Research article

The crisis of research and global recognition in Arab universities

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ABSTRACT

Scientific research is facing a critical situation in Arab nations. While international rankings have become the first priority of universities engaged in research across the world, most universities undertaking scientific research in the Arab region are occupied with other matters more vital to their survival. Given the current crisis in some universities in the Arab region, this study seeks to understand the factors responsible for the falling standards in scientific research and the lack of global recognition of these universities. Through interviews with university rectors or their designates along with three international experts on higher education policy, this investigation considers the social, economic, and political factors responsible for the crisis in some Arab universities that undertake scientific research. The investigation also probes the effect that political instability has on the Arab universities, particularly in light of the "Arab Spring" and how top administrators propose to improve research capabilities in their institutions. Thematic analysis of the interviews suggests lack of research infrastructure, funding and resources, and English publications, in addition to unmotivated faculty, as primary causes for the dilemma of Arab universities. The findings also indicate that in countries that are mired in political crises, lack of security is preventing higher education institutions from functioning and preserving their role in society as institutions of intellectual rigor and research. Although these Arab universities cannot control the political destiny of the country, international experts who were interviewed emphasized the importance of building a research infrastructure and an environment that motivates researchers. Furthermore, using English as the language of research and the emphasis of basic science are crucial elements to developing a sound research university.

Keywords: Arab universities, scientific research, funding, global rankings, security, socioeconomic issues

INTRODUCTION

Scientific research is the midst of a crisis in Arab nations. Higher education institutions in the Arab world are competing for excellence in the highly challenging and unstable political environments. Arab education is beset with multiple problems, which have been worsened by improvised solutions that were not based on scientific evidence (Almajiadil & Shamas, 2007). Because scientific research is facing a crisis, many Arab institutions are not able to compete with advanced countries (Alsayed, 2007). Although global university rankings maybe perceived as an important indicator of research and academic exceptionalism, such rankings are not particularly realistic or helpful as they do not consider the economic and political climate within which the ranked universities operate. Because most Arab universities engaged in research activities are confronted with political and economic uncertainties than worrying about rankings, the lack of context in rankings undervalues the role of research universities in newly industrialized countries and does little to improve their plight or improve the educational system. It must be acknowledged that not all Arab universities are facing the same crisis in economic and political terms. Qatar University, King Saud University (KSU), the United Arab Emirates University, and a few others enjoy a financially sound proposition in a politically stable environment. Furthermore, the American University of Beirut, in particular, continues to be one of the world's most prestigious international universities. Within this context for Arab countries, this study focuses on the effects that economic and political factors have on research institutions in the Arab world. The institutions considered in this study are the Arab research universities (not including branches of Western universities) known for their participation in the international research community. Following Wolcott's (2005) definition of qualitative inquiry to "understand", not to "prove", this study identifies the effects of the crisis faced by universities on the global ranking of a sample of research universities in the Arab world.

Given the current crisis situation at many Arab universities engaged in research, this study seeks to understand the factors contributing to the decline in scientific research and the lack of global recognition of these universities. Although this study is not the first to consider the crisis faced by Arab universities undertaking research activities, this investigation reaches out to the source by interviewing rectors or presidents and international experts to ascertain the causes, effects, and solutions of this research dilemma. Through interviews with these policy and research experts, this investigation offers a unique opportunity to hear directly from policy leaders on the factors responsible for the crisis in Arab research universities and the low respect they receive in global rankings. The purpose of this study, therefore, is to first identify the social, economic, and political factors responsible for the research crisis in Arab universities. Second, the investigation takes into account the political instability and security issues that affect research in many Arab universities. Third, given the crisis in these universities, a survey of presidents and international experts focuses on the effect that political instability has on their future production of research. Finally, this study asks the respondents how Arab universities can improve their research capabilities to become world-class institutions. The basic questions guiding this investigation are:

1. What are the socioeconomic and political factors that contribute to poor production of research by the faculty at Arab research universities?
2. How do instability and security issues impede scientific research at Arab universities?
3. How can Arab research universities become world-class institutions?

Issues in scientific research at Arab universities

A number of issues are acting as stumbling blocks for the advancement of scientific research in Arab universities. Education and university officials in the Arab world recognize the inadequate application of information technology in research at Arab universities (Wheeler, 2002). Anderson (2012) notes that open enrolment policies, limited academic freedom, and underinvestment in public institutions all contribute to the deterioration of research in universities in the Arab region. In Egypt, for example, free universities are not really free because the poorly paid faculty members charge the students for reading materials. Anderson states that "The universities, and their faculty and students, are trapped in a vicious cycle of inexpensive, low quality, and not very enlightening education" (Anderson, 2012, p. 773).

