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A Proposed Ranked-Based Ranking Model on the Impact of International Ranking of Higher Education Institutions on Higher Education Reform in the Kingdom of Saudi Arabia

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To measure the impact of international ranking of higher education institutions on higher education reform in the Kingdom of Saudi Arabia and to propose a ranked-based ranking for the Saudi higher education institutions in addition to a ranking development model. A non-experimental study based on the quantitative data retrieved from five types of rankings (Webometrics, Shanghai, QS, Times Higher Education and Leiden) and qualitative data from the Ministry of Education, in addition to the measure proposed by the researcher (Ranked-based ranking)—are all analysed using descriptive statistics and content analysis. The big gap between the establishment of the Kingdom (1932), the the discovery of the oil (1939) the first established higher education institution (1957), realising the importance of higher education internalization after (2000) and first inclusion of Saudi higher education institution(s) in international rankings (2006)—all indicate a slow progress on educational sector in the Kingdom, especially when compared to the the many pluses the country have. However, the achievements of the Kingdom since the launch of King Abdullah's Education Reform and Development programme have made a minor difference and resulted into having the Kingdom being ranked among the top Arab countries and mong the international higher education rankings. Yet, when comparing this to the new vision 2030—new challenges are rising and this progress seems to be turtling again. What has been achieved so far is a big plus in the history of the Kingdom; what is being intended to be achieved seems to be a shy step and a minor objective; the proposed ranked-based ranking model could be developed towards a comprehensive ranking system; and the proposed model for improving ranking is country specific and might not work for other countries

Keywords: Higher education in Saudi Arabia; university rankings; higher education institutions; Ranking model.

Introduction

The Kingdom of Saudi Arabia (KSA), referred to in many websites as (Saudi Arabia: SA) is one of the Arabian States, mainly the oil-states. Basically, the Arab World (AW) consists of 22 countries spreading over the Arabian Peninsula, the Eastern Mediterranean (West Asia) and North Africa. Arab League (AL) that was established in 1945 includes also the 22 Arabian countries. These 22 countries in addition to some other countries (i.e. Cyprus, Iran, Israel and Turkey) are referred to as the Middle East countries. Arabic is the official language in

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the AW with some other dialects and/or languages that are used in some countries (e.g. Amazigh in Morocco, Swahili in Yemen, etc.). Islam is also the major religion in generally all the countries with other religions in some countries like Christianity in Egypt and Lebanon, and Jewish in Yemen, etc. (Christina, Mehran, & Mir, 2007).

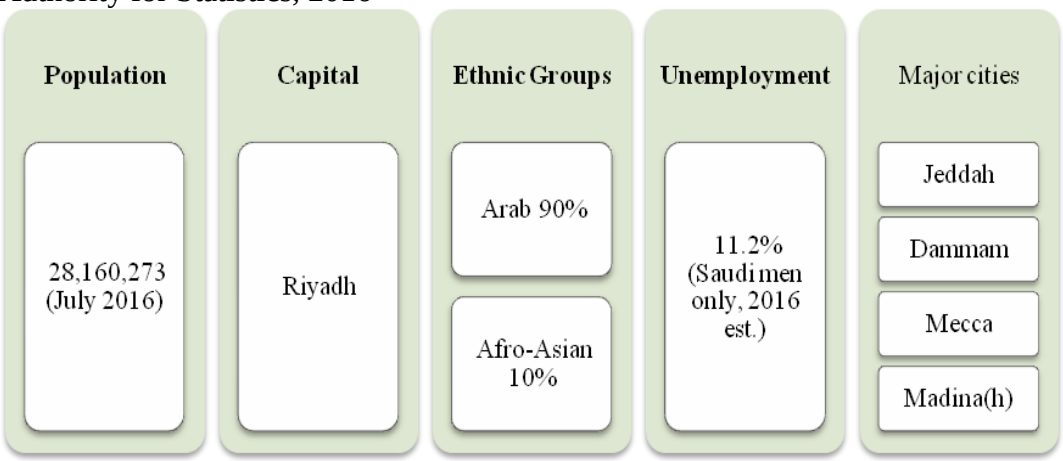
The AW includes one of the largest economies in the world GDP, namely, Kingdom of Saudi Arabia. It also includes some of the richest countries in the world (e.g. Qatar, Kuwait, Oman, UAE, Bahrain, Saudi Arabia, Iraq, Libya, etc.). Given this, the AW is divided economically into three categories: oil-states (high income countries), non-oil states (middle income countries) and minor-oil states (low income countries). While the high income countries depend on oil production, both minor and non-oil states depend on human capital—migrating to the oil states (Christina, Mehran, & Mir, 2007).

Christina, Mehran & Mir (2007) accounted for education in the Middle East and the major impacting factors for education were social, political and economic changes. The social changes are almost a result of religion conflict. In other words, while Islam is the major one in the over majority of this region, various versions and religious schools have negatively helped in making a huge social gap. When it comes to the political changes, the endless Arab-Israel conflict and recently the [Arab S-P-R-I-G] have made the situation worse and raised rather fast political changes in the region. As for the economic changes, the gap among oil-states, non-oil states and minor-oil states is another conflict in the region. The misuse of the resources in the oil-states in particular is what makes the situation worse. If we consider the shared factors that could make a more effective Arab World (the major part of the Middle East), it would be easy to see to what extent such region (i.e. Arab World) is really a big failure! Language and Religion are the major factors that could help make a powerful union similar to that in the European Union. The Arab League is a big failure that has never made any practical progress for the region. Would it be possible to have a better education in such states where some of them are listed on the top list of the richest countries, but on the other hand in the top list of weakest educational system(s)? This question would be left to the policy-makers of the Arab World—to keep enlarging the gaps among their own people and states, or bridging the gaps and starting a new era of science and comprehensive prosperity.

That being said, in this paper we present a case of higher education in one of the oil-states, namely, KSA. We intend to examine the impact of international ranking of higher education institutions on the higher education reform in the KSA. With this also, we assume that the international ranking has been impacting the higher education reform in the KSA. We also intend to present to the readers who can judge whether [this story of higher education reform in a country with such resources] is a success or not! While this last objective goes beyond our direct objectives as we only intend to analyse the impact of international ranking on the Saudi higher education system, yet propose our own ranking (i.e. Ranked-based Ranking)—we also assume that such an issue is predictable, too, through our presented data and analysis.

Background

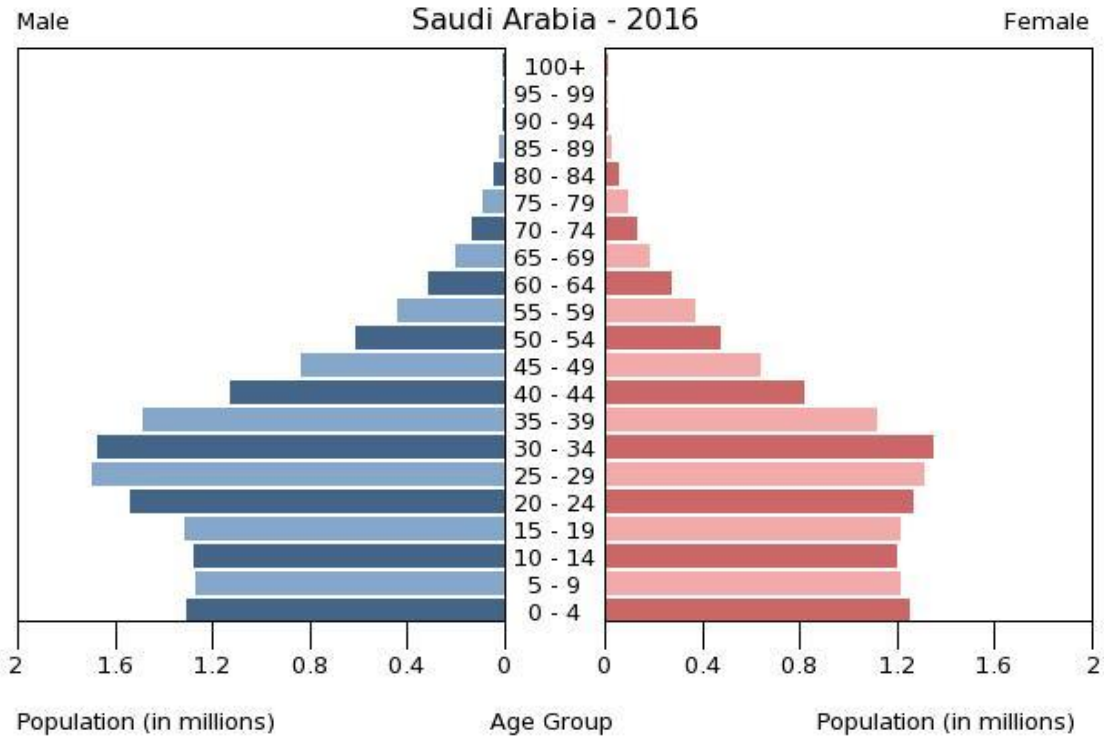
Diagram 1. Key Fact about the Kingdom of Saudi Arabia: Based on the General Authority for Statistics, 2016



The above diagram presents some key facts about the KSA. As can been seen the population of the country is the highest when compared to the the gulf countries (Bahrain, Kuwait, Oman, Qatar, UAE). However, if we compare the population to some other key facts about the country as one holding the largest share in the OPEC, then it might leave greater expectations about the achievements of the country and the provided services to the population. The unemployment rate is below 12% (for male only) according to the CIA Website but it is only 5.7% according to the General Authority of Statistics (GAS) in the KSA for the year 2016. For both females and males it is reported as 5.1 for the year 2016—calculated as per percentage of the population. The next figures will show some plus key facts about the KSA which raises greater expectations in regard to the quality of education in such a country with these pluses.

