Human Development Indices: A Regional Perspective

Uddin, G.E.

ABSTRACT

This work undertakes a cross-country comparative study of the trend of Human Development progress in selected countries between 1990 and 2013. Following the UNDP regional classification, countries are evaluated based on the human development aggregates: Low, Medium, High and Very High Human Development. A total of 35 countries, inclusive of the industrial countries are examined and factors such as continual social unrest, engendered socio-political crisis, adverse income distribution, high depth of food deficit, lack of education and health services amidst others were evident as limiting factors for human development, of which synonymously, economic development. However based on the progress made in selected economies, it is recommended that priority attention especially by Developing Economies be given to enabling necessary institutional and structural changes, pioneering a national development strategy, education investment and knowledge development, availability of healthcare system and maintaining stable political environment in view to foster human development, which ultimately will lead to actualising economic development.

Keywords: HDI, Human Development, Region, growth, economy

INTRODUCTION

Taking development as a multidimensional concept invariably, justifies the argument of adopting the UNDP Human Development Index as a measure of development. Thus, it is opined that development is more than GNP growth, more than income and wealth and more than producing commodities and accumulating capital. Hence, development is viewed to be measured not just by the yardstick of income alone, but by a more comprehensive index-called the human development index—reflecting life expectancy, literacy and command over the resources to enjoy a decent standard of living (UNDP, 1990; Lindman and Sellin, 2011). According to the UNDP (1990) Human Development Report, each component of the HDI is measured in the following ways:

- i Health measured by **life expectancy at birth**.
- i Education measured as a combination of **adult literacy** (with two-thirds weight) and **gross enrollment** (with one-third weight).
- iii Wealth measured by **GDP per capita**.

The HDI was created to emphasize that people and their capabilities should be the ultimate criteria for assessing the development of a country, not economic growth alone (hdr.undp.org/en/content/human-development). The HDI can also be used to question national policy choices, asking how two countries with the same level of GNI per

Uddin, G. E. is currently a M.Sc. Economics Student in the Department of Economics, University of Lagos, Nigeria; E-mail: godwinuddin@gmail.com

capita can end up with different human development outcomes. These contrasts can stimulate debate about government policy priorities. The human development index is a summary measure of average achievement in key dimensions of human development: a long healthy life, being knowledgeable and have a decent standard of living. The HDI is the geometric mean of normalized indices for each of the three dimensions highlighted above. The health dimension is assessed by expectancy at birth component of the HDI calculated using a minimum value of 20 years and maximum value of 85 years. The education component of the HDI is measured by mean of schooling for adults aged 25 years and expected years of schooling for children of school entering age. Mean years of schooling is estimated by UNESCO institute for statistics based on educational attainment data form censuses and surveys available in it database. Expected years of schooling estimates are based on enrolment by age at all levels of education. This indicator is produced by UNESCO institute for statistics. Expected of years of schooling is capped at 18 years. The indicators are normalized using a minimum value of zero and maximum inspirational values of 15 and 18 years respectively. The indices are combined into an education index using arithmetic mean (hdr.undp.org/en/content/human-development).

The standard of living dimension is measured by gross national income per capita. The goalpost for minimum income is \$100 (PPP) and the maximum is \$75,000 (PPP). The minimum value for GNI per capita, set at \$100, is justified by the considerable amount of unmeasured subsistence and non market production in economies close to the minimum that is not captured in the official data. The HDI uses the logarithm of income, to reflect the diminishing importance of income with increasing GNI. The scores for the three HDI dimension indices are then aggregated into a composite index using geometric mean (hdr.undp.org/en/content/human-development). Based on the foregoing, this study appraises from a regional perspective, human development indices.

METHOD

This work undertakes a cross-country comparative study of the trend of Human Development progress as measured using the HDI and recorded as data across selected countries following the UNDP regional classification between 1990 and 2013. In line thereof with the UNDP Report classification 2014, the human development aggregates which are as follows: Low Human Development (HDI below 0.550), Medium Human Development (HDI 0.550 to 0.699), High Human Development (HDI 0.700 to 0.799) and Very High Human Development (HDI 0.800 and above) would be adopted in examining the trend. Also, following the classification of countries into six regional aggregates: Sub Saharan Africa; Arab States; Europe and Central Asia; South Asia; East Asia and the Pacific; Latin America and the Caribbean; five countries from each region examined are Ethiopia, South Africa, United Republic of Tanzania, Nigeria, Madagascar; Egypt, Iraq, Saudi Arabia, United Arab Emirates, Sudan; Albania, Turkey, Belarus, Ukraine, Republic of Moldova; Afghanistan, Bangladesh, India, Islamic Republic of Iran, Pakistan; China, Philippines, Indonesia, Malaysia, Viet Nam; Argentina, Brazil, Bolivarian Republic of

Venezuela, Dominican Republic, Trinidad and Tobago respectively. Also inclusive are selected Industrial Countries such as Australia, Greece, USA, United Kingdom and Hungary.