Education systems in the Arab world are constrained by low-quality education that emphasizes rote methods of learning over critical thinking, irrelevant education characterized by a mismatch of skills learned in the schools versus the skills needed in the workforce, gender inequality, and social class

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difference (Adams & Winthrop, 2011). In Morocco, one of the biggest challenges facing university reforms is activating the partnership between scientific research and socioeconomic development (Jassos, 2008). The lack of financial resources is a significant contributing factor hampering scientific research. In a survey of the faculty at Nile Valley University and Shindy University in Sudan, it was found that 74% of the faculty members maintained that scientific research does not get financial support from the Ministry of Higher Education, the university, or the private sector (Farah & Othman 2008). Studies by a number of scholars report a disconnect between research in Arab universities and economic and social development (Alaydrous, 2004; Albargouty & Abosamrah, 2007; Albomohammed & Albadrie, 2012; Aleraiqi, 2006; Farah, 2014; Hafiz, 2014; Ismael, 2014; Kisnawi, 2001). Farah (2014) and Hafiz (2014), in particular, found weakness in scientific research due to lack of strategic future planning, disinterest by the private sector, and dependence on imported foreign expertise. Naifah (2008) categorizes the current condition of Arab universities into three areas. First, problematic factors that include lack of strategic plans and independence, weak research, lack of innovation, low number of graduate programs, and appointment mechanism of administrators in institutions. Second, the frustration of faculty members resulting from lack of professional development, research funding, incentives, security and sense of belonging, and low self-esteem. Third, scientific research, which Naifah describes as insignificant in its best form, is detached from the business and market realities and conducted merely for faculty promotion. In Egypt, faculty's salaries in public universities are around $260 per month, which is hardly sufficient to support a family. To make up for economic shortages, the faculty members resort to private tutoring that forces students to attend off-campus classes and to purchase academic notes from the faculty members (Altbach, 2013). Corruption is rampant in Arab universities and widespread in administration, student admission, grading, and hiring professors, all of which prove to be very costly (Buckner, 2013).

Aladwan (2013), the secretary general of the Association of Arab Universities (AAU), presents a list of some of the challenges confronting research activities at Arab universities. Of foremost concern are the low rates of expenditure and consequent low output from scientific research. Lack of a clear strategic plan for research coupled with a lack of specialized research centers is also a major concern. The "fragility," as he describes the status of the university educational systems, is also a contributor to these challenges. Studies by Albargouty and Abosamrah (2007) and Ismael (2014) reported that low rates of expenditure had a negative effect on research output. Salih (2013) observed that corruption, poverty, unemployment, and deteriorating economies led to the Arab uprising and, as a result, higher education institutions were deeply affected.

> In some parts of the Arab world, fear has overcome many individuals and has prevented them from pursuing a normal daily life. In particular, professors at Iraqi universities are in the midst of an immense struggle in their personal and professional lives. Ali and Al-Mukhtar explained the academic life in Bagdad in the following words:
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> "Today, Baghdad University is only a shell of its former self. There are a few bright lights in our academic life: a recent increase in our monthly salary, better computer facilities, and satellite and Internet communications (with which we are doing our best to catch up with the latest scientific developments). Still, we are missing the most basic part of life, which is security" (Ali & Al-Mukhtar, 2004, p. 4).

A major challenge for all the institutions of higher education in the region has been the "Arab Spring" of 2010, which overthrew regimes (in Egypt, Libya, Tunisia, and Yemen), triggered a civil war in Syria, and promoted constitutional changes in Morocco and Jordan.

When the revolution took place in Egypt, students and faculty members called for the resignation of university presidents and deans, demanding democratic elections to these positions to insure accountability and transparency (Anderson, 2012). Fifty-nine Egyptian professors from various disciplines were arrested for speaking out against the current government that overthrew the democratically elected President Mohammed Morsi (reported in *The Middle East Monitor*, September 29, 2013).