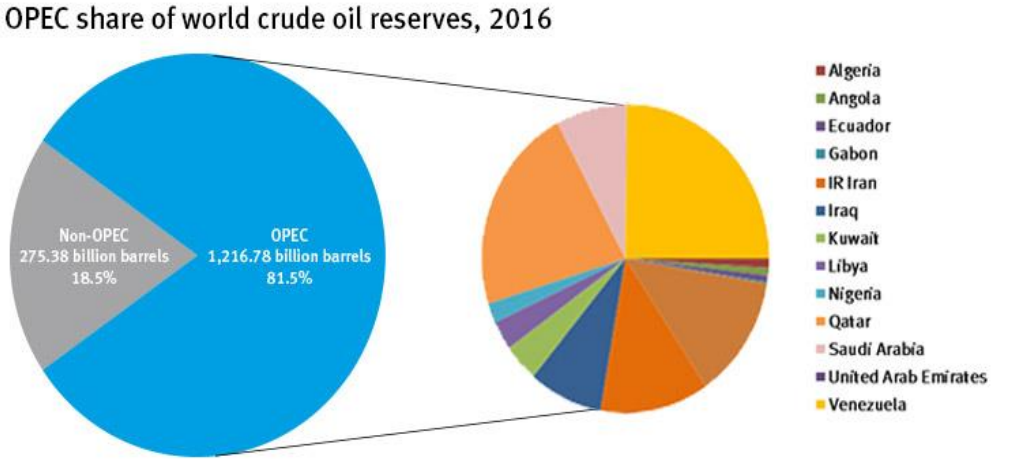
Among the pluses that the KSA has is the high percentage of adult population as compared to the low percentage of aged population. The above figure according to the World Factbook in (Central Intelligence Agency, 2017) illustrates that the lowest percentages of both females and males are above 50 years old as compared to the highest between 20-40 for both females and males. Above all, if we also consider the high percentage of the young population which would make a within plus in the structure of the society. Have there been well-structured plans to make the best of these two classes of the population in addition to the high income of the country, it would undoubtedly turn into a revolutionary development in the country. This plus point should be compared to other countries which are currently issuing new policies to decrease the effect of the high percentage of aged population within the structure of their society (e.g. China and Canada).

Figure 1. Distribution of Population in the KSA according to Age



Source: Central Intelligence Agency, 2017.

Figure 2. OPEC Crude Oil Reserves for the Year 2016



OPEC proven crude oil reserves , at end 2016 *(billion barrels, OPEC share)*

Venezuela	302.25	24.8%	Kuwait	101.50	8.3%	Qatar	25.24	2.1%	Gabon	2.00	0.2%
Saudi Arabia	266.21	21.9%	United Arab Emirates	97.80	8.0%	Algeria	12.20	1.0%			
IR Iran	157.20	12.9%	Libya	48.36	4.0%	Angola	9.52	0.8%			
Iraq	148.77	12.2%	Nigeria	37.45	3.1%	Ecuador	8.27	0.7%			

Source: OPEC Annual Statistical Bulletin 2017.

Theoretically, all members of the Organisation of Petroleum Exporting Countries should have a good welfare and prospered life as compared to other

countries which have to depend on industrial income. However, some of these countries due to political reasons are left behind and the treasure they have seems to be a damn on its people. Regardless of this issue, the KSA is an example of where the life of comfort is to be claimed and looked upon enviously—though this look decreases when being compared to other neighbouring countries (e.g. Qatar, UAE). According the above figure, the KSA is ranked as the second in regard to crude oil reserves in 2016 (OPEC, 2017). Is the kind of life and higher education quality match this plus point? Is it the best level they have reached? Is the budget allocated for education in general and higher education in particular fair enough as compared to allocated budgets for other areas? This is what goes beyond the objectives of this paper, but we expect that it is not among the highest budgets as compared to other sectors, especially, army (See Krieger, 2007) for either the overuse or underuse of budget for education in the KSA. Considering its importance among the OPEC, this has qualified the KSA to be among the 20 GDP countries (Statistics Times, 2017)—making another plus that could be used to implement a comprehensive yet significant development on the country. Not just this, the country is expected to jump from nearly 19 to 16 by 2030. Would higher education jump too!

Table 1. Indicators and Ranking for the Kingdom of Saudi Arabia among the Arab and World Countries

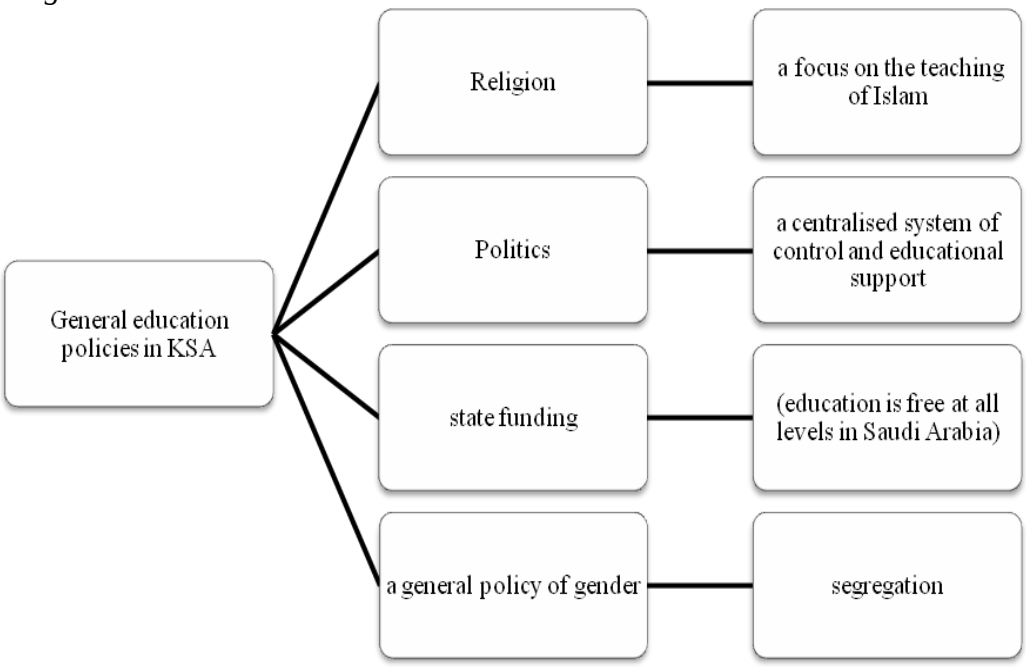
Indicator	**Among Arab Countries**	**Among World Countries**
Ease of doing businesses	1	22
Global competitiveness	3	20
Institutions	4	20
Infrastructure	4	31
Macroeconomic environment	2	4
Property rights	5	27
Health and primary education	5	53
Higher education and training	3	48
Goods market efficiency	4	27
Financial market development	3	27
Technological readiness	3	41
Market Size	1	23
Business sophistication	3	28
Innovation	3	30

Source: Council of Saudi Chambers, 2017.

Another interesting thing is the reported statistics within the Website of the Council of Saudi Chambers (CSC). As the above table shows, the KSA is given high ranks be it among the 22 Arab countries or among the world countries. For instance, it is reported to have the third rank in higher education and training among the Arab counties and 46 among the world countries. These ranks seem to be attractive in both levels but they do not seem to be so when being weighed to the high income of the country.

