

CHALLENGES AND OPPORUNITIES TO TRANSITION INTO A KNOWLEDGE-BASED ECONOMY IN LIBYA

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Abstract: *Libya is an Oil- Based Economy as a large percentage of its GDP comes from oil and gas sector. The main objective of this paper is to investigate the challenges and opportunities for the transition to a knowledge based economy in Libya.*

The broader question in this research is firstly, what are the main challenges facing the transition into the knowledge-based economy in Libya? Secondly, what are the major opportunities for transition into a knowledge-based economy in Libya? The research methodology was based on a descriptive and comparative method of analysis.

The contribution of this research is to fill the acute shortage in the Libyan literature by presenting a more comprehensive analysis and investigating the challenges and opportunities for the shift to a knowledge-based economy in Libya. The findings of this study indicate several obstacles for a transition to a knowledge-based economy in Libya such as political, social, economic, institutional, and organizational obstacle.

Keywords: *Knowledge based-economy, Challenges, Opportunities, Libya.*

1. INTRODUCTION

On one side, this article illustrates that transition to a knowledge-based economy faces several challenges in Libya in particular and coincides with a substantial knowledge gap compared to other knowledge developing countries such as Saudi Arabia, UAE, and Qatar. On the other side, this research fills the gap in the Libyan literature by presenting a widespread investigation to make a better understanding of the likely opportunities and challenges for the transition to a knowledge-based economy in Libyan country.

The research methodology was based on an expressive and comparative approach to analysis based on the structure and definition of a knowledge-based economy, aiming to indicate the review of the literature to examine the challenges and opportunities for the movement to a knowledge-based economy in Libya.

2. THEORETICAL FRAME WORK AND LITERATURE REVIEW

The Organization for Economic Co-operation and Development OECD [1], suggests a differentiation between knowledge-based economies and resource-based economy, which means that the knowledge-based economies are ones that directly supported production, distribution, and use of knowledge and information, with a significant role given to information, technology and learning in the performance of the economy. Contrasting by that, a resource-based economy is the economy of a country whose gross national product or GDP to a large extent comes from natural resources (oil and gas).

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Gorzela [2] indicated a framework for a knowledge-based economy supported the excellence between the old paradigm (resource-driven economies) and therefore the new paradigm (knowledge-driven economies). Gorzelak further discusses that applying the concepts of the knowledge economy to modern management suggests the necessity for a paradigm shift from resource-driven urban economies (table 1).

Table 1. Knowledge economies change in cities

Resource driven economies The old paradigm	Knowledge driven economies The new paradigm
Quantitative factors	Quantitative factors
Labor	Qualification
Raw material	Research and development
Premises	Local supplier
Bulk transportation	Reliable infrastructure
Energy	Good living conditions
Subsidization	Friendly and stable policy environment
Tax allowances	Entrepreneurship
Grants and direct subsidies	Effective and honest promotion
Low user charges and rents	Competitive attraction of capital innovation
	Qualified labour

Source: Gorzelak (2001)

Furthermore, the World Bank Institute utilize the Knowledge Index (KI) and the Knowledge economy index (KEI) to analyze knowledge over the world's nations. As indicated by the World Bank, the KI measure a nation's capacity to produce, receive, and diffuse knowledge. The KEI takes into consideration whether the environment is conducive for knowledge to be utilized effectively for economic development. Overall, the index represents the general level of development of a nation or region towards the knowledge economy [3].

Recent research shows that there are many challenges impacting the transition to a knowledge-based economy in Libya [4-5].

3. SOCIO-ECONOMIC CHARACTERISTICS OF LIBYA

The general socio-economic and development characteristics of the Libyan country and world regions as measuring of economic growth (GNI per capita), life expectancy, mean years of schooling, literacy rate, and gross enrollment ratios are given in the table 2. It is apparent the real gap between Libya and some Arab countries as well as other world regions regarding HDI components. Overall, the Libyan nation is characterised by low standards of economic development together with low population numbers. Libya is one of the Arab countries classified as low-income economy [6].

