

# Proposed Considerations to Improve Funding and Its Management in Universities of the Arabic Countries

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## Abstract

Universities receive a great deal of attention by governments due to its vast importance in development and economy. Productive type of universities are the most affective in this regard as they are producers of income, research, patents, intellectual activities, and good graduates. No wonder, they are always ranked highly among international universities. Very few Arabic universities are of this type and were able to make it in international rankings. Several reasons for this shy appearance of Arabic universities, of which funding and its management are of prime importance. This study aimed to find out ways to improve the status of Arabic Universities in this regard.

Several funding indicators were found to be positively related to good ranking of universities namely: total income, governmental funding, income/students, and extent of financial autonomy. In this context, this study recommends the following considerations to be addressed to improve the funding environment of Arabic universities: differentiation, privatization, self-funding, endowments, number of students, diversification of income, intellectual concentration, and regulations.

International universities do not differ a lot from the Arabic universities in capabilities and abilities. Its main superiority is in its organization, governance and administration. If the Arabic universities improve their environment by making it more productive, stimulative, and attractive of minds, it will make it among the suburb international universities.

**Key Words:** Arabic Universities, University funding, University Ranking.

## 1. Introduction and Background

Universities receive a great deal of attention by the governments of their countries; this is due to the vast importance of universities in development and economy. In this context, universities' affect its community at various degree and scope depending on the type of the university. Generally, universities differ from each other in size, vision, objectives, specialties, financing, products, governance....etc. and can be classified accordingly into educational, research, and productive universities (King Abdul Aziz University 2010).

Educational universities concentrate on educating students and preparing them for the job market, they differ from each other in the specialties they offer, number of students, and students' selection criteria. This category of universities is the most common and achieving the basic educational needs of the communities. Hereby, they are widely affected by the needs of the community and the surrounding social, political, and economic conditions. Some of these universities were affected badly by the community pressure to accept more students beyond its capabilities to the point of affecting the quality of its graduates. While other universities adhered to its capabilities and limits its student admission to assure good quality of its graduates (king Abdul Aziz University 2010, P 10; Tayeb and Zahid 2015, p13).

Research universities concentrate on research and creativity to study and solve community problems, in addition to providing basic education programs, They differ from each other in the quality and quantity of research projects, number of publications, extent of interaction with the community, and the amount of revenue it acquire. This category of universities is the most capable of attracting community funding and aid. (King Abdul Aziz University 2010, p32).

Productive universities are the universities that have tangible products for the development of the community in the form of agricultural, industrial, information, and health services. And/or in providing consultancies, and making its labs workshops and facilities available for community use. Also, in the form of producing patents' with economic benefits and direct use (King Abdul Aziz 2010, p 63). Some of these universities go all the way to establishing its own companies to manufacture or manage hotels, real estates, or various services. These activities may include in some universities investing its holdings of lands, liquid money, endowments in partial partnerships with local community establishments (King Abdul Aziz University 2010, p 67; Nagadi 2016, p25).

In actuality, there is no definite separation between these categories of universities. All universities may have one or all of the above-mentioned activities, and differ in the extent of concentration on these fields of activity. No doubt that all types of universities serve the community regardless of its concentration on education, research, and/or production. However, universities would have a more complete role if it serve the community in all aspects. Thereby would have a noticeable positive effect on knowledge and financial prosperity. Therefore, productive universities are more inquisitive for the needs of the community nowadays, because countries development plans rely on knowledge economy as a tool for better development of its community and source of better income (Altunbasak 2016).

Regardless of the category of the university, it require enough funding to run its activities, especially in view of the increase in cost, and the decrease in government and community funding (Al-Harbi 2014, p 11). Universities differ in the source of funding, some depend only or mainly on governmental funding, other depend on self-funding through tuitions, real estate, labs, workshops, hospitals, farms, intellectual capabilities' investments, and/or research. Generally, most universities depend on a mixture of these sources of funding, but still complain of inadequacy in this context (Al-Harbi 2017).

Some of the available self-funding sources are purely business in nature that may be used by any academic or non-academic establishment (such as endowments, donations, and real estate) (Al-Harbi 2017). This type of universities have a complete separation between funding activities and academic activities. Thereby there would not be any direct impact or reflection of the funding activities of these universities on its students or staff. On the other hand, other self-funding sources depend on the academic deepness of universities by using its intellectual activities, patents, consultancy, and research (Al-Harbi 2017). This type of universities have a direct relation between its academic and funding activities. Thereby there would be a direct impact of the funding activities of these universities on its academic process and allow practical training and financial benefits for students and staff even after their graduation or leaving the university. In addition, this would affect positively the financial income of the university and the country that it belongs, as it would decrease the dependence of universities on the government, create job opportunities in the surrounding community, serve the community, and solve its problems (Ritzen 2016).