The University of Tripoli in Libya also confronted lack of security, violations, and harassment against the faculty and female students (Ministry of Higher Education-Libya News, n.d.). Moreover, in Syria, after the uprising took place, higher education and research have become "unthinkable luxury" according to a PhD Syrian student in neuroscience at Cambridge University (Redden, 2012), while students are still unable to challenge their professors (Grove, 2013). Religion has been used as an avenue to bring in interference and disruption of academic functions. Revolutions in Egypt and Tunisia

have emboldened the radical Islamists and triggered political fights that threaten academe. A Tunisian specialist in Islamic civilization warns that his university has become an ideological battleground. Egyptian scholars are also concerned that the rise of Islamists is leading to greater intimidation and censorship (Lindsey, 2013). Authoritarian regimes in the Arab world seek to shape Arab higher education and impose limitations to academic freedom (Taha-Thomure, 2003).

Within this context of the Arab Spring and the ensuing instability of the political, religious, educational, and economic sectors, universities and their faculty members are still eager to pursue a mission of teaching and research. Unfortunately, in their assessment and ranking of institutional performance, international ranking organizations and funding agencies, in general, are oblivious to this struggle for survival among many Arab universities. While most Arab universities play central roles in the intellectual vitality of their nations, few are rewarded or recognized for the importance these institutions play in teaching and research in their respective countries and regions. The next section of this paper addresses the above-mentioned issues that Arab universities confront in their quest to be recognized as globally relevant institutions.

International recognition in the developing world

Global recognition and the university rankings, popularized by the Shanghai Jiao Tong University's academic ranking of international universities, according to Ordorika and Lloyd (2015), directly point to the global hegemony of the "dominant" American and British Anglo-Saxon model of universities. Even though the Center for World Class Universities at Jiao Tong University determines the rankings, critics often complain about its Western model and English-speaking bias. For example, Ordorika and Lloyd (2015) propose further that the international ranking of universities is a "manifestation of what Bourdieu and Wacquant (1999) have termed US 'cultural imperialism'". Nevertheless, Liu, one of the founders of the Shanghai Jiao Tong ranking system, defends the assessment process by explaining that "any ranking exercise is controversial and no ranking is absolutely objective" (Liu, 2011, p. 2).

Controversial ranking systems are evolving rapidly and are influencing the development of higher education systems around the world (Marginson, 2007; Ordorika & Lloyd, 2015). Rankings also have an impact on an institution's external resources by attracting investment, increasing institutional revenues, and improving the quality of incoming students. Teichler (2011) attributes the predominance of international ranking of universities to three major trends: higher education internationalization, massification of higher education, and increased competition. Rather than accepting the ranking system, Levin, Jeong and Ou (2006), in their attempt to define what comprises a world-class university, concluded that reputation rather than quality of research, teaching, and community service makes a world-class university. Alternatively, Altbach (2011a) indicated that there is no specific definition to a world-class university system. Universities "can be world class in serving in the best way possible their particular mission, region, or country" (Altbach, 2011b, p. 2).

In a new knowledge-based economy, universities engaged in research activities play a major role in building the core of competitiveness among countries. National governments are concerned about the strengths and weaknesses of their institutions to respond to global competition (Liu & Cheng, 2011), with the main focus "on economic benefits rather than the quality enhancement itself" (Shin & Kehm, 2013, p. 2). Marginson (2006) observes that world governments are taking advantage of the situation and observing the rankings as a performance indicator, free of collection cost.

Arab governments and educational systems, however, have a varied reaction to global competition and university rankings. For example, prominent universities engaged in research in Saudi Arabia have been vigorously competing with each other and worldwide to find a place in the Shanghai ranking of top 500 universities. Ironically, before 2008, no Saudi universities were included in any of the global ranking lists; however, in 2015, four Saudi universities found a place in the Academic Ranking of World University (n.d.), known as the Shanghai ranking. Alothman (2008), former rector of KSU, explained that KSU studied the experience of 98 international and prestigious universities in ten advanced countries and created a strategic plan to raise KSU's status among the world universities. In six months, KSU was able to form 79 program partnerships with world universities, including Harvard and Illinois, and recruit 14 Nobel Prize winners and highly recognized researchers.

Universities in the developing world are at a distinct disadvantage when it comes to global competition and rankings among universities. The typical institutional indicators (research, students, and funding) of universities do not consider the economic, social, and cultural circumstances of a country and its universities. To understand first-hand how these national circumstances affect

universities in the Arab world, the author spoke directly to leaders at various academic institutions. Given the instability in the Arab world, the purpose of this investigation was to interview a sample of institutional leaders (rectors) in Arab universities and international experts on the socioeconomic and political factors that impede scientific research and contribute to poor performance in global competition and subsequent university rankings.

