

TITLE **Information Centers and Socioeconomic Development in MENA; Finding a Quantitative Relationship**

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Abstract

Even though it may seem that information floats on its own throughout the Internet, in reality someone must make policies and financial decisions to gather and organize data and prepare it for retrieval at the appropriate time. It must be stored in various formats in information hubs. These information hubs are essential components of the Internet, itself an essential component of socioeconomic development. But are these information hubs acknowledged in international development planning in the Information Age?

This paper discusses information centers – libraries, archives and museums - in the context of coordinated global planning for socioeconomic development and offers a metric by which information centers may be correlated to a country's social and economic advancement. It concludes with reflections about information components of the United Nations (UN) 2030 Sustainable Development Goals and the needs to gather data and expand information centers in order to achieve sustainable development.

Key Words Information centers, libraries, archives, museums, socioeconomic development, international development, Human Development Index, Sustainable Development Goals

Introduction

When we talk about the Information Age, we readily recognize the need for robust, broadband information and telecommunications networks. We know that vast amounts of multi-media, content-laden packages of information must be transmitted across those networks at very high speeds. And we know that the quantity of information increases every year.

Underlying this information-rich environment are questions related to the sources of information; e.g. after information and data are generated, who gathers, organizes and stores them? Libraries and archives, along with museums, digital archives, datacenters and even archaeological and World Heritage Sites are information centers. Information

centers in the broadest sense are those places where information is collected, organized, stored and made accessible.

In the context of the flow of information and the development of a country, several questions come to mind. Is it possible, for example, to link information centers *per se* in some measurable way to the socio-economic status of a developing country? If the ultimate goal of development planning is to advance the socioeconomic status of a society in the Information Age, should information centers be included in the plan?

This paper discusses aspects of these issues in the context of coordinated global planning for development. The study offers a metric by which information centers may be correlated to the social and economic advancement of a developing nation. It concludes with reflections about information-related components of the United Nations (UN) 2030 Sustainable Development Goals and the needs to gather specific data and to establish and enhance information centers in order to achieve socioeconomic development.

Overview of paper¹

- I Coordinated Global Planning for Development***
- II Linking Information Centers to Socio-Economic Development***
- III Factoring information centers into the Sustainable Development Goals***

I Coordinated Global Planning for Development

The first coordinated effort to plan world-wide social and economic development did not occur until the end of the 20th century. The United Nations Development Programme hammered out the Millennium Development Goals (MDGs) and adopted them in 2001, at the turn of the 21st century. The UN gave the world fifteen years in which to accomplish eight goals.

2015 Millennium Development Goals

1. Eradicate extreme poverty and hunger
2. Achieve universal primary education
3. Promote gender equality and empower women
4. Reduce child mortality
5. Improve maternal health
6. Combat HIV / AIDS, malaria and other diseases

¹ Components of this article were included in papers delivered by the author at the Namibia IFLA Satellite Conference, Windhoek, 12 August 2015 and at 2015 Sharjah International Book Fair (SIBF) / ALA Library Conference, United Arab Emirates, 11 November 2015.

7. Ensure environmental sustainability
8. Develop a global partnership for development

Everyone recognized the essential and appropriate nature of the goals. At the same time they realized that many aspects of development were not included. None of the goals, for example, related directly to information and data at a time when information as a commodity in the Information Age was already being widely discussed.

As the 15-year timeframe for the Millennium Development Goals was winding down, the United Nations and various organizations began to conceptualize what the next strategic goals for development would look like. MDGs were set to expire in 2015 and progress was being made in all eight goal areas but everyone agreed the new goals must reflect the vast global changes made and evolving in the second decade of the 21st century.