From another point of view, improving university education require applied competitive training, which cannot be made available without allowing applied research, and attracting and motivating gifted and excellent students and staff to produce their best, and come up with new inventions and creative solutions (Tayeb and Zahid 2015, p15). This would yield better graduates capable of immediate job productivity in the available business firms, or start their own business. In this context, productive universities are most suitable to achieve this (Guaning 2016).

From the above, it become obvious that productive universities play an important developmental role in its communities if is succeed in attracting and managing its knowledge and funding capabilities. These universities would be a corner stone in the prosperity and advancement of its communities. Therefore, international universities' ranking establishments concentrate in its ranking parameters on intellectual productivity of universities in form of research, patents, and international prizes (Tayeb 2016).

Arabic universities did not achieve well in international rankings, as few Arabic universities appeared in these rankings with low ranks (Shanghai Ranking 2017). This indicates that Arabic universities are inferior to international universities in its research and scientific achievements, which would have negative impact on its countries educationally, economically and developmentally. No doubt there are multiple cultural, economic, organizational and political reasons for this, of which funding is a chief efficacious component

Several studies were reported in this field. One of which, is the study by Hussain (2011) who reported that governmental university education in Egypt suffer a serious deficit in funding, and recommended to allocate more funds for universities. In another study, Hakeem (2011) studied the future of university funding in Saudi

Arabia, and recommended the continuity of governmental funding of basic and vocational education, and the promotion of private sector investments in education. Also, Al-Rubai (2011) studied the privatization of university education in Jordan, showed positive and negative aspects, and recommended to solve these negative aspects. Likewise, Beltagi (2016) studied education funding, and recommended to improve spending efficiency in universities, and to businessmen to establish private educational institutes. Furthermore, Al-Harbi (2017) studied education funding in Saudi Arabia, and recommended several funding alternatives, such as private sector participation, establishing of an “education economy administration office” in the ministry of education, and initiating a tax scheme on education. Nevertheless, no studies reported the relation of university funding to achieving excellence in international rankings as a neutral indicator of the improvement of university education quality, and economic development of its communities.

## **2. Study objective**

This study aims to discuss the funding structure and its management in some international universities, in order to note the most important considerations to improve funding structure and its management in Arabic universities.

## **3. Study questions**

In order to achieve the study objectives the following questions were placed:

- 3.1 First Question: What is the status of funding and its management in a selected sample of international universities?
- 3.2 Second Question: What is the relationship between university rank and each of the following: total funding, average funding per student, percentage of governmental income, percentage of non-governmental income, and the extent of financial autonomy?
- 3.3 Third Question: What is the status of funding and its management in a selected sample of Arabic universities?
- 3.4 Fourth Question: What is the status of the selected Arabic universities in view of the extracted relations in this study?
- 3.5 Fifth Question: What are the proposed considerations need to be addressed in order to improve funding and its management in Arabic universities?

## **4. Study sample**

Selection of universities for this study depended on the world known Shanghai Jiao tong ranking as it is the most spread and accepted ranking in academic media, and as it depends on research and knowledge creativity as the main factors in its ranking. The international universities selected to be the first ranked university in each continent in 2016; this was to ensure the diversity of cultures from around the world (Shanghai Ranking 2017). Table 1 shows the selected international universities for this study.

**Table (1) Selected International Universities**

University Name	University Rank	Country	Continent
Harvard	1	USA	North America
Cambridge	4	UK	Europe
Tokyo	20	Japan <sup>1</sup>	Asia
Melbourne	40	Australia	Australia
Sao Paulo	150 – 101	Brazil	South America
Cape town	300 – 201	South Africa	Africa

As of for the Arabic universities sample, the first ranked university of each Arabic country appeared in the 2016 ranking were selected. Nevertheless, because two universities from the same country achieved a similar ranking, we selected both universities in spite of being from the same country, in addition to the university appeared in the ranking from the other country (Shanghai Ranking 2017). Table 2 show the selected Arabic universities for this study .