RESULTS AND DISCUSSION

Amidst selected countries for Sub-Saharan Africa (figure 1), South Africa evidently advances over the years, particularly more than the other countries examined within the period, between medium and high levels of human development with its height in 1991 and maintaining a high level of human development in 1995 and between 1997 and 1999 but had never attained such a high level ever since. The progress made by South Africa could be attributed to the late apartheid period and early post-apartheid period (i.e. post 1994) which envisaged various institutional and structural changes, whereby initially the government segregated education, medical care, beaches, and other public services, and provided black people with services that were often inferior to those of white people. Other countries on the other hand, even Nigeria, though maintained an upward progress in their level of human development over the period but still within the low human development category.

In relation to the Arab States, all selected countries examined except Sudan which remained at low level of human development attributable to her continual social unrest, had progressed through the later three categories of human development (i.e, from medium to high and then to very high) with United Arab Emirates having the lead and attaining its height in 2007 and such could be attributed to its maintaining of a liberalist approach to development, despite her religious inclinations (figure 2). In 2007 however, The United Arab Emirates (U.A.E.) unveiled its National Development Strategy recognizing the need to develop an infrastructure that was not based on oil revenues, and underlying this was a purposeful drive towards education investment and knowledge development in the Arab world, and also working extensively with the United Nations to meet the UN Millennium Development Goals. A notable delimiting factor for Egypt, Iraq and Sudan is the engendered socio-political crisis capable of hindering the already attained progress. It is of note that Iraq vividly lacks data on GNI, so much the reason why HDI was not computed for some years. Observing the selected countries of Europe and Central Asia, the development trend path seem interwoven which attest to their similarity in their level of human development (see figure 3). All the countries are notable of the developed world, particularly Turkey while Belarus, Ukraine and Republic of Moldova are off-shoot of the defunct communist state - the USSR- whom as at 1991 and 1992 had HDI values of 0.908 and 0.873 respectively. Albania, also a post-socialist republic, seems notable with a high level of human development as she provides a universal health care system and free primary and secondary education.

Following is the South Asian region with the Islamic Republic of Iran surpassing all other countries and maintaining a high level of human development since the mid-1990s, after advancing from a medium human development level attained in the early 1990s (figure 4). Such progress is attributable to her central planning and state ownership framework, aligned with specialised system of education focused to science and technology. India

comes next in line but surprisingly though as an emerging economy and almost for all years within the period of study, did not surpass a medium human development level of 0.600 after having a decade of low human development. Underlying other respective countries are issues of political instability accounting for their synonymous low level of human development, unlike Bangladesh (a former part of Pakistan) whom also experiences an adverse income distribution, less women education, lack of healthcare services and high depth of food deficit and environmental degradation while Afghanistan has as well for long been a war-torn zone. In Pakistan, however, due to accompanying macroeconomic instability since 2007 and limited economic progress, investment in education and health had remained challenging.

Surprisingly as well, China whom is renowned to lead the East Asia and the Pacific region and as a prominent emerging world power could not sustain a high human development level but maintains a medium human development level most of the years of the study (figure 5), while evidently, is surpassed by Malaysia whom as an emerging economy in attempt to path a specialised economic progress is pioneered by a long term economic development plan launched in 1991 to help her achieve her vision 2020 and such, has enabled her maintain a high human development level. Indonesia, Philippines and Viet Nam on the other hand had notably maintained a sustainable medium human development level over the years in view.

