

BUILDING INNOVATION CAPACITY FOR KNOWLEDGE CREATION IN GCC COUNTRIES

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Research Aims

- to highlight the importance of innovation in the new economy
- to identify some of the challenges facing Arab countries to promote knowledge and gain from globalization.
- To shed some light on the role that knowledge plays in promoting economic diversification and increasing productivity
- To Determine the innovation Gap
- To promote ideas for bridging the knowledge and innovation Gaps

Capacity Building for Innovation

- **First**, the new economy is a knowledge-based Economy driven by knowledge and information
- **Second**, globalization has increased global access by providing opportunities for countries to compete in bigger markets. Global competitiveness requires products and services with high contents of knowledge.
- **Third**, the diffusion of new technologies, mainly ICTs has reduced the cost of managing knowledge and sharing information. This provided an opportunity for developing countries to gain global access to knowledge, skills and technology. In addition, falling costs has encouraged factor mobility, especially labor, among and within nations.
- **Fourth**, trade in goods and services have resulted in common standards which countries are required to meet in order to compete in the global markets.
- **Finally**, the internationalization of science and technology allowed many countries to increase collaboration and share research projects together.
- **As a consequence**, innovation networks among firms, universities and research centers which helped in speeding up the process of technological learning and ultimately increase in production and exports of knowledge-based products and services.

Research Problem

- **The annual Global Innovation Index (GII) 2013 edition, which is published by Cornell University; business school INSEAD, and the UN's World Intellectual Property Organization (WIPO), suggests that countries in the Middle East are falling behind developed economies when it comes to innovation?**

Reflective Generic measurement to Innovation: Brief scanning worldwide

- innovation is **measured by the share of total expenditure in total GDP allocated** for research and development in the national economy
- In 2009, the global expenditure on R&D **accounted for \$1.2 trillion**
- the **share of China** in total global expenditure on R&D increased from **2.2%** in 1993 to about 15% in 2014.
- The United States alone accounted for one third of the global expenditure on R&D.
- whereas the Arab World as part of Middle East spends the **equivalent to 0.3% on R&D**

Some consequences encountered the Arab World Economy due to the share of the lowest among world nations

As stated by the United Nations:

- “In MENA economies, **technological progress is slow,**
- **capital accumulation has reached a ceiling,**
- and there is **high unemployment.**
- To maintain employment levels, **labor productivity is kept low.**
- In the absence of steady and continuous technological progress, **countries retain substitution of capital for labor in order to stabilize employment.”**

World Bank, Knowledge Economies in the Middle East and North Africa (Washington: 2003), P. 7.

Scanning the previous concepts on the Innovation- ENB paradigm

Lack of
Innovation and
Knowledge
Creation

- Low level of Innovation and Weak Knowledge

To be out of
the above
negative
consequences
???

- Innovation enhances the country's capabilities to increase productivity

Innovation is
defined as
multidimensio
nal issues

- New materials and components
- The introduction of new Processes
- The opening of new markets
- The introduction of new organizational forms

Building capacity for closing the Innovation Gap

Education
System base on
QA
international
Standards

- Building enabling environment for innovation (research and development, incentives, findings and building infrastructure...)
- increases the prospect for greater collaboration across national borders through linkage creation and spillover effects.
- To this end,
 - ❑ governments should provide support for creating such environment by allocating more funding for R&D,
 - ❑ involving the participation of public institutions in R&D,
 - ❑ encouraging small and medium enterprises, building ICT infrastructure and investing in human capital resources.

A Model of Knowledge-based Development (KBD)

The model in the Following Table involves broad based objectives that serve as a framework for leapfrogging and sustaining development

	Economics (KBE)	Social	Natural
Education (development of human capital)	Education for a skilled workforce	Education for total human development	Education for sustainable development
Innovation (Development of structural capital)	Systems, processes, and technological innovations	New institutions and protocols for peace, equity and human reights	Environmental technologies, e.g. renewable energy technologies
Building networks (Development of stakeholder capital)	Financial and physical networks, e.g., ICT infrastructure	Social networks, social trust, cultural integrity	Agreements to protect and sustain planetary life support systems

Global Innovation Index (GII) 2013 edition

looked at 142 economies around the world, using 84 indicators including the quality of top universities, availability of microfinance, venture capital deals - gauging both innovation capabilities and measurable results.

Innovation: Key Performance Indicators for Selected Countries

The following Table illustrates some of the indicators used for measuring the state of innovation in several Advanced countries.

