102	var103	var104	var105	var201	var202	var203	var301	var302	var303
var101	1.0000										
var102	-0.114	1.0000									
var103	0.0136	-0.074	1.0000								
var104	0.0423	-0.058	0.0056	1.0000							
var105	0.0390	0.1352	0.0429	0.2230	1.0000						
var201	0.0077	-0.054	0.0283	0.1894	0.0985	1.0000					
var202	0.1369	0.0476	-0.008	0.1141	0.0441	0.0004	1.0000				
var203	0.0793	0.0408	-0.152	0.1323	0.2003	0.1196	0.1387	1.0000			
var301	-0.066	0.0165	0.0358	-0.030	-0.069	-0.005	-0.025	-0.068	1.0000		
var302	0.0890	0.0524	0.0337	-0.102	0.1539	0.1378	0.1478	0.3656	-0.019	1.0000	
var303	0.0307	0.0202	0.0404	0.0390	0.0820	0.1053	0.0788	0.0411	0.0079	-0.063	1.0000
var304	0.0197	-0.053	-0.011	0.2075	0.0512	0.0975	0.1781	0.3070	-0.041	0.1222	-0.025
var305	-0.114	-0.173	-0.024	-0.042	-0.136	-0.055	-0.035	-0.052	-0.000	-0.025	-0.017
var401	0.0415	-0.004	-0.002	0.0865	0.0744	0.2172	-0.070	-0.005	-0.077	0.1447	0.0359
var402	0.0210	0.0409	0.0075	0.0496	0.0658	0.0458	0.0606	0.1379	-0.012	0.1347	0.0634
var403	0.0601	0.0034	-0.069	0.1368	0.1178	0.1214	0.1100	0.6237	-0.070	0.4059	0.0425
var404	0.1252	-0.029	0.0342	0.0171	0.0861	0.0364	0.0190	0.1615	0.1026	0.2049	-0.023
var501	-0.035	0.0586	-0.047	0.0839	0.1265	-0.020	0.0679	0.1364	-0.012	0.0218	0.0714
var502	0.0854	-0.064	0.0323	0.2550	0.1350	0.1364	0.0458	0.1465	0.0238	-0.033	0.1833
var503	-0.014	-0.070	0.0762	0.2983	0.1214	0.0674	0.0157	0.1302	-0.019	-0.049	0.1348
var601	-0.016	0.1156	-0.045	0.2276	0.0794	0.0358	0.0884	0.0465	-0.045	0.0529	-0.074
var602	0.0044	-0.055	-0.046	0.1082	0.0167	0.0962	0.0944	0.1861	-0.059	0.0709	0.0423
var603	0.0611	0.0300	0.0873	-0.027	0.0768	0.0173	-0.018	0.0352	0.0061	0.0314	-0.071
var701	0.0973	0.2013	-0.040	0.3049	0.2707	0.1703	0.2236	0.3911	-0.162	0.2682	0.0021
var702	0.1094	-0.274	0.0885	0.1128	0.0343	0.0946	0.1348	0.0904	-0.028	0.0647	0.0394
var703	0.1037	0.0470	-0.010	0.2120	0.2274	0.1315	0.1456	0.2513	-0.060	0.1235	0.0344
var704	-0.069	0.0559	-0.078	0.2718	-0.011	0.1167	0.1808	0.1279	-0.113	0.0270	0.0137
var705	0.0419	0.0940	0.0852	0.0273	0.0537	0.0055	-0.002	0.0302	0.0015	0.0630	-0.045
var706	-0.056	-0.016	-0.108	0.0882	0.0690	0.0814	0.0655	0.2969	0.0291	0.1007	0.0412

	var304	var305	var401	var402	var403	var404	var501	var502	var503	var601	var602
var304	1.0000										
var305	0.0377	1.0000									
var401	0.0124	-0.047	1.0000								
var402	0.1064	-0.103	0.0400	1.0000							
var403	0.2644	0.0282	0.0772	0.0190	1.0000						
var404	-0.028	-0.085	0.0218	0.0567	0.1460	1.0000					
var501	-0.003	-0.000	0.0179	0.0517	0.0554	0.0811	1.0000				
var502	0.1515	-0.026	0.0716	0.0539	0.1384	0.0707	0.0079	1.0000			
var503	0.1267	0.0868	-0.045	0.0202	0.0875	0.0794	0.1180	0.2903	1.0000		
var601	0.1647	0.0563	0.0457	0.0587	0.1150	-0.001	-0.072	0.0538	-0.008	1.0000	
var602	0.2883	0.0364	0.0062	0.0537	0.1787	-0.094	-0.060	0.1128	0.0646	0.1864	1.0000
var603	-0.062	-0.025	0.0305	0.0434	0.0001	0.0275	0.0003	-0.067	-0.059	-0.014	-0.070
var701	0.3478	-0.107	0.0765	0.1719	0.4101	0.0609	0.0453	0.2459	0.0787	0.3440	0.1305
var702	0.1264	0.0351	0.1040	0.1232	0.0146	0.1188	0.0402	0.0726	0.0772	0.0694	0.0216
var703	0.2203	-0.141	0.0190	0.0935	0.2102	0.0883	-0.045	0.2046	0.1631	0.0854	0.2200
var704	0.2904	0.0424	-0.027	0.0520	0.1777	-0.110	0.0176	0.0801	0.1427	0.1540	0.2803
var705	-0.048	-0.049	-0.016	0.0466	0.0032	0.0323	0.0071	-0.072	-0.072	0.0330	-0.074
var706	0.1957	0.0712	0.0107	0.1468	0.2723	0.0170	-0.023	0.0726	0.0639	0.2117	0.1832

	var603	var701	var702	var703	var704	var705	var706
var603	1.0000						
var701	0.0845	1.0000					
var702	0.0820	0.1291	1.0000				
var703	-0.023	0.3828	0.2158	1.0000			
var704	-0.038	0.2570	0.0371	0.2427	1.0000		
var705	0.7542	0.1310	0.0643	0.0275	-0.018	1.0000	
var706	-0.006	0.3068	0.0920	0.1135	0.0924	0.0301	1.0000

