



**Full Report**

**Research Project**

**Education and Human Development: The Case of Thailand**

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### Abstract

The aim of this integrative study builds on the established theories of economic development and human capital development in order to review the relevant literatures, analyze the empirical evidence, and propose the integrated framework of education and income distribution. For the purpose of this study, it is posited that education expenditure are determined by multi-dimensional determinants. A number of theories are therefore incorporated regarding education and income distribution. This study recognizes and quantifies education expenditure by both types and stages of education according to the allocation of government budget and the rate of enrollment at each stage of education as well as the measures of education quality such as test score. The results reveal that a numbers of previous studies have found the impact of education, both quantitatively and qualitatively, on economic development particularly on income distribution. This study addsto the literatures by proposing another framework that integrates several factors from several dimensions including the education expenditure, enrollment rate, and test scores along with some macroeconomic-related control variables. This integrated framework is based on the model of path analysis, which can be used for public policy analysis, particularly to analyze the direct and indirect impact of education policy and education outcome on income distribution.

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## Chapter 1

### Introduction

#### Significance of the Study

The term ‘development’ may mean different things to different people. In the past few decades or so several meanings of this term have been defined. Nevertheless, by considering the scope of what this term should cover, it is crucial to have some working definitions for policy makers and practitioners to deliver the desirable development outcomes.

One of the overarching definitions proposed by Todaro and Smith serves as a useful basis in the understating of development goals. That is, ‘development’ refers to “the multidimensional process involving changes in social structure, popular attitudes, major institutions, as well as the acceleration of economic growth, poverty eradication, and a reduction of inequality” (Todaro and Smith, 2010).

Generally, education is a fundamental foundation for a nation to develop in every dimension. Therefore, the government’s expenditure on education is considered as a long term investment on human development issue. It becomes a controversial issue of spending on education in developing countries since it takes times to see the result. Due to lack of incomes and economic growth, many developing countries are struggling for economic development when developed countries are focusing on education investment. Since then, many children do not get access to education due to poverty and lack of governmental funding in many developing countries. Countries that can provide strong budget for education allow most of the children to be educated. As the result, the difference has large impact on the future of each country regarding to expenditure of education for human development issue.

Improvement in education results in human capital increase. This increase will happen through capital education accumulation, and education improvement through longevity and increased labor productivity. In turn these will result in human development. In studies of education and human development in different standards, different criteria for education are considered. These criteria can be cited, including government education expenditure.

The cost of governmental education expenses, same as government’s spending cost on education and human resources will improve quality and increase productivity and longevity. In other words, the government’s spending on education will result in promoting public learning by doing and spillover effect, and its impact on human capital and economic growth is affecting on human development. The purpose of this study is to examine the effect of government education expenditure

on human development. This can lead to a comprehensive policy recommendation for the development of a country.

This paper seeks to add to the literature by exemplifying the theoretical background of theories that focus on the role of education that relate to human development. By reviewing these theories, it allows us to have a profound understanding how government policy on education play in promoting human development. This integrative study takes into account public policy as represented by public expenditure as it is an obvious sign of how and what government behave in practice.

### **Objectives of the Study**

The first objective of this paper is to clarify how the expenditure of education can impact on the future of state, especially in human development issue. According to Mr. Ban Ki-moon (2013), he expressed that “education empowers people and transforms life”. People are the most important human resources for every country. To use this human resource effectively, the quality should be added by educating the people. The third objective is to reveal how these two, educational expenditure and human development, are related to each other. What are the impacts of educational expenditure on human development?

### **Scope and Limitations of the Study**

Despite the use of several public policy instruments in education policy, this study focuses only on public expenditures because it provides the opportunity to investigate the actual behavior or stance of the government. Analysis is placed on the determinants of education expenditure of various kinds and levels. The analysis will cover a number of theories public expenditures that are likely to determine the level of human capital. More and better data over the past decade have presented new opportunities to investigate the possible linkages among those factors and the actual expenditure.

This study uses time-series analysis, which indicates changes in the policy-decision making in Thailand over the past. This paper focuses on the annual data of Thailand by looking at the relationship between independent variables and dependent variables in a given time period.

Despite the advantage of using the most recent data, compared to previous studies, the period of analysis examined in this study is still limited to the availability of data. The completeness as well as the confidence in the results of a time series analysis critically depends on the length of the data



period. While the general degrees of freedom are judged to be adequate, a more comprehensive set of data would strengthen the results. The data on education indicators were obtained from the ministry of education and a survey by the national statistical office. Also, the panel data may not be complete due to poor data at the provincial level. Moreover, even though various explanatory variables are included in this study, there could be more significant variables that are not included.

Lastly, public spending is only part of the picture. This study confines itself to public expenditures on education. Therefore it gives only a partial picture of the total resources devoted to the education section in Thailand. Private spending on education is significant in many countries. According to the World Bank, private spending averages 25% of all education expending in developing countries. There might be some missing data from the total education expenditure of Thailand. This study, therefore, can only explain the behavior of government policy makers and leaves private households aside.

### **Benefits of the Study**

The benefits of this study were of high concern when initializing the research. The contributions made from this study will add to the literature in the field of policy analysis and to the field of public economics, particularly education expenditure policy. The results obtained from this study should be beneficial and should make a contribution to theory and to policy practitioners in the following ways:

- 1) The findings of this study reaffirm the robustness of the theory of public expenditure and its impact when analyzing at the country-level. It can also explain the increase in education expenditures in Thailand during the past few decades. Further research on the country level will be motivated by the results of this study.

- 2) The analysis of the impact of education expenditures on human capital in Thailand can fulfill the element of education policy analysis and public expenditure policy analysis. Particularly interesting is that the findings can fill the gap in the understanding of the issue of the social and developmental impact of education expenditures. New knowledge of public policy is strongly expected from this study.

3) The analysis in this study can increase the understanding the government's actual behavior in the given context of political economy pressure. This will help policy makers to be more cautious when analyzing public policy making.

4) This study can immensely contribute to the development strategies of Thailand, which will lead to more efficient and equitable outcomes. The policy recommendations in this study should be used critically to provide better policy advice for better allocation of education expenditures.

