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<th>Information highways : paths to prosperity or poverty</th>
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<td>Author(s)</td>
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Paper No. 7
AMIC 8th ANNUAL CONFERENCE

INFORMATION HIGHWAYS:
PATHS TO PROSPERITY OR POVERTY?

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July 1999
INFORMATION HIGHWAYS: PATHS TO PROSPERITY OR POVERTY?

PREAMBLE

1. The aim of this paper is to:

1.1 examine the proposition that Information and Communication Technologies (ICTs) have a role in determining the development gap between Information-rich and Information-poor countries in Asia;

1.2 outline the strategies that can be utilised to promote ICT as a key enabler in social and economic development based on the Malaysian approach and experience; and

1.3 suggest the role of key national institutional players, including media and communication professionals, in the ICT diffusion and acculturation process and ICT-enabled transformation of society.

2. From the outset some definitional issues need to be clarified. “Prosperity” and “Poverty” in this paper specifically refers to the material dimension and does not purport to cover the intellectual and spiritual dimensions. We are all well aware of the subjective nature of value-laden words such as “prosperity” and “poverty”. Suffice to say an individual can be rich materially and poor in an intellectual sense or conversely poor materially and rich in a spiritual sense.

3. “Information Highways” are said to subsume both the infrastructure and the content that flow through the high-speed ICT networks globally. Just as the railways, roads and transportation networks provided the ballast for economic development in the Industrial Age, information highways are expected to do the same in Information and Knowledge Age.

CONTEXT

4. It is a given amongst socio-technology and new economics theorists that the world is inexorably moving toward a knowledge-based economy and society. In particular much has been written about the post-industrial society and role of knowledge in propelling the global economy. Knowledge, both tacit and codified, is seen as the key resource of nations. Codified knowledge as we know it is of course “information” that primarily resides in the networks such as organisational Intranets and the INTERNET. Tacit knowledge is personal and that which resides in the "neural networks" of the individual.

5. The emergence of a network society and the global information economy are described by Manuel Castells in his book "The Rise of the Network Society". The main features of the Informational/Global economy he posits are:-

5.1 An asymmetrically interdependent world organised along three major economic regions, namely, Europe, North America and the Asia Pacific
5.2 An increasingly polarised global economy along the axis of opposition between productive, information-rich, affluent areas and impoverished areas economically devalued and socially excluded.

5.3 Emergence of a new pattern of international division of labour constructed around four different positions, namely, producers of high value based on information labour, producers of high volume based on lower cost, producers of raw materials based on natural endowments, and the redundant producers reduced to devalued labour. Castells key point is that these different positions do not coincide with countries per se. "They are organised in networks and flows, using the technological infrastructure of the informational economy."

6. The central thesis is that "informational societies" will become clusters that make up the global economy. The revolution in ICT in the second half of the twentieth century and its diffusion in all spheres of social and economic activity including its contribution in providing the infrastructure for the formation of the global economy is the key to understanding this transformation. Societies will increasingly organise their production systems to maximise knowledge-based productivity through the development of ICTs and meeting the prerequisites of human resources and communications infrastructure. The increasing investments in ICTs in the eighties and nineties in the developed economies of North America and Europe, and some developing economies of Asia-Pacific, seems to lend credence to this thesis.

KEY ISSUES

7. Given this context, are information-rich nations predisposed to achieve higher levels of economic and social development? How do we ascertain this to be true with respect to Asian nations? The data presented in Tables A and B is a preliminary attempt to cluster Asian nations using ICT diffusion rates and economic, socio-demographic variables. A note on the methodology used to classify is provided in Appendix 1.

8. The initial findings are that there is some correlation between a high score on the communication domain and the economic and socio-demographic domains. Whilst there is some data variability that may have affected the determination of the overall development status of countries, the results seem to be fairly accurate, at least the intuitive level, if not in an empirical sense.

