

# **Fertility Decline and Its Causes**

*An Interactive Analysis of the Cases of Uganda and Thailand*



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## i. List of abbreviations

AIDS:	Acquired Immunodeficiency Syndrome
CIA:	Central Intelligence Agency
GDI:	Gross Domestic Income
GDP:	Gross Domestic Product
GNP:	Gross National Product
HIV:	Human Immunodeficiency Virus
ICPD:	International Conference on Population and Development
NSOT:	National Statistical Office Thailand
PRB:	Population Reference Bureau
TFR:	Total Fertility Rate
UBOS:	Uganda Bureau of Statistics
UN:	United Nations
UNFPA:	United Nations Population Fund

## ii. Abstract

The present paper deals with the topic of fertility in developing countries and takes as its point of departure the need to reduce very high fertility, given its potential harmful effects. Two approaches to reducing fertility are identified, viz. coercion and voluntarism. As coercion is rejected, the paper works within a voluntary approach to fertility reduction. This entails trying to understand what causes high fertility to persist so these causes can be targeted. It is discussed how such causes can best be examined, and as it is my belief that a problem with many fertility theories is their focus on just one explanatory factor, I identify a theoretical framework that is able to incorporate insights from several different theories.

After an operationalization, this framework is used to analyze the fertility trajectories of two countries: Uganda, a country exhibiting one of the world's highest fertility rates, and Thailand which has succeeded in remarkably reducing its fertility level. The analysis of Uganda reveals that the very high costs of contraceptive use are crucial in sustaining the country's high fertility level. In Thailand, an effective government family planning program initiated in receptive settings seems to have been vital for the country's fertility decline. Through the analysis, the advantages of working within an interactive theoretical framework become evident, as this enables the simultaneous impacts of different factors to be taken into consideration.

## 1. Introduction

Since Malthus wrote his *Essay on the Principle of Population*, human fertility has been highly debated. Today, many Western countries have undergone fertility transitions with high fertility rates dropping to levels around the replacement rate<sup>1</sup> and sometimes even below<sup>2</sup>. In recent years, a number of Asian countries have followed this example. However, many countries retain extremely high fertility rates, especially in Sub-Saharan Africa (Malthus, 1798; O'Neill et al., 2001:39-48).

Though much discussed, high fertility rates can be said to imply problems at several levels. Globally, high fertility rates are connected to the global population growth which can have adverse effects on the climate<sup>3</sup>. Nationally, fears have arisen that resource depletion caused by rising numbers of people will exacerbate already harsh living conditions in high fertility countries. And on an individual level, high fertility's harmful consequences for women are pointed out (Dasgupta, 1993:345-360). Though I am aware that some scholars dispute the need for reducing fertility levels (e.g. Pearce, 2010), I will take this need as the point of departure of the paper, as it is a prominent position in the field of fertility.

When discussing how to reduce fertility, a stand must initially be taken on the issue of coerced versus voluntary fertility limitation. Coercion entails imposing control measures on potential parents to forcibly prevent births, e.g. requiring sterilization after a certain number of children. A voluntary approach involves "leaving matters to the responsible reflection of the people themselves, helped by the process of economic and social development" (Sen, 1996:1036-1044).

In this paper, coerced fertility limitation is not considered acceptable. People's right to decide freely the number, spacing, and timing of their children has been established in several international declarations, most forcefully at the ICPD (UN, 1995). As this declaration is endorsed by 179 countries and hints at the trends in population policies, coercive fertility limitation seems less relevant to consider.<sup>4</sup>

Accordingly, the paper works within a voluntary approach to fertility limitation. This entails improving economic and social factors to enable and motivate people to have fewer children, cf. the

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<sup>1</sup> Two children per woman are considered the replacement rate for a population (depending on mortality), resulting in relative stability in population size (CIA, 2010).

<sup>2</sup> This applies to e.g. Russia and Italy. See PRB, 2005.

<sup>3</sup> These effects depend on consumption patterns in the countries experiencing population growth. These have to adopt the lifestyles and associated greenhouse gas emission levels of the West for the population growth to cause global environmental problems.

<sup>4</sup> For a philosophical rejection of coercive fertility limitation, see Sen, 1996 and 1999.

above quotation by Sen. Hence, reducing fertility has to go through *understanding* which factors are causing the high fertility so these can be targeted.

Two countries have been chosen for examination: Uganda, because it has one of the world's highest fertility rates, making it interesting to search for combinations of factors that might hinder fertility reductions, and Thailand, as this country has reduced fertility remarkably, making it worth examining in the pursuit of valuable lessons (UNFPA & PRB, 2003). This leads to the main research question of the paper:

*How can the fertility levels of Uganda and Thailand be explained?*

In answering this question, a theoretical framework is necessary to guide the investigation. So, before the main research question is answered, another question has to be resolved:

*How can causes of a given fertility level be identified?*

The paper starts by answering the question of how to identify causes behind a given fertility level, thereby providing the paper's theoretical framework. This framework is then applied to the fertility levels of Uganda and Thailand in sections 3 and 4, respectively, answering the paper's main research question. The paper ends with a recap and conclusion.