### **Organization of the Study**

Four additional chapters, each embracing particular themes, organize the rest of this study. Chapter 2 reviews the related literature both regarding theory and empirical evidence, as well as the formulation of conceptual frameworks which form the basis of the studies in subsequent chapters. Chapter 3 presents the previous evidences and researches related to this field of study. Chapter 4 explains the research methodology and provides a specific rationale for the variable selections on which empirical analysis will be performed.

Chapter 5 presents the findings from the proposed models based on actual time-series data, particularly the possible determinants of education expenditures at the national level. Chapter 6 provides a summary of the results, discusses the possible policy implications of the findings, and suggests a possible line of further study.

## Chapter 2

### Literature Review

#### Conceptual Background of Human Capital

Human capital is a term used for education, health, and other human capacities that increase productivity when they are improved. Educational and health investments have closely interrelated impacts. Health investments can improve the returns to schooling via a longer working life that yields more income, better school attendance, and increased learning.

Educational investments in turn improve the returns to investment in health by providing basic hygiene and sanitation information, and also the numeracy and literacy skills to better utilize other health programmes. Education also provides training for health personnel, and raises the returns to a longer working life.

The causality between human capital and income runs in both directions. Higher income leads to more spending on education and health, and better health and education increases income earned.

The basis of human capital lies in the theories of Theodore Schultz, an economist at the University of Chicago who was awarded the Nobel Prize in economic sciences in 1979. Schultz, an agricultural economist, produced his ideas of human capital in the early 1960s as a way of explaining the advantages of investing in education to improve agricultural output.

The logical next step was to expand this linkage between better education and improved productivity as a benefit for the economy as a whole. Schultz demonstrated that the yield on human capital in the US economy was larger than that based on physical capital such as new plant and machinery.

Gary Becker, the 1992 Nobel Prize winner for economics, is one of the very early proponents of human capital theory. Becker (1975) advocates the importance of human capital in the process of economic development by proposing different kinds of human capital creation. He also emphasizes on the significance of the investment in human capital as a key for sustainable economic development or even an engine of economic development itself. The investment in human capital includes variety of ways such as formal education and on the job training.

Another prominent scholar who advocates the theory of human capital is Jacob Mincer. In his seminal work, Mincer put forward the importance of the role education plays in promoting human capital which in turn leads to economic development or at least sustains the level of economic development.

The general categories of human capital investments can be described in a life-cycle chronology: resources in child care and child development represent pre-school investments. These overlap and are followed by investments in formal school education. Investments in labor market mobility, job choice, job training, and work effort occur during the working life, while investments in health and other maintenance activities continue throughout life.

The human capital approach to analysis of health and education investment unifies the underlying mechanisms behind both. Broadly, the approach is based on calculating the stream of higher future income that can be earned from human capital investments today and comparing this to the direct and indirect costs of the investment. Health and education contribute directly to well-being via other channels such as more empowerment in decision-making and greater civic engagement, but the basic human capital approach focuses on benefits from higher income (Alesina, Alberto, and Dani Rodrik, 1994).

### **Some Essential Issues on Human Development**

While development as growth is considered as a mainstream development, the question of human development became of central concern among development economists from around 1980s. Development approach or theories that focus on other perspective are known as alternative development, which considers development in terms of, for example, equality, justice, self-reliance, environment sustainability or cultural pluralism. Alternative development theories have been subjected to considerable enrichment and further elaboration since 1970s. Moreover, these theories have achieved great importance in the academic debates as well as international development co-operation.

Amartya Sen (1999) fascinatingly view development as the capability of individuals in which they can do what they want to do and can be what they want to be. This approach to development clearly places emphasis on human as the central ground of the universe. In his seminal works, Amartya Sen attempts to point out that human freedom is the ultimate goal of development. The view

of development as human development ignites international organizations to invest more resources to promote people-centered developmental approach and hence a series of human development report by the United Nations.

It is even more fascinating as it has been increasingly and widely accepted this view of development as human development. Ul Haq (in WB 2008) enlarges the view of Sen as the following statements:

*“The basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all, or not immediately, in income or growth figures: greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities. The objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives.”*

Development is multi-dimensional process that involves changes in people, social structure, public attitudes and national institutions. Development process incorporates economic organizations and political and social systems.

Human development approach, at the first time, has stated by Amartya Sen and Mahbubul Haq in the 80 decade, it is telling that, the human development is the process of expanding the real freedoms that people enjoy it. This is general and comprehensive approach, and it is as needed to overcome the major factors for dependency, that are poverty and injustice, poor economic opportunities, including social exclusion and neglect of public facilities. According to human development reports, human development is the process of expansion options for human that the most important of these include a long and healthy life, education, enjoyment of a good standard of living, more choices include political freedom, guaranteed human rights and dignity breath. In fact, we can say that human development has two aspects: One aspect is related to human capabilities, such as improved health, knowledge and skills and other aspects of their capabilities to the opportunities and benefits purposes, such as being active in political, social and cultural issues. (Gustav Ranis, 2004).

### **Education and Human Development in Theory: Income Improvement Perspective**

Dudley Seers (1969) interestingly presents the framework for analyzing the effect of public policy on income inequality. Seers' work is useful for this study as it provides the simple framework of how government can intervene to achieve greater potential for development in terms of equity. This is because fiscal system could bring about development more rapidly especially when there is income available for transfer to the poor.

Gary Becker attempts to illustrate the importance and the significance of human capital as an important part of thinking about development and many developmental problems such as income distribution and labor turnover. In his study, the results show that higher investment in human capital, i.e. higher level of education leads to higher future earnings (Becker, 1975). This implies that if the lower-income group of population receives higher level of education relative to other groups, then income inequality problem should be less severe.

It has also been argued that a relative expansion of education reduces inequality (Knight and Sabot, 1983). This occurs when the supply of educated labor rises relative to demand, the wage premium on education decreases, which outweighs the early tendency to first increase income inequality when limited labor is educated. The human capital approach suggests that while inequality in education's concentration contributes to income inequality, expanding education to the lower income groups increases their productivity and thus wages, thereby improving income distribution, provided the marginal product of labor remains high despite the increased supply of skilled labor (Ahluwalia, 1976).

The starting point to consider about the theoretical linkages between education and income distribution arises from this theory of human capital. Human capital theorists immensely promote the role of education in the transformation of human beings into more efficient productive components (Schultz, 1963; Becker, 1964; Mincer, 1974; Ahluwalia, 1976). In other words, the human capital theory attempts to explain that education helps increase productivity. Therefore, if low income group of population receive more education they will be more productive and be able to generate higher income. An increase in income of the poor, therefore, reduces income inequality. The provision of formal education is seen as a productive investment in human capital. The proponents of human capital theory consider human capital as equally important or even more important than physical capital.

