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Building a sustainable higher education sector in the UAE

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Abstract

Purpose – The purpose of this paper is to examine the relevant economic aspects that could affect the sustainability of the HE sector in the UAE.
Design/methodology/approach – Data are collected mainly through secondary sources and based on the relevant information. Two constructs, namely, market factors and educational governance are identified from the literature. An empirical model depicting the different factors that contribute to these two variables is outlined.
Findings – Educational governance and market factors are identified as the key pillars which contribute to the economic efficiency in the HE sector in the UAE. These constructs are affected by relevant factors. Some of the issues relating to educational governance could be controlled. Though factors contributing to market conditions could be deemed uncontrollable, HE institutions could come up with better strategies to deal with those issues.
Research limitations/implications – The UAE HE sector could be a major contributor to the economy in the future, it is important to identify the main constructs and the associated forces which could impact the economic efficiency of the HE sector. The model proposed could be empirically tested in future studies.
Originality/value – This study is a novel attempt to examine sustainability in the HE sector in terms of economic efficiency, while previous studies have focused on the social and environmental aspect of the sustainability in the HE sector. Thus this study tries to address this lacuna in this domain by focusing on the economic efficiency aspect which is an important contributor to the sustainable development. The results may provide valuable insights for universities and regulators in developing appropriate strategies to improve the HE sector.

Keywords United Arab Emirates, Sustainability, Higher education, Educational governance, Market factors
Paper type Conceptual paper

1. Introduction

Higher education (HE) is becoming an extremely important contributor to the economic development in many countries. The developed and some developing countries across the world are increasing their efforts to attract students from other countries to study in higher education institutions (HEI), thereby gaining revenues that can even compete with their export revenues. Now, countries in Europe, Australia and North America consider HE an important sector of the economy (Keller, 1983; Clark, 1983; Delanty, 2001; Kerr, 1987; Vaira, 2004). For example, Australia's education sector is attracting large numbers of international students and the revenue from international students contributes a whopping AU$17.5 billion to the Australian economy (Australian Bureau of Statistics, 2015). Even countries that are traditionally dependent on a commodity-based economy are making this transition. The United Arab Emirates (UAE) in their vision 2021 document has outlined plans for a knowledge-based economy, providing an educated and qualified workforce, which will continue to drive the economic development of the country (Cedwyn *et al.*, 2013). This shows that a sustainable model of HE could be a significant force in driving economic change. The pertinent question to be addressed is – how can the HE sector remain sustainable at the same time be competitive in a dynamic environment.

Sustainability means different things to different people. In environmental science sustainability is the quality of not being harmful to the environment or depleting natural resources, and thereby supporting long-term ecological balance. Economic sustainability is

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the ability to support a defined level of economic production indefinitely. Social sustainability is the ability of a social system, such as a country, to function at a defined level of social well-being indefinitely. In general, sustainability is defined as a requirement of our generation to manage the resource base such that the average quality of life that we ensure ourselves can potentially be shared by all future generations. It is clear that development is sustainable if and only if it involves a non-decreasing average quality of life (Asheim, 1994). In simple words sustainability is the ability to be sustained, supported, upheld or confirmed. It means that sustainability initiatives are not based on fixed rules and regulations. Sustainable practices evolve as a learning process and sustainability is a term with variable and contested meanings (Wals and Jickling, 2002). This has resulted in some confusion about what sustainability really means (Piotrowicz and Cuthbertson, 2009). Even universities (Velazquez *et al.*, 2006) and academics (Reid and Petocz, 2006) are not clear about sustainability initiatives. Some universities think that sustainability can be attained through poverty reduction (Sanusi and Khelgat-Doost, 2008), green campus (Alshuwaikhat and Abubakar, 2008) and curriculum development (Lozano, 2010; Beusch, 2014). According to Velazquez *et al.* (2006) institutions involved in HE should have research, community outreach, partnerships and sustainability. Though myriad of research has been undertaken on different sustainability initiatives in HE sector, most of the studies focus on the sustainability initiatives in terms curriculum development, building green campus, poverty reduction and community outreach. To date no study has explored the key factors that could contribute to the sustainability of higher education sector purely from an economic point of view. This is particularly important as the universities across the world are expanding to international markets and rigor of competition in HE sector is now fierce. This study attempts to propose a model of sustainability of HE sector by identifying the key factors that could affect the sustainable development of HE. The focus of the study is UAE which has more than 100 HE institutions affiliated to universities all across the world offering different programs (Knowledge and Human Development Authority, 2014). Competition in the UAE HE sector is fierce even though there are many barriers to entry in the form of many approvals (Wilkins, 2010). Tight regulations combined with the number of providers make it a challenging environment to operate for HE providers. The objective of this study is to uncover those critical factors that could affect the sustainability of the HE sector. The paper draws on the theoretical concept of Triple bottom line developed by Elkington (1998), which simultaneously considers and balances economic, environmental and social issues from a micro-economic point of view. While acknowledging the views on Elkington (1998) on sustainability, this paper concentrates on the view that the economic efficiency of the HE sector is the key cornerstone of sustainability. A sustainable HE sector could attract large numbers of students locally and internationally, thus bringing in huge revenues to universities and to the country. With reduced incomes from oil, HE sector could be developed as an alternate source of revenue to the UAE in the twenty-first century.

