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CHALLENGES AND DRIVERS FOR QATAR'S TRANSFORMATION INTO A KNOWLEDGE-BASED ECONOMY AND SOCIETY- WORK IN PROGRESS IN EDUCATİON SYSTEM REFORMS

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ABSTRACT

Until late 1990's, core Arab traditions and a nationalistic approach were the main factors determining the structure of the educational system in Qatar. The system was old, rigid and devoid of any international benchmarking to assess its competitiveness at a global scale. However, beginning in early 2000s, the Qatari leadership, with the help of international assessments, was quick to realize that if Qatar desired a place among the leading knowledge-based economies, it had to revamp its educational system and all peripheral activities to enrich its human capital. Moreover, Qatar's need to move away from oil/gas-based economy has been a key driver to reform and enhance its education and innovation system to gradually transform Qatar into a knowledge-based sustainable economy and society, which was adopted as its National Vision 2020 (QNV 2030) and a blueprint for its sustainable development plans for the next few decades. However, while the leadership planned and focused on implementation of QNV 2030 objectives, there has been a general sense of incoherency between key stake holders and execution and implementation of conceived initiatives and reforms. This paper discusses various challenges that need to be overcome to realize Qatar's ambitious sustainable development goals based on innovation driven knowledge economy after analyzing the current progress of several reforms and initiatives within the human capital development arena. Several recommendations are proposed entailing progressive and adaptive policy-making and responsive governance of the educational and innovation framework in Qatar, which needs to invoke economic incentives and fortify intellectual property rights while nurturing expansion in innovation, education, vocational skills, information and communication technologies.

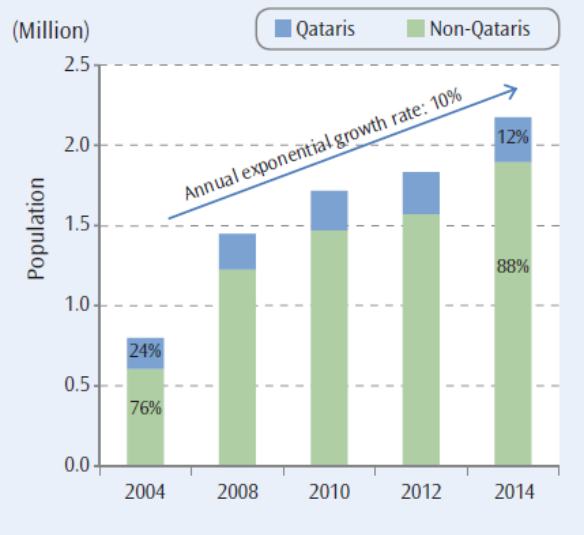
Keywords: Qatar, knowledge economy, educational system, innovation, entrepreneurship.
JEL Codes: M11

1. INTRODUCTION

Survival and competitiveness of nations have been long studied by various thinkers, scientists and leaders, each coming with different opinions, thoughts and insights depending on where they come from regionally, culturally and discipline-wise (Garelli, 2006; Furman, et al., 2002; Acemoglu, et al., 2013). One thing in common in all is that demographics and stock of skilled and talented population of a nation always play a crucial role and impact on the future and competitiveness of the country. Thus, human capital development has been identified as an important pillar of sustainable development and knowledge economy (United Nations, 2015; World Economic Forum, 2016) Human capital can become even a major and complex issue for countries with significant natural resources but with limited population, such as Qatar. According to Koç & Kayan (2016), sustainable development depends on a number of factors, which encompass various social aspects, political conditions and the overall state of the economy to mention the least. However, the degree of success, which a country can achieve in ensuring long-term sustainability is intertwined with the importance it places and precisely acts on its human capital development through careful planning, diligent implementation and continous improvement of progressive and responsive educational and innovation system. When a government is truly focused upon harnessing the skills and knowledge of its population at large, it will take positive steps to formulate an effective long-term national vision in place (Rand-Qatar Policy Institute, 2007). Qatar has a vision to transform itself into a knowledge-based economy and to realize this goal, Qatar has made significant effort to alleviate its educational system (Ministry of Development Planning and Statistics of Qatar, 2011). Qatar is standing at crossroads where it faces a perplexing choice of effectively strategizing to