IFLA, the International Federation of Library Associations and Institutions, joined with other organizations in discussing the post-2015 development agenda. There was agreement that the next generation of goals must recognize and address more aspects of social and economic development; including

- access to information
- value of culture
- worldwide information and telecommunication infrastructure (Internet)

Global Campaign to Include culture

As planning for the new UN goals progressed, a coalition of organizations declared *culture* to be the fourth dimension of sustainable development along with *economic*, *social* and *environmental* dimensions. The coalition undertook a global campaign, “The Future We Want Includes Culture,” to advocate for the inclusion of culture in the post-2015 development agenda.

“Holistic and integrated development will only be achieved when the values of creativity, heritage, knowledge and diversity are factored into all approaches to sustainable development. This means guaranteeing the availability and accessibility of cultural infrastructure (such as, but not limited to, libraries, museums, theatres, community centres, arts education centres) and the implementation of long-term cultural programmes and projects.” (Global Campaign for Culture, 2015)

The Campaign’s Declaration in May 2014 was translated into eight languages and endorsed by over 900 organizations and thousands of citizens in 120 countries. (Global Campaign for Culture, 2014)

Lyon Declaration on Access to Information and Development

During the 2014 IFLA World Library and Information Congress in Lyon, France, members of the International Federation of Library Associations and Institutions finalized and adopted “The Lyon Declaration on Access to Information and Development.” That document called “upon the Member States of the United Nations to make an international commitment to ensure that everyone has access to, and is able to understand, use and share the information that is necessary to promote sustainable development and democratic societies.” (IFLA World Library and Information Congress, Lyon, France, 2014)

Global Connect Initiative

During the UN General Assembly in September, 2015, the U.S. State Department launched the Global Connect Initiative.

“A crucial and common goal unites us here today in New York: the goal that the Internet – a core enabler for social and economic development – should be open and accessible to everyone. This goal is based on the core understanding that the Internet should be secured as a global resource and that it be managed in the public interest as a democratic, essential, secure, free, progressive, inclusive and pluralistic communication platform.” (BestBits, 2015)

The initiative seeks to bring 1.5 billion people who currently lack Internet access online by 2020. IFLA, together with a range of other organizations, co-signed a statement by BestBits.² It stresses that:

States must promote and facilitate universal, equitable, secure, affordable and high-quality Internet access on the basis of human rights, the rule of law, and net-neutrality, including during times of unrest. All of the Internet, for All the people, All the time! (BestBits, 2015)

United Nations Planning Group

An open working group of the UN General Assembly hammered out a set of 17 Sustainable Development Goals accompanied by 169 targets. IFLA played a persistent and key role throughout the two-year process and has singled out four goals – Goals 4, 9, 11, 16 – and specific targets within each for initial emphasis during 2016.³

The Goals were formally adopted by the United Nations General Assembly on 25 September 2015.

2030 Sustainable Development Goals (United Nations, 2015)

² BestBits is a network of civil society organizations promoting initiatives that strengthen global Internet access and governance. See <http://bestbits.net/organizer/best-bits/>

³ IFLA’s latest information about 2030 Sustainable Development Goals [#next4billion](http://www.ifla.org/node/9914) – IFLA’s roundup of the United Nations Summit for the 2030 Agenda

Goal 1	End poverty in all its forms everywhere
Goal 2	End hunger, achieve food security and improved nutrition, and promote sustainable agriculture
Goal 3	Ensure healthy lives and promote wellbeing for all at all ages
Goal 4	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all 4.4 By 2030, substantially increase the number of youth and adults who have relevant skills, including technical and vocational skills, for employment, decent jobs and entrepreneurship
Goal 5	Achieve gender equality and empower all women and girls
Goal 6	Ensure availability and sustainable management of water and sanitation for all
Goal 7	Ensure access to affordable, reliable, sustainable and modern energy for all
Goal 8	Promote sustained, inclusive and sustainable economic growth, full and productive employment, and decent work for all
Goal 9	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation 9.c Significantly increase access to information and communications technology and strive to provide universal and affordable access to the Internet in least developed countries by 2020
Goal 10	Reduce inequality within and among countries
Goal 11	Make cities and human settlements inclusive, safe, resilient and sustainable 11.4 Strengthen efforts to protect and safeguard the world's cultural and natural heritage
Goal 12	Ensure sustainable consumption and production patterns
Goal 13	Take urgent action to combat climate change and its impacts*

