

CHAPTER ONE

METHODOLOGICAL FRAMEWORK AND PREVIOUS STUDIES

Part One: Methodological Framework

1.1 Background:

Sudan Economy is suffering from many economic problems including declining rates of economic growth, decline in the productivity in mostly all sectors of the economy; inflation, unemployment, devaluation of local currency; in addition to the adverse effects of globalization, social, economical, political, and cultural changes.

Knowledge has become the main determinant for human development, and economy-based on knowledge has become the sole determinant of economic development.

This thesis aims to examine the readiness of Sudanese economy to step forward knowledge-based economy. The Findings of this thesis would allow Sudan to be better positioned through the identification of gaps in strategically important areas.

1.2 Statement of the Problem:

Although the main pillars of knowledge based economy can be witnessed widely in Sudan, many problems still surrounding its diffusion and adoption. The research problem in this study is identified through two the literature examined; in order to build the research background of knowledge based economy, understand the problems facing developing countries. The findings from the literature review highlighted important issues which led to the identification of the following problem: Knowledge economy is more than an economic terminology it is a long term transformation process from

traditional economy to knowledge-based economy affecting humans, organizations, business and politics. Therefore, the social, political and cultural factors are fundamental in this massive change. These factors received less attention when setting the strategic agenda, although they have greater impact in Sudan.

It becomes very vital to identify to what extent Sudan is able to acquire and build a knowledge society? Is it possible that Sudan will adopt a knowledge-based economy? What are the actual potentials needed to build a knowledge economy in Sudan? What are the main the challenges facing Sudanese government and what are the urgent needs required for exploring potential alternatives that assist in facing these challenges?

In this context, it is the aim of this research to explore and identify key factors for knowledge economy development in Sudan to assist in achieving a sustainable economic development, to examine the future patterns of Sudan's sustainable economic development through the adoption of a strategy for developing a knowledge-based economy.

1.3 Research Objectives:

The objectives of this research can be stated as:

1. To examine Sudan's readiness in undertaking the development of a knowledge-based economy and identifying the key knowledge-based economy factors for achieving sustainable economic development in Sudan.
2. to highlight the components of the Knowledge economy and explore the literature of the knowledge economy and its relevance to developing countries in particular as a feasible sustainable economic development alternative; then highlight the Modern growth theory in the knowledge economy,

3. To offer recommendations that could assist the government to pursue a practical strategy in developing a knowledge-based economy that would lead to sustainable economic development in Sudan.

1.4 Research Questions:

The main research questions are:

- Q1.** What is the status of quality government institutions and economic incentives as a factor of knowledge economy development in Sudan?
- Q2.** What is the status of training support as a factor of knowledge economy development in Sudan?
- Q3.** What is the status of education as a factor of knowledge economy development in Sudan?
- Q4.** What is the status of research & development, and innovation as a factor of knowledge economy development in Sudan?
- Q5.** What is the status of information and communication technologies as a factor of knowledge economy development in Sudan?
- Q6.** What is the status of information and communication technologies' infrastructure as a factor of knowledge economy development in Sudan?
- Q7:** What is the level of readiness of Sudanese economy to turn into a knowledge-based economy

1.5 Research Hypotheses:

H1: *Governance and regulatory regimes constitutes a great obstacle in enhancing knowledge-based economy in Sudan.*

H2: *Training support is a weak factor in enhancing the knowledge outcome in Sudan.*

H3: *Education is a weak factor in enhancing the knowledge outcome in Sudan.*

H4: *Research and development is a weak factor in enhancing the knowledge based economy in Sudan*

H5: *Information and communication technology relative to other pillars is a strong factor in enhancing the knowledge based economy in Sudan*

H6: *Information and communication technology's infrastructure is a weak factor in enhancing the knowledge based economy in Sudan*

H7: *There is a weak readiness for Sudan Economy to be a knowledge-based economy.*

1.6 Importance of the Research:

This research is important for the following reasons:

Scientific Importance:

- 1.** This research attempts to make an addition to the existing knowledge and it tries to highlight the most important factors and obstacles contributing to the development of knowledge-based economy in Sudan. There is no great development as far as the studies or publications concerning the analysis of knowledge-based economy especially in the Arab countries in general and in Sudan in specific. Scholars in such field have concentrated in analyzing developing economies. They also concentrated in examining the existence of knowledge economy only, they do not extended their research to include examining sustainable knowledge economy (knowledge-based economy). This research is the first in its type that try to explore the potentials of knowledge-based economy in Sudan.
- 2.** This research is among the few ones that use two research methods to examine knowledge economy: the benchmarking technique and descriptive analysis. Most previous studies are using either benchmarking techniques (e.g. World Bank benchmarking technique) or invention questionnaires (Community Invention Survey-CIS).