Source: Author's calculation from VHLSS 2006

6d. Spearman correlation of variables of VHLSS 2008

	var101	var102	var103	var104	var105	var201	var202	var203	var301	var302	var303
var101	1.0000										
var102	-0.110	1.0000									
var103	-0.057	-0.052	1.0000								
var104	0.1043	-0.016	-0.077	1.0000							
var105	0.0521	0.0471	-0.022	0.0805	1.0000						
var201	0.0004	-0.044	-0.027	0.1341	0.0471	1.0000					
var202	0.1179	0.0359	-0.037	0.1149	0.0719	0.0359	1.0000				
var203	0.0476	0.0535	-0.080	0.1316	0.1228	0.1344	0.1478	1.0000			
var301	0.0282	-0.034	0.0961	-0.023	-0.005	-0.010	-0.036	-0.048	1.0000		
var302	0.0897	0.0430	0.0584	-0.139	0.0524	0.1474	0.0434	0.2984	-0.117	1.0000	
var303	-0.077	0.0319	-0.046	-0.017	-0.033	0.0050	-0.022	0.0088	-0.211	0.0450	1.0000
var304	-0.048	0.0244	-0.022	0.1667	0.0683	0.1116	0.1604	0.3453	-0.171	0.1554	0.0934
var305	-0.122	-0.097	-0.053	-0.098	-0.078	0.0260	0.0339	0.0600	-0.035	0.0802	-0.014
var401	0.0099	-0.025	0.0346	-0.031	0.0239	0.1259	0.0185	0.0443	-0.068	0.0660	0.0418
var402	0.0044	0.0455	-0.075	-0.018	0.0996	0.0455	0.0325	0.1401	0.0020	0.0815	0.0408
var403	0.0013	0.1075	-0.084	0.0827	0.1760	0.1467	0.1382	0.6726	-0.050	0.3756	-0.008
var404	0.0180	0.0186	0.0303	-0.024	0.0073	0.0423	-0.039	0.1225	0.0413	0.1164	-0.020
var501	0.0365	-0.009	-0.032	0.0412	0.0420	0.0626	0.0859	0.2080	0.0023	0.0363	0.0319
var502	-0.041	0.0748	-0.043	0.2145	0.1771	0.1575	0.2015	0.0938	-0.008	0.0096	0.0183
var503	0.0329	-0.044	0.0131	0.3164	0.1356	0.1040	0.0467	0.1840	0.0011	0.0041	-0.003
var601	0.0233	0.0749	-0.100	0.1301	0.0771	0.1068	0.0937	0.1812	-0.103	0.1422	-0.002
var602	-0.006	0.0159	-0.041	0.0059	-0.060	0.0950	0.0277	0.1923	-0.065	0.1073	0.0132
var603	0.0683	0.0104	0.2510	-0.049	0.0170	0.0594	0.0153	0.0115	0.0544	0.1293	0.0114
var701	0.1018	0.1991	-0.066	0.2900	0.2285	0.1512	0.2043	0.4078	-0.080	0.2778	0.0623
var702	0.0248	-0.259	0.0948	0.0717	0.0936	0.1194	0.0389	0.1033	0.0012	0.0043	-0.068
var703	0.0041	0.1252	0.0249	0.1588	0.1726	0.1057	0.1449	0.2992	-0.035	0.0776	-0.027
var704	-0.013	0.0662	-0.052	0.1327	-0.009	0.0268	0.0696	0.1222	-0.095	0.0201	0.0128
var705	0.0203	0.0247	0.2523	-0.000	-0.033	-0.014	-0.018	0.0042	0.0476	0.0612	0.0309
var706	-0.014	0.0773	-0.063	0.1474	0.0817	0.1200	0.1091	0.4170	-0.060	0.1764	0.0727

	var304	var305	var401	var402	var403	var404	var501	var502	var503	var601	var602
var304	1.0000										
var305	-0.010	1.0000									
var401	-0.006	0.0061	1.0000								
var402	0.0501	-0.051	0.0264	1.0000							
var403	0.3359	0.0629	-0.012	0.0226	1.0000						
var404	-0.000	-0.011	0.0211	0.0325	0.1457	1.0000					
var501	0.0932	-0.000	-0.004	0.0974	0.1597	0.0643	1.0000				
var502	0.1468	0.0492	0.0405	0.0504	0.1092	0.0403	0.1354	1.0000			
var503	0.1304	0.0474	-0.013	-0.025	0.1385	0.0604	0.0446	0.3238	1.0000		
var601	0.1938	-0.028	0.0210	0.1793	0.2011	0.0058	-0.113	-0.001	0.0219	1.0000	
var602	0.2731	0.0898	0.0164	-0.009	0.1881	-0.041	-0.013	0.0763	0.0769	0.1213	1.0000
var603	-0.046	-0.042	0.0585	-0.056	0.0059	0.0386	-0.088	0.0448	-0.031	-0.066	0.0037
var701	0.3284	-0.135	0.0151	0.2408	0.4182	0.0629	0.1322	0.1857	0.1247	0.3491	0.0761
var702	0.0377	0.0032	0.0143	0.0921	0.0219	0.0215	0.0826	0.0455	0.0437	0.0969	-0.058
var703	0.2927	-0.075	-0.020	0.0939	0.2859	0.0546	0.0278	0.1736	0.1982	0.1350	0.2234
var704	0.2342	0.0436	-0.030	0.0532	0.1376	-0.096	0.0569	0.0500	0.0191	0.1876	0.2455
var705	-0.043	-0.040	0.0341	0.0161	-0.009	0.0635	-0.085	-0.023	-0.069	-0.068	-0.017
var706	0.3262	0.0200	-0.072	0.1910	0.3583	0.0134	0.0987	0.0941	0.1017	0.3600	0.1887

	var603	var701	var702	var703	var704	var705	var706
var603	1.0000						
var701	0.0360	1.0000					
var702	0.0377	0.1327	1.0000				
var703	-0.004	0.3619	0.1119	1.0000			
var704	-0.047	0.1780	0.0418	0.2165	1.0000		
var705	0.5919	0.0573	0.0634	0.0409	-0.061	1.0000	
var706	-0.053	0.4854	0.1022	0.1972	0.1218	-0.0032	1.0000

Source: Author's calculation from VHLSS 2008

Appendix 7. Descriptive characteristics of indicators of the well-being index of households in Hanoi