- Goal 14 Conserve and sustainably use the oceans, seas and marine resources for sustainable development
- Goal 15 Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation, and halt biodiversity loss
- Goal 16 Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels
- 16.10 Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreements
- Goal 17 Strengthen the means of implementation and revitalize the global partnership for sustainable development

*Acknowledging that the United National Framework Convention on Climate Change is the primary international, intergovernmental forum for negotiating the global response to climate change.” (United Nations General Assembly, 2015; 14)

II Linking Information Centers to Socio-Economic Development

The new, more comprehensive 2030 Sustainable Development Goals include factors directly and indirectly related to the human need for information. They represent a remarkable and essential first step toward acknowledging the vital role of information in social and economic development. They represent a rationale for pursuing answers to the question posed earlier in this paper: Is it possible to link information centers *per se* in some measurable way to the socio-economic status of a developing country?

Data elements used in study

I undertook to explore ways of answering this question and began by using the populations and numbers of information centers in each of the countries making up the region called Middle East and North Africa. These data elements provide a manageable sample to test my hypotheses that information centers make a positive difference in development.

1. Middle East and North Africa Countries

The 22 countries that make up the Middle East and North Africa were chosen as a sample sufficiently large and diverse to test a methodology. The countries represent a wide spectrum of economic productivity, share

certain culture traits and for the most part aspire to maintain stable governments with some level of democratic participation.

2. Population of each MENA Country

The populations of each country offer an indication of the number of people in the jurisdiction needing sustenance (water, food, housing), health care, education, jobs and access to information. (United States Central Intelligence Agency, 2015)

3. Number of Information Centers in each Country

In the most comprehensive sense, information centers include documentation centers, digital and traditional libraries, archives and museums, archaeological and cultural heritage sites. Information centers collect the *intellectual content*; in other words, the data, information and cultural record of a region for the purposes of governing, commerce, education, research, innovation, entertainment and life-long learning. Information centers can indicate the commitment of a society to record, organize and preserve information about itself and to provide access to information from outside its region to local residents. Information centers promote personal fulfillment, educate a skilled labor force, foster an informed electorate, teach information literacy skills and encourage innovation and entrepreneurship.⁴ (See Table 1)

Population by country

⁴ The study does not look at information technology and telecommunications (ICT) infrastructures which enhance the transmittal of data and are essential for the dissemination of digital data in particular. While acknowledging the importance of ICT, the study focuses instead on the existence and availability of the intellectual content that is collected in information centers, not the ways in which it is stored or transmitted.

Data on number of libraries and museums in each country is compiled by Online Computer Library Center (OCLC) in Global Library Statistics. Retrieved February 2015.

This study relies on the OCLC statistics for the number of national, public, academic and special libraries and museums in each of the MENA countries. The total number of libraries cited represents administrative units and not service points, so the number of actual delivery points may be greater than the statistics indicate. The raw statistics also do not address the quality or format of collections, level of services offered, nor the skill level of information center staff; thus those factors are not addressed in this study. School libraries, of particular importance to basic education, are not included in this study due primarily to lack of reliable data. Data regarding archaeological and World Heritage Sites is not included.

Populations of each MENA country are listed beginning with the less populated to the more populated. (See Table 2 for specific numbers)

- Djibouti with 810,000 residents
- Bahrain has 1.3 million
- Ten countries in the region - Israel, Jordan, Kuwait, Lebanon, Libya, Mauritania, Oman, Palestine, Qatar, United Arab Emirates – have populations between 2 and 10 million
- Syria and Tunisia have 18 and 11 million respectively
- Saudi Arabia and Yemen have populations of about 26 million
- Four countries – Algeria, Iraq, Morocco and Sudan – support populations ranging from 30 – 40 million
- Egypt and Iran each has sizeable landmass and the largest populations with over 80 million.

