Abstract

The *Vision 2030* agenda was recently adopted as a roadmap and methodology for developmental and economic action throughout the Kingdom of Saudi Arabia. *Vision 2030* includes support for universities' academic and administrative operations through the collection, rigorous analysis, and reporting of a wide range of data. Prefaced with an overview of the Saudi economic, policy, and educational landscape, the paper's main contribution is a case study of Imam Abdulrahman Bin Faisal University (IAU), chosen because of its recent attempt to institutionalize academic assessment protocols, procedures and culture. It institutionalized a directorate focused on academic assessment, launched a Decision Support Unit dashboard, and developed key performance indicators (KPIs) to assess students' academic performance, course performance and employability. The IAU has since become a regional leader in higher education assessment. Emulating their approach affords other Saudi higher education institutions the opportunity to increase Saudi graduates' ability to directly contribute to the country's economy, ultimately promoting economic growth, diversification, and development as envisioned in *Vision 2030*.

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Institutional Academic Assessment and Effectiveness in Higher Education: A Saudi Arabia Case Study

Every educational system strives to ensure academic quality, enhance students' learning, and make their institutions more accountable to stakeholders. This paper seeks to shed light on a Saudi Arabian (SA) policy program aimed at developing an evidence- and effectiveness-oriented institutional culture that will contribute to increasing the performance of academic institutions in general and faculty members and students in particular. To that end, in the context of the worldwide movement toward institutional academic assessment and effectiveness in higher education, this paper presents a case study of a Saudi university's experience with bolstering and sustaining efforts to obtain external accreditation and move forward on a successful academic trajectory.

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Saudi Arabia is a noteworthy case because it is experiencing high unemployment within the context of a bourgeoning academic environment and context. The education system is often chastised for inadequately preparing students for the Saudi labour market (Alrasheedy, 2017; Lindsey, 2010). Universities are expected to come forward to address this issue. One strategy is to focus on assessing the academic effectiveness of higher education (HE) institutions. Prefaced with a literature review capturing an overview of the Saudi economic, policy, and educational landscape, the paper's main contribution is a case study of Imam Abdulrahman Bin Faisal University (IAU) chosen because of its recent attempts to institutionalize academic assessment protocols, procedures, and culture.

Overview of the Saudi Landscape

Over the last decade, dramatic and positive changes have taken place in the Kingdom of Saudi Arabia (KSA), and many of these changes are happening in the area of education. The nation has witnessed exceptional growth in the number of HE institutions. This phenomenon was recently highlighted by the KSA's Ministry of Higher Education when it reported an 86% expansion in the number of universities from 2006 to 2016 (Pavan, 2016).

In 2016, 1.7 million students (total SA population is 34 million) were enrolled mostly in the Kingdom's 28 public universities with others placed in the 10 private-sector institutions. The latter proportion is projected to account for 12% of all enrollment in 2020 and continues to grow exponentially. Most institutions comprise colleges and departments with a complement of research centers. Universities offer programs ranging from humanities and social sciences to medicine, engineering, science, technology, and business. Despite this range of academic offerings, the Saudi HE system is not keeping up with market demands. Only two Saudi HE institutions received top placement (top 100) in major global ranking systems although *Vision 2030* aspires to raise this to five by 2030. *Vision 2030* also aims to modernize curricula and forge closer links between the academy and industry, which will require a focus on assessments, student outcomes, and institutional capacity (ICEF Monitor, 2018).

It is important to recognize that the expansion and improvement of HE constitute a need rather than a luxury—in part as a result of the gap between education demand and supply.

The dramatic growth in the number of Saudi HE institutions is consistent with two global trends. First, over the last 20 years, growth in HE enrollments has closely followed world trade growth and has far outpaced the world's GDP growth. Second, this expansion is viewed by many governments as a vehicle for achieving national priorities and contributing to economic growth (British Council, 2012). In Saudi Arabia, the expansion of HE institutions has also been consistent with a significant increase in the number of high school graduates—individuals who are seeking opportunities to complete their education and launch their career (Organization for Economic Cooperation and Development [OECD], 2019). Another factor has been the amalgamation of the country's women's colleges, which had previously been under the auspices of the General Presidency for Girls' Education, the supervisory authority for all aspects of female education from 1960 until 2002.

Recent studies (Hamdan, 2015a; 2015b; 2016; 2017) have identified several factors interacting with the state of HE in Saudi Arabia: high birth rate, high unemployment rate among Saudi females, vast number of expatriate workers (also prevalent in other *Gulf Cooperation Council* [GCC] countries), changes in the global economy and its economic structures and, most recently, the launch of the KSA's new national development plan's *Vision 2030* policy program (Kingdom of Saudi Arabia, 2018; to be discussed). The government's growing investment in human capital and human development is bringing higher expectations to the labor market, which is increasing the level of pressure on Saudi universities to improve the caliber of their graduates.

Compared to a 39% average for OECD countries, only 24% of Saudi citizens graduate from higher education. This trend may be reversing because first-time entry rates into bachelor degree programs rose to 66% in 2017 (higher than the 58% OECD average). That said, SA graduate level enrollments are far below OECD rates, especially master-level, first-time entry rates, 3% compared to 24%. Upon graduation from HE, a quarter (26%) of Saudi graduates is unemployed, which makes unemployment is low compared to partner countries and OECD nations. This number reflects the hard reality that while 84% of male graduates are employed, nearly two thirds (59%) of female tertiary graduates are not (OECD, 2019).

