THE IMPACT OF GLOBALIZATION ON HEALTH STATUS IN SUB-SAHARAN AFRICA

BY

KENENI GUTEMA NEGERI (B.Sc.)

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ADVISOR:

DAMEN HAILEMARIAM (MD., MPH., PHD.)

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FDI – Foreign Direct Investment

GATS – General Agreement on Trade and Services.

GATT – General Agreement on Trade and Tariffs.

GDP – Gross Domestic Product

GLB – Globalization

ICT-- Information and communication technology

IMF – International Monitory Fund

IMR – Infant Morality Rate

LDC – Least Developed Countries

MDG – Millennium Development Goal

PPP – Purchasing Power Parity

SPS – Sanitary and Phytosenitory Measures

SSA – Sub-Saharan Africa

TBT – Technical Barriers to Trade.

TRIPS – Trade Related Intellectual Property Rights.

UN – United Nation

UNCTAD – The United Nation Conference on Trade and Development.

UNDP – United Nations Development Programme

WB – World Bank

WHO – World Health Organization

WTO – World Trade Organization

ABSTRACT

Globalization (GLB), one of the characteristics that define the beginning of 21st century has received considerable attention in the past two decades. Its effects are suggested to impact on most aspects of economic, political and social life including that of public health. Despite being current national and global concern with such many potential impacts, yet limited attention so far has been given to its effect on health, particularly in developing countries.

Therefore, this empirical study aimed to examine the relationship between GLB and health status outcome in Sub-Saharan Africa (SSA) to contribute to policy making dialogue that can exploits the possible benefits and mitigate GLB's detrimental effects.

The study was confined to the period of 1960-2000 for cross-section of twenty-six SSA. Two latest decades of contemporary GLB were measured with preceding two decades for comparison. A Balanced panel data (time series-Cross section) analytic method was used for its advantage over pure time series and pure cross-section study. Measures of GLB and the traditionally recognized determinant of health were used as an independent variable while Infant Mortality Rate (IMR) was used as a dependent measure of health. The analysis was made using LIMDEP econometric analysis software for its reach varieties of panel data analytic procedures. A 0.05 alpha level was used to report the significant values.

The result revealed the existence of correlations between the presumed determinant of health and measure of health status. Among the determinant factors, export of goods and services (p=0.018), Primary school enrollment of females (p=0.030) and emigration (p=0.020) were found to have significant, inverse relationship with IMR. On the other hand, import of goods and services (p=0.042), tourism (p=0.012), and surprisingly, urbanization (p=0.038) were found to have a positive, significant association.

Whilst possible recommendations were suggested from these findings, the effect of separate dimensions of GLB on health and the other integral features like cultural dimensions of GLBs' influence on health are recommended for further research in the region.

1. INTRODUCTION

Globalization (GLB), one of the characteristics that define the beginning of 21st century, in its economic concept has generally been described by UNDP (1997) as the global intensification of cross border flows of trade, financial capital, people, information and communication technology as well as the emergence of a single, increasingly integrated global economy. Clearer, about this global phenomenon is that it is a multidimensional process encompassing economic, social, cultural, political, and technological components, and that it defines much of the environment with in which health is determined, as Woodward (2002) has explained.

Even if GLB is not a new phenomenon, Labonte & Torgerson (2002) argued that contemporary GLB distinguished from previous one by its scale of movement. At the same time, Robert & Carbaugh (2004) noted, the new wave of GLB was been characterized by an increase in trade, labor migration, and capital (investment) flows among countries. This has began in 1980 and is distinct by an increase in the number of developing countries breaking into world market while others became increasingly marginalized in the world economy and faced increased poverty.

While some analysts of GLB suggest its advantage of income raising and improving standards of living in the developing world, others for example Cornia (2001), claim that growth has been slowing down, particularly for Least Developed Countries (LDC).

Moving into increasingly globalized world, the closely interlinked problems of poverty and health have been the subject of a number of global initiatives since 1996. Among these global initiatives is the UN Summit of Millennium Development Goals (MDGs), which addresses poverty and related health

problems. MDGs considers critical factors that must be met by 2015 by accelerating or decelerating the achievements as described by UN:(2000), and Global Minststries (2005).

Therefore, contemporary GLB has fundamental relation with MDG, in that the key dimensions of GLB, if managed in a way that supports development in all countries, can help to alleviate global poverty. In turn, health, which was been closely related with MDGs aim of poverty reduction and health improvement programme of which three of its goals, namely Goal 4, Goal 5, and Goal 6 explicitly, addresses the health problems. (Details of MDG goals and targets were shown in Annex I).

Considering the coexistence of poverty and health, there is a growing recognition that poor health is one of the most central aspects of poverty as Golden & Reinert (2006) stated, because many features of poverty have a negative impact on health and on access to effective health services. In turn, sickness and disability can affect the productivity of individuals, households and communities; making it more likely they will fall into poverty or be unable to escape poverty for long periods. Moreover, As has been explained by Diaz-Bonilla et al (2002), most of the illnesses associated or aggravated by poverty are infectious diseases such as diarrhea, HIV/AIDS, malaria and tuberculosis, which are associated or aggravated with the lack of income, clean water, sanitation, food, access to medical services and education which characterize poor countries and communities. Thus, as Dollar (2001) commented, rising income of the poor leads to lower mortality, an indication of better health, and also to better female education which contribute further to the health out come.

Sub Saharan Africa has made efforts to incorporate itself into the GLB process as reviewed by Cheru (1997), which is suggestive of the regions' acquiring both potential health gains and problems

associated with GLB as has been committed on The United Nations Conference on Trade and Development (UNCTAD).

Although the linkage between health and GLB, particularly the causal effect of GLB on health of population is increasingly the focus of research as well as, debate and policy analysis at both national and international levels as Labonte & Spiegr (2001) explained, in many respects, however, this still is a new field of inquiry and empirical analysis.

Despite the fact that many researches are needed to better understand the ways in which contemporary GLB can lead to better health, especially for the poor, there is scarcity of literature with respect to its influence on the health status in developing countries. Even less is known about the health-determining context of GLB in Sub-Saharan Africa (SSA).

Therefore, this study is believed to be an input in filling this gap as the findings can contribute to the level of evidence of possible effects of GLB on the health status of developing countries.

2. LITERATURE REVIEW

Literatures reviewed were organized in the following order. First, health status of SSA followed by general notion of GLB and health. Then, the linkage of key dimensions of GLB to health preceding conceptual framework for analysis will pursue.

2.1. Trends of health status in SSA

Cornia & Mwabu (1997) examined trends of health status in SSA. The authors noted that in almost all countries of the World dramatic declines in mortality was witnessed in 20th century regardless of initial levels, socio-economic circumstances and development strategies. In the advanced economies, the declines were already apparent at the end of 19th century. In the developing countries, substantial declines have taken place after the end of Second World War. The magnitude of the initial decline was also impressive as to engender widespread speculation during the 1960s and 1970s that the mortality gap between the developed and developing countries would narrow significantly by the end of 20th century. This view was encouraged by the fact that some of the most pronounced reductions were occurring in countries with relatively law economy.

At independence, early 1960s most SSA inherited weak and dualistic health care structures being almost perfect mirror images of the domestic economies, with the traditional and modern sectors co-existing side by side. Modern health services were understated, distorted and located mainly in urban areas. In consequence, the bulk of the population, which resided in rural areas, relied on traditional medicine to meet its basic health needs. Apart from some vertical disease eradication programme, broad based public health efforts were insignificant. Curative care was equally under developed. For example the average number of people per physician varied between 12,000 and 100,000 compared

to a south Asian average of 6000.As a result compared to other countries with similar economic level IMR was considerably high.

However, according to theses authors and Cornia (2001), between the early 1960 and the early 1980s, most SSA realized substantial advances in extending health care services coverage. Large-scale campaigns were implemented to reduce the incidence of infectious diseases and health worker training was upgraded in most countries. Thus, there was a sustained progressive decline in IMR in the region over the period (1960 –1980). The average linear decline was faster, 2.9/1000 per year.

The rapid descent in the mortality rates of infant recorded over 1960-80 was followed by a major slow down during the consecutive decades. Sanders (1999) explained the condition, saying, while at an aggregate level health status has improved in SSA over the last four decades; between 1981 and 1999 IMR has decreased by 15.1% as compared with 26.9% for the world as a whole. Further more the author also noted that in 1999, seven of the 48 SSA countries had a lower life expectancy than in 1970s.

Similarly, Cornia & Mwabu (1997) argued during the last two decades the average yearly rate of decline in infant mortality in Africa was substantially lower than the rate recorded over the previous two decades, and was much smaller than normally observed in developing countries. According to these author, the average yearly decline of IMR in SSA during the period was –2.13, - 2.07 for the periods of 1960 –1970 and 1970- 80 respectively, while, the last two decades were –1.7 and –1.22 for the 1st and 2nd decade respectively.

Therefore, SSA occupies a peculiarly central place in this narrative of GLB and health because the global health crises of the past decades have over whelmingly been concentrated in Africa.

2.2. Globalization and health

According to Labonte & Torgerson (2002), GLB is not a new phenomenon and its era can be contrasted with the development path pursued in prior decades, which was generally more inward looking. Prior to 1980, many countries quite deliberately adopted policies that were designed to illustrate their economies from the world market in order to give their domestic industries an opportunity to advance to the point where they could be competitive. The author further elucidated that during the past twenty years (1980-2000), there was an increased global market integration reversing the trend of the previous two decades (1960-1980).

Thus, contemporary GLB is distinguished from previous ones by the scale of movements in the liberalization of border trade in goods and services, flow of finance capital, labor, information, communication and technology across national boundaries as described by Markweisbrot et al (2001) and Robert & Carbaugh (2004).

Besides, the increasing cross border flows of the dimensions of GLB have a special contribution in creating pressures for the emergence of international institutions like World trade organization (WTO), International Monitory Fund (IMF) and World Bank (WB) and rules regulating national policies towards such opening of national boarders; thus promoting a further increase in the level of cross-border flows as stated by Woodward et al (2003).

Opinions differ with regard to the direct and indirect benefits and detriments of GLB for health. Optimists argue that global integration facilitate economic growth and economic security, which would benefit health. They base themselves on the results of several studies arguing, on one side, inequalities between and with in countries have decreased due to GLB which

promotes health as Frank & Romer (1999) discussed. Also Dollar (2001) said, although other nations or households might become richer, absolute poverty is reduced and that this is beneficial for the health of the poor.

Golden & Reinert (2006) further argued that global poverty, which is a widespread phenomenon even in its extreme form, has shown some recent trend toward leveling off and even declining somewhat since 1981. According to reports from these authors, estimates from data covering 1981 to 2001 period including both the poor (those living on less than US$ 2 per day) and the extremely poor (those living on less than US$ 1 per day) in terms of 1985 purchasing power parity (PPP) dollars conveyed two news. Regarding the number of the poor there has been a recent leveling off for the first time since the early 19th century at approximately 2.7 billion persons. The number of extremely poor has finally shown some down ward movement to approximately 1.1 billion. The authors in addition noted that most of this decline is primarily attributed to developments in China, and to a lesser extent in India. However, the cases of other developing regions, where majority of the extremely poor people resides, for example Africa was not explained much in this regard.

Similarly, Ravallion (2003) argued that the rate of progress against absolute poverty was noticeable in current period of globalization and if it is maintained, the MDGs will be achieved on time at aggregate level.

Diaz Bonilla (2002) noted that the relationship between GLB and economic growth, income distribution and poverty provides the general background for health outcomes. If growth leads to poverty reduction, health status should improve. Because as the author noted, higher incomes at the individual level will facilitate access to health and health related goods and services. Growth also

provides social resources to supply those goods and services including government revenues. On the other hand, there is also a strong reverse link going from improved health conditions to higher economic growth.

Dollar (2001) looked largely on the indirect effect of GLB on health in terms of economic integration. He concludes that economic integration is good for national income growth, which in turn, is good for population health. The author further explains that at macro level there is no evidence that socioeconomic inequalities widen as a result of opening up the economy to trade and foreign direct investment, that some forms of economic integration can be harmful for health, for example, the spread of HIV/AIDS through traveling and tourism, and finally, that international rules and institutions need to be more beneficial to poor countries.

Agenor (2002) examined the extent to which GLB may hurt the poor using measures of trade openness and financial integration. The author found that a non-linear relationship appear to exist indicating that GLB at low levels does hurt the poor while the opposite is true at higher level of GLB.

Wei and Wu (2002) analyzed GLB in terms of economic integration and used trade levels of gross domestic product to explain health as measured by IMR and Life expectancy. The authors' finding suggest that trade measures do have a positive and significant impact on health controlling for income and other determinants of health.

On the other side, pessimists are worried about the health effect of contemporary GLB. They argue that several aspects of GLB are affecting the health status adversely, by increasing the gap in health

in equality with in and between countries left out of the health benefits or GLB. For example, a report by WHO (2001) shows the inequalities followed globalization processes, which was been reflected on health status of the poor directly or indirectly.

Cronia (2001) sees effects of economic integration on health suggesting that GLB has been favorable to a handful of fast growing economies, notably in Asia, but much less favorable to other economies, including African, and Latin American. According to the author, in these region, unequal patterns of growth and sluggish health development results from deregulation and market liberalizations. Similarly, Drehers' (2002) finding suggest that GLB has a positive effect on economic growth, but not sufficiently so to reduce poverty.