achieve sustainable development goals (SDGs) by (1) moving away from an oil-centered economy to a knowledge-based economy, and on the other hand, (2) carefully managing its "Qatarization" policy towards addressing the acute population imbalance between Qataris and non-Qataris, whereby, it must gradually replace a large segment of expatriates with a well-educated and skilled native workforce, properly groomed and trained to take on technically and managerially challenging assignments, especially in facets of science, technology innovation (STI) and management. The greater challenge for Qatar would be to strike a balance between the two core objectives while respecting, protecting and upholding human rights. The subject merits further research as to how Qatar may be able to achieve sustainable human development faced with rapidly changing population dynamics. Vast arrival of expatriates into Qatar during 2004-2014 has almost tripled the population of Qatar from 0.8 million in 2004 to almost 2.2 million in 2014 and around 2.7 million in 2017 as depicted in Figure 1 (Ministry of Development Planning and Statistics - Qatar, 2015). The exponential growth in population was not appropriately catered for in the National Development Strategy 2011-2016 (NDS) and Qatar National Vision 2030 (QNV). For Qatar, managing growth and avoiding uncontrolled expansion to maintain stability to its educational reforms and policies remains one of the greatest challenges to date. Recent and frequent reforms and changes in education, indeed, might have already disturbed this stability as a byproduct of aimed improvements in the skill sets of national population (Koç & Kayan, 2016). Furthermore in practice, little attention has been given to restructuring of the non-Qatari population and their educational state to enable them to attain higher wages and skill levels since it is assumed that they will join the workforce with already earned degrees, skills and knowledge; and leave when not needed any longer.

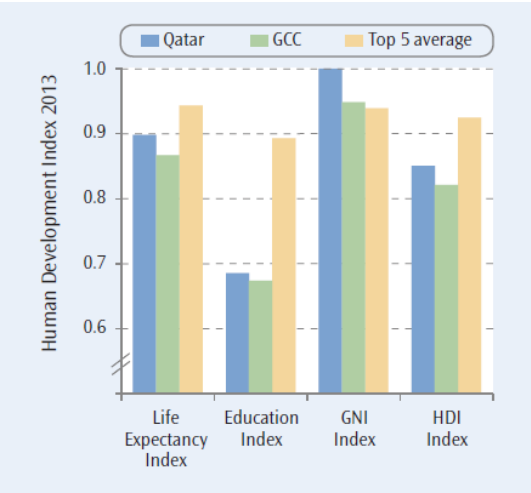
Figure 1: Qatar's population growth between, 2004 and 2014



Sources: MDPS (2015a) and QSA (2010).

As summarized by Koç & Kayan, 2016; Brewer, et al., 2007; Berrebi, et al., 2009), Qatar has been undertaking drastic educational reforms to enhance quality of education, learning techniques and skill sets to meet global educational requirements and its own future human capital goals. As a consequence of such recent reforms, the students in Qatar have been facing major social and cultural changes, challenges and different international experiences due to an influx of expat teachers as well as students through family structures. Students from diverse ethnicities expose differences of lifestyle, language and other cultural aspects in both classroom and outside school. In light of these challenges, adaptation of curriculum changes becomes more complex for students; moreover, learning different subjects and gaining social and technical skills through a non-native language becomes a barrier in smoothly assimilating information and knowledge in such diverse student body. Qatar scored reasonably well by being ranked the 31st out of 187 countries in UNDP's Human Development Index (HDI) study in 2014. However, when it comes to the educational segment of this index, Qatar is lagging behind the five highest HDI countries, as shown in Figure 2 (Ministry of Development Planning and Statistics of Qatar, 2015), mainly attributable to less students enrolling in tertiary education as well as low attainment levels in K-12. The fact signifies an important take-home lesson for Qatar that in order to bolster its HDI ranking, Qatar will need to focus especially on its male population and get them to enroll in higher post-secondary education, where the current enrolment rates for boys are very poor in comparison to girls enrolling in higher secondary post-secondary education.

