# Economic Growth and Social Welfare Development in Korea: An Exploration into the Applicability of Objective Indicators in the Evaluation of Developmental Efforts*

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Growth is not an end in itself, but rather an instrument for creating better conditions of life. OECD, 1972

## I. Introduction

The Republic of Korea has been widely heralded as an "economic miracle." During the outgoing decade of the 1970s, the national economy of the Republic, which was once devastated by a military conflict between superpowers, made one of the greatest leaps in the world. Its real Gross National Product (GNP) more than doubled during the ten-year period from 1969 to 1979, growing at 10 percent a year. Per capita GNP reached $1,597 in 1979, in real terms more than doubled the level of ten years

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before. Most unprecedentedly, Korea's overseas sales soared to $15,056 million in 1979 from a meager $87 million in 1963, showing a growth of 173 times over the 17-year period. This rapid expansion of the economy has been transforming Korea from a primarily agrarian society to a burgeoning industrial complex. The signs and effects of such transformation are visible on every side, not only in economic and technological sectors but also in the way Koreans lead their lives.

Compared to any other period of Korean history, citizens of this small country are better fed and housed, more educated and skilled, and they live longer and travel more frequently. While creating one of the world's substantial "middle-powers," the rapid economic growth in this country within a short span of time has also led to more pollution, alienation, violence and disorders. Besides, it has increasingly resulted in the fostering of a hedonistic and egotistic mentality, and expanding governmental control and regulation. Obviously, these changes have not all contributed to what might be called "progress" or "development."(1) Therefore, questions are frequently asked in academic circles about GNP growthmanship ("growth forever and the more the better").(2) And doubts are increasingly expressed about the governmental efforts to evaluate the nation's level of progress in terms of national income statistics and employment rates (Denison, 1971; Morris, 1979).

The purpose of this paper is to develop an alternative measure of national well-being and thereby provide a more adequate documentation of the nature of recent changes in Korean society. Based on this documentation, the paper seeks to explore whether rapid economic growth is the optimal way to maximize the well-being of citizens. By examining systematically the temporal relationship between the rate of economic growth and changes in the welfare of the Korean population, this inquiry is intended

(1) For illuminating discussions of the concept of development, see Goulet(1973) and Myrdal(1974).

(2) GNP growthmanship is discussed in Abel (1975:815) and Gross (1974:224-226).

to shed new light on the continuing policy debate over "steady-state economics" versus "growthmania."(3)

In addition, the present research is designed to address most of the major issues surrounding the current research on quality of life and social indicators. What really happens to the overall health of the nation and the well-being of its citizens when their national economy grows rapidly? Does rapid economic growth make every citizen better off? Or is it associated with subtle forces which reduce welfare in some elements of human life just as it improves welfare in others? Is GNP a reliable and valid measures of national well-being as considered by development planners in many countries? The findings derived from this analysis will make it possible within the context of an industrializing country to examine critically those findings from earlier research on quality of life which was conducted in Western, industrialized countries.

## II. Previous Research

The enhancement of citizen welfare has been the supreme goal of public policy in civilized societies. In seeking to achieve this goal, most governments in these societies have chosen to maximize economic growth under the assumption that the quality of citizens' lives is primarily determined by their capability to provide jobs and consumer goods (Abel, 1975:815; Milbrath, 1979:33). Although few scholars deny that economic growth is necessary for the reduction of poverty and unemployment, many question that economic growth alone necessarily leads to a better quality of life (Heilbroner, 1974; Hirsch, 1976; Kahn *et al.*,1976; Mishan, 1960; Sharkansky, 1975). It has been increasingly argued that a correspondence between economic growth and quality of life should not be taken for granted as assumed by many political leaders and development planners; their relation-

(3) Many scholars around the world have recently debated the importance of economic growth for human welfare (Abel, 1975; Beckerman, 1974; Heilbroner, 1974; Hirsch, 1976; Mesarovic and Pestel, 1974; Mishan, 1974; Kahn, 1976; and Sharkansky, 1975).

ship should be considered as an empirical question suitable for study (Beckerman, 1974:62; Strumpel, 1976:3; Liu, 1980:3).

In recent years, several attempts have been made to examine empirically the effects of economic growth upon human life. Easterline (1973, 1974) analyzed survey data from the United States and 19 other countries and found that within these countries there is no increase in happiness over time despite demonstrable economic growth. In the United States, for example, the average level of happiness was found to be little different from that in the late 1940s, though the per capita real income of Americans grew by 60 percent. From this finding, Easterline concluded that America is trapped on a "hedonic treadmill." This is to say that the happiness one gets from his material situation depends not on the absolute amount of goods he has, but on the level of resources he commands vis-à-vis other people around him.(4)

The results of Easterline's analysis that relative status, not the absolute amount of income, is an important ingredient of happiness raises serious questions about any effort to satisfy mankind solely or primarily through the growth of GNP. As he points out, economic growth would not bring about increased happiness because the positive effects of income on happiness would be largely or wholly offset by a corresponding upward shift in standards for self-appraisals of happiness. For the same reason, any public policy designed to help the poor could be considered self-defeating and thus even "unscientific" (Davis, 1975:1).

