

Small State, Large World, Global University? Comparing Ascendant National Universities in Luxembourg and Qatar

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Comparing the small states of Luxembourg and Qatar, I analyze their ascendant national universities to find out the extent to which these higher education institutions reflect global norms relating to research universities – or the traditions of their host countries. Which characteristics of “world-class” universities exist in the Université du Luxembourg and Qatar University, embedded in two unusual small states that are hyper-diverse culturally and extremely wealthy? Despite significant cultural differences, both Luxembourg and Qatar have compensated perceived vulnerabilities of small states as they invest in national skill formation and the production of knowledge. Although tensions remain regarding the languages of instruction, the international recruitment of scholars and students, and sustainability, these universities are growing in prominence regionally and globally.

Introduction

Science, based on intellectual dialogue, conferences, and publications in the lingua franca of the day, is a thoroughly worldwide activity. Research universities offer spaces for multilingual, multicultural learning and for scientific discovery. Increasingly, national progress relies on successfully institutionalizing universities that promise to generate the “knowledge society” and the respective economy (Ramirez & Meyer, in press). Today, all countries invest in higher education, often in a national university. Because the world has many more small than large nations, examining university institutionalization in such countries can help us gauge global scientific capacity-building. At the same time, the “global financial crisis” since 2008 has shown the importance of sustainability – and its limits (Calhoun, 2011).

The costs of tertiary education have risen by 15% across the developed world since 2000 (OECD, 2011). Some of the most prestigious and well-endowed higher education institutions, both private and public, have had to radically reduce their teaching and research investments. Can the dramatic expansion in student services and expenditures of tertiary education institutions in the Anglophone world that have long led the global league tables be sustained – or be successfully emulated elsewhere? Given massive current financial dilemmas in UK and US higher education (see Head, 2011), striving states and institutional entrepreneurs farther down in the rankings have a tremendous opportunity to attract the best and brightest. However, this must largely be financed through considerable state investments, which were also crucial in the initial growth and world renown of leading European and American universities. Creating new institutions from the ground up may involve high costs and myriad challenges, especially for small states due to limited highly-qualified human resources and lack of economies of scale (Crossley, Bray & Packer, 2011; Martin & Bray, 2012). Numerous successful universities in regions around the world, such as the National University of Singapore (www.nus.edu.sg), have provided considerable returns from national investments in education and science (Salmi, 2009). Newly-established universities may capitalize on the freedom to bypass old paradigms and utilize new technologies.

Two nascent national universities with ambitious agendas – the Université du Luxembourg and Qatar University – are embedded in very small but exceptionally wealthy states in which each

university emulates global goals simultaneously with serving local needs, such as labor market demand. Comparing recent institutionalization processes there provides insights into how small states compensate being on the perceived periphery of a scientific world characterized by stark and increasingly global rivalry. These attempts to produce an internationally-competitive higher education institution emphasize key features of what it means to be a “small state,” and helps to explore the transformation of barriers into advantages. The comparison of Luxembourg and Qatar emphasizes similarities and differences in the strategies developed and investments made in attempts to join the elite ranks of world-class universities.

From the beginning, universities have been standard-bearers of the nation-states in which they are located, often serving to train elites – from civil servants and business leaders to clergy and intellectuals. Yet they have also reached beyond such boundaries, be they political, linguistic, or disciplinary, oriented as they are to universal goals such as truth-seeking and cross-cultural understanding. Higher education, more than ever due to massive educational expansion in societies worldwide (Schofer & Meyer, 2005), is often viewed as the most assured pathway to elevated social status for individuals and to economic growth for societies, as those with tertiary education qualifications often enjoy higher salaries and lower unemployment rates than other groups.^[1] Higher education, while exhibiting durable national differences (and sometimes nationalistic tendencies, seen in the training of diplomats and development of science-based armaments), has become increasingly international in orientation over recent decades.

