Patterns of Economic Development in the World

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Abstract

The purpose of this paper is to identify different patterns of economic development among the countries (222 countries/territories) in the world. The economic development was based on both economic growth (quantitative) and quality of life (qualitative) respectively. Several patterns of economic growth were identified: knowledge-based, trade-based, savings-based (resource/oil rich-based) and ethnic-religiously affected. The knowledge-based economy was found most predominant pattern of economic growth, followed by the trade-based. Neither the savings-based nor the ethnic-religiously affected pattern was found significant in affecting economic growth. The knowledge-based and trade-based patterns of economic growth have positive effects on both objective and subjective quality of life as well as on reducing conflict, domestic and international. Ethnic-religious fractionalization increases poverty level and unequal distribution of income, while the oil-richness increases conflict and relative deprivation. Although the dominance of the knowledge-based economy does diminish the effect of the 'traditional' pattern of the free-trade on economic growth, these two patterns are all significant in enhancing economic growth and quality of life. Countries featured with the patterns of 'diseconomies' (savings-based/oil-richness, ethnic religiously-affected) need to follow suit to catch up with the most successful patterns of economic growth. When/if these countries, developing or developed, pursue policies for economic development, each of the variables out of which the patterns of the knowledge-based as well as the trade-based economy were built should be cross-national comparatively examined for their respective strengths.

Keywords: Knowledge-based economy; Savings-based economy; Globalization; Relative deprivation; Factor analysis

Introduction

The purpose of this paper is to identify different patterns of economic development among the countries in the world. The patterns of economic development will be built out of the twenty-seven 'common' variables that cut across the 222 countries/territories of the world. The variables were selected as they are theoretically deemed relevant to the economic development. The economic development encompasses not only the economic growth (quantitative) but also the quality of life (qualitative). When addressing economic development, this paper differentiates between the economic growth and the quality of life in the economic development, Based on the variables, this paper will explore and detect first diverse patterns of economic growth. It will analyze how each pattern was built out of the diverse variables relevant to the economic growth. This multivariate approach for the patterning of economic growth variables is in contrast with a univariate or bivariate approach for economic growth based on a single or a few variables. Based on each pattern that is built out of the diverse variables, it will also test hypothesis about the relations of variables in each pattern. Finally, it will assess the effect of the 'growth,' quantitative dimension of economic development, on the 'quality' of life, qualitative dimension of economic development. For this purpose, it will assess the effect of each of the patterns of the economic growth on the ingredients of quality of life. Finally, by comparing between the different patterns of economic growth as well as their respective effects on the quality of life, it will suggest policies to the countries with the least successful pattern(s) of economic growth as to how they should follow suit to catch up with the most successful pattern.

Many Views of the Development

Economic development is based on the following three ingredients: economic growth, quality of life and human development. Although these three ingredients of economic development are interrelated with each other, differences among the three come from the emphasis placed on each of the three: economic growth is quantitative, while the other two indicate qualitative dimensions of development. Human development (HDI/Human Development Index) is objective while quality of life (QLI/Quality of Life Index) subjective. Many international economic variables affect economic development. Globalization is one of them. There have been pros and cons of the role of globalization1. Stiglitz [1] was critical of globalization, while Goklany [2] argued for a positive effect of economic globalization based on free trade, and demonstrated that the free trade helped to enhance the human well-being. In a globalized world individual economies become increasingly intertwined with the rest of the world.

Knowledge-economy is based on the notion that knowledge and ideas are the key factor of prosperity and economic growth. Superior knowledge capitalization is considered to be the driving force of the economic growth and productivity, which can offer a sustainable competitive advantage Tocan [3]. Resource-based economy depends on natural resources. And the income of those resource- based economy comes from the natural resources. Norway's export of oil and gas forms 45% of total exports and more than 20% of the GDP. More than 80% of Russian exports are oil, natural gas, metals and timber. There are pros and cons of the effect of natural resources on economic

growth. Alexeev and Conrad [4] show the potential-resource wealth has tended to make countries better off. Yet Collier and Goderis [5] suggest that this may be due only to the income generated by resource rents rather than to the growth of output. They espouse 'resource curse' theory, which suggests that countries with abundant natural resources, such as oil, often fail to democratize because the elite can live off the natural resources rather than depend on popular support for tax revenues. They argue with 'natural resources trap' in which countries, particularly in Africa, dependent on oil, gas, and mining have tended to sustain weaker long-run growth, higher rates of poverty, and higher inequality in comparison with non-oil, mineral-dependent economies at similar levels of income. Some countries with natural resources are not necessarily creating the employment opportunities. Even oil and mineral revenues have often fuelled corruption, which has a severely negative impact on a country's development.