Country	Institutions	infrastructure	Human capital & research	Knowledge and technology output	Creative output	Innovation Gap	Global Rank
Switzerland	87.3	57.0	55.4	61.5	71.8	28.2	1
Sweden	89.9	63.1	62.5	54.1	55.6	44.4	2
U.S.A.	86.0	57.5	61.1	53.6	49.2	50.8	5
Finland	95.3	57.5	67.4	50.8	53.9	46.1	6
Singapore	92.2	59.2	63.2	48.5	44.6	55.4	8
Denmark	95.3	53.9	60.4	41.9	58.8	41.2	9

Innovation: Key Performance Indicators for Selected Countries

The following Table illustrates some of the indicators used for measuring the state of **innovation Gap in GCC Countries**

Country	Institutions	infrastructure	Human capital & research	Knowledge and technology output	Creative output	Innovation Gap	Global Rank
UAE	75.6	49.7	50.0	12.0	47.6	52.4	38
Qatar	73.9	46.0	31.9	19.9	48.5	51.5	43
S. Arabia	58.4	40.6	39.8	24.8	48.2	51.8	42
Kuwait	61.4	35.3	31.2	44.7	36.4	63.6	50
Oman	71.6	35.9	33.8	20.1	26.3	73.7	80
Bahrain	69.9	39.8	27.8	26.1	29.4	70.6	67

Generic Interpretations

Every country has its strengths and improvement platforms to be considered; the comments on the previous figures, the UAE led the Middle East in institutions, human capital and research, infrastructure, and business sophistication, while Saudi Arabia ranked highest for market sophistication, Kuwait in knowledge and technology outputs and Qatar in creative outputs, Bahrain is very close to the UAE in institutions

However, the way toward excellence and to reach the optimal target is subject to many limitations encountered strategic planning, but the aims to uplift the economic prosperity is not easy way.

Even the best among the best countries which is ranked number one is still has had a big GAP equal to 28.2%.

To analyze the gape from a strategic perspective we must go deeper in strategic analysis to let the Strategic Decision Makers construct Innovation & Knowledge Based Economy Model to fit for purpose and Grand Government Vision.

Building Innovation Capacity & Filling the Gaps Strategic Analysis to the Rank 1 Country **Switzerland**

Strengths: (Economy's best percent ranks)

- ✓ Ease of paying taxes
- ✓ Education
- ✓ Expenditure on education
- ✓ Public expenditure on education per pupil
- ✓ Gross tertiary outbound enrolment
- ✓ Microfinance institutions' gross loan portfolio
- ✓ Knowledge workers
- ✓ Firms offering formal training
- ✓ GMAT mean score
- ✓ Royalties and license fees payments (% of service imports)
- ✓ Knowledge and technology outputs
- ✓ Knowledge impact
- ✓ ISO 9001 quality certificates
- ✓ Communications, computer and information services exports, %
- ✓ Audiovisual and related services exports

Building Innovation Capacity & Filling the Gaps Strategic Analysis to the Rank 1 Country **Switzerland**

Weaknesses: (Economy's worst percent ranks)

- ✓ Graduates in science and engineering
- ✓ Research and development (R&D)
- ✓ QS university ranking average score of top 3 universities
- ✓ Infrastructure
- ✓ Government's online service
- ✓ General infrastructure
- ✓ Gross capital formation
- ✓ Total value of stocks traded
- ✓ Venture capital deals
- ✓ Trade and competition
- ✓ Market access for non-agricultural exports
- ✓ Joint venture/strategic alliance deals
- ✓ Patent families filed in at least three offices
- ✓ Patent Cooperation Treaty resident applications
- ✓ Madrid system trademark registrations by country of origin

Conclusion

On the bases of the research findings we conclude the most critical obstacles which hinder building capacity for innovation in the Arab World

- The current **capacity for knowledge creation in MINA region is weak.**
- The overall state of **knowledge readiness is inadequate** to allow those countries to attain the rank of knowledge economy given supply- demand constraints.
- On the **supply side, low levels of education and training of the workforce** hinder the process of conversion into a knowledge economy **for not being able to utilize the knowledge and technology in a productive and effective way.**
- **Lack of skilled human resources** also weaken the country's ability to conduct research and development and promote innovation.
- On the other hand, constraints on the **demand side** arise from fact that **the demand for knowledge in most Arab countries remains inadequate** to create linkages with manufacturing and educational sectors largely inactive in research and development stemming from weak demand for innovation in the resource-based local economy.

Recommendations:

- **It is urgent for governments in the region to speed up the process of conversion from resource-based to knowledge-based economies.**
- the knowledge gap between Arab countries and the industrial countries is actually widening reflecting the **need for immediate action on the part of Arab leadership in the public and private sector working collectively**, rather than at cross-purposes, on a regional rather than on a national level.