Moreover, according to the classification of the UNDP-HDI 2014, the average GDP per capita for Libya is 21,666 in 2013. This means that the country is rated in the world medium-income group and its GDP per capita is lower than for those of the other Arab oil countries. Additionally, the other HDI components: average life expectancy, mean years of schooling, expected years of schooling, literacy rate and gross enrolment ratios for Libya are 75.3%, 7.5%, 16.1%, 89.5% respectively, whereas the gross enrolment ratios are Primary 114 (2012), Secondary 104 (2012), Tertiary 61 (2012) on average, are lower than for those of other world countries. These socio-economic development characteristics of Libya have genuine ramifications, as they force difficulties and obstruct the change to knowledge-based economies [7].

Table 2. Socio-economic characteristics of Libya compared to some Arab countries and world regions (2003-2014)

Countries	HDI (years) Value 2013	GNI Per capita (ppp us\$) 2011-2014	Life Expectancy At birth (Years) 2013	Mean Years of Schooling (Years) 2013	Expected year of Schooling (Years) 2012	Adult literacy rate (% age 15 And older) 2014	Population with at least secondary education 2012	Population Total (millions) 2013	Gross enrolment ratio			
									Primary (%) 2003-2012	Secondary (%) 2003-2012	Tertiary (%) 2003-2012	
Libya	0.784	21.660	75.3	7.5	16.1	89.5	49.6	6.2	114	104	61	
KSA	0.836	52.109	75.5	8.7	15.6	87.2	66.5	28.8	103	114	51	
UAE	0.827	58.068	76.8	9.1	13.3	90.0	62.7	9.3	108	-	-	
Qatar	0.851	119.029	78.4	9.1	13.8	96.3	60.5	2.2	103	112	12	
HDI groups												
Very high human development	0.890	40.046	80.2	11.7	16.3	-	86.9	1.1897	103	101	76	
High human development	0.735	13.231	74.5	8.1	13.4	94.2	64.1	2.4855	118	87	35	
Medium human development	0.614	5.960	67.9	5.5	11.7	71.7	47.5	2.2621	111	70	23	
Low human development	0.493	2.904	59.4	4.2	9.0	58.2	22.1	1.1456	98	39	8	
Regions												
Arab States	0.682	15.817	70.2	6.3	11.8	77.0	41.1	366.0	105	76	28	
East Asia and the Pacific	0.703	10.499	74.0	7.4	12.5	94.4	-	2.6359	120	84	-	
Europe and Central Asia	0.738	12.415	71.3	9.6	13.6	97.7	75.0	233.4	101	95	50	
Latin America and the Caribbean	0.740	13.767	74.9	7.9	13.7	91.5	54.7	611.3	106	85	44	
South Asia	0.588	5.195	67.2	4.7	11.2	62.9	38.4	1.7490	110	64	22	
Sub-Saharan Africa	0.502	3.152	56.8	4.8	9.7	58.9	28.1	888.2	100	43	8	
Least developed countries	0.487	2.126	61.5	3.9	9.4	59.3	-	898.4	105	42	9	
World	0.702	13.723	70.8	7.7	12.2	81.2	63.6	7.1621	108	74	31	

Source: UNDP Human Development Report (2014)

4. THE CHALLENGES OF A TRANSITION

Significant challenges facing the transition to a knowledge-based economy in Libya and they involve improving opportunity, making great governance accessible, and improving the mindfulness and responsibility of the Libyan government to organize the progress to transformation from an oil-based economy to knowledge-based economy [8].

Another aspect is social and cultural, Libya is facing many obstacles for a transition to a knowledge-based economy by the absence of cultural and social awareness, and more importantly the social and cultural variables such as the political history of the Libyan country, cultural history [9], improvement of political economy, globalisation, and the emergence of the knowledge and communication uprising. As well as, the political structures and enabling environments, that support the transition to knowledge economy progress. These transitions should be prepared by policymakers in the country to emphasis a demographic structure that needs to be culturally changed to show a tough role in taking an important increase in the economic, social, and political structure of the country [10].

The economy, traditionally dependent on oil, has suffered greatly from ongoing conflict and state fragmentation. The sabotage of port terminals and production facilities has caused significant fluctuations in oil exports, and therefore government revenues, throughout the transitional period. Economic growth is flat or negative, as the fighting has damaged infrastructure, and foreign investment has stopped [11].