Savings and economic growth are closely related with each other. Governments of the countries offer a number of saving and investment schemes that are tax exempt in order to promote the practice of saving. The governments in return invest thus earned capital in various development projects of the country, which helps to build a better economy and the growth of economy. The relations between the savings and the economic growth are bilateral as well: the savings increase with the increase in income and the economic growth increases the amount of savings as well. According to the Harrod-Domar growth model, every economy must save a certain proportions of its national income, if only to replace worn-out or impaired capital goods (buildings, equipment, and materials) for the economic growth2. The more they can save and invest, the faster they can grow. New investment will bring about corresponding increases in the flow of national output, GNP. The mechanism of economic growth and development, therefore, are simply a matter of increasing national savings and investment. The main obstacle or constraint on development was relatively low level of new capital formation in most poor countries. Rostow [6] Terms of trade, favorable or unfavorable, could affect economic development. Unfavorable terms of trade will result in a negative or low economic growth particularly in developing countries, as they rely on the export of a single or a few primary commodities Chow and Appleyard [7,8]. Export-led growth is a trade and economic policy aiming to speed up the industrialization process of a country by exporting goods for which the nation has a comparative advantage. Export-led growth implies opening domestic markets to foreign competition in exchange for market access in other countries. This strategy seeks to find a niche in the world economy for a certain type of export. By implementing this strategy, countries hope to gain enough hard currency to import commodities manufactured more cheaply somewhere else. During 1970 and 80s, the export-oriented industrialization was particularly characteristic of the development of the national economies of the Asian Tigers/Dragons: Hong Kong, South Korea, Taiwan and Singapore.

The corruption distorts market, undermining development and make business unsustainable. According the World Bank, corruption increases the cost of doing business up to 10% globally. Corruption is regarded as a major obstacle to sustainable development3. The Global Competitiveness Index (GCI) measures a set of institutions, policies, and factors that sustain current and medium-term levels of economic prosperity. The index assesses the ability of countries to provide high levels of prosperity to their citizens. This in turn depends on how productively a country uses available resources 4.

Relative deprivation is a cause of conflict in developing countries which in particular experience during the transition period from underdeveloped to modern societies in the course economic development. Relative deprivation is the experience of being deprived of something to which one believes oneself to be entitled. It refers to the discontent that people feel when they compare their positions to others and realize that they have less of what they believe themselves to be entitled than those around them [9,10].

Types of political system have been argued to affect the quality of life. Democratic political system with market- economy as well as with a higher degree of political freedom enhances the quality of life. Politics affect the wealth and economic growth. Authoritarian political systems turn out to be more conflict-ridden than democratic counterparts and they lower the quality of life. Political liberalizations and reforms, with minimal corruption, are required for sustainable economic growth. Russet [11] found democracies are considered efficient in generating wealth and economic growth, which also lessen the frequency of internal conflict. Economic freedom based on market economy is considered more helpful in economic growth and development than planned, socialist economy. When inequality of income distribution is related to ethnicity, gender, or geographic region, Clemens [12] argues that a stronger role for the state (that is, authoritarian political system) is advantageous for equal distribution of income, and the most vulnerable members of societies can be safeguarded by the role of stronger authoritarian government.

Ethnic diversity affects trade. Ethnic diversity could boost trade by involving more ethnic networks: a higher ethnic concentration is associated with a larger trade-enhancing impact of migration. Thicker ethnic networks are proportionally more effective at exploiting the business opportunities across the host and origin countries. It is also argued that ethnic networks have a positive effect on trade, despite the fact that the extent of positive effect could vary across different ethnic groups [13]. Ethnic heterogeneity has been impeding enhancement of quality of life [14,15].