To analyze the contemporary internationalization of higher education in small states, this contribution uses available research literature to compare two relatively recently founded national universities, striving for international reputation, that belong to states among the smallest but wealthiest globally: Luxembourg in Europe and Qatar in the Middle East. Reflecting the theme of the special issue, I proceed by discussing ‘smallness/’ and briefly portray these two small states that host ascendant research universities. I then discuss major trends in the internationalization of tertiary education. Delving into the two case studies, I compare these universities in their respective contexts, asking if and how ‘smallness’ is reflected in each national university. What goals and functions does each national university have? Finally, which characteristics do these newly-founded universities – striving to be ‘world-class’ – exhibit?

Theoretical Approach

Theorizing smallness, an often-overlooked characteristic in the research literature on statehood (but see Katzenstein, 1985), demands attention to definitions, theoretical goals, and empirical measures. Small states have particular advantages and disadvantages (see, e.g., Bray & Packer, 1993), yet many ascribed characteristics do not hold empirically, also when confronted with the two cases under investigation here. Indeed, as Bacchus (2008) emphasizes, regardless of their size, small states “can improve their development prospects by skillful planning” (p. 127). Here, I discuss three layers in which national universities in small states develop and attempt to realize their global ambitions: small state context, transnational trends in education, and the research university locally and globally. I examine two nascent educational organizations in small states of different world regions, being constructed within contrasting institutional environments, and utilizing very different resource-bases to grow. These universities are similar in their ambition to become part of global dialogue (and to compare favorably with hundreds of other research universities), to be regional leaders, and to address local and national needs. Yet they have chosen particular emphases and selected different strategies to reach these goals.

'Small' States?

Many characteristics come to mind when 'small' states are considered. Often, these seem to be vulnerable and peripheral, due to both the lack of large populations and little land, due to their geo-political location, or due to limited economic capacity (Bacchus, 2008; Bray & Packer, 1993). Yet, as is evident in the cases of Luxembourg and Qatar, even very small states may exert influence via elite networks, supranational coordination, and business acumen far beyond their population size or land area. For example, these countries host powerful media companies, Al Jazeera (www.aljazeera.com) in Qatar and Radio-Television-Luxembourg (www.rtl.com) that wield considerable regional influence by shaping political consciousness. Furthermore, successful small states may convert perceived disadvantages, such as the lack of considerable domestic consumer markets, into factors of strength, such as highly successful trading relationships with other countries near and far. Import/export flows and labor migrations are also necessary because these countries are not self-reliant or self-sustaining; this is also true in academic markets. Due to the reliance on other countries' universities to train their citizens, both their labor forces and their education systems reflect a high degree of internationalization, especially at tertiary level. The two countries chosen for in-depth comparative analysis are atypical in many ways, as they compensate well for their modest physical and population size. Both have chosen to invest in founding and expanding their own national university to respond to changing global norms and economic conditions. Most importantly, Luxembourg and Qatar now attempt to convert their current economic success into long-term affluence via education and science.

As a correlate of heavy in-migration and cultural diversity, multilingualism is a further hallmark of life in these small states, although languages are also often highly stratified in their usage and prestige. Internally, less functional differentiation and tight social ties can ease decision-making and bundle resources across boundaries that in other contexts would be challenging. For example, cosmopolitan life and elite communication in both countries is centered in a single dominant city. Other strategies to compensate for their lack of military force are advanced diplomacy (as seen in regional integration attempts, such as the Benelux or the Gulf Cooperation Council) or political neutrality, which led to Luxembourg to host several European Union institutions, such as the European Court of Justice. Perhaps decisively, these small states have amassed vast wealth from their strategic dominance in key industrial sectors. They have done so whether through discovery and extraction of national resource holdings, like Qatar's traditional pearl trade or its current oil and natural gas reserves, or in highly profitable global industries, such as Luxembourg's traditional steel foundries, now largely replaced by supranational governance and banking. Thus, while small in terms of population and area, these states are large in resources and influence. Indeed, the countries chosen for this comparison are listed first and second by the International Monetary Fund (2011) in terms of GDP per capita: Qatar at Intl\$102,891 and Luxembourg at Intl\$84,829.