Saudi Arabia as an Oil-Dependent Country

The development of a modern HE system in Saudi Arabia is well underway. The expansion of access to opportunities has occurred rapidly and on a massive scale. The next challenge of "improving the quality of learning and teaching within the universities has been acknowledged" (Alnassar & Dow, 2013, p. 59). It is important to recognize that the expansion and improvement of HE constitute a need rather than a luxury—in part as a result of the gap between education demand and supply associated with the country's massive oil-driven demographic growth. Despite the fact that SA "has amassed great wealth from oil, developments in the country have been subject to the unpredictable cycle of rising and falling

oil prices" (Alexander, 2000, p. 412). This vulnerability has intensified the pressure on the government to find ways to diversify the economy and thus reduce the level of dependence on the petroleum industry.

KSA is not unique in its drive toward higher levels of economic diversification and performance. This phenomenon is well known around the world as "governments are increasingly looking to the different sectors of higher education to augment learning skills and improve workers' ability to develop and use technology, thus enhancing productivity and strengthening state's economic position" (Alexander, 2000, p. 412). The contemporary world economy is rapidly changing; meaning, national governments will come under more and more pressure to raise their respective economies' level of diversification in order to minimize their level of exposure to unexpected shifts in demand for specific commodities as well as for specific types of goods and services. In Saudi Arabia, that commodity is oil.

Unemployment in KSA

Paradoxically, notwithstanding the massive oil-driven economic expansion, including the impressive growth of the private sector, the KSA continues to be burdened by a high rate of unemployment. According to the KSA General Authority for Statistics (GaStat; 2016), the 2016 rate of unemployment of Saudi nationals was 12.2%. Moreover, nearly 34.5% of all Saudi adult females and 5.9% of all adult males were unemployed. The highest levels of unemployment were found in the youth population as 40% of all citizens under the age of 35 had no stable form of employment (Alrasheedy, 2017). This rate varied among different age groups with the highest being among people aged 20 and 24 (GaStat, 2016).

Many countries around the world—including relatively advanced countries like the United States—are being forced to confront the reality of substantial disparities between what its university students are learning and what its employers are seeking.

But unemployment among Saudi nationals is different from unemployment in most other countries, which typically results from poor economic conditions and general poverty. The KSA's problem with unemployment is intertwined with the fact that the majority of private-sector positions are held by expatriates (i.e., people who have left their own country to live in another, often for a prolonged period). Moreover, the preponderance of high-status private-sector positions, which require highly qualified employees, is currently filled by non-Saudis who constitute approximately one third of the country's population. The seriousness of this situation is highlighted by the fact that less than 10% of the private-sector workforce comprised Saudi citizens in 2009, a trend that still continues (Alrasheedy, 2017). The longstanding problem of Saudi graduates' lack of job-related skills is one of the main reasons for the severe underrepresentation of Saudi nationals in the KSA workforce. Indeed, "one of the main issues that the private sector has is the fact that there aren't enough well-trained Saudis for the kinds of jobs that are needed" (Lindsey, 2010, p. 10).

Even though Saudi Arabia faces many challenges related to ensuring that its university graduates are equipped with the skills and knowledge required to succeed in the workforce, it should be remembered that, in this particular regard, the KSA is by no means unique. Many countries around the world—including relatively advanced countries like the United States—are being forced to confront the reality of substantial disparities between what its university students are learning and what its employers are seeking. In the late 1990s, this problem was brought into stark relief by the Boyer Commission (1998), which was charged with investigating and analyzing the U.S. situation. Twenty years ago, the commission found that

> many students graduate having accumulated whatever number of courses is required, but still lacking a coherent body of knowledge, or any inkling as to how one sort of information might relate to others. And all too often they graduate without knowing how to think logically, write clearly, or speak coherently. The university has given them too little that will be of real value beyond a credential that will help them get their first jobs. And with larger and larger numbers of peers holding the same papers in their hands, even that credential has lost much of its potency. (Boyer Commission, 1998, p. 6)

The widespread and pervasive global nature of the problems associated with ensuring that graduates are able to meaningfully contribute to the workforce and economy should help

Saudi policymakers and educators to avoid becoming pessimistic about the country's current state of affairs and future prospects. They are not in it alone; there is potential and opportunity to address the issue in their contemporary context.

Saudi Higher Education Assessment and Accountability

The KSA government unveiled the *National Transformation Plan* (NTP) on April 25, 2016 as part of the wider "Vision for the Kingdom of Saudi Arabia," otherwise known as *Vision 2030* (Kingdom of Saudi Arabia, 2018). This is both a roadmap and methodology for developmental and economic action throughout the KSA. Associated with the government's new strategy—to decrease the level of reliance on oil production and increase the level of emphasis on human capital—is a change (new emphasis) in the relationship between the government and the HE system. It appears that the emerging economic reality is driving the Saudi government to redefine the role of HE, including exerting pressure on institutions to become more productive and gear their programs toward fulfilling the needs of the labor market.