Schultz (1963) explicitly put forward the concept of human capital investment and the formation of human capital in economic growth and wage growth. Schultz also proposes that the changes in the investment in human capital are a basic factor reducing the inequality in the personal distribution of income. This is because the economic capabilities of man are predominantly a produced means of production and most of differences in earnings are a consequence of differences in the amounts that have been invested in people. It is also mentioned that the scope of education requires more attention than it has received.

Another theoretical linkage between human capital and income distribution is created by Mincer (1974). In his view, each person determines the distribution of income among them based on revenue and maximizes human capital to the different decision-making. The crucial point of Mincer's work is that the amount of investment in human capital, i.e. years of education, correlates with the distribution of income.

The human capital approach also suggests that education expansion to the lower income group, such as vocational education, can help increase the productivity of the poor and hence wage (Ahluwalia, 1976). Once the lower income class gains higher wages, it implies that the distribution of income is improved. Education of the right type can consequently alter the distribution and reduce income inequality.

Theoretical arguments have also examined how different levels of education such as higher education affect income distribution. Chiswick, Carmel and Chiswick (1987) explain how increased participation in higher education could change the composition of the labor force but it is not clear whether income disparity would increase or decrease. When few are highly educated, increasing participation in higher education could first raise income inequality as more individuals move change their category from unskilled to the skilled cohort. Ram (1989), nevertheless, discusses that further increase in enrolment in higher education might then lower income inequality as more and more unskilled become skilled hence lowering the wage premium for skilled workers.

Inequality in education quality can also increase income inequality if this attracts skill-biased technological change (Walde, 2000). In the country where the skill ratio between graduates from higher education and secondary education is large, there is a chance to adopt technologies that require skilled workers (those graduates from higher education) and to replace unskilled workers. The skill bias is predicted to depend on education system.

### **Education improves health and human development**

Many people have different opinion on human development. Some may look at the economic growth of the countries but the others may measure human development by looking at the well-being of the people. However, according to the UNDP, human development refers to a process of increasing people's options or choices. In every level of development, there are three essential choices for the people: to acquire better knowledge, to live a long and healthy life, and to have access to resources that needed for living standard. Without those essential choices, it is impossible to improve the quality of life of the people. Moreover, there are two dimensions on human development.

First is to acquiring human capabilities and second is the use people made of these acquired capabilities for productive, such as leisure and other purposes. Then, some might think that economic growth and human development is the same. In fact, there are differences between them, economic growth is focusing on income and product, while human development is focusing on enhancing all human options, for example in education, clean environment, health, and material well-being. Then, in order to achieve human development, we have to invest in human resources development, such as in human capital, in term of health, nutrition and training, and education that boost production and make additional income and lead to human development.

In addition, there are six basic pillars that important in human development; equality, productivity, sustainability, empowerment, cooperation, and security. Equality means the equal access to opportunities and the concept of this, is to imply the existence of competitive markets and competitors with equal access to productive assets and knowledge. Then, productivity means human development does not completely rely on the economic growth, but improvement of productivity can be achieved through development of human resources and creation of environment where people can make use of their capabilities. Sustainability is to ensure sustainability of choices in order to fulfill the needs of future generations. Empowerment imply social environment in which people can participate and achieve a better life. Cooperation means participation and belonging to communities and groups as a ways to increase a source of social meaning.

Finally, security is to offer people development opportunities freely and safely with confidence that they will not disappear suddenly in the future. Therefore, for people to enjoy a better life, it does not completely depend on improvement in income or material well-being, so without the elements above this goal cannot be achieved. (United Nations Development Program , 2009)



In addition, human rights and human development has the same common vision because their goal is human freedom. In this case people must have freedom to exercise their choices, express their opinion, and participate in decision-making that affects their lives. To achieve this goal, these two concepts must be done. First we need to have well governance to implement human rights policy and a formation of participation of community in decision making processes, seconds by promote civil and political right and economic and social rights, which are components of the level of development. For example the right for education relates to intellectual development.

Moreover, without sufficiency income, people cannot access to both health and education. So it means that those three keys factors, (education, health, and development) play a big role in human development. These three factors are connected to each other, without one of them we cannot achieve human development.

In fact, development is a complex process including multiple interactions among different components, besides the education and health, the most important drivers of development are governance and other political factors, geography and climate, cultural and historical legacies, a careful openness trade and foreign investment, labor policies that promote productive employment. So it means that the interaction between them is important because they provide us more understanding about the development processes. To make it clear, if we increased access to education, but the countries are lack of job opportunities that require high-level skills, so the development might be limited. We are going to discusses about the connections between education and health and how they impact on human development.

If people are educated they know how health is important for them. All the process above that we have mentioned cannot be achieved if people are not healthy. So we can assume that health is the basic step in human development. There are a lot of advantages for people if we are healthy. Good health enable people to work regularly, increase the productivity at work, and to work for a long period of time. It is obviously that health play a big role in promoting human development. Moreover healthy not only contribute to individuals but also to the people around them because there will be no spread infection and they also have mental strength to look after the others. Then health also can be considered as the platform for others areas to improve such as in population growth. Good health help in population growth rate which lead to promote development.

Health improvements often have the greatest effect on people especially on children. Then, better medicine and nutrition enhance the likelihood that a child will survive into adulthood. If children are healthy, parents can go to work regularly and can concentrate on their work which will increase the productivity, and there will be less emotional stress on families which will improve the understanding of families. For children, they can go to school regularly in ways to be educated person and to live in better educated lives. As those generations reach working age, they certainly can help the countries to boost an economic growth if economic policies encourage job creation. So education and health is a long term investment for human development. It may take times but it is worth investment for better future. (Stark and Rosenzweig, 2006)

*“Health improvements often have the greatest effect on those who are vulnerable, children in particular. Advances in medicine and nutrition increase the likelihood that a child will survive into adulthood”* Stark and Rosenzweig, (2006).