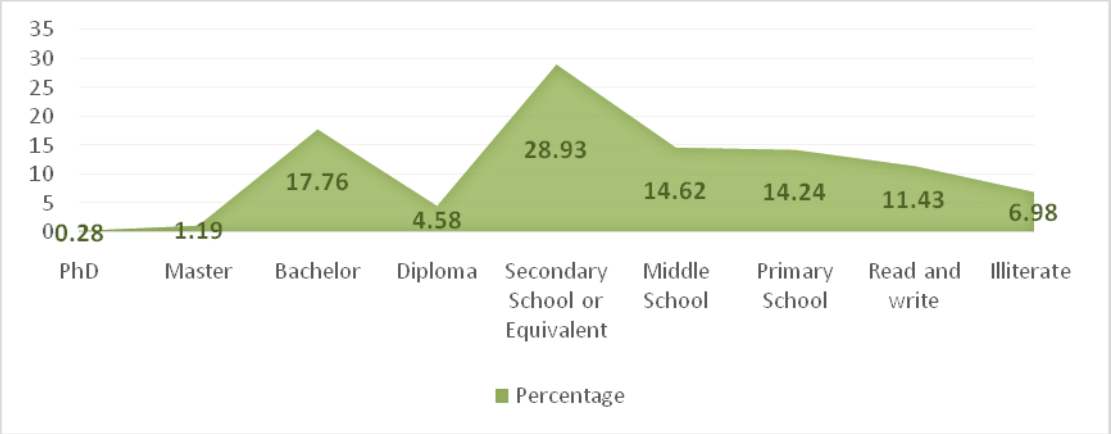
Having presented a number of the pluses of the country, now let's get closer to higher education system in the KSA. In a country like the KSA, education policies are classified into general and specific ones. While the former refers to [strict] ones that are usually untouchable, unarguable, and nearly an amendable, the latter refers to the real education policy that will specify educational matters (See Elyas & Al-Sadi, 2013) for the effect of politics, economy and social structure on education in the KSA).

Diagram 2. General Education Polices in the KSA



The above diagram (Ministry of Education & and Ministry of Higher Education, 2008; Smith & Muḥammad, 2013) illustrates the general education polices in the KSA which is classified into two major types: political ones and religious ones. Each of these is further divided into two types. Since the government provides free education for all and one that is even funded for those who do not have jobs (providing them with living costs and accommodation), so in return it is a centralised educational system. As for the other side, Islam must be taught intensively be it in school or in the university and students must be always coerced with Islamic courses in addition to the segregation of female and male students in nearly all places of education with the exception of health and medical faculties and colleges (for further discussion of the politics of education in the KSA, see Prokop, 2003). We should also note here that, first, the KSA established the Ministry of Education in 1954 including higher education, then the Ministry of Higher Education was established in 1975 to be merged again with the Ministry of Education in 2016 with the announcement of Vision 2030 (Sack, Jalloun, Zaman, & Alenazi, 2016), (see also Alkhazim, 2003), for more details about the the administration of higher education in the Kingdom until 2003.

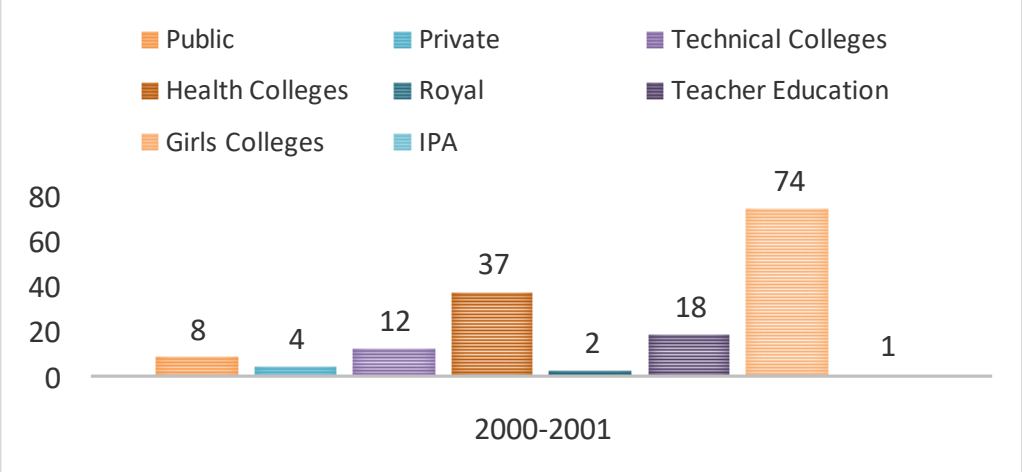
Figure 3. Saudi Arabia Population for 10 years and over by Educational Status



Source: General Authority for Statistics, 2016.

With all the above listed pluses, the KSA still have some problems when looking at the above figure—showing the distribution of the population according to educational indicators. There is still over 6% who are reported as illiterate and around 12% who don't have any qualification. Moreover, the PhD holders are under 0.30% and the same thing for master holders the percentage of which does not even reach 1.5%. This seems to be so contradictive with a country being ranked among the top ones internationally in sending their students to study abroad (See Hamdan, 2015) for more reading about teaching and learning in the KSA).

Figure 4. A Sample for the Types of Higher Education Institutes in the KSA, 2000-2001



Higher education system in the KSA has various types of institutions (Ministry of Education, 2017b). As it can be seen not only public and private institutions, but also other verities that consider the general and the specific education policies mentioned earlier. For instance, to fulfil the segregation policy, girls' colleges are given a different type. To fulfil the professional needs, colleges like technical, IPA (The Institute of Public Administration), health, royal and

teacher education are given different institutions different from the academic and research institutions (For more details about the educational system in the KSA, see Clark, 2014; Saha, 2015).

Figure 5. Number of Universities in Saudi Arabia 1980-Present

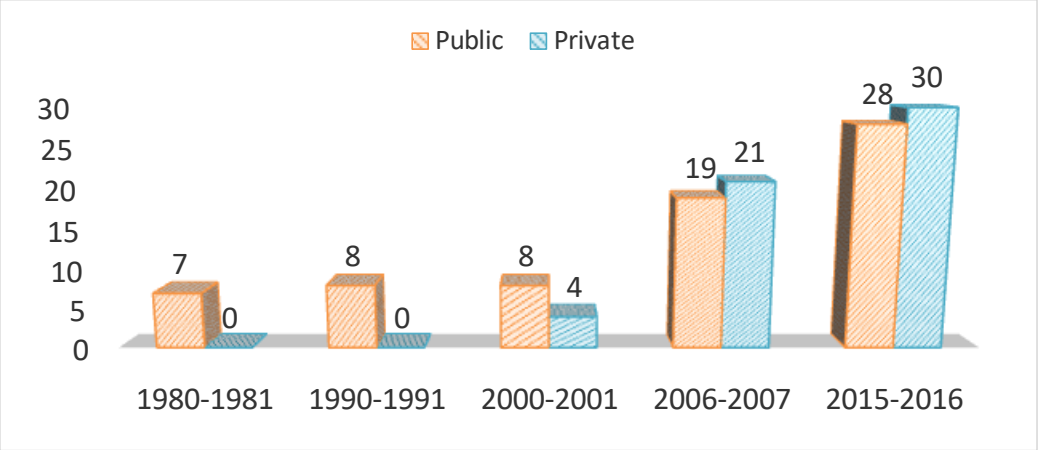


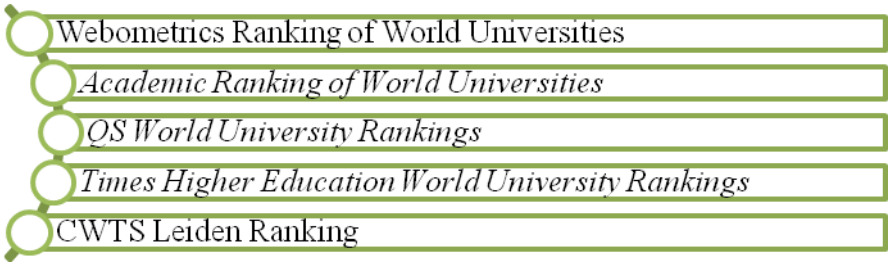
Figure 7 (Ministry of Education, 2017b) shows comparatively the number of both public and private higher education institutions in the KSA between 1980 and 2016. The number of universities is shown in every 10 years to measure the possible differences within decades. As is shown, the number of the public universities remained nearly the same between 1980-2000 (i.e. 7-8 universities). More interestingly, the number of the private universities remained zero until 2000 where only four private institutions are reported. However, the number of both public and private universities has significantly increased between 2006-2016 to double four times for the public universities and about eight times for the private ones.

Method

Sample

Our purpose in this paper is to examine the impact of international ranking of higher education institutions on higher education in the KSA. On the basis of this, our study population is the higher education institutes in the KSA. The sampling frame of this study would be the official websites of the international ranking. These included five international rankings (see the given diagram below). The sample of this study is the listed Saudi higher education institutions listed in any of the five type of rankings mentioned in the sampling frame.