Practical Importance:

The results of this thesis can be used by other researchers and policy makers in the government of Sudan.

The findings of the thesis can be applied in Sudan and other countries that share similar cultural, religious, and economic backgrounds.

1.7 Case Study: Unit of Analysis:

This research is conducted at two levels (“national” and “organizational”) and is concerned with two units of analysis. The first represents the unit of analysis for the national level and defined as the “country-Sudan. The second represents the unit of analysis for the organizational level and defined as the “private companies in Sudan”.

1.8 Research Methodology:

This research depends on the descriptive method to determine the nature of; the concept and indicators of the knowledge-based economy as well as the use of the inductive method to predict the ability of Sudan's economy to shift into a knowledge-based economy and it benefits from the experiences of other countries.

1.8.1 Data Collection Methods:

We will use both primary and secondary data. The benchmarking process from the World Bank knowledge economy index will be applied in analyzing the secondary data. For generating the primary data, (in order to provide useful information and have direct interest in knowledge-based economy development) a questionnaire survey will be used targeting major service companies in Sudan as a major stakeholder to the government (A group of grade ‘excellent’) service companies will be selected based on size, readiness and availability to provide information.

1.9 The Limitations of Research:

- a. The bias of the quantitative survey to only one segment of the services sector namely major services companies in Sudan, since they are likely to provide useful information on knowledge economy development. In such a situation the results may not represent other business sectors.
- b. This research was conducted in one country with less socio-economic development levels. The findings based on this research may be possible to generalize only to other similar countries with the same socioeconomic situations.
- c. The research covers the most recent periods in Sudan. The period is not determined by an exact date; rather it depends on the availability of data.

1.10 The Structure of the Research:

Chapter One:

Chapter one provides a methodological framework to the research, it includes Research Problem, questions, hypotheses, objectives, justifications, importance, limitations and methodology.

Chapter Two:

This chapter provides a background to the research problem and explains description of the socio-economic situation in Sudan in order to enable the audience to understand the challenges and potentials of Sudan Economy to become knowledge- based economy.

Chapter Three:

This chapter reviews the theoretical framework and literature on knowledge economy, the previous local, regional and international and where this research fits in with the existing literature.

Chapter Four:

This chapter presents the methodology chosen to collect data that tackles this research problem. The benchmarking method was discussed and explained,. The steps of questionnaire development, sampling techniques, validity and reliability were all presented in detail.

Chapter Five:

This chapter explores the analysis process of the benchmarking phase using knowledge assessment methodology (KAM) as an assessment tool.

It also presents the results of the questionnaire. The factor component analysis was discussed and analyzed.

Chapter Six:

This chapter covers the conclusions and recommendations of the research thesis. It also provides a review of the whole research process as presented in this thesis. In addition, the research results will be compared to the existing literature.

References and Appendices

All material references and appendices will be displayed at the end pages of the research thesis.

PART TWO

1.11 PREVIOUS STUDIES

1. Study No. 1:

Title: Causality between Knowledge and Economic Growth: An Empirical: Investigation for the Case of Sudan (1980-2008)

Author: Mutasim Ahmed Abdelmawla

The objective: is to examine from an empirical point of view, the causality between knowledge (educational attainment) and economic growth in Sudan over the period (1980-2008).

The results obtained signify that educational attainment Granger causes economic growth, while the economic growth generated is found to be statistically insignificant in inducing the level of knowledge.

2. Study No. 2:

Title: The Incidence and Transfer of Knowledge within the Arab Societies, Journal of the Knowledge Economy, 2013, vol. 4, issue 4, pages 406-422

Author: Samia Satti Osman Mohamed Nour

The objective: is examining the incidence and transfer of knowledge in the Arab countries.

The results obtained showed that the incidence and transfer of knowledge can be enhanced by institutional support in the form of subsidies and incentives to knowledge components (education, R&D, and ICT). The major policy implication from the findings is that the Arab countries should stimulate local efforts and incentives for building and transferring knowledge and should pay more attention to enhance and support the institutions for the creation and transfer of knowledge and for building the knowledge economy in the Arab countries.