Woodward (1997) and Lee (2002) suggested the potential health problem associated with GLB which includes rapid spread of infectious diseases like HIV/AIDS, increased adoption of unhealthy life styles related to food and nutrition like obesity, alcohol consumption, and increased tobacco related diseases. Diaz-Bonilla et al (2002) focused on the economic growth preceded by GLB that rely upon finite and rapidly diminishing natural resources, and produces toxic emissions with both direct and indirect human health effect which includes water pollution from populated areas industry and intensive agriculture; and urban air pollution from motorcars, coal power station and industry.

While the above reviewed literature enlightens the general notion of GLB's influence, a more look into particular features of GLB and health seems more rational. Hence, focus is made on the next part.

2.3. Key dimensions of globalization and health

Of the key dimensions that characterize the changing nature and qualities of GLB, as described by Golden & Reinert (2006) and Stiglitiz (2003), are increased cross-boarder flows of trade, financial capital, people, and idea/ information. Further identification of indicators for these dimensions is imperative because the dimensions are more general phenomenon. Therefore, the recent work of Lockwood & Redoano (2005), Kearny, (2005) and Bhandari & Heshmati (2005), all similarly clarify and presented indicators for the most significant aspects of GLB as identified and used for analysis in this study. These are:

- Trade flow – Export and import of goods and services
- Financial capital - Foreign direct investment (inflows and outflows)
- People - International travel and tourism arrived and departure and number of migrant
- Idea/information proxies -Telephone main line, internet users

The over all assumption of taking these indicators (proxies) is that the direct and indirect influence of contemporary GLB on health status can reasonably be analyzed using this measures.

At this junction point, however, reviewing pertinent literatures is more logical to sight the profound effect of contemporary GLB on health through its aforementioned key dimensions. Besides, an elaboration of these has also been made on conceptual framework for analysis as well.

2.3.1. Impact of Trade on Health

Trade is the exchange of goods and services among countries. International trade can have direct health and safety effects on poor individuals, which can be beneficial or detrimental. Golden & Reinert (2006) discussed the most important benefits, imports of medicines and medical products; in most cases, it is not possible for developing countries to produce the entire range of the more basic

medical supplies, medical equipment and pharmaceuticals.Besides, Woodward (1997) noted that drugs typically represent around 20-30 percent of total recurrent costs at the facility level, which is, second only to personnel expenditure.

On the other hand, the authors also suggested that many developing countries import (legally or illegally) large amount of weaponry and export sexual services both of which can have negative outcomes for the health and safety of poor individuals. The production processes of some export industries can adversely affect the health of workers in those industries, compromising the health of workers. A small but important amount of trade involves hazardous waste dumping, which can cause serious environmental effects as well.

Sein &Rim (2001) and Lee (2002) commented that international trade in food and food related products has become markedly increased to over US $ 400 billion in recent years and there is a growing threat that this kind of trade might lead to a spread of food-born diseases. Contamination of food by hazardous material such as microbial pathogens, bio toxins, pesticide and other chemical substances and recently genetically modified food and food products, which rescued health status of the utilizers.

Evans et al (2001) in a case study from Tonga investigated the potential effects from liberalized trade on food consumption patterns and nutritional intake. The authors forwarded that further liberalization of trade can have a negative effect on the possibility of keeping such food at bay, which in turn presents important challenges to public health.

Even if there is a dearth of literatures regarding Africa, there are reports from other developing region of the world. For example, as Golden & Reinert (2006) noted, the export of Nomegan, an insecticide used in banana production is a case in point. This insecticide was banned in 1979 in the United States because it causes skin diseases, sterility and birth defects. Despite this, it was used in Central American banana production through the 1980s and in some cases through the mid 1990s. Banana workers in Central America began to report severe symptoms including anencephaly. In 2004, over 1000 affected Nicaraguan workers marched to their capital city, to demand for compensation and similar concerns were voiced in Honduras and in some cut flower export industries of Colombia and Ecuador again involving in the use of insecticides.

According to WHO (2001) estimate, nearly one-third of pesticides marketed in developing countries do not meet international standards. These, as suggested by Golden & Reinert (2006) frequently contain hazardous substances and impurities that have already been banned or severely restricted elsewhere. The Import of hazardous waste into poor countries is motivated by lower disposal costs in those countries as well as by growing opposition to disposal in rich countries as Golden & Reinert (2006) stated.

2.3.2. Impact of Financial Flows (FDI) on health

Financial capital flows involve the exchange of assets or financial instruments between countries. Woodward (2003) analyzed that the proportion of net financial flows going from the public sector in developed countries to the public sector in developing countries fell from 56% in 1990 to 9% in 2000. While those going from the private sector to the private sector, which were only 18% in 1980 rose from 38% in 1990 to 82% in 2000. This shift has led to skewing of the distribution of

international financial flows away from sub-Saharan Africa and towards larger and better off developing countries in Latin America and South East Asia.

Golden & Reinert (2006) explained that FDI is among the legitimate subcomponents of the financial capital flows. Although FDI can affect poor people directly by generating employment and improving technology, human capital and promoting competition much of its effect on poverty is indirect. Its adverse effect could be through unsafe working conditions and environmental destruction. Thus the extent to which poor people benefit varies greatly by country sector, and firm. Hence, the effect of this aspect on poverty provides part of the general background of health outcome.

A report of WHO (2001) noticed that FDI in Hospitals or diagnostic centers is likely to improve the delivery of health services especially for the affluent segments of the population in developing countries. As a result of greater use of the private sector, there could be a possible shift of public resources benefiting the poor. Thus, the health system in countries with foreign commercial presence would have the risk of two tiers, with different systems serving different population groups. On the other hand, FDI could similarly siphon off trained staff from public facilities to lesser availability of essential health services for those that need those most.

2.3.3. Impact of Flow of People on health

It has widely been agreed that indicators for dimensions of GLB are: international travel and tourism (arrival and departure), and number of migrants. As Dollar (2001) and Lee (2002) noted increased volume of cross boarder travel has major implications for the spread of disease, and risky behaviors for diseases. The author suggested that the AIDS epidemic is the most dramatic example in recent times of a deadly disease spread through travel and migration. Similarly, Rodriguez (2001) indicated

that travelers and local populations are also vulnerable to death and disability due to accidents, violence and injuries, chronic diseases such as those related to sex tourism.

Stiglitz (2003) argued that migration is a central and under appreciated feature of GLB. According to this author it has the potential to help poor people, but it also can hurt them in a variety of ways. Migrants send remittances to their home countries and the remittances directly contribute to alleviating poverty. In few instances, the technology and entrepreneurship of the Diasporas who have succeeded abroad and returned to the home country has played a significant role. Simillarly, Golden & Reinert (2006) said that, the most common benefit of emigration to source countries is the flow of remittances sent by migrant workers to friends, and families back home. In 2004, the value of these remittances to developing countries was estimated at US $ 160 billion; over five times the level in 1990. However, many migrants, including refugees and undocumented workers, remain vulnerable to discrimination and abuse.

Bach (2003), highlighted another important feature of GLB. He noted that labor market in health care which is becoming an area of high concern, reflects shortage of staff and skill shortages in source countries of Africa, while addressing problem of staff shortages in destination countries.

The out flow of young, skilled workers especially in the area of medical professionals can undermine health systems in source countries while these systems are trying to combat public health crises such as AIDS, tuberculosis, and malaria. Chayda (2002) investigated this, saying that the bulk of cross-boarder flows of health care professional take the form of permanent migration, for example, an estimated 10,000 health professionals emigrated from South Africa between 1989 and 1997, and is about one-half of the health profession graduates each year emigrates. Similarly, the author also

noticed that over 10,000 medical and biotechnology experts emigrated from Egypt, and out of 1200 physicians trained in Zimbabwe during the 1990s only 360 were practicing in the country in 2001. Some 60% of Ghanaian physicians trained locally during 1980s have also left the country, and in the Sudan an estimated 17% of physicians and dentists left the country between 1985 and 1990.

Labonte & Torgerson (2002) also noted that an increase in the international mobility of health professionals could also force an increase in the salaries and increasing training requirements to allow departing staff to replace.

At last, Lowenson (2001) discusses GLB and occupational health with examples from South Africa. The author claims to see a pattern of reduced work place conditions, in turn affecting employers, which require public health policies to focus on social protection of the affected individuals.

2.3.4. Impact of Flow of Idea/ Information on Health

The flow of idea/information can be closely related to other dimensions of GLB. Fixing this broad scope on its direct health influences, a number of researchers commented. Chandrasekhar and Ghosh (2001) suggested the potential contribution of information communication and technology to health, stemming from three sources; the first is their role as an instrument for continuing education, and life long learning that will enable health professionals in developing countries in advancing their knowledge. The second is their use as a delivery mechanism to poor and remote locations of a wide variety of services varying from improved public health education to emergency advice and management including epidemic management and mitigating the consequence of natural disasters. The third source is their potential use as a mechanism to increase the transparency and efficiency of governance, which would in turn, improves the available delivery of publicly provided health services.

The currently emerging service, Tele medicine is another significant advantage of this factor, though it is limited in developing countries. However, the Internet sale of medicines raises questions about bypassing the regulatory provisions of countries, as well as the prescription of medicine for cross-boarder sale. The cross boarder spread of ideas /information covers the unprecedented pace of the spread of culture through films, food and lifestyle, including global branding, other multinational firms use advertising effectively and extensively to target youth and women in developing countries. Likewise, Labonte & Torgerson (2002) forwarded that diffusion of new knowledge and technology that can aid disease surveillance, treatment and prevention as an advantage of GLB to health.

Patrica & Mechael (2002) argued that the flow of medical information and idea is shifting with increased access to the Internet, mobile phones and data retrieval systems. Such interactions followed by behavioral adaptations that can have potential effects on public health, health service delivery and social determinants of health.

2.4 Globalization and health, a frame work for analysis

To analyze the impact of GLB on health, reviewing the recent works and applying the accepted frameworks that link GLB to health is imperative. Though literatures pertaining to this are scarce, a special theme issue of WHO Bulletin, which is almost entirely dedicated to GLB and health, is a recent source of work presenting framework for analysis by Woodward et al (2001). The schematic representation of this framework is displayed in Annex II.

Other two frameworks were also compared but both frameworks are more complex and less defined in linking GLB to health. For example, Huynen et al (2005) emphasized uniquely on the contextual part, but less detailed for framing such analysis. Labonte & Torgerson (2002) focused exceptionally

on international governance at large but the concept of proximal health determinants were less emphasized making such study uneasy to frame.

Therefore, the work of Woodward et al, which has been agreed upon for its comprehensiveness and for providing useful checklist of GLB and its potential effects on health that assists researchers and policymakers by focusing on the relevant aspects, was preferred as a bottom line for this study. Furthermore, Labonte & Torgerson (2002), an author with different framework has also acknowledged the comprehensiveness of Woodward's work.

According to Woodward et al (2001), health status is proximally determined by individual level health risks, population levels health influences and the health care system. Besides, household economy strongly influences health status of individuals and health care system and a bi-directional link exists between these determinants at all levels.

Individual level health risks include behavioral, environmental and nutritional related risks. While population level influencing factors include socio-cultural, environmental and infectious agents and presence of hazardous products, that of health care system aspects are health service prices, quality and access to health services following the national policy (Annex II). The framework displays multiple linkages of GLB to health which exist directly and indirectly, of which the following were explained.

2.4.1. The Direct Effects

2.4.1.1. At individual and population level

The spread of communicable diseases, both food born and non-food born, illustrates the direct effect of GLB on health at individual and population level. The growth in international travel with more than two million people crossing international boards each day has contributed to carrying diseases into new areas. Such unprecedented speed and volume of global travel has resulted in greater vulnerability to the spread of old, new and reemerging infectious diseases. The increased cross-boarder of migrants in search of employment, or because of conflict, often in an illegal or undocumented manner tends to leave the migrants not covered by the health services of the receiving country, and is vulnerable to disease and could serve as a source for the spread of disease.

Due to the wide spread flow of people, information and ideas, life styles also spread through out the globe. It is widely acknowledged that several modern behavioral factors such as unhealthy diet, physical inactivity, smoking, alcohol misuse and the use of illicit drugs are having a profound effect on human health. Transnational social interactions, formal or informal, are also gaining importance in this regard through Telecommunication, Internet, Television and radio, which play an important role in establishing global net works.

4.2.1.2. At Health System level

At Health system level health services are increasingly influenced by GLB induced changes in health care. Economic changes including policies, trade, migration of professional and knowledge are major areas of these influences. Additionally Government budget for health access to health goods and products (drugs, vaccines, medical supplies, etc) are influenced.

Global governance structures are gaining more and more importance in formulating direct health related policies. According to Dodgson et al (2002) the most important organizations in global health governance are the WHO, WB and WTO.

Although WHO aims at assisting government to strengthen health care services, government involvement in health care policies has been decreasing and subsequently medical institutions are more and more confronted with neo liberal economic system. Thus health is increasingly perceived as a private good leaving the law of the market to determine whose health is profitable for investment and whose health is not. According to collines (2002) there are populations who are no longer protected by a centralized health sector that provides universal access to every one and some groups are even denied the most basic medical services following the privatization of health services.