Both countries have fashioned high-tech campuses for their universities. University City, in the capital of Doha, Qatar, hosts a number of prominent foreign universities' branch campuses; Qatar University's own campus is also ultramodern. The Université du Luxembourg, while still housed in several regal structures, will soon move into a completely refurbished former steel factory site (Campus Belval), alongside the border to France. This Cité des Sciences initially budgeted at €600 million and comprising 20 new buildings, has begun to accommodate research institutes, banks and retail stores, and R&D companies. Making up for lacking private endowments, these small states are investing heavily in top-quality foundations for education and science.

Thus, these countries provide good cases to examine what remains of smallness when this

concept is separated from the challenge of finding sufficient financial resources to establish the material and human infrastructures that are necessary but not sufficient to create a university competitive with top institutions worldwide. In both countries, elites have marshaled support for these universities because they recognize the importance of education and science for the future development of their countries, which depends, more than ever, on transnational economic, political, and cultural networks. Before analyzing the relationship of each organization to its state, its region, and the rest of the world, the changing conditions for higher education and science – whether attempted in Europe or the Middle East – must be addressed. To what extent are these universities orienting themselves to global norms and higher education trends, such as massification, mobility, and Internet-based teaching and learning – or rather focusing on national priorities? What challenges exist for these universities aiming to become world-class?

Large World: Transnationalization of Higher Education and Science

The ongoing trans-nationalization of higher education and science tests traditional nation-based analyses of institutional change in education. Yet even cross-national analyses often discount longstanding differences in the foundational principles undergirding these complex systems. In response, neo-institutional analyses of higher education have explored the diffusion of worldwide ideas and norms relating to higher education (Drori, Meyer, Ramirez, & Schofer, 2003; Schofer & Meyer, 2005). Such work has uncovered the ideologies, values, and assumptions that guide educators and policymakers as they continuously attempt to optimize their institutions and organizations based on comparisons with other countries.

Continued growth in the numbers of youth and adults attending all types of higher education institutions is a key element behind both growing scientific capacity and the role of the university in knowledge production. For example, about half a million students, or just 1% of the youth age-cohort, were enrolled in higher education worldwide in 1900; a century later approximately 100 million youth were enrolled, representing 20% of the college-aged cohort (Schofer & Meyer, 2005). This phenomenal growth forms a critical base for the recruiting and training of the world's future scientists and scholars (Altbach, 2005). It also supports the growth of scientific literacy and educational attainment that affects occupations, businesses, and indeed all dimensions of society (Baker, forthcoming).

While the motivations for pursuing internationalization are myriad, most suit small states extremely well, because of the aforementioned structural and cultural conditions often present. The rationale and vision shared by many governments of how to build capacity for science is easily grasped: infrastructure for research lies at the heart of the knowledge triangle – “the beneficial combination of research activity, specialised education/training and innovation that advances our knowledge” (EC, 2010a, p. 3). In terms of teaching today, internationally-oriented universities aim to prepare students for employment as well as for global citizenship, especially in states that rely to a large extent on foreign workers and the export of goods and services. In terms of research, governments hope universities will strengthen institutional capacity and broaden networks, to contribute to knowledge production on key issues, to enhance prestige and visibility, and to generate revenue (Salmi, 2009).

The Global Research University

To what extent are the young universities in Luxembourg and Qatar on the path to becoming global research universities? Are they or will they likely become globally competitive? To address such questions, the characteristics of world-class universities synthesized by Levin, Jeong and Ou (2006) are helpful (see also Salmi, 2009). The priorities most-often considered are excellence in research

(top-quality faculty); academic freedom; self-governance; and adequate facilities and funding. Further crucial factors include diversity; internationalization (foreign students, scholars, and faculty); democratic leadership; and a talented student body. Also vital to ensure competitiveness are informational infrastructure (ICT, library); high quality teaching; connection with society and serving community needs; and within-institution collaboration. These dimensions are compared as each “world-class” research university measures itself against several hundred other well-resourced and performance-oriented organizations worldwide. Universities compete in a growing number of rankings, for example, Times Higher Education, Shanghai-Jiao Tong or Webometrics, among others. Unmistakably, direct comparison and competition as well as regional coordination (as in the Bologna process in Europe) are key factors that have intensified institutional change and seem to facilitate isomorphism in higher education (Powell, forthcoming).