Nevertheless, it should be recognized that Easterline's work, as well as others, based on self-assessments of happiness (Duncan, 1975; Morawetz, 1977; Rescher, 1972), are very limited in providing an adequate understanding of the impact of economic growth upon the human lot and also present misleading implications for policy. Their research is inherently limited

(4) According to von Wright (1972), welfare is the primary constituent of the good of man while happiness and other hedonic goods are its secondary or derivative constituents.

because the central concept used in their research, happiness, fails to capture the fundamental element of the welfare of man, i.e., things which are beneficial or harmful to life. The policy implications of their research are consequently misleading because goals that are exclusively related to happiness, it is generally known, cannot be formulated unless such attempts as persuasion and manipulation are made to affect human minds (Uusitalo, 1975:11). Therefore, it seems more appropriate to assess the relationship between economic growth and human life from the perspective of welfare rather than that of perceived happiness or sense of well-being.

In the past, when social scientists investigated the empirical relationship between economic growth and human welfare, they were mostly concerned with Western, industrialized countries such as the United States and Germany (Barnett, 1974; Beckerman, 1974; Ruggeri and Jechinis, 1974; Sametz, 1968; Zapf, 1979). And they made very limited efforts to understand the role of economic growth in the process of improving the welfare of the people in industrializing countries. As evidenced in the recent works of Liu (1980) and Morris (1979), research on non-Western, industrializing countries has been based on cross-sectional analyses of data collected at single points in time; the research to date, moreover, has been solely concerned with the physical aspect of human welfare. Consequently, comprehensive and balanced information is not available on the effects of economic growth on the human lot especially in the developing countries where economies tend to grow rapidly. The present study seeks to fill this void by focusing on the temporal relationship between economic growth and human welfare in a rapidly industrializing country.

## III. Empirical Welfare Measurement

Welfare is a utilitarian notion connected to resources for the satisfaction of human needs.[5] Unlike fleeting feelings of happiness, contentment, or

(5) A more detailed discussion of this notion of welfare can be found in von Wright (1972:89).

elation, welfare is a matter of the objectively determinable conditions of life. Yet, unlike the components of the good life, welfare deals only with basic essentials rather than the nominimal *desiderta* of man's well-being (Rescher, 1972:8). Figuring on the side of essential requirements, welfare can be viewed as the foundation of a happy life or the basic requisites of happiness.

Given that welfare is defined as the requisite of happiness, what are the components of welfare? In principle, an infinite number of resources are conceivable. Yet, the possibility of a complete description of all the influences upon human life—material and non-material, and personal and impersonal—is neither desirable nor possible. It is generally recognized that some resources are more important than others because they are essential to the realization of other elements (Maslow, 1970; Knudson, 1972; Lesse, 1976; McIntosh *et al.*, 1977; Pennock and Chapman, 1977; Montagu, 1955).

In an attempt to determine and validate the components of welfare, the present research has included a comprehensive review of numerous studies from a variety of disparate sources, including the recent work of the Organization for Economic Cooperation and Development (OECD) (Allardt, 1975; Andrews and Withey, 1976; Cantril, 1965; Liu, 1976, 1980; Markley and Bogley, 1975; Fox, 1974; U.S. Department of Health, Education and Welfare, 1970; U.S. Office of Management and Budget, 1973, 1977). These review efforts have suggested a list of ten components believed to be necessary for the fulfillment of fundamental human needs which are not determined by social structure, cultural patterns or the socialization process (Etzioni, 1968a: 870-885; Knudson, 1972). The listing includes (1) income, (2) housing, (3) health, (4) safety and security, (5) work, (6) leisure and recreation, (7) education, (8) love and trust, (9) equality and (10) freedom. Because many important resources like air and water are not included in the listing, it is not exhaustive. Nevertheless, welfare as conceptualized here not only involves basic needs (such as food, clothing and shelter), but also embraces the human relations necessary for making

one's existence more meaningful(love and trust) and the opportunities known to be essential for maximizing one's potential(freedom and equality) (Stockdale, 1973; Fromm, 1976). The present research, therefore, can be considered as one of the most comprehensive efforts to study human welfare from an objective perspective.

The ten welfare resources domains chosen for the present analysis easily meet the measurement criteria proposed by a recent work on quality of life that a welfare component classification should be:

(1) sufficiently universal so that it applies to a large majority in a country;

(2) flexible enough to encompass any life style;

(3) sensitive to changing societal and physical conditions;

(4) open to criticism and to proof or disproof according to scientific criteria; and

(5) small enough to manipulate but large enough to permit adequate detail (U.S. Environmental Protection Agency, 1975: 11-40).