> Indeed, according to the Saudi government, *Vision 2030* seeks to ensure that higher education outcomes are in line with the requirements of the job market. In the year 2030, we aim to have at least five Saudi universities among the top 200 universities in international rankings. We shall help our students achieve results above international averages in global education indicators (Saudi Arabia Council of Economic and Development Affairs [SACEDA], 2016, p. 40; see also The National, 2016).

It is important to note that any efforts to pursue higher international rankings must relate to workforce development outcomes as well.

In a nutshell, the key education-related elements of *Vision 2030* are to move forward with the following: (a) provide education services for all student levels; (b) improve the recruitment, training, and development of teachers; (c) improve the learning environment to stimulate creativity and innovation; (d) improve the curricula and teaching methods; (e) improve students' values and core skills; (f) enhance the education system's ability to address national development requirements and meet labor market demands; (g) develop creative financing methods and improve the education system's financial efficiency; and (h) increase private-sector participation in the education sector (Kingdom of Saudi Arabia, 2016).

In order to ensure that it achieves the education-related objectives set out in the *Vision 2030* strategy, the Saudi government needs to closely monitor the performance of the various participating stakeholders. According to Kuh and Ewell (2010), human capital investment and national economic growth cannot happen without first assessing students' learning to ensure that graduates are acquiring the skills and competencies required for success in the 21st century. The importance of HE assessment extends beyond students' performance in examinations and assignments to include the overall performance of the institution itself and any major components relative to clearly defined benchmarks. Indeed, the assessment of students' learning and the institution's overall effectiveness is essential because it provides the foundation for better strategic planning and decision making, including with respect to the allocation of human and financial resources (Middaugh, 2010). As Middaugh (2010) emphasizes, "successful colleges and universities in the twenty-first century will be characterized by effective assessment and planning" (p. 13).

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The logical next step after assessing institutional performance and incorporating assessment data into strategic planning is holding key stakeholders responsible or accountable for their acts and omissions and, in particular, for the degree to which they have met their respective objectives. According to Trow (1996),

> accountability is the obligation to report to others, to explain, to justify, to answer questions about how resources have been used, and to what effect…. The fundamental questions with respect to accountability are: who is to be held accountable, for what, to whom, through what means, and with what consequences (p. 2).

In the academic context, accountability for organizational performance offers multiple benefits to policymakers and the public as a whole, one of which is the creation of incentives for internal stakeholders to pursue excellence (including faculty members, senior leaders, and administrators). Thus, even though accountability is retrospective in the sense that it mostly focuses on the assessment of previous performance, it is also prospective in that it tends to structure future behavior in positive ways. The anticipation of being held accountable casts a forward-looking shadow over future action (Trow, 1996).

Even when assessment and accountability measures are undertaken in good faith and with high diligence by all relevant stakeholders, there remains potential for bias to interfere with the assessment process.

Similarly, Rabovsky (2012), in referring to accountability-generated incentives in public organizations, points out that, in many cases, leaders and administrators respond to performance-based incentives by implementing approaches to management that raise efficiency and improve performance. Moreover, incentive structures that make distinctions between organizations based on their level of performance can have additional beneficial effects on institutional outcomes. Indeed,

> by rewarding organizations that perform well and sanctioning those that perform poorly, policymakers can provide strong incentives for public agencies to reduce or eliminate wasteful activities and to employ entrepreneurial strategies in developing new technologies and methods to improve service delivery (Rabovsky, 2011, p. 2).

This in turn can lead to a stronger return on investment or to greater 'bang for the buck.' In the HE sector this would help to demonstrate that a national investment in HE is worthwhile, which in turn enhances faith in higher education.

Potential challenges of assessment and accountability. Notwithstanding the many benefits offered by assessment and accountability in the university environment, these approaches present a number of hazards and limitations. This is especially the case when assessment and accountability are unilaterally imposed with few if any distinctions made to account for significant variation in access to resources, the difficulty of tasks, or both (Rabovsky, 2011). Moreover, some Western institutions have observed that administrators sometimes respond to ambitious accountability requirements by both "gaming the system" to manipulate the data provided to evaluators and focusing heavily on activities that are likely to elevate scores in the short term despite the potential to undermine long-term performance (Abernathy, 2007).

In commenting on universities in the United Kingdom, Trow (1996) points out that many academic departments carefully manage their reporting to the relevant government authorities. This can be seen in

> the care with which they sort out the sheep from the goats on their staffs (with what effect on the morale of the goats?); the intense interest that has arisen around gaining certified publication before closing date—an interest that in some cases has involved the withdrawal of scholarly papers from one journal to place them with another solely on the ground of publication date; the recruitment of stars trailing clouds of publications and glory in their train. And on the teaching side, the anxious rehearsals for a forthcoming site visit, whole days given to walking through the visit, with every moment and conversation choreographed and planned for fullest effect; the even more anxious employment of consultants on how best to present themselves to those review committees. (p. 5)

Even when assessment and accountability measures are undertaken in good faith and with high diligence by all relevant stakeholders, there remains potential for bias to interfere with the assessment process and especially with any subsequent implementation of the resulting conclusions. This is largely a reflection of the heavy element of subjectivity in all forms of assessment. According to Rabovsky (2011), subjectivity leads to a lack of neutrality around the use of performance information, largely because (a) these data must be interpreted and given meaning by human decision makers and (b) there sometimes is disagreement within the policy community about the legitimacy of specific indicators. This objectivity and neutrality deficit can in turn lead key stakeholders to view performance information and the conclusions

generated from that information with distrust, ultimately with negative consequences for organizational learning. One way to offset this situation is to ensure that raters come from HE, business, industry, government, and other stakeholders.