3. Study No. 3:

Title: The importance (impact) of knowledge at the macro-micro levels in Sudan, UNU-MERIT Working Paper- ISSN 1871-9872

Maastricht Economic and social Research Institute on Innovation and Technology,
UNU-MERIT

Author: Samia Satti Osman Mohamed Nour

The objective: investigating the importance (impact) of tacit and codified sources of knowledge at the micro and macro levels in Sudan using new primary data from the firm survey (2010) at the micro level and secondary data at the macro level respectively

The results at the macro level codified knowledge and the number of FTER show significant positive correlations with technology (patents). Furthermore, our results at the macro level show significant positive complementary relationships between codified knowledge and the number of FTER.

4. Study No. 4:

Title: Knowledge-based Economic Development as a Unifying Vision in a Post-awakening Arab World(2011):

Author: Schwalje, Wes

London School Of Economics, London, United Kingdom

The objective: traces the evolution of knowledge-based economic development in the Arab World.

The results: An assessment of the effectiveness of Arab investments in human capital shows marginal progress towards knowledge-based development over the last decade. A disconnect between the skills developed in Arab skills formation systems and those required by private sector employers relegates Arab businesses to contesting lower-skilled, non-knowledge intensive industries which has stalled knowledge-based development in the region.

5. Study No. 5:

Title: Knowledge-Based Development In Sudan: Key Factors Affecting, The Use Of K-BDSS Tools In Small And Medium-Sized Enterprises

Journal of Knowledge Management Practice, Vol. 12, No. 2, June 2011

Author: Nour Eldin Mohamed Elshaiekh¹, Chong Chin Wei², Peter Charles Woods²

The objective: to identify the key factors affecting use of K-BDSS tools in Sudanese small and medium-sized companies

The results:

There is a positive relationship between organizational culture and the perceived use of K-BDSS tools in small and medium-sized companies in Sudan.

6. Study No. 6:

Title: The way to knowledge economy: a review of Sudan Knowledge services

UN. ECA Committee on Development Information Meeting (5th : 2007, Apr. 29 - May 04 : Addis Ababa, Ethiopia)

Author: Ghobrial, Rafea Ashamalla; Gadir, Hamad Abdel

Corporate Author: United Nations. Economic Commission for Africa. Library Knowledge, Libraries and Information Services in Development : Subcommittee

Summary: Sudan is a vast agricultural, pastoral and multicultural country. Its population is about 40 million out of which 75% live in rural areas.

Agriculture is the dominant sector in the Sudanese economy. It contributes about 35% to the Gross Domestic Product (GDP), generates over 80% of the foreign exchange earnings, and provides the raw materials for agro-industries and employment for over 80% of the labour force. About 87% of economically active people are depended on agricultural or pastoral activities and related enterprises for their livelihoods. Forest resources contribute about 10% to the GDP, while livestock, which is predominantly kept by the traditional nomadic people, contributes about 8 % of GDP.

7. Study No. 7: in Arabic

العنوان: اقتصاديات المعرفة في الدول العربية: الواقع وتحديات المستقبل

مجلة النيل العلمية- جامعة وادي النيل

الباحث: خالد عبد الحفيظ محمد حمد

قسم الاقتصاد الإسلامي-كلية العلوم الإسلامية والعربية-جامعه وادي النيل

ملخص: تسعى هذه الدراسة إلى معرفه مدي أهميه ظاهره اقتصاد المعرفة وتكنولوجيا المعلومات والاتصالات علي مختلف نواحي الحياة، لاسيما الأنشطة الاقتصادية منها مع التركيز علي تحليل واقع الدول العربية .

كذلك أوضحت الدراسة جملة من التحديات التي تواجهها تلك الدول في سبيل تطبيق تلك التقنيات والعمل علي تذليلها في سبيل الأفاده من تكنولوجيا المعلومات والاتصالات في تطوير الاقتصاد المعرفي لما له من الآثار الايجابية علي مختلف القطاعات الاقتصادية، وبيان أهم المجالات التي يمكن للدول العربية أن تستفيد منها

النتائج: تبلورت نتائج هذه الدراسة بتوضيح الأهمية البالغة لهذه الثورة التكنولوجية وتطورها السريع، وأثارها المحتملة علي إعاده تشكيل الهياكل الاقتصادية التقليدية والوصول لاقتصاد المعرفة.