**Table (2) Selected Arabic Universities**

University Name	University Rank	Country
King Abdul-Aziz	150 – 101	Saudi Arabia
King Saud	150 – 101	Saudi Arabia
Cairo	500 – 401	Egypt

## 5. Study Method

A descriptive analytical methodology were used in this study, through collecting the required information about universities using a special form. Then, the findings were analyzed, and the optimal funding considerations for Arabic universities were extracted.

## 6. Results and Discussion

### 6.1 Answer to the first question:

The first question reads as: What is the status of funding and its management in a selected sample of international universities?. Table (3) shows the student, staff, and ranking status of the selected international universities, and Table (4) shows its funding sources and management status. The following is the details of each university:

### 6.1.1 Harvard University:

Harvard University is in the United States of America in the North American continent. It is the oldest American university established in 1636. It has 22000 students, in 12 colleges and institutes, 33% of its students are in postgraduate programs, and it has 2400 teaching staff members (Harvard University 2017). Thereby its staff student ratio is 1:9, which is an excellent ratio that allows enough time for the staff for research and creativity. It is also noticed that it has a high percentage of post-graduate students, who are an important asset in research. Further, it has a low number of students and specialties, which add positively to the ability of research and creativity.

The university is very active in education and research, as it was the first ranked university internationally in the general rank, the life sciences rank, the medical sciences rank, and the social sciences rank. And, was the fourth internationally in the pure sciences rank, and the thirty seventh internationally in the engineering sciences rank (Shanghai Ranking 2017).

The university income was 4777 million dollars in 2016, the majority of this income (>99%) came from non-governmental sources, namely: 48% from investments and donations in sort of endowment and intellectual investments, 21% from tuition, 12% from research, and 18% from other sources. Governmental sources accounts for less than 1% of its income. The university council (corporation), chaired by the president of the university, is solely responsible of the management, distribution, and auditing these funds. (Harvard University 2017). Analyzing these facts shows that the university is completely autonomous in this aspect, as its main dependence is on its own income from investments, tuitions, research, endowments, and the sole responsibility for this is the university council. It is also noticed that the average income per students is high (217000 dollars/student) which allow for a lot of development, research investment and creative activities.

### 6.1.2 Cambridge University:

Cambridge University is in the United Kingdom, in the European continent. It is one of the oldest universities in the world, established in 1318. It has 18000 students, in 31 colleges and institutes, 33% of the students are in postgraduate programs, and it has 1666 teaching staff members (Cambridge University 2017). Thereby its staff student ratio is 1:11, which is an excellent ratio that allow enough time for the staff for research and creativity. It is also noticed that it has a high percentage of post-graduate students, who are an important asset in research. Further, it has a low number of students and specialties, which add to the ability of research and creativity.

The university is very active in education and research, as it was ranked as the first in university in Europe. Among international universities, it was ranked fourth in the general and the medical sciences rank, second in the life sciences rank, seventh in the pure sciences rank, sixteenth in the social sciences rank, and nineteenth in the engineering sciences rank. (Shanghai Ranking 2017).

The university income was 2750 million dollars in 2014, the majority of this income (54%) came from non-governmental sources, namely: research (27%), tuition (14%), investments and donations in sort of endowment and intellectual investments (6%), and other sources (7%). Governmental sources account for 46% of its income (Shanghai Ranking 2017b). The university council, chaired by the president of the university, is solely responsible of the management, distribution, and auditing these funds (Cambridge University 2017). Analyzing these facts show that the university is completely autonomous in this aspect as its main dependence is on its own income from investments, tuitions, research, endowments, and the sole responsibility for this is the university council. It is also noticed that the average income per students is high (153000 dollars/student) which allow for a lot of research investment and creative activities.

### 6.1.3 Tokyo University:

Tokyo University is in Japan in the Asian continent. It is one of the oldest Japanese universities established in 1877. It has 28000 students, in 20 colleges and institutes, 50% of the students are in postgraduate programs, and it has 4636 teaching staff members (Tokyo University 2017). Thereby its staff student ratio is 1:6, which is an excellent ratio that allow enough time for the staff for research and creativity. It is also noticed that it has a high percentage of post-graduate students, who are an important asset in research. Further, it has a low number of students and specialties, which add to the ability of research and creativity.

The university is very active in education and research as it is the first ranked university in Asia. Internationally, it was ranked the twentieth in the general rank, the eighth in the pure sciences rank, the twenty seventh in the life sciences rank, among the 76-100 universities in the engineering sciences rank, and among the 101- 150 universities in the medical sciences rank. Nevertheless, it did not make to the rank in social sciences. (Shanghai Ranking 2017).