These 22 countries represent a broad range of population sizes and densities, and coincidentally include diverse cultures, religions and languages.

Number of Information Centers by Country

For this study, information centers include national, public, academic and special libraries, museums and some archives. School libraries, archaeological and World Heritage Sites, for example, are not included; nor is the availability of information and communications technology (ICT or Internet) in a country addressed in the study.

The number of information centers per country ranges from less than a handful to thousands:

Table 1. Number of Information Centers in each MENA Country

MENA Country	Information Centers
Djibouti	3
Mauritania	14
Yemen	24
Qatar	28
Bahrain	28
Oman	33
Libya	50

Kuwait	56
Palestine	79
Saudi Arabia	116
UAE	119
Lebanon	123
Sudan	190
Jordan	218
Algeria	301
Iraq	534
Syria	572
Morocco	773
Tunisia	802
Egypt	1,130
Israel	1,748
Iran	4,600

The reliability of statistics regarding the number of libraries, museums and archives in a country is dependent upon a government's interpretation of what qualifies as an information center and the numbers they consequently report as well as the response to surveys circulated by organizations and publishers.

New calculated metric: Number of Persons per Information Center

In order to devise a metric to determine the saturation of information centers in a country, I divided the number of people in the country by the number of information centers. This provides a way to think about how many people share one information center. The metric helps to indicate the extent to which residents have access to information centers for education, research, innovation, life-long learning, entertainment and personal edification.

Population divided by Number of Information Centers

This comparison of data elements; that is, information centers vs. population, helps us understand how accessible information may be to people. We can interpret the lower number of persons per information center to mean that fewer people compete for one information center; thus the people in those countries have easier access to information. (See Table 2 and Figure 1)

MENA countries fall into five ranges of numbers:

- Up to 20,000 people sharing one information center
 Israel – 4,500 persons per information center
 Tunisia – 13,600 persons per information center
 Iran – 17,600 persons per information center

- 20,001 – 100,000 people sharing one center
Syria – 31,000; Jordan – 36,000; Morocco – 43,000; Bahrain – 47,000;
UAE – 47,000; Lebanon – 48,000; Kuwait – 49,000; Palestine – 58,000;
Iraq – 61,000; Qatar – 76,000; Egypt- 77,000; Oman – 98,000;
- 100,001 – 200,000 people sharing one center
Libya – 125,000
Algeria – 126,000
Sudan – 187,000
- 200,001 – 300,000 sharing one center
Saudi Arabia – 236,000
Mauritania – 251,000
Djibouti – 270,000
- Over 300,001 people sharing one center
Yemen – 1.1 million people sharing one information center

Table 2. MENA Countries: Ranked by Persons per Information Center including Population and Number of Information Centers

Country	Population in Millions	Number of Information Centers	Persons per Information Center
Israel	7,822	1,748	4,475
Tunisia	10,938	802	13,639
Iran	80,841	4,589	17,616
Syria	17,952	572	31,385
Jordan	7,930	218	36,376
Morocco	32,987	773	42,674
Bahrain	1,314	28	46,929
United Arab Emirates	5,629	119	47,303
Lebanon	5,883	123	47,829
Kuwait	2,743	56	48,982
Palestine	4,547	79	57,557
Iraq	32,586	534	61,022
Qatar	2,123	28	75,821

Egypt	86,895	1,130	76,898
Oman	3,220	33	97,576
Libya	6,244	50	124,880
Algeria	38,815	307	126,433
Sudan	35,482	190	186,747
Saudi Arabia	27,346	116	235,741
Mauritania	3,517	14	251,214
Djibouti	810	3	270,000
Yemen	26,053	24	1,085,542

Yemen, with a population of 26 million and 24 information centers reported, has over a million people sharing one information center. Contrast that with the three countries providing the most information centers for their large populations: Israel, Tunisia and Iran. Iran, for example, has 80 million people sharing nearly 4,600 information centers.