METHODS

In this investigation, the author conducted semi-structured interviews of the rectors or their designates at Arab universities that were engaged in research and a panel of three international experts on higher education. The author established a contact and support mechanism with the AAU to facilitate channels of communications with a sample of presidents of research universities. The interview protocol was developed in English and then translated into Arabic to ensure accuracy. Interviews were audio-recorded and transcribed by the author. A qualitative approach was selected to collect participants' responses on the subject matter because it allowed them to share their views in depth and in a private setting (Bloor, Frankland, Thomas & Robson, 2001). The key concept analysis was employed to interpret the interviews (Krueger & Casey, 2009).

   Interviews with the presidents were in the form of open-ended questions broadly based on four major themes: impact of global rankings, recognition of research by faculty at Arab universities, factors that impede scientific research, and improving the rankings of Arab universities. The interviews with international experts were also open-ended, and the same major themes used in the interviews with presidents were included. This study was guided by Wolcott's (2005) perspective that qualitative inquiry is about understanding and it is not a proof.

Participants

The participants in the study were presidents or vice presidents from Arab universities engaged in research in seven out of the 22 Arab countries and three experts on global higher education. Fifteen presidents of research institutions in the Arab region were contacted and seven agreed to participate. Three experts on global higher education were contacted and all agreed to participate in the study. The participating presidents or vice presidents, or their designates at seven Arab universities were as follows:

- President of the University of Baghdad in Iraq;
- President of the University of Jordan in Jordan;
- President of the University of Khartoum (UK) in Sudan;
- President of the University of Algiers 1 (UA) in Algiers;
- Vice President of Graduate Studies and Research at Cairo University (CU) in Egypt;
- Vice Rector for Graduate Studies and Scientific Research at King Fahd University for Petroleum and Minerals (KFUPM) in Saudi Arabia;
- A representative of Mohammed 5 University (Souissi) in Morocco.

The countries selected were based on the representation of different regions in the Arab world and cooperation of university leaders. The three experts interviewed in the field of global higher education were Ken Kempner, Simon Marginson, and Philip Altbach. These experts were selected on the basis of their knowledge of higher education inferred from their numerous international publications and research in the field. Each author has contributed as an editor and/or co-author to a number of significant books in the fields of global higher education and global university rankings.

RESULTS

The themes generated from the qualitative analysis of interviews with the rectors, presented below, focused on promoting research and publications, funding, and the need to become a world-class university. These areas of concern by top administrators are somewhat at odds with concerns of faculty members in a study of Princess Nourah Bint Abdulrhman University by Almansour and Kempner (2015). In their study, the researchers found that the faculty members were concerned with the lack of research motivation, lack of a research funding system, and the difficulty in publishing in high-impact journals, primarily in English. The concerns expressed by faculty members in the Almansour and Kempner study are also somewhat in contrast to the perspectives by the panel of three international

experts in this study, which are discussed subsequently: university rankings, English as the language for global rankings, basic science, economic factors, faculty's socioeconomic status, and research at Arab universities in the revolution era.

Presidents of Arab research universities
Promoting research and publication

Almost all the rectors interviewed explained that stimulating scientific research and enabling publications in high-impact journals is an action each of their universities has undertaken in proportion to their available resources. At the UA, however, research activity is part of a national scientific research plan funded by the Algerian government. The rector of UA indicates that the research program includes 30 programs related to all aspects of life, such as health, finance, and social services. He, however, questioned the validity of the rankings and being judged by an external agency: "How can we be ranked from long distance without visiting the university?"

The biggest promotion of research among the participants interviewed is that taking place at KFUPM in Saudi Arabia and at the University of Jordan (UJ). The Vice President of KFUPM, which is now one among the 500 world-class universities in the Shanghai ranking, indicated that the increased funding by the Saudi government and semi-governmental entities in the past 2 years has enabled the university to initiate research projects and solicit cooperation with world universities in the world, such as Stanford, Massachusetts Institute of Technology, and Cambridge, in energy and the environment. He admits this had an impact on lifting up the ranking. However, he remarks the university has neither changed its mechanism nor methodology and strategic plan of research merely for ranking purposes.

At the UJ, the president explained that the university is leading a research effort in stem cells and body tissues and is aiming for an international breakthrough in this area. He noted taking several steps to advance his university's ranking, including systemization of scientific research and instituting measures to encourage the faculty members to increase publications in high-impact journals. He believed that these efforts have paid off and UJ has advanced in the world rankings. The president of the UK indicated that he is encouraging faculty to publish in science and nature journals and is cooperating with the Webmetrics ranking, which has resulted in making improvements to the university website. The president of the University of Bagdad (UB) indicated that publications in high-impact journals have increased from 350 articles in 2012 to 650 articles in 2013.