Empirical evidences have shown that demographic variables such as ethnic composition Alesina [16,17], urbanization and population growth [18] have significant effects on quality of life. Some even advocate the ability of religion to eradicate poverty and promote private sector development, along with the role of religion in sustainability of nation [19,20]. The role of harmony emphasized by Confucianism and Buddhism is taken into account in the business and economic development. For example, silence, connections (guanxi), tolerance and harmony that are educated by the Confucianism and Buddhism are emphasized in the Chinese business community.

A large defense/military spending disproportionate to economic capacity is siphoning off the resources, which otherwise could have been used for economic growth and quality of life [21]. Some found the trade-off between the defense spending and economic growth. Beonoit [22], based on the 44 developing countries, argued that there is a positive correlation between military expenditures and economic growth over the period 1950-65. Defense spending was found to still have a significant effect on the level of quality of life during the post-Cold war era. Countries with greater defense burden retain a lower quality of life regardless of population growth, urbanization and ethnic diversity [23].

The review of literature indicates that economic development is composed of the two dimensions: quantitative (economic growth measured by GDP) and qualitative (human development and quality

of life). And there are many variables that can determine the economic 'growth.' And the quantitative growth could affect the 'quality 'of life, whether positive or negative. Not only the determinant of economic growth but also the effect of the economic growth on the quality of life will be analyzed in this paper.

Methodology

Based on the review of literature and theories, the following 27 variables were selected. They are again divided into two groups: Economic growth (20 variables) and quality of life (seven variables).

Economic growth: 20 variables

Patterns of economic growth are based on the following 20 variables. Each of the 20 variables is operationalized/measured as follows:

1. Economic growth (GDP/PPP): Economic growth was based on the per capita GDP PPP (Purchasing Power Parity), which indicates gross domestic product (GDP) at purchasing power parity (PPP) per capita. When comparing cross-national differences in the development, including economic development, a PPP basis is more widely used.

2. Globalization: it is based on the KOF Index of Globalization, which measures the three ('plural') dimensions of globalization: economic, social, and political. The indicators measuring the dimensions fall into five broad categories: openness to trade; capital movement; labor movement; exchange of technology and ideas; and cultural integration.

3. Knowledge Index (KI): an economic indicator to measure a country's ability to generate, adopt and diffuse knowledge. The KI is based on the following three key variables: education and human resources, the innovation system and information and communication technology (ICT).

4. Knowledge Economic Index (KEI): The KEI takes into account whether the environment is conducive for knowledge to be used effectively for economic development. The KEI is based on the following four pillars: economic incentive and institutional regime, education and human resources, the innovation system and information and communication technology (ICT).

5. Terms of trade (TT): The value of a country's exports (benefits) relative to that of its imports (costs). It is calculated by dividing the value of exports by the value of imports, then multiplying the result by 100. If a country's terms of trade (TOT) is less than 100%, there is more capital going out (to buy imports) than there is coming in. A result greater than 100% means the country is accumulating capital, that is, more money is coming in from exports.

6. Global competiveness: the competitiveness is based on Global Competitiveness Index (GCI) that measures a set of institutions, policies, and factors, which sustain current and medium-term levels of economic prosperity. It ranges between 2.97 (minimum) and 5.67 (maximum). GCI assesses the ability of countries to provide high levels of prosperity to their citizens. This in turn depends on how productively a country uses available resources.

7. Corruption/Corruption Perceptions Index (CPI): the Corruption Perceptions Index (CPI) annually ranks countries by the perceived levels of corruption, as determined by expert assessments and opinion surveys. The CPI generally defines corruption as the misuse of public power for private benefit. The

CPI ranks countries on a scale from 100 (very clean) to 0 (highly corrupt).

8. Ethnic fractionalization/homogeneity: the fractionalization measures are computing the probability that two randomly drawn individuals (from a country) are not from the same group (ethnic-racial) 5.

9. Religious fractionalization/homogeneity: measures are computing the probability that two randomly drawn individuals (from a country) are not from the same religious group.

10. Urbanization (%): the measure is based on urban-rural dichotomy; "urban" refers to a group of allegedly nonagricultural pursuits while "rural" to agriculturally oriented employment.

11. Population growth: population growth rate estimates for the period 2005–2013; the natural increase per 1,000 of the population.