Table 7a: Descriptive characteristics of indicators of well-being index in 2002

Survey: Mean estimation		Number of obs = 740		
Number of strata = 1		Population size = 654240		
Number of PSUs = 67		Subpop. no. obs = 740		
Design df = 66		Subpop. size = 654240		
Criteria	Mean	Std.	[95% Conf.	Interval]
I. Demographic and social characteristics				
non-single parent	85.80	1.67	82.46	89.14
none-single occupant	97.59	0.61	96.36	98.81
registration	na	na	na	na
non-poor	96.13	1.08	93.97	98.29
life improvement	na	na	na	na
II. Education				
schooling status	92.68	1.69	89.31	96.05
literate	92.58	1.29	90.00	95.16
bachelor or above	28.16	3.49	21.18	35.14
III. Health and entertainment				
ill or injure	na	na	na	na
insurance	na	na	na	na
non-hospitalized	na	na	na	na
entertainment	0.17	0.05	0.07	0.26
non-smoking	11.72	2.16	7.40	16.04
IV. Work and career				
working status	98.72	0.52	97.67	99.76
leader	3.90	1.14	1.63	6.16
professional	27.29	2.93	21.45	33.13
working time	89.71	2.01	85.70	93.72
V. Financial status				
excess income	13.83	1.67	10.50	17.17
health care coverage	na	na	na	na
unindebted	na	na	na	na
VI. Consumption and basic services				
non-food expenses	53.39	0.99	51.42	55.36
tap water	57.59	5.82	45.96	69.22
non-rental payment	99.95	0.02	99.91	99.99
VII. Ownership and living accommodations				
assets and appliances	21.92	0.61	20.69	23.14
living space	16.04	2.19	11.67	20.41
permanent house	63.47	3.59	56.31	70.64
safe toilet	70.42	4.74	60.94	79.89
house ownership	92.88	1.71	89.47	96.29
internet connection	4.06	1.12	1.82	6.30

Source: Author's calculation from VHLSS 2002

Table 7b: Descriptive characteristics of indicators of well-being index in 2004

Survey: Mean estimation		Number of obs	=	240		
Number of strata	=	1		Population size	=	663300
Number of PSUs	=	23		Subpop. no. obs	=	240
Design df	=	22		Subpop. size	=	654240

Criteria	Mean	Std.	[95% Conf.	Interval]
I. Demographic and social characteristics				
non-single parent	87.05	2.37	82.13	91.96
none-single occupant	97.20	1.13	94.85	99.54
registration	90.64	1.91	86.67	94.60
non-poor	98.13	0.97	96.13	100.13
life improvement	90.93	1.84	87.13	94.74
II. Education				
schooling status	94.13	1.77	90.45	97.81
literate	92.97	1.65	89.54	96.40
bachelor or above	35.11	3.94	26.94	43.29
III. Health and entertainment				
ill or injure	42.37	3.56	34.99	49.74
insurance	56.09	2.74	50.40	61.78
non-hospitalized	75.07	2.33	70.23	79.91
entertainment	0.44	0.05	0.35	0.54
non-smoking	43.19	3.58	35.76	50.62
IV. Work and career				
working status	98.05	0.79	96.42	99.68
leader	4.06	1.22	1.52	6.60
professional	34.83	4.59	25.32	44.35
working time	92.31	2.26	87.62	97.00
V. Financial status				
excess income	16.61	2.19	12.06	21.15
health care coverage	95.44	1.32	92.71	98.17
unindebted	80.50	3.06	74.15	86.85
VI. Consumption and basic services				
non-food expenses	50.13	0.97	48.12	52.13
tap water	60.30	4.90	50.13	70.47
non-rental payment	99.92	0.02	99.87	99.97
VII. Ownership and living accommodations				
assets and appliances	20.27	0.53	19.18	21.37
living space	22.03	2.95	15.92	28.15
permanent house	62.57	4.24	53.78	71.36
safe toilet	76.73	4.44	67.53	85.94
house ownership	89.53	3.15	82.99	96.06
Internet connection	6.85	1.80	3.11	10.59

Source: Author's calculation from VHLSS 2004

Table 7c: Descriptive characteristics of indicators of well-being index in 2006

Survey: Mean estimation		Number of obs = 240		
Number of strata = 1		Population size = 758485		
Number of PSUs = 23		Subpop. no. obs = 240		
Design df = 22		Subpop. size = 758485		
Criteria	Mean	Std.	[95% Conf.	Interval]
I. Demographic and social characteristics				
non-single parent	84.03	2.23	79.41	88.66
none-single occupant	97.44	1.22	94.91	99.97
registration	92.51	1.64	89.11	95.92
non-poor	94.29	1.62	90.92	97.65
life improvement	91.72	1.99	87.60	95.85
II. Education				
schooling status	96.61	1.13	94.27	98.95
literate	93.44	1.81	89.70	97.19
bachelor or above	29.76	3.05	23.44	36.09
III. Health and entertainment				
ill or injure	62.36	2.29	57.62	67.10
insurance	61.98	2.86	56.06	67.91
non-hospitalized	93.76	1.03	91.62	95.90
entertainment	0.36	0.05	0.26	0.46
non-smoking	18.57	3.90	10.48	26.66
IV. Work and career				
working status	97.16	0.97	95.16	99.17
leader	3.63	1.04	1.48	5.78
professional	30.95	3.53	23.63	38.26
working time	92.06	1.87	88.19	95.93
V. Financial status				
excess income	21.52	2.40	16.55	26.49
health care coverage	97.11	1.73	93.53	100.69
unindebted	82.92	2.63	77.46	88.37
VI. Consumption and basic services				
non-food expenses	49.73	0.82	48.02	51.44
tap water	60.00	5.10	49.42	70.58
non-rental payment	99.87	0.07	99.71	100.02
VII. Ownership and living accommodations				
assets and appliances	21.76	0.42	20.89	22.62
living space	30.15	3.85	22.16	38.14
permanent house	77.25	3.87	69.23	85.27
safe toilet	82.65	3.56	75.27	90.04
house ownership	95.11	1.29	92.43	97.80
Internet connection	6.09	2.11	1.72	10.47