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2 I am grateful to R. Ramachandran of Mimos Berhad for providing the data and analysis in the Tables and Appendix 1
Table A: Correlation Matrix Between Major Domains of Development
In the Study of Classification of Asian Nations

<table>
<thead>
<tr>
<th>Domain</th>
<th>Socio-Demography</th>
<th>Economy</th>
<th>Communication</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Socio-Demography</td>
<td>1.00</td>
<td>0.88</td>
<td>0.83</td>
<td>0.95</td>
</tr>
<tr>
<td>Economy</td>
<td>-</td>
<td>1.00</td>
<td>0.84</td>
<td>0.94</td>
</tr>
<tr>
<td>Communication</td>
<td>-</td>
<td>-</td>
<td>1.00</td>
<td>0.95</td>
</tr>
</tbody>
</table>

Footnotes:

Socio-Demography: 8 Variables:
- Life Expectancy Index
- Infant Mortality Rate
- Crude Birth Rate
- Crude Death Rate
- Total Fertility Rate
- Adult Literacy Rate
- Education Index
- Gender Development Index

Economy: 7 Variables
- Real GDP Per Capita
- Electricity Consumption Per Capita
- Labour Force % of Total Population
- % of Labour Force in Industry
- % of Labour Force in Services
- Women's Share of Adult Labour Force (>15 years)
- Urban Population (as % of Total)

Data Sources:
### TABLE B: COUNTRIES BY DEVELOPMENT STATUS AND DOMAINS OF STUDY

<table>
<thead>
<tr>
<th>DEVELOPMENT STATUS</th>
<th>OVERALL</th>
<th>ECONOMY</th>
<th>COMMUNICATION</th>
<th>SOCIO-DEMOGRAPHY</th>
</tr>
</thead>
<tbody>
<tr>
<td>HIGH</td>
<td>12 COUNTRIES</td>
<td>12 COUNTRIES</td>
<td>12 COUNTRIES</td>
<td>12 COUNTRIES</td>
</tr>
<tr>
<td>MEDIUM</td>
<td>11 COUNTRIES</td>
<td>11 COUNTRIES</td>
<td>11 COUNTRIES</td>
<td>11 COUNTRIES</td>
</tr>
<tr>
<td></td>
<td>Korea Dem. People's Rep. Of, Turkmenistan, Kyrgyzstan, Uzbekistan, Tajikistan, Philippines, Malaysia, Indonesia, China, Iran, Turkey, Pakistan, Sri Lanka</td>
<td>Pakistan, Thailand, China, Indonesia, Tajikistan, Philippines, Malaysia, Vietnam, India, Pakistan</td>
<td>Korea Dem. People's Rep. Of, Turkmenistan, Kyrgyzstan, Uzbekistan, Tajikistan, Philippines, Malaysia, Indonesia, China, Iran, Turkey, Pakistan, Sri Lanka</td>
<td>Korea Dem. People's Rep. Of, Turkmenistan, Kyrgyzstan, Uzbekistan, Tajikistan, Philippines, Malaysia, Indonesia, China, Iran, Turkey, Pakistan, Sri Lanka</td>
</tr>
<tr>
<td>LOW</td>
<td>10 COUNTRIES</td>
<td>10 COUNTRIES</td>
<td>10 COUNTRIES</td>
<td>10 COUNTRIES</td>
</tr>
<tr>
<td></td>
<td>Papua New Guinea, Pakistan, Afghanistan, Bangladesh, Myanmar, Cambodia, Afghanistan, Bangladesh, Nepal, Bhutan</td>
<td>Afghanistan, Bangladesh, Myanmar, Cambodia, Afghanistan, Bangladesh, Nepal, Bhutan</td>
<td>Papua New Guinea, Pakistan, Afghanistan, Bangladesh, Myanmar, Cambodia, Afghanistan, Bangladesh, Nepal, Bhutan</td>
<td>Papua New Guinea, Pakistan, Afghanistan, Bangladesh, Myanmar, Cambodia, Afghanistan, Bangladesh, Nepal, Bhutan</td>
</tr>
</tbody>
</table>

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9. Given these initial findings the **key questions** are:

9.1 Do we need and want to do something about addressing the gap between the information-rich and information-poor in Asia?

9.2 If so, what can we as individuals, groups, organisations, institutions, communities and nations do?

**THE MALAYSIAN EXPERIENCE**

10. In 1991, Dr. Mahathir Mohamad, the Prime Minister of Malaysia in articulating the Vision for a fully developed nation by the year 2020, emphasised the need for the Malaysian society to be "information-rich". His rationale simply put was that "it can be no accident that there is today no wealthy, developed country that is information-poor and no information-rich country that is poor and undeveloped."

11. Given this strategic vision, Malaysia's planned her move to leapfrog from the Industrial Age to the Information and Knowledge Age fully cognisant of the potential of ICT to accelerate and transform social and economic development in the new millennium. ICT is seen as a potent development tool that can:

   a. enhance knowledge, skills and values
   b. create new social and economic opportunities
   c. promote direct participation and democratisation.