2. Economic efficiency is the key pillar of sustainability in HE sector

According to the World Council for Economic Development, sustainable development meets the needs of the present generations without compromising the ability of future generations to meet their own needs. At the macro level it means addressing important issues such as: economic efficiency (innovation, prosperity, and productivity), social equity (poverty, community, health and wellness, human rights) and environmental accountability (climate change, land use, biodiversity). Thus, sustainability is a broad subject with varying objectives that focus on the development needs of present and future generation under varying conditions. For the HE sector one could argue that issues like social equity and environmental accountability are important social causes for this sector, however achieving economic efficiency should be given equal priority if not more along with other sustainability initiatives. The research in the

HE sector has always focused on the social aspect of sustainability. However in the current economic climate where universities and other HE providers are faced with challenges like reduced funding (Khalifa, 2009), increase in competition and changing market demands (D'Alessio and Avolio, 2009), the economic efficiency is now emerging as the main pillar that contributes to the sustainable development of this sector. For the HE sector it may be feasible that adopting a strategic approach more in line with private business, with a sharper focus on efficiency and operating profit is inevitable, or perhaps even advisable (Curtis and Samy, 2014). Countries like UAE have invested heavily in the HE sector and they expect these institutions to contribute to the economy in the future (Mahani and Molki, 2011). However, the challenge is to come up with a sustainable model which addresses the important variables that contribute to the sustainability in HE sector in the UAE. The Triple bottom line theory identifies the three important pillars of sustainability, namely, environment, social, and economic. The argument behind the theory is that that the companies should focus on three bottom lines. The first and foremost is the profit line and second is focus on the people. The third line is planet which focuses on the environment. Triple bottom line theory is the way of expressing a company's impact and sustainability on both a local and a global scale. The theory and its relevance to the HE sector is discussed in detail in the next section. The paper is organized as follows: next few sections would provide a brief discussion of the Triple bottom line theory and then an overview of the HE sector in UAE. This is followed by the discussion on two key attributes which could affect the economic efficiency, namely, educational governance and market conditions. The final section provides recommendations and research limitations.

3. Triple bottom line and sustainability

The Triple bottom line theory was put forward by Elkington (1997). He suggests that firms should engage in socially and environmentally responsible behavior and make positive financial gains. The theory argues that the organizations should strike a balance between economic, environmental and social issues. Environmental sustainability is often related to caring for the natural environment which includes measures like waste reduction, pollution reduction, energy efficiency, emissions reduction, a decrease in the consumption of hazardous/harmful/toxic materials, and a decrease in the frequency of environmental accidents. The social capital focuses on the betterment of internal and external communities, it could range from poverty alleviation to looking after your employees. Social sustainability means that organizations provide equitable opportunities, encourage diversity, promote connectedness within and outside the community, ensure the quality of life and provide democratic processes and accountable governance structures (Elkington, 1997). Economic sustainability is about having a steady cash flow and maintain an above average returns to the stakeholders (Dyllick and Hockerts, 2002). The three dimensions of Triple bottom theory are interrelated and they may influence in different ways (Elkington, 1997). Universities as discussed earlier strive for sustainability addressing the social dimension and environment dimension, namely, poverty reduction (Sanusi and Khelgat-Doost, 2008) green campus (Alshuwaikhat and Abubakar, 2008) and curriculum development (Lozano, 2010; Beusch, 2014). However, the key variable which should trigger the environmental and social dimension is the economic efficiency. Universities should prioritize this aspect of the Triple bottom line theory. The Triple-bottom-line concept suggests that firms not only need to engage in socially and environmentally responsible behavior but should make sure that positive financial gains can be made in the process (Gimenez *et al.*, 2012).