One of the international institutions, which assists and supports the increase of global economic integration having profound implications for health, is WTO. Established to promote freer trade, WTO is responsible for the new set of rules governing world trade. There are five multilateral agreements on trade under WTO that are relevant to public health.

1. The General Agreement on Tariffs and Trade (GATT) updated during the Uruguay round of trade talks; GATT can affect the international flow of health goods or products. Its provisions allow countries to ban the import of products if necessary to protect public health, as long as such bans are not applied in ways that discriminate between countries of origin or between domestic and foreign-made products and do not restrict international trade any more than is necessary to achieve their public health objectives as noted by Woodward (2003).

2. Trade Related Aspects of Intellectual Property Rights (TRIPS)

TRIPS set the minimum standards of protection for intellectual property rights including patents copy rights trademarks and industrial designs. Though intended to strengthen incentives to create new knowledge, it may make patented drugs less affordable and accessible to developing countries by prohibiting access to the cheaper generic drugs. Dollar (2001) indicated the controversy over antiretroviral drugs in developing countries, epitomizing this.

3. Sanitary and Phytosanitory Measures (SPS)

According to Woodward (2003), SPS affects national policies for food safety. One particularly concern is the effect of unnecessary strict food safety conditions on the export prospects of developing countries.

4. Agreement on Technical Barriers to Trade (TBT)

TBT has implication for the production, labeling packaging, and quality standards of pharmaceuticals biological agents, food staffs and other consumer products.

5. General Agreement on Trade in Services (GATS)

GATS covers the movement of consumers and providers across boarders to receive and supply health care, foreign direct investment in health and the emerging areas of e-commerce and tele-health. It extends the concept of cross boarder trade to include, for example, investments in the hospital sectors, thus potentially opening up health systems to privatization. This may facilitate access to high- level services by the better off; but it may also divert human resources from public services to more profitable, private services, there by reducing staffing levels, lowering staff quality and raising salary costs for the public sector.

2.4.2. The Indirect Effects

Indirectly, GLB, at the general level may influence national policy, regulatory and institutional issues that affect the health inputs, services and outputs, health related infrastructures including sanitation, potable water, quality of housing roads and communications, and these are among important facilitating factors in access to health and health services.

The expected change in economic growth resulting from GLB, as mentioned earlier, a change with level of percapita income, affects public and private sector participation in financing, insuring, and delivering of health services at household and national levels that the funding construction of health related infrastructures

Of the global institutions, WB plays an important role in the field of health for economic development and focuses on reaching the MDGs. Huynen et al (2005) said that it also influences health related policies together with international Monetary Fund (IMF) through poverty reduction strategy approach.

Moreover, the direct effect of economic GLB on health explained early may also be seen indirectly by altering the balance of public and private sector functions. Of these, Process like international migration of health workers, expansion of trade in health care equipment, and inputs resulting from trade liberalization, such as reduction in tariffs, the implementation of patents for medicines. In addition, other changes agreement in TRIPs and other WTO issues including government procurement. The lowering of barriers to imports of goods such as drugs, medical equipment, and other consumables may reduce the prices of services at health care system. Conversely, on top of the

direct effect outlined earlier the monopoly granting effects of TRIPs agreement may increase the price of drugs, vaccines and other patented inputs.

Finally, in mediating the proximal effect of GLB, on health, the prominent contribution of Grossman (1972) demand for health model has a considerable effect. In this theory, determinants of health include social, economic, demographic and environmental factors.

Of the social factors, according to Gbesemete & Jonsson (1993), education is pointed out as one of the most determinants of health. It influences a population's use of available health and medical services. Educated population seems to be more receptive to medical, sanitary and nutritional information that leads to increased longevity. Female education is likely to make use of numerous alternatives in childcare and the treatment of illness that are available in rapidly changing society. Females are also more likely to take personal responsibility in such fields as birth control.

Another widely accepted representative of economic factor is GDP, which indicates level of income. It has been argued by WHO (1992) that as income increases health levels tend to increase or vice versa. Because, increased resources at national level allow development of service either through infrastructure or improved facilities in health and non-health sectors. At household level, income is the active constraint both for the level of nutrition and other health related expenditures and for utilization of those health services that may be available.

Of the socio-demographic aspects, fertility has been argued to be an important influence on health particularly in developing countries. The closer the birth interval the higher the risk of mortality for existing young children and the newly born, indirectly, there may also be lagged effects through changes in desired family size and availability of more health resources for fewer children.

One aspect of environmental factor that has also been discussed earlier is urbanization that could be a proxy for a collection of potential positive and negative health related factors. On the positive side, urbanization avails access to medical care and health related services and information. On the other side, as Owen & Roberts (2005) discussed, urbanization is associated with pollution and congestion that have adverse effects on health. The rapid growth of urbanization is not well regulated and is environmentally hazardous with huge gaps in social services and infrastructures. Urban centers also are the one, which connect the world through the process of GLB. Hence the importance of urban public health is also becoming a main concern in understanding global and national health challenges.

Therefore, having this conceptual framework as groundwork of this study, stepping to the empirical analysis could be reasonable, by highlighting superior analytic approaches and software for such macro level analysis.

In establishing causal relationships, as Elifsson (1998) and Motulsky (1995) described, regression analysis is a well recognized procedure for the best prediction of dependent variable from multiple independent variables. Moreover, in a cause and effect analysis Yaffee (2003), suggests panel data analytic approach, the combination of time series and cross sectional-study, as an increasingly popular form of longitudinal data analysis among econometric and other social science research method.

According to Hsiao (1985), the approach has advantages over the two traditional methods (pure time series and pure cross section) by offering first; the number of observations is typically much larger in providing more reliable parameter estimates. Second, the approach enables to specify and test more sophisticated models incorporating less restrictive behavioral assumptions and third,in controlling

unobserved hetrogenity. Likewise, Gujarati (2003) suggests that, with repeated observations of enough cross-sections, panel analysis permits the researcher to study the dynamics of change with in time series. As Green (1997) noted, the method also enhances the quality and quantity of data in ways that would be impossible using only one of the two dimensions.

Regarding the Software, Greene (2002) LIMDEP, econometric software is preferred in this study for its variety of panel analytic procedures. Student version 7.0.3 windows interface William H Green, was used, as it is the accessible version.

Taking its name from limited dependent variables, LIMDEP is a complete package for estimating and analyzing econometric models. It is primarly oriented toward panel data and cross section. But, most standard problems in time series analysis can be handled as well. Basic procedures for data analysis contained in the program include: descriptive statistics, stratification, multiple linear regression and stepwise regression.

We can also model the sorts of extension of the linear regression model normally needed for research and teaching such as one and two way random and fixed effects for balanced or unbalanced panel data, non-linear single and multiple equations, regression models. LIMDEP is also best known for its extensive menu of programs for estimating the parameter, of non-linear models for qualitative and limited dependent variables.

As the author, has quoted it from Journal of applied Econometric, January 1994, Harry Parsch said "As a specialized programme for the estimation of panel data models with fixed or random effects LIMDEP currently has few (if any) serious competitors." Another quote by the same author is that of Jeffery Osleeb, the American Geographer stated, "The LIMDEP Package provides the greatest range of analytical capabilities that I have encountered in any package."

3. OBJECTIVES AND HYPOTHESIS OF THE STUDY

3.1. Objectives

3.1.1. General Objective

The general objective of the study is to examine the extent to which GLB affects the health status in SSA for ultimate goal of health development.

3.1.2. Specific Objectives

The specific objectives are:

1. To assess whether a correlation at aggregate level exists between measures of GLB and health in SSA.
2. To estimate the strength of a possible associations between measures of GLB and health status in the region.
3. To forecast the role of GLB on health status in SSA

3.2. Hypothesis

The hypothesis posed in this study is that some aspects of contemporary GLB have an effect on health status in SSA.

4. METHODOLOGY

4.1 The Conceptual Framework of the Study

The identification and quantification of all possible health effect of GLB goes beyond the scope of this study. However, the foundation of this conceptual model arises first, from the broader definition of GLB indicated in the introductory part as a bottom line. Second, from the recent widely accepted framework of Woodward et al (2001) description of contemporary GLB link to health reviewed in the literature. Third, consideration of the important work of Grossman (1972) demand for health model, a theory which is increasingly a standard begging point for research regarding potential health determinants.

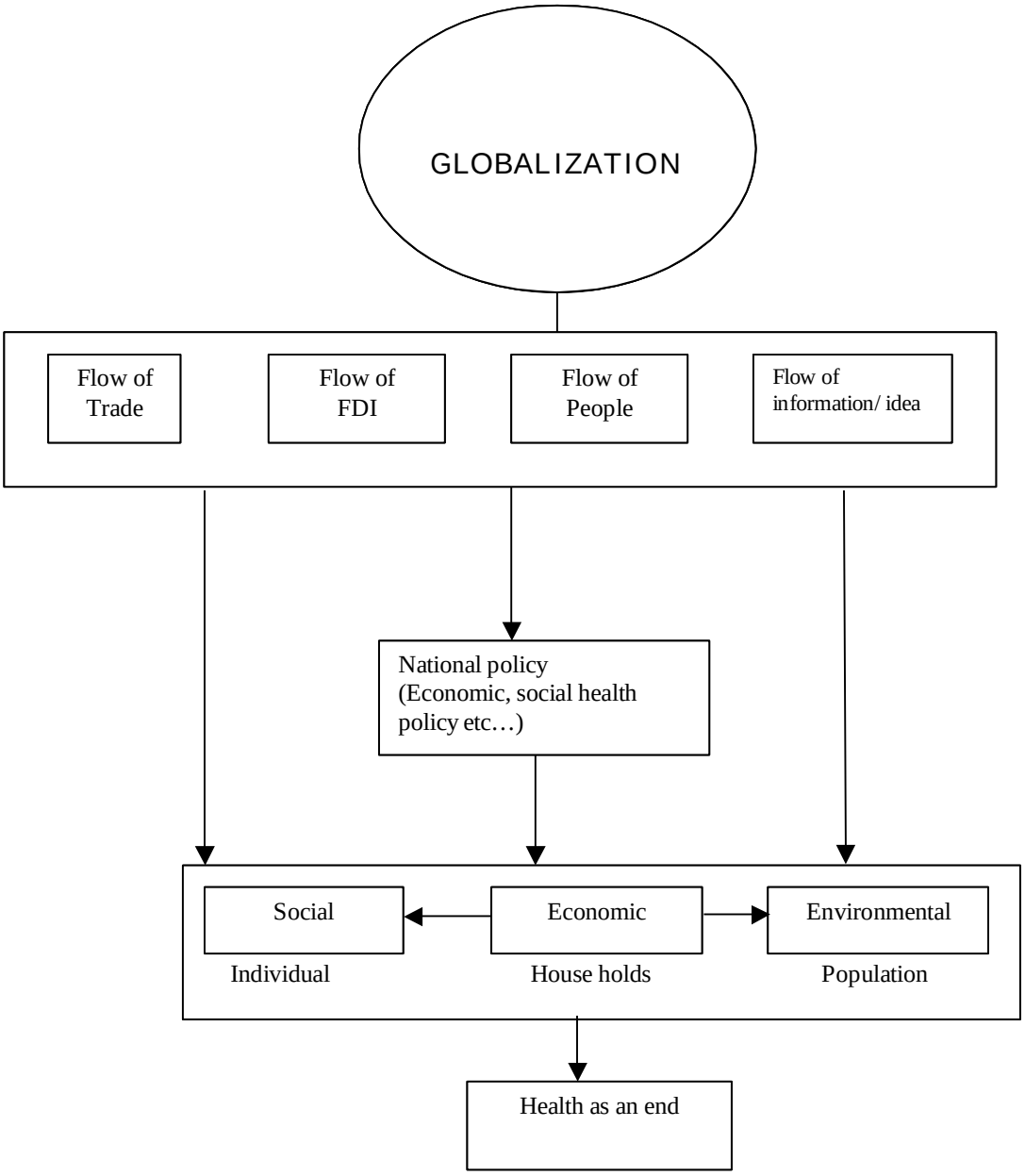
Therefore, the general concept is that there is an increasing cross-border flow of trade, financial capital, people and information/idea. These have created pressure for the development of international institutions and rules regulating national policies towards such flows. In turn, these have contributed to the opening of national boarders thus promoting further increase in the level of cross boarder flows. These processes have direct and indirect influence on health, proximally at individual, population, household and health care system level.

Besides, the widely recognized traditional health determinants indicated by Grossman Health production function model (social, economic and environmental factors) were considered to be augmented with the health related contemporary GLB variables which are a newly emerging health determinant and not included in his model.

Fig 4.1 shows a condensed form of conceptual framework for this particular study. Of note is that the framework is of eclectic type. On one hand, variables not included in Grossman model were captured for the fact that contemporary GLB appeared after the development of the model, and on

the other hand, some variables e.g. genetic factors (though not measured in this study) are not found in Woodward et al conceptual framework. Further more, while Grossman's model is the widely accepted mathematical (theoretical) model; that of Woodward et al is a conceptual framework leading to such work. Therefore, the eclectic nature of the presented conceptual model for this study seems logically acceptable as it is also empirically tested in this study.

Fig: 4.1.Conceptual framework; Globalization as a Determinant of Health.



