A sociological study of development issues and problems in developing countries

K. A. S. Wickrama

Iowa State University

Follow this and additional works at: https://lib.dr.iastate.edu/rtd

Part of the Economics Commons, Social and Cultural Anthropology Commons, and the Sociology of Culture Commons

Recommended Citation

This Dissertation is brought to you for free and open access by the Iowa State University Capstones, Theses and Dissertations at Iowa State University Digital Repository. It has been accepted for inclusion in Retrospective Theses and Dissertations by an authorized administrator of Iowa State University Digital Repository. For more information, please contact digirep@iastate.edu.
INFORMATION TO USERS

This manuscript has been reproduced from the microfilm master. UMI films the text directly from the original or copy submitted. Thus, some thesis and dissertation copies are in typewriter face, while others may be from any type of computer printer.

The quality of this reproduction is dependent upon the quality of the copy submitted. Broken or indistinct print, colored or poor quality illustrations and photographs, print bleedthrough, substandard margins, and improper alignment can adversely affect reproduction.

In the unlikely event that the author did not send UMI a complete manuscript and there are missing pages, these will be noted. Also, if unauthorized copyright material had to be removed, a note will indicate the deletion.

Oversize materials (e.g., maps, drawings, charts) are reproduced by sectioning the original, beginning at the upper left-hand corner and continuing from left to right in equal sections with small overlaps. Each original is also photographed in one exposure and is included in reduced form at the back of the book.

Photographs included in the original manuscript have been reproduced xerographically in this copy. Higher quality 6" x 9" black and white photographic prints are available for any photographs or illustrations appearing in this copy for an additional charge. Contact UMI directly to order.
A sociological study of development issues and problems in developing countries

Wickrama, K. A. S., Ph.D.
Iowa State University, 1992
A sociological study of development issues and problems in developing countries

by

K.A.S. Wickrama

A Dissertation Submitted to the Graduate Faculty in Partial Fulfillment of the Requirements for the Degree of DOCTOR OF PHILOSOPHY

Major: Sociology

Approved: Members of the Committee:

In Charge of Major Work

For the Major Department

For the Graduate College

Iowa State University
Ames, Iowa
1992

Copyright © K.A.S. Wickrama, 1992. All rights reserved.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACKNOWLEDGEMENTS</td>
<td>V</td>
</tr>
<tr>
<td>GENERAL INTRODUCTION</td>
<td>1</td>
</tr>
<tr>
<td>Development in Developing Countries</td>
<td>1</td>
</tr>
<tr>
<td>Organization of Research</td>
<td>5</td>
</tr>
<tr>
<td>Review of the Literature</td>
<td></td>
</tr>
<tr>
<td>Contemporary Theories on Development in Developing Countries</td>
<td>15</td>
</tr>
<tr>
<td><strong>PART I. EFFECTS OF EXTERNAL AND INTERNAL FACTORS ON ECONOMIC AND HUMAN DEVELOPMENT</strong></td>
<td></td>
</tr>
<tr>
<td>INTRODUCTION</td>
<td>23</td>
</tr>
<tr>
<td>Previous Research</td>
<td>23</td>
</tr>
<tr>
<td>Hypotheses</td>
<td>43</td>
</tr>
<tr>
<td>METHODOLOGY</td>
<td>46</td>
</tr>
<tr>
<td>Sources of Data</td>
<td>46</td>
</tr>
<tr>
<td>Measures</td>
<td>47</td>
</tr>
<tr>
<td>Analyses</td>
<td>53</td>
</tr>
<tr>
<td>RESULTS</td>
<td>55</td>
</tr>
<tr>
<td>Factors Affecting Economic Development</td>
<td>55</td>
</tr>
<tr>
<td>Differential Effects of Capital Penetration on Economic Development</td>
<td>57</td>
</tr>
<tr>
<td>Factors Affecting Human Development</td>
<td>61</td>
</tr>
<tr>
<td>Differential Effects of Economic Structure on Human Development</td>
<td>64</td>
</tr>
<tr>
<td>Factors Affecting Different Dimensions of Human Development</td>
<td>64</td>
</tr>
</tbody>
</table>
iv

SUMMARY OF FINDINGS AND IMPLICATIONS
Policy Implications: Theory to Practice
Democratic Participation at National Level
Theoretical Implications

REFERENCES

APPENDIX. DATA FOR THE COUNTRIES USED IN THE ANALYSIS
Several individuals have helped me in the completion of this dissertation. First and foremost, I owe a deep debt of gratitude to my major professor, Dr. Patricia M. Keith, for her understanding and guidance. Her flexibility and the confidence placed in me have been an inspiration for this work.

Sincere appreciation is extended to Dr. Fred Lorenz for his instruction on statistical and methodological issues. Great appreciation is also extended to Dr. Motoko Lee, Dr. Duane Shinn, Dr. John Tait and Dr. Stephen G. Sapp for their guidance and encouragement in this work.

Special appreciation is extended to my friend Dr. Jay Beaman, who has been very helpful to me throughout this research.

Last though not least, I thank my wife Prema and children, Bhagya and Thulitha, who have been most loving, and have provided constant encouragement throughout my graduate studies at Iowa State University.
GENERAL INTRODUCTION

Development in Developing Countries

Spencer, Saint-Simon, Comte, Weber, Durkheim and Parsons saw that the progress of societies, which implied development, is a result of a natural evolutionary process with discrete stages. Modernization theory, based on this 'natural evolutionary process', argues that underdevelopment of a society is a transitory stage. All societies, which are autonomous, are progressing along a linear path. The traditional backward social structure of less developed countries has no capacity to adopt modern institutional forms. Marx was not an exception to this thinking. He also believed that society progresses through definite sequential stages. He believed that capital accumulation in capitalist countries would have a negative effect on societal progress in the developing countries. Dependency theorists, extending the process of international capital accumulation, introduce the concepts of core and periphery in the world system to explain the continuing dependence and underdevelopment of developing countries.

Wallerstein (1979) in his world system theory, argues that all these theories have reified parts of the totality into different unrealistic units and then compared those structures. Instead the totality of global structure has to
be examined. The totality is the world capitalist system which has a world scale division of labor. He argues that periphery countries have no possibility of development within this capitalist economy.

However, the present uneven development in developing countries is not adequately explained by all of these theories. Wide-spread absolute poverty in developing countries, the diversity of economic and human development among the countries, the disparity between the level of economic development and the level of human development in a country and the complexity of development issues call for a more comprehensive and diverse theoretical analysis. The issues and problems related to third world development can be seen at various levels. There are different socio-economic theories for different levels. For example, whereas world system theorists consider global level structural variables, modernization, urban bias and evolutionary theorists consider country level variables to explain development. Meanwhile, organizational and social psychological theories are useful to analyse development problems at the lower levels.

But present particularism in sociological theories blinds a large part of the reality in developing countries by being confined to specific ideologies. By limiting the factors affecting development to the global level, world-system theorists deny the country-specific indigenous factors and
human potentials. On the other hand, natural evolutionary theories ignore the effects of both exogeneous factors and country-specific indigenous factors on the development of any country. Both approaches do not recognize any initiative or participation by the people in development, despite positive empirical evidence from developing countries.

Another aspect of development is the link between economic and human development. The evolutionary theories imply that the development of a country is the societal progress which is a natural outcome. Both evolutionary theories and world-system theory view economic development as synonymous with human development; that is human development is an automatic outcome of economic development. The empirical situation shows (Table 1) that there is great disparity between economic and human development in a country. If the focus of development is the people, development should be the total development of the people. The economic development of a country is only one dimension of total development.

In this context, it would be very important to analyse both economic and human development issues and problems at various levels in a comprehensive manner. Hence, this dissertation will focus on the effects of both exogeneous and endogeneous factors on the economic and human development of
Table 1. Indicators for economic and human development for selected developing countries

<table>
<thead>
<tr>
<th>Country</th>
<th>GNP per capita U.S.$</th>
<th>Life Expectancy (years)</th>
<th>Adult Literacy %</th>
<th>Infant mortality (per 1000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Modest GNP per capita with high human development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>400</td>
<td>71</td>
<td>87</td>
<td>32</td>
</tr>
<tr>
<td>Jamaica</td>
<td>940</td>
<td>74</td>
<td>82</td>
<td>18</td>
</tr>
<tr>
<td>Costa Rica</td>
<td>1,610</td>
<td>75</td>
<td>93</td>
<td>18</td>
</tr>
<tr>
<td>High GNP per capita with modest human development</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>2,020</td>
<td>65</td>
<td>78</td>
<td>62</td>
</tr>
<tr>
<td>Oman</td>
<td>5,810</td>
<td>57</td>
<td>30</td>
<td>40</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>6,200</td>
<td>64</td>
<td>55</td>
<td>70</td>
</tr>
</tbody>
</table>


developing countries, including possible mechanisms of those effects.

The proposed research will be a cross-sectional country-level study. However, I expect to use panel data as much as possible depending on its availability.
Organization of Research

This dissertation is presented in alternate format and will be in two parts. The Part I will focus on the study of the external and internal factors on economic and human development. The external factors include world-system variables such as foreign capital penetration and economic structure whereas democracy, industrial-agricultural disparity and ethnic homogeneity will be taken as internal factors.

The Part II will focus on the possible intervening variables of the effects (identified in the Part I) on human development in developing countries. Following the papers is a general summary. Following the General Summary are references cited.

Review of the Literature

Mainstream sociological perspectives on development

The notion of "progress" of society can be found in early western sociology. This "progress" of societies implied development. Nineteenth century sociologists offered different answers to the question of societal change and transformation from small, simple structures into large and complex systems. They produced a variety of typological schema that categorized the process of development into a number of discrete stages. According to Western sociological theorists, societies were conceived as developing along a linear, progressive path,
passing through successive stages, each of which is characterized by particular forms of social organization (Hall, 1988).

Comte (1798-1857) attempted to model sociology after the natural sciences and sought to explain social change using natural science laws ("social physics"). He believed natural evolution of society is directed towards social progress. This process can be facilitated by needed social reforms. His evolutionary process consisted of three stages, namely the theological stage, the metaphysical stage and the positivistic stage. The theological stage is based on belief in supernatural power, whereas the metaphysical stage is based on the belief in natural forces. The positivistic stage which started in the Seventeenth Century is based on natural science. His main focus was the systematic character of society, its parts, inter-relationships and functions. "Comte was able to place all known societies on a continuum of development, from the primitive tribes described by the explorers of America and the Orient, on through the empires of history, and culminating, needless to say, with nineteenth-century France" (Collins and Makowsky, 1984:29). This view of social transformation greatly influenced the later functionalist and organicist views of the society.

Extending the views of Comte on the natural progressive nature of society and Darwin's views on organic evolution,
Spencer made society analogous to an organism. Accordingly, Spencer's social change comes about through natural evolution. Both society and organisms grow with a simultaneous increase in complexity and structure. "Evolution is definable as a change from an incoherent homogeneity to a coherent heterogeneity accompanying the dissipation of motion and integration of matter" (Spencer, 1862:291). Just as in an organism, the three components of structure of society, namely, regulatory, operative and distributory are subject to this change. Spencer concluded the condition of homogeneity is an unstable condition. Just like the conservation of energy in physical matter, there is a 'persisting force' in the society which causes spontaneous social change towards heterogeneity. Hence, he opposed any interventions directed towards societal change.

Durkheim also believed in a scheme of evolution of society from mechanical solidarity to organic solidarity through the division of labor. Durkheim, explaining the evolution of society towards a well ordered system through the division of labor, wrote that men depend less on others as individuals, than on mass organisation of a well-ordered system (which) requires that the parts be strongly tied to the whole and subordinated (Durkheim, 1893). His views on the change of common conscience to collective conscience and the change of repressive laws to restitutive
laws were consistent with his overall scheme of natural
evolution of society from 'primitive' stage to industrialised
stage with an increasing morality. Durkheim did not deny the
need for reforms of society and did not want to see another
French revolution but wanted order.

Social science has displayed little interest in the
societies which now form the third world. All sociological
theories were directed to explain the transition from
feudalism to capitalism in Western societies (Roxborough,
1979). These theories did not attribute any active roles to
the people in less developed societies in their development.
According to these theories the less developed societies have
to wait until the 'natural evolutionary process' brings them
to a higher stage. "When sociology did turn its attention to
the underdeveloped world, it was assumed implicitly by a great
many researchers that the new nations would follow the same
path as that taken by Western European nations, and the
theoretical paradigms developed to explain the transition from
feudalism to capitalism in Western Europe were imported
wholesale, and with few amendments, into the study of Africa,
Asia and Latin America" (Roxborough, 1979:13). These theories
took for granted that all developing countries are in a feudal
stage as Western societies were before capitalism.
Accordingly these theories ignore the fact that developing
countries have different types of societies mixed with both
feudal and capitalist sectors. These evolutionary theories justified the superiority of colonial powers and their assymetrical economic and political relationships with the less developed societies in that period. Hence, these theories provided "expert power" which was complementary to the military power of the colonialists used to maintain the "law and order" in their colonies. "In the nineteenth century, a matured version of the notion of progress fused with evolutionary concepts in biology to produce social theories which justified European "superiority" and imperial domination and, at the same time, offered the prospect of progress to societies that were then regarded as primitive." (Hall, 1988:13). But this 'prospect' has not materialized.

Instead, there is continued unemployment, increased income inequality within and among nations, and the stagnation of real income levels among the poorest. The common theme that animates all of these criticisms is that the benefits of the orthodox strategy of development have failed to "trickle down" to the poor of the world (Wilber and Jameson, 1984).

Max Weber attempted to explain societal development using rationality of religion in addition to economic and political factors. He wanted "...to clarify the part which religious forces have played in forming the developing web of our specifically worldly modern culture..."(Weber, 1930:90). He believed religion, society and individuals are more rational
in Europe than in other countries. He overemphasized the effect of Protestantism on societal development. His main conclusion that appeared in his "The Religion of China," "The Religion of India" and "Ancient Judaism" was that the mixture of the ethical and scientific rationalism gave the impetus for rationalizing social institutions and changing the world in the economic and political upheavals of modernity. He found that Confucianism, Brahminism, Buddhism, and Islam entwined with a patrimonial order of stratification so they strengthened the unpredictable, irrational aspects of their societies rather than weakened them (Collins and Makovsky, 1984). But contrary to his views, the most rapid growth of science and development were seen in non-protestant countries in Europe. Weber's causes for underdevelopment, irrationality, have been considered within the context of rational organizations. He denied the fact that basic features of this type of organization, such as simplification, standardization and centralization are not compatible with the ideas, physical environment, complexity, diversity and uniqueness of those societies. Then the problem is not the unavailability of needed 'rationality' in less developed societies but the belief in the universal applicability of rigid ideal type organizations. Accordingly, Weber's views on development do not recognize flexible unique national and local development interventions in developing societies.
Parsons (1951) considered society as a system with a structure comprised of inter-related parts that fulfill different functions. He believed that a society is analogous to an economic system. Like Spencer he believed society changes by differentiation through the division of labor. The productivity and efficiency of the society increase with differentiation. Parsons believed, like Durkheim, a cultural system changes with a change of social structure. He introduced five 'pattern variables' that determine how people choose their behaviors depending on the situation. Parsons attempted to introduce a framework for the comparative study of different societies. His pattern variables were: 1. achievement vs ascription; 2. specificity vs diversity; 3. universalism vs particularism; 4. quality against performance and 5. self-orientation vs collective orientation. Drawing on Tonnies Gemeinschaft-Gesellschaft dichotomy, Talcott Parsons developed his five pairs of pattern variables (Roxborough, 1979). Hoselitz (1960) argued that this scheme of variables can be used for comparative study of economies or behavior related to production of goods and services in different societies. Many writers have objected to the assumption of the validity of the dichotomy of these variables in relation to traditional and modern societies. Even if one accepts the Parsonian contention, the validity of such a dichotomy is itself open to question (Frank, 1969). Parsons argued that
religion changes from a particularistic nature in primitive
religions to universalistic world religions according to his
scheme. Historically, societies could change with the change
of their value systems. There is a normative order of a
society and a stability based on the existing value system.
Hence, this structural functionalism exaggerates societal
consensus, stability and integration and, conversely,
tends to disregard conflict, disorder and change (Abrahamson,
1978). Parsons and other structural functionalist theorists
give a very passive role to people in societal change. "Human
beings are as much engaged in using social systems as in being
used by them" (Gouldner, 1970:220). Further criticizing the
conservative bias of structural functionalism, Gouldner writes
that Parsons persistently sees the partly filled glass of water
as half-full rather than half-empty. This conservative
flavored structural functionalism operates in support of the
status quo and dominant elites (Ritzer, 1983). Hence,
Parson's structural functionalism does not support any
interventional progressive changes in the society other than
natural evolutionary changes.

For Marx (1852), according to dialectics, the inherent
conflicts in feudal and capitalist societies cause inevitable
revolutions which restructure the political and legal system.
This historical transformation is inherent due to the
contradiction between the mode of production and production
relations in feudal or in capitalist societies. The mode of production is the progressive force in social change. The capitalists in feudal societies and working class in capitalist societies have a historical responsibility to effect this change. Class interests and class consciousness are necessary conditions for these revolutionary changes. Marx believed that unity of the working class through political organizations can facilitate this historical social change. He said that the proletarian revolution would happen first in England where capitalism was developed. But the revolution really happened not in England but in Russia. His dichotomization of society into two classes and inevitable class conflict and revolution are too simplified as mechanisms for societal transformation in complex but less developed societies. His theory is totally based on economic determinism and an historical natural evolutionary process. He ignored the diversity, complexity and uniqueness of different societies. As other Western evolutionary theories, Marxism assumes the feudal-capital dichotomy in evolutionary process which ignore the reality of developing societies which contain both a mixture of feudal and capitalist sectors. Later, Trotsky (1931) argued in his theory of permanent revolution that there is a possibility of having a revolution directly from feudal society to socialist society by skipping the stage of capitalism if the feudal societies have mixed
with some capitalist elements. However, according to Marxism in general, there is no possibility of interventions of people in development in a feudal or capitalist society except for facilitating the corresponding historical revolution only under appropriate subjective conditions.