Source: Author's calculation from VHLSS 2006

Table 7d: Descriptive characteristics of indicators of well-being index in 2008

Table 7d: Descriptive characteristics of indicators of well-being index in 2008

Survey: Mean estimation

Number of strata = 1

Number of PSUs = 23

Design df = 22

Number of obs = 240

Population size = 858213

Subpop. no. obs = 240

Subpop. size = 858213

Criteria	Mean	Std.	[95% Conf.	Interval]
1. Demographic and social characteristics				
non-single parent	83.58	1.46	80.56	86.61
non- single occupant	94.78	1.12	92.46	97.11
registration	94.86	1.76	91.20	98.51
non-poor	96.60	1.28	93.94	99.26
life improvement	91.49	2.06	87.21	95.77*
2. Education				
schooling status	97.02	0.94	95.08	98.96
literate	94.38	1.60	91.06	97.70
bachelor or above	32.93	3.69	25.27	40.59
3. Health and entertainment				
healthy	67.44	2.36	62.54	72.33
insurance	63.78	2.58	58.44	69.13
non-hospitalized	82.72	1.04	80.58	84.87
entertainment	0.45	0.06	0.33	0.58
non-smoking	19.94	3.59	12.50	27.38
4. Work and career				
working status	99.32	0.46	98.36	100.27
leader	3.70	1.12	1.38	6.02
professional	38.25	2.91	32.21	44.29
working time	84.84	2.51	79.62	90.05
5. Financial status				
excess income	16.30	2.35	11.42	21.17
healthcare coverage	96.55	1.38	93.69	99.41
unindebted	89.00	1.86	85.14	92.86
6. Consumption and basic services				
non-food expenses	49.41	0.94	47.45	51.36
tap water	66.20	5.35	55.11	77.29
non-rental payment	99.83	0.14	99.55	100.11
7. Ownership and living accommodations				
assets and appliances	23.09	0.54	21.96	24.22
living space	32.75	3.44	25.61	39.89
permanent house	75.77	3.59	68.34	83.21
safe toilet	88.83	3.54	81.49	96.18
house ownership	96.24	1.78	92.54	99.94
Internet connection	18.40	3.14	11.88	24.92

*This value is for duration of 7 year, from 2001-2008.

Source: Author's calculation from VHLSS 2008

Appendix 8. Descriptive characteristics of indicators of well-being index of households in Ho Chi Minh City

Table 8a: Descriptive Characteristics of Indicators of Well-being Index in 2002

Survey: Mean estimation			Number of obs =	774
Number of strata =	1		Population size =	1038874
Number of PSUs =	57		Subpop. no. obs =	774
Design df =	56		Subpop. size =	1038874
Criteria	Mean	Std.	[95% Conf.	Interval]
1. Demographic and social characteristics				
non-single parent	77.35	1.88	73.59	81.12
non-one single occupant	94.53	1.09	92.35	96.72
registration	na	na	na	na
non-poor	90.29	1.97	86.34	94.24
life improvement	na	na	na	na
2. Education				
schooling status	90.68	1.70	87.28	94.09
literate	87.37	1.69	83.98	90.75
bachelor or above	18.25	2.63	12.98	23.52
3. Health and entertainment				
healthy	na	na	na	na
insurance	na	na	na	na
non-hospitalized	na	na	na	na
entertainment	0.38	0.08	0.22	0.55
non-smoking	29.49	3.20	23.07	35.90
4. Work and career				
working status	97.33	0.80	95.74	98.92
leader	2.96	0.80	1.36	4.56
professional	17.97	2.50	12.97	22.97
working time	81.37	2.42	76.52	86.23
5. Financial status				
excess income	16.95	3.67	9.60	24.30
healthcare coverage	na	na	na	na
unindebted	na	na	na	na
6. Consumption and basic services				
non-food expenses	53.16	0.95	51.26	55.07
tap water	52.92	6.17	40.55	65.29
non-rental payment	99.68	0.11	99.46	99.90
7. Ownership and living accommodations				
assets and appliances	18.87	0.58	17.70	20.03
living space	22.35	3.04	16.26	28.45
permanent house	24.53	4.14	16.25	32.82
safe toilet	84.07	3.66	76.75	91.40
house ownership	87.87	3.06	81.73	94.01
internet connection	4.09	1.26	1.56	6.62

Source: Author's calculation from VHLSS 2002

Table 8b: Descriptive characteristics of indicators of well-being index in 2004

Survey: Mean estimation		Number of obs	=	300
Number of strata	= 1	Population size	=	1154700
Number of PSUs	= 21	Subpop. no. obs	=	300
Design df	= 20	Subpop. size	=	1154700
Linearized				
Criteria	Mean	Std.	[95% Conf.	Interval]
1. Demographic and social characteristics				
non-single parent	75.42	2.52	70.15	80.68
non- single occupant	95.14	1.23	92.57	97.71
registration	85.38	2.57	80.03	90.74
non-poor	93.47	1.54	90.26	96.69
life improvement	68.50	3.06	62.11	74.89
2. Education				
schooling status	90.04	2.05	85.77	94.31
literate	89.98	1.97	85.87	94.09
bachelor or above	20.45	2.31	15.64	25.26
3. Health and entertainment				
healthy	29.18	3.29	22.32	36.04
insurance	34.94	2.92	28.86	41.03
non-hospitalized	78.55	1.57	75.27	81.84
entertainment	0.78	0.07	0.62	0.93
non-smoking	51.54	4.71	41.71	61.37
4. Work and career				
working status	92.26	1.10	89.97	94.55
leader	2.30	0.79	0.66	3.94
professional	20.24	2.34	15.36	25.11
working time	73.86	3.68	66.19	81.53
5. Financial status				
excess income	28.94	1.51	25.79	32.10
healthcare coverage	84.85	1.83	81.03	88.67
unindebted	74.01	2.19	69.45	78.58
6. Consumption and basic services				
non-food expenses	48.80	0.77	47.19	50.42
tap water	56.64	4.15	47.98	65.30
non-rental payment	99.33	0.20	98.91	99.76
7. Ownership and living accommodations				
assets and appliances	19.77	0.36	19.02	20.52
living space	25.04	1.96	20.97	29.12
permanent house	34.02	3.07	27.61	40.43
safe toilet	88.15	2.75	82.41	93.90
house ownership	87.54	2.54	82.25	92.84
internet connection	10.82	1.39	7.91	13.73

Source: Author's calculation from VHLSS 2004

Table 8c: Descriptive Characteristics of indicators of well-being index in 2006

Survey: Mean estimation		Number of obs	=	300
Number of strata	=	1	Population size	= 1314093
Number of PSUs	=	21	Subpop. no. obs	= 300
Design df	=	20	Subpop. size	= 1314093