For each of the ten components of welfare, objective indicators were elected according to the following criteria. First, only those indicators having unambivalent normative relevance were included. This consideration disqualified many indicators, sch as the divorce rate, on which there is no general consensus as to what course of action is of benefit to human life. Secondly, indicators were used only if time-series measure were available and only if these measures were sensitive to yearly variations. Finally, only those measures whose face validity could be reasonably established were also included. This mode of indicator selection, based on precedent emphasis and existing data, was considered adequate at this early stage of experimental development, especially since no feasible alternative is currently available.The fifty indicators chosen for this inquiry are displyed in Table I.

In assessing temporal changes in welfare, the present inquiry sought to develop aggregate measures, an approach suggested by Drewnowski(1972 : 25-33) and recently tested by Liu (1975) and Morris (1979). Despite the

**Table I. A Framework for Measuring Welfare**

| Human Needs[1] | Welfare Resources | Indicators |
|---|---|---|
| I. Life sustenance Needs | | |
| 1. Physiological Needs<br>The need for food, water, sleep, shelter, reproduction, rest, etc. | Income | 1. Price-deflated disposable income per capita<br>2. Price-deflated mean rural family income<br>3. Price-deflated mean urban family income<br>4. Percentage of farming households with less than three tanbo[2]<br>5. Per capita savings |
| | Housing | 1. Proportion of paved streets<br>2. Percentage of households with homes<br>3. New housing starts per 1,000 households<br>4. Percentage of households with access to safe drinking water<br>5. Percentage of households with telephones |
| | Work | 1. Employment rate<br>2. Underemployment rate<br>3. Productivity index<br>4. Real wage index<br>5. Ratio of employee compensation to property income |
| | Health | 1. Infant mortality rate<br>2. Death rate<br>3. Percentage of the working-age population disabled<br>4. Calorie intake<br>5. Epidemic death rate |
| | Leisure and Recreation | 1. Average weekly non-work time<br>2. Number of holidays a year<br>3. Radio and television sets per 1,000 households<br>4. Price-deflated entertainment expenses<br>5. Per capita passenger kilometers. |
| 2. Protection Needs<br>The need for protection from harm and for a life that is safe and secure, including assurances about the future satisfaction of physiological needs. | Safety and Security | 1. Inflation rate<br>2. Traffic accidents<br>3. Fire incidence<br>4. Criminal offences per 100,000 population<br>5. Percentage of population who are economically inactive |

| Human Needs[1] | Welfare Resources | Indicators |
|---|---|---|
| II. Social Needs | | |
| 1. Belongingness Needs<br>The need for love and affection. These needs are of two kinds–the passive need to be loved and accepted, and the active need to love others. | Love and Trust | 1. Number of Red Cross members per 100,000 population<br>2. Contributions to the Red Cross as a percentage of GNP<br>3. Number of labor disputes<br>4. Number of people accused per 1,000 population<br>5. Proportion of registered mail |
| 2. Esteem Needs<br>These needs include strength, achievement, adequacy, mastery, competence, prestige status, respect, fame, importance and appreciation. | Equality | 1. Females as percentage of college students<br>2. Females as percentage of people in the professional and managerial occupations<br>3. Differences between male and female unemployment<br>4. Differences between average urban and rural family incomes<br>5. Differences between male and female temporary employment rates |
| III. Growth Needs | | |
| Self-Actualization Needs<br>The needs to know and understand, to experiment and to be creative, to grow toward the full realization of one's potential. | Freedom | 1. Number of daily newspapers per one million population<br>2. Occupational freedom measured in terms of self-employment rate<br>3. Economic freedom as measured in terms of percentage of GNP taxed<br>4. Number of government workers per 1,000 population<br>5. Government expenditure as percentage of GNP |
| | Education | 1. Percentage of elementary school graduate entering middle school<br>2. Percentage of middle school graduates entering high school<br>3. Percentage of high school graduates entering post-secondary school<br>4. Percentage of population attending school<br>5. Number of library users per 1,000 population |

1. The categories of human needs are drawn from E. Allardt, *Dimensions of Welfare in a Comparative Scandinavian Study* (Helsinki: University of Helsinki, 1975); Denis Goulet, *The Cruel Choice: A New Concept in the Theory of Development* (New York: Atheneum, 1973); Claire Graves, "Levels of Existence: An Open System of Values," *Journal of Humanistic Psychology* 10 (Fall, 1970); Abraham Maslow, *Motivation and Personality* (Harper and Row, 1970).
2. Tanbo is equivalent to 0.000992km$^2$, The families who cultivate less than 3 Tanbo are officially defined as the poor families.

admitted conceptual difficulties of this approach, an attempt was made to arrive at a global measure of human welfare. This single numeric of welfare fulfills the need for a synthetic measure of development. Moreover, as Drewnowski(1972:87) convincingly argues, only the use of aggregate measures of welfare allows politicians and development planners to stop expressing development solely in terms of the GNP and start thinking of it as an improvement in human welfare.