Both the universities in Luxembourg and Qatar are oriented toward global standards, at least according to their mission statements and annual reports, and seek to become “elite” universities. Yet the target is shifting, as the best of the best, also known as “super research universities” (SRU), have undergone striking recent development (Mohrman et al., 2008). This model emphasizes certain qualities a handful of Western universities have pioneered – extraordinary research capacity, science and technology parks, and preeminent faculty clusters. The principles upon which the SRU has developed emphasize particular qualities of universities in producing scientific knowledge: their missions are explicitly global; they are research intensive, contributing to the expanding “scientification” of all types of societal challenges (Drori et al., 2003); they focus on knowledge and economic integration and form public-private partnerships, given that university-based knowledge production is believed to enhance both social and economic progress. On the cutting edge, SRUs proclaim that they are at the forefront and should define global norms, whether related to graduate/professional training or research production and patent development. Growing budgets dedicated to these twin tasks and their prominence intensify the university’s role as a major leader in scientific knowledge production. Such universities engage in capacity-building via advanced training programs, by establishing cutting-edge research centers, and through interdisciplinary research units. Even if only very few of the thousands of universities actually achieve membership in this “world-class” group, the model they provide is significant for all stakeholders, regardless of SRU sustainability; the principle of knowledge generation builds upon the conception of the SRU as vital both to worldwide economic competitiveness and national social development (Geiger & Sá, 2008).

The emphasis clearly differs by university, with some world-class universities remaining very much an “ivory tower” and others embracing strong roles in improving living conditions in their countries (Ramirez, 2006). Depending on region and especially languages spoken and scientific traditions practiced therein, universities appeal to scientists, who more often than not publish their cutting-edge research in English and train their most ambitious students in multiple languages to facilitate career advancement. I now turn to the case studies to analyze the extent to which the ascendant national universities of two exceptional small states reflect these broader global trends in higher education. To do so, I briefly portray the country and the university and then place the university into regional and global contexts.

Université du Luxembourg

The Country

The Grand Duchy of Luxembourg, nestled between Belgium, France, and Germany, covers 998 square miles in the heart of Western Europe. Today, the city of Luxembourg, a banking center, is

the seat of multiple European Union institutions. Though ruled by a grand duke as a constitutional monarchy, Luxembourg is a representative democracy (see Pauly, 2011). The country prides itself on active membership in myriad regional and supranational associations of economic, political, and military integration, including Benelux, the OECD, the EU, NATO, and the UN. Luxembourg has a population of around a half million people, of which three-fifths are natives. Reflecting its varied heritage of Romance and Germanic Europe, the country is trilingual, with Lëtzebuergesch, German, and French the official languages. With a large immigrant population, mainly from other European countries, Luxembourg is predominantly Roman Catholic. Daily, many tens of thousands of workers commute from surrounding countries, bringing their native language (mainly French and German) and cultural sensibilities with them. More than half the workforce consists of cross-border workers. Luxembourg benefits from a diversification of industrial sectors (from financial services and iron and steel production to information technology and telecommunications) and low unemployment rates. Building on its strong financial industry and the EU institutions, Luxembourg has the second highest per capita GDP worldwide (IMF, 2011).

The University

The Université du Luxembourg (UL), building upon the legacies of several postsecondary training institutes, was founded in 2003 as a private, government-dependent institution (*établissement public*) directed by a seven-member council, the *Conseil de Gouvernance*. Most funding is provided by the state. From the very beginning, Luxembourg has relied heavily on student mobility and tertiary education provided in neighboring countries to supply qualified personnel, especially teachers, judges, and physicians; this has generated cultural hybridity (Rohstock, 2010, p. 44). Although the university's antecedents can be traced back to the early 1800s, when the national school system was first established, it was not until 1974 that the *Centre universitaire du Luxembourg*, hosting several humanities and social science departments, was opened alongside teacher training institutes and an *Institut supérieur de technologie* (IST), which offered technological courses of study (Rohstock, 2010).