Linearized

Criteria	Mean	Std.	[95% Conf.	Interval]
1. Demographic and social characteristics				
non-single parent	74.72	2.74	69.01	80.44
non-single occupant	93.72	0.99	91.66	95.78
registration	88.04	1.73	84.44	91.65
non-poor	92.30	1.29	89.61	94.99
life improvement	71.36	3.01	65.08	77.64
2. Education				
schooling status	92.27	1.47	89.21	95.34
literate	87.58	1.92	83.59	91.58
bachelor or above	18.60	2.41	13.56	23.63
3. Health and entertainment				
healthy	57.37	2.23	52.73	62.02
insurance	49.40	2.20	44.81	54.00
non-hospitalized	93.10	0.83	91.36	94.84
entertainment	0.73	0.06	0.61	0.86
non-smoking	41.63	4.11	33.05	50.20
4. Work and career				
working status	94.34	1.46	91.29	97.39
leader	3.03	1.12	0.69	5.37
professional	26.28	2.68	20.69	31.87
working time	76.05	3.33	69.10	83.00
5. Financial status				
excess income	27.24	1.57	23.97	30.52
healthcare coverage	88.09	2.59	82.68	93.50
unindebted	75.16	2.50	69.95	80.38
6. Consumption and basic services				
non-food expenses	51.57	1.01	49.46	53.68
tap water	64.96	4.22	56.16	73.76
non-rental payment	99.47	0.26	98.92	100.02
7. Ownership and living accommodations				
assets and appliances	20.50	0.35	19.78	21.22
living space	30.62	2.73	24.92	36.33
permanent house	42.43	3.75	34.61	50.25
safe toilet	97.90	1.45	94.88	100.91
house ownership	93.37	2.05	89.08	97.65
internet connection	12.59	2.28	7.83	17.35

Source: Author's calculation from VHLSS 2006

Table 8d: Descriptive characteristics of indicators of well-being index in 2008

Survey: Mean estimation		Number of obs	=	300		
Number of strata	=	1		Population size	=	1526445
Number of PSUs	=	21		Subpop. no. obs	=	300
Design df	=	20		Subpop. size	=	1526445

Linearized

Criteria	Mean	Std.	[95% Conf.	Interval]
1. Demographic and social characteristics				
non-single parent	74.92	4.08	66.42	83.43
non-one single occupant	96.59	0.74	95.05	98.14
registration	88.27	2.24	83.59	92.95
non-poor	91.19	2.18	86.64	95.74
life improvement	74.76	2.59	69.35	80.17*
2. Education				
schooling status	94.22	1.92	90.22	98.22
literate	87.65	2.28	82.90	92.40
bachelor or above	23.43	2.75	17.69	29.17
3. Health and entertainment				
healthy	53.24	3.52	45.89	60.59
insurance	55.83	1.65	52.38	59.28
non-hospitalized	86.61	1.19	84.12	89.11
entertainment	0.68	0.08	0.52	0.84
non-smoking	30.94	3.26	24.14	37.74
4. Work and career				
working status	98.45	0.68	97.03	99.88
leader	5.14	1.15	2.74	7.54
professional	25.97	2.30	21.16	30.77
working time	78.17	3.27	71.34	85.00
5. Financial status				
excess income	83.70	2.35	78.83	88.58
healthcare coverage	3.45	1.38	0.59	6.31
unindebted	11.00	1.86	7.14	14.86
6. Consumption and basic services				
non-food expenses	50.28	0.97	48.26	52.29
tap water	63.47	4.15	54.81	72.13
non-rental payment	98.99	0.38	98.19	99.80
7. Ownership and living accommodations				
assets and appliances	21.91	0.54	21.96	24.22
living space	28.30	1.14	20.35	25.06
permanent house	53.95	3.59	68.34	83.21
safe toilet	97.27	3.54	81.49	96.18
house ownership	90.71	1.78	92.54	99.94
internet connection	26.67	3.14	11.88	24.92

*This value is for duration of 7 year, from 2001-2008.

Source: Author's calculation from VHLSS 2008

Appendix 9: Level of deprivation households in Hanoi and Ho Chi Minh City

Table 9a: Level of deprivation of households in Hanoi

Indicator	2002	2004	2006	2008
1. Demographic and social characteristics				
single parent	0.41	0.37	0.46	0.47
one member	0.07	0.08	0.07	0.15
no permanent resident permit	0.27*	0.27	0.21	0.15
poor	0.11	0.05	0.16	0.10
no improvement in life	0.26*	0.26	0.24	0.24**
2. Education				
stop school	0.35	0.28	0.16	0.14
illiterate	0.35	0.33	0.31	0.27
no bachelor diploma	3.42	3.09	3.34	3.19
3. Health and entertainment				
ill or injure	1.65*	1.65	1.08	0.93
no insurance	1.25*	1.25	1.09	1.03
hospitalized	0.71*	0.71	0.18	0.49
no expenses for entertainment	2.47	1.19	1.13	1.15
smoking	2.52	1.62	2.33	2.29
4. Work and career				
jobless	0.05	0.07	0.10	0.02
no leader	3.43	3.43	3.44	3.44
no professional status	2.60	2.33	2.47	2.21
over work	0.37	0.27	0.28	0.54
5. Financial status				
no excess income	0.83	0.72	0.38	1.13
unable to cover health care	0.22*	0.22	0.14	0.16
indebted	0.93*	0.93	0.81	0.52
6. Consumption and basic services				
low non food expenses	0.29	0.58	0.36	0.47
no tap water	2.02	1.89	1.90	1.61
high rental payment	4.76	4.76	4.76	4.76
7. Ownership and living accommodations				
few assets and appliances	0.43	0.56	0.33	0.30
small living space	2.00	1.86	1.66	1.60
impermanent house	0.87	0.89	0.54	0.58
unsafe toilet	0.70	0.55	0.43	0.27
not house owner	0.17	0.25	0.12	0.09
no internet connection	2.28	2.22	2.24	1.94

*The value of the indicator in the year 2004, not the year 2002.