[Insert Figure 1 (Map) here]

Human Development Index

The calculated metric called Persons per Information Center articulates the saturation of information centers in a country. The next step is to explore a possible correlation between the saturation of information centers and the social and economic development of a country. For this purpose the Human Development Index (HDI) was selected as a comprehensive indicator of socioeconomic development of a country.

HDI is issued each year and grew out of the first Human Development Report in 1990 published by the United Nations Development Programme. UN economist Mahbub ul Haq in partnership with Amartya Sen compiled the HDI to demonstrate that development includes not only a country's economic advancement but also social improvement and capacity building for its residents. Development progress and assessment must consider people and their capabilities as well as economic growth.

The HDI is based on three dimensions revised as of the *2010 Human Development Report*:

1. *Life Expectancy Index* – Measured by life expectancy at birth, also referred to as the standard of living factor
2. *Education Index* – Measured by 2 factors:
 - a. Mean years of schooling for those age 25
 - b. Expected years of education for those age 5
3. *Income Index* – Gross National Income (GNI) with *per capita* Purchasing Power Parity (PPP) measured in US\$ as an indicator of standard of living.

Human Development Index by countries and categories

The UN ranks HDI scores according to these four categories.

- Very High HDI 0.944 - 0.808 (49 countries world wide)
Israel, Qatar, Saudi Arabia, UAE, Bahrain, Kuwait
- High HDI 0.790 - 0.700 (52 countries world wide)
Libya, Oman, Lebanon, Iran, Jordan, Tunisia, Algeria
- Medium HDI 0.698 - 0.556 (42 countries world wide)
Palestine, Egypt, Syria, Iraq, Morocco
- Low HDI 0.540 - 0.337 (42 countries world wide)
Yemen, Mauritania, Sudan, Djibouti

Correlating Persons per Information Center to Human Development Index

When the calculated metric “Persons per Information Center” was compared to the Human Development Index score using *Pearson’s* technique and *Stata* software, it resulted in a statistically valid ratio, indicating a -0.5142 coefficient with a significance level of .014. Loosely translated, this means that in 1000 cases, 14 of them will deviate from the correlation.

Table 3. Statistical outcome of Persons per Information Center correlated to HDI scores for each MENA country

	PPIC correlated to HDI for MENA countries
Correlation Coefficient*	-0.514
Significance Level	.014

This comparison shows a significantly negative and moderately strong correlation between these two variables. Therefore, we can say that MENA countries with fewer people per information center will in most cases experience higher HDI scores. That is, if a MENA country has a higher saturation of information centers, the people have more access to information centers and, in addition, the country’s score on the HDI will in most cases be significantly improved. (Table 3)

The correlation between People per Information Center and the Human Development Index is illustrated visually in a *scatterplot*. (Figure 2)

Figure 2. Persons per Information Center vs. Human Development Index

[Insert Figure 2 (scatterplot) here]

On the bottom line are the HDI scores, going from left to right, from lowest to highest. Higher HDI scores demonstrate a better rating.

Along the vertical line are the number of Persons per Information Center. In this case, the lower number, at the bottom, is more desirable than the higher number. Note that Yemen, with 24 information centers shared among 26 million people, is literally off the chart and does not appear on this scatterplot.

We see the line moving from high on the left to low on the right, indicating that most countries with high to very high HDI scores have fewer people per information center. Those countries fall into the lower right part of the graph.

This can be explained in several ways: MENA countries with higher HDI scores have a higher saturation of information centers; or, alternatively, most MENA countries with fewer people per information center have higher HDI scores.