Marx explained the process of capital accumulation through surplus value generated in a capitalist society. Also, he was empirically correct, by saying that accumulation of capital with development of the capitalism would cross the boundaries of the nations (Marx, 1965). That is capital would accumulate in Western societies at the expense of less developed societies. Marx argued that development of the world capitalist system is the force which links the fates of developed and less developed societies (Marx, 1965). Accordingly, Lenin argued that highest stage of capitalism is imperialism. The declining rate of profit in the metropolis meant that, with the opening up of the colonies, there were more profitable investment opportunities abroad. Then there would be outflow of capital to the colonies (Lenin, 1966). But in reality, this type of outflow of capital could be seen mainly towards some of the Asian colonies. However, there are various forms of imperialism through formation of world markets (Roxborough, 1979).

Robert Nisbet, discussing mainstream sociological theories on societal change writes, "Turn to history and only
to history if what we are seeking are the actual causes, sources and conditions of overt changes of patterns and structures in society. Conventional wisdom to the contrary in modern social theory, we shall not find the explanation of change in those studies which are abstracted from history; whether these be studies of small groups in the social laboratory, group dynamics generally, staged experiments in social interaction, or mathematical analyses of so-called social systems. Nor will we find the sources of change in contemporary revivals of the comparative method with its ascending staircase of cultural similarities and differences plucked from all space and time" (Nisbet, 1969).

**Contemporary Theories on Development in Developing Countries**

**Modernization Theory**

Modernization theory (Hoselitz, 1960 Rostow, 1960), which was a recent manifestation of the evolutionary functionalist paradigm along with social psychological ideas or concepts, also introduced four stages of development. This evolutionary process changed the "traditional" societies to "modern" societies through intermediate stages. These stages are: 1. Traditional society characterized by low level technology, low productivity, a rigid social structure and fatalistic attitude; 2. A "pre-take off" stage in which traditional values
and attitudes change through the introduction of modern technology and scientific knowledge; 3. A "take-off" stage in which the remaining of traditional culture disappear and the sustained economic growth gets established; and 4. A final stage which is characterized by a high level of living, comparable to modern industrial societies. This model is comparable to Tonnie's (1957) Gemeinschaft and Gessellschaft model and to Parson's (1951) pattern variables model.

According to the proposed model, the modernization school argued that development will occur by the provision of needed capital and technology to less developed countries by developed countries. It was assumed these aids are readily available through the generosity of developed countries (Stockwell and Lailaw, 1981). Modernization theorists believed that the notion of traditionalism of less developed societies impede the development of their societies via introducing technology and promoting industrialization. Hence, traditional institutions in these societies should be replaced by compatible institutions as a prerequisite for development. Modernization theory emphasized Weber's 'rationalization' of economic and social institutions in less developed countries to facilitate the modernization process following Western countries. Most of the bi-lateral and multi-lateral loans and aids provided to less developed countries have been based on these modernization principles. Use of
modernization principles is a subordination of social, cultural and behavioral elements in these societies. "The diffusion of capital, technology and various elements of social structure from the advanced countries to underdeveloped areas has often hindered the development of the latter rather than promoting it" (Frank, 1969).

Dependency/World-system Theory

Extending the issue of international capital accumulation through various forms (world trade, technology, and capital penetration etc.), the Latin American dependency school outlined three main forms of investments by 'advanced' countries in less developed countries. Those forms are: 1. Raw material extraction and cash cropping; 2. Manufacturing plants to produce for local markets (elite customers); and 3. Labor-intensive manufacturing plants in global assembly lines (Bornschier and Chase-Dunn, 1985). Hence the dependency school argued that the 'advanced' countries could achieve high levels of development due to their dominant position in the world economy while constraining the development of less developed countries or a resulting 'dependent development'. That is, "contemporary underdevelopment is in large part the historical product of past and continuing economic and other relations between the satellite underdeveloped and the now developed metropolitan countries" (Frank, 1969:4). Dos Santos
(1984) defined the dependency as a situation in which the economy of certain countries is conditioned by the development and expansion of another economy to which the former is subjected. The relation of interdependency between two or more economies and between these and world trade assumes the form of dependence when some countries can expand and can be self-sustaining while other countries can do this only as a reflection of that expansion which can have either a positive or negative effect on their immediate development. That is, development and underdevelopment can be seen as two sides of a single global process based on world division of labor. This world division of labor can be analysed in terms of relationship between the centre (developed) and periphery (less developed). The core/periphery relationship has existed in different forms during last five centuries with continuous expansion and further deepening (Wallerstein, 1974). The main mechanisms that reproduce the core/periphery power differential are the processes of state formation, uneven class formation and unequal exchange (Chase-Dunn and Rubinson, 1977). Dependency theory implies that external factors are the most important obstacles for development in less developed countries. The less developed countries are trapped in existing dependency structures. Hence, it is necessary for less developed countries to dissociate from the world market and strive for self-reliance (Friberg and Hettne, 1985).
Wallerstein (1974, 1977) taking world system as his unit of analysis, stressed that whatever happens in countries is explained by the contradictions in the system as a whole. The global world-system is defined primarily by circulation of capital. The characteristic of world capitalist system is its globality. This world system determines the social structure in a country. It does not give any autonomy to interior forces in a country. There is no distinction between interior and exterior forces. The latter determines the former. There are limited possibilities of transformation of less developed societies within the capitalist world-economy. It is a matter of changing the structural position from a peripheral to a semi-peripheral one, a possibility that is open to a few. We can speak only of social change in the social world system.

The globalization of development by world-system theory, can be regarded as an effort to go beyond dependency to create a framework in which both the centre and periphery, as well as the relations between them, are considered (Friberg and Hettene, 1985). In contrast, in many dependency analyses the external situation of dependence is taken more or less as given and the main focus of study is the internal processes of the dependent society and its interactions with external processes (taking a country as the unit of analysis). This contrasts with world-system perspective in which world economy and its dynamics are taken as the starting point
(Bornscher and Chase-Dunn, 1985). However, the external factors are taken as the determinants of development of less developed countries in both dependency and world system theories. In this analysis, perspectives from both these theories are combined.

Dependency/world system theory totally neglect the role of indigenous factors in development in a country. The great diversity and complexity of third world countries provide negative empirical evidence for this stance. Mouzelis (1988) notes that the inadequacy of treating the third world in an undifferentiated manner and the need to take into account variations within it has become part of the conventional wisdom in the development field. But it is one thing to stress the complexity and enormous variation within the capitalist periphery and another to do something constructive about it.

The variations in either economic development or human development in developing countries are not adequately explained by dependency/world-system theory. The economic development rates (GNP growth) in South Korea (6.7), Thailand (5.8), and Botswana (8.8) are impressive when compared to those of rest of the third world countries (World Bank, 1988). On the other hand, levels of human development (a composite measure of both human capabilities and level of achieved well being of people in a country on the basis of
life expectancy, literacy rate and purchasing power to buy commodities) achieved by Sri Lanka, Jamaica, Malasia and Costa Rica are comparable with some of the developed countries (UN, 1990). Dependency/world-system theory assumes that there would be spontaneous development in periphery countries in the absence of economic domination by developed countries. By arguing that the one great source of underdevelopment is the capitalist core, these theorists unavoidably imply that without capitalist exploitation there would be development (Rhyne, 1991). That is, dependency/world-system theory not only does not recognize non-dependent indigenous factors such as geography, history, ethnicity and social structure which affect development but also any local initiative or any role of people in their development in less developed countries.

On the other hand, all the above discussed mainstream sociological theories and development theories are deterministic. According to these theories there is no space for people to initiate and participate in development except for minor details (Friberg and Hettene, 1985). These theories deal either with an endogenous(evolutionary theories) or an exogeneous process (dependency/world-system theory) of development and both of these processes are deterministic and are also exclusive in nature. Moreover, all of these theories assume that human development is an automatic outcome of economic development.
There are many success stories from developing countries showing certain possibilities ("local spaces") of raising the living condition of the people through grassroots level participatory interventions. The Grammen bank in Bangladesh, and the change agent program in Sri Lanka are movements which are involved in such interventions. These interventions use the 'local space' where action is generated in local communities: 'conscientization' emphasizes people as subjects (not as objects) of the development. Conscientization is the process in which human beings, not as merely recipients (objects) but as knowing subjects, achieve a deepening awareness of the sociological reality that shapes their lives and capacity to transform that reality (Paul Freire, 1971).

As Galtung (1980) argued, no social structure has any concerted meaning unless there are people acting in the prescribed manner in the prescribed positions. No structure exits in and by itself. New structures come into being because people start doing new things, start dealing with each other in a new way. The point is only that for this to happen the concerted and deliberate actions of many people are needed. Hence, one of most important forms of social change is also the one least noticed by theoreticians because it is so obvious: structures change simply because people stop doing something and do something else instead.
PART I. EFFECTS OF INTERNAL AND EXTERNAL FACTORS ON ECONOMIC AND HUMAN DEVELOPMENT
INTRODUCTION

Previous Research

A substantial volume of research has addressed development issues in the Third world since the 1970's. Most of this research is confined to dependency or world system and modernization theories. This research has focused on the effects of the dependency related variables (independent variables such as foreign capital penetration and foreign trade) on socio-economic variables (dependent variables) such as economic growth, agrarian crisis, disarticulation (disparity between different sectors in development level and productivity), income inequality, overurbanization, fertility rates, mortality rates and political violence in developing countries. Past research has used diverse statistical methods for analyses of cross-national data, gathered from various sources.

Economic development and human development

In most of the research, the level of economic development of a country has been measured by Gross Domestic Product per capita or by Gross National Product per capita. Because of inaccuracies inherent in exchange rates, use of exchange rates systematically overestimates the inequality between countries when GNP per capita is used as a measure of
economic development (Peacock and Hoover, 1988). Some researchers avoid this problem by measuring economic development using other indicators such as energy consumption per capita (Muller, 1988). Most of the research on development in developing countries has concentrated on the effects of world system variables such as foreign investment penetration, trade structures, and foreign debts on economic development (Bradshaw, 1987; Timberlake, 1980). These studies show that there are negative effects of world system variables on the economic development of developing countries. In most of the research, human development is measured by direct indicators such as life expectancy, infant mortality, literacy rates, per capita calorie consumption, and percentage of low birth weight etc (Stokes, 1990; Wimberley, 1990). Much research has shown that there are significant negative effects of world system variables on infant mortality and life expectancy (Lenski and Nolan, 1984; Nolan and White, 1983; Sell and Kunitz, 1987).

Although there is little research on the relationship between economic development and human development, available findings are contradictory. Shin (1975) found that development level explains only 20 percent of the variance of infant mortality. Literature from the World Bank (1988) showed that Burma, with a per capita GNP of less than $200, and Sri Lanka, with less than $400 per capita GNP have
longevity and infant mortality measures comparable to those of Brazil and Mexico which have six to ten times the per capita GNP. Todaro (1981) found that national economic growth is not always reflected in increased well-being among the poor. Some Third World countries that underwent rapid economic growth in the 1960s and 1970s simultaneously experienced greater unemployment and income inequality. Warnock (1987) observed that economic growth in Brazil is accompanied by a decline in real wages and increase in infant mortality. Firebaugh (1980) concluded that the relationship between income distribution and standard of living (which are proxies for human development) varies substantially across nations.

Modernization theorists argue that the relationship between economic development and income distribution (proxy for human development) is curvilinear (Kuznets, 1955; Hirshman, 1958). Paukert (1973) and Rubinson (1976) found evidence for this thesis by plotting the GNP of various nations against various indices of inequality. A partial analysis of previous studies, avoiding specification error, demonstrated a moderately strong curvilinear relationship between economic development and income inequality (Weede, 1980). But some research (Adelman and Morris, 1973) observed there is no such pattern and concluded that development level has only secondary and minor effects on equity.

These contradictory results might be due to the
difference in the selection of controlling variables for the analyses. Hence, it is useful to examine the correspondence between the economic development level and human development indicators net of established contributing factors such as world system variables, democracy and rarely considered indigenous variables such as ethnic homogeneity.

**Foreign capital penetration**

Dependency or World system theories contend that foreign investment penetration affects economic growth of developing countries adversely while basic needs proponents show that it adversely affects the health and nutritional status of the people. Modernization theorists argue that foreign investment penetration contributes to the economic growth of developing countries.

Summarizing several country studies and theoretical works, (Frank, 1969; George, 1977; Moran, 1978), Wimberely (1990) writes that foreign investment penetration has distorted development in developing countries through the following processes:

(1) Slowing economic growth, owing to such factors as decapitalization and displacement of domestic firms by the multinational corporations;
(2) Promoting income inequality, often in the interest of politically and economically powerful foreign investors;

(3) Obstructing progressive domestic political processes in developing countries that are contrary to core economic interests;

(4) Diverting land from food production for domestic use and displacing poor farmers who have few alternatives for livelihood; and

(5) Corrupting local consumer tastes.

Many Dependency or World system theorists argue that investment dependency is more important than other kinds of dependency (e.g., trade) for exploitation of post-colonial developing countries (Dos Santos, 1970; Frank, 1969). Bornschier and Chase-Dunn (1985), in a study of cross-national data for developing countries, found foreign investment affects economic growth of developing countries adversely. They observed that this effect was mediated by an increase in income inequality, low growth of foreign capital and a decrease of domestic investment of developing countries. London and Williams (1988) showed there is a significant negative effect of foreign capital penetration on the
Physical Quality of life index which is a composite measure of basic needs satisfaction. Evans and Timberlake (1980), using cross-national data noted that high levels of economic inequality found in less developed countries have been attributed to the penetration of their economies by investments of multinational enterprises based in developed countries of the West. They suggested that foreign investment results in high levels of inequality by distorting the evolution of the labor force structure. Third World economies penetrated by foreign capital will have unusually rapidly growing proportions of the labor force employed in the tertiary, and it is the growth of this proportion that mediates some of the effects of dependence on inequality. Bornscheir and Chase-Dunn (1985) showed that income inequality caused by foreign investment penetration affects economic growth of developing countries through a decrease in the rate of growth of stock of foreign capital and a subsequent decrease of domestic investment percentage.

Marshall and Schwartz (1984), using an analysis of cross-national data from 85 developing countries, examined the hypothesis that declining per capita food production in the periphery results from its incorporation into the capitalist world economy. Investment dependence creates strong demand for foreign exchange which, for most of the periphery can only be met by developing the agricultural export sector of the
economy. This development is not compatible with peasant food production and thereby creates an "agrarian crisis" and food shortage in developing countries. Food shortages can result in malnutrition and poor health conditions. Marshal and Schwartz concluded that data supported the hypothesis and their finding extends the analytical potential of dependency or world-system theory.

London and Robinson (1989), using regression analysis of cross-country data, showed that foreign capital penetration by multinational companies contributed to increased political violence both directly and indirectly, through its effect on income inequality. Although they did not mention that political violence contributes to the adverse effects of foreign capital penetration on economic growth and human development indicators, there is a great deal of empirical evidence that political violence of developing countries adversely affects development. They argued that theoretical and empirical integration of internal and international factors yielded the most comprehensive explanation of the causes of collective political violence.

Strokes and Anderson (1990) studied the effect of dependency and disarticulation on development in developing countries. They posited that the effect of disarticulation on basic needs was not an artifact of dependency but that disarticulation was the key intervening variable between
dependency and the social outcomes of economic growth, because it inhibits the spread effects generally thought to be associated with economic growth.

London (1988) found that results from previous studies on the effect of dependency or world-system position on fertility trends in non-core nations were contradictory. He criticized the methods and procedures of previous studies and conducted new analyses. In a study of non-core countries, he showed that the dependency of the country does distort development and impede fertility decline. He also demonstrated that national and institutional characteristics such as social-insurance programs and concerted family-planning programs contributed significantly to declines in fertility. Evans and Timberlake (1980) noted that investment dependency affect the status of women in ways that retard fertility decline. Ward (1984) argues that dependence results in the concentration of women in low-wage or informal labor markets which are compatible with childbearing and promote high fertility. Dependency creates a situation (distorted development) in which children make a contribution to the family income. There is little motivation to limit fertility in developing countries because the core is benefitted by "profitable" child labor (Hout, 1980; Caldwell, 1980; Nolan and White, 1984).

Hout (1980), using cross-national data from 62 countries, showed that the fertility reducing effect of socioeconomic
development is strongest only when dependence is low; it weakens as dependence increases because dependency concentrates income and thereby elite groups control the use of the benefits of growth. Ward (1984) found that the effect of dependence on fertility was small and indirect. Instead it only operates through intervening variables such as women's economic status, income inequality, and infant mortality. 

There are several studies which provide contradictory results on the effects of dependency on demographic characteristic of a country. Thomas Sowell (1983), using cross-national mortality data of developing countries, observed that the net effect of foreign capital penetration on mortality was beneficial to those countries. Bullock (1986) found that investment dependence helps lower infant mortality. Cartright and Adams (1984), using twenty Asian and twenty Latin-American countries, showed that none of fifteen indicators of dependence had any significant effect on fertility measures (crude birth rate and crude birth rate change), net of social development and family planning programs.

The results of the study of effects of dependence on economic growth and on human development indicators are contradictory and call for more analyses. Especially, it is useful to examine the effects of investment dependence after controlling for certain country characteristics such as
economic structure, democratic experience and ethnic homogeneity. The effects of dependence have to be studied for different levels of certain characteristics of countries such as the level of economic development. Also, more research has to be done to identify possible mechanisms of effects of dependence on economic growth and on human development indicators.

Economic structure and disarticulation of the economy

Dependency or world-system theorists argue that the economic structure of developing countries is determined by the world capitalist system. Hence, the economic structure of a developing country is an external factor which affects development. This type of dependency is "structural dependence" on core countries.

Developing nations have traditionally served as exporters of primary goods. Although the nature and value of these goods differ widely from nation to nation, most are marked by price instability, thwarting the economic development of these nations. This aspect of economic structure still lacks diversification and the potential for self-perpetuating growth (Peacock and Hoover, 1988).

Many Third World farmers produce a variety of primary commodities (e.g., coffee, tea and cotton) that are "purchased" by the government and exported. These farmers may
be damaged by low international prices or by other unfavorable circumstances such as drought or famine which affect agricultural production, leading to rural-urban migration and inhibiting economic growth (Bradshaw 1987). Several studies found that raw material export and commodity concentration inhibit economic development in developing countries (Delacroix and Ragin, 1981).

On the other hand, a large part of the agriculture sector in developing countries is comprised of traditional peasant food production. Marshal and Schwartz (1984), using data from 85 developing countries, showed that investment dependence creates a strong demand for foreign exchange which for most of the periphery can only be met by developing the agricultural export sector of the economy. Hence the modernization of agriculture biases production towards exportables. This development is incompatible with traditional peasant agriculture.