The university income was 2093 million dollars in 2015, the majority of this income (61%) came from non-governmental sources, namely: research (21%), tuition (7%), investments and donations in sort of endowment and intellectual investments, followed by tuition income (3%), and other sources (30%). Governmental sources account for 39% of its income. The university council, chaired by the president of the university, is solely responsible of the management, distribution, and auditing these funds. (Tokyo University 2017). Analyzing these facts show that the university is completely autonomous in this aspect as its main dependence is on its own income from investments, tuitions, research, endowments, and the sole responsibility for this is the university council. It is also noticed that the average income per students is high (74750 dollars/student) which allow for a lot of research investment and creative activities.

**Table (3) Status of staff, students, and ranking of the selected International universities**

University Name	Harvard	Cambridge	Tokyo	Melbourne	Sao Paulo	Cape Town
Year of Establishment	1636	1318	1877	1853	1934	1829
# of students (x1000)	22	18	28	47	86	27
# of teaching staff	2400	1666	4636	6500	5809	955
Staff student ratio	1:9	1:11	1:6	1:7	1:15	1:28
% postgraduate students	33	33	50	53	32	35
# of colleges	12	31	25	22	48	6
General Rank	1	4	20	40	101-150	300-201
Pure sci. Rank	4	7	8	101-150	101-150	X
Engineering Sci. Rank	37	19	76-100	51-75	101-150	X
Life Sci. Rank	1	2	27	25	101-150	200-151
Medical Sci. Rank	1	4	101-150	26	151-200	X
Social Sci. Rank	1	16	X	35	X	X

#### 6.1.4 Melbourne University:

Melbourne University is in the Australia in the Australian continent. It is one of the oldest universities in the world established in 1853, it has 47000 students, in 22 colleges and institutes, 53% of the students are in postgraduate programs, and it has 6500 teaching staff members (Melbourne University 2017). Thereby its staff student ratio is 1:7, which is an excellent ratio that allow enough time for the staff for research and creativity. It is also noticed that it has a high percentage of post-graduate students, who are an important asset in research.

The university is quite active in education and research, as it was ranked as the first university in Australia. Among international universities, it was ranked the fortieth in the general rank, the twenty fifth in the life sciences rank, the twenty sixth in the medical sciences rank, the thirty fifth in the social sciences rank, and among the 51-75 universities in the engineering sciences rank, and among the 101–150 universities in the pure sciences rank (Shanghai Ranking 2017).

The university income was 2414 million dollars in 2014, the majority of this income (69%) came from non-governmental sources, namely: tuitions (29%), research (22%), and investments and donations in sort of endowment and intellectual investments (18%). Governmental sources account for 31% of its income (Shanghai Ranking 2017b). The university council, chaired by the president of the university, is solely responsible of the management, distribution, and auditing these funds. (Melbourne University 2017). Analyzing these facts shows that the university is completely autonomous in this aspect, as its main dependence is on its own income from investments, tuitions, research, endowments, and the sole responsibility for this is the university council. It is also noticed that the average income per students is high (51361 dollars/student) which allow for a lot of research investment and creative activities.

#### 6.1.5 Sao Paulo University:

Sao Paulo University was established in 1934 in Brazil in the South American continent. It has 86000 students in 48 colleges and institutes, 32% of its students are in postgraduate programs, and it has 5809 teaching staff members (Sao Paulo University 2017). Thereby its staff student ratio is 1:15, which is an excellent ratio that allow enough time for the staff for research and creativity. It is also noticed that it has a high percentage of post-graduate students, who are an important asset in research.

The university is active in education and research, as it was ranked as the first university in South America. In the international rank of universities, it was ranked among the 101–150 universities in the general rank, among the 101–150 universities in the life, engineering, and pure sciences' rank, and among the 151–200 universities in the medical sciences rank. Nevertheless, it did not make it in the international rank in social sciences. (Shanghai Ranking 2017).