## 2. Theoretical framework for examining fertility levels

### 2.1. Discussion of the current state of fertility theory

Many theories attempt to explain why some countries have undergone fertility transitions while others have not (Cleland & Wilson, 1987). Each theory presents important insights, yet no one has been able to explain all known fertility transitions. The question is, however, whether several of these theories are not actually correct, even though they have each been undermined in certain settings. The claim of this paper is that the problem with many fertility theories is their focus on a single factor to explain fertility transitions. E.g., Caldwell concentrates on intra-familial wealth flows, whereas demand theory focuses on income (Caldwell, 1980; Becker, 1960). What if the *combined* presence of different factors can reduce fertility in a setting where any one of these would be insufficient to do so singlehandedly? Then, if a theory's assertions are tested independently of other societal conditions, the theory may be wrongfully rejected.

To give an example: Ideational theory states that diffusion of knowledge about controlling fertility will reduce fertility (Cleland & Wilson, 1987:20-29). But the spread of knowledge will not reduce fertility if parents desire many children, as in many Sub-Saharan countries. Here, the spread of knowledge must be combined with reduced demand for children (Cleland & Wilson, 1987:27-29). The point is that choosing just one fertility theory for the analysis will exclude a range of possibly important factors. In other words, the theoretical framework should acknowledge that the impact on fertility of one condition depends on other conditions and changes taking place in the population. This calls for a model that can encompass arguments from different theories.

## 2.2. A comprehensive framework for analyzing fertility

Inspiration for such a model is drawn from the framework presented by Mason in Figure 2.1. (Mason, 1997). She claims that a model of fertility transition needs to be both ideational and interactive: Ideational to recognize that people's changing *perceptions* ultimately induce fertility reductions and that these can differ from the reality they mirror. Interactive to reflect that societal changes do not affect fertility in isolation, but in interaction with preexisting conditions and other changes simultaneously occurring.

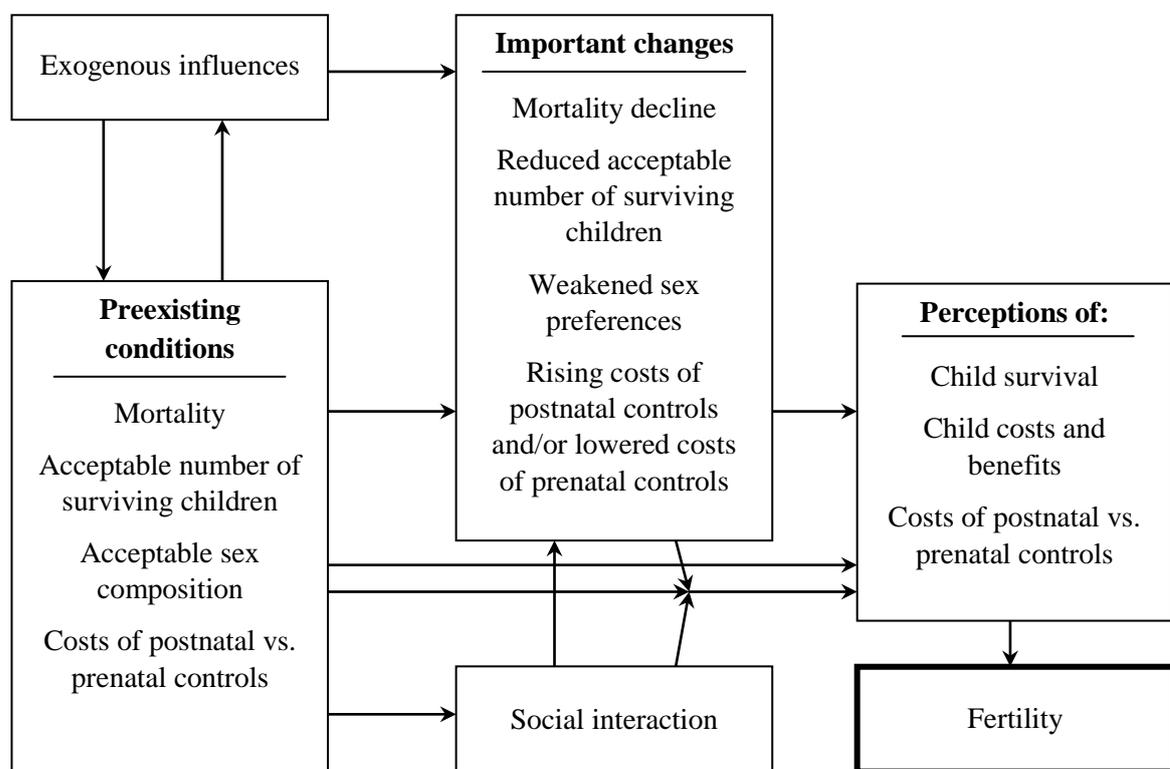


Figure 2.1.: A comprehensive framework for explaining fertility transitions (Mason, 1997:450)

According to this model, a country's fertility level is determined by three proximate factors: The perceptions among reproducing people of children's probabilities of surviving, their perceptions of the costs and benefits associated with having children, and their perceptions of the costs of postnatal versus prenatal controls<sup>5</sup> on family size and composition, with costs incorporating both social, psychological, and financial aspects.

The three proximate determinants are effects of the direct and interactive influences of four preexisting conditions and changes in these, viz. the country's mortality level, the acceptable number of surviving children, the acceptable sex composition of surviving children, and the costs of postnatal versus prenatal controls on family size and composition. The preexisting conditions and changes in them are, in turn, affected by exogenous influences. Lastly, processes of social interaction can influence the proximate determinants directly and indirectly by interacting with the preexisting conditions and changes.