4.2. Data

The data used in this study was collected from the World Bank's World Development Indicators, 2002(unless otherwise noted) on CD-ROM, because WB is internationally recognized organization with better data compilation system particularly for longer periods of time. In addition, the previous macro level studies used it as a data sources

The study is confined to the period of 1960-2000 for a cross section of 26 SSA. The countries were purposively selected for their being in the same geographic region. The year 1960 as an initial period of study because of the fact that these countries became independent in the late fifties or early sixties and the quality of data prior to this year was generally quite poor. On the other hand, the period between 1960 and 1980, which is a relatively closed economic system, and the time between 1980 and 2000 were been separately considered for comparison. The intent of using the two periods is to examine the performance of countries in the years in which they were following policies associated with globalization with years in which they were pursuing a less outward-oriented development path.

There were a number of caveats with regard to the data quality. First, for many variables there are no data available for certain countries. Second, data are not available for every variable for every year. These are not unusual when dealing with a large dataset like that of the current study.

To contest this, countries with relatively complete data were selected. Accordingly, thirty countries were identified. Like wise, variables lacking data for continuous years, for example, the number of internet users were also excluded but valid variables with relatively better data were kept remain. In doing so, 68% of the observations were present. In dealing with the remaining missed data, linear interpolation and linear trend at a point were been used assisted by SPSS 11.00 software package and Excel 4.0 work sheet.

Furthermore, to minimize the problems of outliers that distort the findings, possibly arising from variation in socio economic status, all the four middle-income class countries (those with a per capita income of more than US$735) according to WB standard were excluded. These are South Africa, Botswana, Mauritius and Swaziland.

Therefore, the analysis of this study included observations of 26 low-income countries (those with a per capita income of less than US$ 735) according to WB standard definition. These are Benin, Burkina Faso, Burundi, Cameroon, central Africa R., Chad, Congo.R., Coted'ivoire, Gambia The, Ghana, Kenya, Lesotho, Madagascar, Malawi, Mali. Mauritania, Niger, Nigeria, Rwanda, Senegal, Sudan, Tanzania, Togo, Uganda, Zambia, Zimbabwe. (Annex iii depicts the map of these countries)

The variables observed and their descriptions are as follows.

Infant mortality rate (IMR) is the number of infants dying before reaching one year of age, per 1,000 live births in the same year.

Export of goods and services % of GDP (EXPORT); represent the value of all goods and other market services provided to the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication, construction, financial, information, business, personal, and government services. They exclude labor and property income (formerly called factor services) as well as transfer payments.

Imports of goods and services % of GDP (IMPORT) represent the value of all goods and other market services received from the rest of the world. They include the value of merchandise, freight, insurance, transport, travel, royalties, license fees, and other services, such as communication,

construction, financial, information, business, personal, and government services. They exclude labor and property income (formerly called factor services) as well as transfer payments.

Foreign direct investment, net inflows % of GDP (FDI) is net inflows of investment to acquire a lasting management interest (10 percent or more of voting stock) in an enterprise operating in an economy other than that of the investor. It is the sum of equity capital, reinvestment of earnings, other long-term capital, and short-term capital as shown in the balance of payments. This series shows net inflows in the reporting economy.

International emigration (EMIGR) is number of persons departing from countries of origin, either temporarily or permanently to seek employment, education or to escape adverse political environments (obtained from net migration stock, WB, World development indicators 2005). International tourism, number of arrivals (TOURISM) are the number of visitors who travel to country other than that where they have their usual residence for a period not exceeding 12 months and whose main purpose in visiting is other than an activity remunerated from within the country visited.

Telephone mainlines per 1,000 people (TELE) are telephone lines connecting a customer's equipment to the public switched telephone network. Data are presented per 1,000 people for the entire country.

School enrollment, primary, female % gross (SEPFG) is the ratio of total enrollment, regardless of age, to the population of the age group that officially corresponds to the level of education shown. Primary education provides children with basic reading, writing, and mathematics skills along with an elementary understanding of such subjects as history, geography, natural science, social science, art, and music.

GDP per capita, PPP (current international $) based on purchasing power parity (GDPppp) is gross domestic product converted to international dollars using purchasing power parity rates. An international dollar has the same purchasing power over GDP as the U.S. dollar has in the United States. GDP is the sum of gross value added by all resident producers in the economy plus any product taxes and minus any subsidies not included in the value of the products. It is calculated without making deductions for depreciation of fabricated assets or for depletion and degradation of natural resources. Data are in current international dollars.

Urbanization proxied by urban population percentage of total (URBUN) is the share of the total population living in areas defined as urban in each country.

Fertility rate, total births per woman (TFR) represents the number of children that would be born to a woman if she were to live to the end of her childbearing years and bear children in accordance with prevailing age-specific fertility rates.

On top of the reviewed literatures, the current prominent work of Warwick University Center for the Study of Globalization and Regionalization (CSGR), UK, has developed and used these variables, and Foreign Policy Magazine (FPM) globalization index on work for the last four consecutive years, therefore, the variables are reasonably valid and reliable. Like wise the traditional variables (Gross man) included are all under use along with other models like epidemic and pandemic model for long period of time.

Principal investigator, assisted by two computer literate people organized the data. Then coded, and entered to computer for analysis. Methods like double entry and frequency table were also made in controlling data quality.

4.3. Model Specification

Multiple regression models usually take the following form:

$$Y = b_0 + b_1X_1 + b_2X_2 \text{------} b_n X_n + e \ldots\ldots\ldots\ldots \quad (1)$$

Where, y is the predicted value of the dependent variable

X_s are the independent variables

b_s are the coefficient to be estimated

b_0 is constant term

e is error term

Therefore, to determine the responsiveness of SSAs health status to supposed determinants the specified model is:

$$(Health)_{it} = b_0 + \Sigma\beta_k (G_{kit}) + \Sigma\, \alpha_j (X_{jit}) + e \ldots\ldots\ldots\ldots \quad (2)$$

Where, *Health* is an outcome as measured by IMR in country i (1,2,3…26) at time t (1,2,3…8) periods of time

- § G_s – are variables of GLB explanatory variables (k = 1,2,…5)
- § Xs – are variables of traditional health determinants (j = 1,2,3)
- § α and β - are coefficients to be estimated
- § e- error term.
- § b_0 _ is constant term

This functional form was selected to be a preferable specification to explore the relationships among the multiple variables to find out which independent variable(s) influences the IMR. Besides the dependent and independent variables are quantitative (non categorical), multiple regression model as a preferable form.

The Dependant variable to predict health is IMR. The IMR was preferred to other competing indicator of health status like life expectancy at birth for its advantage of having lesser measurement inaccuracy. In addition, IMR poses reasonably accurate data in relation to other morbidity indicators. Preference of this indicator has also aroused from relative completeness of data for the intended period.

The independent variables:

- Globalization variables are:
    1. Percentage of export of goods and services per GDP (EXPORT)
    2. Percentage of goods and services per GDP (IMPORT)
    3. Foreign direct investment% of GDP (FDI)
    4. International tourism arrival (TOURSM)
    5. Total Emigration (EMIGR)
    6. Telephone main line per 1000 people. (TELE)

- Traditional (Grossman) variables
    1. Primary school female enrollment (SEPFG)
    2. Urbanization (URBN)
    3. Total Fertility Rate (TFR)
    4. Gross Domestic Per capita income (GDPppp)

4.4. Model Estimation

Panel Data analytic method: for its advantage over pure time series and pure cross-section was used. In forming the Panel, the time series data of each country was averaged over five years and a total of 8 periods were formed for each country, the eighth period is formed of six years.

Panel normalization was used for its advantage of removing initial condition and enabling more meaningful data comparison within and between countries over time. It also enables ranking of explanatory variables of the same sign with their degree of influence. The first period (1960-1964) was used as a base period for normalizing the data

Multiple linear regression analysis employed to examine the effect of independent variables on the dependent variable IMR. The parameter estimates of this type functional form can be interpreted, as a one unit change in one of the independent variables, keeping others unchanging, will result in a level change in dependent variable that amount the coefficient of the changed independent variable.

Different types of the most common assumption models in panel data analysis method were separately imposed in regression analysis and the one with superior estimate was selected depending on the statistical significance test rule.

Statistical tests used were: first, choosing from one-way and two-way specifications, F-statistics was utilized to test for significance of unincluded time specific effects in one-way regression specification. Likewise, for significance of country specific effects, a Lagrange-multiplier test was used. For the choice between Fixed (within) Estimator and the Random effect Estimator, a Hausman-test was performed. The analysis was made using LIMDEP econometric software. While for significant estimate, alpha <0.05 was used, the adjusted R-square was used for the variability in IMR explained by the independent variables.

4.5. Operational Definitions

GATS: The General Agreement on Trade in Services is one of 28 free trade agreements of the WTO and it sets the rules for trade and investment in services. Services are estimated to represent 60 - 80% of GDP of WTO member countries. GATS covers 160 service sectors such as road building, water delivery, education, health care, telecommunications, tourism, postal delivery, social security, a variety of municipal services, and insurance. The scope of the agreement is very broad potentially covering government regulation of trade in services, and potentially covering government services at all levels of governments.

GLB: Globalization is the term frequently used to identify a trend toward increased cross boarder flow of trade, financial capital, people and information/ideas and the subsequent integration of the global economy.

Intellectual Property Rights: The right to control and derive the benefits from writing (copyright), inventions (patents), processes (trade secrets) and identifiers (trademarks). See also Trade Related Intellectual Property Rights

MDG: The Millennium development goals were adopted unanimously by the Millennium Summit of the UN General Assembly in 2000. The MDG goals are intended to promote human development in order to improve living conditions and address key global imbalances in poverty, hunger and disease.

Trade Liberalization: The reduction of tariffs, quotas, and other barriers to permit more foreign trade and investment.

TRIPS: Trade-Related Intellectual Property Rights is an agreement of the WTO that covers patents and other forms of intellectual property.

UNCTAD: The United Nations Conference on Trade and Development is a structure established in 1964 to promote worldwide development through various trade proposals. It is a source for technical assistance for developing countries around the issues of trade and development.

WTO: The WTO, established in 1995 as the successor to the 1948 General Agreement on Trade and Tariffs, administers trade agreements, provides a forum for trade negotiations, and monitors national trade policies for the current 147 member countries. The overall aim of the WTO is to reach a single framework of rules for trade and "trade-related" activities.

4.6. Ethical Considerations

The proposal for the study was ethically cleaned from Faculty's' research and publication committee, faculty of Medicine, Addis Ababa University. The aforementioned source has permitted to utilize the data.

5. RESULTS

5.1 Descriptive Information

The descriptive information regarding IMR in the year between 1960 and 2000 was displayed in table 5.1, 5.2 and 5.3. Fig 5.1 and 5.2 also conveys trends of infant mortality in the same period for the specific countries.

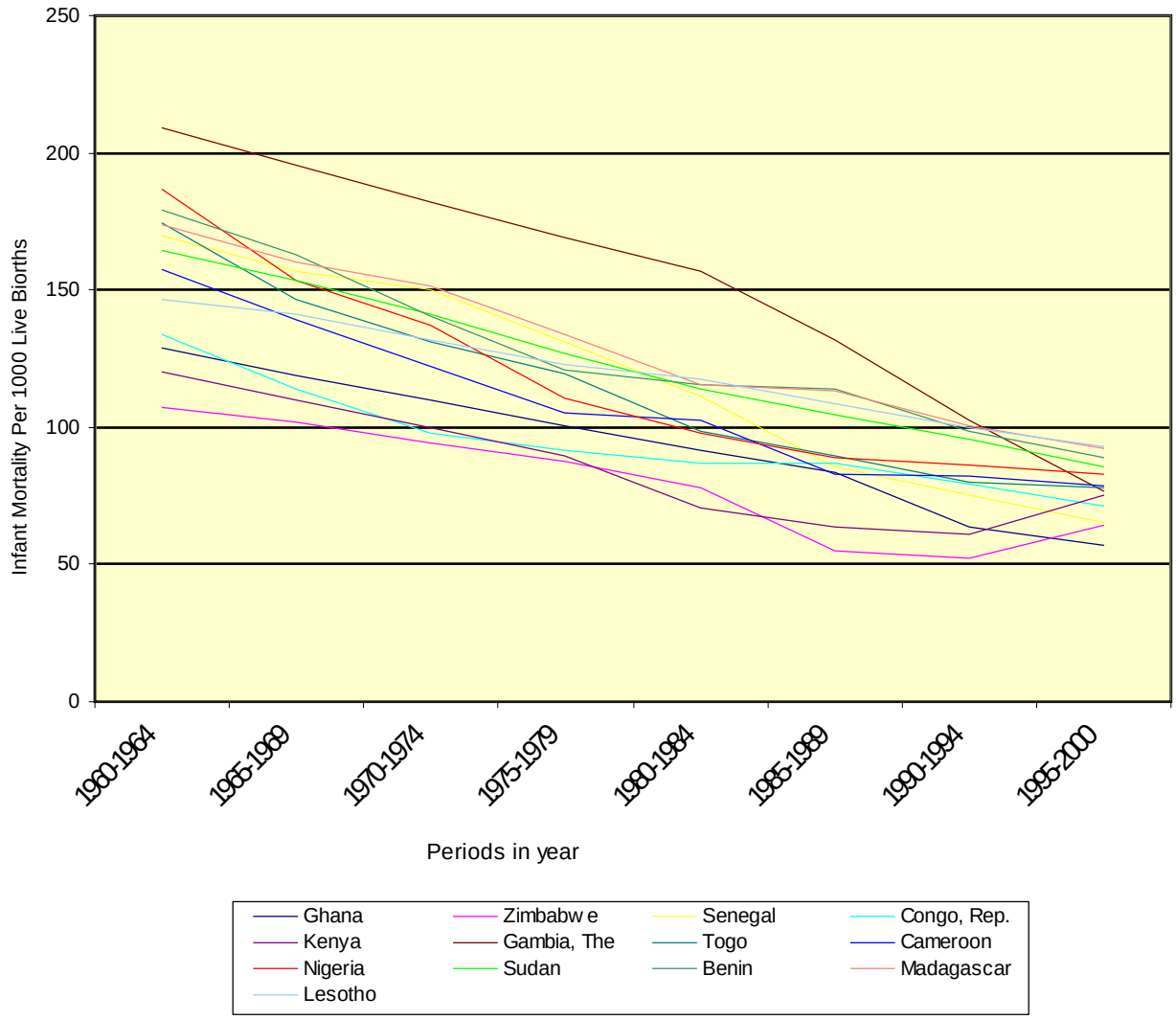
Table 5.1, Trends Of Country Specific IMR in SSA, 1960-2000