4. Overview of the HE in the UAE

HE in the UAE has witnessed significant development in number, diversity, and quality of programs and providers. The high pace of growth has been due to the growing number of college students in the UAE, the Gulf Cooperation Council (GCC), and the Middle East and

North Africa (MENA) region. According to the *CIA World Fact Book*, UAE has approximately 5.6 million residents and ranks 112th in population among nations of the world. UAE citizens make up 19 percent of this population and expatriates make up the remaining 81 percent. Approximately 50 percent of the population of the UAE is from South Asia, about 8 percent are from western nations, and the remaining 23 percent are expats of Arab and Persian descent. Almost 14 percent of the population in the UAE is of college age. The political instability and security concerns in the rest of MENA region have made UAE a choice location for students of that region attending higher educational institutions.

The economic vibrancy of the UAE combined with its openness to expats and foreign institutions have fueled the inflow of foreign educational providers from both the west and east. Among the western countries, universities from UK, North America, France and Australia make up the majority. Indian Universities are the majority from the Eastern nations. According to *Times of India*, the Census data in 2011 show that 41 percent of the Indian population is under the age of 20. Also, 50 percent of the population is in the 20-59 age group. The longstanding relationship between India and UAE coupled with proximity between the two countries provides tremendous opportunity for UAE to attract students from the country (MOE, 2016).

In addition to the pull discussed above, the aging of population coupled with the cut in government funding for HE in western nations has pushed several European and North American institutions to set up operations in the UAE. While the lure of additional revenue is the common motivation behind universities from west and the east, Indian universities establishing campuses in the UAE do not face the shrinking population at home as their western counterparts. By establishing campuses in the UAE, the Indian universities have been able to circumvent the strict caps in enrollment based on infrastructure and job placements at home imposed by the Indian government. In most well-established universities in India, the number of students seeking admissions into HEI far outnumbers the number of seats available in those institutions. However, those students who were not able to get admission into these colleges in India can travel to the UAE to study and graduate from their institution of choice. In addition, the tuition fees charged by these institutions for their operations outside India are also not controlled by the Indian authorities.

4.1 Comparative analysis of HE sector of UAE

The educational system in the UAE is largely modeled on the system from the west, particularly following the system from the USA. By and large most of the universities in the UAE offer four year bachelor degree programs. In the USA there are more than 3,900 colleges and universities offering a wide range of undergraduate degree programs (Iyanna and Abraham, 2012). Almost all of these North American institutions are accredited by regional accreditation entities in the USA. In UK there are 154 recognized higher learning institutions that can award degrees. Their programs are regulated by Higher Education Funding Council for England. The Australian HE providers in the UAE are relatively low in numbers. Australia has around 37 public universities and two private universities. There are two main regulators, namely, Tertiary Education Quality and Standards Agency, and Australian Skills Quality Agency which looks after vocational education and training.

The presence of local universities and the increasing number of offshore campuses, coupled with myriad of regulatory requirements put forward by MOHSE, Knowledge and Human Development Authority (KHDA), Commission for Academic Accreditation (CAA), and National Qualifications Authority (NQA) makes the UAE environment more complex compared to other parts of the world. The UAE public HE sector representation, of approximately 8 percent of institutions, is low in comparison to the public sectors of the comparative countries (Centre for Higher Education Data and Statistics, 2013).

