

**IMPACT OF PUBLIC INVESTMENT
ON HEALTH DEVELOPMENT
IN SRI LANKA**

***With special reference to
Infant Mortality Rate***

By

Buddhika Niranjana Pathiratne

M. Sc. Management



2009

**IMPACT OF PUBLIC INVESTMENT ON HEALTH
DEVELOPMENT IN SRI LANKA**

With special reference to Infant Mortality Rate

By

Buddhika Niranjana Pathiratne

GS/MC/ 1852/2001

**Thesis submitted to the University of Sri Jayawardhanapura
for the award of the Degree of Master of Science in
Management on 2009**

Declaration

The work described in this thesis was carried out by me under the supervision of Dr. H. M. A. Herath and a report on this has not being submitted in whole or in part to any university or any other institution for another Degree/Diploma



.....
B. N. Pathiratne

Declaration of Supervisor

I certify that the above statement made by the candidate is true and that this thesis is suitable for submission to the University for the purpose of evaluation



.....
For Dr. H. M. A. Herath

Dr. P. D. Nimel

.....
Date

ABSTRACT

Sri Lanka has become an example for a third world country, with high social achievements. Despite the low-income level, Sri Lanka's high achievements in the health sector have been regarded as a puzzle in development studies and it challenged the popular concept that social indicators follows economic growth. Compared to majority of the other developing nations, Sri Lanka was maintaining a very high public expenditure to GDP ratio for the health sector in the past. The objective of this study is to analyse the relationship between public expenditure on health and infant mortality rate. Three separate models have been constructed to cover the impact of per capita health expenditure on infant mortality rate between 1951 and 2004. According to constructed parsimonious models, there is a strong negative relationship between infant mortality rate and per capita public health expenditure. The amount of units reduced in infant mortality rate by investing one rupee in per capita public health expenditure between 1951 and 1973 can be achieved only by investing 49 rupees in per capita GDP. It is also found that the investment of 1 rupee on per capita public health to reduce the infant mortality rate after 1974 is only equivalent to the spending 5 rupees in per capita GDP. On the other hand the marginal effect of infant mortality rate of an increase of one rupee in per capita GDP has been recorded as four times the increase after 1974. Government involvement on health development is vital for the reduction of infant mortality rate. Curtailing public health expenditure would result a massive damage to the prevailing health services. By abolishing government funding on health for 1 year would result at least in a loss of Sri Lanka's past health achievements for 15 years, which is a strong justification to claim sufficient amounts of public funding for health development annually. Results of a questionnaire survey conducted for public sector middle level managers show that there is a strong support from the public sector managers for the continuation of public fund allocations for health sector development in the future and also to promote the private healthcare facilities. But the majority of managers except medical officers are satisfied with the present level of funds allocated for public health.

Dedication

To my wife Bawanthi and Little Son Okitha

Acknowledgements

Firstly, I would like to extend my warm-hearted gratitude and sincere thanks to my Supervisor, Dr. H. M. A Herath for his inspiration, encouragement, sound advises, good teaching, good company, lots of good ideas and also for his great efforts to explain things clearly.

I sincerely extend my gratitude and thanks to Dr P.D. Nimal Coordinator of the MSc (Management) programme for his continuous support and guidance throughout the dissertation. A special thank to Mr. Duminda Kuruppuarachchi Lecturer, Faculty of Management for his valuable advices and guidance for the statistical data analysis part of the dissertation.

I am also grateful to Mr P. B. Abeykoon, Controller General of Immigration and Emigration and the staff of the Department of Immigration and Emigration of Sri Lanka for their support to make this dissertation a success.

Let me record my thanks to staffs of the resource library of the Ministry of Finance, library of the Sri Lanka Institute for Development Administration and the library of Marga Institute for helping me in many different ways in the literature survey of the dissertation.

Finally, I am forever indebted to my parents and wife Bawanthi for their understanding, endless patience and encouragement when it was most required. To them I dedicate this dissertation.

Table of Contents

List of Tables	xi
List of Figures	xii
Abbreviations.	xiii
Chapter 1: Introduction	1
1.1 Background.....	1
1.2 Objectives of the Study.....	3
1.2.1 Problem Statement.....	7
1.2.2 concise statement of Research Question(s).....	8
1.3 Significance of the study.....	9
1.4 Methodology.....	11
1.5 Limitations.....	12
1.6 Chapter Outline.....	13
Chapter 2: Literature Review	15
2.1 Development of Public Health Services in Sri Lanka	15
2.1.1 Establishment of Public Health Services, 1900-1947	15
2.1.2 Expansion of Public Health Services, 1948-1976	17
2.1.3 Influence of the Open Economy, 1977 onwards.....	20
2.2 Impact of Public Investment on Health Development	24
Chapter 3: Theoretical Framework	27
3.1 Social Welfare	27