12. Types of political system: countries are classified as "not free," "partly free," and "free" in terms of the degree of political freedom represented by both political rights and civil liberties. Countries with "not free" were coded as 1 (highly authoritarian), "partly free" as 2 (authoritarian), and "free" as 3 (democratic).

13. Military expenditure/defense spending: the measure is based on military expenditure as a percentage of GDP.

14. Economic freedom: economic freedom Index measures economic freedom of countries based on trade freedom, business freedom, investment freedom, and property rights.

15. Oil-richness (Proven oil reserves/Crude Oil): this is a list of countries by proven oil reserves. Proved reserves are those quantities of petroleum which, by analysis of geological and engineering data, can be estimated with a high degree of confidence to be commercially recoverable from a given date forward, from known reservoirs and under current ones.

16. Education: it is based on The Education Index that is calculated from the Mean years of schooling index and the Expected years of schooling index. 1 is the highest possible theoretical score, indicating perfect education attainment.

17. Foreign direct investment (FDI): This shows net inflows (new investment inflows less disinvestment) in the reporting economy from foreign investors.

18. Gross savings: it is measured by % of GDP. Gross savings are calculated as gross national income less total consumption, plus net transfers/ gross domestic savings percent of GDP.

19. Import PC: measured by the total import divided by population size.

20. Export PC: measured by the total export divided population size.

Quality of life: seven variables

The quality of life variables are based on the following seven variables. Each of the variables is operationalized/measured as follows:

1. Income distribution: Measured by Gini Coefficient (or Gini Index). This coefficient measures the degree of inequality in the distribution of family income in a country. The coefficient ranges from 0 (perfect equality) to 1 (complete inequality). The Gini index is the Gini Coefficient expressed as a percentage, which ranges 0 to 100 percent.

2. Quality of Life (QOL Index): indicates the general well-being of individuals and societies, reflecting 'subjective' well-being and the psychology of happiness: quality-of-life index is based on a method that links the results of subjective life-satisfaction

surveys to the objective determinants of quality of life across countries. It ranges between 0 (minimum) to 10 (maximum).

3. Human development/The Human Development Index (HDI): is a composite statistic of life expectancy, education, and income indices to rank countries into four tiers of human development. Human development reflects 'objective' criteria of quality of life. Human development/The Human Development Index (HDI): is a composite statistic of life expectancy, education, and income. (1.0 is the highest, 0 the lowest).

4. Unemployment: measured by the percent of the labor force that is without jobs.

5. Global Peace/Conflict: measured by The Global Peace Index (GPI). It measures the relative position of nations' and regions' peacefulness. Factors include internal factors such as levels of violence and crime within the country and factors in a country's external relations including wars. It ranges between 1.293 (most peaceful) to 3.440 (least peaceful).

6. Poverty line (%): The poverty threshold, or poverty line, is the minimum level of income deemed adequate in a given country. In practice, like the definition of poverty, the official or common understanding of the poverty line is significantly higher in developed countries than in developing countries.

7. Relative Deprivation Index: Measured by the differences between objective (HDI) and subjective (QLI) quality of life. The wider, the higher the level of relative deprivation; the narrower, the lower the relative deprivation.

Two hundred twenty-two (222) countries in the world are used in this analysis. The data cover the 2005-2013 periods depending on their availability for each and every of the countries. This study, for that matter, is not amenable to a time-series (longitudinal) analysis but to a cross-national comparative analysis of the countries in the world.

Results

	Minimum	Maximum	Mean	SD	CV (SD/Mean)
FDI/pc	-1059.76	-1059.76	792.87	2890.03	3.65
Oil (%)	0.00	13.28	0.89	2.17	2.44
Import/pc	46.70	115065.46	6091.48	12820.90	2.10
Export/pc	6.44	78081.47	6687.56	13374.36	2.00
Relative deprivation	-0.75	2.09	0.50	0.57	1.14
GDP/PPP	400.00	102800.00	16738.57	18626.58	1.11
Unemployment (%)	0.00	90.00	14.12	15.22	1.08
Defense spending (%)	0.10	20.90	2.20	2.21	1.00
Pop growth (%)	-1.01	4.93	1.13	1.08	0.96
Terms of trade	0.00	5.12	1.12	0.97	0.87
Ethnic fractionalization	0.00	0.93	0.39	0.28	0.72
Poverty (%)	29.00	770.00	353.11	194.25	0.55