12. The **National Information Technology Council (NITC)** was established in 1994 with the vision of creating an information-rich society in line with the aspirations of Vision 2020. The NITC aims to enhance the development and utilisation of ICT as a strategic technology for national development. The NITC acts as a think-tank at the highest level and advises the Government on matters pertaining to the development of ICT in Malaysia.

13. The **National Information Technology Agenda [NITA]** was formulated in 1996 to provide a comprehensive framework for development in the Information Age. In essence the NITA:

   a. aims to transform the nation into a knowledge and values based society according to Vision 2020;
   b. focuses on comprehensive human development;
   c. leverages on trisectoral partnership between the public, private and community interest sectors; and
   d. uses top-down and bottom-up approaches for planning and implementation.
14. The National IT Framework (NITF) is a strategic and synergistic combination of a number of key components, working in tandem. The framework is best viewed as an interconnected triangle consisting of three key elements, namely, People, Infostructure and Applications.

15. The primary importance of the human factor in a change environment is well reflected by the placement of the “people” element at the apex of the triangle [See Slide]. The triangle itself reflects the three key issues surrounding the triangulation, these being: access and equity, creating value and qualitative transformation.

16. The principle that all citizens need access to information in an equitable manner has been duly recognised. The infostructure element is seen in terms of hard and soft infrastructure. The hard infrastructure involves the computer hardware and the relevant telecommunication components. The soft infrastructure on the other hand includes databases, networks, laws, and regulations. The third element of applications revolves around the development of content that is needed by all players in the ICT field. The main emphasis here is on local content and culture compatibility. The development of appropriate and cost effective applications would be critical in ensuring that Malaysia is able to maintain its competitive position in the market place in the years to come. Each of the three elements in the NITF has its own strategies, all of which work towards the achievement of a civil society.

17. The implementation of the NITA and related initiatives comes under the purview of the NITC, which is chaired by the Prime Minister. The NITA calls for a concerted effort from all quarters, including government agencies, private enterprise, non-governmental organizations, unions, academia, and the media.

18. The operationalisation of NITC policy initiatives thus far, can be summarised as follows:-

a. The Multimedia Super Corridor [MSC] - a greenfield corridor for global multimedia and ICT applications
b. Demonstrator Applications - nation-wide mini-MSC like projects
c. Cyberjaya as R&D Centre, Putrajaya as Smart City, Subang Jaya as test-bed for Smart Community Development
d. NITC Strategic Agenda - the latest policy initiative launched in 1998.

19. The primary goal of the NITC Strategic Agenda is to effectively facilitate the migration of Malaysians and institutional structures to the E-World. This migration is seen as a people-driven transformation. The key challenge is to engender the requisite mindset in our people and institutions to successfully participate, develop and grow in this emerging networked global society in the 21st century.
20. The desired end-states envisioned by the five Strategic Agenda Thrust Areas can be summarized as follows:

<table>
<thead>
<tr>
<th>THRUSTS</th>
<th>VISION</th>
<th>KEY-FOCUS</th>
</tr>
</thead>
<tbody>
<tr>
<td>E-Economy</td>
<td>All sectors of the Malaysian economy creating value and wealth through successful participation in the emerging knowledge-driven global economy</td>
<td>Knowledge-driven economy</td>
</tr>
<tr>
<td>E-Public Services</td>
<td>The Public, Private and Community Sectors providing people-oriented, customer-focused services electronically</td>
<td>Delivery mode of public goods and services</td>
</tr>
<tr>
<td>E-Community</td>
<td>Networks of Communities dynamically participating in the process of governance to enhance the quality of life of Malaysians</td>
<td>Participating governance for quality of life</td>
</tr>
<tr>
<td>E-Leaning</td>
<td>Formal and informal networks providing the opportunity and cultivating an ethos of life-long learning for individual organisational, institutional and societal advancement</td>
<td>A life-long learning culture</td>
</tr>
<tr>
<td>E-Sovereignty</td>
<td>Citizens and institutions focussed on enhancing national identity, integrity and societal stability in the face of borderless challenges to our sovereignty</td>
<td>Resilient National Identity</td>
</tr>
</tbody>
</table>

21. We have established E-Working Groups comprising key players from the public, private and community interest sectors in formulating the requisite policies, strategies and programmes to:-

a. To build the capabilities (knowledge and skills) of individual Malaysians to live and work in the E-World.

b. To develop and strengthen the capacity of our organizations and institutions to function efficiently and effectively in the emerging networked global society.
22. To make our people aware and to understand the emerging E-World, programmes for diffusion and acculturation of ICT at the grass-root level are being undertaken using public, private and community-based "learning" institutions.