Another problematic scenario involving good-faith assessment and accountability is related to attempts to improve organizations based on the assessment conclusions. As Romzek (2000) explains,

> in seeking to change the operations of agencies and employees, it is essential to have corresponding shifts in accountability relationships so that behavioral expectations are appropriately aligned with managerial emphases. The new behaviors sought need to be reflected in the administrative measures used to evaluate agency and individual performance (p.35).

A well-designed collegiate assessment program could and should include collection points after graduation. Just looking at learning within the undergraduate period is very limiting.

Higher education institutional effectiveness (i.e., its ability to achieve its mission, vision, and goals) will depend on these new accountability relationships.

Finally, although some may not agree, Trow (1996), a renowned scholar on this topic, suggested that even the best assessment systems are unable to capture the true depth and breadth of an educational institution's impact on its students. This is yet another reason why policymakers should be conservative in setting expectations for any particular assessment and accountability program. Trow asserted that "our impact on students can never be fully known" (1996, p. 13). He softens the implication that this statement may come across as weak with the caveat that an institution's impact

> emerges over [students'] whole lifetimes and takes various forms at different points in their lives. Those effects are mixed up with many other forces and factors over which we in higher education have no control—and among these are the student's character and life circumstances. Moreover, our influence on their lives takes many different forms, the most important of which are unmeasurable. One of the major functions of higher education which evades all measurement is our ability to raise the horizons of our students, to encourage them to set their ambitions higher than if they had not come under our influence. Colleges and universities at their best teach students that they can actually have new ideas, ideas of their own rather than merely the manipulation of ideas produced by others. That is not a conception of self very often gained in secondary school, and yet it lies at the heart of most of what people who gain a post-secondary education achieve in their lives. (p.13)

Although Trow (1996) provides salient provocative points, a well-designed collegiate assessment program could and should include collection points after graduation. Just looking at learning within the undergraduate period is very limiting. As well, future assessment initiatives could expand beyond knowledge attainment and measure nontraditional outcomes such as hope, curiosity, and entrepreneurship.

Internal versus external assessment. In order to understand the growing emphasis on HE assessment around the world, including Saudi Arabia, it is important to appreciate the distinction between internal assessment and external assessment. Internal assessment refers both to the gathering of data pertaining to the performance of an institution and any subsequent analysis of those data by the same institution for its own internal purposes. In the academic context, this kind of assessment is typically related to the performance of students and faculty members, although it can also pertain to institutional performance as a whole (e.g., meeting various financial targets). External assessment involves one or more external organizations analyzing institutional data and then drawing conclusions about the latter's performance of the same (in many cases relative to the performance of similar institutions within the same country or even on the international level; Trow, 1996).

Trow (1996) captures an important distinction between these two categories of assessment. External accountability is much like an audit and is aimed at ensuring that universities and colleges are fulfilling their responsibilities to their key stakeholders and, ultimately, to society as a whole. Internal accountability strives to ensure that various

institutional components (e.g., administration, faculty, students, and custodians) are fulfilling their respective responsibilities to one another with a view to meeting and even exceeding performance targets, identifying areas for improvement, and optimizing the use of resources, among other objectives.

Within Saudi Arabia, external assessment is conducted by various national-level bodies, one of which is the *National Center for Assessment and Academic Accreditation* (NCAAA, https://www.ncaaa.org.sa/en/). This organization grants both institution- and program-level accreditation and thus helps to ensure the quality of KSA post-secondary education. In addition to receiving national, domestic accreditation, some Saudi universities and colleges choose to pursue international-level accreditation, with a notable example being IAU's College of Engineering, which received accreditation from ABET, and College of Medicine, which received accreditation from Canada's Royal College of Physicians and Surgeons.

Institutional effectiveness. The distinction between internal and external assessment should also be understood within the broader context of institutional effectiveness (i.e., how well it is achieving its goals). Welsh and Metcalf (2003) explain that the improvement of institutional effectiveness requires the assessment of program learning outcomes, a review process for academic programs, and the assessment of the various performance outcomes set by the institution. Furthermore, the implementation of associated measures is aided by incorporating assessment activities into daily academic operations (Sheldon, Golub, Langevin, St. Ours, & Swartzlander, 2008).

Academic organizational effectiveness is closely related to organizational effectiveness in other contexts, including business settings. Variables that affect the implementation of HE institutional-effectiveness measures are similar to those that affect continuous improvement in corporate and industrial contexts including but not limited to adequacy of both training and time, degree of stakeholder buy in, and the extent to which data are used to inform decision making (Sheldon et al., 2008). Indeed, many opportunities exist for exploring the programs, strategies, and techniques that are designed to increase performance within corporate and industrial settings, and transferring and adapting those programs, strategies, and techniques to university and college environments. To go one step further, future HE external assessments could be expanded to include stakeholders in the assessment process like using business and industry representatives to evaluate students, faculty, and curricula.