An important feature associated with the structure of the economy of developing countries is the disarticulation of the economy. Disarticulation is characterized by weak or missing links between economic sectors (Amin, 1976). This distortion of structure is usually between industrial and agricultural sectors because the agricultural sector utilizes traditional and labor intensive techniques whereas the industrial sector utilizes modern technology. Hence, developed sectors are
unable to use inputs from traditional sectors (Stokes, 1990). Marshal and Schwartz (1984) show that the most general consequence of disarticulation is the distortion of domestic purchasing power arising from concentration of income in the hands of a small number of people. The domestic market is extremely limited and production is distorted toward luxury goods consumed by the wealthy or exported back to the core. This sectorial inequality can be considered as a proxy for income inequality of developing countries (Jackman 1975). This sectorial inequality is very closely associated with the urban-rural income inequality.

Lipton (1977) shows that the investment-output ratio in the non-agricultural sector is about double that of the agriculture sector in developing countries. Government policies (pricing and related policies) which are biased towards urban areas have produced rural-urban migration and increased inequality. Griffin (1977) argues that in order to reduce rural-urban income inequality and national output, the resources should be reallocated to the agriculture sector for higher productivity. Amin (1975) argues that the root of disarticulation is dependency of developing countries on capital and on export.

The modern sector in developing countries gets favorable attention from the governments and attracts a large portion of available scarce capital (domestic and foreign). The
agriculture sector, especially traditional agriculture, is neglected and continues to have low productivity. The productivity of this stagnating agricultural sector is adversely affected by the population growth in rural areas. Also, small and cottage industries in these countries are negatively affected by competition with modern sector domestic production (Amin, 1976).

Although there were several studies examining the effects of economic structure (raw material exports and commodity concentration) on economic growth and human development indicators, these effects have been investigated without controlling for important country characteristics such as democratic experience and ethnic homogeneity and for other world system variables such as foreign capital penetration. It is necessary to perform analyses after controlling for the above variables in order to identify primacy of variables. Also studies are inadequate with regard to the mechanisms of the effects of economic structure on economic growth and on human development indicators through possible intervening variables such as women's education, contraceptive use, fertility and the disparity between agriculture sector and industrial sector. Following sections include separate discussions on the importance of internal and external factors, affecting economic and human development.
Democratic experience of developing countries

Dependency or World system theorists argue that the governments (state and politics) in developing countries are imbedded in deeply structured forces of world capitalism. Governments are representations of the small elite class who serve the capitalist system. States are derivatives of class structure, conceived in terms of level of development, class structure and level of foreign capital penetration. Hence states in developing countries have no autonomy for the formulation and implementation of appropriate development policies. Instead governments are compelled to create favorable conditions for foreign investments including favorable tax and exchange rate, anti-inflationary government policies, political stability, minimal labor unrest and demand structure favoring income concentration (Kohli et al, 1984).

On the other hand, some development activists argue that a democratic political system is necessary for economic and human development in developing countries. States have a degree of autonomy to implement appropriate development policies for economic and human development in developing countries. Thus the development strategy of the government is the crucial variable determining the course of income distribution. It is consistent with the assumption that state authorities do in fact make choices of far-reaching importance for the societies they govern (Kohli et al., 1984).
Therefore, types of government do make a difference. The actions of democratic regimes are different from those of authoritarian ones. Politics and capacities of democratic governments are oriented to pursue policies in a manner more or less autonomous of class and capital. These governments are more accountable to people. A cross-sectional correlation between democracy and less inequality, after control for economic development was found in cross national analyses (Weede 1980). Goulet (1989), in a case study on Brazil and Sri Lanka, shows that political redemocratization now occurring in numerous countries of Asia and Latin America challenges both the rule of dictators and their elitist development strategies. He shows that popular participation is necessary in transition to equitable development.

Freire (1973) argues that when people are oppressed, they do not participate in their own humanization. Conversely, when they participate, thereby becoming active subjects of knowledge and action, they engage in processes of development.

A case study on Sri Lanka, where people have enjoyed universal franchise for more than fifty years, showed that the preponderance of peasantry and low income groups in the electorates has resulted in re-distributive policies which have effected sizeable transfers of income. Because the egalitarian pressures have increasingly taxed the higher income groups, government has not yet been able to broaden the
tax base to siphon some part of the incremental incomes of the peasantry and other self-employed (Marga, 1979). The same study indicated that social policies of the governments were generally directed at winning the support of urban working class and peasantry. It showed that the proportion of total income had shifted in favor of the rural areas as a result of government policies. Sri Lanka has achieved encouraging results in the field of education, health, nutrition, regional dispersal of growth, rural and urban balance and income distribution as a result of government policies.

Few quantitative research studies focus on the effects of democracy on economic growth and on human development in developing countries. Muller (1988) concluded that there should be a strong association between the level of economic development and years of democracy because almost all old democracies have very high levels of development. Most of the research on democracy has focused on the relationship between democracy and income inequality which might be a mediating variable between democracy and development level of developing countries. Stack (1978) and Weede (1982) demonstrated that there is a negative effect of level of democracy on income inequality. Hewitt (1977) showed that there is strong negative correlation between years of democracy and the size of the share of the income received by richest quintile in 25 industrialized nations. Weede and Tiefenbach (1981) found
that the effect of democracy on inequality varied across different samples. They observed there was a significant negative effect in smaller samples whereas no significant effect was found in larger samples. Bollen and Granjean (1981) reported no significant effect of democracy on income inequality. Also Bollen and Jackman (1980) showed there was no reciprocal effect between level of democracy and income distribution.

There are disagreements on the measurements of democracy. Muller argues that any measure of democracy at a single point in time, no matter how reliable and valid, is insensitive to a country's experience of democracy over time. Hence a measure of democracy should be longitudinal, and the length of the time that democratic institutions have existed should be taken into consideration to measure democracy. Further, Muller argues that a reason for the failure to find a significant negative effect of level of democracy on income inequality could be the confounding influence of new democracies. In such countries, sufficient time has not elapsed for the institutions of democracy, operating through mediating variables such as strong trade unions and socialist parties to have exerted an egalitarian effect on the distribution of income. Research on the effect of democracy is confined to some case studies in a few countries and to very few cross-national studies mainly on the effect on income inequality in
developing countries. The results are contradictory. Also the regression analyses used to examine the effect of democracy have not controlled world system variables such as foreign investment penetration and structure of the economy. Hence the issue of primacy of external factors in relation to democracy of a country, that is whether democracy of a country is a product of external factors, has been avoided in the analyses. It is useful to test the effect of democratic experience of a country on economic development and on human development net of world-system variables and possible indigenous variables. Also, more research has to be done to identify the mechanisms of the effects of democracy on development indicators.

**Ethnic homogeneity**

Ethnic groups are self-conscious collectivities of people who, on the basis of a common origin or a separate subculture, maintain a distinction between themselves and outsiders (Hraba, 1979). Ethnic groups may be either cultural or racial and are often territorially segregated. Ethnic conflicts (inter-group rivalries) and ethnic stratification between groups in terms of wealth and power are widespread in developing countries. World system theorists believe that ethnic differentiation in most of the developing countries is result of processes controlled by the highly organized
societies in developed countries.

It is the operation of the world market forces which accentuate ethnic differences, institutionalize them, and make them impossible to surmount over the short run (Wallerstein 1979). Further, Wallerstein argues that ethnic affiliations are linked to political groupings or positions, and are often linked to occupation. Hence ethnic groups, kind of status groups, are blurred collective representation of classes.

Although research on the effect of ethnic homogeneity on development is scant, there is empirical evidence in several African and Asian countries that ethnic confrontations have severely affected the development efforts. Ethnic confrontations have contributed to very large military budgets in developing countries.

On the other hand ethnic segregation has impeded development efforts due to resulting spatial and regional disparities. Newly independent governments have to give considerable emphasis to links between ethnically different regions (Lattre, 1991). Ethnic stratification may have contributed to social and income disparities in developing countries.

Lack of ethnic differences might have contributed to high nationalism among the people in some countries. A higher level of development in these developing countries such as Korea may be partially attributed to nationalistic values and attitudes
of the people. This apparent relationship between nationalism in more ethnically homogeneous countries and relatively higher level of development calls for research on this area. Hence, it is useful to examine the direct and indirect effects of ethnic homogeneity on economic and human development indicators, net of other important contributing factors.

Hypotheses

The following hypotheses will be tested in the Part I of the study.

1. The higher the level of foreign capital investment in a developing country, the lower will be the economic development, net of other factors. The differential effect of foreign capital penetration, depending on the level of economic development and democracy of countries, will also be investigated.

2. The larger the relative size of the agricultural sector in a developing country, the lower will be the economic development, net of other factors. Differential effects of economic structure, depending on level of economic development and democracy of the countries will also be examined.

3. The greater the disparity between the productivity of the
agricultural sector and that of the industrial sector in a developing country, the lower will be the economic development, net of other factors.

4. The less experience in democracy by the people in a developing country, the less will be the economic development in a developing country, net of other factors.

5. The less the ethnic homogeniety in a developing country, the less will be the economic development in a developing country, net of other factors.

6 - 10. Five comparative hypotheses, similar to hypotheses 1 to 5, will be tested for human development index in developing countries instead of economic development as the dependent variable.

The effects of investigated factors on different dimensions of human development will be examined by considering single human development indicators such as life expectancy, infant mortality and literacy as well as the U.N. composite scale of human development.

11. The higher the level of economic development, the higher will be the level of human development in a developing
country, net of other factors.

These hypotheses are represented in the theoretical models shown in Figure 1.

![Diagram]

Figure 1. Theoretical models to be tested for economic development and for human development.
METHODOLOGY

Sources of Data

Cross national socio-economic political data for ninety developing countries, excluding planned economies and countries with population of less than one million, from various sources will be used for the analyses. Planned economies were excluded because data are not compatible with the data from other countries.

The sources of data are

1. World Bank Annual Reports
2. World Food and Agriculture Organization reports
3. UNESCO Annual Reports
4. World Health Organization annual reports
5. Human Development report, UNCD.
7. Third World Encyclopedia.
8. International Labor Organization annual reports
9. Transnational Corporations and Underdevelopment by Bornsheir and Chase-Dunn
10. American Sociological Review - Gini coefficients for income inequality developed by E.N. Muller
Measures

Some of the measures to be used in the analyses are the following.

Economic development

This is measured by the natural logarithm of per capita gross national production (GNP) of a country taken from World Bank report 1988. GNP is the total domestic and foreign output claimed by residents and is calculated without making deduction for depreciation. The natural logarithm is used due to the high skewness of GNP figures across developing countries. When the natural logarithms of the independent variable and dependent variables are used in regression analysis, the regression coefficient shows the percentage change in the dependent variable explained by every percentage change of the independent variable.

Human development

This is measured by a human development indicator, which is a composite scale developed by the United Nations (1990) using life expectancy, adult literacy and purchasing power of the people to buy commodities for satisfying basic needs. To construct a composite index, a minimum value and a desirable value had to be specified for each of three indicators. The minimum and desirable values are the end-points of a scale
indexed from one to zero for each measure of deprivation. Placing a country at the appropriate point on each scale and averaging the three scales gives its average human deprivation index, which when subtracted from 1 gives the human development index (HDI).

Although there is a theoretical basis for the computation of this index, use of this index in regression analyses would obscure important differences among countries with respect to separate components of this index as these components are not very highly correlated. Hence, separate analyses for life expectancy and for literacy (part II) will be performed as well.

**Economic structure**

This is measured by the percentage of production of agriculture sector out of total gross domestic production in a country. The agriculture sector comprises agriculture, forestry, hunting, and fishing. The data were taken for 1965 (early point in time) from the World Development Report (World Bank 1988). The data were taken for an early point in time because economic structure is intended to be used as one of causal variables for the output variables, economic development and human development at later times (1985 and 1990 respectively).

As agriculture is the largest sector in most developing
countries, its percentage of the total economy would reflect the size of the rural sector and also the dependency of country economy on agriculture only. However, some of the production of subsistence agriculture in developing countries are not valued and not included in national production figures. Hence, the measure for economic structure may underestimate the relative size of the agricultural sector in developing countries.

**Disparity between agricultural and industrial sectors**

This will be measured by the ratio of productivity of the industrial sector to that of the agricultural sector in a country. The productivity of a sector can be computed by the ratio of percentage of gross domestic product of the sector to percentage of total labor force in that sector. A country has a high value of this index when its industrial sector is more productive than its agricultural sector. As almost all agricultural areas are rural and industrial areas are urban in developing countries, this measure indicates the rural-urban disparity ('dualism') and urban bias of the country.

This measure was computed following Lipton (1977) except only the industrial sector was investigated rather than the non-agricultural sector which was used in the computation of his index of rural-urban disparity. As some of the non-agricultural sectors such as mining are mostly found in rural
areas, it is more accurate to compare the productivity of the industrial sector (not the whole non-agricultural sector) with that of the agricultural sector to measure the rural-urban disparity.

This measure was computed using World Bank (1988) data for 1965 because this variable is supposed to be used as an independent or intervening variable. Lagged time would allow for this disparity to make any impact on dependent development indicators.

**Foreign capital penetration**

This is measured by (Bornscheir and Chase-Dunn, 1985) the total book value of the stock of foreign direct investment at the end of 1967, weighted by the amount of domestic capital stock of the country and the size of the population.

In order to assess the long-term effects of investment dependence mentioned by Dependency theorists, it is beneficial to use investment at an earlier time. Use of Bornscheir and Chase-Dunn's foreign investment index allows these analyses. This index is based on the stocks of direct investment from 16 Organization for Economic Cooperation and Development (OECD) member countries in 1967. This index has been used by several studies (London and William, 1988; London, 1988; Stokes, 1990; Wimberely, 1990).
Democratic experience

An authoritarian-democracy scale is created to measure the level of democracy. This scale takes into account the period of time a country has enjoyed stable democracy. That is the period of time, people have participated in choosing governments and democratic institutions have functioned.

Bollen (1980) developed a continuous index to measure level of democracy of a country which ranges from 0-100. Muller (1988) used the years of democratic experience of a country for his study on democracy and income equality. I attempt to take both the period of time of democratic experience and the type of non democratic governments into account for this authoritarian-democratic scale. This ordinal level measure of democratic experience was developed as follows.

Dictatorship (at least 75% of the period since 1966 or since independence) = 1

Centrally planned countries or life long/military leaders with or without one party or similar regime at least 75% of the period since 1966 or independence = 2

Countries with one party elections (civilian leaders) at least 75% of the period since 1966 or independence = 3

Countries with multi party elections for more than 20 years and less than 30 years = 4
Countries with multi party elections
for more than 30 years = 5

All other countries with disrupted democracies
since independence = 3

A high score indicates long democratic experience of a
country whereas a low score refers to an authoritarian
country.

**Ethnic homogeneity**

A scale included in the Third World Encyclopedia to
measure the ethnic homogeneity of a country using percentages
of different ethnic groups in the country will be used. The
scale ranges from 0 to 100, showing the minimum score in
Tanzania (7%) and maximum score in Korea (100%).

A high score of this scale indicates that most of the
people in that country belong to the same ethnic group. That
is minorities are numerically small and do not participate in
national level decision making or in struggles for more power
and autonomy. Hence, with a higher value on the ethnic
homogeneity index, there might be more national consensus on
policies and less internal conflicts in a country.

**The infant mortality rate**

The infant mortality rate is the number of infants who
die before one year of age, per thousand live births in a
given year. Data are from United Nations for 1986 (World Bank, 1988). This is a sensitive indicator of the living condition of people.

**Daily calorie supply per capita**

This is calculated by dividing calorie equivalent of the food supply in a country by the population. The data used are from the Food and Agriculture Organization for 1986.

**Primary education**

This is calculated by dividing the number enrolled in primary schools divided by the population of school-age children. These data are from UNESCO.

**Analyses**

This analysis covers the period from 1965 to 1988. This period is sufficient for the independent variables measured at an earlier point in time to make an impact on outcome variables measured at a later point in time. Also due to high correlations between dependent variables at the two points in time, a lagged dependent variable is used in the regression analysis for a very conservative test. Heteroskedasticity of some variables is reduced by taking the natural logarithms of those variables. Bradshaw (1988) transformed GNP natural logarithmically to reduce the skewedness of the data. A
lagged dependent variable was included as an independent variable in several studies which used regression analysis in order to have more conservative tests (Wimberly, 1990; Bradshaw, 1988). In this regression analysis, natural logarithm of GNP in 1966 is included as an independent variable.

There can be specification problems in regression analyses. The possible reciprocal effects are not considered in these analyses. There can be reciprocal effects between dependent and independent variables such as foreign investment and economic growth, democracy and economic growth and economic growth and human development etc. The possibility of nonlinear relationships between dependent and independent variables such as human development and level of economic development is reduced in these analyses because the sample is only from developing countries.
RESULTS

Factors Affecting Economic Development

Table 2 and Figure 2 show the results of regression of economic development level (natural log of GNP) on lagged economic development level and another five factors, including dependency variables. These regression analyses (Table 2) were used to test hypotheses 1 through 5. Hypothesis 1 predicting that the higher the level of foreign capital investment in a developing country, the lower will be the economic development, was supported. Hypotheses 2 and 3 predicting that the larger the relative size of agricultural sector in a developing country, and the greater the disparity between the productivity of the agricultural sector and that of industrial sector in a developing country were not supported. Hypothesis 4 that less experience in democracy by the people in a developing country will be accompanied by less economic development in a developing country, was supported. Hypothesis 5 that less ethnic homogeneity in a developing country will be associated with less economic development in a developing country was not supported. The second model in Table 2 includes only variables which were significant in the regression. It is striking to see that there are no substantial effects of economic structure (percent of agriculture sector), disparity between the agriculture sector
and industrial sector and ethnic homogeneity on level of economic development, net of other factors in the regression. Hence, the hypotheses 2, 3, and 5 are not accepted. Democracy, capital penetration and lagged economic development

Table 2. Linear regression of economic development level measure on the measures of external and internal factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>model 1</th>
<th>model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.500(.768)</td>
<td>-.366(.375)</td>
</tr>
<tr>
<td>Lagged eco. development</td>
<td>.949(.109)***</td>
<td>1.08(.067)***</td>
</tr>
<tr>
<td>Capital penetration</td>
<td>-.003(.002)</td>
<td>-.003(.001)*</td>
</tr>
<tr>
<td>Economic structure</td>
<td>-.005(.005)</td>
<td>a</td>
</tr>
<tr>
<td>Agri-ind disparity</td>
<td>000(.007)</td>
<td>a</td>
</tr>
<tr>
<td>Democracy</td>
<td>.077(.040)*</td>
<td>.072(.032)**</td>
</tr>
<tr>
<td>Ethnic homogeneity</td>
<td>002(.002)</td>
<td>a</td>
</tr>
<tr>
<td>R</td>
<td>.850</td>
<td>.870</td>
</tr>
<tr>
<td>S.E.</td>
<td>.389</td>
<td>.372</td>
</tr>
<tr>
<td>N</td>
<td>54</td>
<td>63</td>
</tr>
</tbody>
</table>

* p < .10  ** p < .05  *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses. a = independent variable not included.
of a developing country have significant effects on economic development, net of other factors. Hence, hypotheses 1 and 4 cannot be rejected. Model 2 in Table 2 shows that these three variables explain 87 percent of the variance of level of economic development of developing countries.