Mason's model is very useful for conceptualizing the *idea* of an interactive approach, but it can be criticized for not making explicit use of the insights from various fertility theories<sup>6</sup>. For example, it does not contain the widely accepted ideas of income's influence on fertility or fertility differences between urban and rural citizens. Maybe most importantly, the model perceives the household as a single unit. It thereby neglects to acknowledge that men and women can have differing fertility interests and that power structures between the sexes determine who dominates fertility decisions – an assertion recognized by Mason herself in a later article (Mason, 2001). As it seems inappropriate to disregard these prominent theories, I will unite them with Mason's general framework in the operationalization below.

### **2.3. Operationalization**

The operationalization will focus on the parts of Mason's model that can be illuminated through other fertility theories. This applies to a number of the preexisting conditions and changes in these and to the variable of social interaction.

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<sup>5</sup> Postnatal controls are actions taken after childbirth to influence the size and sex composition of one's offspring, e.g. killing infants. Prenatal controls are actions taken before childbirth, mainly contraceptive use (Mason, 1997:448).

<sup>6</sup> To be fair, the proximate determinants are modeled after Easterlin, and the distinction between postnatal and prenatal fertility controls comes from Davis (Mason, 1997:448-450).

Several theories present causes behind *the acceptable number of surviving children*. First, classical demographic transition theory attributes fertility decline to the migration of people from rural to urban areas. As urbanization creates ways of life that are inimical to large families, fertility declines can be expected in countries undergoing urbanization (Thompson, 1942:75-80, 204-206; Cleland & Wilson, 1987:6-7).

Secondly, Caldwell claims that high fertility levels prevail in societies where families depend on their own production. Here, each child adds to the productive force and wealth flows from children to parents. When mass education is introduced, the wealth flow is reversed, because children become net receivers of resources. The reduced benefits of having children will cause fertility decline (Caldwell, 1980).

Thirdly, demand theory asserts that parents will demand children because of the utility creating services they produce. When income rises, parents will demand better quality children which means that more time and money must be invested in said children. As this is more costly, demand for children will fall (Becker, 1960:211-217; Cleland & Wilson, 1987:7-8; Robinson, 1997:63-65).

Lastly, the degree of women's empowerment can affect the acceptable number of children. When women enter the labor market, the opportunity costs of their time rise, and each additional child represents time away from work and income lost. Furthermore, women generally want fewer children than men as they bear a disproportionate share of child-related costs. When women gain power, they can bring fertility decisions more in line with their own preferences. Additionally, when women are educated, their ideas about family life and childbearing often change. All of these mechanisms will lower the acceptable number of children (Mason, 2001:166; Eswaran, 2002:434; Hirschman & Young, 2000:18).

Empowerment of women also seems relevant in operationalizing the *costs of prenatal controls*. When women gain access to information about prenatal controls through education, come to see them as safe, and can obtain them through larger freedom of movement, the costs of prenatal controls will fall (Mason, 2001:168-169).

The concept of *social interaction* can be operationalized through ideational theory (mentioned in section 2.1.). According to this, fertility rates will fall when knowledge about controlling fertility spreads between countries with similar cultural backgrounds (Cleland & Wilson, 1987:20-29). For example, if ideas about fertility limitation enter a country, they can reduce the perceived costs of prenatal controls.

Below, operationalizations of all of Mason's concepts are presented:

Mason's concept	Operationalization of preexisting condition	Operationalization of important change
Mortality	Mortality level	Mortality decline
Acceptable number of surviving children	Proportion of population urban vs. rural Direction of wealth flows between generations Income level of population Women's status	Urbanization Children become net receivers instead of net producers Rising incomes Women are empowered
Acceptable sex composition	Preference for girls vs. boys	Falling preference for boys
Costs of postnatal controls	Acceptability of postnatal controls Availability of postnatal controls	Falling acceptability of postnatal controls Reduced availability of postnatal controls
Costs of prenatal controls	Women's status Acceptability of prenatal controls Availability of prenatal controls	Women are empowered Increased acceptability of prenatal controls Increased availability of prenatal controls
<b>Operationalization</b>		
Exogenous influences	Events that affect the preexisting conditions and changes in these	
Social interaction	Spread of ideas about fertility control from neighboring countries	
Perceived child survival	Children considered likely to survive to adulthood	
Perceived child costs	Children considered costly	
Perceived child benefits	Children considered valuable	
Perceived costs of postnatal controls	Postnatal controls considered costly	
Perceived costs of prenatal controls	Prenatal controls considered costly	

*Figure 2.2.: Operationalization of Mason's model*

With this operationalization, the analysis of the fertility levels of Uganda and Thailand can commence<sup>7</sup>.

<sup>7</sup> Mason's framework was developed to uncover the causes behind fertility transitions. In the following analysis, the framework is used to examine Uganda that has yet to undergo such a transition. Though this may seem incompatible with the model's purpose, I believe that it is in perfect correspondence with its own logic: As a change in the preexisting conditions and the consequent effects on the proximate determinants are believed to cause fertility decline, the absence of such changes must logically mean that fertility remains high. Thus, the model can reasonably be used to explain persistently high fertility.

### 3. Explaining Uganda's high fertility level

#### 3.1. Introduction

In the following section, Uganda's fertility level will be analyzed, providing a partial answer to the main research question of the paper.