5. HE regulatory agencies in the UAE

The HE sector in the UAE is in its infancy when compared to the east and the west. The oldest institution of higher education, the United Arab Emirates University (UAEU) is only 40 years old. In addition, it has only been 45 years since the seven Emirates with individual nation status came together to form an economic and political union which is UAE. Thus, the regulatory agencies at the federal and state levels have different requirements for HEI. The federal authority overseeing HE in the UAE is the Ministry of Higher Education and Scientific Research (MOHESR). However, there are free trade zones for HE in various Emirates that are not subjected to the MOHESR's requirements. For example, there are many international universities operating in the Emirate of Dubai who offer their home country degrees. These universities are licensed by KHDA and most of them are not accredited by MOHESR's CAA. The rule for the Emirati students is that their degrees have to be accredited by CAA for their educational accomplishments to be recognized in the government sector. Since the vast majority of UAE residents who belong to other nationalities do not have opportunities to work for the government this limitation is not of major consequence. Some of these KHDA licensed but not CAA accredited universities are highly popular with expatriate students and a minority of Emirati nationals. This is mainly due to the perceived prestige associated with obtaining degrees from western institutions. Similarly, many of the expatriate students from the Indian subcontinent choose to attend off shore campuses of Indian universities that are not CAA accredited due to their popularity/name recognition in India and for the most part the relatively lower fee structure. This diversity of nationalities, the differences in career opportunities for citizens and non-citizens, existence of different federal and emirate-specific regulatory agencies and the lack of clarity in HE governance in the UAE has created a very complex HE environment that is confusing at best for college-age students and their parents.

Similar to the role of KHDA in Dubai, in the Emirate of Abu Dhabi, the Abu Dhabi Education Council (ADEC) overseas the establishment and operations of schools and HEI. These two regulatory agencies have the right of refusal within their respective Emirate. In addition, in 2012, the UAE established the NQA, a Federal authority that is responsible for coordinating with relevant entities, the development of strategies, plans, policies and standards for higher education, general education, and technical, vocational and professional education and training in the UAE. Thus, in general the HE sector in the UAE has several regulators that add to the layers of approvals to non-free-trade zone universities.

The UAE's HE sector has been characterized by rapid growth over the decades since the establishment of UAEU, the country's first such institution. UAE is now an HE hub with three federal universities and more than 70 ministry-accredited institutions in the country. While some universities have standalone campuses, others operate within education free zones or education clusters. There are about 120,000 students enrolled at various institutions in the country. In Dubai alone there are more than 39,000 students enrolled in 12 HE systems including American, British, French, Canadian, Australian, Indian, and UAE. Over 390 academic program offerings, mostly concentrated in areas of Business, Management, IT and Marketing. The two Emirates of the UAE that account for over 80 percent of all HEIs, over 90 percent of students are in Abu Dhabi and Dubai (MOE, 2016). Therefore, the discussion here will be focused on the HE environment in these two Emirates.

5.1 Emirate of Dubai

According to the KHDA, there are 57 institutions that offer HE programs in Dubai. These are grouped into four categories (Table I):

(1) Federal institutions: these are institutions funded by the UAE Government and there are three federal institutions that primarily cater to Emeriti nationals.

(2) International universities: there are 26 international institutions operating in Dubai and these are degree-awarding institutions that have international or home country institutional accreditation.

(3) Local universities: there are 25 local institutions who are institutionally accredited by the CAA in UAE, and some of these local universities may also have international institutional and/or program accreditation.

(4) Vocational: there are three vocational institutions that generally do not award degrees.

The federal institutions in Dubai account for 18 percent of the students, the private institutions in the Free Zones account for 46 percent of the students, while private institutions outside the Free Zones have 36 percent of the students. Students studying in Dubai are from a wide range of nationalities. Emirati students are by far the largest group of over 20,000 or 43 percent, followed by Asian students at almost 10,000 or 21 percent. With the recent political and economic troubles in the MENA region, there has been a substantial increase in the numbers of African and Arab expat students.

In the Emirate of Dubai, international universities can either be accredited by the CAA of the MOHESR, or quality assured through Dubai's University and Quality Assurance International Board (UQAIB). UQAIB was established by KHDA in 2008 to assure the quality of HEI in the Free Zone that are not accredited by the CAA. UQAIB also approves all new programs offered by HE providers (Knowledge and Human Development Authority (KHDA), 2014).

5.2 In the Emirate of Abu Dhabi

According to ADEC, there are 23 HEIs in Abu Dhabi that offer a wide range of undergraduate, masters and doctoral degree programs. These institutions can be divided into three categories of the federally funded institutions, the institutions that are funded by the Emirate of Abu Dhabi known as the public non-federally funded institutions, and the privately funded institutions that do not receive any funding from the country or the Emirate of Abu Dhabi (ADEC, 2014).

6. Educational governance and market conditions

Our exploratory research through relevant secondary data reveals that economic efficiency in the UAE HE sector depends mainly on two aspects, Educational Governance and Market conditions.

6.1 Educational governance

The presence of various accreditation bodies with highly perspective review process hinders HE providers' ability to quickly launch innovative programs that respond to industry needs. This could also impede the productivity of the organization. The factors uncovered as part of research are shown in Figure 1.