Now let discuss about how health and education link together, and how it promote human development. Some might think that education and health are different from each other, and some are likely underestimating their impacts. In fact, the understanding the link between health and education is important not only for social policy but also for academic knowledge. For example the recent success stories of East and Southeast Asia showed that human development need a combination of factors that we have listed above. Furthermore, most government treats education and health separately. This leads to negative impact on policy implementation. For example, fund invest in teacher training, may be wasted if teacher receive no advice or knowledge about HIV prevention. This kind of situation, mostly happen in under developing countries, so this leave children, in more danger to HIV infection due to their lack of knowledge about it. So it is clear that how important the link between education and health in implementing policies on human development issue. (Bloom, 2000)

Moreover, education may indirectly affect health, unlike education’s effects on income. Educated people tend to be more careful about their health than uneducated people because through the skill they gain from schooling can help them to access to health information and give them health-seeking behavior. Nowadays, many schools also provide general knowledge about health in school, such as nutrition, and sex education, etc.

Good education gives information to the children about the cause and effect of health. So educated children may have more concrete understanding of how behaviors can affect health

outcomes, then they can prepare for solution or avoid negative outcome for their health. If people are educated, they tend to be healthier, so they can work regularly and earn higher incomes. They are likely to have more income and have more access to health services, besides they will not taking health risks such as smoking, having unprotect sex, and failing to exercise. Higher income allow people to have better food, live in more secure places, protect themselves against environmental shocks, and purchase better healthcare. So in some ways, this promote living standard of the people as well as the countries. (EFA Report , 2005)

That may be true, education does not solely come from the teacher, but also from the environment that we are living in, such as from our peer group, co-worker, and so on. Education is important not only for individual but also for the countries, since it promote the knowledge, skills, habits, and values for the people. So what type of education is needed to empower citizens to become agents of change for better world societies? Education plays important role in development, especially in small countries. Education makes the people to become a useful member of their society and to develop their culture and to live more satisfying lives.

The most common way to get education is to attend school, colleges, and university. Besides, we also can learn the skills and knowledge through every day activities such as watching new, reading newspaper and magazines to update the information and understanding the outside world better. Then, there are also specialized trainings they may need to prepare for job or career. In the countries which political situation is unstable parents, teachers and society have concerned about the value and education value for the children. In this situation, the countries need a system of education which apart from giving education, it also need to introduce how can we strengthen national unity through meaningful and constructive value education. In today world, due to fast changing realities, so the question arise how can we cope or prepare for this challenges? In this case, we have to rely on the people who are educated and knowledgeable to bring all the transformation of the culture of violence, in tolerance and greed to the peace. To achieve this goal, we have to try to be united, there are no ready-made solution.

Basic education also is necessary for democratic society because it will help them to function smoothly. Democratic mean to participate effectively with knowledge and understanding in decision-making and policy processes. Then, it required knowledge, the ability to think independently and literacy based on evidence. In this case education is an essential investment to achieve this goal. If

people have those abilities above they will respect for individual rights and can participate effectively in democratic institutions. Therefore, education should be the topmost importance in our community to develop both individual and the countries standard.

### **Human Development Index**

The Human Development Index (HDI) is the widely used measure of comparative socioeconomic development between countries. It is presented by the UNDP in its annual Human Development Reports. (Razmi, Abbasian and Mohammadi, 2012)

The HDI ranks countries from a scale of 0 to 1 based on three development goals:

1. Longevity – measured by life expectancy at birth
2. Knowledge – measured by a weighted average of adult literacy (two thirds) and gross school enrolment ratio (one third).
3. Standard of Living – measured by real per capita income adjusted for PPP and diminishing marginal utility of income.

Countries are then ranked into four groups based on their HDI score:

- Low human development (0.0 – 0.499)
- Medium human development (0.50 – 0.799)
- High human development (0.80 – 0.90)
- Very high human development (0.90 – 1.0)

A major advantage of the HDI is that it shows that a country can do much better than expected with a low level of income, and conversely substantial income gains may not accomplish a lot. However there are criticisms of the HDI. Gross enrolment for example may overstate the amount of schooling because it does not account for primary school students who drop out at later ages. Also, equal weight is given to all three components which is a value judgement and subject to some dispute.

Perhaps most importantly, there is no accounting for quality of life or education when calculating life expectancy and education levels. An extra year of life probably has much greater value if it is a year in good health rather than spent ill. Similarly enrolment does not capture the quality of schooling.

This approach insists on the front counting the people in the community and practice to the formation of human capabilities in areas such as health, knowledge, and meet basic needs and focuses on the ability to create jobs and increase prosperity for stresses. UN nominated, decade of the 1990s, as human development decade and introduced longevity, knowledge and minimum income level as three human development key indexes.

Based on this index, countries are classified with high human development (Human Development Index greater than 0.8), countries with medium human development (in the range of indicators 0.8-0.5) and countries with low development (human development index of less than 0.5).

In year 2011 by United Nations Human Development Report, human development index has been calculated and published for 187 countries. In this report, 187 countries are ranked in the four categories in terms of human development, ranking 1 to 47 are countries with very high human development countries, ranking 48 to 94 are the countries with high human development, ranking from 95 to 141 are countries with average human development and ranking above 142 are as low human development countries. In this report.

### **The impacts of education expenditure on human development**

Regarding to many case studies, education expenditure on human development has high reasonable returns on social and private life. Expenditure on education is independent variable which is percentage of government spending on education. Thus, it has impacts dependent variable, human development, regarding to the budget. As the information has been mentioned earlier, education has direct and indirect impact cost on human development. Therefore, the expenditure on education is very important to promote human development by educating people. The effectiveness of education will improve the capability of human capital in general. This improvement has positive impacts both on individuals and society. Therefore, part of government budget should be spent on education.

Generally, every country is investing in education, and government financial support has been increased in some countries compare to the past. Public expenditure is usually measured on percentage of GDP. For public education budget, it goes to the education institutions to provide goods and services for the children. However, the public fund alone can not provide everything, but the households and other institutions, such as non-profit organization, have to co-operate to educate the children. In case of Philippine, approximately 95% of education expenditure is provided by the

family. Depends on the country, the distribution of government fund is different as well as in the level and regions of education.

Additionally, the government should lower the cost of education by budget for education as much as possible for the family to be affordable. When the enrollment of students gets higher and educated, there are many positive returns in the country. Firstly, the education strengthens labor force by providing skilled labors in productivity. The economy may growth faster as the skilled labors increase. It attracts FDIs and makes change in production goods and services. Secondly, educated people may transform their lives better and make change in society. The living standard will get better as they get high wage. When the people are well-educated, their morality and characteristics improve, so there will less crimes since they have ability to classify what is right and wrong. So that, people will feel more secure without crime scenes in the community.