Figure 2: Human Development Index of Qatar compared with the averages of top five countries at both GCC and Global scale. (UNDP 2014)



This study presents comparative and critical analysis of various challenges that need to be overcome to realize Qatar's ambitious sustainable development goals based on innovation-driven knowledge economy after analyzing the current progress of several reforms and initiatives within the human capital development arena. Several recommendations are presented focusing on progressive and adaptive policy-making and responsive governance of the educational and innovation framework in Qatar, which needs to invoke economic incentives and fortify intellectual property rights while nurturing expansion in innovation, education, vocational skills, information and communication technologies.

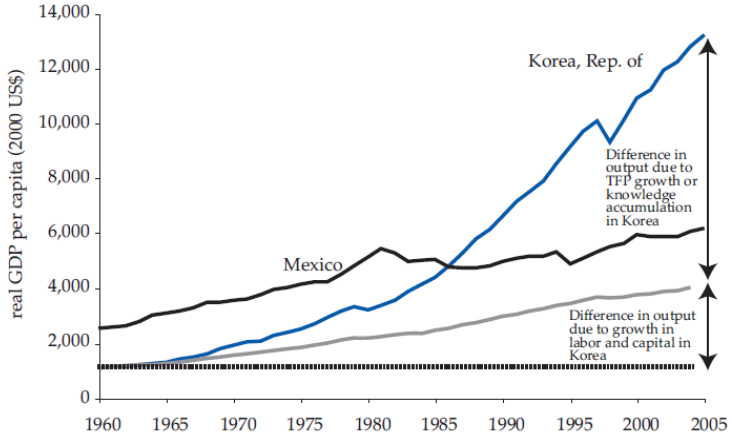
2. LITERATURE REVIEW

According to Baghat (1999), educational policies in the last few decades within the Arab world have fallen short to adequately address societal needs vis-a-viz traditional and modern education. The Qatari schooling system places emphasis on replication and memorization of acquired knowledge elements (Rostron, 2009; Weber, 2010), and university education, through the only university then, was mostly focused in preparing Qatari nationals to take on bureacratic assignments and roles (Bahgat, 1999, p. 130). In 2001, services of a non-profit American institution, "RAND" were acquired to critically examine the state of Qatar's educational system (Romanowski & Nasser, 2012; Rostron, 2009). It had been a point of concern for quite some time amongts the Qatari leadership, that the educational system in Qatar was "not producing high-quality outcomes and was rigid, outdated, and resistant to reform" (Brewer et al., 2007, p. iii). The analsysis presented by RAND showed some glaring anomalies and highlighted that the acdemic performance of graduate students was unsatisfactory and the performance of graduate students was critically falling short of the expectations and demands of employers (Brewer et al., 2007; Rostron, 2009). The report further shed light on the fact that Qatar's educational curriculum is merely "emphasized rote memorization" and "unchallenging" (Brewer et al., 2007, p. xviii). In an effort to develop a strong educational system, Qatar could take lessons from countries who have successfully chartered the path of transforming their economies and societies to knowledge-based economies and societies to meet sustaianability challenges of the future. For example, Suh and Chen's research (2007) reveals that Korea's economic growth was faster than most comparable economies over four decades since 1960s. The primary reason for the witnessed growth phenomena was not labor and capital investments, but rather the acute rise in total factor productivity and accumulation of knowledge in the Korean populace. For reference, the author draws a comparison between the transformation of the per capital income figures of Mexico and Korea over the period 1960-2005 as shown in Figure 3.

Korea's educational investment portfolio during the period 1960s-1990s merits special attention. The Korean Government was a consistent solicitor of educational loans/credits from the World Bank during the period 1969-1999. Although it took 5-7 years on average for an educational loan/credit project to get implemented, the Government was quick enough to immediately contract another loan or credit as soon as the previous project was taking off. The government of Korea while borrowing from the World Bank kept a consistent focus on three facets, i.e., goals, financing sources, and application of loans/credits. The Korean Government materialized a total of twelve education loan/credit projects over a period of 25 years (1969-1994) through consistent borrowing from the World Bank. By borrowing repetitively from the same funding source, the Korean Government officials had accumulated invaluable knowledge and experience with respect to policies and procedural requirements, thus, saving costs and avoiding unnecessary trials and errors. About 10% of the loan/credit proceeds were applied for training of instructors abroad and invitation of foreign experts. A large majority of the funds were also used for procurement of equipment and facilities for workshops and laboratories. In usage of the borrowed