Amidst the selected countries for the Latin America and the Caribbean region (figure 6), all countries except Dominican Republic, seem evident to have a varying but sustainable level of human development ranging within high and very high levels. Progress made in Argentina (a highly developing emerging economy) and the Bolivarian Republic of Venezuela (of the developed world) respectively could be attributed to their relative economic successes – seemingly stable political environment and fair living standard due to her huge participation in the world market. Trinidad and Tobago as a continental country enjoys high industrial productivity with relatively less population – partly due to immigration, an evidence for her progress while Brazil though having to deal with certain socio-economic and socio-political issues had priority to ensure giant strides in macroeconomic stability. Dominican Republic as an island nation is marked with high population turnover, structural inefficiencies and income inequality, but still has been able to ensure an at least varying high level of human development. The selected industrial countries, Australia, USA, United Kingdom, Greece and followed by Hungary exhibiting an almost same development path (figure 7) project an underlying similar approach to pioneering human development by these countries.

CONCLUDING REMARKS

An overview of selected countries for the regions enlisted had showed that enabling necessary institutional and structural changes, having liberalist approach to development despite religious inclinations as evident in the Arab world, pioneering a National Development Strategy, encouraging education investment and knowledge development, availability of

health care system and pre-tertiary education, maintaining a stable political environment and fair living standard, providing structures for high industrial productivity, and ensuring macroeconomic stability are factors among many others that could help foster or advance human development and synonymously economic development while continual social unrest, engendered socio-political crisis, adverse income distribution, less women education, lack of healthcare services and high depth of food deficit and environmental degradation, prevalence of war, macroeconomic instability, non-prioritised investment in education and health, structural inefficiencies and income inequality in the form of underemployment could be limiting factors to human development. It is on this note that developing economies have to build on appropriate key success factors, learn from development success stories, and in every extent, recede to the background all forms of militating factors that could impede the presupposed level of development.

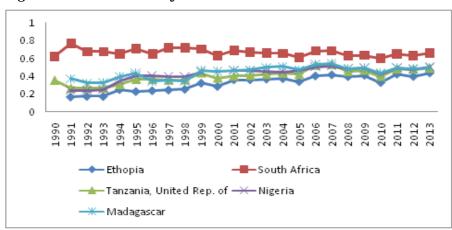


Figure 1: Sub-Saharan Africa

Source: Author's Computation

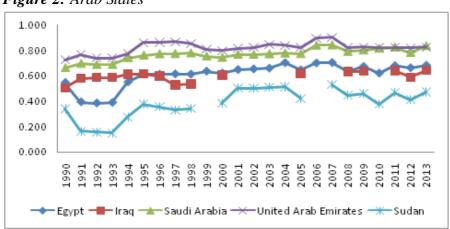
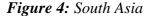