Different weights were assigned to different types of human needs in constructing an aggregate measure of human welfare simply because society responds to these unmet needs on a varying scale of urgency and importance. Based primarily upon a dual-level hierarchy of need suggested by recent empirical studies on the subject,(6) the satisfaction of physiological or biogenic needs was incorporated into our model because it is generally considered to be much more important than either social or growth needs,

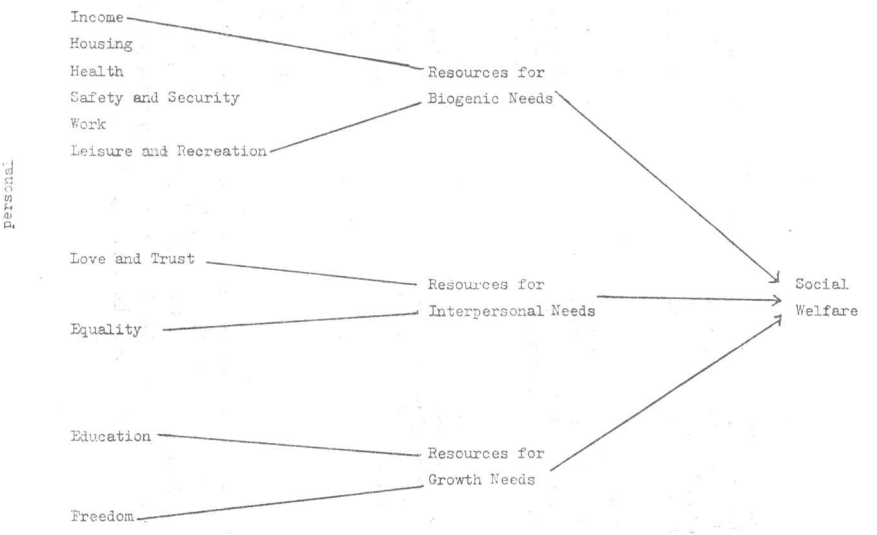



**Fig. 1. A Strategy for Measuring Social Welfare**

(6) The notion of a dual-hierarchy of human needs is suggested by Adler(1969, 1972), Lawler and Suttle (1972), Maslow (1970), and Wahba and Bridwell (1976).

especially in developing countries. Specifically, resources necessary for the satisfaction of *biogenic* needs are valued three times as important as those for social or growth needs. As suggested in Figure 1, this unequal weighting was done by choosing 6 domains for biogenic needs and 2 domains for each of social and growth needs and by giving equal weight to each of the ten welfare domains. Although this decision can be viewed as an arbitrary one, it reflects the general concern of people living in an industrializing country like the Republic of Korea.(7)

Our model of welfare as thus conceptualized can be expressed symbolically as follows:

$$IHW=BW+IW+PG$$
$$BW=IC+HE+HO+SS+WO+LR$$
$$IW=LT+EQ$$
$$PG=ED+FR$$

where IHW is the Index of Human Welfare; BW is biogenic welfare; IW is interpersonal welfare; and PG is personal growth.

IC is income—the money or the other gain received by an individual for labor, services or from property investment, operation, etc.

HE is health—physical and mental well-being as well as facilities and services of medical care.

HO is housing—the availability of adequate housing facilities.

SS is safety and security—the safeguarding of life and property.

WO is work—the opportunity for employment and the quality of that employment.

LR is leisure and recreation—time, money and facilities for rest and fun.

LT is love and trust—a compassionate relationship on the part of individual not only within the family but outside it as well.

EQ is equality—the state or instance of being treated equally in political,

(7) A recent survey on the perceptions of life quality by the Korean population confirms this pattern of concern. This finding is reported in Shin, Lee and Kim (forthcoming, 1982).

economic, legal or social situations.

ED is education—attainment of knowledge and skills.

FR is freedom—opportunities for and participation in making decisions affecting one's life and being free from undue restraints.

For the purpose of computing a composite measure of welfare, the Diffusion Index, proposed by economist Moore Jr. (1954) at the National Bureau of Economic Research, was adapted to the time series data. As a statistical tool for monitoring changes in a multi-dimensional phenomenon at peridoic intervals, the Index computes the proportion of time-series experiencing positive changes less those demonstrating negative changes.[8] The formula for aggregating time-series into a summary measure can be written:

$$Di=\frac{Psi-Nsi}{Tsi}(100)$$

where DI is the Diffusion Index for the ith period; Psi is the number of time-series with positive change over the ith period. Nsi is the number of time-series with negative change over the ith period, and Tsi is the total of time-series considered in a given year.