Diagram 3. Sampling Framework



Measures

Since this study did not have any direct contact with the targeted sampling, *unobtrusive measures* were used in the study. In other words, *secondary analysis* of data retrieved from the official websites of the international rankings of higher education institutions was the main measure of this study. The retrieved data is evaluated in relation to *census bureau data* and official higher education policies issued by the education authorities in the KSA.

Having done that, then the researcher proposed a new measure for ranking the higher education institutions. This measure called [*Ranked-based Ranking Model*]. A detailed description of this proposed measure is given in the discussion section.

Design

A non-experimental design was used in this study. In notational form, it can be depicted as:

C X O_1 O_2

where:

C= assignment by cutoff of the last year(s) rankings (2016, 2017 and 2018) according to the availability of the data during the study carrying out
X= higher education reform in the KSA
O_1= the unobtrusive measure (i.e., five types of rankings)
O_2= the researcher's proposed Ranked-based Ranking

The main assumption of this design is that the higher education reform in the KSA was motivated by the internal rankings and the international ranking was part of the higher education reform in the KSA. It is a paradoxical structure where we assume that the international ranking has led to higher education reform in the KSA and higher education reform has resulted into international ranking inclusion of the Saudi higher education institutions.

Procedure

The data is collected from the official websites of the five rankings and the University Rankings Website. However, there are some issues that are worth considering. These will be clarified in the following table. While we can realise

that the study's internal validity is clearly affected by the time, we assume that our concern was to produce a final ranking list based on the assignment by cutoff data. In each of the below given rankings, two steps were followed: searching for Saudi Arabia and then checking the given list of the universities. It should be also noted, that our search was not restricted to the given below periods, we even checked the starting times for the inclusion of any Saudi higher education institution as this was included in our analysis and discussion sections. However, the main data for the analysis and the produced yet proposed ranked-based ranking is mainly based on the data for the last editions of the rankings (2016 and after).

Table 2. Time Periods for the Included Data

Ranking Name	**General Study Data**			**Ranked-based Ranking Data**
Webometrics	2017 edition	January edition July Edition		July Edition, 2017
Shanghai	2016			2017
QS	2016	2017	2018	2018
THE	2016			2016
Leiden	2016	2017		2017

Having retrieved that data from the above websites, then it was analysed using descriptive statistical tools to produce figures for included Saudi higher education institutions (i.e. Excel version 2016). The rankings are compared within time whenever possible. For instance, in the case of the Webometrics, the two editions for the year 2017 are presented comparatively. For the Shanghai ranking, the rankings for each university are presented comparatively since the first listing time until the last edition. As for the QS ranking, the results are introduced in contrast for three years (2016, 2017 and 2018). Similarly, for the Leiden ranking, the results for the years (2016 and 2017) are compared too. The THE is the only ranking where only the data for one year is presented and compared among the universities other than within each university according to the year. The data analysis was concluded with the next step leading to the proposed model: ranked-based ranking. The description of this analysis is detailed in the discussion's section.

Results

Five international higher education institutions rankings are presented below—showing the recent ranks of higher education institutions in the KSA. First, a brief introduction about each ranking will be accounted for, then the recent ranking for the higher education institutions in the KSA is presented. It should be noted that some of the ranking types show the ranks at the local level, regional level, continental level or field level—which will not be shown here. In other words, only the international rankings will be shown.

Table 3. Types of International Rankings

Name	Full Name	Publisher		Location	Country	Date	Frequency
Shanghai Ranking	Academic Ranking of World Universities	Shanghai Jiao Tong University	2003-8	Shanghai	China	2003	Annual
		Shanghai Ranking Consultancy	2009-Present				
QS Rankings	QS World University Rankings	Quacquarelli Symonds Limited & Times Higher Education	2004-2009		UK	2004	Annual
		Quacquarelli Symonds Limited	2010-Present				
Webometrics Ranking	Webometrics Ranking of World Universities	Spanish National Research Council		Madrid	Spain	2004	Biannual
Leiden Ranking	CWTS Leiden Ranking	Centre for Science and Technology Studies, Leiden University			Netherlands	2007	Annual
Times Higher Education	Times Higher Education World University Rankings	Times Higher Education			UK	2010	Annual

Source: The-State-Secretariat-for-Education-Research-and-Innovation-(SERI)-and-Swiss Universities, 2017.

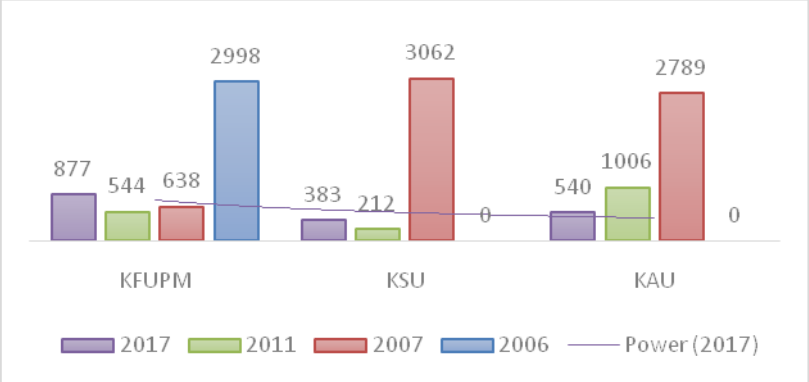
Table 4. Ranking Criteria for the Five Rankings

Ranking name	Criterion	Indicator		Weight	
Academic Ranking of World Universities	Quality of Education	Alumni Noble Prize and Medals		10	
	Quality of Staff	Noble Prize and Medals		20	
		Intensive citation		20	
	Research Output	Nature and Science publications		20	
		ISI publications		20	
	Size of the Institution	Staff number		10	
Webometrics Ranking of World Universities	Size/number of pages	Presence	Google	5	
	Number of external networks	Visibility	Ahrefs Majestics	50	
	Number of citations	Transparency or openness	Google Scholar Citations	10	
	Number of citation among the top 10%	Excellence or scholar	Scimago	35	
QS World University Rankings	Academic peer review	Survey		2004	2005-
				50	40

	Employer review	Survey		10
	Citations per faculty	Citation rate	ISI	20
			Scopus	
	Faculty student ratio	Number of students per teacher		20
	International students	Number of foreign students		5
	International faculty	Number of foreign researchers and professors		5
Times Higher Education World University Rankings	Citations	ISI		30
	Teaching	Income per academic		30
		Reputational survey – teaching		
		PhD awards per academic		
		PhD awards / bachelor's awards		
		Undergraduates admitted per academic		
	Research	Papers academic and research staff		30
		Research income (scaled)		
		Reputation survey – research		
	International students and staff	Domestic and international students ratio		7.5
		Domestic and international staff ratio		
		Internationally co-authored papers		
	Industry income innovation	Research income per an academic staff		2.5
CWTS Leiden Ranking	Largest number of publications (P)	Co-authored by two or more organisations		
		Co-authored by two or more countries		
		Co-authored by two or more industrial partners		
		Co-authored with two or more [organisations] within a distance of less than 100 km		
		Co-authored with two or more [organisations] within a distance of more than 1000 km		
	Mean citation score (MCS)	Research output		
	Mesn normalised citation score (MNCS)	Research output		
	Proportion of top 10% publications. (PP Top 10%)	Top research output		

Source: The-State-Secretariat-for-Education-Research-and-Innovation-(SERI)-and-Swiss Universities, 2017.