6.2 Educational governance regime in the UAE

ADEC, the Dubai Education Council (DEC) and the UAE Ministry of Education are entrusted with the duties of education reform, whilst preserving local traditions, principles and the cultural identity of the UAE (Watt, 2012). Though this is an effective mechanism

Table I. Categories of higher education institutions in Dubai

Type	Categories of higher education institutions in Dubai			
	Federal institutions	International universities	Local universities	Vocational institutions
Number	3	26	25	3

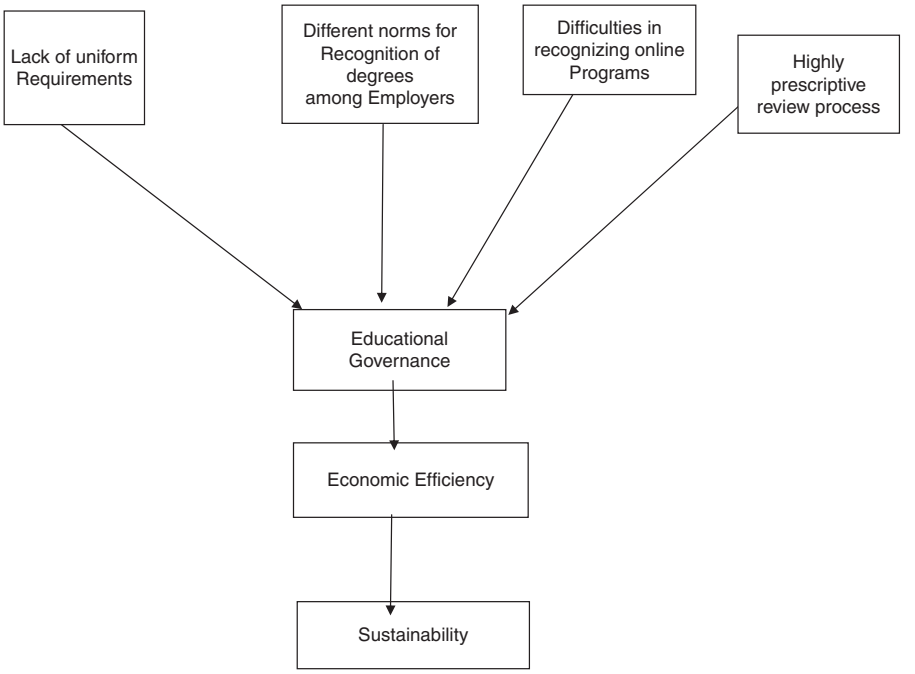

Figure 1.
Factors affecting educational governance

which ensures the quality and best practices at times it could be a cumbersome process of institutions. Following are some of the difficulties that arise from the current educational governance.

Lack of uniformity in requirements. UAE is working fast and hard to put in place mechanisms that ensure quality programs in HEI. The approvals have to be sought from CAA, ADEC/KHDA along with international regional accrediting agencies and professional accrediting agencies if applicable. Often these approvals are sequential as opposed to concurrent. The highly restrictive and sequential approval process is intended to ensure quality, market need, while ensuring that fly-by-night education providers are not entering and setting up operations. There is a learning curve that comes with this especially when regulations have to cover a range of HEIs from around the world. In an attempt to ensure quality, UAE has established an educational governance system that creates several layers of approvals which could take quite a bit of time. At the same time, the establishment of the free trade zones to attract well-known international universities, by design, allows these universities to bypass the accreditation requirements of the CAA and thus allows for different standards in their operations.

Different norms for recognition of degrees among employers. While the international universities in the educational free zones have greater brand recognition and thus attract a diverse pool of students from the UAE and the region, they do not attract many Emiratis into their programs. This is because governmental agencies in the UAE by and large only recognize degrees from CAA accredited institutions.

Difficulties in recognizing online programs. Lack of recognition of online programs by potential employers has been a barrier for online education (Elaine and Seaman, 2013). Until recently, MOHE did not recognize degree programs that were completed offered in an online mode. Last year, the MOHE developed a list of premier universities from around

the world offering online programs and have in effect recognized those. However, the process of developing the list or how an online program is reviewed prior to being listed is unclear.