Religious fractionalization	0.00	8603.00	4345.51	2282.17	0.53
Saving/GDP (%)	-8.00	57.00	20.66	10.88	0.53
Corruption	1.10	9.30	3.98	2.07	0.52
Knowledge (KI)	85.00	963.00	514.57	257.08	0.50
Knowledge economy (KEI)	91.00	958.00	515.75	251.98	0.49
Urbanization (%)	10.90	100.00	57.51	24.38	0.42
Political freedom	1.00	3.00	2.21	0.82	0.37
Globalization	20.69	92.95	57.18	16.90	0.30
HDI	3.04	9.55	6.75	1.71	0.25
Gini index (%)	23.00	63.20	39.92	9.65	0.24
Peace/Conflict index	1.16	3.44	2.06	0.48	0.23
Education index	2.82	9.93	8.00	1.76	0.22
Economic freedom	1.50	89.30	59.71	11.71	0.20
Global competitiveness/GCI	2.78	5.72	4.19	0.68	0.16
Quality of life/QLI	3.89	8.33	6.21	0.99	0.16

Table 1: Variations among the Countries in the world

Note: CV=SD/Mean

Sources: Data from CIA, World Factbook (2007, 2008, 2009, 2010, 2011, 2012. 2013); Encyclopedia Britannica, Inc., The Nations of the World/ Britannica Book of the Year (2007, 2008, 2009, 2010, 2012, 2013);

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http://en.wikipedia.org/wiki/Education_Index;

http://en.wikipedia.org/wiki/Knowledge_Economic_Index;

Diversity among the Countries in the World

Table 1 presents means of the 27 variables with their respective coefficient of variations (CV=Standard Deviation (SD)/Mean),

indicating the degree of homogeneity or heterogeneity of dispersion for each variable among the countries. The CVs were sorted out in the order of size: The larger, the more heterogeneous, the smaller, the more homogeneous in their respective distribution/dispersion among the countries. FDI (3.65), oil (2.44), import/pc (2.10), and export/pc (2.00) were found the largest CVs, indicating there are great degrees of variations/heterogeneity among the countries in the degree of FDI, oil, import/pc, and export/pc in the world. Quality of life/subjective (.16), global competiveness/GCI (.16) and economic freedom (.20) were found relatively homogeneous in the dispersion across the countries

	Knowledge Based	Free trade Based	Savings-Based	Ethnic-Religiously Affected
Knowledge (KI)	0.939	0.284	-0.063	0.006
Knowledge Economy (KEI)	0.921	0.340	-0.110	0.030
Globalization	0.813	0.396	-0.185	0.025
Education	0.787	0.078	0.055	0.018
GDP/PPP	0.751	0.600	0.052	0.017
Corruption	0.738	0.540	-0.139	0.048
GCI	0.685	0.540	0.169	0.076
Population Growth	-0.655	0.270	0.187	0.015
Urbanization	0.649	0.300	0.177	0.061
Economic Freedom	0.569	0.532	-0.160	0.284
Export/pc	0.312	0.907	0.030	-0.061
Import/pc	0.361	0.892	-0.074	0.003
FDI	0.076	0.850	0.006	0.060
Oil	0.124	-0.139	0.817	0.167
Defense	-0.015	-0.023	0.707	0.216
Terms of Trade	-0.011	0.052	0.684	-0.290
Political Freedom	0.577	0.088	-0.598	0.126
Saving/GDP	-0.262	0.380	0.589	-0.363
Relig Fractionalization	0.190	0.090	0.059	0.714
Ethnic Fractionalization	-0.491	-0.027	-0.054	0.576
Eigenvalue (%)	(44.6)	(13.8)	(9.4)	(6.0)

Table 2: Factor Analysis: Patterns of Economic Growth

Table 2 presents a factor analysis, in which loadings of 20 variables, including the economic growth variable (GDP/PPP), are presented. The 20 variables will be classified into several patterns/dimensions via factor analysis. The factor analysis aims to explore and detect 'patterning' of variables. The table shows four factors (patterns) identified. The factor loading for each variable that is greater than. 50 are considered significant, although that criteria varies from .30 to.40 to .50. The cutoff points are somewhat subjective, which should be determined by the researcher. Eigenvalue (%) at the bottom indicates the percent of total variance accounted for by each factor. Factor 1 with the largest 44.6% indicates the most dominant factor/pattern of

all in economic growth, followed by Factor 2 (13.8%), Factor 3 (9.4%), and Factor 4 (6.0%) respectively.