Figure 6. Webometrics Ranking of Saudi Higher Education Institutions in different Years



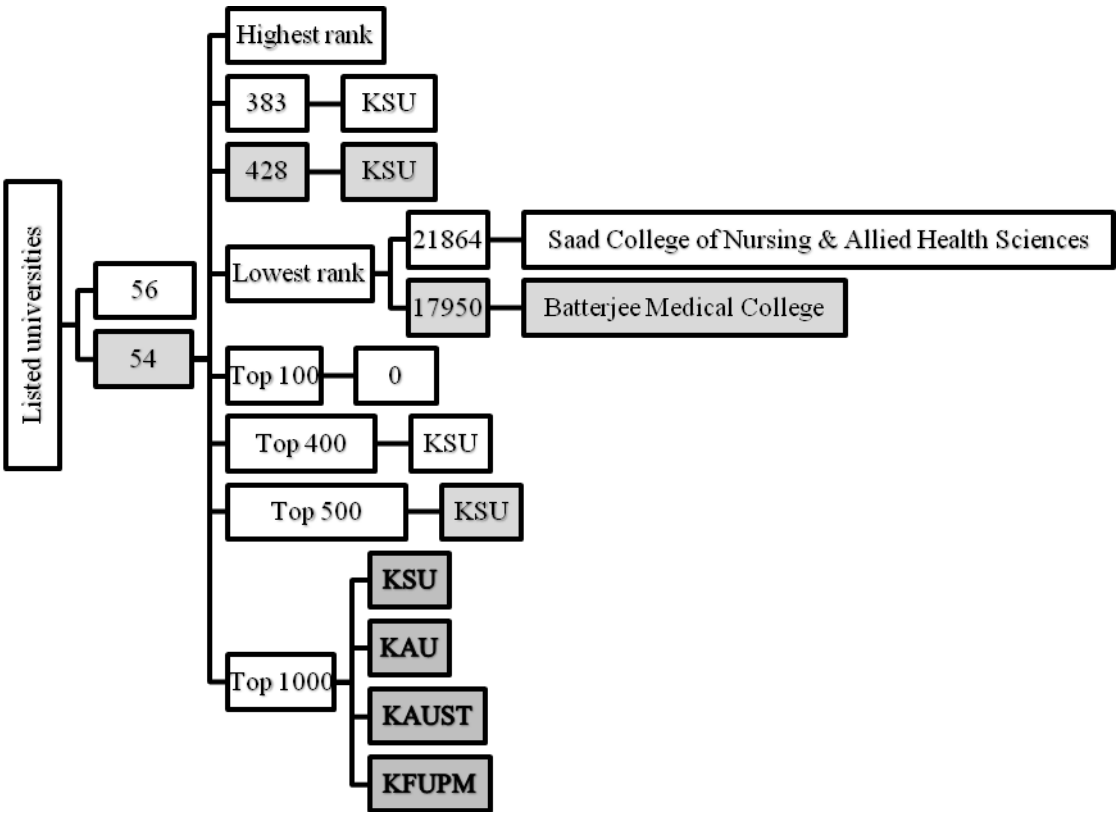
Source: Spanish-National-Research-Council, 2017.

One of the first steps and the shortest ways [maybe] to initiate and motivate the inclusion of Saudi higher education institutions among the international ones was through the Webometrics. As a matter of fact and as shown in the discussion section, this type of ranking was a major factor—raising doubts about higher education quality in the KSA. Since and as shown in the above table, this ranking type is completely based on the evaluation of the higher education institute's website, universities especially the major ones (e.g. King Saud University, King Abdulaziz University, King Fahd University of Petroleum and Minerals, etc.)—pushed their staff and administrative teams forward to make all their academic efforts and provided services pubic toward building comprehensive university websites. This has resulted into a significant jump yet inclusion of several Saudi higher education institutions among the top higher education institutions.

However, this highly motivating jump seems to decrease when looking at the ranking of the Saudi higher education institutions in 2017 (January and July versions). The below figure illustrates the number of the included institutions and how some of them have been ranked lower than they were in the previous rankings.

According to this diagram (Spanish-National-Research-Council, 2017), the highest rank is (383) for KSU which was ranked (212) in 2011. By this means, only one Saudi higher education institution is listed among the best 500 institutions and only 4 among the top 1000—with lower ranks except for KAU which jumped significantly higher as taking the rank (540) in 2017 as compared to (1006) in 2011. The main reason behind this regression is seemingly unpredictable. However, two or more assumptions are possible. First, the Saudi higher education institutions are going back because they are manifesting internal affairs hurdling the progress and continuity to either keep their current positions or levelling them up. Second, other international higher education institutions are working significantly harder to excel yet be positioned above those in the KSA.

Diagram 4. Webometrics Ranking for Higher Education Institutions in the KSA in 2017 January and July Editions



To be included in the other international rankings (e.g. Shanghai Ranking) is clearly harder than that of the Webometrics. It should be noted that both use different criteria for ranking but we can also claim the Webometrics is different from all other rankings as it is totally internet-based (assessing the content and the impact of the institution's website) as compared to other rankings (see tables above). While the first appearance of the the Saudi higher education institution in the Webometrics was in 2006, the first appearance for them in the Shanghai ranking was in 2009. The following diagrams show the listed Saudi higher education institutions until the last list (2017).

KSU which is the first established higher education institution in the KSA (Alamri, 2011) was also the first included university in the Shanghai ranking. As the figure shows, KSU has been significantly improving since 2009 taking higher positions to reach (101-150) in 2016 and 2017. Would there be chances to have the [Harvard of the Arab World and the Middle East] as some call it (Krieger, 2007)—among the the top 100 and [maybe] 50? This is what will be predictable when further editions are published.

Figure 7. King Saud University

Source: Shanghai-Ranking-Consultancy, 2017.

Figure 8. King Fahd University of Petroleum and Minerals

Source: Shanghai-Ranking-Consultancy, 2017.

KFUPM which was the only listed university in the Webometrics in 2006 and which was one of the major reasons behind the higher education reform in the KSA, took the second lead to be the second listed university in the Shanghai ranking in 2010 after the appearance of KSU in 2009. Unlike KSU which has shown a significant progress since 2009, KFUPM has shown different fluctuations in rankings. It kept going up among (401-500) and (301-400) until 2014 where it went back to where it has started (401-500)—to back up again to (301-400) in 2016 and 2017. Thus, KFUPM reached its peak in 2012.

Figure 9. King Abdulaziz University

Source: Shanghai-Ranking-Consultancy, 2017.

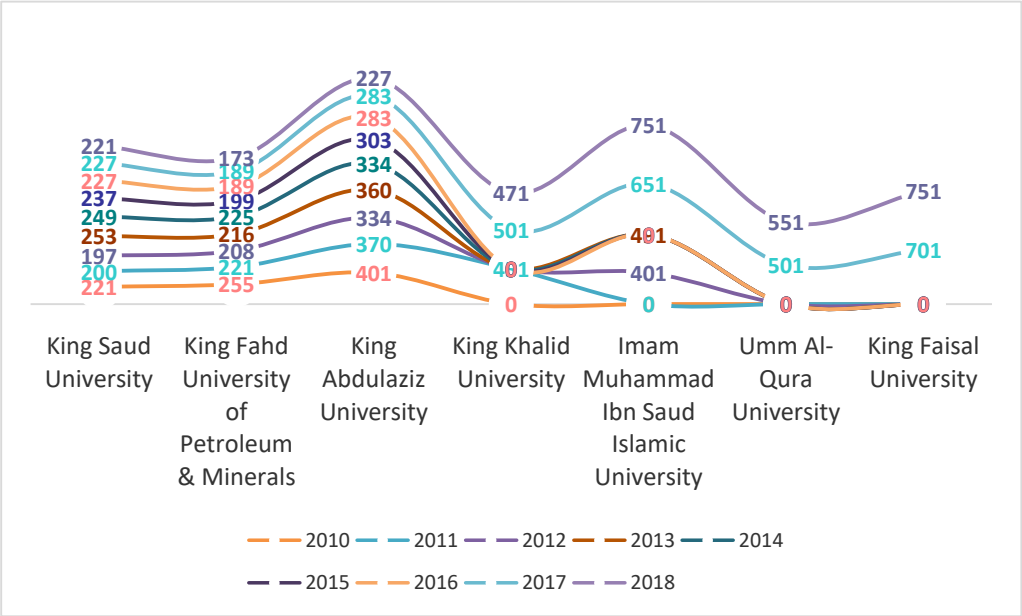
KAU which has the second top rank 2017 is also among the leading higher education institutes in the KSA. It is clear that it took this institution longer time since the education reform in 2006 to be included in the Shanghai ranking. As the figure shows, the first inclusion for this university was in 2012. Therefore, like KSU and even exceeding the KSU, KAU has been achieving higher rankings since 2010 to reach (101-150) with a closer indication to 101. Besides, while KSU and KFUPM have started from (401-500), KAU has started with the rank (301-400)—jumping to (201-300) in the next year and (151-200) in the year after. Not only this, in the next years (2016 and 2017), it went up to exceed even KSU (101-150).

Figure 10. King Abdullah University of Science and Technology

Source: Shanghai-Ranking-Consultancy, 2017.