Highly prescriptive review process. Due to the infancy of the HE sector in the UAE, the review process at different levels is granular in nature and highly prescriptive. The current process has been to put in place to ensure quality, this often leads to long lead times. Even though the intention for establishing the highly prescriptive process is to prevent the few that may try to circumvent quality parameters, it makes the environment inflexible and arduous in responding quickly to educational needs of the various stakeholders.

7. Market conditions

This variable refers to the external market conditions that could affect the sustainable development of HE sector. Our research has revealed a number of factors under market conditions that could affect the sustainability of the HE sector (Figure 2).

7.1 Challenges facing HE in the UAE and the region

Lack of adequate numbers of qualified faculty. Globally, there is a dearth of faculty with doctorates from reputed universities. In the MENA region, the shortage is more acute. A study done by Cedwyn *et al.* (2013) in the UAE HE sector found that quality teaching impacts student satisfaction which points out the need for quality faculty. With regional instabilities, attracting faculty from the west has become more and more difficult.

Lack of clear market knowledge. The multi-layered system with different state-based agencies and educational free trade zone create a rather confusing HE environment for high school students and their parents when it comes to making choices about where to go and which university to attend to.

Dearth of regionally relevant research. Inadequate levels of funding for research, a general lack of a research focus at regional universities have contributed to dearth of research from the gulf region (Hvdit, 2015). With very little quality research undertaken in the region,

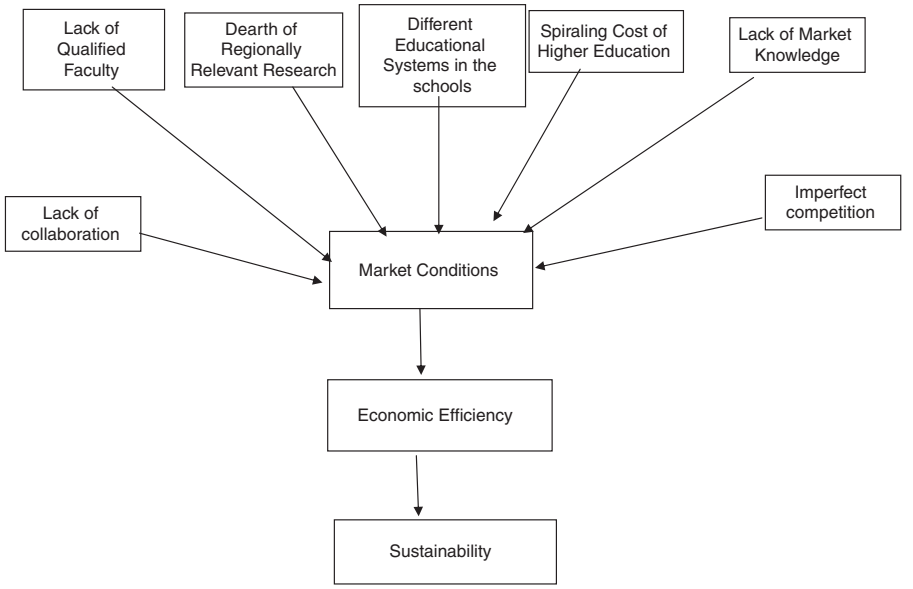

Figure 2.
Factors affecting market conditions

innovation and customization of the curricula is difficult. As most textbooks are written for the western market, the textbooks used in the region contain hardly any case studies relevant to regional and local situations. Several universities have now started a concerted effort to develop textbooks with case studies related to the region. For this purpose they are reaching out to academics in the region. These universities too are working with western publishers to produce textbooks with case studies relevant to the region. These activities are still nascent.

Diversity in the education preparation of students coming from different educational systems. UAE is becoming an increasingly attractive option for international students not only from the Arab region, but also from other parts of the world (Ahmad and Hussain, 2015). People from 200 nations live in Dubai. This qualifies Dubai as a true international city. With such diversity, it is no wonder that school systems in the UAE are also diverse. When these students graduate from high school and join universities, the curricula are drastically reduced to a handful. Majority of the HEIs in the UAE follow the US curricula. The diversity of students coming to colleges creates a big challenge to faculty and administrators to create an optimal learning environment that is inclusive of all. In addition, as almost 100 percent of the faculty in colleges are expats. They come from different educational systems. In these conditions it is a challenge to ensure consistency in teaching and learning at the HEIs.