Factor 1 documents 11 variables (underlined) significantly loaded: knowledge (KI), knowledge economy (KEI), globalization, education, GDP/PPP, corruption, global competitiveness (GCI), population growth, urbanization, economic freedom, and political freedom. This cluster/patterning of 11 variables underlined goes together under the factor 1. The primary purpose/function of the factor analysis via SPSS (Statistical Packages for Social Sciences) this research has utilized is to explore 'patterns' based on factors. The factors were produced by the SPSS based on significant factor loading of each of the variables. Each

of the four factors produced in this research is based on the variables significantly loaded under each factor respectively as can be seen from Table 1.

The factor loading of each of the variables indicates: First, it represents not only how the variables are weighted for each factor but also indicates the correlation coefficient between each variable and each factor on which the variable significantly loads. Secondly, factor loadings can be interpreted like standardized regression coefficients (beta weight), which can compare among the observable/manifest variables in their respective association (correlation) with yet latent/unobserved factor, whose name is to be created. The creation of a new name for the latent factor is based on a 'commonality' that can cut across the variables found significantly loaded. Thirdly, the factor loadings of the variables under each factor can be used as correlations between the variables in their respective factor they load on. For example, factor loadings of variable 1 and variable 2 in Factor 1 can be multiplied, which then can be used to indicate the 'strength' of correlation between the two variables. And this correlation can follow suit for Factor 2 and Factor 3 and so on. The correlations between the two variables for each of the factors now can be compared for their respective contribution to their respective factor as well.

Factor 1 shows a high economic growth (GDP/PPP) as well as a high knowledge index, knowledge-economy, and education (years). The factor documents a high globalization as well. Countries classified with this factor are also highly urbanized, yet they experience with a low population growth. The countries document a low corruption along with a high global competitiveness. This indicates they are transparent as well as capable of sustaining effective political/administrative institutions and policies. Both economic and political freedoms are high as well. The factor 1 is labeled as a "knowledge-based economy" pattern. The following are the 10 most knowledge-based economies, which rank according to the factor score. The factor score, which determines the 'economic ladder' among the countries was based on the following formula: (factor coefficient) x (Z score). Computer (SPSS) produces the factor score for each of the countries. And the classification of the most and the least countries ("economic ladder") was solely based on the size of the factor scores sorted out by the computer. 6 The following ten most knowledge-based economies in the world are sorted out in descending order of the size of the factor score: Singapore, Belgium, Norway, Austria, Denmark, Australia, Sweden, Canada, Germany, and Malaysia.

Factor 2 has seven variables loaded: GDP/PPP, corruption, global competiveness (GCI), economic freedom, export/pc, import/pc, and foreign direct investment (FDI). Although GDP/PPP, corruption, GCI, and economic freedom are less strong than in factor 1 (knowledge-based economy), they are still significantly associated with the factor. The countries classified with factor 2 documents a high international trade amount (export and import) as well as a high foreign direct investment (FDI) they receive. Economic freedom is also high. They document a high economic growth as well. Yet, political freedom, democratic or authoritarian, was found to be insignificant in the patterning of this factor. The amount of trade (export and import) as well as the FDI countries receive is not necessarily determined by the degree of political freedom, democratic or authoritarian. Both corruption and GCI, like in the knowledge-based economy (factor 1), still were found significant in the patterning of factor 2 as well. This indicates that countries classified by this factor are transparent with low corruption as well as sustaining a high global competitiveness. GDP/PPP, corruption, and GCI were found significant in contributing

to the patterning of not only factor 1 but also factor 2 as well. This represents 'a factorial complexity,' indicating both theoretically and empirically they are significantly associated with both factor 1 (knowledge-based economy) and factor 2 respectively. Factor 2 is labeled as "free/trade-based economy" pattern. The 10 most countries are: Finland, US, Denmark, Sweden, Estonia, Norway, Belgium, France, Canada, Japan. Some countries turn out to pursue dual economic strategies, knowledge-based and trade-based, in pursuing economic growth. Denmark, Sweden, and Norway, for examples, were already found in the list of the 10 most countries in the knowledge-based economy (Factor 1).