As its three founding principles, the contemporary university's leaders chose multilingualism, interdisciplinarity, and internationalization. These foci accentuate the strategy developed to capitalize on Luxembourg's history as a trading crossroads, its contemporary situation of linguistic and cultural diversity, as well as to compensate being a new university in a very small state through strategic investments in promising research areas. The mission statement emphasizes that as "a small-sized institution with an international reach, [it] aims at excellence in research and education. In a reduced number of research fields identified by its successive strategic plans, its ambition is to be among the world's top universities. UL intends to be innovative, centered on research, primarily interested in the quality of the structure it offers to its students, its teachers and its researchers and attentive to the needs of the society around it" (University of Luxembourg, 2005). With nearly 100 nationalities represented among the 5,700 students (2010/11), around half of whom are not natives, the university is extraordinarily diverse. Likewise, the 189 faculty members represent 20 nationalities. If the country has three official languages, the university replaces the local language with the current international scientific lingua franca: English. Regardless of nationality, each student pays tuition of just €200 per semester. Thus, the state ensures that its national university can attract students from around the world.

Aiming to develop strengths based on both international trends and local/regional needs, the university has three faculties, all decidedly multidisciplinary: (1) Science, Technology, & Communication; (2) Law, Economics, & Finance; and (3) Humanities, Arts, & Education. Further, two major interdisciplinary research centers aim to advance the cutting-edge internationally,

namely the 'Interdisciplinary Centre for Security, Reliability and Trust' focusing on information systems, and the 'Luxembourg Centre for Systems Biomedicine' (the latter with €140m of funds over five years). The university's total budget for 2008 was €71.3 million, with external funding of 14% (€13m), but both have grown in recent years. By identifying in advance the most promising research areas that also reflect Luxembourg's economic and geographic contexts, the university concentrates its resources.

A major state investment has established a new campus, in the southern city of Esch-sur-Alzette. Belval, located on the brownfield site of Luxembourg's formerly dominant steel industry, is set to unify the faculties in state-of-the-art facilities rising next to historically-preserved blast furnaces. Symbolizing issues of sustainability in educational, ecological, and financial terms, this campus requires considerable, long-term commitments on the part of government. For Luxembourg, recycling a former industrial site as the incubator for its future economic strength represents its approach. The university's strategic plans call for an ecologically-sustainable campus. This may be realized if faculty, students, and staff live and work there and use the on-campus rail station; however, Luxembourg has among the highest automobile densities per capita in the world. The university actively participates in international networks on sustainable campus development; in fact, the 'Sustainable Campus Charter' of the International Sustainable Campus Network (ISCN) and the Global University Leaders Forum (GULF) was prepared there. Regarding financial sustainability, the current fiscal difficulties in Europe pose a threat to the livelihood not only of the university, but of the country and the region. Simultaneously, the university promises desired economic diversification.

In terms of recent and planned reforms, the role of the Ministry of Culture, Higher Education and Science has shifted from administration to a more strategic one of defining the overall framework and main goals of the university. In future, the university is to counteract social selectivity and "attract more young people from underprivileged SES backgrounds into higher education" (EC, 2010b, p. 13). This goal, shared by many expanding tertiary education systems throughout the world is, however, counteracted by differentiation that often diverts students from lower-class backgrounds into less prestigious tiers (Shavit, Arum, & Gamoran, 2007). Yet in small countries with only one university, the crucial distinction is whether to study at home – or to go abroad, and today all BA students are expected to do so for a semester.

The university aims to achieve excellence in research by recruiting top faculty members. Although the funds provided by the national government are considerable (top-ranked in Europe), organizational autonomy is very low (www.university-autonomy.eu). In a hyper-diverse society, internationalization has been present from the start. A key challenge is to attract a talented undergraduate student body, since the tradition in Luxembourg was to study abroad. While the small classes, low tuition fees, and high quality of the campus and faculty should attract students, questions of sustainability will rise. Especially given the research focus on information technology, professional informational infrastructure is good, but the library holdings remain quite limited. The transfer of knowledge and meeting community needs is an area requiring investment, as is within-institution collaboration among the campuses, currently spread across the country.