Moreover, they will be helpful in the community with the skill they have. Inequality in community will decrease, and the gap of rich and poor will be lower in the state. Thirdly, the political stability in the state is most likely to be guaranteed when people are aware of participation in politics. They will be aware of what the government is doing and knowing right and wrong of its action. This is very important because it is directly affect people's daily life. Because of politics, there are things can be affected. For example, current political conflict in Thailand seems to causes a lot of problems in the state. Many rallies taking place in the capital city and block many places. It becomes problem for the people to travel since it is not secured.

Many foreign investors have doubt to make investment in Thailand. The economic growth, tourism, and consumption power has been declined during this season although it should not. Looking at this situation, it can be assumed that many people are still uneducated. Rather than trying to participate in political, many people seems to support the government who are corrupt. In this case, it seems the government should focus on educating its citizens especially who are in rural areas.

That is why government spending on education should be considered carefully since it is deal with human development issue on several dimensions. If the government does not support the education system by providing high expenditure on education, the development of the country will stuck in poverty because the human many people are not able to effort education all alone by themselves. As the consequence, there will be opposite impacts in society.

The productivity cannot increase with low skilled labor force, so the economic growth cannot be improved. The poverty alleviation process cannot be implemented effectively. Poverty will lead the people to struggle in their daily life rather than taking part in political participation. So, the democratization is not sustained well in country like this. Therefore, government expenditure, plus strong management in education institution, is required to support education to promote human development. Then, the country will grow and maintain sustainable economic growth in the state.



## Chapter 3

### Education and Human Development: Some Empirical Evidences

#### The relationship of education expenditure and human development

If we think logically, every investment expects the benefit. So the investment in education is to improve the people well-being. It is highly possible that we can achieve a positive impact on education expenditure than negative. The reason for education expenditure is to provide access to knowledge, long and healthy life, and decent standard of living for the people. When we think of education expenditure, the school must be the first priority because the better education system, the more educated people we have. In fact, education and human development go together. If we spent money effectively on education, it will have a lot of positive impact on human development.

For people to have access to knowledge, government have to improve the education system, start from the cost of the education up to job opportunities. That may be true, there are a lot of ways that we can get access to knowledge, but the question is, the ways that we acquire for that knowledge is effective or not? So in this case, we focus on two types of acquire knowledge, first is to learn from school and second is to learn from outside school (vocational training). In school, the government should improve the quality of the school, such as in infrastructure, and teachers. If we have a high quality of schooling system, there will be more students that want to attend school, besides the government should focus on the subject that students are most interested in and should improve the quality of that subject. For example, if the government spend so much money on the subject that students are not interested, it is wasteful since there are not many student enrol in that subject. The school must put general knowledge along with the lesson in class for the students, such as health issues. Then, the cost of the study also plays a big role in enrolment for school. So in this case, government should provide the scholarship program for the student who cannot afford to attend the school. (Financial and Human development, 2011)

For vocational training, to make it better, not only the state but also the individual also have responsible for it. In fact, not all people can attend school, so this is the way to help people who do not attend school to have a better career. Mostly, vocational training centre are running by private sector. In this case, the government should help by funding of education institutions scholarships, grants, and loans for the citizen. For private sector, they should help or advice the people how they



can get a job after the training. For the individual, first they should accept the lower wages in their work place. If we can have those three things, vocational training will have a lot advantage for the citizens.

In addition, the educated people know how health is important to them, and they have learnt about it since they were a kid in school. There is a big gap between to be healthy and not healthy. If people are not healthy, they can do nothing, and it will effect in productivities. However, if people are healthy they can work regularly, more productive, more creative, and more income. Moreover, if the citizens are more productive, it also benefits the country as a whole, and it will increase both GDP and living standard of the countries. Besides, if people have higher income, it means they have enough money to spend on their basic needs and they have access to health care system, and education, etc. So we can assume that higher income lead to higher living standard. From above that we have discussed, the relationship between education expenditure and human development is clear, and they are linked to each other. (National Competitiveness and Expenditure, 2011)

### **Education expenditure, productivity, and income improvement**

Evidences on education and human development can be divided into two groups, cross-country and time-series analyzes. Majority of the work done in this field uses cross-country data to analyze the impact of several measures on education. These measures include enrolment rates, school attainment, or education expenditure. There are also some studies that use time-series data to analyze the impact of education on income distribution within country, although this is very limited in the number of studies.

The first group of research uses cross-country data including the following literatures. Becker (1964) and Schultz (1963) empirically confirm the association of labor productivity and individual earnings. The human capital approach proposes that more education help improves employment and earnings among the poor since additional knowledge and skills make human beings become more efficient and productive. The work of Becker and Schultz both serve as the foundation of a number of studies on human capital and income in the past couple of decades.

Mincer (1974) illustrates the positive correlation between years of schooling and individual earnings. That is, if an individual spend more years in school then he or she tend to earn more after graduate. This coincides with the theoretical background of the human capital theory and support the

public policy that favors high rates of school attainment. The weakness of Mincer's work is perhaps due to the fact that it only focuses on the years of schooling in general but neglects the importance of each stage of education.

It is clear that better education and better health are important because it improve not only an individual's quality of life, but also increase the living standard of the countries. First, what does education mean in human development? We can assume education as an input in human development because invest in education in terms of resources and time, besides it is long term investment. For example, in the project of UNESCO of poverty eradication strategy, the education is the first strategy to implement for the human development. UNESCO, collects data on numerous inputs such as enrolment numbers and rates, repetition rates, and teacher ratios. We also can take education as a basic human right, because better education lead to improve people's welfare. In addition, education as a tool of development; it means education increase the ability of people in work skill, and life skills; such as confidence and sociability. The consequence of these skills in individuals promotes economic growth which increased productivity and potential better governance for the countries. (Sen, 1999).