All the participants in the interviews indicated awards and incentives for faculty publishing in high-impact journals and encouraging international cooperation. Not all the presidents admitted making changes only for the sake of the rankings, except CU, which, according to its Vice President, is "updating our plans to take the ranking issue into consideration". The president of UJ remarked that "ranking reflects prestige more than it reflects quality," while the VP of KFUPM explained "custom made changes to rankings' criteria may advance the ranking of a given university but it would not last if the university leadership is not focused on quality". Only two participants admitted that faculty members' socioeconomic status affects their motivation for research. Almost all agreed that political climate has no effect on research. Security issues in Iraq are downplayed by the president of UB, who said, "Life goes on, we got used to it".

Funding

Almost half of the participants expressed that increased funding for research is playing a role in improving the university's prestige. The VP of KFUPM reported an increased budget by government and semi-government bodies. The president of UB confirmed receiving a billion dollars from the Iraqi government to boost research at medical, engineering, and basic science colleges. The remaining participants, however, expressed the need for funding of their institutions. The UK president protested the trade embargo imposed against his country by the USA and Europe. He stated that "Sudan is deprived of technology, we have the brains but we lack the capabilities". Similarly, the representative of Mohamed 5 Souissi University in Morocco said that "lack of sufficient research resources is a major factor that impedes scientific research". For CU as well, the vice president explained that "Limited funds affect the quality and quantity of the research".

The presidents did not indicate any remarkable activity by the private sector in the funding process for their institutions. Investing money in university-based research is not taken seriously by the private sector. Instead, the presidents who were interviewed focused on international companies to fund research at their universities. The findings from the interviews do show that universities in countries

such as KFUPM and UJ that enjoy political stability and economic resources are more active in research. Somewhat surprisingly, the VP of CU did not see any direct relationship between the political climate and research funding.

Becoming a world-class university

All participants except the president of UA viewed global cooperation, partnerships, visibility, and investments with the rest of the world as key factors to becoming a world-class university. The UA president, however, remarked that "We have world-class universities in the Arab world and teaching in Arabic is a sovereign issue". On a more realistic note, the president of UB encouraged abandoning old methods of learning by converting from receiving to creating knowledge. The representative of Mohammed 5 University called for resources and funds for research, followed by motivation and program evaluation. The VP of CU remarked that becoming a world-class university requires "fulfilling current ranking criteria and requirements, starting a transparent mechanism for national/regional ranking, improving financial ability of universities, and encouraging cooperation between universities and industries". The president of UJ recalled the golden age of Arab scientists and explained their superiority: "they were thinkers, innovative, forethought, free, and supported by the state". He added that "Universities now are not necessary for manufacturing knowledge, they are merely providing it".

In summary, the participating presidents of Arab universities were keen on promoting research and publications. UJ and KFUPM were advancing in the rankings as a result of their efforts in scientific research and publications but most Arab universities were in critical need of funding. While the private sector is hesitant to invest in research, universities are looking for international investments. All the participants in the study, however, downplayed problems with security and the impact of these issues on universities engaged in research.

With these varied and guarded perspectives of the political circumstances of their universities by the presidents or rectors, we turn next to interviews with three international experts on higher education.

International experts

Importance of university rankings

Although experts agreed that global university rankings have become more important than they should be and that their role has become overemphasized, Marginson viewed global rankings as crucial to universities "in determining their self-image and position in the world and it affects the venue that's placed on them by perspective students, faculty, governments and industry investors". He remarked that "it's probably the most crucial performance indicator for university leaders". Kempner commented that "It's an escalation similar to an arms race, everybody wants to be like Harvard, even Harvard wants to be like Harvard". Altbach indicated that ranking is important to research institutions, and it is going to stay. He explained that "In the era of pacification, people and governments like to differentiate themselves and rankings is too simple a way to do that". On the evolution of rankings, all the three experts expected additional measurements to be implemented. Kempner noted that alternative ranking systems are starting to compete with the Chinese version. Marginson expected rankings to move toward stronger weighting and combination of indices. He would, however, like to see rankings evolve "towards single rather than multi-indicators, free of psychological fallacies displayed in league tables". Altbach expected measuring more than research, mainly teaching. He added that "THE [Times Higher Education] is doing that but that's difficult to measure".