23. A programme to "Educate the educators for the 21st century" would be implemented to mass-produce ICT fluent educators. Schools, colleges, universities, ICT training institutions, mobile ICT training units and other virtual institutions of learning have been identified as "walk-in / log-on" ICT training centers for the educators. Educators here means all that consider themselves as such including parents.

24. A comprehensive review to re-engineer the national education system, specifically in terms of flexibility in curriculum and content development, teachers' training, examination system, university entrance requirements, is currently being undertaken. The objective is to make the education system an open learning system to cater for the needs of the society and the changing E-World.

25. ICT equipment, peripherals and access fees for communications and delivery systems have to be made affordable to ensure competitiveness in the E-World. For educational and community-based institutions these items should be made affordable through the provision of tax exemption, subsidy schemes and special discounted fixed rates for communication and net access charges. These fiscal and other incentives are continuously reviewed and realigned to promote ICT usage.

26. The capacity of organizations to function effectively in the E-World needs to be developed and strengthened. Competitiveness in the borderless world is premised on innovativeness and entrepreneurship. The ability to use knowledge, information and ideas to innovate new products and services and the entrepreneurial skills to market and sell will be critical for Malaysia's success in the digital economy.

27. The niche area for the E-Economy is the Networked Services Sector, which is expected to expand its contribution to GDP as well as expand the pie through economic growth. The networked services sector is basically an information-based sector, enriched and enhanced by connectivity and knowledge sharing which is used for creating new services, information and knowledge products.

28. In building organizational capabilities, "value creators" would be encouraged to take the front-line in E-Economy activities to create new economic value. These "early adopters" or "networked entrepreneurs" who are able to use the electronic network for maximum advantage would be provided support and inducements to compete effectively in the global arena.

3 Niche because it is able to create new value growth exponentially with linear growth in investment in networks.
RECAP OF THE MALAYSIAN EXPERIENCE

29. Some lessons that may be relevant to others can be summarised as follows:-

a. A national vision for societal transformation is important as a focal point
b. Strategies to translate Vision into Reality are critical
c. A National ICT Policy framework is key to promote focussed, meaningful action and optimise resources for development.
d. Government [Public Sector] must take the lead in the initial stages as pacesetter for ICT development
e. An inclusive Governance Model to build smart partnerships among the Public, Private and Community interest sectors is key to sustainable progress and development.
f. Effective and on-going communication is imperative to ensure realisation of the development vision, strategies and programmes.
g. Government must show commitment through allocation of resources and treat the provision of ICT infrastructure and information services as a "public good".

WAY FORWARD

30. Before considering the probable strategies to address the problems of the Info-poor some general observations are in order. Despite the great advances in ICT equitable access to information has never been and unlikely to be distributed evenly among the members of any community, rich or poor, small or large. For some time yet, access to information will continue to be the preserve of an affluent minority in all societies.

31. Even if comprehensive free access is equitably provided to all citizens there is no guarantee all will use ICT. There will always be segments of society that will not want to avail themselves of the technology or the content because of a myriad of reasons, including complacency and sheer unwillingness to adapt to change.

32. We can have the best information highways traversing the nation but it will be of no use if the individual citizen does not see value in this for his or her conduct of daily life, work or play. It is the aggregate of individuals who make the nation which must see the benefits and importantly use ICT. With the critical mass of users, information highways can become meaningful in the context of economic and social development. Given that multitudes of Asians are struggling with the real problems of basic survival, would information highways be of "virtual" use to them?
33. Perhaps if Information Highways can be used by institutional players to deliver goods and services in an efficient and effective manner. Yes, if economic sectors can boost knowledge-driven productivity and create value and new employment opportunities. Yes, if NGOs can organise activities and deliver services with a customer focus. Yes, if political representatives can listen to the people and deliver the "public goods" as promised and can be held accountable for this through ICT. Yes, if educators can nurture the minds of the youth and future generations to come.

34. Most certainly the media and communication professionals can play a significant role in diffusion, dissemination and information provision to educate the citizenry. Importantly they need to get proactively involved in the public policy formulation and contribute to societal developmental processes. What is stopping media and communication professionals, organisations and institutions from adopting communities and establishing E-Villages, E-Schools, E-Libraries and similar projects? Surely the spin-off effects can only but create potential business opportunities if seen from a consumer and customer perspective.