		INFANT MORTALITY PER 1000 LIVE BIRTHS AVERAGED OVER PERIODS IN YEAR									
S.N	Country Name	1960-1964	1965-1969	1970-1974	1975-1979	Total Decline From1960	1980-1984	1985-1989	1990-1994	1995-2000	Total Decline From1980
1	Zimbabwe	107	102	95	87	20	78	55	52	65	13
2	Kenya	120	110	100	90	30	70	64	61	75	-5
3	Ghana	129	119	110	101	28	92	84	64	57	35
4	Congo, Rep.	134	114	98	92	42	87	87	80	72	15
5	Zambia	132	118	103	95	37	89	108	108	113	-24
6	Cameroon	158	140	122	105	53	103	83	82	79	24
7	Uganda	128	117	107	113	15	116	116	101	93	23
8	Togo	175	147	131	119	56	99	90	81	78	21
9	Nigeria	187	154	137	111	76	98	89	86	83	15
10	Senegal	170	157	150	131	39	111	85	75	65	46
11	Tanzania	144	137	127	115	29	106	109	116	99	7
12	Lesotho	146	141	132	123	23	118	109	100	93	25
13	Cote d'Ivoire	161	146	132	116	45	107	99	94	109	-2
14	Sudan	164	153	141	127	37	114	105	96	85	29
15	C.African R.	170	153	136	124	46	116	106	100	96	20
16	Benin	179	163	141	121	58	115	114	99	89	26
17	Burundi	151	142	138	129	22	120	115	120	109	11
18	Madagascar	174	161	152	134	40	116	114	101	93	23
19	Mauritania	173	160	145	128	45	119	115	111	105	14
20	Burkina Faso	170	150	139	140	30	131	113	111	106	25
21	Rwanda	148	144	142	135	13	126	117	138	126	0
22	Chad	191	181	169	156	35	122	118	114	101	21
23	Gambia, The	209	196	182	169	40	157	132	103	77	80
24	Niger	188	178	168	159	29	136	140	144	119	17
25	Malawi	205	198	192	180	25	166	141	125	106	60
26	Mali	209	206	204	193	16	182	151	130	120	62

As indicated in table 5.1 and 5.2, decline in IMR from 1960-2000 was remarkable. The average regional decline was 162/1000 to 93/1000 (Table 5.2). The progress was particularly highest in the

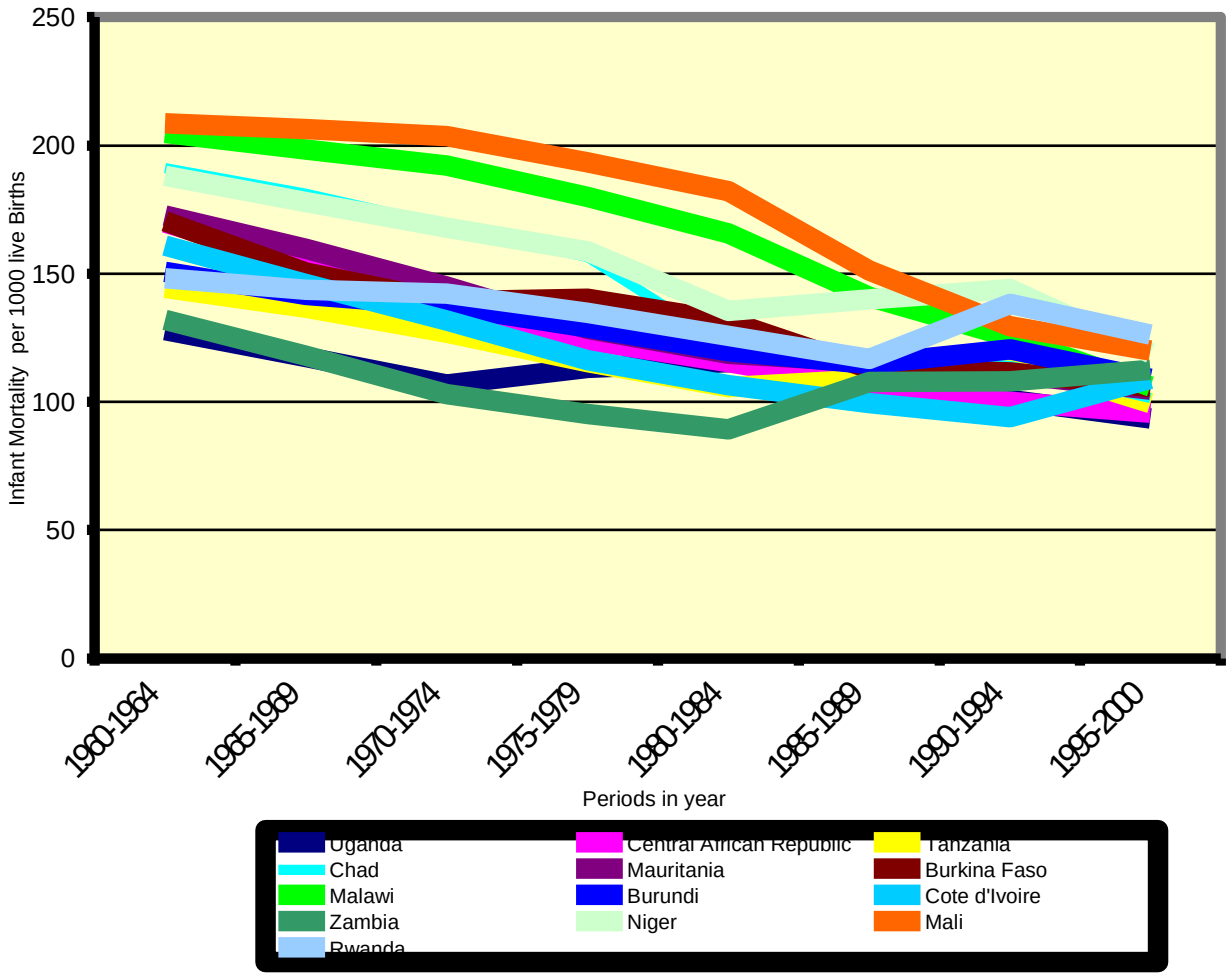
first two decades (1960-1980). For example in Nigeria, Benin and Togo, the decline rate was 76/1000, 58/1000 and 56/1000 respectively. The least decrease rate seen was 13/1000, 15/1000 and 16/1000 for Rwanda, Uganda and Mali respectively. Total regional decline in the two decade, 1960-1980 was 3.5% (table 5.3), with a stable decline in all countries (Fig 5.1 and 5.2).

Fig.5.1, Trends of Infant Mortality in the first thirteen SSA, 1960-2000



The steady descent seen in prior decades was followed by a major slowdown over the period 1980-2000. As shown on table 5.1, the mortality rate was been even increased in three countries: Zambia, Kenya and Cote' divorce. The increment rate was 24/1000, 5/1000 and 2/1000 for the three countries respectively. No change has been seen in Rwanda. Even if, there were countries with remarkable progress during this period, for example Gambia (80/1000), Mali (62/1000) and Malawi (60/1000) they remain with the highest tall of IMR (For detail see Table 5.1, Fig 5.1, 5.2).

Fig.5.2, Trends of Infant Mortality Rate in the second thirteen SSA, 1960-2000



Similarly, trends of IMR for the specific country performance is displayed by using line graph for counties with IMR less than 98 and above or equal to 98 for simple observation of the trends.(Fig 5.1 and Fig 5.2).As indicated, a decreasing pattern in trend of IMR can be seen in the region for the specific countries though the decline rate shown was more slow after 1980s. On the other hand, pattern of IMR decline observed in the countries with IMR more than 98/1000 shows some what different pattern prior to 1980s, that may probe for other studies beyond the scope of this investigation

Regionally, the improvement shown was also suggestive. IMR progressed from 162/1000 in the first period to 93/1000 in the last period. (For details see table 5.2).

Changes in the identified determinant of health in the region during the four decades were also noted. Of the usually known determinants of health included in this study, percentage of primary school enrollment of female (gross) increased from 36 in the first period to 73 in the last. GDPppp progressed from 1162.92 to 1958.56, total fertility rate changed from 7 to 6, and urbanization from 13 to 34.

Table 5.2, Health Status and Its Determinants, Averaged Over the Sampled Period In SSA, 1960-2000.

INDICATOR	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-00
IMR	162	149	138	127	115	106	100	93
EMIGR	199831	209204	245254	266332	297359	382161	415510	368354
EXPORT	19.43	21.15	22.68	23.27	23.66	22.82	23.40	26.88
FDI	1.06	0.98	1.22	0.75	0.57	0.67	0.75	2.50
GDPP	251.19	361.71	477.60	563.33	759.58	928.75	1024.09	1162.92
IMPORT	28.37	28.64	31.43	37.56	38.61	35.18	36.65	37.78
SEPFG	36	39	42	50	62	68	68	73
TELE	2	2	2	2	3	3	4	7
TFR	7	7	7	7	7	7	6	6
TOURISM	69179	70632	72342	74783	86429	116500	152723	248714
URB	13	15	18	22	26	29	32	34

Of note is, in the first two decade IMR was found to be falling by 3.5% while in the last two decade it was found to decreasing at the rate of 2.2 %(Table5.3).

Table 5.3, Decline Rate of IMR in Sub-Saharan-Africa, 1960-2000

	Period							
	1960-64	1965-69	1970-74	1975-79	1980-84	1985-89	1990-94	1995-00
IMR	162	149	138	127	115	106	100	93
No. of Decline	__	13	11	11	__	9	6	7
% change in the year			3.5				2.2	

The unique feature of this study is exploring key aspects of GLB as the newly emerging determinants of health. Therefore, dimensions of this global force processes were widely examined. Accordingly, trade as measured by percentage of export of goods and services and import of goods and services, showed increment from 19.43 and 28.37 to 26.88 and 37.78 for export and import respectively during the first and last period (Table 5.2).

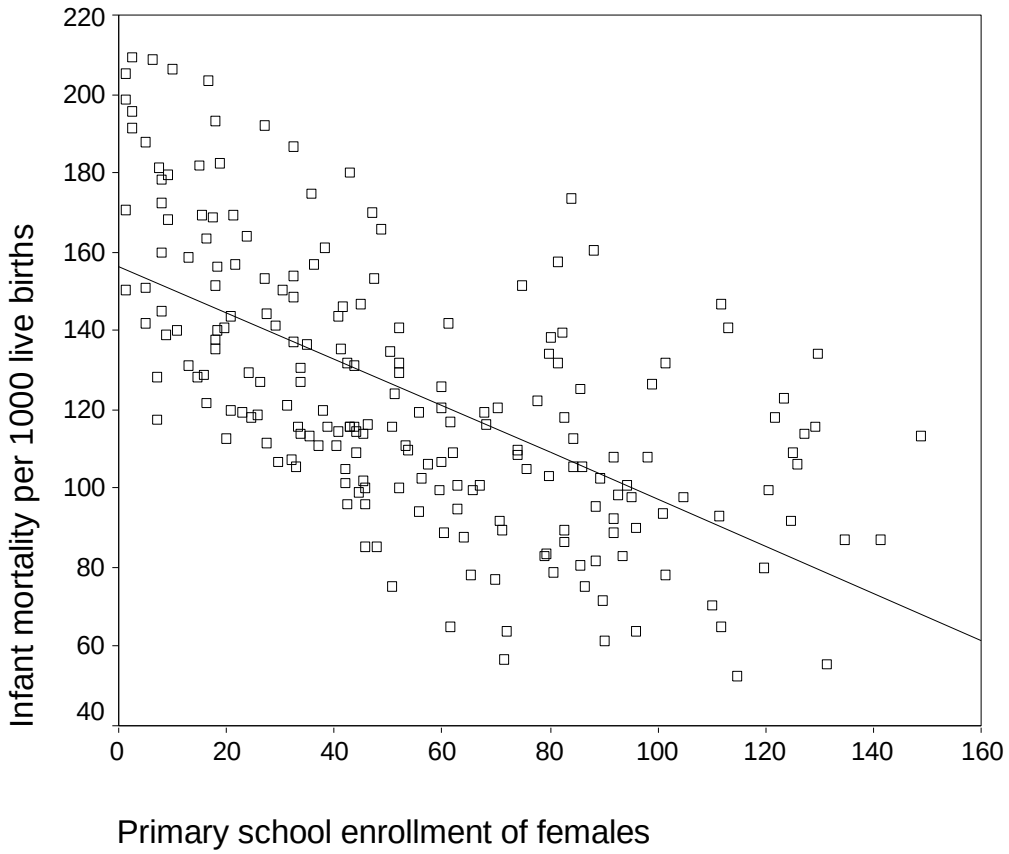
Percentage of net inflow of foreign direct investment per GDP, a financial flow aspect, increased from 1.06 to 2.50 but no apparent stable changes was seen. Besides, as indicated on Table 5.2, sharp increase was observed between 1995 and 2000.