To wrap up the overview of the Saudi context, there is no doubt that accreditation is a significant issue in Saudi Arabia, and its level of importance will only increase as the desire to improve (and expectations of improvement) become more intense among key stakeholders, including the institutions' respective leadership teams, faculty members, students, parents, and alumni as well as the KSA's government and major employers. Alshayea (2012) points to the growing emphasis on accreditation in the country by noting that "the Saudi Arabian higher education system has taken major actions to improve itself and maintain international standards. These actions are in response to the perceived low quality of the system which has affected its graduates" (p. 2).

We highlight how IAU paved the way for what may be eventual widespread use of a new approach to assessment that ultimately increases institutional performance and competitiveness, in house and beyond .

Couched within this Saudi Arabian context, we now present a case study of IAU, a university leader in the KSA ranked 6th among Saudi higher education institutions in Quacquarelli Symonds ranking. We highlight how IAU paved the way for what may be eventual widespread use of a new approach to assessment that ultimately increases institutional performance and competitiveness, in house and beyond. Results pursuant to performance, processes, and products may also serve as a way to generalize assessment findings beyond higher education, a topic for future research.

Method

Case studies investigate contemporary phenomena within their real-life context (Yin, 1984), in this case institutional academic assessment and effectiveness in higher education as it played out at IAU. The university developed a new approach for assessing academic and institutional effectiveness (including administrative processes) in association with applying for and receiving external accreditation. This case especially focuses on how IAU dealt with faculty members and students' academic performance components (via the establishment

of Key Performance Indicators [KPIs]) relative to IAU's primary mission, objectives, and strategic plan.

The authors judged IAU to be a good example of both a critical and unique case (Yin, 1984) of institutional academic assessment and effectiveness in the KSA. Critical because insights into its innovative approach to institutional assessment will constitute a significant contribution to knowledge and any theory building about higher education in KSA. It is unique in the sense that IAU is one of the first among a few KSA universities to engage in the proactive assessment of the effectiveness of its academic success as a higher education institution.

Per the tenets of case study research design protocol, a holistic single case study was developed and characterized as such because it examines the global nature of the phenomenon with no attention to subunits, which would have lead to an embedded case study (Yin, 1984). This merits clarification because IAU has three campuses and many specialized colleges that accommodate over 45,000 students (IAU, 2019), which would amount to subunits in an embedded case.

IAU is one of the first among a few KSA universities to engage in the proactive assessment of the effectiveness of its academic success as a higher education institution.

The chain of evidence used to develop the case included documents from multiple sources, among them the university and its related units and websites, internal and external reports, and personal communication with key informants. These steps collectively addressed issues of case study-related validity and reliability (Yin, 1984).

Finally, we strived to achieve analytical generalizability instead of statistical generalizability to a particular population. The intent was to facilitate generalizing the IAU case to (a) the broader phenomenon of institutional academic assessment and effectiveness in the context of KSA higher education (i.e., to similar situations) and (b) any eventual theories or models pursuant to that phenomenon (Yin, 2010).

Case Study of Imam Abdulrahman Bin Faisal University

A chronological approach is used to present the IAU's case study (Yin, 1984), starting in 2013 and culminating in 2017. The chronological case reporting approach serves to document changes over time thereby informing an evolving context for the phenomenon under study. As a caveat, equal attention was given to reporting each key event (five in total occurring during three specific years, 2013, 2015, and 2017). These time periods contain different events that unfolded culminating in the final assessment protocol (Yin, 1984). The 2017 termination date for the case was chosen because it represents when the university's assessment protocol was finalized. Future studies will explore and report on its effectiveness and efficacy. This case study served only to document the emergence of the IAU's assessment system and its attempts to establish protocols, procedures, and an assessment culture.

Creation of the IAU's Internal Decision Support Unit (DSU; 2013)

Imam Abdulrahman Bin Faisal University or IAU (formerly known as University of Dammam) is a NCAAA-accredited public university located in the Eastern Province of Saudi Arabia. It comprises four campuses (Dammam, Khobar, Qatif, and Jubil). The university houses 21 colleges, nearly 80 majors, and five research centers with upwards of 45,000 students and 3200 faculty members (local and international). The colleges are clustered under four overarching disciplines: health, engineering, science and management, and arts and education (IAU, 2019; University of Dammam, 2015). IAU ranks in the top six universities in Saudi Arabia and 582nd in the world out of 1000 (Quacquarelli Symonds [QS], 2019).

The IAU's Decision Support Unit (DSU) was established in 2013 on the initiative of the university's Vice President for Studies, Development, and Community Services (Alnouman, 2017). The Unit deals with the collection, processing, and analysis of data and the presentation of its findings to the university's decision makers in order to provide them with insights into both the institution's true state of affairs and various alternative courses of action. The IAU-DSU's mandate also includes responsibility for the development and implementation of decision-support systems related to the educational, research, and professional services provided by the university to internal and external parties.

The IAU-DSU intends to be a model for universities and other higher education institutions throughout Saudi Arabia. It handles an impressive range of university data including information related to education delivery, academic performance, human resources, financial performance, research, ranking, accreditation, student services, community services, hospital services, and all types of operational systems (personal communication, Alnouman, 2017; spring 2018). Furthermore, Alnouman (current head of the IAU-DSU) explained that the Unit's work takes into consideration the objectives, requirements, and interests of beneficiaries and stakeholders in order to: help anticipate, formulate, and forecast the future; develop models that facilitate the generation of alternatives; and develop proposals for appropriate development policies in all sectors of the university.