35. As Asian media and communication professionals you also have a responsibility to be intimately involved in development of indigenous information and entertainment content. It must not just be an "American Dream" that is broadcast to the remote villages of Asia but also "country-culture specific dreams". Let the people of Asia make informed decisions by providing the choice. Surely regional and professional organisations like AMIC can contribute toward the evolution of life-long learning ethos, through specific programmes and projects. In my humble opinion, Asians need to rediscover the passion for learning and the thirst for knowledge. Then from a civilisational perspective, Asian nations can reconstruct the glory of past millennia and become meaningful players in the new millennium.

CONCLUSION

36. In my view to be Information-poor is unfortunate, but to be information-rich and not do anything about it to benefit the society we live in, is blatantly criminal. We all have important and invaluable roles to play. We need to target segments of the population to bring about "hubs of learning" to facilitate innovation, creativity and entrepreneurship. Value creation that results from this will contribute to economic development. Let us do it in small yet meaningful ways- mini-projects in schools, places of worship, homes, and community centres. What is required is a total effort by all sectors of society. Sustainability in implementation of programmes and projects is critical. Getting people involved in the process of transformation is key. It must be people-driven.

37. Of course people must want to change. Information highways can only enable socio-economic development, not bring it about. We cannot afford
to subscribe to the view that technology is the panacea for development. Technology should not be allowed to control humans but humans should creatively harness the technology for societal advancement. The Asian philosopher Dr. S. Radhakrishnan once pointed out, that the greatest danger to any society is not so much the existence of physical slums but the alarming growth of "mental slums".

38. Can we not learn some lessons from this? Surely as individuals we need to first make the commitment to life-long learning. Second, we can make someone, somewhere information-rich by sharing our tacit knowledge, on a daily basis. The true meaning of prosperity for Asians in the new millennium can be an abiding reality; if we can all make this commitment today. The paths to prosperity begin with you!

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Chennai, India
1 July 1999
Appendix 1

CLASSIFICATION OF ASIAN NATIONS:
An Explanatory Note On Methodology

Background & Objective

1. The annual publications like Human Development Report (HDR), World Development Report (WDR) and World Competitiveness Yearbook disseminate information by nation or nations classified under various groups. The criteria used in such classifications are either by geographical location or by levels of development or by selected variables or by aggregation of variables. The classification also has its specific objective especially when the report chooses to describe one nation against another or one group against another.

2. The classifications by geographical location used in the HDR are Sub-Saharan Africa, Arab States, Asia and Pacific & Oceania, Latin America, the Caribbean and North America, European Union, Nordic Countries, ASEAN etc. The same report uses criteria such as developed countries (DC), less developed countries (LDC), first world, second world and third world, industrial and non-industrial countries, Organization for Economic Cooperation and Development (OECD) etc to denote the levels of development. Similarly, the HDR computes the Human Development Index (HDI) into high, medium and low levels of development but using three selected leading indicators, namely Real Gross Domestic Product, Life Expectancy and Literacy measures. These measures are aggregated to provide a HDI value for each country. In HDI compilation the cut off points for high, medium and low are determined subjectively.

3. The WDR is a specific purpose publication catering for its member countries. The report does not address development status of all countries in the world. In fact, the number of countries covered in WDR is smaller than in HDR. The WDR 1998/99 has compiled 148 indicators to describe the development status of its member countries. In classifying nations into "developing countries" or "advanced countries" the report uses income classification as determined by Gross National Product (GNP) per capita. The report qualifies the use of the word "countries" - "to refer to economies implies no judgement by the World Bank about legal or other status of a territory. The term "developing countries" includes low-and middle income economies and thus include economies in transition from central planning, as a matter of convenience".

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World Development Report: Knowledge For Development page viii
4. The WCY analyzes and ranks 47 nations that are key players in the world economy. In other words, the WCY from the onset precludes economically low contributors from its analyzes. However, the WCY has a merit of ranking competitiveness using 246 criteria under eight domains of study: domestic economy, internalization, government, finance, infrastructure, management, science & technology and people.

5. The foregoing briefly indicates these traditional documents contain subjective elements in classifying nations for disseminating information or even formulating strategic planning. In particular, the reports are subjected to factors such as political and economic bias, construed by some lacking objectivity in measurement criteria and having limitations in appropriate scope and coverage as well as meaning of variables.

6. To address all of these issues an attempt is being made in this paper to develop a methodology to rank and classify Asian nations according to different levels of development but using statistical criteria. The levels of development are high, medium and low.