Differential Effects of Capital Penetration on Economic Development

Interaction between capital penetration and lagged economic development

Following Stroke and Anderson (1990), I examined the interaction between capital penetration and lagged economic development on the level of economic development by creating dummy variables representing three categories per capita GNP:
less than $500, between $500-$1000 and more than $1000. These categories had 42, 20 and 16 developing countries respectively. The capital penetration score was multiplied by each dummy variable to obtain three product terms. Hence, the coefficient of three product terms can be interpreted as the slopes of capital penetration within each level of economic development (Table 3).

Table 3. Linear regression of economic development level on interaction terms for capital penetration at three levels of lagged economic level and other factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>.924(.473)</td>
</tr>
<tr>
<td>Lagged economic</td>
<td>.888(.078)***</td>
</tr>
<tr>
<td>development</td>
<td></td>
</tr>
<tr>
<td>Democracy</td>
<td>.038(.031)</td>
</tr>
<tr>
<td>Interaction between</td>
<td></td>
</tr>
<tr>
<td>penetration and</td>
<td></td>
</tr>
<tr>
<td>GNP &lt; $500</td>
<td>-.007(.001)**</td>
</tr>
<tr>
<td>GNP = $500-1000</td>
<td>-.003(.001)*</td>
</tr>
<tr>
<td>GNP &gt; $1000</td>
<td>.002(.001)</td>
</tr>
<tr>
<td>R</td>
<td>.898</td>
</tr>
<tr>
<td>S.E.</td>
<td>.334</td>
</tr>
<tr>
<td>N</td>
<td>63</td>
</tr>
</tbody>
</table>

*p < .10  ** p < .05  *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses.
For each level of economic development, the equation reduces to a model containing the constant, effect of lagged economic development, effect of democracy and effect of capital penetration for that specific development level. Table 3 shows the results of a regression with interaction effects of capital penetration and lagged economic development level. According to these results, effects of foreign capital penetration are more pronounced in lower levels of economic development. Although there are significant negative effects of capital penetration in the countries with GNP less than $1000, there is no such effect in the countries with GNP higher than $1000.

Interaction between capital penetration and democracy

Similar to interaction terms between capital penetration and lagged economic development, three interaction terms were created using three categories of democracy: Authoritarian regimes, partial democracies and democracies more than 30 years. Table 4 shows the results of a regression of economic development on lagged economic development, democracy and three terms of penetration for three democracy categories. The results are interesting. Capital penetration has significant negative effect on economic development only in partial democracies and has no effect on economic development in authoritarian regimes and or in established democracies.
Table 4. Linear regression of economic development level on interaction terms for penetration at three levels of democracy and other factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>-.430 (.382)</td>
</tr>
<tr>
<td>Lagged economic</td>
<td>1.076 (.067)*** development</td>
</tr>
<tr>
<td>Democracy</td>
<td>.113 (.057)*</td>
</tr>
<tr>
<td>Interaction between penetration and</td>
<td></td>
</tr>
<tr>
<td>Authoritarian regime</td>
<td>-.001 (.002)</td>
</tr>
<tr>
<td>Partial democracies</td>
<td>-.002 (.001)*</td>
</tr>
<tr>
<td>Democracies more than 30 yrs</td>
<td>-.003 (.003)</td>
</tr>
</tbody>
</table>

\[ R^2 = .874 \]
\[ S.E = .371 \]
\[ n = 63 \]

* p < .10  ** p < .05  *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses.
Factors Affecting Human Development

In this section tests of hypotheses 6 to 10 are reported. Table 5 and Figure 3 show the results of regressions of the Human Development Index on the same independent variables used in regressions of economic development. It is striking to see that there are no significant effects of foreign capital penetration and the agriculture-industrial disparity on the Human Development Index whereas lagged economic development, democracy, economic structure and ethnic homogeneity have significant independent effects on human development.

Hypothesis 6 that higher levels of foreign capital investment in a developing country will be associated with the lower human development was not supported. Hypothesis 7 predicting that the larger the relative size of the agricultural sector in a developing country, the lower will be the human development was supported. Hypothesis 8 predicting that greater the disparity between the productivity of the agricultural sector and of the industrial sector in developing country, the lower will be the human development was not supported. Hypothesis 9 that less experience in democracy in a developing country will be associated with lower human development in a developing country was supported. The hypothesis that less ethnic homogeneity in a developing country will be related with lower human development in a developing country was supported. Finally, hypothesis 11 that higher economic development in a developing country will be
Table 5. Linear regression of human development index on the measures of external and internal factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>model 1</th>
<th>model 2</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>16.693</td>
<td>7.474</td>
</tr>
<tr>
<td></td>
<td>(22.971)</td>
<td>(22.788)</td>
</tr>
<tr>
<td>Lagged eco. development</td>
<td>8.420**</td>
<td>7.181**</td>
</tr>
<tr>
<td></td>
<td>(3.286)</td>
<td>(3.077)</td>
</tr>
<tr>
<td>Capital penetration</td>
<td>-.072</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>(.052)</td>
<td></td>
</tr>
<tr>
<td>Economic structure</td>
<td>-.620***</td>
<td>-.496***</td>
</tr>
<tr>
<td></td>
<td>(.147)</td>
<td>(.145)</td>
</tr>
<tr>
<td>Agri-ind disparity</td>
<td>-.302</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>(.236)</td>
<td></td>
</tr>
<tr>
<td>Democracy</td>
<td>5.109**</td>
<td>5.411**</td>
</tr>
<tr>
<td></td>
<td>(1.215)</td>
<td>(1.188)</td>
</tr>
<tr>
<td>Ethnic homogeneity</td>
<td>.121*</td>
<td>.142**</td>
</tr>
<tr>
<td></td>
<td>(.061)</td>
<td>(.062)</td>
</tr>
<tr>
<td>$R^2$</td>
<td>.794</td>
<td>.712</td>
</tr>
<tr>
<td>S.E.</td>
<td>11.569</td>
<td>11.700</td>
</tr>
<tr>
<td>n</td>
<td>54</td>
<td>64</td>
</tr>
</tbody>
</table>

* p < .10  ** p < .05  *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses. a = independent variable not included.
associated with greater human development was supported. Hence hypotheses 6 and 8 were rejected and hypotheses 7, 9, 10 and 11 were accepted.

Figure 3. Results of the model for level of human development

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital Penetration</td>
<td>-.072</td>
</tr>
<tr>
<td>Economic Structure</td>
<td>-.620**</td>
</tr>
<tr>
<td>Agri-Ind Disparity</td>
<td>-.302</td>
</tr>
<tr>
<td>Ethnic Homogeneity</td>
<td>.121*</td>
</tr>
<tr>
<td>Lagged Economic Dev.</td>
<td>8.42**</td>
</tr>
<tr>
<td>Democratic Experience</td>
<td>5.11**</td>
</tr>
</tbody>
</table>

Human Development (UN Index)

Differential Effect of Economic Structure on Human Development

Interaction between economic structure and lagged economic development

I examined the interaction effects between lagged economic development level and economic structure using a similar method as in the case of capital penetration. The results are shown Table 6. The effect of economic structure decreased with an increase in the level of economic
(relative size of the agriculture sector) on human development. It is interesting to see that there is no effect of economic structure on human development in the countries with high economic development (GNP is more than $1000).

**Interaction between economic structure and democracy**

There is an interaction between democracy and economic structure on human development. Similar analyses as in the case of capital penetration shows (Table 7) that there is no effect of economic structure (relative size of agriculture sector) on human development in countries with established democracies.

**Factors Affecting Different Dimensions of Human Development**

The correlates of the different components of human development were examined separately. Table 8 shows the results of regressions of separate indicators of human development (life expectancy, infant mortality, daily calorie consumption and education enrollment) on same independent variables as in the case of Human Development Index. Though composite indexes may be useful in preliminary studies, reliance on them precludes finding important relationships among their components and important differences in the causes
Table 6. Linear regression of Human Development Index on interaction terms for eco-structure at three levels of democracy and other factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>8.280(23.196)</td>
</tr>
<tr>
<td>Lagged economic</td>
<td>7.276(3.160)*</td>
</tr>
<tr>
<td>development</td>
<td></td>
</tr>
<tr>
<td>Democracy</td>
<td>4.903(2.244)**</td>
</tr>
<tr>
<td>Ethnic homogeneity</td>
<td>.145(.063)*</td>
</tr>
<tr>
<td>Interaction between eco-structure and</td>
<td></td>
</tr>
<tr>
<td>Authoritarian regimes</td>
<td>-.510(.154)***</td>
</tr>
<tr>
<td>Partial democracies</td>
<td>-.248(.086)**</td>
</tr>
<tr>
<td>Democracies more than 20 yrs</td>
<td>-.390(.270)</td>
</tr>
</tbody>
</table>

\[ R^2 = .713 \]
\[ S.E. = 13.241 \]
\[ n = 64 \]

* p < .10  ** p < .05  *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses.
Table 7. Linear regression of Human Development Index on interaction terms for economic structure at three levels of lagged economic level and other factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>22.857(24.236)</td>
</tr>
<tr>
<td>Lagged economic development</td>
<td>4.946(3.290)</td>
</tr>
<tr>
<td>Democracy</td>
<td>4.235(1.361)***</td>
</tr>
<tr>
<td>Ethnic homogeneity</td>
<td>.131(.061)**</td>
</tr>
<tr>
<td>Interaction between eco-structure and</td>
<td></td>
</tr>
<tr>
<td>GNP &lt; $500</td>
<td>-.534(.145)***</td>
</tr>
<tr>
<td>GNP between $500-1000</td>
<td>-.413(.192)**</td>
</tr>
<tr>
<td>GNP &gt; $1000</td>
<td>-.159(.235)</td>
</tr>
</tbody>
</table>

\[ R^2 \] = .728
\[ \text{S.E.} \] = 12.899
\[ N \] = 64

* p < .10    ** p < .05    *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses.
Table 8. Linear regression of separate human development indicators on the measures of external and internal factors

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>Life expectancy</th>
<th>Infant mortality</th>
<th>Daily calorie</th>
<th>Primary education</th>
</tr>
</thead>
<tbody>
<tr>
<td>Constant</td>
<td>48.414</td>
<td>188.66</td>
<td>1647.00</td>
<td>159.00</td>
</tr>
<tr>
<td></td>
<td>(8.886)</td>
<td>(47.834)</td>
<td>(523.894)</td>
<td>(39.923)</td>
</tr>
<tr>
<td>Lagged eco. development</td>
<td>2.070</td>
<td>-20.750</td>
<td>138.360</td>
<td>-4.375</td>
</tr>
<tr>
<td></td>
<td>(1.271)</td>
<td>(6.843)</td>
<td>(74.947)</td>
<td>(5.809)</td>
</tr>
<tr>
<td>Capital penetration</td>
<td>-.028</td>
<td>.143</td>
<td>-.028</td>
<td>-.082</td>
</tr>
<tr>
<td></td>
<td>(.020)</td>
<td>(.109)</td>
<td>(.118)</td>
<td>(.092)</td>
</tr>
<tr>
<td>Economic structure</td>
<td>-.252</td>
<td>.818</td>
<td>-.640</td>
<td>-1.172</td>
</tr>
<tr>
<td></td>
<td>(.057)</td>
<td>(.305)</td>
<td>(3.344)</td>
<td>(.252)</td>
</tr>
<tr>
<td>Agri-ind disparity</td>
<td>-.164</td>
<td>.590</td>
<td>6.654</td>
<td>-.551</td>
</tr>
<tr>
<td></td>
<td>(.091)</td>
<td>(.490)</td>
<td>(5.375)</td>
<td>(.398)</td>
</tr>
<tr>
<td>Democracy</td>
<td>1.490</td>
<td>-6.070</td>
<td>51.100</td>
<td>1.607</td>
</tr>
<tr>
<td></td>
<td>(.470)</td>
<td>(2.529)</td>
<td>(27.702)</td>
<td>(2.07)</td>
</tr>
<tr>
<td>Ethnic homogeneity</td>
<td>.051</td>
<td>-.046</td>
<td>3.606</td>
<td>.023</td>
</tr>
<tr>
<td></td>
<td>(.023)</td>
<td>(.126)</td>
<td>(1.386)</td>
<td>(.107)</td>
</tr>
<tr>
<td>2</td>
<td>.750</td>
<td>.660</td>
<td>.579</td>
<td>.475</td>
</tr>
<tr>
<td>R</td>
<td>4.476</td>
<td>24.091</td>
<td>263.853</td>
<td>19.050</td>
</tr>
<tr>
<td>n</td>
<td>54</td>
<td>54</td>
<td>54</td>
<td>51</td>
</tr>
</tbody>
</table>

* p < .10  ** p < .05  *** p < .01

Note: For each regression, unstandardized regression coefficients are shown with corresponding standard errors in parentheses.
of these components. Such indices may be misleading (London and William, 1988; Wimberely, 1990).

The regression analyses show that variance of life expectancy is well (72%) explained by the independent variables whereas 47.5% of the variance in primary education was explained by these variables. These analyses clearly show that there are harmful effects of economic structure on each of the human development indicators (as in the case of composite scale).

Although, disparity between agriculture and industrial sector had no effect on composite human development index, there was a significant negative effect of this disparity on life expectancy, but not on other indicators (Table 8). Similarly, democracy had no significant effect on primary education enrollment separately, although it had beneficial effects on human development (Table 5) and on health and nutrition related indicators. Also, it is interesting to see that ethnic homogeneity has beneficial effects only on life expectancy and daily calorie consumption.
DISCUSSION AND CONCLUSIONS

Effects of External and Internal Factors on Human Development

There was no effect of agriculture-industrial disparity, which indicates rural-urban disparity, on level of economic development. This finding is contrary to Lipton's (1977) argument that urban bias perpetuates economic inefficiency and therefore inhibits economic development. Also, the lack of an effect of economic structure which is measured by the relative size of the agricultural sector on economic development is contrary to Lipton's urban bias theory. Although the relative size of agriculture sector around 50 percent in most of the poorest countries (GNP less than $350), their level of economic development (GNP) varies largely from $120 to $360. This might be due to the effect of other control variables such as democracy and ethnic homogeneity which were included in the analyses and to the use of a better measure of rural-urban disparity (see under measures).

The highly significant positive effect of lagged economic development on the level of economic development is not surprising. The countries with a low level of development have low levels of domestic investment and low levels of economic growth, although they are similar in other factors. This is a vicious circle in which developing countries are trapped. Some of the poorest countries such as Zaire,
Zenegal, Madagascar, Uganda, Niger and Central African
Republic had negative economic growth during the period of
1965-1986. The negative effect of foreign capital penetration
on economic development of developing countries net of other
factors, found in regression analysis, supports dependency or
world-system perspective. According to dependency or world-
system theorists economic dependency impedes comprehensive
economic development of developing countries through
distortions of the labor market (increase of the tertiary
sector) and promotion of rural-urban migration (Ledogar, 1975;
Timberlake and Kantor 1983). There are seven poorest
countries (GNP less than $360) which have a capital penetration
index of more than 50). Also this association supports
Bornscheir and Chase-Dunn's (1985) findings that income
inequality caused by foreign investment penetration affect
economic growth of developing countries through a decrease in
the growth of the stock of foreign capital and a subsequent
decrease in the domestic investment percentage.
The positive effect of the democratic experience of a country
on the level economic development supports Muller's (1988)
hypothesis (see literature review). The countries such as
Paraguay, Brazil and Costa-Rica which have long experience in
democracies showed GNP's of more than $1000 whereas the 25
poorest countries (GNP less than $300) in the world have
authoritarian types of governments except for India. These
findings are partly supported by the observed negative association (Muller, 1988) between the democratic experience and economic inequality since high economic inequality might impede comprehensive development of a country. The positive independent effect of democracy on economic development, net of foreign capital penetration and economic structure of a country contradict the dependency perspective (Kohli et al., 1983) which states that governments (state and politics) in developing countries are imbedded in deeply structured forces of world capitalism and they cannot make any difference. But this positive association supports the argument of development activists that when people participate in decision-making, thereby becoming active subjects of knowledge and action, they engage in processes of development (Fiere, 1973).

The negative effect on capital penetration on economic development only for lower income countries shows that foreign capital can do more harm to weaker economies. The lack of an effect of capital penetration on economic development in higher income countries might be due to their more industrialized economy because capital penetration in the industrial sector has indirect beneficial effects rather than in agriculture sector. Such industrialized countries like Chile, Brazil, Panama and Venezuela have relatively small agricultural sectors, less than 30 percent, and have respectable level of economic development (GNP > $1000)
despite high foreign capital penetration.

Lack of effects of capital penetration on economic development both in highly authoritarian countries and in highly democratic countries regardless of level of economic development may be due to different reasons. The size of the international market of authoritarian regimes (mainly small countries such as Bhutan, Burkina Faso, Mali, Burma, and Benin) are not large enough for the economy to be affected by foreign capital penetration although they are similar on other dimensions. The lack of an effect of capital penetration on economic development in established democracies might be attributed to a very low level foreign capital penetration as a result of strong opposition parties and trade union movements in those countries. Established democracies such as India and Paraguay have foreign capital penetration index of less than 20.