High education fee can have negative affect on human resources because students form wealthy families can attend good high schools and get access to the best public and private schools, but for the poor people, they have to attend low quality of school which cost lower fee and their level of knowledge is low after complete their degree in high school, therefore, they cannot access to the good public universities. This means that they will find it hard to get a good job and their productivity will lower than the one with better education. So the consequences of this are the productivities of the country will be low due to the low level of educated labour. (From quantity to quality and beyond , 2004)

Primary schooling has been a prime object in the study of education and income distribution. Ahluwalia (1974) concludes that primary school enrollment rates are significant to the lowest income bracket and secondary enrollment rates significantly increase the middle class' income share, while decreasing that of the highest income group.

Knight and Sabot (1983) argue that the effects of more schooling may be either positive or negative for income inequality because the evolution of rates of return to education are likely far more complicated than a simple linear progression suggests. Education, nevertheless, is still considered as a major determinant of pay.

In a large panel of countries, De Gregorio and Lee (2002) find schooling attainment significantly negatively and education inequality positively relate to the GINI coefficient, while both are insignificant to income shares.

Psacharopoulos (1977) uses cross-country data to analyze the effect of access to education and income distribution by using coefficient of variation of enrolments as a proxy for educational inequality. The implication of this finding is that a policy of more equal access to education, that is to allow more access to secondary and higher education, might have the desired impact of making income distribution more equal. College subsidies increase the GINI coefficient globally and between LDCs, which insignificantly decreasing it among DCs (Psacharopoulos and Tilak, 1991).

The human capital expenditure is, in many literatures, considered as a major contributor to income distribution, especially the role of educational expenditure. This is in line with the observation of Sylwester (2002), Braun, (1988), and Birdsall, Ross, and Sabot (1997) that a higher amount invested in education has an impact on distribution of income. Sylwester (2000) develops a model to test the impact of education expenditures on income inequality. It appears that countries devote more resources to public education as a percentage of GDP have lower income inequality in subsequent years although any effects are slow to be realized.

As Schultz (1963) remarks “higher amounts invested in human capital are the most important factor in decreasing inequality”, education expenditure is expected to play a crucial role in determining income distribution. Keller (2010) confirms this remark from her studying using education expenditure at each education stage as explanatory variables and concludes that an increase in education expenditure, especially at the primary level, can decrease income inequality. The work of Keller (2010) also tests for the indirect effects of education on income distribution through a vector of control variables, such as economic growth, fertility rate, export ratio, and inflation. This method provides a further understanding of how education policy can affect income distribution.

Although the vast number of studies of human capital and income distribution devote to cross-country analysis, it is worth mentioning some studies that use time-series as this kind of study is

still limited but can produce a very informative policy advice. Lin (2007) studies the impacts of education expansion and schooling inequality on income distribution in Taiwan. He uses a time-series analysis between 1976-2003. The results show that either increases in schooling level or schooling dispersion tend to improve the income distribution. Educational expansion can reduce inequality in Taiwan.

Gunatilaka, Chotikapanich, and Inder (2006) find Sri-Lanka's middle class benefiting disproportionately more from education provision and infrastructure than the poor, raising income inequality. This indicates that policy-makers should pay attention to the right type of education and to evaluate whether education expansion benefits the population in general or just particular groups.

Equally important is the work conducted by the World Bank in 1993, which can help us clarify a framework to analyze the impact of public policies on growth and income distribution. This can be considered as a key document signaling a shift in emphasis in thinking among economies. It was built around insights flowing from the endogenous growth theory's methodology for identifying the crucial policy variables in the growth process. This framework is illustrated in figure 2 below.

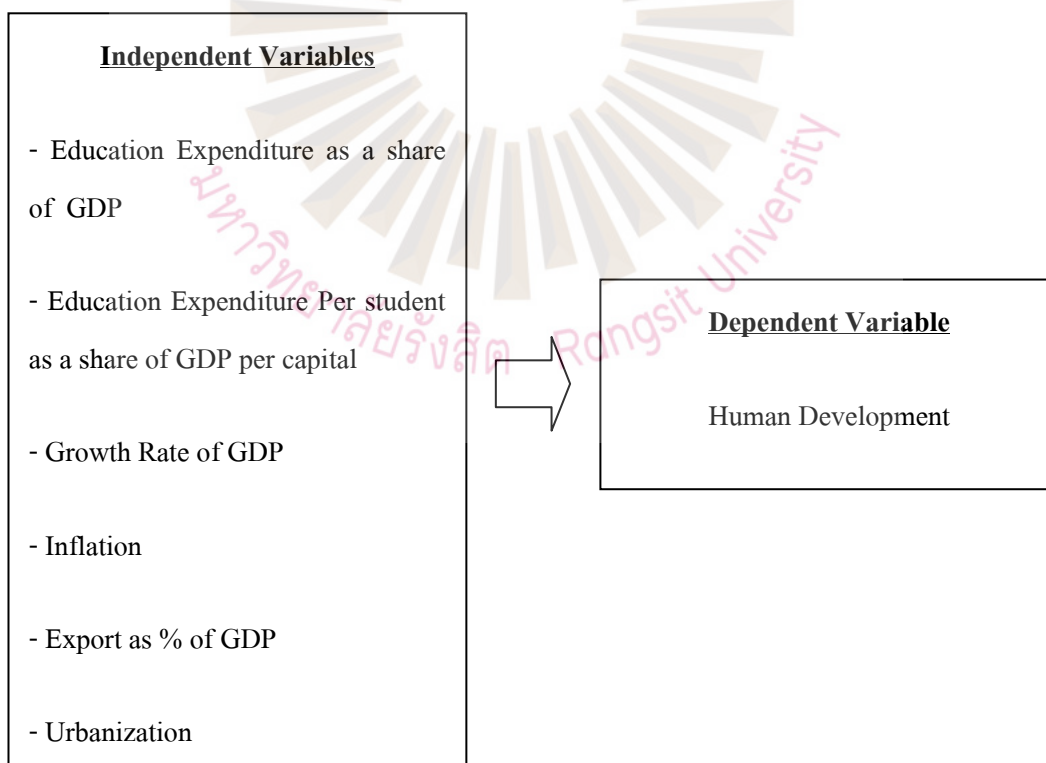
A central contribution of the World Bank (1993) is the argument that sustained growth and equal income distribution are the results of critical macroeconomic policy, human capital formation, openness to international trade, and environment that encourages private investment and competition. In this view, the success of many economies in East Asia has been due to reinforcing policy feedbacks. No single policy ensured success implies that there can be indirect effects and the correlations among the explanatory factors.