The Unit's work does not stop at this point, as it continues to both monitor the changes and transformations that occur as a result of development decisions. It presents the results of follow-up to officials and decision makers. The IAU-DSU's mandate encompasses multiple areas and themes (e.g., students,' faculty members,' and administrative members' performance; research outcomes; rankings; and alumni). These all point to institutional effectiveness. All of the Unit's work is undertaken in accordance with the authority conferred on it by the university, as set out in its *Internal Policies and Regulations Manual* (personal communication, Alnouman, spring 2018).

Creation of the Internal IAU-DSU Dashboard (2013)

Given the many challenges confronting Saudi HE institutions, it is clear that quantitative, evidence-based analysis is essential for increasing institutional effectiveness, thus ensuring further progress in teaching and learning.

The IAU appreciated that quantitative data were necessary for informing management decisions. To facilitate the managerial aspect of assessment work, the DSU now uses analytic dashboard software as a toolbox that processes massive quantities of data and makes them ready for analysis and interpretation. Dashboards connect to multiple data sources to ensure that the institution has a clear snapshot of its key metrics. These systems help to provide a solid basis for decision making related to improving faculty members' teaching, students' learning outcomes, and overall institutional performance. They are especially useful for provosts, deans, department chairs, and administrative directors in that they help these individuals to manage their institutions with greater effectiveness and efficiency (Middaugh, 2010). At IAU, deans and upper administration have access to the dashboard data and use this information to make strategic decisions. Select data are made available at the IAU's website for public consumption.

Data mining and subsequent analysis undertaken using the DSU dashboard provide information that supports decision making aimed at improving the overall performance of the university and its 19 colleges and faculties as well as its faculty members and students. Indeed, given the many challenges confronting Saudi HE institutions, it is clear that quantitative, evidence-based analysis is essential for increasing institutional effectiveness, thus ensuring further progress in teaching and learning. This kind of ongoing assessment should help to bring greater transparency and accountability to Saudi post-secondary institutions' operations while raising their domestic and international reputations.

Actually, IAU's assessment objectives are very similar to those articulated by an American accreditation organization, the Middle States Commission on Higher Education. Much like this organization, IAU believes that "assessment of student learning demonstrates that an institution's students have knowledge, skills, and competencies consistent with institutional goals, and that students at graduation have achieved appropriate higher education goals" (Middaugh, 2010, p.11).

Obtaining External NCAAA Institutional Accreditation (2015)

To facilitate the external assessment process and thus obtain institutional accreditation, IAU developed several key policies and support structures, as noted above. These policies and structures enabled the NCAAA to better gather the information that it required to grant IAU institutional accreditation in 2015. IAU's accreditation has enhanced its reputation and legitimacy, both nationally and regionally. It now ranks 5th among 28 public KSA universities and 12th among the Middle East and North Africa (MENA) region (detailed at IAU's website, https://www.iau.edu.sa/en).

Creation of the IAU's Directorate of Monitoring and Academic Performance (MAP; 2017)

In 2017, the university's president established the Directorate of Monitoring and Academic Performance (MAP) under the VP Office for Academic Affairs (IAU, 2018). The MAP's main responsibility is to monitor the university's then 19 constituent colleges for academic performance, areas for improvement, and the ways in which (and to what extent) their mission and vision are being accomplished. MAP's institutional assessment mission comprises the following four elements:

- responding to mandated institutional data-reporting requirements emanating from the IAU's higher administration for the purposes of improving the institution and responding to requests from regional and specialized accreditation organizations;
- developing and monitoring performance indicators that measure overall institutional effectiveness and the university's and its constituent colleges' progress toward the achievement of the university's strategic planning goals, with an emphasis on the quality of teaching and learning;
- conducting special research studies to assist academic and administrative departments in meeting program-review, assessment, and accreditation requirements; and
- contributing to ongoing institutional initiatives to improve methods of storing, managing, analyzing, and reporting data.

Creation of Internal Key Performance Indicators (KPIs; 2017)

MAP's work is facilitated through the use of KPIs (see Table 1), which were developed in 2017 after receiving NCAAA accreditation, to monitor the colleges' academic performance. These KPIs emerged as a result of a three-pronged initiative that included (a) identification of both best practices and (b) IAU's priorities followed by (c) a pilot test of the draft indicators. This initiative was led by one of the authors, working with IAU faculty members and another professor. All three stages are now discussed.

MAP's work is facilitated through the use of KPIs which were developed in 2017 after receiving NCAAA accreditation, to monitor the colleges' academic performance.

Phase 1: Identification of international, regional, and local KPIs and best practices. The goal during this first phase was to identify best practice; that is, any KPIs used to measure the academic performance of universities and their component colleges and faculties around the world. The team (led by one of the authors) began by benchmarking with overseas universities in Europe, the United States, Japan, and Australia, as well as regional universities in Egypt, and local universities in the KSA, using their respective websites. The aim was to understand how these institutions monitor their own academic performance and identify what KPIs they employed.