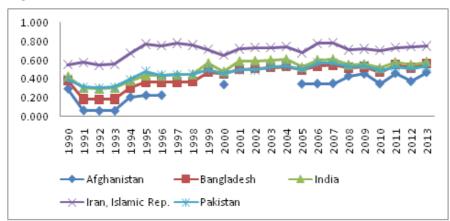
Figure 2: Arab States

Source: Author's Computation

Figure 3: Europe and Central Asia

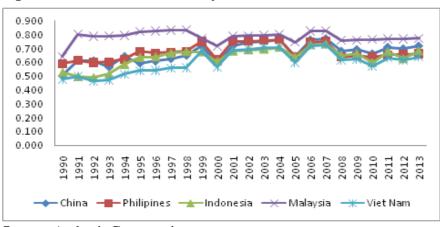
Source: Author's Computation





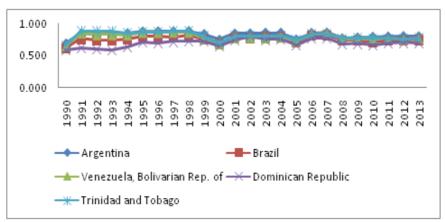
Source: Author's Computation

Figure 5: East Asia and the Pacific



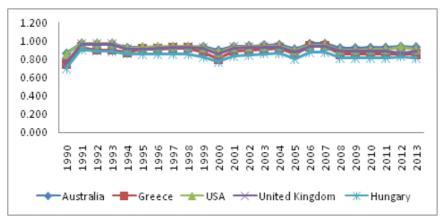
Source: Author's Computation

Figure 6: Latin America and the Caribbean



Source: Author's Computation

Figure 7: Industrial Countries



Source: Author's Computation

Table 1: Human Development Index Trends

| Sub-Saharan Africa | Ethiopia | South Africa | Tanzania, United Rep. o | f N | Vigeria | Madagascar |
|--------------------|----------|--------------|-------------------------|-----|---------|------------|
| 1990 | | 0.619 | 0.354 | | | |
| 1991 | 0.166 | 0.766 | 0.266 | 0 | .242 | 0.371 |
| 1992 | 0.173 | 0.674 | 0.268 | 0 | .241 | 0.325 |
| 1993 | 0.172 | 0.673 | 0.270 | 0 | .246 | 0.327 |
| 1994 | 0.249 | 0.650 | 0.306 | 0 | .348 | 0.396 |
| 1995 | 0.227 | 0.705 | 0.364 | 0 | .406 | 0.432 |
| 1996 | 0.237 | 0.649 | 0.364 | 0 | .401 | 0.349 |
| 1997 | 0.244 | 0.716 | 0.357 | 0 | .393 | 0.350 |
| 1998 | 0.252 | 0.717 | 0.358 | 0 | .391 | 0.348 |
| 1999 | 0.321 | 0.702 | 0.436 | 0 | .445 | 0.462 |
| 2000 | 0.284 | 0.628 | 0.378 | | | 0.453 |
| 2001 | 0.359 | 0.684 | 0.400 | 0 | .463 | 0.468 |
| 2002 | 0.359 | 0.666 | 0.407 | 0 | .466 | 0.469 |
| 2003 | 0.367 | 0.658 | 0.418 | 0 | .453 | 0.499 |
| 2004 | 0.371 | 0.653 | 0.430 | 0 | .448 | 0.509 |
| 2005 | 0.339 | 0.608 | 0.419 | 0 | .466 | 0.470 |

| 2006 | 0.402 | 0.680 | 0.519 | 0.506 | 0.537 |
|------|-------|-------|-------|-------|-------|
| 2007 | 0.414 | 0.683 | 0.530 | 0.511 | 0.543 |
| 2008 | 0.394 | 0.628 | 0.451 | 0.483 | 0.487 |
| 2009 | 0.409 | 0.631 | 0.464 | 0.488 | 0.494 |
| 2010 | 0.328 | 0.597 | 0.398 | 0.423 | 0.435 |
| 2011 | 0.422 | 0.646 | 0.478 | 0.496 | 0.495 |
| 2012 | 0.396 | 0.629 | 0.476 | 0.471 | 0.483 |
| 2013 | 0.435 | 0.658 | 0.488 | 0.504 | 0.498 |

Table 2: Human Development Index Trends

| Arab States | Egypt | Iraq | Saudi Arabia | United Arab Emirates | Sudan |
|-------------|-------|-------|--------------|----------------------|-------|
| 1990 | 0.546 | 0.508 | 0.662 | 0.725 | 0.342 |
| 1991 | 0.394 | 0.582 | 0.697 | 0.767 | 0.164 |
| 1992 | 0.385 | 0.589 | 0.687 | 0.740 | 0.157 |
| 1993 | 0.389 | 0.589 | 0.688 | 0.738 | 0.152 |
| 1994 | 0.551 | 0.614 | 0.742 | 0.771 | 0.276 |
| 1995 | 0.613 | 0.617 | 0.762 | 0.861 | 0.379 |
| 1996 | 0.611 | 0.599 | 0.772 | 0.864 | 0.359 |
| 1997 | 0.614 | 0.531 | 0.774 | 0.866 | 0.333 |
| 1998 | 0.612 | 0.538 | 0.778 | 0.855 | 0.343 |
| 1999 | 0.635 | | 0.754 | 0.809 | |
| 2000 | 0.621 | 0.606 | 0.744 | 0.797 | 0.385 |
| 2001 | 0.648 | | 0.769 | 0.816 | 0.503 |
| 2002 | 0.653 | | 0.768 | 0.824 | 0.505 |
| 2003 | 0.659 | | 0.772 | 0.849 | 0.512 |
| 2004 | 0.702 | | 0.777 | 0.839 | 0.516 |
| 2005 | 0.645 | 0.621 | 0.773 | 0.823 | 0.423 |
| 2006 | 0.700 | | 0.840 | 0.896 | |
| 2007 | 0.703 | | 0.843 | 0.903 | 0.531 |
| 2008 | 0.637 | 0.632 | 0.791 | 0.822 | 0.447 |
| 2009 | 0.672 | 0.637 | 0.802 | 0.826 | 0.463 |
| 2010 | 0.620 | | 0.815 | 0.824 | 0.379 |
| 2011 | 0.679 | 0.639 | 0.825 | 0.824 | 0.468 |
| 2012 | 0.662 | 0.590 | 0.782 | 0.818 | 0.414 |
| 2013 | 0.682 | 0.642 | 0.836 | 0.827 | 0.473 |