The cross border flow of people, the other aspect of GLB, is measured by total emigration and number of tourism receipts from first period to the last changes shown was marked. Number of emigrants changed from 199831 to 368354 and that of tourism receipt changes from 69179 to 248714 (Table 5.2).

Telephone main line availability to portray information flow was observed and it is 2 per 1000 people in the early 1960s and 7 per 1000 people in 2000. As shown in table 5.2, the changes observed were only in the last two decades.

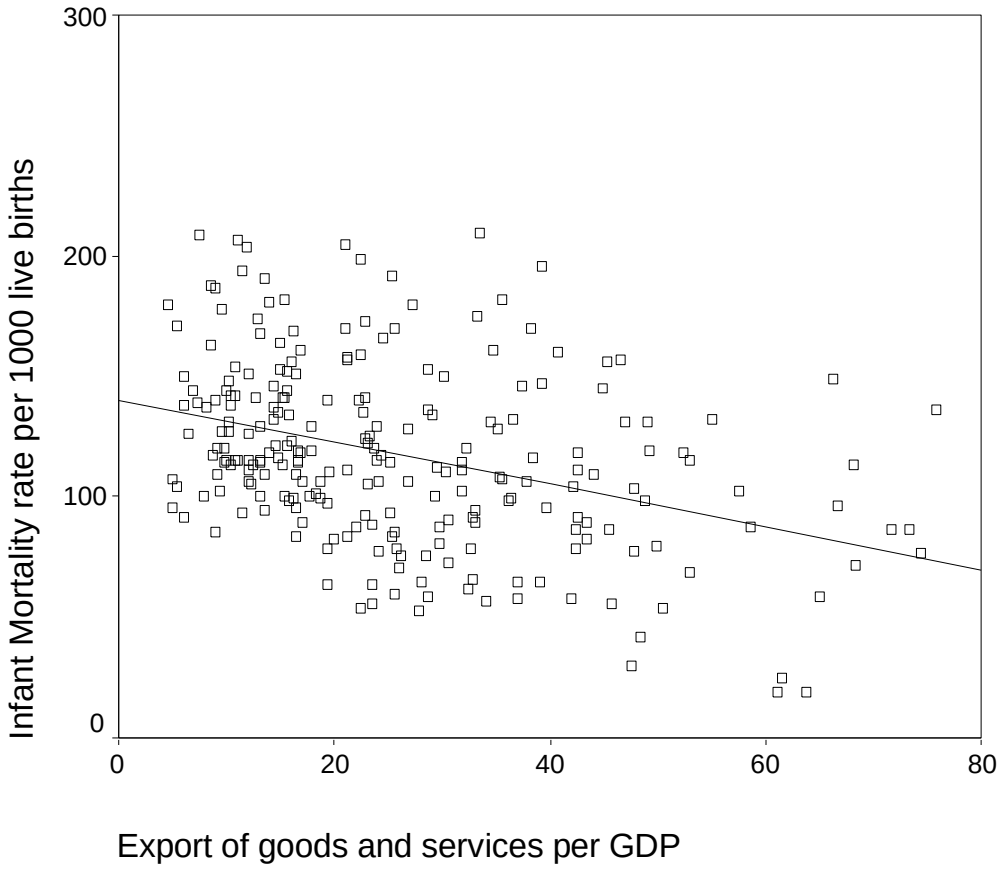
One quick way of determining the relationship between one variable and another is to plot them against each other. In this study some of the identified determining factors of health were plotted against IMR.

Fig 5.3, Scatter plot of Infant Mortality and Primary school female enrollment in SSA 1960-2000



As shown in Fig 5.3, scatter plots of primary school female enrollment against IMR shows clear negative linear relationship, implying an increase of the factor decreases IMR, and, so does export of goods and service per GDP and IMR (fig 5.4), but seems less strong.

Fig 5.4, Scatter plot of Infant Mortality and export of goods and services in SSA 1960-2000



Correlation matrices without excluding initial condition has made as an insight into a relationship between health status and its determinants. From the customary known determinants, the respective correlation of primary school enrollment for females, GDPppp, Urbanization and total fertility rate was-0.62, -0.64, -0.6 and 0.40 respectively in the year between 1960 and 2000.

Considering the last two decades, trends in the correlation of these determinants has somewhat decreased.

Correlations for globalization variables; telephone mainline, tourism, emigration, export, import and foreign direct investment was -0.59, -0.45, -0.27, -0.25-0.14 and -0.10 respectively.In the last two decades progressive changes in the trends of theses variables has been noted. Tourism and export showed noticeable changes. For details, see Table 5.4.

(The detailed correlation matrices are shown in Annex IV).

Table 5.4, Correlations of Health determinants to IMR across time periods in SSA, 1960-2000

Variables / Period	EMIGR	EXPORT	FDI	GDPppp	IMPORT	SEPFG	TELE	TFR	TOURISM	URBAN
1960-2000	-0.27	-0.25	-0.10	-0.64	-0.14	-0.62	-0.59	0.40	-0.45	-0.6
1960-1979	-0.36	-0.21	-0.09	-0.32	-0.15	-0.56	-0.5	0.40	-0.41	-0.4
1980-2000	-0.16	-0.28	-0.12	-0.58	0.01	-0.52	-0.57	0.58	0.51	-0.51

5.2. Analytic Results from Regression

Regression results shown have three parts, first for the whole period of analysis (1960 –2000) shown on table 5.5 and Table 5.6, followed by the first two decade (1960-1979) indicated on Table 5.7and Table 5.8, thirdly for the period of the last two decade (1980-2000) specified on table 5.9 and table 5.10.Consequently, Equation (2) is estimated using the dependent variable IMR and the determining variables described as independent ones.

Table 5.5, One-Way Error Component Regression (from1960-2000) Model Estimates for Equation (2)

Estimators	Parameters	Estimate of the parameter	St. error of the parameter	t-ratio	P-value
Restricted Model OLS	TELE	-0.0118	0.004	-3.107	0.002
	SEPFG	-0.0019	0.001	-2.430	0.016
	TOURSM	-0.0002	0.001	-0.317	0.752
	URBAN	-0.0249	0.010	-2.408	0.017
	EXPORT	-0.0438	0.017	-2.622	0.009
	IMPORT	0.0201	0.014	1.407	0.161
	EMIGR	-0.0077	0.004	-2.005	0.046
	TFR	0.4059	0.112	3.613	0.000
	CONSTANT	0.5161	0.120	4.286	0.000
Fixed Effect Model	TELE	-0.0077	0.004	-1.729	0.085
	SEPFG	-0.0032	0.001	-5.117	0.000
	TOUR	0.0001	0.001	0.122	0.903
	URBAN	-0.0672	0.013	-5.161	0.000
	EXPORT	-0.0239	0.019	-1.248	0.213
	IMPORT	-0.0163	0.018	-0.929	0.354
	EMIGR	-0.0045	0.003	-1.623	0.106
	TFR	0.2559	0.127	2.011	0.046
Random Effect Model	TELE	-0.0102	0.004	-2.773	0.006
	SEPFG	-0.0026	0.001	-3.225	0.001
	TOURSM	-0.0001	0.001	-0.151	0.880
	URBAN	-0.0466	0.010	-4.555	0.000
	EXPORT	-0.0343	0.017	-1.992	0.046
	IMPORT	0.0034	0.015	0.232	0.816
	EMIGR	-0.0060	0.003	-1.833	0.067
	TFR	0.3399	0.105	3.224	0.001
	CONSTNAT	0.6326	0.114	5.528	0.000

Lagrange Multiplier test of Restricted vs. Fixed Effect/ Random Effect $\chi^2_{(1)}$ =40.77, p=0.000

Hausman test of Fixed Effect vs. Random Effect; $\chi^2_{(8)}$ =0.00, P=1.000

5.2.1 Estimation Of Equation (2) For The Total Period Of Analysis (1960-2000)

Table 5.5 displays the one way and table 5.6 shows the two-way error component regression. Using F-test statistic (shown at the bottom of table 5.6), the significance of time specific effect which is not included in one way regression was tested and the result suggests that the two way error component regression is superior to the one way (p=0.000)

Table 5.6, Two -Way Error Component Regression (from1960-2000) Model Estimates for Equation (2)

Estimators	Parameters	Estimate of the parameter	St. error of the parameter	T-ratio	P-value
Fixed Effect Model	TELE	-0.0002	0.003	-0.077	0.938
	SEPFG	-0.0009	0.001	-1.574	0.117
	TOURSM	0.0019	0.000	4.842	0.000
	URBAN	0.0219	0.008	2.612	0.010
	EXPORT	-0.0248	0.013	-1.957	0.052
	IMPORT	0.0129	0.011	1.135	0.258
	EMIGR	-0.0039	0.002	-1.905	0.058
	TFR	0.0837	0.091	0.918	0.360
	CONSTANT	0.6562	0.093	7.031	0.000
Random Effect Model	TELE	-0.0006	0.003	-0.247	0.805
	SEPFG	-0.0008	0.001	-1.466	0.014
	TOURSM	0.0018	0.000	4.770	0.000
	URBAN	0.0212	0.008	2.641	0.008
	EXPORT	-0.0275	0.012	-2.266	0.023
	IMPORT	0.0152	0.011	1.405	0.160
	EMIGR	-0.0040	0.002	-1.967	0.049
	TFR	0.0996	0.088	1.126	0.260
	CONSTANT	0.6439	0.119	5.424	0.000

F-test of one way vs. Two-Way F [7,167] = 51.742, P=0.000.

Lagrange Multiplier test of Restricted vs. Fixed Effect/ Random Effect $\chi^2_{(2)}$ =316.23, p=0.000.

Hausman test of Fixed Effect vs. Random Effect; $\chi^2_{(8))}$ =28.18, P=0.888

Adjusted R-squared = 42% for Two Way Random Effect

To examine the assumption of absence of country specific effects, the poolability of OLS estimator for the model, the Lagrange Multiplier test was done. The results yields χ^2 value of 40.77, p= 0.000.

Under this the null hypothesis of zero country specific effect is soundly rejected, suggesting there is strong country, specific effects. Hence, the within or random effect model is preferred to OLS (the test doesn't support the poolability of the data set).

For the choice between the within (fixed) effect and the random effect (GLS) estimator a Hausman - test was used. As shown at the bottom of table 5.6, the test shows a χ^2 value of 3.64, (p= 0.888) Suggesting the two-way Random estimate is preferable. Accordingly as can be seen from Table 5.6, export of goods and services (P=0.023) and emigration (0.049), were found to be significant estimators of the parameters in the model having inverse relationship with IMR, holding all other factors constant. In addition, Primary School enrollment of females (P=0.014) is also significant as usually expected. On the other hand Tourisms (P=0.000) and urbanization (P=0.008) were significant estimators holding a positive sign keeping others unchanged. The adjusted R-square of this model is 0.42; indicating 42% of the variability in IMR was been explained by the independent variables included.

5.2.2 Estimation Of Equation (2) For The Presiding two-Decade (1960-1979)

In displaying this result, the same procedures in 5.2.1.were followed to examine the possible assumptions (table 5.7 and 5.8). The F-test here again shows the superiority of Two-Way specifications over One-Way (P=0.000). Again, Lagrange multiplier test is significant (P=0.000) and Hausman test (P=0.955) is found to be statistically insignificant, suggesting that Two-way Random effect Model is preferable to estimate the model equation.

Accordingly, export (P=0.006), and Primary school enrollment of females (P=0.003) were found to have a significant effect holding negative signs of the respective coefficients when others kept

unchanged. Nevertheless, Import of goods and services (P=0.019) is another significant estimator holding a positive sign. (For details, see Table 5.7 and Table 5.8) The adjusted R-square of this model has shown to be 0.51, implying 51% variability in IMR could be explained by the model.