Relevant and common KPIs were listed and grouped into four categories: teaching, learning, assessment, and feedback. These KPIs were subsequently compared to those of the AFAQ (a long-term Educational Plan approved by Royal Decree; Kingdom of Saudi Arabia Ministry of Education, 2015) and the NCAAA. Then, various subcategories were developed (e.g., student and course performance and employability) and the KPIs were distributed under each subcategory. Based upon the KPIs, a Balanced Score Card (BSC) was created to assess both performance and progress.

Phase 2: Identification of IAU's priorities. The goal during this second phase was to determine whether the list of categories, subcategories, and KPIs developed in the first phase was appropriate to IAU's context. To determine this, the monitoring-related objectives within IAU's strategic plan were analyzed, including their respective KPIs. The outcomes of this analysis then provided a basis for enhancing the original list. The final KPIs (before pilot testing) were deemed to be closely aligned with IAU's context and needs. Strategic IAU objectives included assessing the impact of new learning and teaching methods that can be

linked with MAP. In particular, the draft of the strategic plan that the university shared with faculty members included the following objectives (IAU, 2017):

- 1.1 Expansion of teaching and learning opportunities;
- 1.2 Development of programs, curricula, teaching, and evaluation methods;
- 6.1.2 Activation of the role of the decision-making unit; and
- 6.1.5. Evaluation of the performance and motivation of the university employees.

Phase 3: KPI piloting. In the third phase, the list of KPIs developed in phases one and two was first implemented at IAU's College of Computer Science and Information Technology, the first college to be assessed for its level of academic performance. The results and feedback were subsequently used to change, amend, delete, and add various KPIs. The final list of KPIs, profiled in Table 1, has been approved for use in the initial assessment of the remaining colleges within the university. It is organized by student performance (seven dimensions), course performance (one dimension), and alumni employability (one dimension).

Table 1
Key Performance Indicators for Assessing Academic Effectiveness of IAU Colleges

A. Student Performance	A.1 Degree Completion	A.1.1	On-time degree completion ratio compared with IAU's ratio (over the last four years)
		A.1.2	On-time degree completion ratio of the various programs (over the last three years)
	A.2 Faculty-to-Student Ratio (FSR)	A.2.1	Faculty-to-Student Ratio (FSR) per college (compared with national/international ratios)
		A.2.2	Faculty-to-Student Ratio (FSR) per program
	A.3-Student Warning Analysis	A.3.1	Development of the number of students on probation over the last four regular semesters
		A.3.2	Number of students per college/program who received first, second, and third warnings during the last four semesters
	A.4 Program Drop Outs	A.4.1	Number of students who dropped out (dropped out from all courses) during the last four semesters
		A.4.2	Number of students who dropped out (dropped out from some courses) during the last four semesters
		A.4.3	Number of students who changed program during the last four semesters
		A.4.4	Number of students who dropped out from the university during the last four semesters
	A.5 Program/College Performance	A.5.1	Distribution of students' CGPA on the bell curve per college
		A.5.2	Distribution of students' CGPA on the bell curve per program
		A.5.3	Percentage of students whose CGPA is 3.75 or above
		A.5.4	Development of students' academic achievement (CGPA) per college [average] over the last two years
		A.5.5	Development of students' academic achievement (CGPA) per program [average] over the last four semesters
		A.5.6	Development of students' academic achievement (CGPA) by batch
	A.6 Student and Faculty Load	A.6.1	Development of students' unit load per college [average] over the last two years
		A.6.2	Development of students' unit load per program [average] over the last two years
		A.6.3	Faculty load per academic staff member by college/department (average: number of course sections / total number of faculty)
	A.7 Active Students	A.7.1	Percentage of international/non-Saudi students, if applicable (compared with the IAU percentage)
		A.7.2	Percentage of female to male students, if applicable (compared with the IAU percentage)
B. Course Performance	B.1 Course/Program Performance	B.1.1	Percentage of Fs per college/program – List of the five topmost percentages in courses per program
		B.1.2	Percentage of A^{+}s and As per college/program – List of the five topmost percentages in courses per program
C. Alumni	C.1 Employability	C.1.1	Employability rate
		C.1.2	Gender employability rate / program

MAP's work also includes ongoing verification of the recently established KPIs based on benchmarking with national institutions, namely the NCAAA and the AFAQ and with international institutions such as the National Institute for Learning Outcomes Assessment (NILOA). The KPI template used by MAP respects the following variables, which guide data mining and analysis for each of the 18 colleges:

- *undergraduate students' profile* (in terms of total headcounts, breakdown by gender, degree completion period/rate, cumulative GPA by program and by college, and students' withdrawal rate per program and per college relative to that of the university as a whole);
- *undergraduate students' success* and progress rates (in terms of retention and graduation rates for specific cohorts of students);
- *classroom environment* (in terms of the student/faculty ratio and class sizes, among other variables);
- *full- and part-time faculty distribution* (in terms of gender and other characteristics);
- *degrees awarded*; and
- *employment outcomes* of recent graduate cohorts (in terms of jobs, professions, and/or enrollment in graduate programs).

Any KPI data gathered by the IAU-DSU are converted into information that can be used in making important decisions about admissions, institutional plans, and the allocation of human and financial resources in support of activities related to teaching and learning. And, as Middaugh (2010, p. 230) recommends, "effective institutions continue to monitor the ongoing relevance of the college or university experience of graduates beyond the receipt of a degree."