Source: UNDP Human Development Report (Several Issues)

 Table 3: Human Development Index Trends

| Europe and Central Asia | Albania | Turkey | Belarus | Ukraine | Moldova, Rep. of |
|-------------------------|---------|--------|---------|---------|------------------|
| 1990 | 0.609 | 0.576 | | 0.705 | 0.645 |
| 1991 | 0.821 | 0.694 | | | |
| 1992 | 0.791 | 0.671 | | | |
| 1993 | 0.699 | 0.717 | 0.861 | 0.844 | 0.758 |
| 1994 | 0.714 | 0.739 | 0.847 | 0.823 | 0.714 |
| 1995 | 0.739 | 0.792 | 0.866 | 0.842 | 0.757 |
| 1996 | 0.633 | 0.711 | 0.787 | 0.719 | 0.663 |
| 1997 | 0.655 | 0.772 | 0.806 | 0.689 | 0.612 |
| 1998 | 0.656 | 0.782 | 0.785 | 0.665 | 0.610 |
| 1999 | 0.725 | 0.735 | 0.782 | 0.742 | 0.699 |
| 2000 | 0.655 | 0.653 | | 0.668 | 0.598 |
| 2001 | 0.735 | 0.734 | 0.804 | 0.766 | 0.700 |
| 2002 | 0.781 | 0.751 | 0.790 | 0.777 | 0.681 |
| 2003 | 0.780 | | 0.786 | 0.766 | 0.671 |

| 2004 | 0.784 | | 0.794 | 0.774 | 0.694 |
|------|-------|-------|-------|-------|-------|
| 2005 | 0.689 | 0.687 | 0.725 | 0.713 | 0.639 |
| 2006 | 0.814 | 0.802 | 0.819 | 0.789 | 0.718 |
| 2007 | 0.818 | 0.806 | 0.826 | 0.796 | 0.720 |
| 2008 | 0.703 | 0.710 | 0.764 | 0.729 | 0.652 |
| 2009 | 0.705 | 0.716 | 0.775 | 0.722 | 0.646 |
| 2010 | 0.719 | 0.738 | 0.779 | 0.710 | 0.623 |
| 2011 | 0.714 | 0.752 | 0.784 | 0.730 | 0.656 |
| 2012 | 0.749 | 0.722 | 0.793 | 0.740 | 0.660 |
| 2013 | 0.716 | 0.759 | 0.786 | 0.734 | 0.663 |

 Table 4: Human Development Index Trends

| South Asia | Afghanistan | Bangladesh | India | Iran, Islamic Rep. | Pakistan |
|------------|-------------|------------|-------|--------------------|----------|
| 1990 | 0.296 | 0.382 | 0.431 | 0.552 | 0.402 |
| 1991 | 0.069 | 0.186 | 0.308 | 0.577 | 0.311 |
| 1992 | 0.065 | 0.185 | 0.297 | 0.547 | 0.305 |
| 1993 | 0.066 | 0.189 | 0.309 | 0.557 | 0.311 |
| 1994 | 0.208 | 0.309 | 0.382 | 0.672 | 0.393 |
| 1995 | 0.228 | 0.364 | 0.439 | 0.770 | 0.483 |
| 1996 | 0.229 | 0.365 | 0.436 | 0.755 | 0.442 |
| 1997 | | 0.368 | 0.446 | 0.780 | 0.445 |
| 1998 | | 0.371 | 0.451 | 0.758 | 0.453 |
| 1999 | | 0.470 | 0.571 | 0.714 | 0.498 |
| 2000 | 0.341 | 0.453 | 0.483 | 0.652 | 0.454 |
| 2001 | | 0.502 | 0.590 | 0.719 | 0.499 |
| 2002 | | 0.509 | 0.595 | 0.732 | 0.497 |
| 2003 | | 0.520 | 0.602 | 0.736 | 0.527 |
| 2004 | | 0.530 | 0.611 | 0.746 | 0.539 |
| 2005 | 0.347 | 0.494 | 0.527 | 0.681 | 0.504 |
| 2006 | 0.350 | 0.535 | 0.604 | 0.777 | 0.568 |
| 2007 | 0.352 | 0.543 | 0.612 | 0.782 | 0.572 |
| 2008 | 0.430 | 0.515 | 0.554 | 0.711 | 0.536 |
| 2009 | 0.453 | 0.527 | 0.560 | 0.718 | 0.545 |
| 2010 | 0.349 | 0.469 | 0.519 | 0.702 | 0.490 |
| 2011 | 0.458 | 0.549 | 0.581 | 0.733 | 0.531 |
| 2012 | 0.374 | 0.515 | 0.554 | 0.742 | 0.515 |
| 2013 | 0.468 | 0.558 | 0.586 | 0.749 | 0.537 |