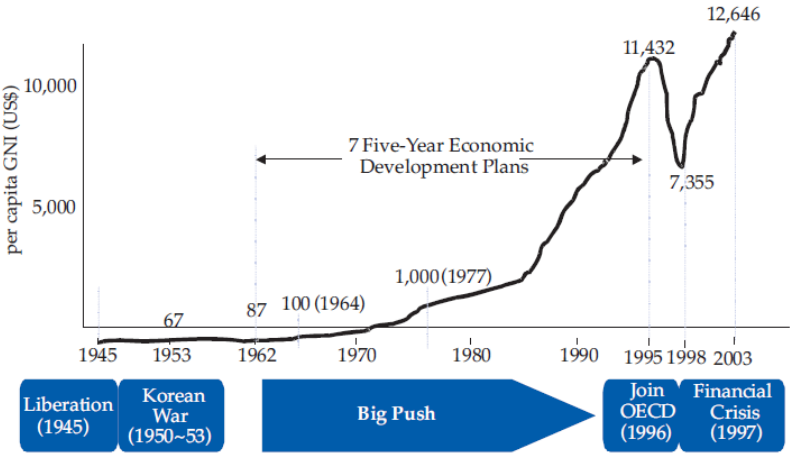
funds, Korea's continued selectivity in the content, sources of educational loans, and their applications remained on target and efficiently managed without any bureaucratic hurdles or delays in execution of envisaged educational plans (Suh & Chen, 2007).

Figure 3: Effect of Knowledge on Korea's Long-Term Economic Growth (1960–2005)



The Republic of Korea and its economy was in a turmoil post World War II and the Korean War which followed soon after. However, Korean leadership soon realized that in order to progress and move forward, it had to quickly move from being solely an agricultural-based economy, to an industrialized economy. During the period 1950 to 1997, Korea's leadership in essence adopted the critical pillars of an industrialized economy. These plans encompassed intensive learning processes consisting of active technological capability building and complementary human resources development. Pro-activeness became the hallmark of Korean leadership and through accurate forecasting and dynamic support to projects and various educational reforms, they were able to foster an environment which would ensure sustainability. From an historical perspective (Figure 4), during the 1960s, Korea started off as an economy dependent upon agriculture (rice) and labor-intensive light manufacturing sectors (textiles and bicycles). Heavy investments were made to upgrade primary education standards. The Korean regime at the time desired to enter into manufacturing sophisticated commodities locally. To achieve the objective, crucial technologies were obtained through foreign licensing and production commenced on the territory Korea, allowing Koreans to be exposed and educated on state of the art technological platforms. During the mid-1970s, the Korean government erected a well-targeted industrial policy, which was a radical step towards development of heavy industries (for example, shipbuilding and chemicals etc.). Other than expanding the industrial base, additional technologies were imported, to further enhance the technological edge. Special focus was laid upon the quality and merit of K-12 education and other vocational training programs. In the 1980s, Korea resorted to deregulation of various sectors in order to foster a market-conducive environment through liberalizing trade. Simultaneously, Korea placed a renewed focus towards its higher education while investing heavily into R&D and encouraging academia-industrial collaborations through the establishment of the National Research and Development Program. In a phased manner as stated earlier, Korea continued to pursue high-value-added manufacturing in the 1990s through active promotion of indigenous high-technological innovations in a planned attempt to transform into a knowledge-based economy with design, innovation and management of high-value products and services.

Figure 4. The Growth Path of the Korean Economy



Source: Authors' construction.
Note: GNI = gross national income.

The Qatari Government may find a viable model in the Korean example, as Qatar may follow the same steps as Korea did in setting up of a modern and accessible higher education system on sustainable lines.