First, a brief introduction of the country is appropriate: Uganda is a country of around 31 million people (2007), divided among 20 different ethnicities and made up of Catholics, Protestants, Muslims, and various traditional religions. 79% of the working population is employed in agriculture. Despite a GDP growth rate of 5-6% since the mid-1990s, the country remains among the world's poorest, with a GDI per capita of US\$340. HIV prevalence has been reduced since the early 1990s, but an estimated 6.4% of the adult population remain infected as of 2006.

The total fertility rate (hereafter TFR<sup>8</sup>) of the country was 7.1 children in 2003, creating population growth of approximately 3.4% annually. Between 1980 and 2000, Uganda's TFR declined by less than 10%, giving no indication of a fertility transition (Udenrigsministeriet, 2009b; UNFPA & PRB, 2003:90; Blacker et al., 2005:355-357; Ahn & Shariff, 1994:17).

#### 3.2. Analysis of Uganda's fertility level

##### 3.2.1. Preexisting conditions and changes in these

In Uganda, the infant *mortality rate* and the under-five mortality rate show that out of a 1.000 live born children, 88 will die within their first year of life, and 152 within their first five years. Such high mortality rates are known to induce people to have many children, as they wish to have some children survive to adulthood (UBOS, 2001:99; Hashimoto & Hongladarom, 1981:784).

Regarding changes in these variables, the infant mortality rate has remained rather constant at a high level, whereas the under-five mortality rate has fallen with ten points in the years prior to 2000 (UBOS, 2001:99). This could act as an initial enticement to reduce fertility, as the likelihood of children surviving their first five years of life has increased.

Concerning the *acceptable number of surviving children*, Ugandan women describe their ideal family as consisting of 4.1 to 6.4 children (Blacker et al., 2005:364). According to our model, different factors can illuminate this wish for a rather large number of children.

First of all, 85% of Uganda's population live in rural areas. According to classical demographic transition theory, rural people will have more children than urban people, and this is

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<sup>8</sup> TFR is the average number of children born per woman if all women lived to the end of their reproductive years and bore children according to a given fertility rate at each age (CIA, 2010).

exactly the case in Uganda: the rural TFR is 7.4, whereas the urban is only 4. No significant urbanization has taken place in the country yet, and Uganda remains a markedly rural society (UNFPA & PRB, 2003:90-91).

Secondly, some people believe that their children will support them when they can no longer do so themselves. In Caldwell's terms, this shows that wealth flows from children to parents, making children a net resource for parents. Changes in this variable can be traced, though, as educational levels seem to be rising, making childrearing more expensive than earlier. This could indicate that wealth flows are changing directions (Blacker et al., 2005:366-369; Wolff et al., 2000:126).

Thirdly, Uganda is one of the poorest countries of the world, cf. section 3.1. Even though marked economic growth has occurred, GDI per capita remains low. Hence, according to demand theory, the country has not undergone the process of rising incomes that can bring with it a demand for better quality offspring and thereby a preference for fewer children.

Fourthly, regarding women's empowerment, decision-making about fertility is traditionally male-dominated, and no indications have been found that this is changing. On the other hand, female educational rates are increasing, and as much as 82% of women between 15 and 64 are connected to the labor market. In general, though, the Ugandan society remains male-dominated, and women's status continues to need improvement (Wolff et al., 2000:136; Blacker et al., 2005:366; UNFPA & PRB, 2003:90-91).

A fifth factor seems to be of importance when examining the literature: Uganda is characterized by a culture that attributes high value to lineage, and this makes it natural to have many children, as these will enter into their father's clan and make this stronger and more numerous (Lutalo et al., 2000:224-226).

With regard to the *acceptable sex composition* of offspring, no distinctive indications have been found of a clear preference for boys or of changes in this variable. Hence, this will not be considered a significant explanatory factor behind Uganda's fertility level.

The same can be said of the *costs of postnatal controls on fertility*. None of the available literature gives the impression of postnatal controls being a prominent consideration among Ugandan parents. Of course, this can also indicate that the costs of postnatal controls are particularly high so that they are simply unthinkable. As it is impossible to determine the reason for the lack of mention of postnatal controls, this factor will not be considered further in the analysis.

The picture is quite opposite when it comes to the *costs of prenatal controls on fertility*. Initially, it should be mentioned that contraceptive use in Uganda is generally low; only 18.2% of women in the childbearing age use modern contraception<sup>9</sup>, the most popular methods being the injectable and the pill. This figure covers a remarkable urban-rural differential: 41.6% of urban women use modern contraception as opposed to 14.7% of rural women (UNFPA & PRB, 2003:90-91; Blacker et al., 2005:362).

Two factors seem important in explaining this low prevalence of modern contraception. First, proposing contraceptive use and fertility limitation seems to imply great social costs. Childbearing is largely equated with fidelity and love in Uganda, and both men and women tend to fear waning interest or infidelity if their partner proposes to start using contraception. Furthermore, fears of open (and sometimes violent) confrontation may stop women from suggesting contraceptive use (Wolff et al., 2000:129-136).