The university income was 3722 million dollars in 2014, the majority of this income (61%) came from governmental sources. Non- governmental sources accounted for 39% of the income, namely: research income (37%), income from investments and donations in sort of endowment and intellectual investments (1%), and other sources (1%). No figure could be obtained about the income from tuitions, which may be included within other categories (Shanghai Ranking 2017b). The university council, chaired by the president of the university, is solely responsible of the management, distribution, and auditing these funds. (Sao Paulo University 2017). Analyzing these facts show that in spite that the sole responsibility of its financial affairs is with the university council, but it seems that the university has a limited autonomy in this aspect, as its main dependence is on governmental sources. It is also noticed that the average income per students is high (43279 dollars/student), which allow for a lot of research investment and creative activities.

**Table (4) Status of Funding & its management in the selected International Universities**

Name of the University	Harvard	Cambridge	Tokyo	Melbourne	Sao Paulo	Cape Town
Total Income (million \$)	4777	2750	2093	2414	3722	307
Income/student(\$)	217000	153000	74750	51361	43279	11582
% Governmental Income	<1%	%46	%39	%31	%61	%28
% Tuition Income	%21	%14	%7	%29	x	%30
% Investments and Donation Income	%48	%6	%3	%18	%1	%6
%Research Income	%12	%27	%21	%22	%37	%35
% other sources	18%	7%	30%	0	1%	1%
Financial Autonomy	yes	yes	Yes	Yes	Limited	Limited

#### 6.1.6 Cape Town University:

Cape Town University is in South Africa in the African continent. It is one of the oldest universities in the world established in 1829. It has 27000 students in six colleges and institutes, 35% of its students are in postgraduate programs, and it has 955 teaching staff members (Cape Town University 2017). Thereby its staff student ratio is 1:28, which is a bit high ratio that may limit the time for the staff for research and creativity. Nevertheless, it has a high percentage of post-graduate students, who are an important asset in research.

The university is active in education and research as it is the first ranked university in Africa. In the international rank, it was among the 201–300 universities in the general rank, and among the 151–200 universities in the life sciences rank. Nevertheless, it did not achieve any rank in the other areas (Shanghai Ranking 2017).

The university income was 307 million dollars in 2014, the majority of this income (72%) came from non-governmental sources, namely: research (35%), tuition (30%), investments and donations in sort of endowment and intellectual investments (6%), and other sources (1%). Governmental sources accounted for 28% of its income (Shanghai Ranking 2017b). The university council, chaired by the president of the university, supervised by the minister of education, and has members from the government and local community, is solely responsible of the management, distribution, and auditing these funds (Cape Town University 2017) . Analyzing these facts show that the university is not completely autonomous in this aspect in spite that its main dependence in funding is on non-governmental sources. This is because government officials affect its council directly or indirectly. It is also noticed that the average income per students is low (11582 dollars/student) which limit the university programs of research, investment and creative activities.



6.2 Answer to the second question:

The second question read as: What is the relationship between university rank and each of the following: total funding, average funding per student, percentage of governmental income, percentage of non-governmental income, and the extent of financial autonomy? The answer to this question was obtained from analyzing the reported data in the previous question's answer.

6.2.1 Relation between general rank and total income:

Figure (1) shows the relation between the general rank achieved by the university and its total income. Although no definite relation can be concluded due to the sample size, but there is a trend of a positive relationship; that as the total income increases this would lead to a better rank.

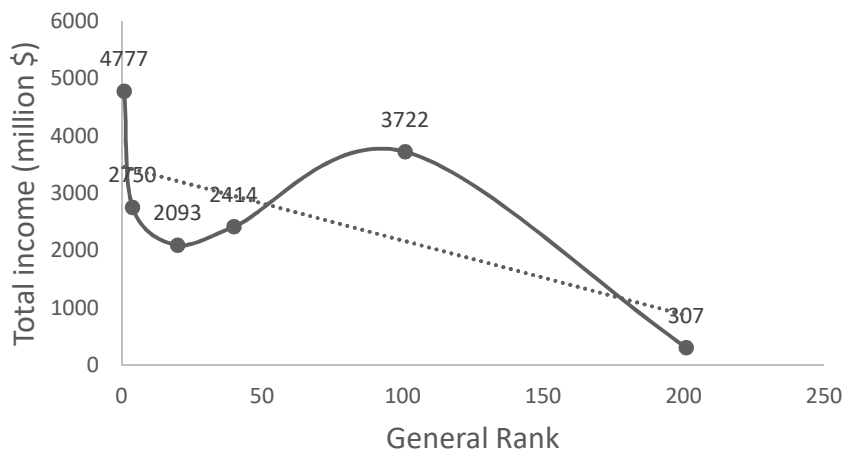


Fig. (1) Relation between the total income of the university and its rank

6.2.2 Relation between general rank and average income/student:

Figure (2) shows the relation between the general rank achieved by the university and its average income/student. Although no definite relation could be concluded due to the sample size, but there is a trend of a positive relationship; that as the average income/student increases this would lead to a better rank.