**The duration of this value is 7years instead of 5 years as other ones.

Source: Author's calculation from VHLSSs 2002, 2004, 2006, and 2008

Table 9b: Levels of deprivation households in Ho Chi Minh City

Indicator	2002	2004	2006	2008
1. Demographic and social characteristics				
single parent	0.64	0.70	0.72	0.72
one member	0.16	0.14	0.18	0.10
no permanent resident permit	0.42*	0.42	0.34	0.34
poor	0.28	0.19	0.22	0.25
no improvement in life	0.90*	0.90	0.82	0.72**
2. Education				
stop school	0.44	0.47	0.37	0.28
illiterate	0.60	0.48	0.59	0.59
no bachelor diploma	3.90	3.79	3.88	3.65
3. Health and entertainment				
ill or injure	2.02*	2.02	1.22	1.34
no insurance	1.86*	1.86	1.45	1.26
hospitalized	0.61*	0.61	0.20	0.38
no expenses for entertainment	2.18	1.01	1.08	1.06
smoking	2.01	1.38	1.67	1.97
4. Work and career				
jobless	0.11	0.28	0.20	0.06
no leader	3.47	3.49	3.46	3.39
no professional status	2.93	2.85	2.63	2.64
over work	0.66	0.93	0.86	0.78
5. Financial status				
no excess income	0.79	0.20	0.24	0.42
unable to cover health care	0.72*	0.72	0.57	0.37
indebted	1.24*	1.24	1.18	1.07
6. Consumption and basic services				
low non food expenses	0.23	0.62	0.49	0.44
no tap water	2.25	2.06	1.67	1.74
high rental payment	4.76	4.76	4.75	4.71
7. Ownership and living accommodations				
few assets and appliances	0.70	0.69	0.61	0.46
small living space	1.84	1.78	1.65	1.71
impermanent house	1.80	1.57	1.37	1.10
unsafe toilet	0.38	0.28	0.07	0.06
not house owner	0.29	0.30	0.16	0.22
no internet connection	2.28	2.12	2.08	1.75

*The value of the indicator in the year 2004, not the year 2002.

**The duration of this value is 7years instead of 5 years as other ones.

Source: Author's calculation from VHLSSs 2002, 2004, 2006, and 2008

Table 9c: Disparities in level of deprivation of households in Hanoi versus households in Ho Chi Minh City

Indicator	2002	2004	2006	2008
1. Demographic and social characteristics				
single parent	63.0	52.7	63.2	65.5
one member	44.3	57.7	40.8	153.1
no permanent resident permit	64.1*	64.1	62.6	43.8
poor	40.1	28.7	74.2	38.6
no improvement in life	28.8*	28.8	28.9	33.7**
2. Education				
stop school	78.9	58.9	43.9	51.5
illiterate	59.0	70.1	52.8	45.5
no bachelor diploma	87.8	81.6	86.3	87.6
3. Health and entertainment				
ill or injure	81.4*	81.4	88.3	69.6
no insurance	67.5*	67.5	75.1	82.0
hospitalized	116.2*	116.2	90.4	129.1
no expenses for entertainment	113.5	117.4	104.3	108.0
smoking	125.7	117.2	139.5	115.9
4. Work and career				
jobless	42.0	25.2	50.1	44.2
no leader	99.0	98.2	99.4	101.5
no professional status	88.6	81.7	93.7	83.4
over work	55.5	29.4	33.1	69.5
5. Financial status				
no excess income	104.7	350.3	158.1	268.6
unable to cover health care	30.1*	30.1	24.3	44.1
indebted	75.0*	75.0	68.8	48.7
6. Consumption and basic services				
low non food expenses	124.2	92.7	72.8	106.6
no tap water	89.7	91.6	114.2	92.5
high rental payment	100.1	100.0	100.3	101.0
7. Ownership and living accommodations				
few assets and appliances	62.0	82.1	54.5	64.9
small living space	108.6	104.0	100.7	93.8
impermanent house	48.3	56.7	39.5	52.6
unsafe toilet	186.5	196.4	657.6	409.5
not house owner	58.9	84.1	73.6	40.5
no internet connection	100.0	104.5	107.4	111.3

*The value of the indicator in the year 2004, not the year 2002.

**The duration of this value is 7years instead of 5 years as other ones.

Source: Author's calculation from VHLSSs 2002, 2004, 2006, and 2008

Appendix 10: Spearman correlations of households in the cities

10a. The Spearman correlations among multidimensional poor status and level of deprivation of indicators of households in the City (*implies that the test is significant at 1% level or level of confident is 99%)

	Mpoor	wbdep101	wbdep102	wbdep103	wbdep104	wbdep105	wbdep201	wbdep202	wbdep203	wbdep301	wbdep302
Mpoor	1.0000										
wbdep101	0.1125*	1.0000									
wbdep102	0.0531	-0.1089*	1.0000								
wbdep103	-0.0175	-0.0477	-0.0497	1.0000							
wbdep104	0.3277*	0.0762*	-0.0394	-0.0328	1.0000						
wbdep105	0.1433*	0.0778*	0.0946*	0.0024	0.1531*	1.0000					
wbdep201	0.3161*	-0.0011	-0.0536	0.0390	0.1390*	0.0333	1.0000				
wbdep202	0.3394*	0.1086*	0.0302	-0.0200	0.1196*	0.0610	0.0590	1.0000			
wbdep203	0.2990*	0.0628	0.0463	-0.1066*	0.1313*	0.1430*	0.1409*	0.1391*	1.0000		
wbdep301	-0.0050	-0.0184	0.0131	0.0781*	-0.0325	0.0108	0.0401	0.0013	-0.0040	1.0000	
wbdep302	0.1978*	0.0868*	0.0696*	0.0434	-0.1347*	0.1046*	0.1480*	0.1015*	0.3476*	0.0512	1.0000
wbdep303	0.0841*	-0.0218	0.0023	-0.0153	-0.0004	0.0478	-0.0109	0.0393	0.0137	-0.0073	-0.0166
wbdep304	0.4498*	0.0382	0.0619	-0.0755*	0.1880*	0.0901*	0.1279*	0.1871*	0.3143*	-0.0985*	0.1394*
wbdep305	0.0871*	-0.1220*	-0.1469*	-0.0341	-0.0166	-0.0939*	0.0241	0.0307	0.0552	-0.0202	0.0099
wbdep401	0.0899*	0.0444	-0.0095	-0.0205	0.0500	0.0354	0.1709*	-0.0149	0.0670*	-0.0225	0.1223*
wbdep402	0.0972*	0.0266	0.0413	-0.0368	0.0196	0.0708*	0.0491	0.0489	0.1279*	0.0088	0.1109*
wbdep403	0.3066*	0.0448	0.0443	-0.0695*	0.0898*	0.1374*	0.1348*	0.1250*	0.6508*	-0.0037	0.3870*
wbdep404	0.1127*	0.0503	-0.0200	0.0465	0.0094	0.0546	0.0654*	0.0023	0.1370*	0.0560	0.1757*
wbdep501	0.1604*	-0.0337	-0.0221	-0.0284	-0.0051	-0.0183	-0.0086	0.0448	0.0767*	-0.0381	0.0034
wbdep502	0.3412*	0.0570	-0.0046	0.0059	0.2270*	0.1671*	0.1123*	0.1302*	0.1279*	0.0507	0.0046
wbdep503	0.3572*	-0.0031	-0.0764*	0.0355	0.2931*	0.1337*	0.1199*	0.0609	0.1611*	0.0414	0.0022
wbdep601	0.3247*	0.0525	0.0984*	-0.0400	0.2141*	0.0597	0.1120*	0.1101*	0.1217*	-0.0187	0.1013*
wbdep602	0.3429*	-0.0192	-0.0389	0.0060	0.0530	-0.0277	0.1201*	0.0981*	0.2060*	-0.0072	0.1163*
wbdep603	-0.0144	0.0221	0.0092	-0.1072*	0.0106	0.0212	-0.0496	0.0134	-0.0261	0.0208	-0.0351
wbdep701	0.4585*	0.0911*	0.2085*	-0.0324	0.3356*	0.2103*	0.1302*	0.2147*	0.2547*	-0.0122	0.1420*
wbdep702	0.1528*	0.0516	-0.2643*	0.0679*	0.0842*	0.0392	0.1007*	0.0890*	0.1186*	0.0139	0.0388
wbdep703	0.3794*	0.0459	0.0522	0.0084	0.1708*	0.1854*	0.1217*	0.1353*	0.2737*	0.0282	0.1571*
wbdep704	0.4315*	-0.0277	0.0383	-0.0653*	0.1966*	0.0032	0.1206*	0.1316*	0.1676*	-0.0433	0.0876*
wbdep705	-0.0092	0.0585	0.0278	0.1283*	0.0261	0.0406	-0.0161	-0.0024	-0.0088	0.0724*	0.0434
wbdep706	0.1884*	-0.0178	0.0272	-0.0431	0.1017*	0.0568	0.1040*	0.0911*	0.3564*	0.0381	0.1526*