Secondly, access to contraception is unstable and limited, particularly in rural areas. An *exogenous influence* appears here, as government policy seems to have influenced the costs of prenatal controls. For years, family planning was only available to married women with their husband's permission, indicating that empowerment of women regarding their freedom to obtain contraception was minimal. Even after the ICPD and the onset of the HIV/AIDS epidemic, family planning has a low status to the Ugandan government, and provision of family planning is a predominantly urban affair. Additionally, the provision of contraception is unstable which increases the costs of using prenatal controls further (Blacker et al., 2005:367-368; Lutalo et al., 2000:225; Ketende et al., 2003:136).

The costs of prenatal controls do not appear to have changed in any considerable way in recent years, though some people report more positive attitudes to condom because of the HIV/AIDS epidemic (Williamson et al., 2006:95).

### 3.2.2. *Proximate determinants*

The last step in the analysis consists of examining the proximate determinants of Uganda's fertility level, viz. people's perceptions of different factors. These perceptions will largely reflect the preexisting conditions and changes therein, but, as Mason underlines, people's perceptions may not directly mirror reality.

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<sup>9</sup> Modern contraception means contraception that is scientifically proven to prevent conception. In many societies, traditional contraception is also used, e.g. withdrawal. The prevalence of traditional and modern methods combined is 22.8% in Uganda (Ntozi & Kabera, 1991:118; UNFPA & PRB, 2003:90).

As stated above, both infant and under-five mortality is quite high in Uganda. Since nothing indicates that people's *perceptions of child survival* probabilities differ from these actual levels, it seems reasonable to assume that they are not particularly high.

With regards to the *perceived costs of children*, two considerations appear to be common among reproducing people. The economic costs of children are a concern when considering how many children to have, and these costs are perceived as quite high. Also, some women worry about the health consequences of having children (Wolff et al., 2000:126; Ketende et al., 2003:135).

Concerning the *perceived benefits of children*, two factors emerge. As described in section 3.2.1., large value is attributed to producing new members of the clan in patrilineal Uganda. Accordingly, a perceived benefit of children is that they strengthen the clan. Secondly, some parents perceive children as an insurance against old age, though this perception is actually at odds with the rising economic costs of children (Lutalo et al., 2000:224-226; Mason, 2001:162; Blacker et al., 2005:369).

In addition to the actual costs of prenatal controls being quite high, some misconceptions seem to increase the *perceived costs of prenatal controls*. Some people voice concerns about the potential adverse affects of contraceptives, both on fertility and on the health of future children. Furthermore, some women seem to fear much worse reactions from their partners to their suggesting condom use than are actually justified (Lutalo et al., 2000:224; Williamson et al., 2006:94).

### **3.3. Conclusion**

The analysis above examines the causes behind Uganda's high fertility level. Though a few factors could allow for a decline in fertility to take place – e.g. the (small) reduction in under-five mortality and the lack of a marked preference for boys – the majority of factors examined point towards a sustained high fertility level. And the proximate determinants which directly affect fertility generally are indicative of a high fertility rate: People probably perceive their children's chances of surviving to adulthood as rather small, making it reasonable for them to have many children. Some perceived benefits of having children are identified; people mention the value of children in the lineage-oriented society and also connect them to providing support in their old-age. On the other hand, children bring economic costs and health risks for women. Finally, both men and women connect suggesting and using contraception to very high costs because of the possibly devastating consequences to the relationship and the difficulties in actually obtaining contraception.

## 4. Explaining Thailand's low fertility level

### 4.1. Introduction

Unlike Uganda, Thailand has experienced significant fertility decline. Until the 1960s, fertility was high, and the population was among the fastest growing in the world. Consequently, a national population policy was initiated in 1970. Hereafter fertility declined rapidly: From 5.43 in 1968-70, TFR fell to 2.81 in 1978-80. Further reductions followed, and replacement rate fertility was reached at the end of the 1980s (Goldstein, 1972: 420-435; Hirschman & Young, 2000: 21-22).

The following analysis will focus on the fertility decline taking place between the end of the 1960s and the end of the 1980s. This period is of primary interest, as the aim is to draw lessons from the attainment of replacement rate fertility. A brief introduction to Thai society in this period is appropriate before proceeding to the analysis:

In 1960, Thailand had a population of 26 million, rising to 34, 44, and 54 million in 1970, 1980, and 1990, respectively. The population consisted of mainly ethnic Thai people and a minority of Chinese; 94% Buddhist, and 4% Muslim. At the time, Thailand was largely rural, and farming constituted its main industry (NSOT, 2000; Udenrigsministeriet, 2009a). Income levels are presented in the analysis.

### 4.2. Analysis of Thailand's fertility level

#### 4.2.1. Preexisting conditions – Thailand before the late 1960s

During the 1960's, Thailand's infant *mortality rate* was 84 per 1.000 live-born children. This relatively high number may have been a factor inducing parents to bear many children to insure themselves against some of them dying (Hashimoto & Hongladarom, 1981:782).

Next is the examination of the *acceptable number of children*. Before the transition, around 75% of the population lived in rural households. Classical demographic transition theory predicts that rural life encourages high fertility, and this was exactly the case in pre-transitional Thailand (Goldstein, 1972:420-423).

Secondly, a considerable proportion of children were in the labor force before the transition, indicating that children may have been of economic value to their families (Hirschman & Young, 2000:24). According to Caldwell, this should lead parents to desire high numbers of children.

Regarding income level, the real per capita GNP was as low as US\$140 in 1965 (Masih & Masih, 1999:464). Thus, according to demand theory, the country had yet to undergo the income

growth that can induce demand for better quality offspring and an associated preference for fewer children.