3. DATA AND METHODOLOGY

Zikmund (2000) and Blaikie (2003) explain that among various forms of research, the quantitative approach utilizes gathering of numerical data to ensure objective and accurate results through experimentation, survey and observation. However, a qualitative approach, or data in words, is potentially useful to obtain more information. A common consensus has been established recently that mixed qualitative and quantitative research studies provide more robust and useful findings (Hair, Black, Babin, Anderson, & Tatham, 2006). Saunders (Saunders, Lewis, & Thornhill, 2000) and Zikmund (2000) suggest that qualitative and quantitative methods could complement one another if applied efficiently, to enrich the data gathering particularly in new interdisciplinary research areas, as is the case with this study. To truly understand the challenges and drivers that would play a significant rule in qatar's transformation into a knowledge-based economy, the primary objective of the research must encompass a critical analysis of the historic development and current situation of Qatar's work force and human resource development plans and initiatives in comparison to several benchmarked countries which have tranformed themselves into viable knowledge based economies. Moreover, the research must also analyze issues around existing gender differences in education and their impacts on social, economic and cultural views and growth. A future study in this regard must be able to identify gaps in Qatar's workforce/human capital between today's and 2030's needs/goals (policies, capacity and programs), and establish relational target metrics between 2030 needs and current status.

Reforms in an educational system is an ever eveolving process. Qatar's next steps towards reformation must include development of policies, strategic implementation of envisioned programs, roadmaps and placement of continuous monitoring and assessment tools to fill the gaps in order to achieve its 2030 goals of becoming a sustainable knowledge economy. The resaerch being undertaken is essentially concerned with the future vision of Qatar's sustainable development through the adoption of a strategy for developing a knowledge-based economy, and hence, its human capital. An in-depth study on Qatar's human capital development plans and initiatives in comparison and benchmarked with other relevant countries shall be undertaken. The research will approach the current status and future plans in two ways: triangulation using collected data and conduct of various interviews and surveys. The new study will develop, recommended policies, roadmap and an implementation plan for a modified human capital development model. Validation of the proposed new model would also be necessary by gaining inputs from key personnel marked in the study and soliciting their opinion on the new model through re-interviews, focused group studies and by possibly involving as many participants as possible to eliminate issues of bias etc. Expanding on the steps stated above, the knowledge economy literature also emphasizes the importance of incorporating a benchmarking process through a tool known as the knowledge assessment methodology (KAM). This has been developed by the World Bank Institute to gauge a country's readiness for a knowledge economy compared with other regions and countries (Chen & Dahlman, 2006). Thus, a benchmarking process, a qualitative approach (in the form of interviews) and a quantitative approach (in the form of a questionnaire survey) may be applied in the data gathering methodology with a view to producing practical and useful results. This multi-method research strategy will test the validity of measurements by means of triangulated cross-method comparisons.

Triangulation requires multiple sets of data tackling the same research question from different viewpoints (Creswell, 2003). Testing of variables by different methodologies may have important ramifications for the research problem as long as these methods are employed independently of one another, but are focused as tightly as possible upon the question being researched. As explained by Brewer and Hunter (2006) that the advantage of multi-method studies is accrued especially in cases where multiple tests are designed and performed by the same investigator in a short period of time, the same level of knowledge and skill are more likely to inform and consolidate each test. A qualitative approach will help gain insights on the issue from senior government officials whose positions qualified them to provide useful information on Qatar's economic development plans in general, and knowledge economy main drivers in particular: education and training, information and communication technologies, research and development, and government institutions that support such factors. The qualitative approach will be followed by a quantitative approach, to gain valuable information from targeted reputable innovative and technological companies in Qatar, which may render feedback and information on our research issue, as the main drivers, facilitators and end users of human capital and knowledge economy development in Qatar. It is extremely important to interview some executives from high-tech companies in Qatar as they may be able to provide valuable information regarding factors which are important in shaping an effective knowledge economy policy in Qatar. Apart from high-tech companies, another area where skilled force is immensely important is the service sector in Qatar. The service sector in Qatar contributes significantly to the overall GDP (Ministry of Development Planning and Statistics - Qatar, 2015). More importantly this sector employs both semi-skilled and skilled labor. Thus, this sector has been viewed as the potential driving force of any knowledge economy quest as is the case in developed and fast growing developing countries. An electronic mail survey may also be used as a means to collect data for analysis. In quantitative studies, the data are transformed from words into numbers, are then subjected to different statistical manipulation, and are subsequently reported in both numbers and words (Cavana, Delahaye, & Sekaran, 2001).