Study Coverage & Scope

7. The study covers 33 countries in Asia, though the actual number in the continent may be higher. They are chosen based on two simple criteria: first, geographical location as per to continent of Asia irrespective of their impact on global economy and secondly, the availability of comparable international statistics.

8. It is widely accepted today that classification and benchmarking one nation with another cannot be solely based on one or few variables especially on the mere notions of Gross Domestic Product as used to be the methodology in the past. This is because, besides economy dimension nations, have to cope up with social, demography, political, technology, environment and cultural dimensions in order for them to remain productive and competitive. The concern is more so in the wake of globalization and market liberalization phenomenon affecting the whole world.

9. Due to data constraints and availability of comparable and compatible data at international level, the study scope is confined to three major domains of development. They are socio-demography, economy and communication. The socio-demography variables, in its integrated form, represents quality of life; economy domain represents the materialistic well being of the population and communication domain variables indicate development of new human relationship.

10. The data sources and appropriation of variables under the three domains of study are shown in Table A in the main paper titled "Information Highways: Paths To Prosperity or Poverty?" by Jayanath, Mimos Bhd, Malaysia.
Methodology

11. The Dalenius & Hodges (1959) Method of Stratification concept used in sampling theory, as indicated in the formulae below, is modified to facilitate the needs of this social study. In particular, Dalenius – Hodges used square root technique in data reduction, while this paper attempted the stratification concept with logarithm.

\[ Z(y) = \int y f(y) \sqrt{y} \, dt \]

The modified version of the Dalenius & Hodges Technique is given below.

\[ Z(y) = \int y \log(f(y)) \, dt \]

12. The logarithm technique is adopted as it has inherent property of compressing a set of data with wide variation and represent them in a standardized format (that is, either to base 10 or e) as well as making data comparable in magnitude. Intuitively, as we know the Asian data tend to vary greatly with one another ranging best performance by Japan to poorest performance by Afghanistan.

13. Each variable is ranked and total rank score is computed for each nation. By the default of the suggested ranking procedure, the lowest value is equal to the number of variables, let say \( k \), and the highest value is \( nk \) where \( n \) is the number of countries under study. The procedure will record the lowest value when a particular country records the best performance in ALL the variables under study. Similarly, the highest value is recorded when a particular country registers poorest performance in ALL the variables and no tie or shared ranks are present. The cut-off points are determined by using the modified version of Dalenius & Hodges Technique as mentioned above. The above procedure also can be repeated at sub domain.

Merits of Methodology

14. The merits of the methodology adopted in this exercise especially in comparison with HDR or WDR or WCY in classifying nations are as follows:

i) Classification is free from political or economic bias such as "first world" and "third world", developed against "less developed" etc.

ii) The cut-off points are determined objectively using statistical criteria and not arbitrarily like in HDI.

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iii) The number of variables is kept to optimal level unlike WCY monitors 246 variables, which demand higher resources. Large number of variables do not necessarily advocate greater accuracy provided the variables are distinct and meaningful;

iv) Provides a basis for integrating the variables of differing units and enable meaningful representation at domain and sub domain levels

v) The total ranks at sub domain level provide basis to assess the correlation as shown in Table A in the main paper by Jayanath.

vi) The methodology enables ranking and benchmarking basis among nations as shown in Table B in the main paper by Jayanath.

vii) The classification has an advantage of minimizing the variation between variables within a group and provides a better basis for computing meaningful summary measures at domain or sub domain level

viii) Provides a basis for benchmarking comparison among nations overtime period.

Demerits

15. Similarly, the demerits are as follows:

i) Incompatible data among countries affect the result and interpretation very badly. For instance, in the Classification of Asian study Afghanistan ranked for best performance in assessing the share of employed population. This data may be arguable for consistency and compatibility in terms of concepts and definitions, though published in HDR.

ii) Lack of published data for countries like Taiwan also posed a problem. For simplicity, the missing value for Taiwan is imputed by taking a simple average of Singapore and South Korea on the premise these nations are emerging economies.

iii) For some countries the reliability of published data is also questionable. For example the real GDP per capita value for Korea Dem. Peoples Republic of quoted as high as US 3,965 in HDR as oppose to a GNP per capita of US920 as quoted in World Fact Book. Such readings obviously distort the findings.
Conclusion

16. The accuracy of the Classification of Nation exercise depends on the validity and authenticity of data as well comparability at international level. Otherwise, the results need to be interpreted with care.

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