Libya's labor force continues to be controlled and its labor threatened. Yet, many of the country's labor laws have discouraged job creation in the formal sector, especially, their provisions on the small wage, working hours, night shift systems, and discharge procedures and training requirements. Libyan laws governing discharge are severe. In 1980, the Libyan Social Security Law necessitates employers to pay more severe benefits to lay-off employees, equal to 100 percent of earnings for more than 6 months [7].

The global unemployment rate in Libya is 8.9 % in 2012, whereas youth unemployment rate is 23.9 % in the same year, compared with other Arab oil countries, Qatar stands at 0.6% in 2012 for the unemployment rate and with 1.7 % youth unemployment rate in 2012. In addition to that, UAE has 3.8% in 2012, the level of the unemployment rate and youth unemployment is 11% in 2012. All lower than Libya [10].

Table 3: Labor force unemployment rate and Corruption Perceptions Index for Libya and some Arab countries

Country	Labor Force Participation Rate% (2012)	Unemployment Rate (>15years- 2012)	Youth Unemployment Rate (15-24 years- 2012)	Corruption Perceptions Index (CPI) World Ranking (2013)
Libya	53	8.9	23.9	172
Qatar	87	0.6	1.7	28
Saudi Arabia	52	5.6	27.8	63
UAE	79	3.8	11	26

Source: UNDP, Arab Knowledge Report 2014

According to the World Bank the lack of employment opportunities among all labor groups reflects low labor productivity, the mismatch between labor force skills and sector demands, and a high rate of job stand in line for public sector occupations. In the same period, the private seg-

ment in Libya has not been able to engage a large number of the unemployed, since the private sector in Libya accounts only for a minor amount of employment [12].

Based on the above (table 3), the ranking of Libya in the Corruption Perceptions Index (2013) was 172 globally, although the Gulf countries in general ought to occupy comparatively advanced positions, reflecting their economic development, and their improvement in the knowledge axes. UAE ranked 26th worldwide, followed by Qatar at 28th and Saudi Arabia at 63th. On another side, Libya came at low positions on the international list [9].

Another challenge for transferring Libya to KBE is supply aspect, the supply of local knowledge products and local production of knowledge is seriously obstructed by the lack of economic, financial and human resources, and enabling environments. More specifically, the insufficient allocation of financial and human resources for building knowledge-based economy arises from an absence of funding, a lack of knowledge capital, investment and spending on knowledge, education, R&D and scientific research. Libyan country does not appear in HDR2014 and HDR 2019 for annual GDP on Research and development expenditure [9].

In the investment freedom category of the 2015 (IEF) which captures the difficulty of investment, Libya stands at 5 out of 100, where 100 is the best value [10]. Concerning the regulatory environment for private sector activities, the Doing Business Index (DBI) 2015 ranked Libya in 180th position from 189 countries. The business influence of the existing rules and regulations on FDI are extremely high, placing Libya in 135th position out of 144 countries around the world. Moreover, in 2008 the World Bank confirmed that the education level of MENA countries did not have what the labour market needed [11].

In addition to the above, the transition to a knowledge-based economy in Libya is extremely impeded by the high incidence of youth migration or brain drain. Immigration estimates demonstrate that 9% in 2011 of the Libyan youth migrate, [13] and according to the UNESCO 2014 statistics, more than 10.000 Libyan students were studying abroad in 2012 [9]. Libya is one of the developing countries where many Libyan students have scholarships abroad (Western countries, the US and Canada) and they not return to their country. As a result, this country loses one of the significant sources, its human capital.

Libya also ranks very poorly in terms of the prevalence of foreign ownership of businesses. The New Companies Law which was introduced by the government in 2013, is bound to constrain the development of private-sector further. Under this law, Libyan shareholders can only issue up to 49% of a joint venture to a foreign partner [7].

The transition to knowledge-based economy in Libya is obstructed by weak national system of education, training institutions, scientific research, and improvement of ICT and innovation structure [12]. On the other hand, the obstruction comes from the absence of relations between research centres and universities in Libya and between research centres and production and investment sectors as well as limited capability of benefitting from advanced ICT.