Case Wrap Up and Discussion

Given the many changes that are taking place in the global economy, Saudi Arabia has no choice but to reduce its level of reliance on oil production. The KSA government's new strategy, as articulated in various official documents including *Vision 2030*, emphasizes a significant realignment of priorities in the country's higher education system. The accomplishment of these priorities depends to a great extent on the implementation of effective assessment (internal and external) within Saudi universities and colleges.

This case study illustrated that Imam Abdulrahman Bin Faisal University (IAU) is already distinguishing itself as a leader, as it has begun to move forward with the performance measurement and analysis of all key aspects of its operations. The creation of the internal dashboard and KPIs was linked with IAU's NCAAA external accreditation. The intent was to ensure that the university continued to grow and be informed by critical and current information about the institution's academic effectiveness. The KPIs were especially designed so the university could monitor and collect data about the individual colleges. Subsequent to receiving NCAAA accreditation and the implementation of these academic assessment structures and tools, the IAU is now a national and regional leader, as noted (QS, 2019).

The implementation of institutional assessment represents a milestone for IAU in terms of raising its performance and quality on many fronts. Over time, the implementation of assessment will contribute to improving the quality of teaching and learning, thus elevating not only the university's academic performance but also its national and international ranking. These improvements will have a significant impact on IAU's constituent 19 colleges by raising their level of accountability for their teaching performance and learning outcomes, an approach that is closely aligned with the objectives of the Commission on the Future of Higher Education (2006).

A culture of informed decision making based on evidence collected through KPI assessments is a precondition for the continued infusion of resources into assessment.

A culture of informed decision making based on evidence collected through KPI assessments is a precondition for the continued infusion of resources into assessment. The determination of each institution's strategic objectives with respect to students' lives and experiences is required in order to frame credible discussion about institutional effectiveness

and provide analytical results that can be used to build strategies. This cycle could be most effective in translating data into information that can be made available to both internal and external constituencies.

HE assessment and planning are necessities and should be inclusive not just of reporting on performance but also the preparation of enrollment planning models, administration and analysis of institution-wide surveys, and dissemination of information obtained from those surveys to the university community and wider audience. Furthermore, other universities can follow the lead of both the IAU-DSU and MAP, which are encouraged to oversee and maintain a portrait of each college as part of their participation in a rigorous accountability system. The presence of accountability measures in the university culture will ideally become a cornerstone of the institution. Among other benefits, this culture will help to ensure that the constituent colleges, faculty members and students will appreciate the importance of assessment and will make a sincere effort to ensure that it becomes and remains meaningful.

HE assessment and planning are necessities and should be inclusive not just of reporting on performance but also the preparation of enrollment planning models, administration and analysis of institution-wide surveys, and dissemination of information obtained from those surveys to the university community and wider audience.

Although centralized decision-making by administrators helps to avoid some of the challenges associated with collective decision-making, there is no perfect method of discharging the monitoring role without ongoing revision to the KPIs. The key to the successful assessment of institutional effectiveness is to ensure that the information obtained from assessments is actually used to inform strategic planning and decision-making, including resource allocation. Moreover, communicating information and ideas quickly and comprehensively is essential for conveying the central message of assessment—that is, improving teaching and learning (Kuh et al., 2014). The gathering and use of evidence of students' learning in making decisions and strengthening institutional performance and public accountability are collectively known as "student learning outcomes assessment" (Ikenberry & Kuh, 2014, p. 2).

The ongoing institutional assessment initiative that is being undertaken at IAU, one of the Saudi's leading HE institutions, includes the creation of a culture of institutional assessment aimed at improving the quality of teaching and learning. This case has illustrated that, by implementing these kinds of practices, institutions can become more accountable and transparent in their operations and ongoing strategic planning. The case provides useful insights for academic mangers and decision makers who are striving to shape a better future for their institution in general and to improve students' experiences and outcomes in particular.

Looking toward the future, accreditation must not be the ultimate goal—although being nationally accredited certainly is a milestone for IAU. Such an approach would be analogous to a student aggressively studying for days leading up to a final exam and then forgetting virtually everything after the end of the semester. Rather, the ultimate goal beyond accreditation should be ongoing systemic improvement, including the institutionalization of performance-management and quality control standards and practices, together with the continuous identification of areas for further development. That is, the institution has to evergreen its assessment protocol, keeping it fresh, current, and relevant.

In conclusion, in *Vision 2030* the Saudi government committed to (a) closing the gap between HE outputs and the requirements of the job market by working with the private sector; (b) having at least five KSA universities among the top 200 in international rankings; and (c) helping university students to achieve academic results that are above international education indicators (Saudi Arabia Council of Economic and Development Affairs, 2016). To that end, growing institutions like IAU must engage in continuous planning to determine what to measure and how to frame meaningful discussions about institutional effectiveness. They also need to develop improvement strategies that can be effectively communicated to internal and external stakeholders. The IAU case herein reflects the great potential to raise the quality of Saudi Arabia's higher education outcomes by assembling, deploying, and evergreening evidence and analysis of institutions' teaching and learning performance and effectiveness in light of national goals and visions.

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