Source: UNDP Human Development Report (Several Issues)

Table 5: Human Development Index Trends

| | - | | | | |
|---------------------------|-------|-------------|-----------|----------|----------|
| East Asia and the Pacific | China | Philippines | Indonesia | Malaysia | Viet Nam |
| 1990 | 0.502 | 0.591 | 0.528 | 0.641 | 0.476 |
| 1991 | 0.614 | 0.613 | 0.499 | 0.802 | 0.498 |
| 1992 | 0.612 | 0.600 | 0.491 | 0.789 | 0.464 |
| 1993 | 0.566 | 0.603 | 0.515 | 0.790 | 0.472 |
| 1994 | 0.644 | 0.621 | 0.586 | 0.794 | 0.514 |
| 1995 | 0.594 | 0.677 | 0.637 | 0.822 | 0.539 |
| 1996 | 0.609 | 0.666 | 0.641 | 0.826 | 0.540 |
| 1997 | 0.626 | 0.672 | 0.668 | 0.832 | 0.557 |
| 1998 | 0.650 | 0.677 | 0.679 | 0.834 | 0.560 |
| 1999 | 0.718 | 0.749 | 0.677 | 0.774 | 0.682 |
| 2000 | 0.591 | 0.619 | 0.609 | 0.717 | 0.563 |
| 2001 | 0.721 | 0.751 | 0.682 | 0.790 | 0.688 |
| | | | | | |

| 2002 | 0.745 | 0.753 | 0.692 | 0.793 | 0.691 |
|------|-------|-------|-------|-------|-------|
| 2003 | 0.755 | 0.758 | 0.697 | 0.796 | 0.704 |
| 2004 | 0.768 | 0.763 | 0.711 | 0.805 | 0.709 |
| 2005 | 0.645 | 0.638 | 0.640 | 0.747 | 0.598 |
| 2006 | 0.763 | 0.747 | 0.729 | 0.825 | 0.720 |
| 2007 | 0.772 | 0.751 | 0.734 | 0.829 | 0.725 |
| 2008 | 0.682 | 0.638 | 0.654 | 0.760 | 0.617 |
| 2009 | 0.693 | 0.647 | 0.665 | 0.761 | 0.622 |
| 2010 | 0.663 | 0.638 | 0.600 | 0.766 | 0.572 |
| 2011 | 0.710 | 0.652 | 0.678 | 0.768 | 0.632 |
| 2012 | 0.699 | 0.654 | 0.629 | 0.769 | 0.617 |
| 2013 | 0.719 | 0.660 | 0.684 | 0.773 | 0.638 |
| | | | | | |