The Global Innovation Index GII (2014) shows the main gap in the innovation system and knowledge structure in Libya, reproduced in the value, rank, and progress of the Global Innovation indices for Libya, by comparing to other oil-based economies such as Qatar, UAE, and Saudi Arabia. The index indicated that UAE ranked 36th worldwide and first with Arabic coun-

tries, where Saudi Arabia was placed 38th globally and second with the Arab global countries and Qatar stands at 47th in the global innovation index and comes third in the position with Arab countries whereas Libya does not take any position in GII (2014) - figure 1 [12].

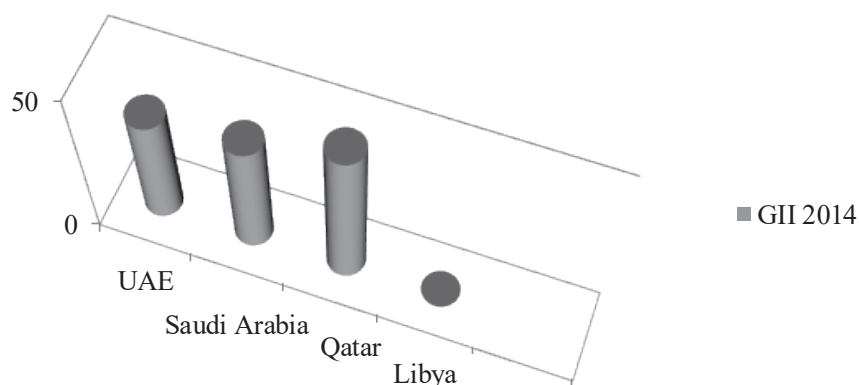


Figure 1. Global Innovation Index Ranking for Libya and some Arab countries

Source: Global Innovation Index 2014

Based on that, HDR (2014) and AKR (2014) illustrated that the total spending on R&D in the Arabic countries including Libya as a percentage of GDP throughout the past four decades is not enough for the requirements of this sector. Recently, it is clear from the figure 2 that Arabic countries did not exceed 3.10% of the total international spending on scientific research in 2009.

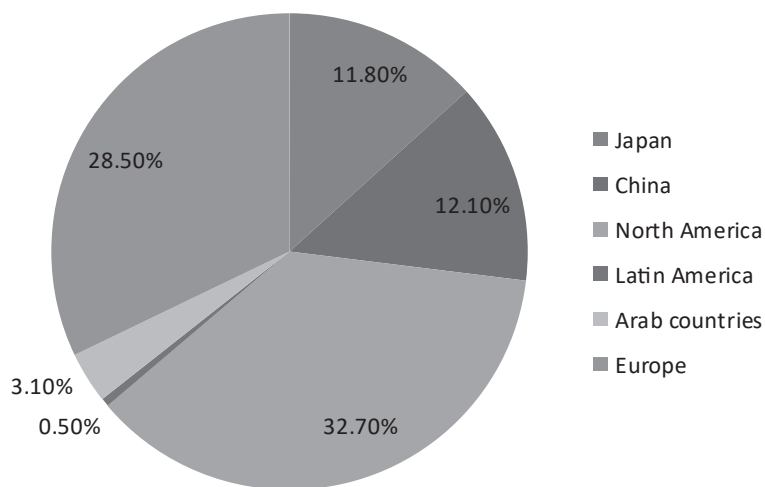


Figure 2. Arab countries Expenditure on Research and Development Compared with some countries and regions around the World in 2009

Source: Adopted from AKR 2014

Furthermore, [9] indicates that the number of full-time researchers per million citizens in 2011 was 61 in Libya and 42 in Saudi Arabia. As well as, proportion number of full-time researchers per million citizens in the Arab region including Libya was 373 in 2007, however the world average was 1,081 (table 4).

There are more than 500 researchers per million nationals in developing countries (table 4). It can be seen that the number of full-time employees who are working in research and development in the Arab countries and Libya was low compared to the number of full-time scientists and researchers in developed countries and the world.

Table 4: The number of full-time researchers per million citizens in Arab countries shared and other regions

Region	Share of Total of Researchers in the World (%)	Researchers per Million Citizens	Total Local Expenditure on Research and Development per Researcher
	2002 2007	2002 2007	2002 2007
World	100 100	926.1 1,080.8	136 158.9
Developed Countries	69.7 62.1	3,363.5 3,655.8	161.3 105
Developing Countries	29.8 37.4	397.8 580.3	78.5 100
Less Developed Countries	0.5 0.5	40.5 43.4	37.6 43.8
Arab Countries Combined	1.8 1.7	354.9 373.2	34.3 38.4

Source: Adopted from UNDP Arab Knowledge Report 2014

Libya is one of Arab countries that has limited number of researchers who are working in research institutions and it does not assist scientists in achieving advanced scientific levels of knowledge in the fields of cognitive production and technical innovations.