The statistically significant correlation between the saturation of information centers and scores on the HDI in MENA countries provides a rationale for establishing and expanding information centers. As such, it could be used now to advocate for more and better information centers in the Middle East and North Africa region.

In addition, if the sample size is expanded and the correlation holds consistent in regions besides MENA, the metric and correlation can be used in measuring progress over time and toward the 2030 Sustainable Development Goal.

III Factoring information centers into the Sustainable Development Goals

Focusing again on the SDG, Goal 16 is directly related to establishing ‘effective, accountable and inclusive institutions’ such as information centers and, in Target 16.10, it specifically addresses providing access to information.

U.N. Sustainable Development Goal #16

Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels

Target 16.10

Ensure public access to information and protect fundamental freedoms, in accordance with national legislation and international agreement.

Information Centers offer two-way exchanges

Information centers often function as two-way distribution points. For example, they

1. Organize, preserve and digitize local records to support education and life-long learning and to provide primary sources for researchers, scholars and practitioners inside and outside the region.
2. Provide local residents, scholars, researchers and practitioners access to information outside the region, often including proprietary databases of scholarly journals and the latest globally generated knowledge in arts, humanities, social sciences, sciences and technology.

Every society has information content that is unique and is of value to the world. By establishing and / or expanding information centers within a country, the country makes its unique features visible to the world and encourages the two-way exchange of information.

Types of Data needed

There are many types of data that are valuable, even essential, to collect and preserve but are not uniformly collected by countries across the globe. Some examples:

- Census data – all aspects
- Laws passed by federal and local governments
- Policies that guide government operations
- Local material artifacts and records
- Significant and every-day events that become local history
- Publications produced within the country
- Fiction and non-fiction books, poetry and essays by local authors
- Oral histories of local leaders and residents
- Financial reports of corporations doing business in the country
- Market and labor reports of the local economy

As well as

- Cultural artifacts which represent ways of preserving national identity
- Art objects

The UN itself is advocating for more data. More data is needed in order to form the baseline for several of the Sustainable Development Goal targets. The need was

specified in Item 57 within the Resolution adopted by the UN General Assembly on 25 September 2015

Item 57.

We recognize that baseline data for several of the targets remains unavailable, and we call for increased support for strengthening data collection and capacity-building in Member States, to develop national and global baselines where they do not yet exist. We commit to addressing this gap in data collection so as to better inform the measurement of progress, in particular for those targets below which [sic.] do not have clear numerical targets. (United Nations Department of Economic and Social Affairs, 2015)

Data about Information Centers themselves

Shifting the focus to address data about information centers themselves, more accurate and thorough statistical reporting about the existence and types of information centers and cultural institutions in developing countries would greatly improve research efforts regarding their value.

For example, no single international agency gathers and uniformly reports statistics regarding the numbers and types of information centers. Organizations collecting subsets of that data include many national government agencies, various publishers of reference sources, the International Federation of Library Associations and Institutions (IFLA), UNESCO Institute for Statistics and Online Computer Library Center (OCLC). The available data regarding the number of libraries, museums, publishers and library schools is aggregated from over 80 sources and published by OCLC on its website *Global Library Statistics*. (OCLC, 2015)

Conclusion

Intuitively it makes sense that more information centers in a country lead to better informed residents living with higher educational and health standards. And intuitively we might assume that countries strive to achieve higher scores on the Human Development Index, a metric that tracks their standard of living, educational achievement and economic progress. But now we have a calculated, international metric demonstrating that within a Middle East and North Africa sample of countries, there is a statistically significant correlation between access to information centers and socioeconomic development.

Even in countries where information centers, particularly libraries and archives, are plentiful, they are nearly invisible to many people. In vast regions of the world, information and data have not traditionally been recorded. But today the global economy is increasingly looking to knowledge and service sectors for productivity and contributions to the marketplace. Information centers figure heavily into this scene, whether they are traditional, digital, visible or not.

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December 21, 2015

Rev. February 8, 2016; March 1, 2016