All aggregate measures, whether component or global, are calculated by substracting the number of negative changes from the number of positive changes divided by the total number of indicators or components considered. The quotient is then multiplied by 100. The possible range of their scores is from −100, where all the variables produced negative changes, to+100, where all of them produced positive changes. The magnitude of positive index values denotes the extent of progress or improvement, while negative values suggest the extent of retrogression. In short, the component indices can be seen to reflect changes in the resources necessary for the satisfaction of needs in their respective domains. The Index of Human Welfare, mean-

(8) The Diffusion Index is known to have indisputable advantages over other techniques in measuring and aggregating multi-directional changes in a complex phenomenon like welfare. Unlike the arithmetic mean statistic used by Drewnowski (1974) in his Level of Living Index, this technique is not unduly affected by the missing values and extreme values of the time-series. For further details, see Bonham (1975:73-80).

while, is an overall assessment of all the changes which occurred in the ten universal components of the human existence.

Percentage changes in the GNP were calculated by modifying the conventional way of measuring percentage rate of change over a given time interval, that is,

$$\frac{100(B-A)}{(B+A)}$$

In this formula, the sum of A and B is used as the denominator in order to keep positive and negative percentage changes symmetrical, and the factor 100 is used in the numerator to bring the modified values to the identical level of the welfare indices. The percentage changes resulting from this modified formula, assuming that A and B cannot be negative, can vary between $-100$ and $+100$. Unlike the Index of Human Welfare designed to measure qualitative manifestations of value change, this index of GNP change represents a measure of quantitative change.

## IV. Data Analysis and Findings

The basic sample period used in the present study is 1963~79, for a total of 17 observations. All the variables described above were measured annually for the entire period. The data on the variables were obtained from two disparate sources.[9] Information on the variable of political conflict and repression came from newspapers' accounts of anti-government demonstrations staged by college students and of governmental handling of these activities. Information on all other variables came from government publications, which include *Social Indicators of Korea*, *Korea Statistical Yearbooks*, *Labor Statistics Yearbooks*, *Statistics Yearbook of Education*, *Major Statistics of Korean Economy*, and *Statistical Yearbooks of Communications*.

Table II and III present data on changes in the GNP of the Republic

(9) Part of the data reported in this paper was presented in Shin (1980).

of Korea and its social welfare for the period of 1963 through 1979, during which it became more industrialized than any other countries at comparable levels of income and population. As displayed in the tables, each index for the base year (1963) was, *a priori*, set at 0. The other 16 years are shown to have index values with positive or negative numbers depending on the nature of changes observed in given variables. While the simple indices of welfare in Table II facilitate an easy interpretation of all the changes occurring from one year to the next, the cumulative indices in Table III are intended to allow periodic net assessments of all the yearly changes taking place since the base year.

The evidence presented in the tables reveals considerable variations in the direction and magnitude of temporal changes in welfare across its ten domains. Some domains experienced positive changes, while others experienced negative changes. And even among those domains which changed for the better the magnitude of their improvement is found to vary widely. While the yearly increment of welfare in the domains of income, and leisure and recreation was estimated at more than 60 percent, the annual rate of improvement in equality was less than 5 percent.

Careful scrutiny of the data in Tables II and III reveals three general patterns of changes in welfare in Korea over the past 16 year-period. The first pattern represents *uninterrupted progress*, which means that the improvement of welfare occurred without any interruptions over the entire 16 years. As shown in their simple and cumulative index score, the domains of income, leisure and recreation, and housing changed for the better in every year for the whole period. The second pattern, in contrast, portrays *interrupted progress* in the following four components: (1) education, (2) equality, (3) work, and (4) health. While the general direction of changes in these welfare domains was for the better, the overall positive trends were occasionally hampered by negative changes. The third and final pattern—*interrupted retrogression*—is observable in the domains of (1) freedom, (2) love and trust, (3) safety and security. Yearly changes in these