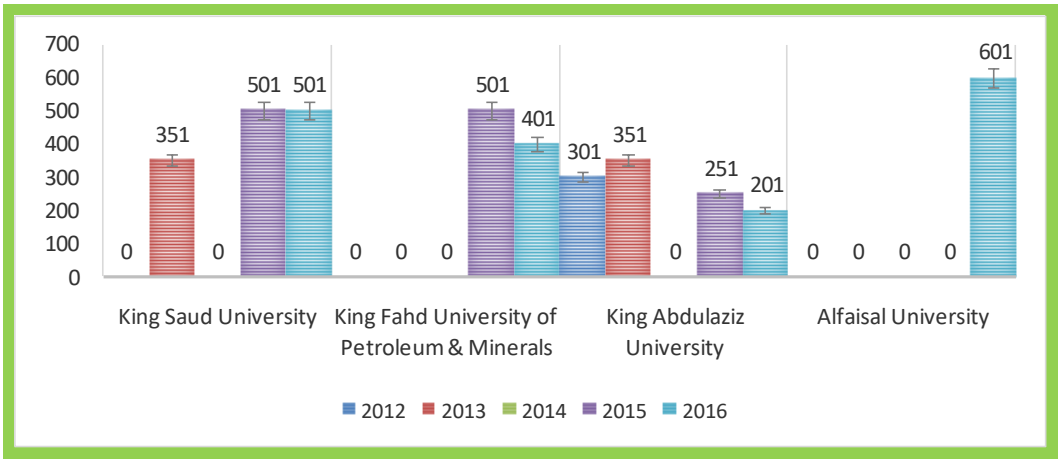
The unique Saudi higher education institution which was established in the [Golden Age] of the Kingdom in 2009 is also a remarkable output of the higher education reform in the KSA. Although the university is only 8 years old compared to older Saudi higher education institutions—have not been included (e.g. King Khalid University in 1998, King Faisal University in 1975), it was ranked immediately after 4 years of its establishment. And it has been going up to reach its peak in 2017 (201-300).

Figure 11. QS Ranking for Higher Education Institutions in the KSA



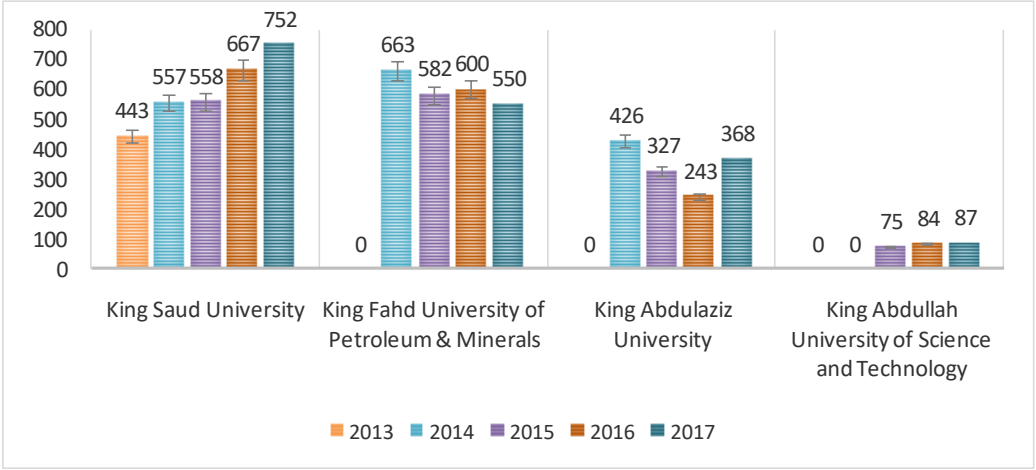
The inclusion of a number of the Saudi higher education institutions—first in the Webometrics and then the Shanghai ranking—have encouraged yet put the Saudi higher education institutions in the positions of qualifying for other rankings like the QS Ranking. The above figure, according to (Quacquarelli-Symonds-Limited, 2017) illustrates the listed institutions between 2010 and 2018. Unlike the other rankings, in this type of ranking, four different Saudi institutions are listed in addition to the three major ones: KSU, KFUPM and KAU. Besides, KAUST have never appeared in the QS Ranking. As it can been seen only the three major universities have been being listed frequently since 2010. In other words, Imam Islamic University appeared only in 2012 and 2013—dropped out to come back again in 2017 and 2018 with significantly lower rankings between (701-800) as compared to earlier ones between (401-500). Similarly, King Khalid University was first listed in 2011 to disappear until 2017 and 2018—appearing again with lower rankings again—behind 471 and behind 501 later as compared behind 451 in 2011. By all means, we can see that the highest ranking achieved by the Saudi higher education institutions were among the top 200 universities with first highest for KFUPM as (173) in 2018 and the second highest for KSU as (197) in 2012. On the contrary, the lowest rank among the seven included institutions has been behind (751) in 2018 for Imam Islamic University and KFU.

*Figure 12.*Times Higher Education Ranking for Higher Education Institution in KSA



The Time Higher Education has started in 2010; however, the first inclusion for Saudi higher education institutions was two years later (Time Higher Education, 2017). As is shown, fewer institutions are included in this ranking. For instance, there was only one institution in 2012, namely, KAU (301). More interestingly, like in the QS ranking, KAUST is not listed here too. Once, a new university which has never been listed in any of the above rankings is included, namely, Alfaisal University. We can also notice that the highest rank is (201) achieved by KAU in 2016 as compared to the lowest rank (601) for Alfaisal University in the same year. Above all, in 2014, none of the Saudi higher education institutions was included.

Figure 13. Leiden Ranking (PP Top 10%) for Higher Education Institutions in KSA



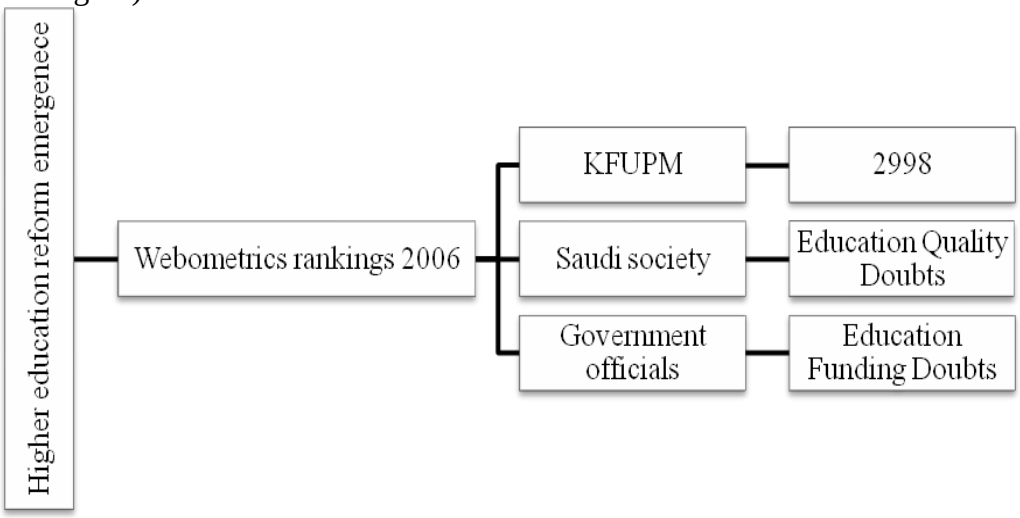
Leiden ranking is also another international categorisation and ranking for higher education institutions. The first time for the inclusion of Saudi higher education institutes took place in 2013 (Centrum-voor-Wetenschap-en-Technologische-Studies, 2013), though only one university was included among

the top 500 (443). In the next year, the number of the included universities increased to three and to four in the year after. However, in 2015 the increase was significant where KAUST appeared for the first time yet among the top 100 (75). As is shown, the highest ranks in general have been achieved by KAUST with the highest as (75) in 2015. On the other hand, the lowest was achieved by KSU as (752) in 2017. Surprisingly, KSU's rank, which was the first and only included university in 2013, has been strongly decreasing to reach its weakest in 2017 as (752) as compared to (443) in 2013. The same situation applies to KAUST though the decrease is weak (starting with 75 in 2015, going down to 84 in 2016 and then decreasing again into 87 in 2017). The strongest part in this ranking seems to be occupied by KAU which kept strongly increasing between 2014 and 2016 to go down in 2017—yet the achieved rank still positive as it is significantly higher than that achieved in the first time (368) as compared to (426) in 2014.