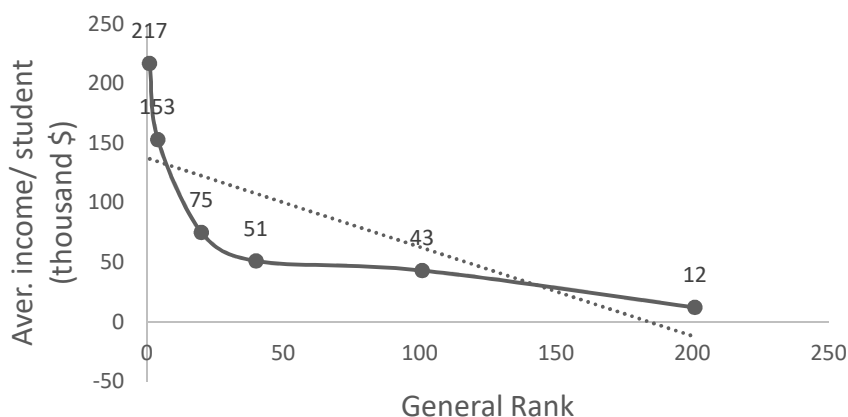


Fig (2) Relation between the general rank and the average income/student

### 6.2.3 Relation between general rank and percentage governmental income:

Figure (3) shows the relation between the general rank achieved by the university and its percentage governmental income. Although no definite relation could be concluded due to the sample size, but there is a trend of a negative relationship; that as the percentage governmental income decreases this lead to a better rank.

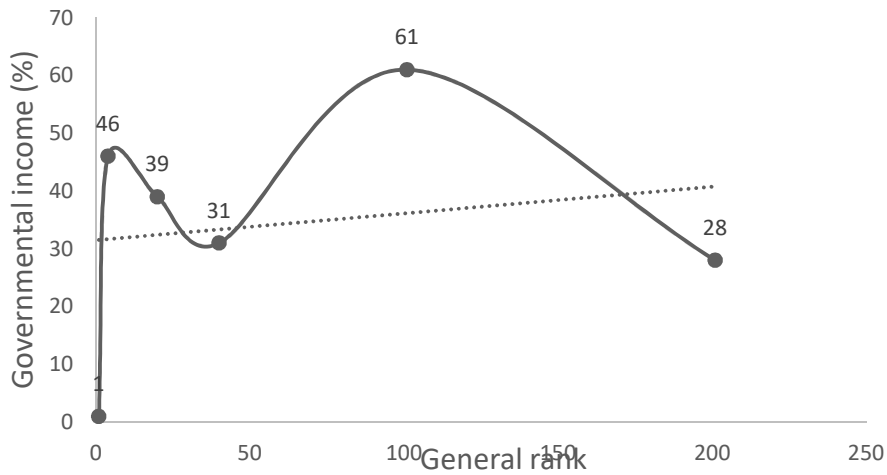


Fig (3) Relation between the general rank and the percentage governmental income

### 6.2.4 Relation between general rank and percentage non-governmental income:

Figure (4) shows the relation between the general rank achieved by the university and its percentage non-governmental income. Although no definite relation could be concluded due to the sample size, but there is a trend of a positive relationship; that as the percentage non-governmental income increases this lead to a better rank.