Table 6: Human Development Index Trends

| Latin America/ | Argentina | Brazil | Venezuela | Dominican | Trinidad and |
|----------------|-----------|--------|-----------|-----------|--------------|
| the Caribbean | | | | Republic | Tobago |
| 1990 | 0.694 | 0.612 | 0.644 | 0.589 | 0.658 |
| 1991 | 0.854 | 0.759 | 0.848 | 0.622 | 0.876 |
| 1992 | 0.833 | 0.739 | 0.824 | 0.595 | 0.876 |
| 1993 | 0.832 | 0.730 | 0.824 | 0.586 | 0.877 |
| 1994 | 0.854 | 0.756 | 0.820 | 0.638 | 0.855 |
| 1995 | 0.883 | 0.804 | 0.859 | 0.705 | 0.872 |
| 1996 | 0.885 | 0.796 | 0.859 | 0.701 | 0.872 |
| 1997 | 0.884 | 0.783 | 0.861 | 0.718 | 0.880 |
| 1998 | 0.888 | 0.809 | 0.860 | 0.720 | 0.880 |
| 1999 | 0.842 | 0.750 | 0.765 | 0.722 | 0.798 |
| 2000 | 0.753 | 0.682 | 0.677 | 0.645 | 0.697 |
| 2001 | 0.849 | 0.777 | 0.775 | 0.737 | 0.802 |
| 2002 | 0.853 | 0.775 | 0.778 | 0.801 | 0.801 |
| 2003 | 0.863 | 0.792 | 0.772 | 0.749 | 0.801 |
| 2004 | 0.863 | 0.792 | 0.784 | 0.751 | 0.809 |
| 2005 | 0.758 | 0.705 | 0.716 | 0.668 | 0.745 |
| 2006 | 0.861 | 0.808 | 0.833 | 0.771 | 0.832 |
| 2007 | 0.866 | 0.813 | 0.844 | 0.777 | 0.837 |
| 2008 | 0.777 | 0.731 | 0.758 | 0.684 | 0.764 |
| 2009 | 0.789 | 0.732 | 0.757 | 0.686 | 0.766 |
| 2010 | 0.799 | 0.699 | 0.759 | 0.663 | 0.764 |
| 2011 | 0.804 | 0.740 | 0.761 | 0.695 | 0.764 |
| 2012 | 0.811 | 0.730 | 0.748 | 0.702 | 0.760 |
| 2013 | 0.808 | 0.744 | 0.764 | 0.700 | 0.766 |

Source: UNDP Human Development Report (Several Issues)

Table 7: Human Development Index Trends

| | F | | | | |
|-----------------------------|-----------|--------|-------|----------------|---------|
| Industrial Countries | Australia | Greece | USA | United Kingdom | Hungary |
| 1990 | 0.866 | 0.749 | 0.858 | 0.768 | 0.701 |
| 1991 | 0.973 | 0.934 | 0.976 | 0.967 | 0.911 |
| 1992 | 0.971 | 0.901 | 0.976 | 0.962 | 0.893 |
| 1993 | 0.972 | 0.902 | 0.976 | 0.964 | 0.887 |
| 1994 | 0.926 | 0.874 | 0.925 | 0.919 | 0.863 |
| 1995 | 0.927 | 0.907 | 0.938 | 0.916 | 0.856 |
| 1996 | 0.929 | 0.909 | 0.940 | 0.924 | 0.855 |
| 1997 | 0.931 | 0.923 | 0.942 | 0.931 | 0.857 |
| 1998 | 0.932 | 0.924 | 0.943 | 0.932 | 0.857 |
| 1999 | 0.936 | 0.881 | 0.934 | 0.923 | 0.829 |

| 2000 | 0.898 | 0.798 | 0.883 | 0.863 | 0.774 |
|------|-------|-------|-------|-------|-------|
| 2001 | 0.939 | 0.892 | 0.937 | 0.930 | 0.837 |
| 2002 | 0.946 | 0.902 | 0.939 | 0.936 | 0.848 |
| 2003 | 0.955 | 0.912 | 0.944 | 0.939 | 0.862 |
| 2004 | 0.957 | 0.921 | 0.948 | 0.940 | 0.869 |
| 2005 | 0.912 | 0.853 | 0.897 | 0.888 | 0.805 |
| 2006 | 0.968 | 0.938 | 0.955 | 0.945 | 0.878 |
| 2007 | 0.970 | 0.942 | 0.956 | 0.947 | 0.879 |
| 2008 | 0.922 | 0.858 | 0.905 | 0.890 | 0.814 |
| 2009 | 0.924 | 0.858 | 0.905 | 0.890 | 0.816 |
| 2010 | 0.926 | 0.856 | 0.908 | 0.895 | 0.817 |
| 2011 | 0.928 | 0.854 | 0.911 | 0.891 | 0.817 |
| 2012 | 0.938 | 0.860 | 0.937 | 0.875 | 0.831 |
| 2013 | 0.933 | 0.854 | 0.914 | 0.892 | 0.818 |
| | | | | | |

REFERENCES

Lindman, C. and **Sellin, J.** (2011) Measuring Human Development: The Use of Principal Component Analysis in Creating an Environmental Index, Department Of Statistics, Uppsala University, Bachelor Thesis, Spring 2011, Supervisor: Lennart Norell

United Nations Development Programme (1990) Human Development Report. Available online at *hdr.undp.org/en/content/human-development*.