This research can also use factor analysis to analyze the data collected via the survey questionnaire to answer the questions proposed, to find appropriate and significantly related factors that assist in formulating a knowledge economy policy that takes into consideration all stakeholders' ideas and concerns. Analogous to our research is another case involving knowledge economy data collection surveys, where some regression analysis was also used (Shapira, Youtie, Yogeesvaran, & Jaafar, 2006). Moreover, according to Chen (2006), factor analysis is a useful tool for data reduction and provides a clearer picture of which factors act together according to their underlying dimensions.

4. PRELIMINARY FINDINGS AND DISCUSSIONS

Over the past fifteen years, Qatar has initiated focused steps towards improving its higher education system and K-12 study regime (Stasz et al., 2007). In March 2003, the new Education for a New Era (EFNE) policy engulfed all facets of higher education and paved way for the formation of the Higher Education Institute, which furnishes scholarships to Qatari students in order to undertake higher studies in Qatar and abroad (Brewer et al., 2007). The primary concern is to improve Qatar's human capital enabling them to positively contribute to the overall socioeconomic system (Stasz et al., 2007). Initially it was envisaged that the new educational reforms would be completed within 10 years (Brewer et al., 2007), however, due to many objectives not completely met, the reformation process may take several more years. Centric to Qatar's educational reforms is the desire to gradually replace foreign workers with a new generation of Qatari nationals, groomed in aspects of critical thinking, appropriately educated and skilled to take on challenging work assignments both within the private and public sectors (Rostron, 2009; Stasz et al., 2007). The Qatarization policy aims to eradicate umemployment issues of local citizens through a two prong strategy of both educating them and then settling into jobs commensurating to their skills and education (Bahgat, 1999; Rostron, 2009; Khodr, 2011). In 2003, the inception of the Education City through Qatar Foundation initiatives (Brewer et al., 2007) was another major milestone which facilitated reputed international universities, think tanks and research centers to establish a footprint in Doha enabling locals students to have access to top class academic facilities and learning opportunities. However, the move was seen sceptically by many locals who wanted to avoid westernization of their children and deemed it as a threat to their own heritage and culture (Reilly, 2008; Rostron, 2009). The preservation of the tribal heritage and culture of Qatar remains the pinnacle of any policy reformation and given utmost importance by a conservative population (Rostron, 2009). Therefore, public education system reformation must remain sensitized to Qatar's history, religion and language which are considered vital towards preservation of its culture (Brewer et al., 2007; Rostron, 2009). Qatar is a "country in transition, trying to embrace new opportunities while at the same time seeking to re-assert its conservative Muslim, Arab, Bedouin identity" (Rostron, 2009; p. 221). Any future research towards policy improvement in educational reforms within the Qatari context must take into confidence key decision makers and service providers in Qatar, on the potential benefits of pursuing knowledge economy initiatives as a sustainable economic development option that could respond positively to Qatar's current economic challenges and future uncertainties. This study will aim to combine three different data collection approaches; a benchmarking process that gauges Qatar's knowledge economy readiness against relevant countries and regions; a qualitative approach where socio-economic development senior government decision makers shall be interviewed; and a quantitative approach where decision makers of main service sector and some innovative companies in Qatar shall also be surveyed. The study may be unique in the sense that only knowledge economy input indicators shall be used that are

relevant to Qatar's current socio-economic development level which could provide a more practical foundation for the government in assessing and shaping future knowledge economy development plans.

5. CONCLUSION

The research being undertaken, could serve the Qatari government with potent recommendations to achieve its sustainability goals through transformation into a knowledge-based economy. The research findings could be applicable to other Arab countries that share similar cultural, religious, and economic backgrounds with Qatar, especially the GCC countries of which Qatar is a member. The outcomes of the study may form the basis for a knowledge-based economy development strategy within the GCC countries, which are aiming for greater economic integration. Moreover, the current research may instigate further studies and research in an array of aspects concerning knowledge economy transformation within the Arab and Muslim context.

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