Factor 3 is based on a cluster of five variables: oil, defense and terms of trade, political freedom and savings/GDP. Those countries classified by factor 3 are savings-oriented. The oil variable significantly loaded with the factor 3 indicates that oil-rich countries are able to sustain a large savings/GDP. Also countries classified with the factor document with favorable terms of trade they experience in their international trade. Not all countries, which document a large savings per GDP, are necessarily oil-rich. This means the savings are also based on their favorable terms of trade countries are able to maintain in their international trade as well. That is, the sources of the savings could be not only from the oil-richness but also from the favorable terms of trade. Regardless, countries classified with this factor turn out to allocate a large defense spending based on their savings. Political freedom variable loads on this factor as well. Both the savings and the politics (authoritarian) turn out to be conducive to a large resources allocation for the defense spending. Yet none of these variables, oil-richness, savings, defense spending, terms of trade, and authoritarian politics was found significant in contributing to economic growth. Not all those countries with high 'savings-mindedness' are necessarily politically authoritarian either. Wealth amassed via the savings seems to be siphoned off to the defense spending, which nevertheless turns out to be insignificant in affecting economic growth, positive or negative. Factor 3 is labeled as a "savings-based economy" pattern. The 10 most countries: Saudi Arabia, Russia, Azerbaijan, US, China, Venezuela, Kazakhstan, Singapore, Norway, Malaysia.

Factor 4 indicates a cluster of only two variables: religious and ethnic fractionalizations. GDP/PPP is not loaded on this factor. This indicates countries featured with religious and ethnic fractionalizations, whether heterogeneous or homogeneous, were found to have no significant effects on economic growth. Diversity in culture associated with diverse religions and/or ethnic compositions has been argued to affect economic growth and development, yet the finding proves the argument untenable. Factor 4 is labeled as a 'ethnic-religiously affected' pattern. The 10 most countries are: US, Ghana, Canada, UK, Australia, South Africa, Malaysia, Germany, Brazil, and Pakistan

The correlation coefficients in Table 3 indicate how each of the four different patterns of economic growth correlates with each of the different ingredients (variables) of the quality of life. This correlation analysis is justified as the economic growth, 'quantitative' dimension of economic development based on GDP/PPP, is not necessarily and positively associated with the 'qualitative' dimension of economic development as measured by the seven ingredients: poverty, relative deprivation, peace/conflict, unemployment, income distribution, human development (HDI) and quality of life (QLI/subjective). And this correlation analysis in Table 3 aims to assess how each of the economic strategy based on each of the four patterns of the economic growth already shown in Table 2 affect the qualitative dimension of

economic development measured by the seven ingredients of the quality of life.

	Knowledge-based	Free Trade-based	Savings-based	Ethnic-Religiously affected
Poverty	-0.351	0.128	-0.140	0.427
Relative deprivation	-0.042	-0.397	0.362	0.051
Peace/Conflict	-0.573	-0.411	0.324	0.170
Unemployment	-0.076	-0.198	0.123	0.071
Income distribution/Gini	-0.310	-0.112	0.199	0.334
Human development/HDI	0.904	0.320	0.042	-0.034
Quality of life/subjective	0.679	0.479	-0.198	-0.164

Table 3: Pattern of Economic Growth and Quality of Life: Correlations

The underlined coefficient is significant at .05.

Knowledge-based economy is significantly correlated with poverty level, peace/conflict, income distribution, human development (HDI/objective quality of life), and quality of life (QLI/subjective quality of life). It reduces poverty level, conflict, and income inequality. It enhances both objective and subjective quality of life: HDI and QLI. Yet the pattern has found insignificant in affecting unemployment and relative deprivation. As far as the unemployment and the relative deprivation are concerned, even this dominant pattern of economic growth based on the knowledge-based economy/strategy was found unable to significantly solve them. Trade-based economy does reduce conflict and relative deprivation. Free and liberal trade among the nations does reduce conflict. It also reduces relative deprivation among the people, which has been argued to be one of the causes of conflict, internal conflict in particular, as well. The free trade among the nations was found to contribute to increase peace rather than conflict, internationally as well as domestically. Free trade has also positive effects on the quality of life, objective (HDI) and subjective (QLI). But the pattern is not significantly correlated with poverty level, unemployment, and income distribution, indicating that the free trade was found not to significantly reduce poverty, unemployment and unequal distribution of income.