The positive effect of the economic development level on the human development index might be attributed to the improvement of health, education facilities and purchasing power of the people through the economic development of developing countries. All of the countries which have GNP more than $1000 score higher on Human Development Index, more than 50 (although the countries with GNP's less than $1000, show large variation in human development, from 12 to 71). An increase in the level of human development along with an
increase in economic development is in accord with the findings of Stokes and Anderson (1990). But there may be a problem with precision of specifying variables since squared term of economic development level (which is needed to examine a curvilinear relationship,) is not included.

The positive effect of democracy on the human development index should be due to improvement of services and a decrease in income inequality with the increase of democracy in developing countries. Sri Lanka which has enjoyed long established democracy has a high human development index of 79, which is comparable to those of developed countries, whereas Benin which is similar to Sri Lanka in other factors has a human development index of 22. The correlation between democracy and less inequality is observed, after controlling for economic development in cross-national analyses (Weede, 1980). Also this positive effect of democracy on human development supports the fact that social policies of the democratic governments are generally directed at winning the support of the urban working class and peasantry (Marga 1979). That is, policies of democratic governments can make a significant change in terms of human development even after controlling for economic development level (UN, 1990). This situation is attributed to the existence of equitable distributive policies, more favorable labor regulations and more decentralized budget allocations in
established democracies such as India, Sri Lanka and Costa Rica. Economic structure, measured by the relative size of the agriculture sector, adversely affects the human development index in the poorest countries although it has no effect on economic development after controlling for other factors. For example, Sierra Leone which has a larger agriculture sector than Zambia, but is similar to Zambia in other factors, has a lower human development index (15) than that of Zambia (48). The relative size of the agriculture sector is a proxy for rurality in a developing country which is characterized by lack of education and health services resulting in a low level of human development. Another important contributing factor to the low level of human development in agriculture-dominated poorest developing countries is low wages and deprivation of plantation workers in a large plantation sector. Lack of influence of economic structure (relative size of agriculture sector) in relatively high income countries might be due to high productivity of agriculture which is integrated with the industrial sector in some of the high income countries such as South Korea and Taiwan.

The observed positive effect of ethnic homogeneity on human development, even with no effect on economic development after controlling for external variables, contradicts dependency or world system perspective which states that
ethnic stratification is a product of world market forces (Wallerstein, 1979). But there is an independent effect of ethnic homogeneity on human development even after controlling for capital penetration and economic structure. For an example, Madagascar which is ethnically homogeneous (94) has higher human development index (44) than Sudan (25) which has ethnic homogeneity score of 27, although both countries are similar in other characteristics. This might be due to small minority groups in higher ethnically homogeneous countries since minority populations normally are low income earners and have less access to government services in developing countries. This situation is aggravated by the fact that government activities are not adequately decentralized in ethnically segregated developing countries.

How are Different Dimensions of Human Development Affected by External and Internal Factors?

The economic structure, measured by relative size of the agriculture sector of the economy, is an indicator of rurality with a high incidence of poverty, hunger, lack of communication and lack of physical infrastructure. Significant effects of economic structure on separate human development indicators such as infant mortality, life expectancy and primary education (table 8) can be mediated by various intervening factors. The effect of the economic structure on primary education is more profound (beta=.80) than the effects
on other indicators. This suggests that education may be an intervening variable between economic structure and other human development indicators.

The negative effect of disparity between the industrial and agriculture sectors on life expectancy may be due to the relative high vulnerability of the rural agricultural population (nearly 75%-80% of country population) to the unfavorable situations such as droughts, famines and epidemics. The lack of relationship between democracy and enrollment in education may be because policies and programs of democratic governments concentrate more on health and food services rather than on education which is a long term investment. Besides, female education is discouraged by religious beliefs in some developing countries.

The association of ethnic homogeneity with life expectancy and daily calorie consumption may be attributed to less inequality in relation to food and other deliveries in ethnically homogeneous societies. The absence of an effect of ethnic homogeneity on infant mortality which is a very sensitive indicator for health care and nutritional status of people calls for further research in this field.

Separate regressions of human development indicators show that foreign capital penetration has a harmful effect only on daily calorie consumption, net of other control variables. This is contrary to Wimberely (1990) who found that foreign
capital penetration has a negative effect on infant mortality. The absence of a significant effect of capital penetration on infant mortality may be due to the use of more control variables such as economic structure which can operate as an intervening variable between penetration and infant mortality. The negative effect of foreign capital penetration on daily calorie consumption may be a result of the decline of domestic food production in developing countries. This supports the findings of Marshal and Schwartz (1984) who argued that so long as agricultural modernization in developing countries occurs in the context of investment dependence, the demand for foreign exchange will reinforce the mechanisms that bias the distribution of modernization inputs toward agricultural export production (not food production).
REFERENCES

Adelman, Erma and Morris, Cynthia

Amin, Samir

Bollen, K.A.


Bollen, K.A. and Jackman W. Robert

Bollen, K.A. and Jackman W. Robert

Bollen, Kenneth A. and Burke Grandjean

Bornschier, Volker and Chase-Dunn, Christopher

Bradshaw, York

Bullock, Bradley
Caldwell, John C.

Chase-Dunn, Christopher and Robinson, Richard

Cutright, Phillips and Adams Richard

Delacroix, Jacques and Charles Ragin

Dos Santos, Theotonio

Evans, Peter B. and Timberlake, Micheal

Frank, Andre Gunder

Freire, Paulo

Firebaugh, Glenn

George, Susan
Griffin, Keith

Hall, Anthony and Midgley, James

Hewitt, Christopher

Hirshman, Albert

Hout, Michael

Hraba, Joseph

International Labor Organization.

Jackman, Robert.

Kabaragama, Daisy and Mulford, Charles

Kohli, Atul, Altfeld, F. Lotfian, Saideh and Mardon, Russell
1984 "Inequality in the Third World: An Assessment of Competing Explanations" Comparative Political Studies 17(3).

Kuznets, Simon
Lattre, De Anne

Lenski, Gerhard and Nolan, Paul
1984 "Trajectories of Development: A Test of Ecological-

Lipton, Michael
1977 Why Poor People Stay Poor: A Study of Urban Bias in
World Development. Cambridge: Harvard University
Press.

London, Bruce
1988 "Dependence, Distorted Development, and Fertility
Trends in Noncore Nations: A Structural Analysis of
Cross-National Data." American Sociological Review
53:606-18.

London, Bruce and William, Bruce
1988 "Multinational Corporate Penetration, Protest, and
Basic Needs in Non-Core Countries: A Cross National

London, Bruce and Robinson, Thomas
1989 "The Effect of International Dependence on Income
Inequality and Political Violence." American
Sociological Review. 54:305-309.

Marga Institute
Press.

Marshal, Harvey and Schwartz, Michael
1984 "Investment Dependency and the Agrarian Crisis".
International Journal of Contemporary Sociology.

Moran, Theodore
1978 "Multinational Corporations and Dependency: A
Dialogue for Dependentistas and Non-
Dependentistas." International Organization 32:79-
100.

Muller, Edward N.
1988 "Democracy, Economic Development, and Income

Nolan, Paul and White R.B
Paukert, Felix

Peacock, Walter and Hoover, Greg

Potter, J.E

Rubinson, Richard

Sell, Ralph R. and Stephen J. Kunitz

Shin, E.

Sobel, M.E

Sowell, Thomas

Stack, Steven

Stokes, Randall and Anderson, Andy
Todaro, Michael P.  

Ward, K.B  

Warnock, John W.  

Weede, Erich  

Weede, Erich and Tiefenbach, Horst  

Weisband, Edward  

Wimberly, W. Dale  

World Bank  
Part II. IMPORTANCE OF INTERVENING VARIABLES ON HUMAN DEVELOPMENT IN DEVELOPING COUNTRIES.
INTRODUCTION

Interventions of Variables

Development involves improving the living conditions of people in a country. This is also referred to as human development. Hence, development is not only the increase in national income or production, measured by the GNP of a country, but it also involves fair distribution as revealed by the first part of this study. It is useful to examine the process of human development in order to gain insight into the mechanisms involved.

Hence, in this part of the study, I intend to discuss possible intervening variables between independent variables (internal and external factors) and human development in developing countries, identified in the Part I. In addition to the variables used in Part I, a few more variables will be examined as intervening or mediating variables of the possible mechanisms. These variables include income inequality, fertility, availability of health services, availability of drinking water and use of contraception in developing countries.

Some of the variables, which were used as output variables in part 1 of this study (GNP, Per capita calorie consumption, and literacy) will also be examined as possible intervening variables between internal and external factors and level of
human development. Some clues for such intervening roles were taken from the regression results in Part 1.

The level of economic development (GNP) of a country will also be considered as a moderating variable for some of the possible examples. Hence, models with intervening variables will be tested for two groups of countries (GNP < $500 and GNP > $500) in order to identify possible interaction effects between the level of economic development and the intervening variable or the independent variable of the model (Figure 5).

Intervening variables

Income Inequality

Another aspect of economic development in a country is income distribution. Two countries with the same level of per capita income may have different income distribution patterns. Hence, they may have different production and consumption structures. For a given low level of GNP and per capita income, the more unequal the distribution of income, the more aggregate demand and production will be influenced by the consumption preferences of the rich (Todaro, 1985). The rich can dominate the structure of production and imports toward luxury goods despite the basic needs of the poor. A large part of a country's resources are used to fulfill the demands of a small minority of elites in most developing countries.
If the income is evenly distributed, the demand would be more towards basic food and necessities which would create more labor intensive economic activities, benefiting a majority of the people.

However, classical economic theorists argue that income inequality of a country has an U shape relationship with the level of economic development of a country. Several studies on income inequality, supporting this argument, demonstrate a moderately curvilinear relationship between economic development and inequality (Weede, 1980). On the other hand, several studies, supporting a dependency argument, show that foreign capital penetration in a country widens the income inequalities within the population by altering certain structural conditions and impeding economic growth. Multinational firms locate in peripheral nations in order to take advantage of the lower wages in these nations. Nevertheless, the wages paid by transnational corporations are still well above the going rate in peripheral countries. This results in a large income gap between those citizens who are employed by transnational firms and those who are not. Furthermore, the "comprador class" has no incentive to initiate redistributive government policies (Bornscheir and Chase-Dunn, 1985).

Hence, income inequality of a country can be examined as an intervening variable between capital penetration and
economic and human development indicators in order to test the above views.

Fertility

Most of the developing countries are characterized by high fertility rates. Most classical economists contend a high rate of population growth is the main cause for the underdevelopment of these countries, while proponents of a dependency perspective argue that a high rate of population growth is a result of under-development itself. I will examine fertility as an intervening variable between external and internal factors (as in part 1) and development indicators in order to test the above propositions. Dependency theorists argue that high rates of fertility in developing countries are a result of distorted development by economic dependency (Nolan and White, 1983). High rates of fertility in these distorted economies are caused by slow economic growth, income inequality and expansion of the tertiary sector (Bornshier and Chase-Dunn, 1985).

Fertility of a woman is determined by her economic and social status. Children are considered as benefits to a household when child labor is used for the household economy. However, they would be seen as costs toward the household in terms of opportunity costs and direct costs to the parents even when they are a part of the household economy (Potter,
1983). These perceived costs and benefits of the children by the parents vary with the mode of production, the mother's economic activities, expectations for security in old age and intergenerational wealth flow.

According to the "wealth flow" theory, in pretransition societies (before a decline in fertility) the net value of intergenerational wealth flows were upward, whereas in post-transition societies (after fertility levels have started to decline) it is downward. It is this change in the direction of inter-generational wealth flows which is responsible for shifts in the balance of children's contributions and costs and finally resulting in the onset of fertility decline (Caldwell, 1983).

Women's status in marriage, access to land and women's political status are associated with their fertility expectations. In addition, religious values, ethnic attitudes and community structure influence fertility rates in a country.

**Government services**

I intend to investigate the availability of some basic services provided by the governments as intervening variables which could mediate between external and internal factors (discussed in Part 1) and human development indicators of developing countries. Services such as education, health and
drinking water along with availability of food are fulfillments of basic needs which could be attributed to human development of a nation. Income and wealth can be redistributed among the people through the provision of these services although income inequalities exist in terms of wages and pricing policies in a country.

Especially in developing countries, where absolute poverty is very high, provision of these services can be very critical determinants of human development indicators such as life expectancy, infant mortality and literacy, regardless of level of economic development. Empirical evidence shows that provision of these services depends on the type of government of a country. The type of government is a reflection of political awareness and experience of the people. This proposition can be reduced to the issue of whether governments can represent the voice of a majority of people by fulfilling their basic needs despite the existing class structure or whether it only serves an elite minority.

**Availability of health services**

Access to health services is a basic need of any group of people. But, in many developing countries health services are not keeping pace with the changing population. Provision of extensive health services by the government is an effective distributive strategy implemented by some developing countries
which have shown commendable achievement in human development. Since most of the primary health care programs in developing countries commenced in 1980's, only measures of curative care facilities can be considered in this analysis.

Access to safe drinking water

Most of the diseases and illnesses in developing countries are infectious and parasitic which are water born. These diseases can largely be preventable by promoting access to safe drinking water. Most of the rural people in developing countries consume water which is far below WHO standards in terms of the concentration of micro-organisms and in harmful minerals such as flourides.

Besides, supply of domestic water for households is a responsibility of women who often have to walk a number of miles for water, consuming their productive time. Urban biased government policies neglect the drinking water problem for the majority of rural people. However, some governments in developing countries have diverted substantial resources with the assistance of international organizations to rural areas for drinking water supplies through small schemes, tube wells and protected dug wells.

Making access to safe drinking water for rural people is an effective distributive strategy of governments which contribute to human development for the majority of people.
Family planning programs

Family planning activities in a country could have an impact on population growth and on human development indicators such as infant mortality and life expectancy of women. The success of these activities are closely associated with the religious beliefs, type of government and educational level of the people. Some democratic governments in developing countries have heavily subsidized family planning services. Hence, use of family planning services is worth examining as an intervening variable between internal factors such as democracy and fertility. Such an examination would allow us to have insight into the effects of government programs and government blessed voluntary participatory programs on development of a country.

Hypotheses

The following hypotheses from the literature and from the findings of Part I will be tested in this second part of this study.

1. There is a significant negative indirect effect of the economic structure on human development through economic development.

2. There is a significant positive indirect effect of democracy on human development through economic development.
3. There is a significant negative indirect effect of foreign capital penetration on human development through economic structure.

4. There is a significant negative indirect effect of the economic structure on human development through food availability.

5. There is a significant negative indirect effect of economic structure on human development through primary education.

6. There is a significant positive indirect effect of democracy on human development through availability of health services.

7. There is a significant positive indirect effect of democracy on human development through availability of drinking water.

8. There is a significant negative indirect effect of economic structure on human development through fertility.

9. There is a significant positive indirect effect of democracy on human development through fertility.

10. There is a significant positive indirect effect of ethnic homogeneity on human development through fertility.

11. There is a significant negative indirect effect of capital penetration on human development through income.
inequality.

12. There is a significant positive indirect effect of democracy on human development through income inequality.

In addition to testing indirect effects through intervening variables, possible simultaneous direct effects of exogenous variables to the endogenous variable will also be examined.

Possible moderating effects (interactions) of the level of economic development of a country with the economic structure, democracy, fertility, and capital penetration on different output variables in the models will be tested.
METHODOLOGY

Measures

Income inequality

Income inequality in a nation is commonly measured by the Gini coefficient of concentration. The Gini coefficient is an indicator of the extent to which the distribution of income deviates from perfect equality. The Gini coefficient can be obtained by plotting the cumulative percentage of population and the respective cumulative percentage of total income (Lorenz curve). The degree of inequality in income distribution is shown by how far the Lorenz curve departs from the diagonal. The proportion of total area below the diagonal that is above the Lorenz curve is the Gini coefficient.

Gini coefficients (Muller, 1988) calculated using the data from World Bank, ILO and United Nations organizations for the period of 1965-1975 are used for the analyses.

Fertility

The fertility rate (total fertility rate) is measured by 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 at each age in accordance with prevailing age-specific fertility rates. Data are derived from the World Fertility Survey.
Availability of health services

As government health programs and institutions are run by physicians, the average number of people covered by one physician is a good indicator of availability of health services in a country.

Family planning programs

Intensity of family planning programs can be measured by the percentage of married women of childbearing age (15-44 yrs) using contraception. This refers to women who are practicing or whose husbands are practicing any form of contraception. These include condoms, diaphragms, spermicides, intrauterine devices, oral and injectable contraceptives, sterilization, withdrawal and abstinence. Data are from World Bank Annual Reports for 1986 which have been based on the World Fertility Survey.

Availability of safe drinking water

The availability of safe drinking water can be measured by the percentage of population in a country who have access to safe drinking water. These figures were taken from the United Nations (UNCD) for 1990.

Measurements of primary education and availability of food (per capita calorie consumption) were described in Part I.
Only one dimension of human development, expected years of living, which is measured by life expectancy is considered as the output variable for this part of the study. Expected length of life is the most sensitive human development indicator (dimension) to internal and external factors when compared with infant mortality, per capita calorie consumption, and literacy as revealed by Part I. Moreover, life expectancy can be considered as product of other human development measures in a country.

**Analyses**

Separate path models for different hypotheses will be tested using Lisrel Program. This program is used because it shows the significance of indirect effects in the models. Also, different models can easily be compared for their explanatory ability, by comparing the chi-square values of those models.