	wbdep303	wbdep304	wbdep305	wbdep401	wbdep402	wbdep403	wbdep404	wbdep501	wbdep502	wbdep503	wbdep601
wbdep303	1.0000										
wbdep304	0.0406	1.0000									
wbdep305	0.0269	-0.0514	1.0000								
wbdep401	0.0069	0.0310	-0.0321	1.0000							
wbdep402	0.0192	0.0684*	-0.0547	0.0381	1.0000						
wbdep403	-0.0239	0.3064*	0.0632	0.0695*	0.0404	1.0000					
wbdep404	-0.0285	-0.0243	-0.0305	0.0534	0.0306	0.1538*	1.0000				
wbdep501	0.0812*	0.0614	0.0181	-0.0127	0.0226	0.0457	0.0164	1.0000			
wbdep502	0.1113*	0.1737*	-0.0127	0.0903*	0.0439	0.1161*	0.0279	0.0389	1.0000		
wbdep503	0.0764*	0.1345*	0.0699*	0.0075	-0.0093	0.1120*	0.0628	0.0779*	0.2876*	1.0000	
wbdep601	-0.0580	0.2146*	-0.0046	0.0092	0.0657*	0.1204*	0.0015	-0.0677*	0.0091	-0.0071	1.0000
wbdep602	0.0085	0.2571*	0.0553	-0.0174	0.0220	0.1826*	-0.0711*	0.0212	0.0969*	0.1023*	0.1246*
wbdep603	-0.0331	-0.0261	-0.0019	0.0084	-0.0084	-0.0279	-0.0173	0.0146	0.0125	-0.0142	0.0146
wbdep701	0.0020	0.3335*	-0.0912*	0.0871*	0.0903*	0.2473*	0.0190	-0.0006	0.2321*	0.1581*	0.2680*
wbdep702	0.0235	0.0596	0.0471	0.0578	0.0755*	0.0507	0.0679*	0.0145	0.0583	0.0724*	0.0223
wbdep703	-0.0072	0.2815*	-0.0773*	0.0311	0.0859*	0.2509*	0.0513	-0.0305	0.1888*	0.2013*	0.1361*
wbdep704	-0.0095	0.3156*	0.0039	-0.0016	0.0657*	0.1829*	-0.0888*	0.0327	0.0625	0.1503*	0.2080*
wbdep705	0.0102	-0.0558	-0.0362	-0.0090	0.0081	-0.0313	0.0184	-0.0240	0.0354	-0.0100	-0.0235
wbdep706	0.0089	0.2347*	0.0205	-0.0028	0.1351*	0.3138*	0.0049	0.0071	0.0994*	0.1018*	0.1103*
	wbdep602	wbdep603	wbdep701	wbdep702	wbdep703	wbdep704	wbdep705	wbdep706			
wbdep602	1.0000										
wbdep603	-0.0276	1.0000									
wbdep701	0.0864*	-0.0494	1.0000								
wbdep702	-0.0042	0.0048	0.0768*	1.0000							
wbdep703	0.2596*	-0.0505	0.2959*	0.1862*	1.0000						
wbdep704	0.3028*	0.0146	0.2932*	0.0720*	0.3010*	1.0000					
wbdep705	-0.0858*	-0.1471*	0.0502	0.0873*	0.0419	-0.0612	1.0000				
wbdep706	0.1806*	-0.0177	0.1957*	0.1229*	0.1849*	0.1334*	0.0037	1.0000			

10b. The Spearman correlations among official poor status and level of deprivation of indicators of households in the cities
 (*implies that the test is significant at 1% level or level of confidence is 99%)