**Table II. Simple Indices of Economic Growth and Welfare**

| Year | Income | Housing | Work | Health | Safety | Love | Equality | Education | Leisure | Freedom | GNP | Welfare Index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1963 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1964 | 60 | 20 | −20 | 100 | −20 | −20 | −60 | 60 | 20 | 60 | 5 | 40 |
| 1965 | 20 | 60 | −60 | 100 | 20 | 20 | 60 | 100 | 20 | −60 | 3 | 80 |
| 1966 | 100 | 60 | 20 | 20 | 20 | −20 | 20 | −20 | 20 | −60 | 6 | 20 |
| 1967 | 20 | 20 | 60 | 40 | −60 | 20 | 20 | 100 | 100 | −60 | 3 | 40 |
| 1968 | 100 | 20 | 60 | 20 | −20 | −20 | −60 | 20 | 60 | −100 | 5 | 20 |
| 1969 | 100 | 60 | 100 | 60 | −60 | −60 | 20 | 20 | 80 | −100 | 6 | 20 |
| 1970 | 60 | 100 | 20 | 60 | −100 | 20 | −20 | 60 | 100 | −20 | 4 | 40 |
| 1971 | 100 | 60 | 60 | 100 | −20 | −60 | 60 | 20 | 100 | −60 | 5 | 40 |
| 1972 | 60 | 40 | 20 | −40 | 20 | −20 | 20 | 60 | 20 | 20 | 3 | 40 |
| 1973 | 100 | 60 | 60 | 20 | 60 | −20 | 60 | −20 | 60 | 20 | 7 | 60 |
| 1974 | 60 | 60 | 20 | −20 | 20 | −60 | 20 | −20 | 100 | −20 | 4 | 20 |
| 1975 | 60 | 60 | 60 | 60 | −100 | −60 | 60 | 20 | 20 | −100 | 3 | 20 |
| 1976 | 60 | 20 | 60 | 20 | −20 | 20 | −100 | 20 | 60 | −40 | 7 | 40 |
| 1977 | 60 | 100 | 60 | 60 | −60 | 20 | 20 | 20 | 40 | −60 | 5 | 60 |
| 1978 | 100 | 60 | 100 | 60 | −60 | −60 | 20 | 100 | 100 | −60 | 6 | 40 |
| 1979 | 60 | 20 | −20 | 60 | −60 | −20 | −60 | 100 | 60 | −60 | 3 | 0 |

**Table III. Cumulative Indices of Economic Growth and Welfare**

| Year | Income | Housing | Work | Health | Safety | Love | Equality | Education | Leisure | Freedom | GNP | Welfare Index |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 9 6 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 1 9 6 4 | 60 | 20 | −20 | 100 | −20 | −20 | −60 | 60 | 20 | 60 | 5 | 40 |
| 1 9 6 5 | 80 | 80 | −80 | 200 | 0 | 0 | 0 | 160 | 40 | 0 | 8 | 120 |
| 1 9 6 6 | 180 | 140 | −60 | 220 | 20 | −20 | 20 | 140 | 60 | −60 | 14 | 140 |
| 1 9 6 7 | 200 | 160 | 0 | 260 | −40 | 0 | 40 | 240 | 160 | −120 | 17 | 180 |
| 1 9 6 8 | 300 | 180 | 60 | 280 | −60 | −20 | −20 | 260 | 220 | −220 | 22 | 200 |
| 1 9 6 9 | 400 | 240 | 160 | 340 | −120 | −80 | 0 | 280 | 300 | −320 | 28 | 220 |
| 1 9 7 0 | 460 | 340 | 180 | 400 | −220 | −60 | −20 | 340 | 400 | −340 | 32 | 260 |
| 1 9 7 1 | 560 | 400 | 240 | 500 | −240 | −120 | 40 | 360 | 500 | −400 | 37 | 300 |
| 1 9 7 2 | 620 | 440 | 260 | 460 | −220 | −140 | 60 | 420 | 520 | −380 | 40 | 340 |
| 1 9 7 3 | 720 | 500 | 320 | 480 | −160 | −160 | 120 | 400 | 580 | −360 | 47 | 400 |
| 1 9 7 4 | 780 | 560 | 340 | 460 | −140 | −220 | 140 | 380 | 680 | −380 | 51 | 420 |
| 1 9 7 5 | 840 | 620 | 400 | 520 | −240 | −280 | 200 | 400 | 700 | −480 | 54 | 440 |
| 1 9 7 6 | 900 | 640 | 460 | 540 | −260 | −260 | 100 | 420 | 760 | −520 | 61 | 480 |
| 1 9 7 7 | 960 | 740 | 520 | 600 | −320 | −240 | 120 | 440 | 800 | −580 | 66 | 540 |
| 1 9 7 8 | 1,060 | 800 | 620 | 660 | −380 | −300 | 140 | 540 | 900 | −640 | 72 | 580 |
| 1 9 7 9 | 1,120 | 820 | 600 | 720 | −440 | −320 | 80 | 640 | 960 | −700 | 75 | 580 |
| Annual Rate of Change | 70 | 51 | 45 | 45 | −26 | −23 | 4 | 40 | 61 | −44 | 5 | 36 |

domains are shown in Table II to be a mixture of both positive and negative elements, but the overall direction of changes signifies retrogression rather than progress.

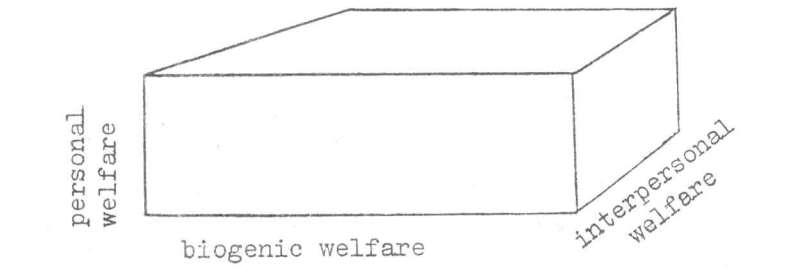
As expected from the earlier discussions of the component indices, the overall welfare of the South Korean society over the past decade and a half improved steadily, forming a remarkable pattern of uninterrupted progress. Since 1963, when the Third Republic was founded in this country, each year with the exception of 1979 witnessed a substantial gain in the general capacity to satisfy a variety of needs which are widely known to be essential to human existence. Furthermore, the average annual rate of life enhancement was estimated at a relatively high 36 percent. This indicates that, out of the ten domains of welfare surveyed in the present analysis, those domains which showed improvements in themselves outnumbered those which changed for the worse by a ratio of more than two to one each year.