In the previous literature, it is difficult to find researches that attempt to clarify the relationship between education expenditure and human development. Education expenditure will improve human development through of a few channels: economic growth, reduce mortality rates and improve the learning process. Economic growth is the process of increases in capacity of economic generation over its time, which will raise income level and production. Education directly and indirectly affects economic growth. Education promotion makes human capital increase through capital education accumulation, and has direct effect on growth. On the other hand, education promotion improves labor productivity through increased longevity and reduced working days due to illness, and indirectly affects the production.

### Proposed Framework

To construct a framework, I also take into account of how to appropriately measure income distributions by avoid using just one indicator. The most standard indicator of income distribution is the GINI coefficient, which will be the first indicator in this study. The share of income of the poorest 40% is also another well known indicator and is included in this study. In the proposed framework, I include two policy variables, which are education expenditure as a share of GDP and that as per student, as independent variables. These variables have both direct impact and indirect impact on income distribution. The indirect impact has to do with another set of variables which include enrollment rates and test score. This set of variables depends on education expenditure but act as independent variables that affect income distribution. Lastly, as in Barro (2000), I incorporate four control variables, which are GDP growth, inflation, export, and urbanization.

### Proposed Framework for Education and Human Development Analysis



## Chapter 4

### Methodology

This study uses the quantitative method approach. For the quantitative method, specifically the time-series and panel data are analyzed by multiple regression analysis. The panel data are regressed with random effects. In this time-series, where the analysis is made at the national level, the unit of analysis is year.

Multiple regression analysis is applied to the empirical test of the quantitative data at both national and local levels. This allows this researcher to analyze the relationship between several independent or predictor variables and the dependent variable. In other words, multiple regression analysis is used to determine a number of factors or dimensions that contribute to the dependent variable, which are educational expenditures in this study. As a result, this research can determine what the best predictors of educational expenditures in Thailand are over time and across country.

#### Data Collection and Analysis

In any sound research, the data collection phase indicates the methodology that will be employed to generate the necessary and useful data that can produce an insightful analysis. The analysis of this study relies on secondary data as the source of data. The use of secondary data, which are mostly important statistics from government agencies, is an appropriate method of inquiry for making inferences and for quantitative analysis. Secondary data are the most common way to collect data in many quantitative researches, particularly in economics.

The time series data, which have been used in the regression analysis, cover the period from 1992 to 2012. Although many data series dated back to 1960s, such as the GDP, some limitations were encountered in the attempt to estimate equations back to those years. The secondary data used in this study were obtained from various sources, mainly government agencies. By using secondary data from government agencies, the data were considered to be highly reliable, as these government agencies employ a consistent and reliable method to collect data as they have tools and systems that reach international standards.

First, the data on educational expenditures, which are the independent variables, were extrapolated from the Bureau of the Budget and from the Ministry of Education. The data will be classified as well into different levels of education and different types of spending. This includes the data on expenditure for primary, secondary, vocational, higher, and non-formal education. The data on expenditure can also be classified as capital expenditure and current expenditure. In this study, the annual expenditure on education will be calculated as percentage of GDP to reflect the significance of budget allocation for education. The lagged expenditures of each type, which are the independent variables, were obtained from the same sources.

Second, data on human capital is obtained from the United Nations. Third, a number of control variables were also obtained as the independent variables (economic variables) from several agencies including the national statistical office and the bank of Thailand.

### **Estimation Procedure and Method**

First, the time series data, which cover the period of 1982 to 2010 of 30 years is used to analyze educational expenditure policy at the macro level. The time-series data are analyzed using the multiple regression method.

The problem of multicollinearity is first tested in order detect the pair of independent variables that have highly and significant correlations. These variables were removed from the equation to eliminate the multicollinearity problem.

Every equation will be tested independently using the multiple regression analysis method. Equations will be estimated independently using the Ordinary Least Square (OLS) method with the assumption of a best, linear, unbiased estimation (BLUE).

All of the statistical results will be tested for their significances with formal statistical tests: t-test, R square test, and F ratio test. Moreover, as this study is a time-series study with a large number of independent variables, it is therefore anticipated that it can cause the problem of autocorrelation, which has to be tested for because if we face a problem of autocorrelation, one of the conditions for the best, linear, unbiased estimation (BLUE) of the regression equation will not hold, causing the parameter estimates to be biased and misinterpreted. With that in mind, this study pays special attention to the problem of autocorrelation.

## Chapter 5

### Results and Findings

In this chapter, the empirical results are presented for all equations using the time-series data, to provide the macro point of view. The results obtained can serve as an explanation of what actually determined the allocation of educational expenditure in Thailand. These empirical results are accompanied by the interpretation, as well as a discussion, of the probable underlying reasons for the estimated results, especially when the results are not consistent with expectation. The table 5.1 below presents the summary statistics of all of the variables incorporated in this study. It shows the mean values as well as the maximum and the minimum values of all the variables in this study.

#### General characteristics of independent variables

The independent variables used in this study consist of Education Expenditure as a share of GDP, Education Expenditure Per student as a share of GDP per capital, Growth Rate of GDP, Inflation, Export as % of GDP and Urbanization. The characteristics of these variables are shown in table 5.1.





**Table 5.1 Characteristics of independent variables.**

<b>Variables</b>	Education Expenditure as a share of GDP	Education Expenditure Per student as a share of GDP per capital	Growth Rate of GDP	Inflation	Export as % of GDP	Urbanization
<b>Mean</b>	3.90	18.74	3.85	2.47	92.04	66.64
<b>Maximum</b>	7.60	32.63	15.20	11.20	200.00	100.00
<b>Minimum</b>	2.00	7.80	-2.30	-10.55	24.00	33.00
<b>Median</b>	3.40	17.58	4.60	2.85	80.00	73.00
<b>Mode</b>	3.00	18.10	-1.80	4.35	24.00	100.00
<b>Amount</b>	20	18	25	25	25	25
<b>Percentage</b>	80	72	100	100	100	100

From the summary statistics in table 5.1 above, Education Expenditure as a share of GDP has the highest percentage at 7 % and the lowest figure is 2.90%. Education Expenditure Per student as a share of GDP per capital has the highest percentage at 32.63 and the lowest is 7.80.

As for the growth rate of GDP, it has the mean of 3.85 and the highest value is 15.20 and the lowest value is -2.30. The mean value of inflation is 2.47 and it reaches its peak at 11.20 and has the lowest rate at -10.55.