Discussion

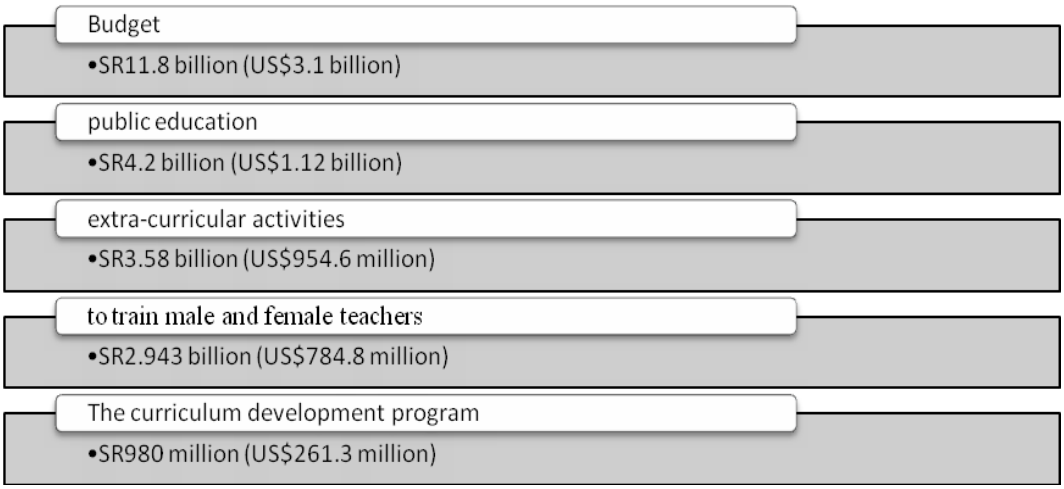
Higher education reform in the KSA was largely motivated by the results of the international ranking of higher education institutions, mainly the Webometrics. The reputation of the KSA with all the pluses we mentioned above have raised many questions about the low quality of the educational system. This had led to launching one the very productive reform programmes [in the golden age of the Kingdom] named after the King at that time (King Abdullah Project for General Education Development).

Diagram 5. Primary Reasons for Higher Education Reform in the KSA (based on readings in)



Source: Smith & Muhammad, 2013.

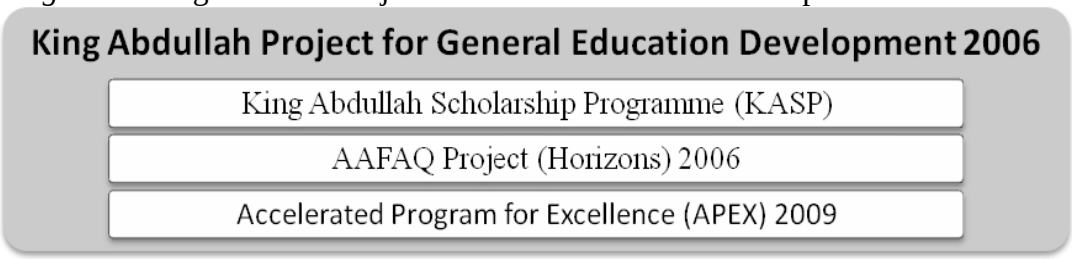
Diagram 6. Budget Distribution for King Abdullah Project for General Education Development 2006



Source: Smith & Muhammad, 2013.

The above diagram shows the distribution of the budget among the different educational sectors and required reforms. As is seen, not only education was targeted but applied education (i.e. extra curricula activities, training or re-qualification of teachers and curriculum development).

Diagram 7. King Abdullah Project for General Education Development 2006



Source: Smith & Muhammad, 2013.

This reform programme was for all education sectors; however, there was an emphasis on higher education as well. The above diagram lists the three main programmes that targeted higher education. The second and the third ones in particular are directly related to the impact of the international ranking and among their objectives the inclusion of the Saudi higher education institutions among the internationally ranked institutions.

Diagram 8. Classification of Higher Education Institutions in the KSA

Comprehensive universities with a research focus	King Saud University
	King Abdulaziz University
Specialised universities with research focus	King Fahd University of Petroleum and Minerals
	King Khalid University
Specialised universities	Imam Muhammad bin Saud University
	King Saud Bin Abdulaziz University for Medical Sciences
Teaching universities	Princess Noura Bint Abdul Rahman University
	Dammam University

Source: Smith & Muhammad, 2013.

Among the immediate reforms that took place for higher education institutions was to classify them into different types. As it can be seen in the above diagram, the universities have been classified into four types. This classification has made it easy to step forward and urge the steps to have a number of these institutions listed among the internationally ranked higher education institutes.

We have presented earlier the five types of international rankings and showed the differences in the criteria used by each one of them. Based on this, we think that a verified ranking of the available ranking of the universities based on these five types is possible. Generally speaking, in order, for a university to be included in this re-ranking, it has to be listed in at least one of these five international rankings regardless of its rank. Having this basic inclusion requirement, then there are four criteria that will be used to decide on the ranks of the ranked universities. These criteria include: to be listed regardless of the rank, to be among the best 500, to be among the best 200 and to be among the best 150. In each criterion, a particular institutions is given either plus (+) or (-). These symbols are then converted into points where the former equals (5) points and the latter-equals (0). The last step will be to calculate the total points for each institution, in each type of ranking the highest is 20 and the lowest is zero. These totals are then calculated out of 100 (5 types of rankings 5x20=100, 4 criteria used for all 4x5=20x5=100).

*Table 5.*Detailed Proposed Ranking-Based Ranking of the Higher Education Institutions in the KSA

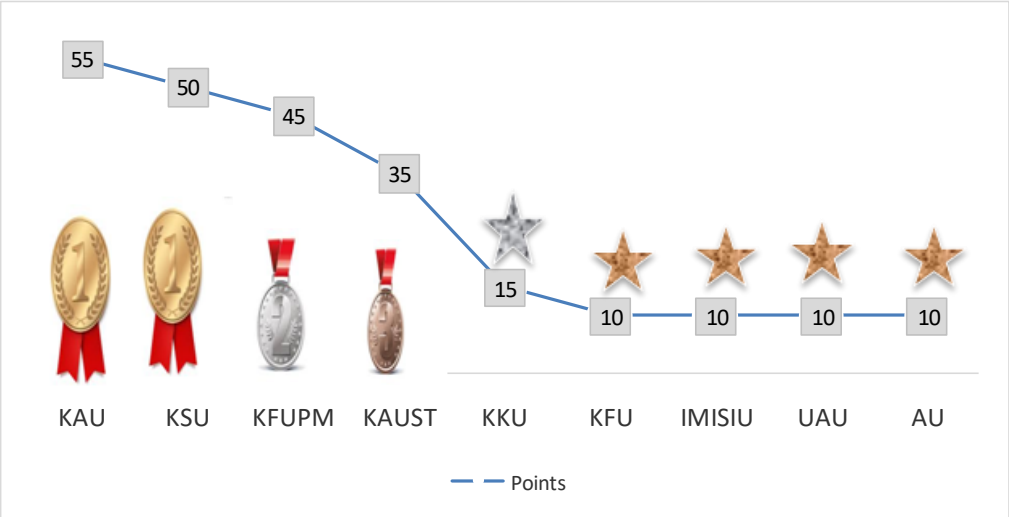
Criteria for each ranking	**Any rank**				**≤500**				**≤200**								**≤150**				
University **Ranking**	Webometrics				Shanghai				QS				THE				Leiden				**Total**
King Saud University	+	+	-	-	+	+	+	+	+	+	-	-	+	-	-	-	+	-	-	-	**50**
King Abdulaziz University	+	-	-	-	+	+	+	+	+	+	-	-	+	+	-	-	+	+	-	-	**55**
King Fahd University of Petroleum and Minerals	+	-	-	-	+	+	-	-	+	+	+	-	+	+	-	-	+	-	-	-	**45**
King Abdullah University of Science and Technology	+	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	+	+	+	+	**35**
King Khalid University	+	-	-	-	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	**15**
King Fiasal University	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	**10**
Imam Muammad Ibn Saud Islamic University	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	**10**
Umm Al-Qura University	+	-	-	-	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	**10**
Alfaisal University	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	+	-	-	-	**10**
Other listed institutions in only the Webometrics*	+	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	**5**

*There are 56 universities in January edition and 54 in July edition 2017 in the Webometrics

Having obtained the final points as shown in the last column, then each institution is given a new rank (numerical) and a grade (descriptive). The basic step for this step of ranking is that the universities will be given stars—a star for each 10 points. For instance, the total score for KAU is 55—qualifying to have 5 stars which is the maximum. On the other hand, KKU, for example has got the total score of 15—qualifying to take only one star. Again, the other universities which are listed only in the Webometrics, yet did fulfil the other criteria even within the same ranking, have got only 5 points—disqualifying them even to get a single star!

Having assigned stars for each listed institution, then the grades are given either (Golden, Silver, Bronze or only star(s)). The requirements for each grade is based on the achieved number of stars: 5 stars for the golden rank, 4 stars for the silver rank, 3 stars for the bronze rank, and the institutions which achieve less than 3 stars are ranked only with stars. This is clarified further in in the given figure below.