Figure 4 shows two nested sample models that have to be tested in order to study the mechanisms of effects. Model B is the reduced model. The coefficients of the paths are a, b and c. Then the indirect effect from X to Y2 in model A would be a*b. Lisrel provides the t value needed to test the significance of all the effects (coefficients) of models including indirect effect a*b, according to Sobel's (1987) method.
Figure 4. Two Sample models to be tested for different hypotheses

If the corresponding t value is more than 2.0, any effect is significant at the .05 level. Model A can be compared with Model B for their overall fitness. If the change in Chi-square from model A to Model B is more than 3.84 (equal to square of Z value), Model A is the better fitting mechanism than Model B at .05 significance level. If the change in Chi-square is less than 3.84, Model B is the better fitting mechanism than Model A at .05 significance level.
If there is no moderating effect from a fourth variable on any of three effects in the models then $a_1 = a_2$, $b_1 = b_2$, and $c_1 = c_2$. However, there can be variables (e.g., GNP) which may have moderating effects on the relationship between any two variables (e.g., $X$ and $Y_1$ in Model A). This is called an interaction between $P$ and $X$ on $Y_1$, and there is a significant difference between $a_1$ and $a_2$. That is, the magnitude of the effect ($a_1$ or $a_2$) depends on the value of the GNP corresponding to $X$ and $Y_1$ (Figure 5). This type of interaction can also occur between $P$ and $X$ on $Y_2$, or GNP and $Y_1$ on $Y_2$. The significance of an interaction effect can be
tested using Lisrel. Models C and D are for two separate groups of countries: countries with GNP less than $500 and countries with GNP more than $500. In order to test any interaction between GNP and X on Y1, two models are compared using Chi-square values by: a) Fixing all the corresponding paths to be invariant; and b) After freeing only necessary corresponding paths of the two models (paths between X and Y1 in two models). If the difference in Chi-square for two model comparisons is more than 3.84, the difference in the coefficients of tested paths of two models is significant at .05 significant level. That is, there is an interaction of GNP on the association between X and Y1. Any interaction of GNP in relation to other paths can be tested in similar manner.
RESULTS

The results of testing of hypotheses 1 through 12 using Lisrel are discussed in order to gain insight into the possible paths from between internal or external factors to human development through different intervening variables. It is not intended to test and identify a comprehensive model including all of the concerned variables, but to use the findings of separate simplified models (without controlling for other variables) to identify the possible intervening variables between internal and external factors and human development.

Economic Development as an Intervening Variable

Effect of economic structure on human development through economic development

In this section, the test of hypothesis 1 predicting that there is a significant negative effect of economic structure on life expectancy through economic development, is reported.

Model 1A and model 1B (Figure 6) include the level of economic development (GNP) as the intervening variable between economic structure and life expectancy. Model 1A shows a direct effect of economic structure on life expectancy whereas Model 1B is the corresponding reduced model. Both the direct effect \( t=-3.36, p<.05 \) and indirect effect \( t=-4.10, \)
p<.01) are significant. Hypothesis 1 is supported by the data. Hence the economic structure negatively affect life expectancy by impeding economic development. In addition, the economic structure has a direct negative effect on life expectancy.

Model 1A is a better fitting model (difference in Chi-square, 1 d.f = 10.42, p=0.00) than model 1B.

**Effect of Democracy on Human Development through Economic Development**

In this section, hypothesis 2 predicting there is a significant positive effect of democratic experience on life expectancy through economic development, is tested. Model 2A and Model 2B (Figure 6) use democratic experience as an exogenous variable in place of economic structure and life expectancy as an endogenous variable. These models show similar results as in four earlier models, having both significant direct (t=4.28, p<.01) and indirect (t=2.01, p<.05) significant effects. Hypothesis 2 is accepted. Hence, the democracy positively effect life expectancy by improving GNP. In addition, there is a positive direct effect of democracy on life expectancy. Change in Chi-square for 1 d.f (14.88) in two models shows that Model 2A is better fitting.
Figure 6. Models with GNP as intervening variable
Effect of capital penetration on human development through economic development

Hypothesis 3 predicted capital penetration will have a significant negative effect on life expectancy through economic development (Figure 6). Although, human development indicators were regressed on internal and external factors, as an output variable (as in the case of level of economic development) in Part I, it is interesting to examine whether these factors affect human development through present level of economic development.

Model 3A and Model 3B (Figure 6) include level of economic development as the intervening variable between foreign capital penetration and life expectancy. Model 3A has both direct and indirect effects of capital penetration on life expectancy whereas Model 3B, a nested reduced model, has only the indirect effect of capital penetration on life expectancy through present level of economic development. Results show that only the indirect effect (t=2.77, p<.05) is significant. Model 3B is better fitting (difference in Chi-square for the two models for 1 d.f.=.44,p=.51). Hypothesis 3 is supported by the data.

Services and Subsidies as Intervening Variables

Effect of economic structure on human development through availability of food

In this section, hypothesis 4 predicting there is a
significant negative indirect effect of economic structure on life expectancy through food availability is reported.

Model 4A and Model 4B (Figure 7) include level of per capita calorie consumption as the intervening variable between economic structure and life expectancy. Model 4A has both direct and indirect effects of economic structure on life expectancy, whereas Model 4B is the corresponding reduced model. Results show that both the direct effect (t= -5.62, p<.01) and indirect effect (t= -3.84, p<.01) are significant. Hypothesis 4 is supported by the data. Hence economic structure negatively effect life expectancy by decreasing the food availability. In addition, there is a direct negative effect of the economic structure on life expectancy. Model 4A is better fitting (difference in Chi-square, for 1 d.f.=22.66).

Effect of economic structure through primary education

Hypothesis 5 predicted that there will be a negative indirect effect of economic structure on life expectancy through primary education.

Model 5A and Model 5B include enrollment in primary education as the intervening variable between economic structure and life expectancy. Model 5A has both direct and indirect effects of economic structure on life expectancy, whereas model 5B is the corresponding reduced model. Results
Figure 7. Models with food consumption and education enrollment as intervening variables
show that both direct effect and indirect effect are significant ($t=4.20, 3.14$ respectively). Hypothesis 5 is accepted. Hence economic structure negatively affects life expectancy by lowering the level of primary education. In addition, there is a direct negative effect of economic structure on life expectancy. Model 1 is better fitting (difference in Chi-square, for 1 d.f. = 16.98).

The effect of available services

In this section, hypotheses 6 and 7 predicting that there are significant positive effects of democracy on life expectancy through public services such as health and drinking water are tested.

Roles of government services such as health and drinking water are examined as intervening variables in Models 6A to Model 7B (Figure 8). Model 6A and Model 7A show that there are significant indirect effects ($t= 2.57, 2.43, p<.05$) of democracy on life expectancy, through provision of health services and establishing access to drinking water.

Hypothesis 6 and 7 are supported by data. Hence, democracy positively affect life expectancy by improving the availability of services such as health services and drinking water. In addition, the democracy has a significant direct effect on life expectancy. Model 6A and Model 7A which
Figure 8. Models with health services and access to drinking water as intervening variables
include direct effects, are better fitting than model 6B and model 7B respectively (changes in Chi-square are 10.36 and 6.85 for 1 d.f.).

Is democracy a product of External Factors?

It is important to examine whether type of government (democratic experience) is a product of external factors such as foreign capital penetration and economic structure (externally controlled structural condition) or whether the government is an organization with an autonomous character. Democratic experience was used as an intervening variable between capital penetration and level of economic development, and economic structure and level of economic development respectively. Results show that indirect effects in both models are non-significant ($t=0.03, -1.00, p>0.10$). Hence, the dependency view that type of government (democratic experience of the people) is merely a product of external factors, is not supported by the data.

Fertility as an intervening variable

Models 8A to 10B (Figure 9) examine the role of fertility as an intervening variable between some external and internal factors and human development indicators.
Effect of economic structure on human development through fertility

In this section, hypothesis 8 that there will be a significant negative indirect effect on life expectancy through fertility is supported. Model 8A and model 8B include fertility as an intervening variable between economic structure and life expectancy. Model 8A has both direct and indirect effects of economic structure on life expectancy. Results show that both the direct effect ($t=-5.71, p<.01$) and indirect effect ($t=-4.00, p<.01$) are significant. Hypothesis 8 is accepted. Hence economic structure negatively affects life expectancy by impeding the fertility decline. In addition, there is a negative direct effect of economic structure on life expectancy. Model 8A is better fitting (difference in Chi-square, for 1 d.f. = 18.15).

Effect of democracy on human development through fertility

Hypothesis 9 predicted that there is a significant positive indirect effect of democracy on life expectancy through fertility. Model 9A and model 9B include fertility as an intervening variable between democratic experience and life expectancy. Model 9A has both direct and indirect effects of democracy on life expectancy whereas model 9B is its corresponding reduced model. Results show that both the direct effect ($t=2.50, p<.05$) and indirect effect ($t=2.85, p<.05$) are significant. Hypothesis 9 is supported. Model 9A is better
Figure 9. Models with fertility as an intervening variable
fitting than Model 9B (difference in Chi-square, for 1 d.f.=4.77).

**Effect of ethnic homogeneity on human development through fertility**

In this section, the results of the test of hypothesis 10 predicting that there is a significant positive indirect effect of ethnic homogeneity through fertility, are reported.

Model 10A and model 10B include fertility as an intervening variable between ethnic homogeneity and life expectancy. Model 10A has both direct and indirect effects of ethnic homogeneity on infant mortality whereas model 10B is its corresponding reduced model. Results show that only the indirect effect (t=2.55, p<.05) is significant. Hypothesis 10 is accepted. Hence, ethnic homogeneity positively affect life expectancy by decreasing fertility rates. In addition to this indirect effect, there is no direct effect of ethnic homogeneity on life expectancy. Model 10B is better fitting (difference in Chi-square, 1 d.f.=1.58, p=.21).

**Effect of income inequality on human development**

Hypothesis 11 predicted that there is a significant negative indirect effect of capital penetration on life expectancy through income inequality. Model 11A and model 11B (Figure 10) which use income inequality as intervening variable between capital penetration and life expectancy show
that the indirect effect through income inequality is not significant ($t=1.30$, $p>.10$) although there is a highly significant positive effect of capital penetration on income inequality. Hence, hypothesis 11 is not supported by the data and is rejected.

The results of the test of hypothesis 12 which predicted there is a significant positive indirect effect of democratic experience on life expectancy through income inequality, are reported.

Model 12A and model 12B (Figure 9) which use income inequality as an intervening variable between democratic experience and life expectancy show that the indirect effect through income inequality is not significant ($t=1.00$, $p>.10$). However, there is a highly significant positive direct effect of democratic experience on life expectancy. Hence, hypothesis 12 is not supported by the data and is rejected.

**Interaction effects of level of economic development**

In this section, observed interaction effects are reported. Interaction effects of level of economic development of a country (GNP) were tested for all the models which do not contain GNP as an intervening variable. The following significant interaction effects were observed.
Chi-square = 0

Model 11A

Chi-square = 2.51 (1 d.f)

Model 11B

Chi-square = 0

Model 12A

Chi-square = 19.37 (1 d.f)

Model 12B

Figure 10. Models with inequality as an intervening variable
Interaction between GNP with primary education on life expectancy

Two models corresponding to two groups of countries (GNP $< 500$ and GNP $> 500$) were considered (Figure 5). These two models were compared: a) After fixing all the corresponding paths are invariant; and b) After freeing the necessary path that has to be compared for interaction. The difference in Chi-square for the two model comparisons (two models with all three invariant paths, and two models with freed relevant path) for the two groups of countries is 3.12 for 1 d.f. There is a significant difference ($p<.10$) in the coefficients of the corresponding paths of the two models (.63,.31) including economic structure ($X$), primary education ($Y_1$) and life expectancy ($Y_2$) when the necessary path is freed in both models. Hence, the effect of primary education on life expectancy is significant in poorer countries whereas there is no such effect in remaining countries.

Interaction between GNP and economic structure on fertility

The difference in Chi-square for the two model comparisons (including economic structure ($X$), fertility ($Y_1$) and life expectancy ($Y_2$)) for the two groups of countries is 3.86 for 1 d.f. There is a significant difference in the coefficients of the corresponding path (between economic structure and fertility) of the two models (.17,.47) when it
is freed in both models. Hence, the effect of economic structure on fertility is significant in relatively economically developed countries whereas this effect is not significant in poorer countries.

Interaction between GNP and democracy on income inequality.

The difference in Chi-square for the two model (including democracy (X), income inequality (Y1) and life expectancy (Y2)) comparisons for the two groups of countries is 10.00 for 1 d.f. There is a significant difference in the coefficients of the corresponding path (democracy and income inequality) of the two models (-.72, -.06) when that path is freed in both models. Hence, the effect of democracy on income inequality is significant only on poorer countries.
DISCUSSION AND CONCLUSIONS

The results show that foreign capital penetration has a harmful effect on human development indicators (see part 1) by impeding economic development in developing countries, supporting dependency perspective (Lenski and Nolan, 1984; Nolan and White, 1983; Sell and Kunitz, 1987). Ethiopia, Zaire, Togo, and Sierra Leone are good examples of countries which have high capital penetrations (more than 60), very low GNP (less than $300) and very low life expectancy (less than 53 years). This is contrary to modernization theorists, who argue that there is a beneficial effect of capital penetration on human welfare (Sowell, 1983). However, this significant link between the level of economic development and human development supports findings of Stokes and Anderson (1990). Accordingly, a higher level of economic development may contribute to human development through an increase of capability of providing basic services to the people, better physical infra-structure, communication and media. This is a type of "trickle down effect" from higher strata towards lower strata which support the arguments of modernization theorists.

There is no direct independent effect of capital penetration on life expectancy, when other factors are not controlled except for economic development. This finding is in conflict with some dependency proponents who argue that there are harmful effects of foreign capital penetration.
through widening income inequalities. Widening income inequalities in turn result in lower human development.

There is no significant link between income inequality and human development (life expectancy). Although, Zambia and Sudan have the same level of income inequality; Gini coefficients are 42 and 41, respectively) they show significantly different life expectancies (53 and 41 respectively) and human development scores (48 and 25 respectively). This is contrary to the views of some of the dependency theorists that inequality created by dependency has harmful effects on human welfare.

Thus there can be a respectable level of human development in a country regardless of income inequality. This may be due to the noncash income of 'low income earners' through subsistence agriculture and also to distributive policies of governments which channel a substantial portion of resources for the provision of basic services.

The results show that economic structure (which was measured by percentage of agriculture in a country) limits human development by impeding economic development (Lipton, 1977; Peacock, 1988; Stokes, 1990;) when other variables are not controlled because there seems to be a significant link between economic development and human development. All of the poorest countries (GNP less than $350) have nearly 50 percent or more in agriculture production and show less than
53 years of life expectancy. However, economic structure, which is a proxy for rurality of a country, also has an independent direct negative effect on human development indicators regardless of level of economic development when the other factors are not controlled.

Although Nigeria has a GNP ($640) four times higher than Bangladesh ($160), both countries, which have 53 percent in agriculture production, have similar life expectancies of 51 years and 47 years and comparable human development scores, 27 and 31, respectively. This direct effect of economic structure may be attributed to the deprivation of rural agricultural areas in terms of government services, infrastructure and low social status of the people regardless of the economic development of the country as a whole.

Democratic experience of people in a country has a beneficial effect on economic development (as discussed in part 1) which could contribute to human development (Muller, 1988; Freire, 1973). Most of the countries with established democracies show higher GNPs and higher life expectancy. Established democracies such as Paraguay, Costa Rica, Uruguay, Venezuela and Israel have GNPs of more than $1000 and show life expectancies more than 70 years.

However, in addition, there is a direct beneficial effect of democratic experience on human development regardless of level of economic development. Although Sri Lanka has a low
GNP ($390) its people have a life expectancy of 70 years. This may be due to the autonomous distributive policies carried out by democratic governments regardless of level of economic development (Goulet, 1989, Marga, 1979). This is contrary to the dependency perspective which states that governments are not autonomous but a product of external forces (Kohl, 1984).

Although, the indirect effect of democracy on life expectancy through income inequality is not significant, there is a significant effect of democracy on income inequality. This effect is moderated by the level of economic development of a country. In poorest countries, the beneficial effect of democracy on income inequality is more prominent (established democracies such as India and Sri Lanka show lowest Gini coefficients of 34 and 38 respectively). However, in relatively economically more developed countries this effect is not significant (relatively high income countries with established democracies such as Mexico and Brazil show relatively high Gini coefficients of 52 and 56). This indicates that democratic policies are more effective in the poorest group of countries in terms of income equality. This may be due to the lack of established capitalist class in poorest countries. The results of the models with public services and facilities as intervening variables call for more research on the issue that democracy of a country benefits.
human development not only by contributing to economic development but also by promoting distributive policies through provision of needed basic services for human development (Marga, 1979; Goulet, 1989). Costa Rica which has long enjoyed democracy spends 33% of its national income for health services and has achieved a life expectancy of 70 years whereas Sudan which had authoritarian type government spends only 1% of national income for health services and has a life expectancy of 50 years. All the established democracies among the developing countries which show relatively high level of human development, have a substantial percentage of population with access to safe drinking water: Costa Rica 91%, Paraguay 78%, and Malaysia 80%. However, provision of safe drinking water is severely affected by the agro-ecological condition of a country.

The results of the models with democracy as an intervening variable support the argument of some development activists that governments are not merely a product of external factors, but they have some kind of autonomous character regardless of external and structural factors (Weede, 1980).

Daily per capita calorie consumption is determined not only by economic development but also by the production of food. The indirect negative effect of economic structure on human development indicators through per capita calorie
consumption may be attributed to the decline of domestic food production in developing countries. This result supports the argument of dependency theorists that developing countries have to emphasize capital accumulation and foreign exchange earnings instead of increase the productivity of domestic agriculture because of its dependent economic structure (Marshal and Schwartz, 1984).

Economic structure, which reflects the rurality of a country, affects primary education. Especially, agriculture dominant economic structures of developing countries compel rural landless population to hire their labor to commercial plantations which discourage them from school enrollment. Rural families trade off children's education in favor of daily cash earnings by hiring labor. Most of the time, girls have to look after their younger siblings are and prepare meals because both parents and elder siblings are involved in wage labor. Also, high rural-urban disparity of services in agriculture-dominant countries deprive the rural population of education. The countries which have very large agricultural sectors such as sub-Saharan countries show a very low percentage of national expenditure (less than 10 percent) for education. Moreover, a large portion of this meager allocation is absorbed by the urban sector, leaving the rural population untouched and illiterate.

The interaction effect of level of economic development
and primary education on life expectancy is interesting. This interaction indicates that primary education is more effective in increasing the living condition of the people in poorest countries. This may be because most of the diseases, illnesses and poor health of rural population can be eradicated by preventive health practices and better nutrition. These practices are more apparent among literate people as they are more knowledgeable. Moreover, literate people are better receivers of technological messages, extension and other services. They are more politically active and have more bargaining power for their wages and for prices of their products. But in relatively economically developed countries, people have already passed this stage.

The results of the models with fertility as an intervening variable show that economic structure of developing countries (relative size of agricultural sector) affect human development adversely, by impeding a decline in fertility (Ward, 1984; Houck, 1980). This result is contradictory to the view of some modernization theorists that there is no association between fertility decline and dependency indicators (Curtright and Adams, 1984). The association between economic structure and fertility may be attributed to the favorable evaluation of adding more children to the family by the parents, to have more child labor and increase security in their old age in a rural agricultural
environment (Potter, 1983). In addition, high fertility rates in developing countries may also be attributed to illiteracy and low levels of education of women. Model 13 shows that an indirect effect of economic structure on fertility through primary school education of women is significant (t=3.44). Fertility affects infant mortality and life expectancy by worsening the food and water situation in the family, providing less attention to care of children and of elderly, and decreases family hygiene.