The University in Global Context

Not even a decade after it opened its doors, the university is ranked 867th globally (Webometrics, 2012). The government mainly evaluates the university by performance indicators for high-impact research. Its research output is measured in publications in peer-reviewed journals and the journals' impact index; the numbers of citations, patents/licenses; published dissertations;

and participation in European research funding programs, such as the European Union FP7 and the European Research Council (EC, 2010b). In terms of teaching, only the indicators of teacher/student ratio and overall modules organized are counted (EC, 2010b). In its quest for reputation, the most important scientific currency, the university places considerable emphasis on international agreements. Funded by the EU, the network of universities of the “Greater Region” connects universities in countries that share borders (www.uni-gr.eu). In terms of bilateral cooperation worldwide, the University has agreements with organizations in more than twenty countries. In sum, Luxembourg has invested both considerable capital and strategic planning in the establishment of its national university, aiming to compete on a global scale by concentrating its resources, both intellectual and financial, and by building on the country’s strengths and priorities. Alliances with other universities in the region and internationally underscore its international outlook.

Qatar University

The Country

The State of Qatar, occupying a 4,416 sq. mile peninsula surrounded by the Persian Gulf, shares a border with Saudi Arabia to the south. Formerly a British protectorate, Qatar gained its independence in 1971. An absolute monarchy, it has been ruled by the Al-Thani family since the mid-1800s (see Fromherz, 2012). It is a member of the Gulf Cooperation Council (GCC) and the Arab League. Although this small Gulf state has a rapidly growing population (currently around 1.7 million), only about 15% (roughly 250,000) are ethnic Qataris. A traditionally Muslim country, today Qatari society is characterized by multiple cultures. Its native Arabic society and the bulk of its population and labor force, migrants mainly from Asia (especially India and Nepal), are highly stratified, with the latter facing exploitation (Human Rights Watch, 2012). Despite the nearly-complete reliance on the work of migrants, a government priority is “Qatarization” of the private sector and professional jobs currently held mainly by expatriates (Rubin, 2012). Considerable social and economic investments are needed to implement Qatar’s ambitious national development program – the *Qatar National Vision 2030* (Qatar, n.d.), especially because of the lack of an “indigenous knowledge economy” and only several decades of educational expansion (Donn & Al Manthri, 2010). Financed by enormous resources derived from its oil and natural gas reserves, Qatar has the world’s highest per capita GDP in the world (IMF 2011).

The University

Qatar University (QU) was first established in 1973 as a college of education. More recently, the 2,500-acre campus “Education City,” funded by the Qatar Foundation, hosts diverse education and research organizations, attracting Western universities to establish international branch campuses (IBCs) (Lane & Kinser, 2011). As of 2012, the following universities operate there, bringing expertise in targeted fields: Carnegie-Mellon (computer science), Georgetown (foreign affairs), HEC Paris (business), Northwestern (journalism), Texas A&M (engineering), University College London (museum studies), Virginia Commonwealth (design), and Weill-Cornell (medicine). These institutions draw the elite of Qatari students who seek “the gold standard” in tertiary education (Lewin, 2008). In part to enhance Qatar University’s competitiveness given the exclusive offerings of the mostly American university branch campuses, since 2003 the university has enjoyed considerable government funding as part of the country’s major development program. This significant reform has transformed and expanded the university, which aims to achieve the vision that Qatar University “be a model national university that offers high quality, learning-centered education to its students” (Moini et al., 2009, p. 75).

Governed by the Supreme Education Council (SEC), the university was originally controlled by a state administration with little autonomy due to considerable ministerial oversight and control. Today, the Emir continues to be the “Supreme Head” of the University, with President Prof. Sheikha Al-Misnad, herself an alumna (1977), responsible for the curricular and organizational transformation of Qatar University into a leading university in the Arab world. The IBCs of Education City, as well as further institutions not housed there, bring their own principles, personnel, and “student cultures” (Wood, 2012), even as they contribute their homegrown reputations to Qatar. By contrast, QU clearly reflects national priorities and is set to facilitate their attainment.