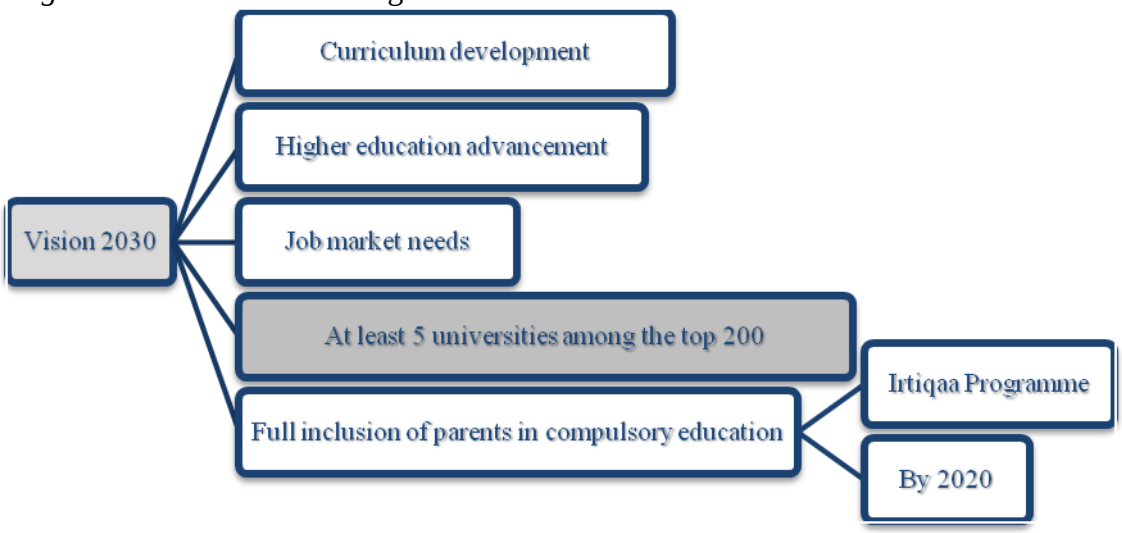
Figure 14. Ranking-based Ranking of the Higher Education Institutes in the KSA



The above figure shows the final re-ranking for ranked Saudi higher education institutions. As it can be seen, there are three categories for these universities: universities ranked with medals, universities with sliver stars and universities with bronze stars. There were two universities which achieved 5 stars—qualifying them to have the golden medal. Yet, since KAU has got higher points—5 points above KSU, so it stands as the first followed by KSU as the second best higher education institution in the KSA according to our ranking. KFUPM has achieved the third rank assigned to the silver medal. KAUST has achieved the fourth rank and assigned with the bronze medal. All the other institutions have not archived three stars—disqualifying them from being assigned to any of the three medals. Instead, one of them is assigned to a silver star (i.e. KKU) and all the other are assigned to a bronze star. To be assigned to the golden star, a university should have ≥20 points. As for the other institutions which are not shown in this figure, none of them has met the requirements, that is,

at least having 10 points to be assigned to a star. Each one of them has achieved only 5 points for being included in the Webometrics Ranking and by itself does not give them any credibility to be listed among the re-ranked universities in the KSA.

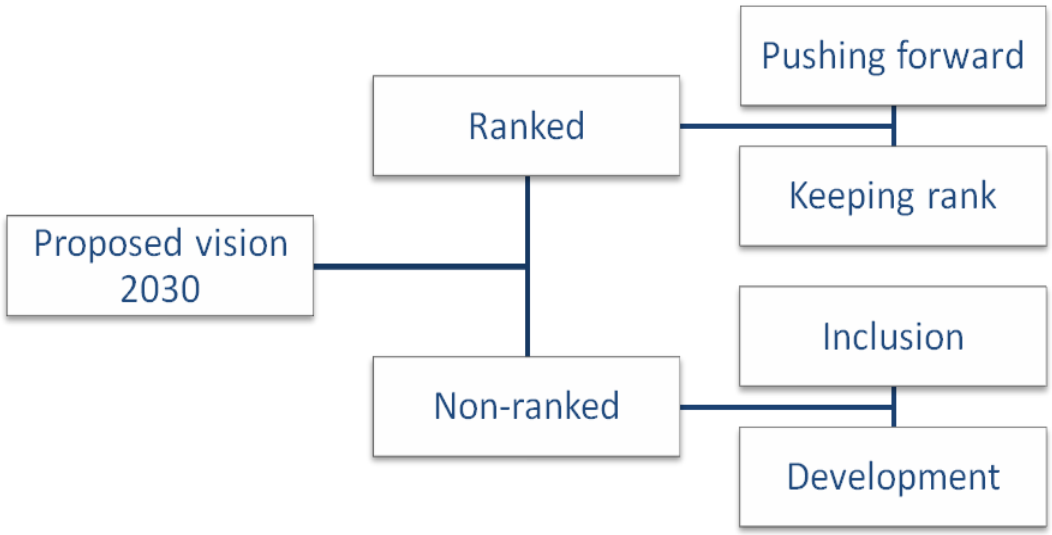
Diagram 9. Vision 2030 and Higher Education in the KSA



With the above objectives within the recently issued general development plan for the KSA (Saudi-Vision-2030, 2016), the above diagram illustrates that at least five universities should be among the top 200. When referring to the original website, it states many times the development of higher education and increasing the rank of higher education institutions in the country. However, there is no specification what are the advancements that will be added. Similarly yet considering the five types of ranking, it is not mentioned clearly where it is intended to have five universities among the top 200. We have illustrated in the results and discussion sections how the differences could be significant in terms of listing top universities among these five types of ranking.

When looking at the rankings, it seems to be a reasonable objective to have five universities among the top 200—taking into considering that there are only two according to Shanghai ranking (KAU and KSU), one according to Leiden ranking (KAUST), one according to QS ranking (KFUPM) and none according to the other rankings. Therefore, this reasonability seems to vanish when looking at the period (2030). It seems to be a very long time and minor objective to be realised within this long time span and by a country with all the pluses we have mentioned above in addition to the significant achievements that have taken place until 2016. A more reasonable plan would have been like—proposing major and minor objectives to improve higher education—the proposed model below is an illustration for this:

Diagram 10. Ranking Development Model



The first step to apply this model is to have a list (e.g. 10 universities should be generally included). The second step should be a detailed description of this inclusion—excluding the general listing of Webometrics where almost many universities would be included (i.e. it should have stronger objectives distinguished from those for the other four types of ranking). The third step would be to have a list of universities that are already included among the the top 500 universities. These should have specific criteria (top up) especially those which are close to the desired rank(s) or are already within the desired rank. For instance, KAU and KSU among the top 150 in Shanghai ranking, KAUST among the top 100 in Leiden ranking, and KFUPM among the top 200 in QS ranking. At the second level, there must be another plan to at least keep the same rank. The second part of the plan is to have new universities included regardless of the rank which will be archived. Having that being done, a comprehensive higher education development will be taking place in the Kingdom. To keep going on with the same plan that took place in King Abdullah's project—seems to be a backward step.

We conclude this section with the point that ranking by itself could be deceptive. In other words, basically a university is included among the best 500/400/300/200/100 universities because it has fulfilled the criteria. What happens then! This rank is not still! The university needs to keep improving and competing as other universities can reach the same position and even exceed and that is where the game of ranking or say battle for excellence starts (See Hazelkorn, 2015; Smith & Muhammad, 2013 for more reading about ranking critical issues)!

Conclusions

We conducted a non-experimental study based on both quantitative and qualitative data (unobtrusive measures) with secondary analysis—to measure the impact of international ranking of higher education institutions on higher education reform in the Kingdom of Saudi Arabia. The data was retrieved from the official websites for five types of ranking (Webometrics, Shanghai ranking, QS, THE and Leiden) and from the Ministry of Education Website, General Authority for Statistics, Council of Saudi Chambers, Vision 2030. King Abdullah Project for General Education Development and Vision 2030 were major variables to measure the impact of international ranking on higher education in the KSA. While the former has been considered as a major achievement in the history of the Kingdom, the latter seems to have very modest objectives and attitudes towards higher education. We also proposed a new ranking system, called—ranked-based ranking where we ranked the ranked Saudi higher education institutions using our proposed ranking system detailed in the discussion section. With this in mind, should the Kingdom want to proceed as being a leading higher education system in the Arab World, yet a competing part of the world in higher education—then challenging yet stronger steps should be taken to step ahead with higher education! Should they really want to be, then this being should be a major objective, other than a shy, general, minor objective!

Limitations

This study has one limitation. In other words, the study has been planned following the *objectivism* approach where we based our results on the public data published by official websites. While we consider our choice as a plus that kept us distanced from any biased analysis or ideas, we also assume that considering the *subjectivism* approach or the *constructionism* one—might had answered some of our concerns about our inferences in regard to the slow progress of higher education in the Kingdom.

Future Research

We did not link our results, conclusions or any included data in this study to any other factors (e.g. political situation of the country, economic situation, social structure, etc.). Given this, future research while considering these factors—different interpretations and inferences might be strongly possible.

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