The interaction effect of level of economic development with economic structure on fertility indicates that the effect of economic structure on fertility does not operate in the poorest group of developing countries. All of the developing countries with lower GNPs (less than $500) have high fertility rates (close to 6), except for Sri Lanka and India. This may be due to the fact that all of the poorest countries have largely agriculture dominant structures. However, in higher income countries there is a decline of fertility rate with the decrease of agriculture sector. Among high income developing countries, Korea, Hong Kong and Singapore show a fertility rate of 2 with small agricultural sectors whereas Honduras, Nicaragua, Cameroon and Cote De Ivoire show fertility rates of 7 with relatively large agricultural sectors. This may be due to the structural condition created by the economy which influences fertility decisions.
Also the democratic experience in a country has a beneficial effect on fertility decline which would contribute to human development. This beneficial effect of democracy on fertility in developing countries may be attributed to higher literacy rates and more awareness, higher social status of women and better family planning activities. Recent studies on the use of contraception show that in many countries, families struggle to pay for food, and effective modern contraceptives are a luxury item. However, most established democracies such as Sri Lanka and India have subsidized family planning services. There is a significant indirect effect of democracy in a country on the use of contraception which contributes to a decline in fertility ($t=3.44$).

The results indicate that high ethnic homogeneity is associated with low fertility which contributes to human development. For example, Korea, Uruguay, Costa Rica, and Jamaica which are ethnically homogeneous (ethnic homogeneity more than 80) have the lowest fertility, less than 3. This may be due to the fact that fertility rates of minorities in heterogeneous societies exceed the country averages. This may be due to their lower social status and to ethnic interests because different ethnic groups may view fertility control programs as a genocidal attempt to reduce their influence by reducing their numbers (Stockwell and Laidlaw, 1981).

The above discussion was based on testing of separate
models of three variables without controlling for the rest of the variables. Hence, it was not possible to investigate whether one variable was an artifact of another. Further studies are needed to gain insight into a broader comprehensive model of the development process in developing countries. The following two hypothetical models (Figure 5 and Figure 6) for the poorest countries (GNP < $500) and relatively high income countries (GNP > $500) which can be tested in further studies, emerge from the findings of Part I and Part II of this research.

Lagged Economic Development Level

- Foreign Investment → Eco. Development → Human Development
- Economic Structure
- Ethnic Homogeneity
- Level and period of Democracy
- Level and period of Democracy
- Family Planning
- Services & Facilities
- Inequality → Food Consumption
- Family Planning
- Services & Facilities
- Food Consumption

Figure 5. Hypothetical model for development process in developing countries (GNP < $500) for further studies
Lagged Economic Development level

Eco. Development → Human Development

Economic Structure

Fertility

Ethnic Homogeneity

Level and Period of Democracy

Services & Facilities

Figure 6. Hypothetical model for development process in developing countries (GNP > $500) for further studies

These models incorporate both direct and indirect effects of internal and external factors on level of development in a developing country. Human development is taken as the final output of the process whereas economic development is also incorporated as an intervening variable. When both the direct and indirect effects on human development are examined at the same time, a deeper insight on the causal mechanisms of this development process can be gained. However, this type of more comprehensive analysis would need a larger number of countries with necessary data.
The model for poorest countries (Figure 5) includes the indirect effects of penetration, economic structure and democracy on human development through primary education, inequality and food consumption whereas the model for the rest of the countries (Figure 6) does not include those indirect effects. However, the model for higher income countries includes the indirect effect of economic structure on human development through fertility. Hence, these two models incorporate differential effects of internal and external factors on human development, depending on the level of economic development of a country.
REFERENCES

Adelman, Erma and Morris, Cynthia

Amin, Samir

Bollen, K.A.


Bollen, K.A. and Jackman W. Robert

Bollen, K.A. and Jackman W. Robert

Bollen, Kenneth A. and Burke Grandjean

Bornschier, Volker and Chase-Dunn, Christopher

Bradshaw, York

Bullock, Bradley
Caldwell, John C.

Chase-Dunn, Christopher and Robinson, Richard

Cutright, Phillips and Adams Richard

Delacroix, Jacques and Charles Ragin

Dos Santos, Theotonio

Evans, Peter B. and Timberlake, Micheal

Frank, Andre Gunder

Freire, Paulo

Firebaugh, Glenn

George, Susan
Griffin, Keith

Hall, Anthony and Midgley, James

Hewitt, Christopher

Hirshman, Albert

Hout, Michael

Hraba, Joseph

International Labor Organization.

Jackman, Robert.

Kabaragama, Daisy and Mulford, Charles

Kohli, Atul, Altfeld, F. Lotfian, Saideh and Mardon, Russell
1984 "Inequality in the Third World: An Assessment of Competing Explanations" *Comparative Political Studies* 17(3).

Kuznets, Simon


Paukert, Felix  

Peacock, Walter and Hoover, Greg  

Potter, J.E  

Rubinson, Richard  

Sell, Ralph R. and Stephen J. Kunitz  

Shin, E.  

Sobel, M.E  

Sowell, Thomas  

Stack, Steven  

Stokes, Randall and Anderson, Andy  
Todaro, Michael P.  

Ward, K.B  

Warnock, John W.  

Weede, Erich  

Weede, Erich and Tiefenbach, Horst  

Weisband, Edward  

Wimberly, W. Dale  

World Bank  
SUMMARY FINDINGS AND IMPLICATIONS

Policy Implications: Theory to Practice

I intend to discuss the appropriate policies and actions that can be taken by the developing nations towards their development in light of the findings of this study. The main findings of this study can be summarized as follows.

a) Foreign dependency and structural dependency of the poorest developing countries negatively affect economic development.

b) Democratic representative participation of the people, although it is a limited form of participation, positively contributes to economic development, income equity, fertility decline and provision of basic services to the people.

c) Economic development, provision of basic services and fertility decline contribute to human development.

These observations were based on cross-national data from developing countries which have different cultural, religious, ethnic and historical backgrounds. However, there is an important message, common to all developing countries, associated with these observations. It is that the democratic participation of people can make a 'change' by direct and indirect means. Democratic governments are compelled to take,
at least limited, direct welfare measures fulfilling the basic needs of the people. Democratic participation of people can make access to productive assets for the people and allow them to utilize these assets appropriately which result in human and economic development. Hence, developing countries, acting in this direction, should facilitate and foster the democratic participation of the people in the decision making process. This democratic participation of the people can be practiced not only at the national level but also at lower levels, more meaningfully.

The external factors such as foreign investment dependency and structural dependency and internal factors such as ethnic heterogeneity of developing countries are difficult to change. In this study these factors were taken as exogenous. Thus I will not discuss changing these exogenous factors as it is beyond the scope of this sociological study. However, this study showed that the effects of these factors can be minimized, or eliminated or can even be turned to benefits by autonomous national policies of democratic governments. That is, governments which are responsive to welfare of the people can make suitable conditions to minimize the effects of external factors. For this task, governments should be autonomous and should have a political will and a sufficient power base. The democratic participation of the people can make governments autonomous, avoiding the
domination of an elite class. The autonomous nature and responsiveness of the representative governments can be enhanced by the awareness, political consciousness, organization and the education level of the common people.

Democratic participation in different countries, varies in quality and quantity. Although, the measurement of the democratic participation of people was limited to national level (representative participation) in this study, it can effectively be extended to lower levels: divisional and grass roots levels. Democratic participation at every level would ensure the participation of the people in making decisions concerning their lives. It allows them to release their latent energy and skills. "When people are oppressed or reduced to the culture of silence, they do not participate in their own humanization. Conversely, when they participate, thereby becoming active subjects of knowledge and action, they begin to construct their properly human history and engage in processes of authentic development" (Goulet. 1989:1). Thus, they will be the subjects of the development process, not merely the objects. That is, the people are mobilized in political, economic, and human development.

The national level policies and reforms (actions from "above") should foster the lower level development activities (actions from "below"). Lower level micro activities can be developed and sustained only in a favorable national level
Democratic Participation at National Level

Democratic participation of the people can form democratic governments which are accountable to the people. Only the governments which are accountable to the people are committed to carry out people-centered policies for economic and human development. Moreover, only democratic governments have the necessary power base for the implementation of such policies. There is a fundamental inconsistency between market ideologies and mass mobilization, and between the highly secretive conditions of program's negotiation and the exercise of democratic participation (Mkandawire, 1991). Most of the developing countries have authoritarian regimes which do not allow or foster any kind of participatory action of its people. Most of these governments are corrupt, less accountable and prey to rule by privileged elite and military powers rather than by men and women's ability (Lattre, 1991).

Some of the effective policies and reforms, that have to be formulated at national level in developing countries, (which are responsible for the remarkable progress achieved by some of the democratic nations, studied) should be addressed the need of facilitating democratic participation of the people at all the levels. The facilitation of democratic participation
in human and economic development includes the direct means such as ensuring basic rights and indirect means such as eradication of existing disparities and human welfare for poorest sections of the society. This type of policy package necessarily includes:

a) Equality of access to economic resources (especially land) for all regardless of gender, ethnicity or caste;

b) Equal political, social and cultural rights for all;

c) Land reform: Fixing maximum limits for land ownership and elimination of landlessness which is the main resource for rural people;

d) Pricing policies which are favorable to rural agricultural and food production (Lipton, 1977);

e) Education for all: Subsidized or free primary education (UNCD, 1990);

f) Health for all: Access to preventive and curative services;

g) Family planning programs: subsidized or free family planning services for all;
h) Food: subsidized food for poorest sections of the people (UNCD, 1990);

k) Supply of safe drinking water for all;

l) Bureaucratic reforms: making bureaucracy more responsive to the needs of the people;

m) Decentralization: delegation of decision making authority to lower level participatory organizations and to local level officers; and

n) Institutional building: Institutions should be built in order to strengthen the power base of democratic governments and to foster democratic participation of the people at lower levels.

The equal political, social, cultural and economic rights regardless of gender, ethnicity or caste are the basic prerequisites for the democratic participation of people in a country. This allows all the people including women, landless, 'untouchables', and unemployed to participate in production and to increase productivity. These basic rights would eliminate some of the discrimination and disparities of deprived groups in these countries.
In relation to the rural agricultural sector, successful countries show that most essential pre-requisites for the participation of people in economic and human development are reforms in the land ownership pattern and in the pricing policy. The successful implementation of these reforms need a strong political will and a strong popular power base. The unutilized lands concentrated in hands of a few people and the available crown lands should be distributed to the landless rural population whose only mean of living is farming. Urban bias pricing policies of the governments should be reversed. Fair and attractive prices should be fixed for the agricultural products. Rural infra-structure and extension services should be improved without discrimination. These reforms can contribute not only to a decline in rural-urban disparity, fertility and subsequent rural-urban migration but also to an increase in production and productivity and to subsequent improvement in human development.

Provision of basic services such as health, education and drinking water and food subsidies is key to the human development of majority poor and their ability to participate in economic development. Some argue that most of the developing countries are not rich enough to provide these services. Adjustment policies imposed on developing countries by international monetary institutions include reduction or withdrawal of most of the services and subsidies provided by
the governments. However, even in the absence of satisfactory economic growth or a relatively even income distribution, countries can achieve significant improvements in human development through well-structured public expenditures (UN, 1991).

Moreover, developing countries are not too poor to pay for human development and take care of economic growth. Social returns of these investments are high: in terms of reduced fertility and improved family nutrition (UN, 1991). Most budgets can accommodate these expenditures by reorienting national priorities (e.g. cutting huge military allocations). Besides, provision of services such as subsidised or free health service and food, should be targeted to poorest areas and to deprived people.

The content of these services should be consistent with the real needs of the people and the area and should be technologically and culturally appropriate. For example, primary education should be given priority over higher education. Similarly, preventive health services should be given priority over expensive curative services. Small gravitational water schemes, protected dug wells and tube wells should be given priority over expensive large water schemes. These services are more effective in poorest countries than in moderately developed countries.

The bureaucratic reforms, decentralization of authority
and local level institutional building are necessary for the effective implementation of democratically determined policies and reforms and for the sustainability of these activities. Common characteristics of bureaucracies in developing countries such as: a) Center orientation; b) Authoritative style; c) Hierarchical nature; d) Lack of accountability to the people; e) Long decision making process; f) Rigidity of procedures; and g) Departmentalism which were inherited by colonists, have been a constraint for democratic policies and reforms. These bureaucracies should be more responsive to the people. The decision making authorities should be decentralized to divisional and local level from the center for effective implementation of appropriate services and programs with the active participation of the people.

Existing rural organizations in developing countries are dominated by traditional rich and a few influential individuals in rural areas. The procedures and traditions of these organizations are utterly undemocratic and exclude majority poor from the decision making process. That is the village elites control not only natural resources but also resources and services provided by the governments under various programs decided at national level. Local bureaucrats and these rural elites are closely allied so they form a dominant coalition excluding poor from a variety of privileges. Although, the governments are democratically
elected, then policies and reforms are intendent to address to needy people, most of the necessary programs do not reach needy people because those programs are filtered by the local power structure.

The poor in rural areas are powerless, vulnerable and isolated and have no capacity to acquire resources and services provided by the government and to participate in development. Hence, their acquiring and bargaining capacities should be developed. This can be accomplished by raising their consciousness and awareness and by organizing them. The majority poor should not only be able to receive their legitimate share of government services but also to make decisions concerning their lives. This empowerment is a genuine democratization process at grass roots level which makes national level democracies more meaningful, powerful and effective.

There are various successful tasks taken in several developing countries to strengthen the capacity of the poor. This is a catalytic process of stimulating the poor to investigate and analyses the socio-economic reality in which they live, in particular the causes of their poverty. They can be organized to take collective efforts to overcome their disabilities and improve their socio-economic status (Thilakarathne, 1984). Trained change agents can raise the consciousness and awareness of the poor by interacting with
them and guide these people to organize them into homogeneous informal groups. Social accountability and mutual trust among the poor can be developed through group activities. These groups can be genuine and effective democratic institutions.

These groups can not only act as the stronghold of the receiving mechanism of existing services and resources within the community but they can also go a long way in generating self-reliant collective activities utilizing indigenous knowledge and local resources. In addition, these groups can generate scarce capital needed for investment through collective savings. The democratic governments can facilitate this democratization process at grassroots level by creating favorable political, legitimate and bureaucratic environments.

"Development should start from the grassroots from village up. People should fully participate in planning for development and in the implementation of such plans. The technological knowledge prevailing at the people's level and the available local resources should be used initially. Progressively and appropriately it could be upgraded with advanced knowledge. National development plans should be based, not partially but totally on this broad based people's participation. It should first strive to satisfy the basic needs of the people and not artificially created wants" (Ariyarathne, 1979:134).

Democratic governments should be based on the grassroots power of the people. Hence, micro level participatory
activities should not be limited to local welfare activities. Instead they should be linked to politics in higher levels. These grassroot organizations should be influential in local and national democratic processes. However, there are various threats and obstacles for these organizations from the power network of local elites. The most difficult form of participation to elicit and sustain is also the most indispensable to genuine development. This is the type of participation which starts at the bottom and reaches progressively upward into widening arenas of decision making (Goulet, 1989).

Hence, the people in developing countries should not wait until the 'natural evolutionary progress' or until the 'world system' is changed. Development is a conscious task of the people in a country. There is a 'space' for the people in these countries to act for their own development.

Theoretical Implications

There are important implications of the findings of this study for the basic assumptions of mainstream theories on development. The assumptions of these theories and the identified empirical situation in developing nations can be summarized as in Table 9. The observations on diverse and complex empirical situation in developing countries are not adequately explained by existing sociological theories.
**Table 9. Basic assumptions of mainstream theories on development and empirical evidence in developing countries**

<table>
<thead>
<tr>
<th></th>
<th>Functionalist /Modernization</th>
<th>Marxist /Dependency</th>
<th>World-system evidence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Definition of development</td>
<td>social transformation</td>
<td>needs to redefine</td>
<td></td>
</tr>
<tr>
<td>Unit of analysis</td>
<td>country</td>
<td>country</td>
<td>world different levels</td>
</tr>
<tr>
<td>Development process</td>
<td>evolution</td>
<td>evolution</td>
<td>evolution not automatic</td>
</tr>
<tr>
<td>Factors</td>
<td>endogenous</td>
<td>endogenous</td>
<td>exogenous diverse</td>
</tr>
<tr>
<td>Primacy of factors</td>
<td>internal factors</td>
<td>internal factors</td>
<td>external interaction</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>bet. diff. factors</td>
</tr>
<tr>
<td>Dichotomy of dev.</td>
<td>feudal/cap.</td>
<td>feudal/cap.</td>
<td>cap/socialist</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>no dichotomy</td>
</tr>
<tr>
<td>Interven. of people</td>
<td>not possible</td>
<td>not possible</td>
<td>not possible</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>possible</td>
</tr>
<tr>
<td>People's role</td>
<td>objects</td>
<td>objects</td>
<td>objects</td>
</tr>
<tr>
<td></td>
<td>passive</td>
<td>passive</td>
<td>active subjects</td>
</tr>
</tbody>
</table>
This inadequacy of the explanatory and guiding capabilities of existing sociological theories on the Third World development call for more comprehensive theoretical support for Third world development. This theoretical paradigm should incorporate following elements.

1. It should be inductively derived on the basis of empirical evidence, especially from the Third world.

2. It should be flexible and nondeterministic enough to incorporate diversities and complexities in the Third World.

3. It should be diverse enough to incorporate different level factors and their interactions into the development process.

4. It should be humanistic enough to recognize human potential and energy which can be used to initiate, divert and carry on the development process in the existing macro environment.

5. It should include a redefinition of development incorporating both economic and human aspects of the desired change.

An appropriate theoretical perspective in which the above elements are incorporated, only can provide the necessary
guidance for the task of development in developing countries. This theoretical perspective should constantly be fed by the empirical observations. That is, theory and practice should not be separated, but be mutually supportive.
REFERENCES

Abrahamson, Mark

Amin, Samir

Ariyaratne, A.T.

Bornschier, Volker and Christopher, Chase-Dunn

Collins, Randal and Makowsky, Michael

Durkheim, Emil

Frank, Andre Gunder

Freire, Paulo

Freire, Paulo

Friberg, Mats and Hettene, Bjorn

Galtung, J.