English as the language for global rankings

All experts agreed that increasing research efforts and publications in English and the emphasis on lifting citation rates is a move in the right direction for institutions that seek a higher ranking. Moreover, all experts agreed that English is decidedly the language of research. Kempner indicated that English is the international language for research. Altbach remarked that "English is the global language of science, much of the best research is in English and people who do the measuring are in English speaking countries". Marginson also explained that "Research dominates rankings because you can count on worldwide systems for recording what's published and what is cited, there are two, web of knowledge and web of science, written by Isaac Thompson". He added that "The Isaac Thompson ranking of world universities is probably the most useful indicator for research performance". Marginson explained that "The only way you can compare research outcomes is to use a common base of research common settings, the only global usage is in English". He added that "the work in German,

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French, Spanish Arabic, Japanese, Korean isn't being read outside those language groups and there's no way we can include them in a global data base because the only global language that is present is English".

Basic science and rankings

The experts agreed that universities need to build infrastructure for science. Marginson remarked that "higher education and research in science have got to be entrenched on a long-term basis in order to be a useful contributor to economy and society". Marginson also stated that "You simply have to have a sustained level of investment in science infrastructure over about two decades to push your position in the rankings". The experts also agreed that adopting competition strategies accelerates research production.

   All the experts agreed that basic science is the area of demand for ranking bodies. Kempner indicated that science is very definable and very quantifiable unlike social sciences that address fuzzier human behavior. He remarked that "the most prestigious work is typically in the sciences, medicine, engineering and the areas that are very quantifiable". Marginson noted that "If you want to improve your ranking performance, you build your applied physical sciences, and applied life sciences. It's those areas, which generate an enormous number of publications and citations, that are very strong in ranking". He added that "China, Korea, and Singapore are rising in the rankings and soon will be comparable to Western Europe, the UK, and eventually North America in terms of volume of science and its applied sciences". Albatch viewed hard science as being fashionable and over-respected in journals.

Economic factors and rankings

The experts agreed on a strong relationship between an institution's financial ability and its research production. Kempner saw wealthy countries as having greater opportunities in research and development where they are able to put a higher percentage of money into research. Meanwhile, lesser-advantaged countries are struggling to provide its citizens necessary utilities and facilities like clean water, sanitation, and basic medical care, which make research a luxury that they cannot afford. Moreover, Marginson believed that there is a close correlation between the level of public investment in research and development and the position in the rankings: "You really got to pump money in for a sustained period to build a globally competitive science infrastructure". Marginson used China as an example and stated that "China has invested heavily in research and development since 1998 and the 15 year investment is showing itself now in the ranking". In 2005, China had eight universities in the 500 world-class university list, and in 2013 the number increased to 28 universities. This means that the investment paid off, according to Marginson. Of course, Kempner noted that "the major ranking indicator was created by a Chinese university that is overly weighted to favor hard-science research, international awards, publications in English, and globally relevant rather than local or regional research".

Faculty's socioeconomic status and rankings

Kempner viewed faculty's socioeconomic status as an important factor affecting research output and, consequently, an institution's ranking. In a case study conducted by Kempner (1994) in Brazil concerning faculty's research, he found that female faculty members were doing more research than male faculty members because their husbands were the major income providers. Conversely, younger male faculty members who provided the primary income of the family had to work in two to three different universities and had no time for research. Low salaries drive faculty to "moonlight" jobs, as Albatch put it. Marginson argued that "it depends on the case, top researchers are driven by discovery and creativity more than money". Marginson cited examples from Russia, Taiwan, and Malaysia. He explained that "in Russia earning per capita income is below $25,000 of the average global income and, therefore, faculty's professional status and salaries lost standing. Nevertheless, Russia's Moscow State University is able to be in the top 100 world-class universities. In Taiwan, earning per capita is $9000, and the Taiwanese were able to make an impressive growth in science publications. In Malaysia, however, the case is different, faculty are not under the best leadership. In addition, Malaysian faculty are underpaid, which drives the best of them to move to neighboring Singapore where their income is higher and the research system is much better". Regardless of income status, researchers need to have the time to conduct research, receive income to support themselves while

conducting their investigations, and have sufficient resources to conduct the research. This is why Maginson, as noted previously, suggested that a long-term and "sustained level of investment in science infrastructure" is needed to improve research and then eventually rankings.