A last factor that may have influenced the acceptable number of children is women's status. Thai women have traditionally enjoyed relative freedom, and 77% were in the labor force in 1960 (Knodel & Debavalya, 1978:45). Still, women working did not conflict with their role as mothers, as most of them worked in family farming, enabling them to combine work with childcare (Goldstein, 1972:419-428). Thus, the labor force participation of women did not significantly reduce their acceptable number of children.

Concerning the *acceptable sex composition* of offspring, Thai people have not shown any strong preference for sons. Accordingly, this factor will not be considered further in the analysis (Knodel & Debavalya, 1978:48; Richter et al., 1994:657).

Additionally, nothing indicates that *postnatal controls* have been a major consideration for Thai people, either before or during the transition. Hence, this factor is considered less relevant and will not be discussed further.

The last condition to be examined is the *costs of prenatal controls*. At the beginning of the transition, 15% of married women were practicing contraception, with rural prevalence being lower than urban. No indications have been found that gender roles made contraceptive use particularly costly, and this matches the relative freedom of women reported above. However, knowledge of and access to contraception was absent in large parts of the population, making costs of prenatal controls high in pre-transitional Thailand. The fact that actual fertility was often higher than desired fertility confirms the costs of fertility limitation (Chayovan et al., 1988:88; Knodel & Debavalya, 1978:38-47).

#### 4.2.2. Changes in preexisting conditions – Thailand between the late 1960s and the late 1980s

Some important changes have taken place in the preexisting conditions in Thailand, contributing to explain the drastic fertility decline.

The infant *mortality rate* has declined since the end of the 1960s, falling to 58 in 1970 and 41 in 1980. These reductions may have induced lowered fertility as it was less necessary for parents to insure themselves by having excess numbers of children (Hirschman & Young, 2000:24).

The *acceptable number of children* has also decreased steadily, and a consensus on small families has emerged (Chayovan et al., 1988:93). What could have caused this change?

Transformations in lifestyle patterns of both the rural and the urban population combined with changes in women's status seem to be of importance. First of all, migration to Bangkok has risen, accompanied by increasing female employment, especially in the modern sector. The separation of work life from family life stops women from taking care of their children during the day. The mismatch between urban life and many children is demonstrated by the fact that urban Thai women have fewer children than they desire (Richter, 1994:652-660).

What, then, has produced the decline in rural women's acceptable number of children? For one thing, the proportion of women with a secondary education increased sharply between 1970 and 1990, and desired family size is known to be inversely related to education in Thailand (Hirschman & Young, 2000:24; Knodel & Debavalya, 1978:42). Also, in the late 1960s, the government initiated the National Family Planning Program which effectively spread information about fertility limitation. This *exogenous factor* could have reduced the preferred number of children, as family planning knowledge might be necessary for people to reduce their desired number of children (Knodel & Chayovan, 1990:260; Knodel & Debavalya, 1978:38-42).

Furthermore, the percentage of children in the labor force declined significantly during the transition, indicating that children's economic roles were shrinking (Hirschman & Young, 2000:23). According to Caldwell, this could induce parents to desire fewer children.

Additionally, between 1970 and 1990, the real per capita GNP rose from a very low US\$210 to US\$1.420. Though still placing Thailand in the category of lower middle-income countries, the rise in incomes may have induced a decline in the acceptable number of children if preferences shifted towards better quality children. The effect of the income growth is not deemed of crucial importance, though (Masih & Masih, 1999:464).

The *costs of prenatal controls* seem to have decreased markedly in the transitional period; hence, contraceptive prevalence increased from 15% of married women in 1969 to 65% in 1984.

This increase is among the most rapid on record (Chayovan et al., 1988:88-89; Knodel & Debavalya, 1978:39). What could have caused this increase?

The National Family Planning Program seems immensely important here. From its launch, the program was very effective in spreading information about fertility limitation and extending family planning services to all of Thailand. Accordingly, contraceptive knowledge rose extensively and was almost universal among married women in the late 1970s, bringing fertility limitation within reach for large proportions of the Thai population.

The program also increased the availability of contraception, thus further lowering the costs of prenatal controls. The relatively high status of women may have contributed to the program's success, because Thai women participated in social and economic life and were exposed to ideas of family limitation spread through the mass media (Knodel & Chayovan, 1990:260; Knodel & Debavalya, 1978:38-46; Chayovan et al., 1988:89-91).

#### 4.2.3. *Proximate determinants*

The final step in the analysis is to examine the proximate determinants of Thailand's reduced fertility level, viz. the perceptions reproducing people hold of different factors.

There are no indications that the *perceived probabilities of child survival* diverged from the actual levels of infant mortality during the transition. Hence, parents' perceptions of infant mortality are believed to have declined along with actual infant mortality.

Regarding *perceived child costs*, the increase in formal employment among women along with migration to Bangkok has created ways of life for some that are incompatible with many children.

At the same time, the *perceived benefits of children* may have fallen. The proportion of children working fell significantly during the transition, and this could have reduced the perceived benefits of children as they contributed less to the household.

Lastly, as no sources have been found to claim otherwise, it is expected that the *perceived costs of prenatal controls* have fallen along with the substantial decline in the actual costs.