From a technological aspect, utilization of ICT is a significant tool of the knowledge economy. However, it might be emphasized that the information technology revolution is important within the development of the knowledge economy. In addition to that the ICT infrastructure is a key component in the knowledge economy and it is the main element of the infrastructure.

Table 5 indicates that Libya is ranked 138 globally for Networked Readiness Index in 2014 and also it does not appear in ICT Development Index in 2012, Qatar came 23 worldwide in 2014 and UAE stands behind on 24th position in 2014.

Table 5. World Ranking of Networked Readiness Index and ICT

Countries	Networked Readiness Index		ICT Development Index (IDI)	
	World Ranking 2012	Value in 2014	World Ranking 2012	Value in 2011
Libya	138	2.75	-	-
Qatar	23	5.22	31	6.41
UAE	24	5.2	33	5.68
Saudi Arabia	32	4.78	50	48

Source: Adopted from AKR 2014

5. CONCLUSION

It is clear that Libya as one of the developing countries is increasingly transitioning into knowledge-based economies from the oil-based economies. However, Libya should invest more in science, technology, and innovation to keep up with the economic development and conducting primary research to transfer knowledge in line with the governmental requirements and promote R&D and innovation to increase the country's global competitiveness as well as it should improve effective information communication technologies and infrastructure of ICT. This is helpful for Libya's government to transition into a knowledge economy, hence reaching economic growth and development.

REFERENCES

- [1] Organization For Economic Co-Operation And Development (OECD) (1996), “The knowledge based economy”, General Distribution OECD:OCDE/GD(96)102, OECD, Paris, pp. 3, 7, 9, 18-19, available at: www.oecd.org/science/sci-tech/1913021.pdf (accessed 4 July 2014).
- [2] Gorzelak, G. (2001), Cited in World Bank, Discussion Paper incorporated in Cleaver, Kevin (2002): A Preliminary Strategy to Develop A Knowledge Economy in European Union Accession Countries, World Bank)URLlink<http://lnweb18.worldbank.org/ECA/ECSSD.nsf/ECADocByLink/Knowledge+Economy?OpenDocument>
- [3] The World Bank (2015). Labor Market Dynamics in Libya: Reintegration for Recovery. Washington, DC.
- [4] UNESCO. Institute of Statistics, (2014): Data Centre. Retrieved August 15, 2014 from:<http://data.uis.unesco.org>
- [5] Nour, S. (2014), “Transition to a knowledge-based economy in the Arab region”, International Journal of Innovation and Knowledge Management in Middle East and North Africa (IJKMMENA), Vol. 3 No. 2, pp. 125-145, World Association for Sustainable Development(WASD), Brighton.
- [6] United Nations Development Programme (UNDP) (2014), “Human development report 2014: Reducing Vulnerabilities and Building Resilience”, UNDP, UN plaza, New York, NY. P.25-270.
- [7] Akoum, I., & Renda, A. (2013). Profile of RDI in the Arab Region and Opportunities for the ICT Sector. Expert Group Meeting on Investment. Hammamet, Tunisia: Research, Development and Innovation in the ICT Sector.
- [8] Barakat, H. I. (1993). The Arab world: Society, Culture and State. Berkeley, California: University of California Press.
- [9] United Nations Development Programme (UNDP) - Arab Knowledge Report (2014), UNDP, Arab Knowledge Report (2014): Youth and Localisation of Knowledge.
- [10] The Heritage Foundation (2015) Index of Economic Freedom, Promoting Economic Opportunity and Prosperity
- [11] The World Bank (2008) “MENA development report: the road not traveled education reform in the Middle East and North Africa”, The Word Bank, Washington, DC, pp.27.
- [12] WIPO 2014, the Global Innovation Index 2014, The Human Factor in Innovation.
- [13] www.africaneconomicoutlook.org