Research at Arab universities in the revolution era (Arab Spring)

The experts agreed that the Arab Spring had been disruptive to normal work at universities. Kempner believed that the Arab Spring has provided an opportunity for Arab universities to openly talk, discuss, and do research on the changing political and economic climate. Marginson indicated that it is important to preserve the role of universities during disruptive political activity. He suggested that the universities losing their role and shutting down during cultural revolution in China is a prime example of this disruption in the university's creation of knowledge. China had to rebuild its universities for at least a decade to recover. Marginson explained that "It's really good if national universities can sustain respect for their role and function as places where ideas are developed and without that you won't have other places in society where ideas can emerge quite as freely and quite as intelligently as in universities".

DISCUSSION

The discussion of the implications from the study findings is organized around each of the questions posed to the presidents and panel of international experts.

What are the socioeconomic and political factors that contribute to poor production of research by faculty at Arab research universities?

The presidents reported that funding is a major obstacle to scientific research at most Arab universities. The results that showed lack of funding and research resources are serious challenges faced by faculty as confirmed by a number of scholars (Albargouty & Abosamrah, 2007; Altbach & Salmi, 2011; Benamer, Bredan & Bakoush, 2009; Ismael, 2014). In this study, the presidents along with the international experts agreed that these universities in the Arab countries typically lack a research infrastructure and connection to the society. According to the respondents, the private sector in Arab countries seems to be hesitant to invest in research and does not have much faith in it. Other scholars (Aladwan, 2013; Farah, 2014; Farah & Othman, 2008; Hafiz, 2014; Ismael, 2014; Kisnawi, 2001; Naifah, 2008; Salih, 2013) have also previously found the lack of investment in university research from the private sector.

The findings by Albargouty and Abosamrah (2007) show the faculty's heavy teaching schedules, low salaries, and incentives as among the main reasons for weak research by the faculty. Most participating presidents in this study, however, did not seem highly concerned about the faculty's socioeconomic issues and their potential effects on research production. Conversely, findings from the interview with the president of the UK in Sudan indicated the near downfall or collapse of academic research in Sudan as a result of the poor socioeconomic standard of living that triggered massive migration of university professors to other countries. Dirar's study (2013) confirmed the high volume of migration of the highly educated Sudanese. Similarly, the Minister of Higher Education in Sudan warned of the collapse of the higher educational system as a result of the migration of university professors, as reported in *Sudan Freedom* (June 24, 2014). The *BBC Arabic* (September 9, 2014) reported that approximately 50,000 Sudanese intellectuals (medical doctors, university professors, engineers and media personnel) had left Sudan.

While Kempner's study (1994) of Brazilian male faculty's lack of research supported the effect of socioeconomic status, Marginson argued that top researchers are driven by discovery and creativity more than money. In a subsequent interview, Kempner agreed with Marginson, but noted that "researchers have to eat too".

The discussion with the presidents and international experts in this study indicated strongly that writing academic articles in English and publishing in high-impact factor journals are new challenges added upon Arab faculty. Publishing in Arabic or French is not measured in the competitive rankings and, therefore, is not considered. Even if faculty members are fluent in English, they often cannot afford publication fees that may be as high as three or four times their monthly salary. Advancing in the global rankings demands publishing in high-impact journals, as reinforced by Altbach and Knight: "The results of globalization include the integration of research, the use of English as the lingua franca for scientific communication" (Altbach & Knight, 2007, p. 291).

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How do instability and security issues impede scientific research at Arab universities?

The interviews in this study show that in countries with political and social conflicts, the participating presidents downplayed the security issue and its impact on higher education. Whether the presidents were being politically cautious or were detached from reality was difficult to discern from the interviews. Nevertheless, it is obvious that security issues are seriously affecting the functioning of higher education institutions. For example, security issues have been escalated at CU when it was forced to close after three bombs exploded targeting the security forces guarding the university (*Reuters*, April 2, 2014).

If security issues and a hostile political climate continue to exist in the Arab region, it is most likely that higher education institutions will continue to be a theater for conflict and violence. Such continued instability would lead probably to loss of funding from all sources, both domestic and international. In crisis situations, the limited government funding for research is diverted to other areas in order to deal with the instability of domestic crises. Such instability, as has happened in Sudan, will lead to an increase in migration of remaining good researchers in what is typically known as the "brain drain". This is the case not only in Sudan because the Arab Spring has triggered mass migration from North Africa, Libya, and Tunisia to Europe (Goff, Zarin & Goodman, 2012). Political instability, as found by Aldawan (2013), is one of the main reasons for the brain drain in Arab countries, which accounts for 31% of the total brain drain from developing countries. For example, the civil war in Syria is driving faculty members to flee the country and seek help from international rescue bodies (Labi, 2012). Similarly, Sajjad's study (2011) found in Pakistan that 33% of the intellectuals have fled the country because of political instability and fear for their lives. Unfortunately, in such unstable political situations, the ruling regime characteristically increases control over higher education and both the autonomy and quality of institutions decline. New politicized higher education institutions typically emerge in countries engaged in civil war. For example, the Syrian opposition party announced the establishment of a new Syrian university on the Turkish border (*Alquds Al-Arabia*, May 8, 2014). The creation of such a highly politicized university typically serves the political agenda of the opposition party rather than creating knowledge.