Table 5.7, One-Way Error Component Regression, 1960-1979 Model Estimates for Equation (2)

Estimators	Parameters	Estimate of the parameter	St. error of the parameter	t-ratio	P-value
Restricted Model OLS	TELE	-0.0382	0.010	-3.831	0.000
	SEPFG	-0.0027	0.002	1.657	0.101
	TOURSM	-0.0247	0.015	-1.679	0.096
	URBAN	-0.0588	0.021	-2.791	0.006
	EXPORT	-0.0888	0.024	-3.665	0.000
	IMPORT	0.0470	0.021	2.212	0.029
	EMIGR	-0.0034	0.007	-0.493	0.623
	TFR	-0.8025	0.281	-2.856	0.005
	CONSTANT	1.9200	0.286	6.725	0.000
Fixed Effect Model	TELE	-0.0361	0.011	-3.230	0.002
	SEPFG	-0.0015	0.001	1.961	0.053
	TOURSM	-0.0395	0.013	-3.007	0.003
	URBAN	-0.0940	0.024	-3.836	0.000
	EXPORT	-0.0857	0.024	-3.525	0.001
	IMPORT	0.0437	0.023	1.912	0.059
	EMIGR	-0.0031	0.004	-0.729	0.468
	TFR	-0.6260	0.338	-1.853	0.067
Random Effect Model	TELE	-0.0380	0.009	-4.063	0.000
	SEPFG	-0.0022	0.001	1.454	0.146
	TOURSM	-0.0308	0.014	-2.258	0.024
	URBAN	-0.0740	0.020	-3.723	0.000
	EXPORT	-0.0868	0.022	-3.864	0.000
	IMPORT	0.0443	0.020	2.205	0.027
	EMIGR	-0.0033	0.006	-0.543	0.587
	TFR	-0.7611	0.267	-2.852	0.004
	CONSTANT	1.9087	0.270	7.080	0.000

Lagrange Multiplier test of Restricted vs. Fixed Effect/ Random Effect $\chi^2_{(1)} = 13.15$, p=0.000

Hausman test of Fixed Effect vs. Random Effect; $\chi^2_{(8)} = 0.00$, P=1.000

Table 5.8, Two -Way Error Component Regression, 1960-1979 Model Estimates for Equation (2)

Estimators	Parameters	Estimate of the parameter	St. error of the parameter	T-ratio	P-value
Fixed Effect Model	TELE	-0.0081	0.008	-0.995	0.322
	SEPFG	-0.0032	0.001	2.755	0.007
	TOURSM	-0.0098	0.011	-0.892	0.375
	URBAN	-0.0098	0.018	-0.540	0.591
	EXPORT	-0.0411	0.018	-2.267	0.026
	IMPORT	0.0327	0.016	1.983	0.050
	EMIGR	0.0020	0.005	0.446	0.657
	TFR	-0.1673	0.222	-0.753	0.453
	CONSTANT	1.0938	0.229	4.771	0.000
Random Effect Model	TELE	-0.0103	0.008	-1.358	0.175
	SEPFG	-0.0033	0.001	2.977	0.003
	TOURSM	-0.0102	0.010	-0.983	0.326
	URBAN	-0.0114	0.017	-0.678	0.498
	EXPORT	-0.0470	0.017	-2.745	0.006
	IMPORT	0.0362	0.015	2.336	0.019
	EMIGR	0.0017	0.004	0.381	0.703
	TFR	-0.2165	0.209	-1.038	0.299
	CONSTANT	1.1531	0.218	5.288	0.000

F-test of one way vs. Two-Way F [3, 67] = 34.285, P=0.000.

Lagrange Multiplier test of Restricted vs. Fixed Effect/Random Effect $\chi^2_{(1)} = 56.23$, p=0.000

Hausman test of Fixed Effect vs. Random Effect; $\chi^2_{(8)} = 2.64$, P=0.955

Adjusted R-Squared=51% for Two Way Random Effect

5.2.3 Estimation Of Equation (2) For The Last Two Decades (1980 –2000)

Like the estimation of the preceding two eras, here again similar processes were followed for the appropriateness of the findings. Table 5.9 and 5.10 displays this finding. In this result, the F-test statistic is similarly significant (P=0.000) implying that Two-Way component error is preferable to One-Way specifications.

Table 5.9, One-Way Error Component Regression (1980-2000) Model Estimates for Equation (2)

Estimators	Parameters	Estimate of the parameter	St. error of the parameter	T-ratio	P-value
Restricted Model OLS	TELE	-0.0055	0.003	-1.714	0.090
	SEPFG	-0.0007	0.001	-1.105	0.272
	TOURSM	0.0012	0.001	2.279	0.025
	EXPORT	-0.0490	0.015	-3.293	0.001
	IMPORT	0.0372	0.013	2.910	0.005
	URBAN	0.0238	0.009	2.531	0.013
	EMIGR	-0.0050	0.003	-1.493	0.139
	TFR	0.3512	0.096	3.648	0.000
	CONSTANT	0.2945	0.103	2.847	0.005
Fixed Effect Model	TELE	-0.0051	0.004	-1.364	0.176
	SEPFG	-0.0032	0.001	-4.312	0.000
	TOURSM	0.0009	0.000	1.978	0.051
	EXPORT	-0.0523	0.018	-2.943	0.004
	IMPORT	0.0480	0.016	2.958	0.004
	URBAN	0.0002	0.018	0.009	0.993
	EMIGR	-0.0042	0.002	-2.660	0.009
	TFR	0.3343	0.121	2.756	0.007
Random Effect Model	TELE	-0.0058	0.004	-1.651	0.099
	SEPFG	-0.0022	0.001	-2.677	0.007
	TOURSM	0.0010	0.001	1.820	0.069
	EXPORT	-0.0518	0.019	-2.739	0.006
	IMPORT	0.0449	0.017	2.659	0.008
	URBAN	0.0142	0.014	1.040	0.298
	EMIGR	-0.0045	0.003	-1.754	0.080
	TFR	0.3898	0.102	3.817	0.000
	CONSTANT	0.2897	0.124	2.338	0.019

Lagrange Multiplier test of Restricted vs. Fixed Effect / Random Effect $\chi^2_{(1)}$ =54.90, p=0.000

Hausman test of Fixed Effect vs. Random Effect; $\chi^2_{(8)}$ =0.00, P=1.000

While the Lagrange multiplier test is significant (P=0.000), an indication for the poolability of the data set is not suggestible; the Hausman test is insignificant (P=0.377) implying the superiority of random effect model over fixed model (Table 5.10). Therefore, the Two-Way random effect model is used in reporting of these results. Thus, Export of goods and services (P=0.018), emigration (0.020) and percentage of primary school enrollment for females (P=0.030) were found to be

statistically significant having inverse relationships holding others constant. On the other hand, percentage import of goods and services (P=0.042), tourism (P=0.012), and urbanization (P=0.038) were both statistically significant, holding a positive signs (table 5.10). As indicated at the bottom of table 5.10, the adjusted R-square of this model is 0.34 suggesting 34% of the variability in IMR is explained by the model.

Table 5.10, Two -Way Error Component Regression (1980-2000) Model Estimates for Equation (2)

Estimators	Parameters	Estimate of the parameter	St. error of the parameter	T-ratio	P-value
Fixed Effect Model	TELE	-0.0007	0.004	-0.161	0.873
	SEPFG	-0.0023	0.001	-2.439	0.017
	TOURSM	0.0015	0.001	2.545	0.013
	EXPORT	-0.0463	0.024	-1.963	0.053
	IMPORT	0.0413	0.022	1.903	0.060
	URBAN	0.0504	0.022	2.316	0.023
	EMIGR	-0.0055	0.002	-2.250	0.027
	TFR	-0.1062	0.157	-0.678	0.499
	CONSTANT	0.6228	0.162	3.853	0.000
Random Effect Model	TELE	-0.0029	0.004	-0.807	0.420
	SEPFG	-0.0017	0.001	-2.170	0.030
	TOURSM	0.0013	0.001	2.525	0.012
	EXPORT	-0.0434	0.018	-2.374	0.018
	IMPORT	0.0334	0.016	2.031	0.042
	URBAN	0.0284	0.014	2.071	0.038
	EMIGR	-0.0054	0.002	-2.335	0.020
	TFR	0.1035	0.124	0.836	0.403
	CONSTANT	0.5053	0.133	3.806	0.000

F-test of one way vs. Two-Way F [3, 67] = 6.934, p=0.000

Lagrange Multiplier test of Restricted vs. Fixed Effect/Random Effect $\chi^2_{(1)} = 55.24$, p=0.000

Hausman test of Fixed Effect vs. Random Effect; $\chi^2_{(8)} = 8.61$, P=0.377

Adjusted R-Squared = 34% for Two way Random effect

6. DISCUSSION, CONCLUSIONS AND RECOMMENDATIONS

6.1. Discussion

The first objective of this study was to assess whether an association at aggregate level exists between measures of GLB and health in SSA. Indeed, there exists a correlation between the two phenomenon and the findings were valuable footsteps for analyzing the significant effects of health determinants in the region. Of the factors to be analyzed, FDI was excluded because of its weak correlation to IMR and GDPppp because of multicolliniarities with other independent variables.

The second and third objectives of the study were to estimate the strength, and predict the outcome of associations between measures of GLB and health status in the region.

Export of goods and services found to have significant association with IMR .In particular; during the era of contemporary globalization (1980-2000), the result suggests that an increase in percentage of goods and services per GDP from the initial base period by one unit will decrease the death of infant by 0.0434 ($p=0.018$). This is consistent, and a reflection of former studies. For example, Golden & Reinert (2006) found that export as a single measure of GLB from 1870-1998 has inverse relationship with global poverty and in turn on the health of the poor. This could be through improved government budget for health and health related sectors, improved household income from export productions, enhanced wages which has all favorable effect on the health and health linked necessities like nutrition& sanitation of the family.

A noticeable finding of this study is the effect from import of goods and services suggesting positive association with IMR. This was insignificant in the whole period, but in the year between 1980 and 2000, it was significant ($p=0.042$), implying an increase in percentage of import of goods and services

per GDP from the initial base period by one unit will increase death of infant by 0.0334. Possible reasons for this might be the import of goods and services to these countries dominantly on the areas of unfavorable effects on health, for example, import of weaponry /arm goods and services at same time limited capacity to regulate the quality of drugs, food, and health damaging substances like alcohols, cigarettes. Furthermore, the imported coasty drugs, medical equipments and other supplies might have been curative focused than the preventive aspects.

The effect of emigration on health status of SSA has been analyzed. The results of the last two-decade was significant (p=0.020) with inverse relation to IMR. According to the results from period 1980-2000, an increase by one unit from the base period, decreases IMR by 0.0054.This might be through the remittances from high number of emigrants with lower skill in the region. Employed in wealthy countries, persons may send valued hard currency back home to their families which improve household income and in turn health of the family. This finding seems to be inconsistent with the issue underlining brain drain debate. Because, emigrants are not identified by their skill level, the effect of higher skilled emigrants particularly health professionals might have been undermined in this study. However, as the finding is consistent with argument of advantages arising from remittance, it may direct towards a think model for lower skilled labor export. There are current arguments, for example, Golden & Reinert (2006) and Stiglitiz (2003) that suggest the growth in remittances was particularly strong in low-income countries and powerfully affects levels of poverty and consumptions among the recipients.

On the other hand, tourism arrival was found to have negative turn over IMR. The influence of this factor in the year between 1960 and 2000 was insignificant. However, the finding from 1980-2000 suggests significant associations (p=0.012) implying an increase of the factor by one units from the base period will increase mortality of infants by 0.0013. This might be through cross border spread

of disease, and risky behaviors for diseases. However, this doesn't undermine the advantage of this sector in improving GDP that has to continue to be reaped but alerts for precautions to be made in prevention and control of diseases in this area.

Analysis of the traditionally known determinants of health considered in this study also suggested considerable results. Primary School enrollment of females found to have significant (p=0.030) inverse relationship with IMR. This is a normally expected outcome and supports the previous findings. According to the results of this study, during the era of contemporary globalization, an increase of ratio of female enrollment in primary school by one unit decreases IMR by 0.0017. Because, educated females are likely to make use of numerous alternatives in childcare for example nutrition, hygiene and the treatment of illness particularly at household level. Females are also more likely to take personal responsibility in such fields as birth control.

A notable result was observed from the influence of urbanization on health status, implying its negative effect particularly in the era of contemporary globalization (p=0.038). The finding showed that an increase of urbanization from the base period by one unit increases a death of infant by 0.0284. The rapid growth of urbanization, internal migration from rural to urban areas noted in the last two decade left gaps in regulating social services and infrastructures.

In stead of favoring, the congestion and pollution seen in the urban areas of this developing countries might have resulted in adverse effects on health status, for example in easy transmission of communicable diseases, insufficient supply of basic social services like nutrition, sanitation, housing. Unemployment, another increasing phenomenon in urban areas might have also challenged individuals and or households in meeting their necessities disfavoring health in the region.

Changes observed from telecommunication mainline availability and total fertility rate as an influence of health were insignificant and it could be due to limited changes of these factors from the base period.

6.2. The Strengths and Limitations of the Study

6.2.1.The Strengths

Extensive attention has been given to GLB nationally, globally and regionally. An effort to examine the link of this phenomenon to health status regionally coupled by review of recent literatures of internationally prominent scholars could be the prime strength of the study.

Methodologically, the study employed panel data technique with the recommendable econometric software, (though limited in capacity) to test the most possible assumptions while the overwhelming majority of studies use either cross-section or time series techniques. It reported the findings of the two-way random assumption, which is more efficient and less biased.

Besides, such macro level study with its analytic procedure is quite unusual and may initiate for further similar studies in the faculty of medicine, department of community Addis Ababa University.