If the vision is to serve national needs, the mission statement emphasizes that Qatar University is “the national institution of higher education in Qatar. It provides high quality undergraduate and graduate programs that prepare competent graduates, destined to shape the future of Qatar. The university community...contribute[s] actively to the needs and aspirations of society” (Moini et al., 2009, p. 75). Furthermore, QU seeks to “promote the cultural and scientific development of the Qatari society while preserving its Arabic characteristics and maintaining its Islamic cultural heritage...The University shall provide the country with specialists, technicians, and experts in various fields, and equip citizens with knowledge and advanced research methodologies” (Moini et al., 2009, p. 75). While crucial to remember that education in Qatar has only been formalized beginning in the 1950s, with the state replacing within-family instruction, this development is being cemented with tremendous investments – US\$4bn was spent on education and science in 2008 alone (Fromherz, 2012, p. 152). “Qatar has set the bar high with its goal of becoming a knowledge-producing economy at record speed. But the country holds some strong cards: a clear vision, highly committed leadership, and abundant resources to devote to the cause” (Rubin, 2012, p. 4). While QU has long been considered among the better universities in the Middle East, the recent reforms have counteracted what many viewed as deteriorating performance (Moini et al., 2009).

The university, emphasizing undergraduate teaching in particular, had 8,706 students in 2009/10, with 38% being Qatari nationals and three-quarters women. Students of Qatari origin study tuition-free. Students are taught by a large group of 653 faculty (all ranks), with non-Qataris (70%) on one-year contracts and tenure held by Qatari faculty members (30%) (QU, 2010); thus the teaching staff is highly stratified by origin. QU’s structure reflects language divisions, consisting of Colleges in Education (Arabic); Humanities and Social Sciences (Arabic); Science (English); Sharia, Law, and Islamic Studies (Arabic); Engineering (English); and Business and Economics (English). Given its department of computing and engineering, solid ICT infrastructure is provided. Addressing the needs of its community has been a hallmark of an institution located in a society experiencing massive demographic and economic change.

In terms of resources, Qatar has chosen to use its wealth to rapidly develop a high-quality education system – and to fund scientific research with 2.8% of GDP. In 2009/10, the research funding for QU amounted to US\$60m (QU, 2010). The university sets out to improve its teaching and research by recruiting researchers globally. Generous funding from the national government (and through Qatar Foundation, especially for Education City) provides excellent facilities. Yet, both academic freedom and self-governance remain partial; the university is not led democratically. Recognizing the discordance with global academic norms, reform initiatives aim to strengthen these dimensions to which most world-class universities conform. As in Luxembourg, the internationalization of all status groups is the rule due to the extraordinarily diverse population of the country, although there are inequalities; for example, only Qataris can study at QU free-

of-charge. Attracting a talented undergraduate student body is difficult because traditionally the brightest students have gone abroad for their studies. The large majority of female students at QU results from their higher probability of seeking tertiary educational opportunities close-to-home. Gender is a major cleavage that leads to pervasive and persistent social inequalities. In QU's gender-segregated libraries, the holdings are growing.

Questions of sustainability are particularly trenchant here. In a desert biome on a peninsula surrounded by the Persian Gulf, Qatar's capital city Doha boasts many of the world's tallest skyscrapers; the construction industry thus far has not embraced sustainable design and green architecture. The country has tremendous fossil fuel resources. Its inhabitants have by far the highest carbon dioxide emissions per person in the world, exacerbated by freely-provided utilities and the highest water usage per capita worldwide – although Qatar must use intensive desalination to ensure that precious water supply. Exemplifying recent developments of such issues, the Qatar Sustainability Assessment System (QSAS) provides a toolkit to evaluate sustainability in built environments; this requires far more attention in future.

Long-planned initiatives (e.g., the Qatar National Vision 2030) are balanced by recent reforms. In country and university, Arabic and English are the two key languages, although this duality is contentious. In early 2012, the SEC decision to switch some disciplines from English to Arabic instruction was accompanied by controversy that reflects fears among some groups that younger Qataris are neglecting their heritage and Arabic language skills in favor of the necessity of English for global communication and knowledge transfer (Harron, 2012). The debate about the language of instruction emphasizes the continuous challenge of serving different groups and aiming to place graduates in labor markets at home and abroad.