How can Arab research universities become world-class institutions?

Most participating Arab university presidents in this study believe that global cooperation, partnership, visibility, and international investment are key factors to becoming a world-class university. The international experts in this study caution, however, that becoming a world-class university is not something that occurs overnight. The experts emphasized the importance of building a research infrastructure based on sustainable financial resources and a research system that motivates researchers. Furthermore, the employment of the English language as the language of research and concentration on basic sciences are crucial elements to receiving global recognition and rising in the ranking lists.

Nevertheless, most of the participating presidents in this study have a positive attitude toward global university rankings. They are focused on advancing their institution's rankings by providing financial and administrative support and incentives for faculty to publish in highly recognized journals in the fields of basic sciences and medicine. As a group, they also promote partnerships and investments with other Arab and Western institutions. Most view partnerships, global cooperation, visibility, and investment as key factors in becoming a world-class university. Yet, Arab universities' scientific research lacks an infrastructure that includes a research system, sustainable funding, researchers, and resources in an innovative and competitive setting, as observed by Naifah (2008). Universities in the Arab world have not been places of innovation or inventions due to political and economic struggles (Anderson, 2012). They also lack independence, freedom, connection with local problems, and investment by the private sector. Although the participating presidents understand how to improve their university's standards, most do not have the means to achieve it.

Unfortunately, not all universities can be world class in the global rankings, but they can serve their respective countries if provided with wise leadership and resources to achieve their goals (Altbach, 2011b). Universities can also be objective and intelligent platforms during a nation's political crisis, as proposed by the president of the UJ. He explained that the political climate in his country has triggered discussions and research efforts in areas such as history, international relations, and political sciences. He believed that universities have a major responsibility during these historical circumstances to frame

intellectual thinking that is objective and focused on a scientific dialog of political, economic, and social justice issues in order to lead positive change in a civilized manner.

CONCLUSION

This study is not intended to generalize every Arab research university in every context, but investigates the insights of a sample of leaders and international experts about their perspectives on Arab universities, research, and global rankings. As noted, this investigation is an inquiry not to "prove" (Wolcott, 2005) but to understand further the political, economic, and cultural effects on research and global rankings. Interviews with a sample of Arab university leaders provided an insight into their institutions while a panel of international experts further illuminated our understanding of the effects of research productivity on global rankings. The panel members provided insightful suggestions for improving research productivity based on their research and study of universities at the global level.

Global competition in academia and the quest for higher rankings have become an indicator of national pride similar to the Olympic Games. Arab universities engaged in research are joining the competition, but very few are able to achieve world-class rankings. Although socioeconomic challenges, the lack of private investment in research, and the absence of a research infrastructure have existed for quite some time, the recent revolutions in some Arab countries have only served to increase the challenges confronting higher education institutions. The foremost concern for universities is an assurance for the safety and security of faculty and staff. Unless professors feel safe, they will spend little time on campus. Research is highly improbable under such unsafe conditions and the migration of good professors, in the "brain drain", will probably continue. Additionally, a research infrastructure should be developed that values faculty, offers recognition, and supports research through grant funding, training, and publication assistance. A just evaluation system is also needed for tenure and promotion, administrative appointments, and research awards to assure that faculty members are awarded on merit. The creation of a research infrastructure should also start with a focused line of inquiry that emphasizes areas of specialization directly related, first, to local, national, and regional needs.

I expect other researchers to continually update this investigation on the socioeconomic and political factors that impede scientific research at most Arab universities.

Higher education institutions are platforms for research and development, progress and hope for the new Arab generations. Ruling regimes may rise and fall but higher education institutions remain. Cairo, Alazhar, Damascus, Bagdad, and other Arab universities have outlived many regimes, revolutions, and wars and are still standing. Arab research universities will regain their personal and global respect when they function as academic research institutions that benefit both their local societies and the global community. This will then give a new meaning to the concept of a world-class university that serves its culture while enriching the global community.

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