It is clear from Tables II and III that the nature and strength of the relationships between the rates of economic growth and changes in social welfare vary considerably from one domain of welfare to another. While economic growth and some welfare components were positively covaried, its relationships with others were either negative or a mixture of negative and positive movements. In addition, the strengths of their relationships were found to vary considerably across domains. Careful examination of the data reported in Table II reveals three general patterns of temporal relationships between GNP growth and welfare domains.

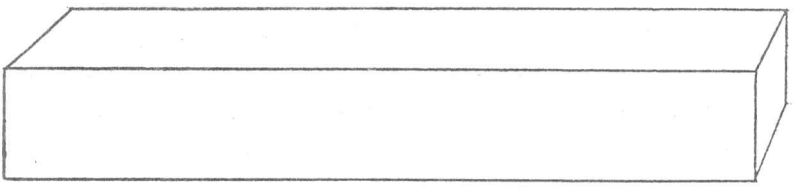
Of these three patterns, the first represents *uninterrupted positive, temporal covariations*. For example, GNP growth was always accompanied by positive index scores in the domains of income, housing, and leisure and recreation, suggesting that economic expansion has led to improvements in these welfare domains every year for the entire 16-year period. The second, in contrast, portrays *interrupted positive, temporal covariations* between economic growth and welfare components. While the nature of general

relationships between the variables considered was positive over time, the overall positive trends were occasionally hampered by negative covariations. The third, final pattern—*interrupted negative, temporal covariations*—was observed in the domains of freedom, love and trust, and safety and security. Yearly interactions between economic growth and these three welfare domains were found to be a mixture of both positive and negative covariations, but the overall direction of their movements was negative.

It is evident from Figure 2 that economic growth did not influence all welfare dimensions uniformly. As depicted in the Figure which illustrates the welfare domains as a cuboid, economic growth within Korea was accompanied by simultaneous expansion and reduction in the three-dimensional profile of welfare. Comparing the 1963 and 1979 welfare profiles shows that the biogenic dimension expanded by 72 percent over the past 16 years, while both the interpersonal welfare and personal growth dimensions declined during the same period by 20 percent, respectively. This means that economic growth not only contributed to but also detracted from welfare. This is an important finding. Prior studies have tended to focus exclusively




(A) 1963



(B) 1979

**Fig. 2. Changing Welfare Profiles in the Republic of Korea**

upon one welfare dimension, such as *economic* or *physical welfare*, and this has led to erroneous conclusions when the importance of economic growth in improving the human lot has been assessed. Most often an advance in economic growth in improving the human lot has been mistakenly interpreted as an advance in *total* welfare.

As the direction of the relationships between economic growth and social welfare was not uni-directional across welfare domains, the strengths of their relationships varied widely from one to another. As expected, GNP growth tends to affect the resources necessary for the satisfaction of basic needs such as income and housing much more strongly than other resources for social personal growth needs. As Table IV indicates, the amount of the variance of welfare indices explained by GNP growth rates ranged from less than 11 percent in freedom to 61 percent in income.

**Table IV. The Proportions of Variance in Welfare Measures Explained by GNP Growth Rate (eta squared).**

| Income | Housing | Work | Health | Safety | Leisure | Love | Equality | Education | Freedom | Welfare |
|---|---|---|---|---|---|---|---|---|---|---|
| 61% | 27% | 31% | 21% | 16% | 20% | 11% | 38% | 28% | 36% | 14% |

When the ten domains of welfare are considered together, it is found that the relationships of GNP growth and the overall index of welfare was consistently positive over time. Throughout the whole period, an increase in Gross National Product was accompanied by improvement in human welfare, forming the pattern of uninterrupted positive, temporal covariations as in the case of income and housing. On the basis of this finding, it can be safely concluded that economic growth does contribute to the development of social welfare in industrializing countries like the Republic of Korea.