Considering the descriptive statistics of export as % of GDP, it is found that the mean value is 92.04 and the highest value is 200 while the lowest value is 24.00.

As for the urbanization, the mean value is 66.64. The highest value of urbanization is 100.00 and the lowest is 33.00.

### General characteristics of Dependent variables

The dependent variable used in this study is Human Development, which is measured by the Human Development Index. The descriptive statistics of the Human Development Index is illustrated in table 5.2 below.

**Table 5.2 Characteristics of dependent variable**

Variable	Human Development
Mean	0.78
Maximum	0.90
Minimum	0.65
Median	0.77
Mode	0.85
Amount	25
Percentage	100

As for the data on Human Development, the highest level is at 0.90 and the lowest level is at 0.65.

### Test of Multicollinearity

The empirical results in this chapter are presented for each equation regarding different types of educational expenditure. In each estimation, this study attempts to identify the problem of multicollinearity, which is a statistical phenomenon in which two or more predictor variables in a multiple regression model are highly correlated. This problem is severe when the value of the Pearson correlation is higher than 0.80 or when the value of the VIF is lower than 10 and the tolerance value greater than 0.10. Some variables are removed when there exists a high level of correlations. In effect, including the same or almost the same variable, they can create multicollinearity. This study considers both examining the correlations and using the VIF value.

Before moving on to the multiple regression analysis, the problem of multicollinearity is to be tested. Using Pearson correlations, VIF, and the Tolerance value, it was found that a number of independent variables had significant correlations. Even though almost every independent variable was the same across the six equations, six correlation matrices still had to be taken into account.

This is because the independent variables in the six equations differ in the lagged expenditures, as they changed as the dependent variables changed. Therefore, we expected to see the correlations of the lagged variables differ in the six correlation matrices, which were calculated with the statistical program.

After the test for Pearson correlations, the Tolerance, and the VIF in the educational expenditure equations, there exist no multicollinearity problem. Therefore, all of the independent variables can be then be incorporated into the multiple regression estimations. Index is illustrated in table 5.3 below.

**Table 5.3 Test of Multicollinearity**

Variables	Correlations
Edu Expen as share of GDP	1.00
Edu Expen / Student as a share of GDP / capital	0.59
Inflation	-0.82
Export as % of GDP	-0.17
Unbanization	0.03
Growth Rate of GDP	-0.27

### Regression Estimations

From the characteristics of all the variables used in this study including Education Expenditure as a share of GDP, Education Expenditure Per student as a share of GDP per capital, Growth Rate of GDP, Inflation, Export as % of GDP and Urbanization, they can statistically and significantly explain the changes of Human Development accounted for 92.5%. This indicates that the estimation can cover or explain the changes of human development index very well.

**Table 5.4 Regression Estimations**

Variables	Unstandardized Coefficients Beta	Standardized Coefficients Beta	p-value
Edu Expen as share of GDP	-.008	-.128	.482
Edu Expen / Student as a share of GDP / capital	0.000	0.035	0.850
Inflation	-0.007	-0.200	0.121
Export as % of GDP	0.001	0.465	0.026*
Unbanization	0.001	0.418	0.034*
Growth Rate of GDP	8.201E-005	0.004	0.968
R = 0.962 , R <sup>2</sup> = 0.925 , p-value = 0.000			

Statistically, there are two variables that have significant effects on Human Development as illustrated in table 5.3.

Export as % of GDP significantly and positively affect human development. This means that when export increases, human development index tends to increase too.

Besides, urbanization also significantly and positively affects human development. This is in the same patter as the effect of export.

From the results of this study, it sends a clear signal that the more country open to trade and promote export as well as when people move to the urban area more, the level of human development tend to be improved.

Interestingly and surprisingly, the higher education expenditures do not have clear effect on human development. This could be because most of the education expenditures are not on investment expenditure but it is operational expenditures, such as salary and wages. This kind of expenditure may not have the desirable outcome. It also implies that the more government spend on education in the same old way, it does not help improve the human development of a country.

The government may need to consider to spend the education expenditures more effectively and efficiently in order to have the desirable outcome. In this sense, in the past education expenditures could not produce the outcome on the development aspect; particularly when one consider development as human development. This will clearly have the effect on people's lives as well as the social dimension of development.

In the past, Thailand may to certain extent have reached the satisfactory level of development especially in terms of economic growth, but it may be worth considering the development in other dimension. High amount of public expenditures on education have been allocated every year and this tends to increase a lot more in the future. Government should ensure that every single baht spent on education can also results on higher level of development outcome particularly on the human development aspect.

If the government can adjust education expenditures to the extent in which it can help improve human development, other social and political problems may then be reduced or even be eliminated from the society.

## Chapter 6

### Conclusion and Recommendation

#### Policy Implications and some lessons for development practices

This paper has reviewed the theoretical background of the two overarching and crucial concepts in development studies, which are human capital and income distribution. Human capital theory places emphasis on education as the key engine to create human capital. The promotion of human capital can lead to the developmental outcomes and one of the important outcomes is income distribution. As indicated by Seers (1969), income distribution cannot be neglected from the goal of development. A number of empirical studies have illustrated the undeniable impact of education policy on income distribution.

This paper serves as the ignition and the exploration of an alternative way to analyze the impact of education policy on human development. The proposed framework in this study clearly points out the significance of education expenditure as a policy tool to the extent in which it has both direct and indirect impact on human development.

There are some reasons for public intervention in education policy. Particularly important is the public expenditure as it reflects how governments behave in reality. A careful consideration should be paid to how government allocates its budget on education. A context-specific can play a very important role in the policy-making process and particularly the policy-making decision. This is because different context may yield different results from the estimation using the proposed framework.

#### Conclusion

The result of this study indicates that education expenditures have no significant effect on human development. This is a clear and bold message to the policy makers to perhaps rethink about the effectiveness and efficiency of education expenditures and in the future may think about gearing the education expenditures to benefit human development more.

**Recommendation**

The further concern is to do with the distribution rather than with the total volume of educational investments. Future research should focus to help children of the poor to acquire a minimal degree of earning power where schooling is also viewed as an instrument. Since poverty is often viewed as a relative concept, the amount of minimal universal government supported education has been progressively lengthening as average education (and income) has increased. It is still not always clear, however, to what extent these policies are efficient in alleviating poverty.



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