Gouldner, Alvin
Goulet, Denis

Hall, Anthony and Midgley, James

Hosteliz, B.

Lattre, De Anne.

Lenin, V.I.

Lipton, Michael

Marx, Karl
1852 Capital. Moscow: Foreign Languages Publishing.

Mkandawire, Thandika

Mouzelis, Nicos

Nisbet, C.T.

Parsons, Talcott

Rhyne, H. E.

Ritzer, George
Rostow, W.W.  

Roxborough, Ian.  

Spencer, Herbert  

Stockwell, Edward and Laidlaw, Karen  

Thilakeratne, S  

Toennies, Ferdinand  

Troskey, Leon  

United Nations  

Wallerstein, Immanuel  

Wallerstein, Immanuel  

Ward, K.B  

Warnock, John W.  

Weber, Max  

Wilber, C.K. and Jameson, K.P.  
Appendix 1. DATA FOR THE COUNTRIES USED IN THE ANALYSIS

<table>
<thead>
<tr>
<th>Country</th>
<th>X1</th>
<th>X2</th>
<th>X3</th>
<th>X4</th>
<th>X5</th>
<th>X6</th>
<th>X7</th>
<th>X8</th>
<th>X9</th>
<th>X10</th>
<th>X11</th>
<th>X12</th>
<th>X13</th>
<th>X14</th>
<th>X15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethiopia</td>
<td>.28</td>
<td>.101</td>
<td>.31</td>
<td>.146</td>
<td>.58</td>
<td>.6</td>
<td>2</td>
<td>.415</td>
<td>.479</td>
<td>.155</td>
<td>.1704</td>
<td>.36</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bhutan</td>
<td>.24</td>
<td>.2</td>
<td>.45</td>
<td>.6</td>
<td></td>
<td>.5</td>
<td>.01</td>
<td>.139</td>
<td>.2477</td>
<td>.15</td>
<td>.25</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B'Faso</td>
<td>. .</td>
<td>.1</td>
<td>.47</td>
<td>.53</td>
<td>.7</td>
<td>11.19</td>
<td>.5</td>
<td>.01</td>
<td>.140</td>
<td>.2003</td>
<td>.20</td>
<td>.32</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nepal</td>
<td>.27</td>
<td>.32</td>
<td>.30</td>
<td>.147</td>
<td>.65</td>
<td>.6</td>
<td>15</td>
<td>.795</td>
<td>.5</td>
<td>.01</td>
<td>.130</td>
<td>.1997</td>
<td>.79</td>
<td></td>
<td></td>
</tr>
<tr>
<td>B'desh</td>
<td>.32</td>
<td>.98</td>
<td>.1</td>
<td>.50</td>
<td>.53</td>
<td>.6</td>
<td>.25</td>
<td>.349</td>
<td>.5</td>
<td>.08</td>
<td>.121</td>
<td>.1804</td>
<td>.71</td>
<td>.60</td>
<td></td>
</tr>
<tr>
<td>Malawi</td>
<td>34</td>
<td>25</td>
<td>.26</td>
<td>.38</td>
<td>.3</td>
<td>.45</td>
<td>.50</td>
<td>8</td>
<td>7.97</td>
<td>.5</td>
<td>.08</td>
<td>.153</td>
<td>.2415</td>
<td>.51</td>
<td>.62</td>
</tr>
<tr>
<td>Zaire</td>
<td>.29</td>
<td>.60</td>
<td>.10</td>
<td>.1</td>
<td>.52</td>
<td>.21</td>
<td>.6</td>
<td>1</td>
<td>11.28</td>
<td>.5</td>
<td>.08</td>
<td>.100</td>
<td>.2151</td>
<td>.9</td>
<td>.98</td>
</tr>
<tr>
<td>Mali</td>
<td>.14</td>
<td>.5</td>
<td>.22</td>
<td>.1</td>
<td>.47</td>
<td>.7</td>
<td>2</td>
<td>.5</td>
<td>.19</td>
<td>.144</td>
<td>.1810</td>
<td>.12</td>
<td>.23</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Burma</td>
<td>.24</td>
<td>.4</td>
<td>.0</td>
<td>.35</td>
<td>.2</td>
<td>.48</td>
<td>.6</td>
<td>.5</td>
<td>.35</td>
<td>.120</td>
<td>.1617</td>
<td>.13</td>
<td>.84</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Madagas</td>
<td>.44</td>
<td>.99</td>
<td>.94</td>
<td>.1</td>
<td>.53</td>
<td>.31</td>
<td>.6</td>
<td>10.97</td>
<td>.5</td>
<td>.44</td>
<td>.130</td>
<td>.2452</td>
<td>.18</td>
<td>.121</td>
<td></td>
</tr>
<tr>
<td>Uganda</td>
<td>.35</td>
<td>.14</td>
<td>.10</td>
<td>.1</td>
<td>.48</td>
<td>.52</td>
<td>.7</td>
<td>1</td>
<td>7.58</td>
<td>.5</td>
<td>.44</td>
<td>.105</td>
<td>.2483</td>
<td>.16</td>
<td></td>
</tr>
<tr>
<td>Burundi</td>
<td>.23</td>
<td>.23</td>
<td>.96</td>
<td>.1</td>
<td>.48</td>
<td>.7</td>
<td>9</td>
<td>.5</td>
<td>.48</td>
<td>.114</td>
<td>.2233</td>
<td>.39</td>
<td>.53</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td>39</td>
<td>41</td>
<td>.14</td>
<td>.7</td>
<td>.3</td>
<td>.53</td>
<td>.46</td>
<td>7</td>
<td>.933</td>
<td>.5</td>
<td>.52</td>
<td>.108</td>
<td>.2316</td>
<td>.7</td>
<td>.72</td>
</tr>
<tr>
<td>Togo</td>
<td>.34</td>
<td>.61</td>
<td>.29</td>
<td>.1</td>
<td>.53</td>
<td>.45</td>
<td>.7</td>
<td>4.04</td>
<td>.5</td>
<td>.52</td>
<td>.96</td>
<td>.2221</td>
<td>.35</td>
<td>.95</td>
<td></td>
</tr>
<tr>
<td>Niger</td>
<td>.12</td>
<td>.21</td>
<td>.27</td>
<td>.1</td>
<td>.44</td>
<td>.68</td>
<td>.7</td>
<td>4.19</td>
<td>.5</td>
<td>.56</td>
<td>.135</td>
<td>.2276</td>
<td>.34</td>
<td>.28</td>
<td></td>
</tr>
<tr>
<td>Benin</td>
<td>.22</td>
<td>.38</td>
<td>.1</td>
<td>.50</td>
<td>.59</td>
<td>.7</td>
<td>6</td>
<td>2.25</td>
<td>.5</td>
<td>.60</td>
<td>.117</td>
<td>.2248</td>
<td>.18</td>
<td>.65</td>
<td></td>
</tr>
<tr>
<td>Somalia</td>
<td>.20</td>
<td>.18</td>
<td>.92</td>
<td>.2</td>
<td>.4</td>
<td>.71</td>
<td>.7</td>
<td>1.14</td>
<td>.5</td>
<td>.63</td>
<td>.134</td>
<td>.2074</td>
<td>.36</td>
<td>.26</td>
<td></td>
</tr>
<tr>
<td>C'Afr.Rep.</td>
<td>.26</td>
<td>.49</td>
<td>.0</td>
<td>.1</td>
<td>.50</td>
<td>.4</td>
<td>6</td>
<td>10.20</td>
<td>.5</td>
<td>.67</td>
<td>.134</td>
<td>.2059</td>
<td>.16</td>
<td>.73</td>
<td></td>
</tr>
<tr>
<td>India</td>
<td>.38</td>
<td>.44</td>
<td>.7</td>
<td>11</td>
<td>.5</td>
<td>.57</td>
<td>.47</td>
<td>.35</td>
<td>.285</td>
<td>.5</td>
<td>.67</td>
<td>.86</td>
<td>.2126</td>
<td>.56</td>
<td>.92</td>
</tr>
<tr>
<td>Rwanda</td>
<td>.30</td>
<td>.22</td>
<td>.86</td>
<td>.1</td>
<td>.48</td>
<td>.75</td>
<td>.8</td>
<td>1</td>
<td>4.39</td>
<td>.5</td>
<td>.67</td>
<td>.116</td>
<td>.1935</td>
<td>.59</td>
<td>.64</td>
</tr>
<tr>
<td>Kenya</td>
<td>.51</td>
<td>.48</td>
<td>.34</td>
<td>.17</td>
<td>.1</td>
<td>.57</td>
<td>.35</td>
<td>.17</td>
<td>.885</td>
<td>.5</td>
<td>.70</td>
<td>.74</td>
<td>.2214</td>
<td>.28</td>
<td>.94</td>
</tr>
<tr>
<td>Zambia</td>
<td>.42</td>
<td>.48</td>
<td>.102</td>
<td>.18</td>
<td>.1</td>
<td>.53</td>
<td>.14</td>
<td>.7</td>
<td>.3809</td>
<td>.5</td>
<td>.70</td>
<td>.82</td>
<td>.2126</td>
<td>.47</td>
<td>.103</td>
</tr>
<tr>
<td>S' Leone</td>
<td>.42</td>
<td>.15</td>
<td>.86</td>
<td>.23</td>
<td>.1</td>
<td>.41</td>
<td>.34</td>
<td>.7</td>
<td>4</td>
<td>5.84</td>
<td>.5</td>
<td>.74</td>
<td>.154</td>
<td>.1784</td>
<td>.22</td>
</tr>
<tr>
<td>Sudan</td>
<td>.41</td>
<td>.25</td>
<td>.8</td>
<td>27</td>
<td>.1</td>
<td>.49</td>
<td>.54</td>
<td>.7</td>
<td>2.73</td>
<td>.5</td>
<td>.77</td>
<td>.108</td>
<td>.2168</td>
<td>.21</td>
<td>.49</td>
</tr>
<tr>
<td>Haiti</td>
<td>.36</td>
<td>.46</td>
<td>.99</td>
<td>.1</td>
<td>.54</td>
<td>.5</td>
<td>7</td>
<td>.5</td>
<td>.80</td>
<td>.119</td>
<td>.1784</td>
<td>.35</td>
<td>.78</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pakistan</td>
<td>.42</td>
<td>.22</td>
<td>.36</td>
<td>.3</td>
<td>.52</td>
<td>.4</td>
<td>0</td>
<td>7</td>
<td>1</td>
<td>1.67</td>
<td>.5</td>
<td>.86</td>
<td>.111</td>
<td>.2180</td>
<td>.53</td>
</tr>
<tr>
<td>Lesotho</td>
<td>.58</td>
<td>.78</td>
<td>.1</td>
<td>.55</td>
<td>.65</td>
<td>.6</td>
<td>2.36</td>
<td>.5</td>
<td>.91</td>
<td>.102</td>
<td>.2299</td>
<td>.14</td>
<td>.115</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ghana</td>
<td>.36</td>
<td>.55</td>
<td>.29</td>
<td>.1</td>
<td>.54</td>
<td>.44</td>
<td>.4</td>
<td>1.76</td>
<td>.5</td>
<td>.97</td>
<td>.89</td>
<td>.1785</td>
<td>.50</td>
<td>.66</td>
<td></td>
</tr>
<tr>
<td>Sri Lanka</td>
<td>.34</td>
<td>.79</td>
<td>.43</td>
<td>.53</td>
<td>.7</td>
<td>5</td>
<td>7</td>
<td>3</td>
<td>3.00</td>
<td>.5</td>
<td>.99</td>
<td>.29</td>
<td>.2485</td>
<td>.36</td>
<td>.103</td>
</tr>
<tr>
<td>Mauritania</td>
<td>.79</td>
<td>.42</td>
<td>.1</td>
<td>.47</td>
<td>.32</td>
<td>.7</td>
<td>1</td>
<td>33.38</td>
<td>.6</td>
<td>.04</td>
<td>.127</td>
<td>.2071</td>
<td>. .</td>
<td>. .</td>
<td></td>
</tr>
<tr>
<td>Senegal</td>
<td>47</td>
<td>27</td>
<td>.90</td>
<td>.2</td>
<td>.2</td>
<td>.47</td>
<td>.25</td>
<td>.7</td>
<td>12</td>
<td>9.96</td>
<td>.6</td>
<td>.04</td>
<td>.130</td>
<td>.2418</td>
<td>.42</td>
</tr>
<tr>
<td>Afg'than</td>
<td>.21</td>
<td>.3</td>
<td>34</td>
<td>2</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>.2179</td>
<td>.19</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
</tr>
<tr>
<td>Chad</td>
<td>.16</td>
<td>.17</td>
<td>.86</td>
<td>.1</td>
<td>.45</td>
<td>.42</td>
<td>.6</td>
<td>.10.95</td>
<td>. .</td>
<td>.134</td>
<td>.1733</td>
<td>.26</td>
<td>.38</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guinea</td>
<td>.16</td>
<td>.83</td>
<td>.25</td>
<td>.1</td>
<td>.42</td>
<td>.6</td>
<td>. .</td>
<td>.148</td>
<td>.1731</td>
<td>.15</td>
<td>.30</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cambodia</td>
<td>.47</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>.2171</td>
<td>.21</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>.51</td>
<td>.4</td>
<td>.02</td>
<td>.5</td>
<td>. .</td>
<td>. .</td>
<td>. .</td>
<td>.146</td>
<td>.2317</td>
<td>.21</td>
<td>.91</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vietnam</td>
<td>.61</td>
<td>. .</td>
<td>.2</td>
<td>.65</td>
<td>. .</td>
<td>.5</td>
<td>20</td>
<td>.47</td>
<td>.2281</td>
<td>.41</td>
<td>.100</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Liberia</td>
<td>.33</td>
<td>.34</td>
<td>.17</td>
<td>2</td>
<td>.54</td>
<td>.27</td>
<td>.7</td>
<td>11.7</td>
<td>.6</td>
<td>.13</td>
<td>.87</td>
<td>.2373</td>
<td>.20</td>
<td>. .</td>
<td></td>
</tr>
<tr>
<td>Yemen PDR</td>
<td>.37</td>
<td>.99</td>
<td>.1</td>
<td>.50</td>
<td>.7</td>
<td>. .</td>
<td>. .</td>
<td>.6</td>
<td>1.15</td>
<td>.142</td>
<td>.2255</td>
<td>.31</td>
<td>.66</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indonesia</td>
<td>.39</td>
<td>.59</td>
<td>.7</td>
<td>.14</td>
<td>.2</td>
<td>.57</td>
<td>.56</td>
<td>.4</td>
<td>4.4</td>
<td>1.83</td>
<td>.6</td>
<td>.19</td>
<td>.87</td>
<td>.2476</td>
<td>.36</td>
</tr>
<tr>
<td>Yemen Ar</td>
<td>.33</td>
<td>.99</td>
<td>.1</td>
<td>.46</td>
<td>.7</td>
<td>2</td>
<td>. .</td>
<td>.6</td>
<td>1.31</td>
<td>.152</td>
<td>.2266</td>
<td>.31</td>
<td>.67</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Philippine</td>
<td>.43</td>
<td>.71</td>
<td>.39</td>
<td>.26</td>
<td>.3</td>
<td>.63</td>
<td>.26</td>
<td>.5</td>
<td>44</td>
<td>3.90</td>
<td>.6</td>
<td>.33</td>
<td>.46</td>
<td>.2260</td>
<td>.66</td>
</tr>
<tr>
<td>Morocco</td>
<td>.49</td>
<td>.25</td>
<td>.47</td>
<td>1</td>
<td>.60</td>
<td>.23</td>
<td>.5</td>
<td>3</td>
<td>36</td>
<td>4.95</td>
<td>.6</td>
<td>.38</td>
<td>.85</td>
<td>.2729</td>
<td>.27</td>
</tr>
<tr>
<td>Country</td>
<td>Value</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>--------------</td>
<td>-------</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>49 55</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Zambia</td>
<td>57 58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nigeria</td>
<td>32 58</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domin' rep</td>
<td>70 56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>P'Guina</td>
<td>47 59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C'Ivoire</td>
<td>49 39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Honduras</td>
<td>57 56</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S' Arabia</td>
<td>39 50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>51 74</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Thailand</td>
<td>44 78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E'Salvador</td>
<td>46 65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Botswana</td>
<td>65 82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jamaica</td>
<td>104 82</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cameroon</td>
<td>47 60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Guatemala</td>
<td>46 59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Congo</td>
<td>39 00</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Paraguay</td>
<td>78 99</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Peru</td>
<td>54 75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Turkey</td>
<td>49 75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tunisia</td>
<td>46 66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ecuador</td>
<td>76 26</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mauritius</td>
<td>79 42</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Colombia</td>
<td>48 80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Chile</td>
<td>43 93</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Costa Rica</td>
<td>41 92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jordan</td>
<td>75 21</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Syria</td>
<td>69 75</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lebanon</td>
<td>73 78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>56 78</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Malaysia</td>
<td>47 80</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S' Africa</td>
<td>53 73</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Mexico</td>
<td>52 87</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uruguay</td>
<td>40 91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Panama</td>
<td>54 88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Argentina</td>
<td>41 91</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Korea Rep</td>
<td>90 60</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Algeria</td>
<td>61 50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Venezuela</td>
<td>47 86</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gabon</td>
<td>55 52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Oman</td>
<td>42 53</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Trinidad</td>
<td>42 88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Israel</td>
<td>96 65</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hong Kong</td>
<td>93 88</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Singapore</td>
<td>52 90</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iran</td>
<td>52 66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Iraq</td>
<td>76 34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>S' Arabia</td>
<td>70 102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Kuwait</td>
<td>84 .</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>U.A. Emirate</td>
<td>78 .</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Libya</td>
<td>72 .</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Angola</td>
<td>30 102</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Note:

X1 = income inequality (Gini coefficient)
X2 = Human development index
X3 = Foreign capital penetration
X4 = Ethnic homogeneity
X5 = Democratic experience
X6 = Life expectancy
X7 = Relative size of agricultural sector
X8 = Fertility rate
X9 = Use of contraception
X10 = Disparity between Agricultural and Industrial sectors
X11 = Economic development (natural log of GNP)
X12 = Infant mortality rate
X13 = Daily calorie consumption
X14 = Access to drinking water
X15 = Primary education

Missing values are indicated as .