Savings-based economy, however, as contrasted with the free trade - based economy, was found to increase rather than decrease relative deprivation and conflict. It has no significant effect on the distribution of income, quality of life (objective and subjective), poverty reduction and unemployment. In reducing the unemployment, even the 'successful' patterns of economic growth (knowledge-based and free trade-based) as well as the savings-based/oil-rich pattern of economy were found insignificant. Even the ethnic-religious fractionalization, heterogeneous or homogeneous, was also found insignificantly correlated with the unemployment. Religious and ethnic fractionalization (heterogeneity) was found to increase poverty level and income inequality as well.

Conclusion

The most dominant pattern of economic growth in the world was found to be the knowledge-based economy, followed by the free-trade economy. The preeminence of the knowledge-based economy over the 'traditional/conventional' trade-based economy as well as over the savings-based economy encompassing oil-richness, among others, is notable in the world economy. The preeminence does indicate the following: Low labor cost advantage (comparative advantage) of the free-trade economy as well as factor-endowment based on natural resources of the oil/resource are diminishing in their respective role in enhancing economic growth in the world. The knowledge-based economy instead manifests knowledge revolution. And the innovation based on the knowledge revolution is more important for economic growth. Some countries pursue dual/plural strategies for economic growth, although not all of them they pursue are necessarily successful in enhancing economic growth.

Not all strategies/patterns for the economic 'growth' were found significant in enhancing the 'quality' of life. None of the strategies/patterns of economic growth was either found to significantly affect the unemployment level, one of the ingredients of the quality of life. Both knowledge-based and free-trade growth patterns were found to have positive effects on human development (objective quality of life) as well as subjective quality of life. They also reduce conflict, domestic and international. While the knowledge- based is more egalitarian in income distribution, the free trade- based not. Ethnic-religious fractionalization/heterogeneity increases poverty level and unequal distribution of income. Regardless of political freedom, economic freedom is still found to be a significant determinant of economic growth. Both freedoms are independent of each other in affecting economic growth. It is not necessarily the political freedom as realized by democracy or democratization that could significantly contribute to economic growth. Authoritarian political system, despite its low political freedom, could still enhance economic growth.

The knowledge-based economy is most important and successful mode of economic strategy, which is conducive not only to economic growth but also in enhancing quality of life. When/if the countries in the world with the pattern(s) of unsuccessful economic growth pursue economic development, each of the variables out of which the successful patterns of economic growth was built should be cross-national comparatively examined for their respective strengths. And they need to follow suit to catch up with the most successful pattern of economy. For this purpose, countries aiming to pursue the successful knowledge-based economy should emphasize the following: First, the education should aim to enhance the information technology (IT), knowledge and knowledge-economy; second, enhance globalization/economic globalization as well as global competiveness; third, remove

corruption; fourth, control over rampant population growth; fifth , enhance market-oriented economic freedom; sixth, sustain the aggregation of economies based on urbanization; finally, enhance political democracy conducive to economic freedom, which is also conducive to the free-market system as well.

Notes

1. The globalization based on the KOF globalization index was used in this analysis.

2. The KOF Index of Globalization was introduced in 2002.

3. The KOF Index of Globalization measures the three main dimensions of globalization: economic, social and political.

4. KOF index of globalization is released annually by the KOF Swiss Economic Institute (Dreher, Gaston, and Martens).

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7. See the 2012 Global Compact Annual Implementation Survey; UN Global Compact Bulletin, July 2012.

8. The Global Competitiveness Report (GCR) is a yearly report published by the World Economic Forum.

9. Alesina, Alberto, Eliana La Ferrara (2003): developed measures of ethnic, linguistic and religious fractionalization in 190 countries/ethnicity data covered years ranging from 1979 to 2001, depending on the country.

10. The factor score was based on the following formula: (factor coefficient) x (Z score). Computer (SPSS) produces the factor score for each of the countries. And the classification of the most and the least countries ('economic ladder') was solely based on the size of the factor scores sorted out.

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