Opoor	Opoor	wbdep101	wbdep102	wbdep103	wbdep105	wbdep201	wbdep202	wbdep203	wbdep301	wbdep302	wbdep303
Opoor	1.0000										
wbdep101	0.0762*	1.0000									
wbdep102	-0.0394	-0.108*	1.0000								
wbdep103	-0.0328	-0.047	-0.0497*	1.0000							
wbdep105	0.1531*	0.0778*	0.0946*	0.0024	1.0000						
wbdep201	0.1390*	-0.0011	-0.0536*	0.0390	0.0333	1.0000					
wbdep202	0.1196*	0.1086*	0.0302	-0.0200	0.0610*	0.0590*	1.0000				
wbdep203	0.1313*	0.0628*	0.0463	-0.1066*	0.1430*	0.1409*	0.1391*	1.0000			
wbdep301	-0.0325	-0.018	0.0131	0.0781*	0.0108	0.0401	0.0013	-0.0040	1.0000		
wbdep302	-0.1347*	0.0868*	0.0696*	0.0434	0.1046*	0.1480*	0.1015*	0.3476*	0.0512*	1.0000	
wbdep303	-0.0004	-0.021	0.0023	-0.0153	0.0478	-0.0109	0.0393	0.0137	-0.0073	-0.0166	1.0000
wbdep304	0.1880*	0.0382	0.0619*	-0.0755*	0.0901*	0.1279*	0.1871*	0.3143*	-0.0985*	0.1394*	0.0406
wbdep305	-0.0166	-0.122*	-0.1469*	-0.0341	-0.0939*	0.0241	0.0307	0.0552*	-0.0202	0.0099	0.0269
wbdep401	0.0500*	0.0444	-0.0095	-0.0205	0.0354	0.1709*	-0.0149	0.0670*	-0.0225	0.1223*	0.0069
wbdep402	0.0196	0.0266	0.0413	-0.0368	0.0708*	0.0491*	0.0489*	0.1279*	0.0088	0.1109*	0.0192
wbdep403	0.0898*	0.0448	0.0443	-0.0695*	0.1374*	0.1348*	0.1250*	0.6508*	-0.0037	0.3870*	-0.0239
wbdep404	0.0094	0.0503*	-0.0200	0.0465	0.0546*	0.0654*	0.0023	0.1370*	0.0560*	0.1757*	-0.0285
wbdep501	-0.0051	-0.033	-0.0221	-0.0284	-0.0183	-0.0086	0.0448	0.0767*	-0.0381	0.0034	0.0812*
wbdep502	0.2270*	0.0570*	-0.0046	0.0059	0.1671*	0.1123*	0.1302*	0.1279*	0.0507*	0.0046	0.1113*
wbdep503	0.2931*	-0.0031	-0.0764*	0.0355	0.1337*	0.1199*	0.0609*	0.1611*	0.0414	0.0022	0.0764*
wbdep601	0.2141*	0.0525*	0.0984*	-0.0400	0.0597*	0.1120*	0.1101*	0.1217*	-0.0187	0.1013*	-0.0580*
wbdep602	0.0530*	-0.0192	-0.0389	0.0060	-0.0277	0.1201*	0.0981*	0.2060*	-0.0072	0.1163*	0.0085
wbdep603	0.0106	0.0221	0.0092	-0.1072*	0.0212	-0.0496*	0.0134	-0.0261	0.0208	-0.0351	-0.0331
wbdep701	0.3356*	0.0911*	0.2085*	-0.0324	0.2103*	0.1302*	0.2147*	0.2547*	-0.0122	0.1420*	0.0020
wbdep702	0.0842*	0.0516*	-0.2643*	0.0679*	0.0392	0.1007*	0.0890*	0.1186*	0.0139	0.0388	0.0235
wbdep703	0.1708*	0.0459	0.0522*	0.0084	0.1854*	0.1217*	0.1353*	0.2737*	0.0282	0.1571*	-0.0072
wbdep704	0.1966*	-0.0277	0.0383	-0.0653*	0.0032	0.1206*	0.1316*	0.1676*	-0.0433	0.0876*	-0.0095
wbdep705	0.0261	0.0585*	0.0278	0.1283*	0.0406	-0.0161	-0.0024	-0.0088	0.0724*	0.0434	0.0102
wbdep706	0.1017*	-0.0178	0.0272	-0.0431	0.0568*	0.1040*	0.0911*	0.3564*	0.0381	0.1526*	0.0089

	wbdep304	wbdep305	wbdep401	wbdep402	wbdep403	wbdep404	wbdep501	wbdep502	wbdep503	wbdep601	wbdep602
wbdep304	1.0000										
wbdep305	-0.0514*	1.0000									
wbdep401	0.0310	-0.0321	1.0000								
wbdep402	0.0684*	-0.0547*	0.0381	1.0000							
wbdep403	0.3064*	0.0632*	0.0695*	0.0404	1.0000						
wbdep404	-0.0243	-0.030	0.0534*	0.0306	0.1538*	1.0000					
wbdep501	0.0614*	0.0181	-0.0127	0.0226	0.0457	0.0164	1.0000				
wbdep502	0.1737*	-0.0127	0.0903*	0.0439	0.1161*	0.0279	0.0389	1.0000			
wbdep503	0.1345*	0.0699*	0.0075	-0.0093	0.1120*	0.0628*	0.0779*	0.2876*	1.0000		
wbdep601	0.2146*	-0.0046	0.0092	0.0657*	0.1204*	0.0015	-0.0677*	0.0091	-0.0071	1.0000	
wbdep602	0.2571*	0.0553*	-0.0174	0.0220	0.1826*	-0.0711*	0.0212	0.0969*	0.1023*	0.1246*	1.0000
wbdep603	-0.0261	-0.0019	0.0084	-0.0084	-0.0279	-0.0173	0.0146	0.0125	-0.0142	0.0146	-0.0276
wbdep701	0.3335*	-0.0912*	0.0871*	0.0903*	0.2473*	0.0190	-0.0006	0.2321*	0.1581*	0.2680*	0.0864*
wbdep702	0.0596*	0.0471	0.0578*	0.0755*	0.0507*	0.0679*	0.0145	0.0583*	0.0724*	0.0223	-0.0042
wbdep703	0.2815*	-0.0773*	0.0311	0.0859*	0.2509*	0.0513*	-0.0305	0.1888*	0.2013*	0.1361*	0.2596*
wbdep704	0.3156*	0.0039	-0.0016	0.0657*	0.1829*	-0.0888*	0.0327	0.0625*	0.1503*	0.2080*	0.3028*
wbdep705	-0.0558*	-0.0362	-0.0090	0.0081	-0.0313	0.0184	-0.0240	0.0354	-0.0100	-0.0235	-0.0858*
wbdep706	0.2347*	0.0205	-0.0028	0.1351*	0.3138*	0.0049	0.0071	0.0994*	0.1018*	0.1103*	0.1806*
	wbdep603	wbdep701	wbdep702	wbdep703	wbdep704	wbdep705	wbdep706				
wbdep603	1.0000										
wbdep701	-0.0494*	1.0000									
wbdep702	0.0048	0.0768*	1.0000								
wbdep703	-0.0505*	0.2959*	0.1862*	1.0000							
wbdep704	0.0146	0.2932*	0.0720*	0.3010*	1.0000						
wbdep705	-0.1471*	0.0502*	0.0873*	0.0419	-0.0612*	1.0000					
wbdep706	-0.0177	0.1957*	0.1229*	0.1849*	0.1334*	0.0037	1.000				