Rapidly growing cost of higher education. Though cost of studying in UAE is significantly less compared to countries, such as Canada, Australia and the USA, UAE is still considered to be one of the countries with a higher cost of living and university fees (Sadaqat, 2014). The cost of HE in the UAE is growing much faster than the rate of inflation. This can be particularly challenging at a time of economic slowdown due to the falling price of oil. With the exception of the federal institutions, most private institutions rely on expats as students. The intensive competition coupled with lower disposable income due to the slowdown in the economy could lead to young and weaker institutions closing down and the number of college going expats leaving HEIs in the UAE.

Government subsidies to federal and semi-governmental institutions are declining. At the present time, the federal institutions do not charge any tuition or fees to Emirati nationals. The government supported institutions such as NYU-Abu Dhabi, Paris Sorbonne-Abu Dhabi, Khalifa University, American University of Sharjah, etc., charge high tuition rates. However, the major portions of their budgets are being funded by the specifics emirate or the UAE government. With the downturn in the economy due to the reduction in the oil revenue, the levels of subsidies have already started to diminish. Having gotten used to heavy subsidies for their continued operations, these educational institutions will have to drastically change their modes of operation. This is bound to bring about a large disruption to the HE sector in the UAE and in the GCC region.

Lack of collaboration among universities in the MENA region. Unlike institutions of the west, the concept of cooperating while in competing is a foreign concept in MENA. Lack of sharing of information and no effective collaborations among institutions in this region leads to duplication of effort, gaps in the market, and lack of coordination. Unlike in the West, there is no move toward information sharing or leveraging each other's resources to optimize operations. This absence of sharing of information regarding salaries, benefits, plans, etc., has created an environment of suspicion among educational institutions. As a result attempts to co-operate among themselves often fail in this region.

Imperfect competition. The opening up of the HE sector by the UAE governments primarily through the establishment of academic zones have attracted many private universities from across the world, including the USA, UK, India, Australia, Pakistan, Iran and Russia (Cedwyn *et al.*, 2013) . Most of them are depending on student fees to achieve economic efficiency. The coming years will definitely see some fierce competition among the

HE institutions to get more and more students. It is expected that potential customers will assess each institution based on the reputation and placement opportunities of the students. Student assessments too play an important part in creating a good reputation. Thus institutions should have to double their efforts to be in the forefront.

8. Important parameters for the sustainability of HE in the UAE

8.1 Expedite approval processes

The various Emirate-specific and federal entities will need to coordinate and share data to develop a streamlined educational governance system with minimal duplication while maintaining the rigor for quality assurance. This can be done through the establishment of a uniform educational governance system throughout the UAE which are then opened to coordinating with international accrediting agencies to verify quality assurance. In addition, through collaboration with international accrediting agencies, streamline the process of reviewing new and existing programs.

8.2 Embrace e-learning

With rapid innovations in technology today blended and e-learning processes can be a great supplement to traditional methods of education delivery. While ensuring quality, online learning platforms can offer great choices to students in the UAE while providing greater access to high education.

8.3 Expand availability of part-time faculty members

Given the dearth of qualified faculty resources, it is imperative to attract qualified practitioner working in the UAE to teach as part time instructors. In order to encourage this, the approval process for them to teach part time needs to be simplified and should be based on their qualification. In addition, by simplifying the requirements for industry practitioners to teach and to give guest lectures the shortage of faculty can be alleviated while ensuring currency of subject matter.

8.4 Promote a culture of giving and endowments for higher education

Similar to western institutions, private institutions need to attract endowments to reduce their level of reliance on student tuition. This would help enhance the sustainability of the HE environment especially during economic downturns. The government can help by encouraging contributions to support education in private institutions. The recently proposed 4 billion dirhams fund by The Abdulla Al Ghurair Foundations expected to provide scholarship for 15,000 students. Initiatives like this would make sure the deserving candidates would get an opportunity to study in the best institutions in UAE. Business practices like branding have been found as an effective mechanism to increase engagement of alumni and potential donors (Stephenson and Yerger, 2014).

8.5 Enhance collaboration through research funding

As mentioned earlier there is a pressing need to stimulate relevant and quality research in the UAE and the MENA region. This could be done by promoting collaboration between universities within the UAE and MENA through funding joint research projects. This helps minimize duplication of research efforts while enhancing research capabilities within federal and private institutions. By developing the capabilities in all institutions the quality and currency of instruction in all institutions will be enhanced. Collaboration with other academies particularly from the reputed universities should be encouraged. This is critical to promote research and increase the output of publications (Munoz *et al.*, 2016).