3.2 Health development	27
3.3 Measuring health status	28
3.4 Infant Mortality Rate	29
3.5 Public Health Expenditure	30
3.6 Per capita Income	32
3.7 Analysis of Bhalla and Glewwe	36
3.8 Analysis of Anand and Ravallion	39
3.9 Critiques on above models	40
Chapter 4 – Data Analysis	42
4.1 Replication of Anand and Ravallion models	42
4.1.1 Estimation of the empirical models for 1952 to 1981.....	45
4.1.2 Reliability of Anand and Ravallion models.....	46
4.2 Estimation of the empirical models for 1950 to 2004.....	48
4.2.1 Methodology.....	48
4.2.2 Data collection	49
4.2.3 Estimation of imperial models	50
4.3 Economics of derived models	56
4.4 Construction of alternative models	60
4.4.1 Methodology.....	61
4.4.2 Economics of alternative models	64
4.5 Perception survey for Public Sector Managers.....	65
4.5.1 Methodology	66
4.5.2 Results of the perception survey	69

Chapter 5: Results Discussion	71
5.1 Discussion of Results	71
5.1.1 Model for 1951 to 2004	71
5.1.2 Model for 1951 to 1973	72
5.1.3 Model for 1974 to 2004	73
5.2 Increase of public expenditure on Health	76
5.3 Decrease of public expenditure on Health	79
5.4 Impact of per capita GDP	80
5.5 Comparison of Results with Literature	82
5.6 Outcomes of the Perception Survey for Public Sector Managers	83
Chapter 6: Conclusion	89
6.1 Conclusion	89
6.2 Further areas to study	94
References.....	95
Appendices.....	103

List of Tables

Table 2.1 Growth of Health Facilities and Personnel 1930-2000	17
Table 2.2 Health Statistics –1900-2000.....	18
Table 2.3 Expenditure Statistics 1950 - 2000.....	20
Table 2.4 Distribution of Those Seeking Treatments by Source of Treatment	21
Table 2.5 Selected Indicators of Sri Lanka and other Developing Countries.....	22
Table 4.1 Infant Mortality Rate, Constant factor prices Real GDP and Public Health Expenditure/GDP ratio for Sri Lanka from 1950 to 2004.....	43
Table 4.2 Selection of Public Sector Managers for the survey.....	68
Table 4.3 Results of the perception survey conducted for public sector managers..	70
Table 5.1 Public Health Expenditure Statistics.....	77
Table 5.2 Responses of public sector managers to question (7) of the questionnaire	85
Table 5.3 Comparison of responses of public sector managers for questions (6) and (7)	87

List of Figures

Figure 4.1: infant mortality rate, Real GDP per capita and public health spending per capita 1952-1981.....	45
Figure 4.2: infant mortality rate, Real GDP per capita and public health spending per capita 1950-2004.....	49
Figure 4.3: Dispersion of the Log (infant mortality rate – 5) 1950-2004.....	60
Figure 5.1: Sectoral expenditure allocations for year 2006 and 2007.....	78

Abbreviations

DDT	-	Dychloro Dyphenyl Trichloro Ethane
GDP	-	Gross Domestic Production
GNP	-	Gross National Production
HDI	-	Human Development Index
IMR	-	Infant Mortality Rate
LM	-	Lagrange Multiplier
OLS	-	Ordinary Least Square
PCI	-	Per Capita Income
PHE	-	Public Health Expenditure
SLAcS	-	Sri Lanka Accountants Service
SLAS	-	Sri Lanka Administrative Service
SLFP	-	Sri Lanka Freedom Party
SLPS	-	Sri Lanka Planning Service

Chapter 1

Introduction

1.1 Background

Sri Lanka maintained high standards in the human development sector during the last six decades. Population growth rate of the country has decreased from 3.3% in 1950 to 1.1% in 2004. Between 1953 and 2000, the adult literacy rate increased from 65% to 92%, which is the highest at present in the developing world. Sri Lanka's crude birth and death rates have decreased by 55% and 52% respectively over the last sixty years. Infant mortality rate of Sri Lanka in year 2004 was 12 per thousand live births. This has been reduced by 85% since 1950 (Central Bank annual report, 2007).

These statistics gives an indication of a successful story of a well-managed healthcare system. Continuation of the free healthcare policy of successive governments by investing public funds in healthcare, which was initiated as early as 1931, has been the main reason behind this success. Sri Lanka's success in healthcare development also shows that even a poor country could achieve high standards in human development through the political will, commitment and correct policy decisions (Samarasinghe, 1998).

Compared to the majority of other developing nations, Sri Lanka was maintaining a good healthcare system in the recent past. Initiatives for healthcare development were taken

in the colonial era. Although development of basic infrastructure to support the plantation industry was the highest priority of the colonial government, a considerable amount of public funds has been allocated for the development of health and education. As a result, at the time of independence, standard of the health of the population of Sri Lanka was much ahead of her neighbours' and other developing countries' in the world (Administrative report, 1948).

Government policies have changed drastically from a colonial and capitalistic to socialistic and welfare orientation when the Sri Lanka Freedom Party (SLFP) came to power in year 1956 with two other Marxist parties (Hettige, 2000). The highest priority of the SLFP government was to improve the public welfare services. As a result, public investments on welfare programmes were increased. Government also changed the role of facilitator for private investment to a giant public investor to promote the economic sector of the country directly. Government maintained a monopoly in the majority of the services including rail, road and air transportation, ports, banks and other financial services, distribution of essential commodities, posts and telecommunication, power and energy and water supply. Although, frequent political changes took place in the post independence era, impact of these changes on the continuation of social welfare policies of the government was minimal until 1977.

Between 1956 and 1977, the bulk of public investment was allocated to Social welfare including Human Resource Development, which accounted for about 40% of the