The University in Global Context

In the Webometrics (2012) ranking, Qatar University placed 1,824th in the world and 21st in the Arab World. In annual reports, while research is underscored, concrete performance indicators seem less important than those of teaching: presenting successful accreditation of courses of study; listing new programs, events, and projects; and monitoring awards, partnerships, and university innovations (QU, 2010; 2011). QU has chosen to focus on preparing qualified graduates for Qatar's dramatically expanding labor market, as do the Western universities' branch campuses. As in Luxembourg, it remains to be seen when these considerable investments in education and science will provide QU with a reputation as a world-class university.

In sum, Qatar has chosen a two-pronged strategy: to entice Western universities to bring their know-how and reputations and to establish and grow its own national higher education institution. In the past few decades, Qatari education, economy, and society have experienced transformative growth. The fit between the diverse international branch campuses of Education City and the local initiatives to strengthen Qatar University and the goals of the family-led state will require further adjustment. Similar to the Luxembourg case, significant economic prosperity provides leaders with a vision of myriad opportunities to construct some of the newest and most impressive university campuses anywhere. Yet issues of linguistic plurality, environmental and financial sustainability, and organizational autonomy remain challenging – and international scientific collaborations and reputations must be established over the long-term.

Conclusions

In this paper, I compared the kind of “small state” that Luxembourg and Qatar represent. Unlike many other small states, these two countries are unusually international, ethnically diverse, and

prosperous. Almost completely dependent on international trading relationships and global markets for capital and labor, both countries have experienced extraordinary recent growth. Over the past decade, Luxembourg and Qatar have further intensified their investments in education and science. The reactions of the institutional actors in each country to perceived vulnerabilities of small population, small size, or peripheral geo-political location show that Luxembourg and Qatar can compensate these features with economic prowess and media influence – and by taking the lead in regional governance, whether the European Union or the Gulf Cooperation Council.

The two ascendant national universities reflect their host countries, whether in the disciplines and research areas chosen or languages spoken; yet their ambitions are not limited to their national contexts. Indeed, governments of Luxembourg and Qatar seem to have found promising mechanisms to compete globally, such as significant investment in selected, high-potential, and often multidisciplinary research fields; the building of cutting-edge campus facilities; and establishment of a range of undergraduate and graduate programs to train local elites and others interested in these universities' dynamic organizational contexts. Of course, many characteristics of the strongest universities took decades to develop, but both of these young organizations have many of the necessary but insufficient conditions to achieve that "world-class" status.

Tensions remain regarding national demands for language representation in curricula and university operations. Recruitment of international scholars and students to these lesser-known universities takes considerable effort, as do international and regional partnerships of differing depth and significance. Due to direct state involvement, organizational autonomy is lacking. Finally, the periods required to convert material resources into human capital or scientific advancement and reputation are much longer than the government-directed investment plans suggest. Arguably, competition in tertiary education and scientific activity will continue to increase worldwide, especially due to the massive expansion of education and science systems in East Asia, such as in China, South Korea, Taiwan, and elsewhere. While both Luxembourg and Qatar have shown their dedication to fund ambitious experiments in capacity-building via university institutionalization, questions surrounding sustainability simultaneously arise, with the University of Luxembourg explicitly debating these issues. Whatever the future holds, these young universities are now the official national standard-bearers. These cases, along with other small societies like the Nordic countries and Singapore, suggest that not the size of a host country, but rather a prescient vision and concentrated resources are the crucial factors to enable cutting-edge science and higher education today.

The examples provided by these strong small states raise doubts about the often-positing association between small population or geographic area and poverty and geo-political marginality. Despite their historical, social and political differences and the similarities of being extraordinarily economically successful in recent times, leaders in both Luxembourg and Qatar have accepted the principle that the future belongs to education and science, though they have not granted their universities full autonomy. Elites in these countries believe that to be successful, they must have a research university that adequately meets national needs – and can compete internationally.

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Endnotes

1. The net long-term economic advantage of having a tertiary degree instead of an upper secondary degree is more than US\$175000 for a man and just over US\$110000 for a woman; OECD average (OECD, 2011: Indicator A9).

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