8.6 Ensure relevance and curricular currency through close ties to the industry
In order to ensure currency and relevance of curricula, there needs to be close partnerships with practitioners and industry. The UAE Government can play an important role to educate the industry on the capabilities of the HEI in the country and promote industry supported research within all CAA accredited institutions. Such partnerships could also encourage practitioners to be guest speakers, part time faculty members, curriculum committee members in HEIs. In addition to educating the industry about HEIs in the country, the approval processes required for practitioners to get closely involved with HEIs will need to be made easier and straightforward.

8.7 Federal scholarships for nationals at private institutions
At the present time the three federal institutions provide education free of cost to Emirati nationals, whereas if the Emirati nationals want to attend any private institution, they will be required to pay. This limits the choices to nationals and at the time diminishes the pressure on federal institutions to compete for students through enhance, programming, curricula and student services. If the educational grant given to Emiratis is portable to institutions of their choice, then the quality of program offering and diversity of student body will be enhanced in all institutions. Such a practice exists in certain GCC nations such as Kuwait.

8.8 National ranking of HEI's
ADEC collects and disseminates comparative data to HEIs in the Emirate of Abu Dhabi. If a ranking system can be developed nationally based on the similar data set that looks at quality parameters such as research output, faculty publications, international accreditations, exchange opportunities, student-faculty ratio, student success, placement and the like, then students and parents can make better informed decisions. The development of appropriate service strategies to deliver a quality educational service to students, to obtain a competitive advantage has become an important criteria (Poole *et al.*, 2000; Khan and Matlay, 2009) In addition, federal grants can be allocated based on these rankings. Such allocation of government funds would lead to the highest ROI while ensuring that educational investment is made within the country as opposed to the current practice of granting scholarships to study abroad.

9. Summary discussion and conclusion

Its central location, high standard of living, economic vibrancy, acceptance of diversity, state-of-the-art infrastructure, safety and security of its residents have made UAE the commercial hub for the region. The same attributes make it a highly desirable location for it to be an educational hub. These attributes are the nation's greatest asset for its economic diversification. For continued economic vibrancy, UAE needs to ensure the sustainability and growth of its education sector by providing an environment that promotes continuous improvement in quality while ensuring innovation in educational infrastructure and programming. For the sustained growth of this sector it is imperative that educational governance within the country is well coordinated and incentivized to promote collaboration and sharing of resources among HEI. In addition, it is critical for the nation to educate its residents of the various categories of educational providers that operate within the UAE and clarify the various attributes and parameters to enable them have a clear understanding of the quality, standard and the value of HE available within the nation.

In addition, better allocation of government funding based on quality parameters and effective deployment of resources can lead to better return on investment from the HE sector. The much needed support for research and development in critical sectors within HEI will pay

much greater dividend in the short run while develop the internal capabilities to nurture innovation and sustainable economic growth. The current model of funding HEI has led the growth of federal institutions and has attracted iconic global institutions to the country. However, with the drop in revenue from the oil sector and the urgent need to diversity its economic base through developing its national labor force in emerging sectors and away from public sectors, it is imperative that UAE focuses its resources on developing its HE environment that would train its citizens while attracting high achieving students from the greater region. If UAE is able to build a sustainable HE environment it could be a magnate for a much larger group of students from Middle East, North, East and West Africa, and the Indian Subcontinent. In addition, several of the former Soviet Republics with large segments of Muslim population would be a new target for HEI within the UAE. Similar to the model in developed nations, attracting high achieving international students will help diversify the economic base of UAE through the development of new sectors within the country. In addition to attracting high achievers, a state-of-the-art educational sector allows UAE to deploy its resources nationally for finding solutions to its corporate and institutional problems rather than the current practice of importing such expertise.

10. Directions for future research, limitations and implications

The challenges identified in terms of educational governance, market conditions are based on secondary research. The variables identified from the model could be tested using appropriate methodologies in the future for their reliability. The sample for such a study should be selected using a sample comprising of academics, administrators and students in the HE sector. UAE is well set to be the hub of education in the Middle East region (Knight, 2013). The study provides some useful insights for relevant stakeholders by outlining the key factors that could influence the sustainability of HE sector in the UAE. From the theoretical perspective, the study examines the significance of economic variable in the Triple bottom line theory in the context of higher education.

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