### 4.3. Conclusion

A number of factors appear to have been in play in Thailand's fertility transition; hence, both infant mortality and the acceptable number of children have fallen. One factor seems especially influential, viz. the increased knowledge of and access to contraception facilitated by the National

Family Planning Program. The program is believed to have been particularly successful because of its initiation in very receptive settings: First, actual fertility often exceeded desired fertility, making the population open to the idea of fertility limitation. Secondly, women's status enabled them to catch the spreading information about family planning. Thirdly, as Buddhism does not contain scriptural prohibitions against contraception and is not particularly pronatalist, no strong cultural-religious objections existed to fertility limitation (Knodel & Debavalya, 1978:48).

## 5. Conclusion

This paper has taken as its point of departure the need to reduce extremely high fertility, given its possible harmful consequences. As coercive means to lower fertility are rejected, the aim of the paper has been to examine how fertility can be reduced voluntarily. Inherent in this aim is to seek to understand the causes behind both persistently high and successfully reduced fertility rates: The first might unveil combinations of causes that hinder attempts to lower fertility; the second may provide lessons to effectively reducing fertility.

With this in mind, two countries were chosen to be examined. Uganda, because it has one of the world's highest fertility rates; Thailand, because it has seen significant and rapid reduction of its initially high fertility.

To analyze these countries' fertility levels, Mason's theoretical framework was chosen because of its capacity to let different societal conditions interact in explaining fertility, thus not making the somewhat common mistake of focusing narrowly on a single explanatory factor behind fertility. The framework did not, however, sufficiently utilize the available selection of theoretical insights into fertility. Consequently, I undertook an operationalization of Mason's framework, combining it with some of the most prominent theories of fertility decline.

The examination of Uganda revealed that the country's high fertility level is not surprising, given the combination of conditions present. The population has remained largely rural and children continue to play an important role as new members of their paternal clan. Even more importantly, contraceptive use is often very costly.

A lesson should be learned from analyzing Uganda: The fact that fertility remains high though children are perceived to be rather costly emphasizes the point made in the discussion of fertility theory: Factors influencing fertility operate in interaction with each other, and a condition that is assumed to bring about fertility decline will not be able to do so, if other conditions are present that

push fertility in the other direction. Thus, the analysis of Uganda demonstrates the importance of making an interactive assessment when examining which factors to target to reduce fertility.

The analysis of Thailand showed that an influential factor behind the fertility decline was the spread of knowledge and availability of contraception. Along with reductions in infant mortality, this is considered to have been a leading cause behind the fertility decline.

An interesting point can be deduced from the case of Thailand: The country embarked on its journey to lowered fertility when the population was overwhelmingly rural, the economy predominantly agricultural, and the income level low. This situation points towards the conclusion that is often drawn when assessing past fertility declines in developed countries: Fertility transitions can be initiated from various development levels, making it difficult to establish a threshold of development necessary for fertility decline to begin (Knodel & Debavalya, 1978:46). In Thailand's case, a particularly receptive setting towards fertility limitation is believed to have been of major importance, creating the possibility of lowering fertility even before powerful socioeconomic development had occurred.

## 6. List of references

- Ahn, Namkee & Shariff, Abusaleh (1994), 'A Comparative Study of Socioeconomic and Demographic Determinants of Fertility in Togo and Uganda', *International Family Planning Perspectives*, Vol. 20, No. 1, pp. 14-17+22.
- Becker, Gary S. (1960), 'An Economic Analysis of Fertility', pp. 209-240 in: National Bureau of Economic Research (1960), *Demographic and Economic Change in Developed Countries*, UMI.
- Blacker, John, Opiyo, Collins, Jasseh, Momodou, Sloggett, Andy & Ssekamatte-Ssebuliba, John (2005), 'Fertility in Kenya and Uganda: A Comparative Study of Trends and Determinants', *Population Studies*, Vol. 59, No. 3, pp. 355-373.
- Caldwell, John C. (1980), 'Mass Education as a Determinant of the Timing of Fertility Decline', *Population and Development Review*, Vol. 6, No. 2, pp. 225-255.
- Central Intelligence Agency (2010), *CIA World Factbook, References – Definitions and Notes*, <https://www.cia.gov/library/publications/the-world-factbook/docs/notesanddefs.html?countryName=France&countryCode=fr&regionCode=eu#T>
- Chayovan, Napaporn, Knodel, John & Kamnuansilpa, Peerasit (1988), 'Approaching Replacement Fertility in Thailand: Results of the 1987 Demographic and Health Survey', *International Family Planning Perspective*, Vol. 14, No. 3, pp. 86-93.
- Cleland, John & Wilson, Christopher (1987), 'Demand Theories of the Fertility Transition: An Iconoclastic View', *Population Studies*, Vol. 41, No. 1, pp. 5-30.
- Dasgupta, Partha (1993), *An Inquiry Into Well-Being and Destitution*, Oxford University Press: Oxford.
- Eswaran, Mukesh (2002), 'The Empowerment of Women, Fertility, and Child Mortality: Towards a Theoretical Analysis', *Journal of Population Economics*, Vol. 15, No. 3, pp. 433-454.
- Goldstein, Sidney (1972), 'The Influence of Labour Force Participation and Education on Fertility in Thailand', *Population Studies*, Vol. 26, No. 3, pp. 419-436.
- Hashimoto, Masanori & Hongladarom, Chira (1981), 'Effects of Child Mortality on Fertility in Thailand', *Economic Development and Cultural Change*, Vol. 29, No. 4, pp. 781-794.
- Hirschman, Charles & Young, Yih-Jin (2000), 'Social Context and Fertility Decline in Southeast Asia: 1968-70 to 1988-90', *Population and Development Review*, Vol. 26, Supplement: Population and Economic Change in East Asia, pp. 11-39.
- Ketende, Charles, Gupta, Neeru & Bessinger, Ruth (2003), 'Facility Level Reproductive Health Interventions and Contraceptive Use in Uganda', *International Family Planning Perspectives*, Vol. 29, No. 3, pp. 130-137.
- Knodel, John & Chayovan, Napaporn (1990), 'Contraceptive Initiation Patterns in Thailand', *Population Studies*, Vol. 44, No. 2, pp. 257-271.
- Knodel, John & Debavalya, Nibhon (1978), 'Thailand's Reproductive Revolution', *International Family Planning Perspectives and Digest*, Vol. 4, No. 2, pp. 34-49.