Careful scrutiny of the data reported in Table IV and Figure 4, however, leads us to believe that the rates of GNP expansion had little effect upon the rates of improvements in human welfare. For example, no difference in the rate of welfare enhancement was discovered between the five years which observed the highest rates of GNP increment (1966, 1969, 1973,

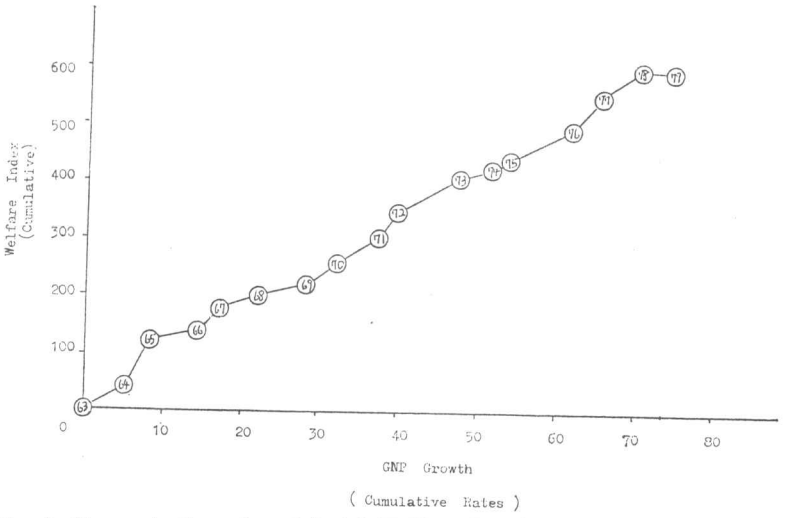



**Fig. 3. Economic Growth and Social Welfare Development in Korea, 1963~79**

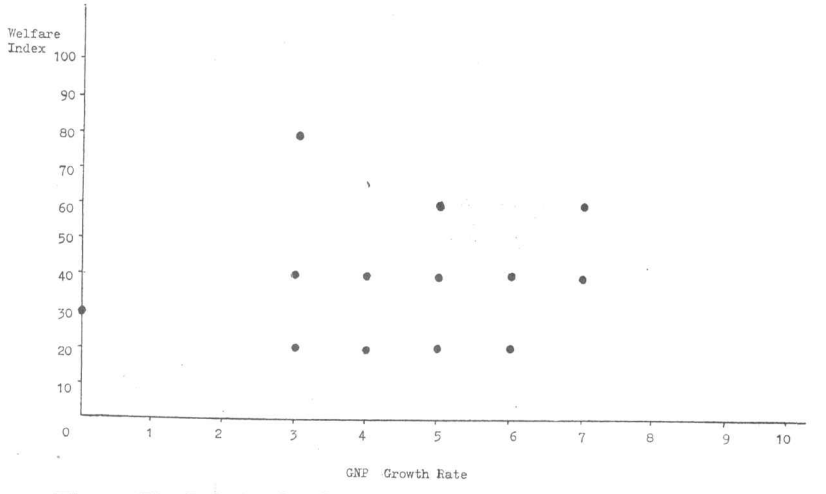



**Fig. 4. The Relationship between the Rates of Economic Growth and Social Welfare Development**

1976, and 1978) and those five years which experienced the lowest rates of GNP growth (1964, 1967, 1972, 1975, and 1979). Surprisingly, the average rates of welfare enhancement for the two groups of years were the virtually identical—35 percent. Similarly, an $e^2$ of 0.14 between the

two variables presents unambiguous evidence that the economic growth rate would be a poor predictor of social development, suggesting that economic growth alone should not be equated with welfare development (Wager, 1970: 1179-1184; Denison, 1971: 9; Morgenstern, 1975:23-31; Lekachman, 1971). The same finding also raises serious questions about the assumption underlying development policy that rapid economic growth is the most effective means of promoting the quality of citizens' lives.

## V. Conclusion

The attainment and maintenance of a high rate of goods and services production has been the main goal of development policy in both industrialized and industrializing countries. The pursuit of rapid economic growth is usually justified by political leaders and development planners on the assumption that this automatically leads to and ensures human welfare. The present study has undertaken to determine whether this assumption is well-founded.

The time-series analysis of data, collected from a rapidly industrializing country, has demonstrated that higher national income makes for greater welfare. Even so, it must be added that the rate of welfare enhancement is almost independent of the average rate of national income growth. Finally, it was also discovered that rapid economic growth is associated with subtle forces which improve well-being in some elements of human welfare while reducing it in other elements.

On the basis of these findings, it can be concluded that the GNP and its derivations, which have been "the Holy of Holies" for most policy-makers since World War II (Gross, 1974:225), should not be used as reliable and valid measures of human welfare. In order better to realize the basic values associated with the meaningful and satisfying existence of humans, national policy should be based on a much broader conception of welfare than is currently implied by the idea of GNP growthmanship. To this end, policy

makers should heed what economist Yew-Kwang Ng(1980:161) has recently said:

> Growth due to the more natural run of events may serve to increase happiness and welfare but a crash program of forced growth may have the reverse effect.

At the same time, policy analysts should continue the further development and refinement of new concepts like quality of life and net national welfare and their measures for a more comprehensive, balanced and concise judgement of what constitutes human welfare.

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