6.2.2. Limitations

Data used in the study was secondary that might have its own limitations including luck of uniformity in report compilation among countries before reaching the source organization. Caveats regarding the observed data are an obvious limitation to the study, which might have reduced data quality. Variables used in the study are still in their early stage and under continuous development. Capacity of the accessed LIMDEP software, student version was another limitation, as additional

variables couldn't be accommodated. Analysis made was at aggregate level and specific countries were not well addressed which might be an interest to many.

6.3. Conclusions

In conclusion, this macro level study has examined the impact of contemporary globalization on health status in 26 SSA in the period 1960-2000 for the ultimate goal of health enhancement.

The results suggested beneficial and detrimental aspects of globalization to health. While the engendering aspects are export of goods and services, emigration, and primary school enrollment of females, the endangering aspects are import of goods and service, tourism and urbanization. Thus, to maximize the benefit and minimize the detrimental effect, recommendations have been made towards the respective key features of globalization and health links.

Furthermore, the findings of this study are believed to be a contribution to the level of evidence by the possible effects of globalization on the health status in developing countries.

6.4. Recommendations

The analysis of GLB and health link at global national and local level is of a paramount for maximizing the benefits and mitigating the detrimental effects. Thus, based on the findings, the following recommendations were made.

1. On export of goods and services, Promotion of this factor is recommended for possible improvements in national and household economy, which have a direct influence on health and health related services. A substantial increase in market access for labor-intensive goods and services, and agricultural products could be one way of achieving this. In addition, a due

emphasis to labor export services like that of middle and lower skilled personnel for short or longer period could be of the area that can maximize the benefit from globalization in the achieved health gains.

2. On import of goods and services side, an emphasis has to be made on particular areas like drugs, medical supplies and equipments. These have to be preventive focused than curative ones. Besides, ensuring the access to essential drugs for priority diseases like Malaria, TB and HIV/AIDS. In addition, improving capacity to regulate imported drugs, foods, as well as health damaging substances. A concrete multilateral step needs to be taken to ensure that imported goods and services that do not compromise poverty alleviation and health development but support it.

3. On the aspect of increased cross boarder flows of people, according to this study, one possible benefit to be harnessed while minimizing the cost of GLB to health link is emigration. A clear positive advantage could be flow of remittances. Therefore, improving the development effect of remittance flows is necessary, for example, raising the efficiency of formal channels to remit money. On the immigrant's side, improving the scrutiny of flows and restricting informal channels, and enhancing the emigrant right is imperative. In doing so, particular emphasis has to be made on lower and mid-level skilled emigrants including health personnel's. Besides, developed countries, which clearly benefit from skilled immigrants, should pay greater attention to where people are trained and the source of their funding. For instance, in funding and training to the level of numbers and standards required for both source and destination countries. At the same time this can avoid the issue of accreditation. In this scheme the required numbers remaining at home could be expected to increase. In addition, such scheme could possibly

minimize brain waste, under utilization of immigrant skill, in developed countries. Side by side, enhancing Diaspora benefits, which play a vital role in investing and transferring technologies, in general, to health sector in particular is also suggestible.

While acknowledging advantage from tourism arrival in improving GDP, in turn health in the countries, considerations has to be made in monitoring cross-border transmission of communicable diseases and risky behaviors, which negatively affect the health status of the population. As this aspect is also suggestive of global burden of diseases, prevention and control measures are to be enhanced by global institutions.

4. On the case of urbanization, this study suggested that urbanization has a negative effect on health status. This deserves national policies, on one hand, reduction of rural-urban internal migration, on the other hand, narrowing the gaps seen in access to social services. Special emphasis has to be given in inclusion of basic preventive health services for the urban poor and regulation of environmentally hazardous substances. Further more, due consideration has to be made by global institutions, as the case of urban public health is an aspect of global health challenge in that urban centers are now the one that connect the world, through the process of globalization.

5. The issue of primary school female enrollments; this was been said for long time, for its importance, so also in this study. There fore, further promotion of this factor was been recommended for its substantial contribution to health development in these countries.

Finally, this study is only a scratch of broad surface of GLB and its influence on health in the region. Therefore, further researches are recommended on the effect of separate components of GLB on health, and on the never touched, for example, cultural dimensions of GLB's effect on health status in the region.

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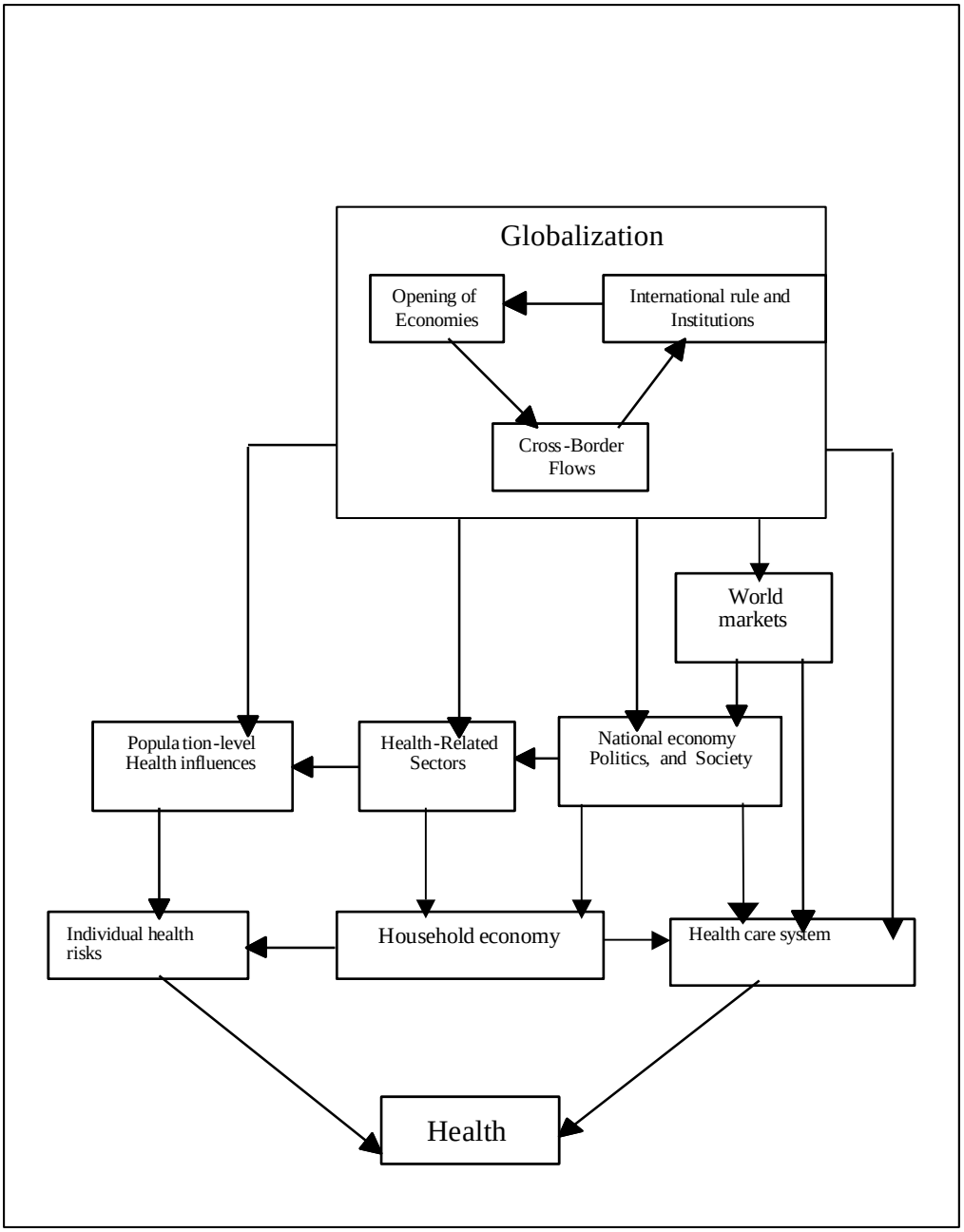
8. ANNEXES

Annex I, MDGs and Targets

No.	GOAL	TARGET
1	Eradicate extreme poverty and hunger	§ Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day. § Halve, between 1990 and 2015, the proportion of people who suffer from hunger.
2	Achieve universal primary education	§ Ensure that, by 2015, children everywhere, boys and girls alike, will be able to complete a full course of primary schooling
3	Promote gender equality and empower women	§ Eliminate gender disparity in primary and secondary education, preferably by 2005, and to all levels of education no later than 2015
4	Reduce child mortality	§ Reduce by two thirds, between 1990 and 2015, the under-five mortality rate
5	Improve maternal health	§ Reduce by three quarters, between 1990 and 2015, the maternal mortality ratio.
6	Combat HIV/AIDS, malaria and other diseases	§ Have halted by 2015 and begun to reverse the spread of HIV/AIDS § Have halted by 2015 and begun to reverse the incidence of malaria and other major diseases.
7	Ensure environmental sustainability	§ Integrate the principles of sustainable development into Country policies and programmes and reverse the losses of environmental resources. § Halve by 2015 the proportion of people without sustainable access to safe drinking water. § By 2020 to have achieved a significant improvement in the lives of at least 100 million slum dwellers
8	Develop a Global Partnership for Development	§ Develop further an open, rule-based, predictable, non-discriminatory trading and financial system § Address the special needs of landlocked countries and Small Island developing States. § Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term.

Annex II, Impact of globalization on Health, A conceptual framework for analysis



Source Woodward et al (2001)

Annex III, Map of SSA's identified for the study

source:newafrica.com/(2001)

List of countries with the corresponding numbers on the map

1. Benin
2. Burkina Faso
3. Burundi
4. Cameron
5. Central African republic
6. Chad
7. Congo R.
8. Cote deivore
9. Gambia The
10. Ghana
11. Kenya
12. Lesotho
13. Madagascar
14. Malawi
15. Mali
16. Mauritania
17. Niger
18. Nigeria
19. Rwanda
20. Senegal
21. Sudan
22. Tanzania
23. Togo
24. Uganda
25. Zambia
26. Zimbabwe

Annex IV, Correlation Matrices of IMR and Its Determinants in SSA, 1960-2000, 1960-1979 and1980-2000

1960-2000	*IMR*	*TEL*	*SEP*	*TOU*	*GDP*	*FDI*	*URB*	*EXP*	*IMP*	*EMI*	*TFR*
IMR	1.00										
TELE	-0.59	1.00									
SEPFG	-0.62	0.42	1.00								
TOURISM	-0.45	0.56	0.31	1.00							
GDPppp	-0.64	0.60	0.41	0.46	1.00						
FDI	-0.10	0.18	0.28	0.09	0.14	1.00					
URBAN	-0.60	0.46	0.43	0.22	0.57	0.14	1.00				
EXPORT	-0.25	0.36	0.29	0.18	0.35	0.22	0.56	1.00			
IMPORT	-0.14	0.17	0.34	0.02	0.17	0.33	0.20	0.38	1.00		
EMIGR	-0.27	0.24	0.01	0.24	0.22	-0.05	0.14	0.00	-0.13	1.00	
TFR	0.40	-0.42	-0.43	-0.34	-0.53	-0.27	-0.50	-0.20	-0.33	-0.07	1.00

1960-1979	*IMR*	*TEL*	*SEP*	*TOU*	*GDP*	*FDI*	*URB*	*EXP*	*IMP*	*EMI*	*TFR*
IMR	1.00										
TELE	-0.50	1.00									
SEPFG	-0.56	0.27	1.00								
TOURISM	-0.41	0.54	0.20	1.00							
GDPppp	-0.32	0.24	0.25	0.25	1.00						
FDI	-0.09	0.03	0.41	0.07	-0.04	1.00					
URB	-0.40	0.29	0.40	0.07	0.42	0.27	1.00				
EXPORT	-0.21	0.13	0.29	0.09	0.42	0.36	0.50	1.00			
IMPORT	-0.15	-0.08	0.34	-0.06	0.08	0.24	0.16	0.29	1.00		
EMIGR	-0.36	0.30	-0.06	0.13	0.14	-0.19	0.05	-0.01	-0.06	1.00	
TFR	0.40	0.13	-0.28	0.33	-0.05	-0.22	-0.29	-0.13	-0.31	0.22	1.00

1980-2000	*IMR*	*TEL*	*SEP*	*TOU*	*GDP*	*FDI*	*URB*	*EXP*	*IMP*	*EMI*	*TFR*
IMR	1.00										
TELE	-0.57	1.00									
SEPFG	-0.52	0.40	1.00								
TOURISM	0.51	0.56	0.31	1.00							
GDPppp	-0.58	0.65	0.26	0.46	1.00						
FDI	-0.12	0.26	0.22	0.09	0.24	1.00					
URB	0.51	0.40	0.26	0.15	0.40	0.08	1.00				
EXPORT	-0.28	0.49	0.27	0.20	0.36	0.14	0.64	1.00			
IMPORT	0.01	0.27	0.30	0.00	0.13	0.39	0.16	0.44	1.00		
EMIGR	-0.16	0.16	-0.07	0.23	0.15	-0.01	0.08	-0.02	-0.21	1.00	
TFR	0.58	-0.59	-0.41	-0.46	-0.61	-0.31	-0.47	-0.21	-0.30	-0.10	1.00