- Lutalo, Thomas, Kidugavu, Medi, Wawer, Maria J., Serwadda, David, Zabin, Laurie Schwab & Gray, Ronald H. (2000), 'Trend and Determinants of Contraceptive Use in Rakai District, Uganda, 1995-98', *Studies in Family Planning*, Vol. 31, No. 3, pp. 217-227.
- Malthus, Thomas (1798), *An Essay on the Principle of Population*, London.
- Masih, Abul M. M. & Masih, Rumi (1999), 'Is a Significant Socio-Economic Structural Change a Pre-Requisite for 'Initial' Fertility Decline in the LDCs? Evidence from Thailand Based on a Multivariate Cointegration/Vector Error Correction Modelling Approach', *Journal of Population Economics*, Vol. 12, No. 3, pp. 463-487.
- Mason, Karen Oppenheim (1997), 'Explaining fertility transitions', *Demography*, Vol. 34, No. 4, pp. 443-454.
- Mason, Karen Oppenheim (2001), 'Gender and Family Systems in the Fertility Transition', *Population and Development Review*, Vol. 27, Supplement: Global Fertility Transition, pp. 160-176.
- National Statistical Office Thailand (2000), *Population and Housing Census 2000*, [http://web.nso.go.th/pop2000/prelim\\_e.htm](http://web.nso.go.th/pop2000/prelim_e.htm)
- Ntozi, James P. M. & Kabera, John B. (1991), 'Family Planning in Rural Uganda: Knowledge and Use of Modern and Traditional Methods in Ankole', *Studies in Family Planning*, Vol. 22, No. 2, pp. 116-123.
- O'Neill, Brian C., MacKellar, F. Landis & Lutz, Wolfgang (2001), *Population and Climate Change*, Cambridge: Cambridge University Press.
- Pearce, Fred (2010), *Peopleshake: Mass Migration, Ageing Nations, and the Coming Population Crash*, London: Transworld Publishers.
- Population Reference Bureau (2005), *2005 World Population Data Sheet*, Population Reference Bureau.
- Richter, Kerry, Podhisita, Chai, Chamrathirong, Aphichat & Soonthorndhada, Kusol (1994), 'The Impact of Child Care on Fertility in Urban Thailand', *Demography*, Vol. 31, No. 4, pp. 651-662.
- Robinson, Warren C. (1997), 'The Economic Theory of Fertility over Three Decades', *Population Studies*, Vol. 51, No. 1, pp. 63-74.
- Sen, Amartya (1996), 'Fertility and coercion', *The University of Chicago Law Review*, Vol. 63, No. 3, pp. 1035-1061.
- Sen, Amartya (1999), *Development as freedom*, Oxford: Oxford University Press.
- Thompson, Warren S. (1942), *Population Problems*, McGraw-Hill: New York & London.
- Udenrigsministeriet (2009a), *Landefakta Thailand*, <http://www.um.dk/da/menu/Udviklingspolitik/LandeOgRegioner/Asien/Thailand/Landefakta/Thailand.htm>
- Udenrigsministeriet (2009b), *Landefakta Uganda*, <http://www.um.dk/da/menu/Udenrigspolitik/Landefakta/LandefaktaAfrika/Uganda.htm>

Uganda Bureau of Statistics (2001), *Uganda Demographic and Health Survey 2000-2001*, Entebbe: Uganda Bureau of Statistics.

United Nations (1995), 'Summary of the Programme of Action of the International Conference on Population and Development', New York: United Nations Department of Public Information.

United Nations Populations Fund & Population Reference Bureau (2003), *Country Profiles for Population and Reproductive Health: Policy Developments and Indicators 2003*, United Nations Populations Fund & Population Reference Bureau.

Williamson, Nancy E., Liku, Jennifer, McLoughlin, Kerry, Nyamongo, Isaac K. & Nakayima, Flavia (2006), 'A Qualitative Study of Condom Use among Married Couples in Kampala, Uganda', *Reproductive Health Matters*, Vol. 14, No. 28, "Condoms, Yes!, Abstinence, No", pp. 89-98.

Wolff, Brent, Blanc, Anne K. & Ssekamatte-Ssebuliba, John (2000), 'The Role of Couple Negotiation in Unmet Need for Contraception and the Decision to Stop Childbearing in Uganda', *Studies in Family Planning*, Vol. 31, No. 2, pp. 124-137.