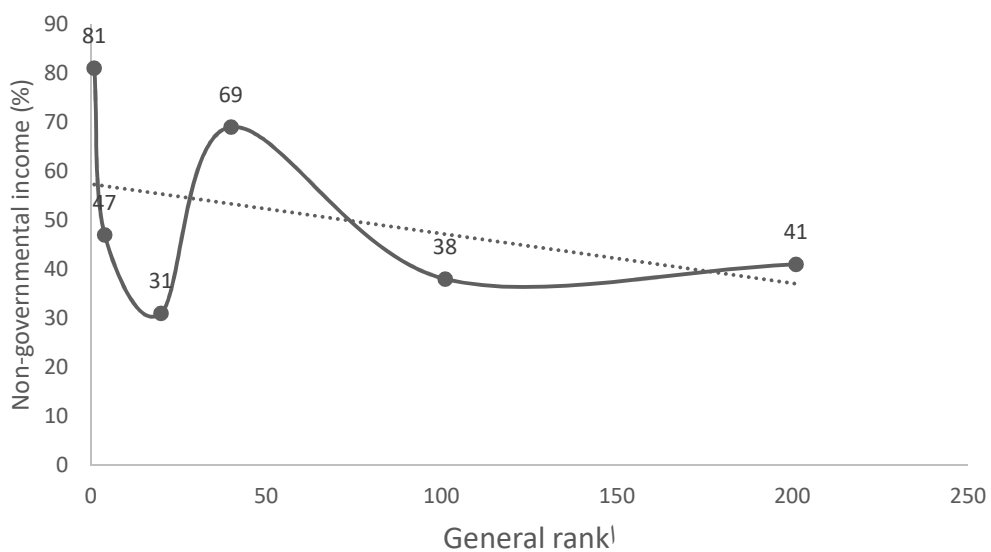


Fig (4) Relation between the general rank and the percentage non-governmental income

### 6.2.5 Autonomy of financial affairs:

Two categories could be identified as about universities' main funding source and its autonomy in financial affairs. The first category includes universities that achieved advanced general rank internationally, such as Harvard, Cambridge, Tokyo, and Melbourne. These universities have a complete financial autonomy including self-funding from its investments, endowments, research, consultancy, and programs. Thus, it have a complete autonomy in dealing with its financial affairs.

The second category is the universities that depend a lot on governmental sources on funding or affected by outside sources in its financial affairs. Therefore, its activities and strategies are affected by outside sources. Such universities could not achieve advanced general rank internationally, such as Sao Paulo and Cape Town.

### 6.2.6 Relation of funding and rank achievements:

From the above, we may conclude the presence of some indicators of rank achievements, namely: the income source of the university funds, its amount, and the extent of autonomy of financial affairs affect. These indicators affect, all together, the universities' achievement in the international rank. Universities that have high funds amount, low number of students, self-dependence of funding, and have complete financial autonomy achieve better in ranking.

### 6.3 Answer to the third question:

The third question reads as: What is the status of funding and its management in a selected sample of Arabic universities? Table (5) show the student, staff, and ranking status of the selected international universities, and Table (6) show its funding sources and management status. The following is the details of each university:

#### 6.3.1 King Abdul-Aziz University:

King Abdul Aziz University is in Saudi Arabia, it is one of the oldest universities in this country, established in 1967. It has 173000 students in 42 colleges and institutes, 10% of its students are in postgraduate programs, and it has 3744 teaching staff members (Personal Communication, King Abdul Aziz University 2017). Thereby, its staff student ratio is 1:46, which is a high ratio that allow very little time for the staff for research and creativity, especially in the presence of low percentage of post-graduate students, who are an important asset in research.

The university is active in education and research as it is tied in the first rank of Arabic universities. In the international rank, it was among the 101–150 universities in the general rank, the fifth in the engineering sciences rank, and the thirty-second in the pure sciences rank. Nevertheless, it did not make it in the international rank in the other areas (Shanghai Ranking 2017).

The university income was 2012 million dollars in 2014, the majority of this income (68%) came from governmental sources. Non-governmental sources account for 32% of its income, namely: investments and donations in sort of endowment and intellectual investments (16%), research (11%), and tuition (5%). (Shanghai Ranking 2017b). The university council, chaired by the minister of education, is solely responsible of the management, distribution, and auditing these funds. (Bureau of experts 2017). Analyzing these facts shows that the university is little autonomous in this aspect as its main dependence is on governmental sources, and its council is chaired by the minister. It is also noticed that the average income per students is high (11632 dollars/student) which allow for a limited activity of research investment and creative activities.

#### 6.3.2 King Saud University:

King Saud University is in the oldest university in Saudi Arabia established in 1957. It has 61000 students in 21 colleges and institutes, 15% of its students are in postgraduate programs, and it has 3799 teaching staff members (King Saud University 2017). Thereby, its staff student ratio is 1:16, which is a good ratio that allow enough time for the staff for research and creativity. Nevertheless, it is noticed that it has a low percentage of post-graduate students, who are an important element in research.

The university is active in education and research as it is the tied in the first rank in the Arabic universities. In the international rank, it was among the 101–150 universities in the general rank, among the 76–100 in the

engineering sciences rank, and among the 151–200 universities in the pure and life sciences ranks. Nevertheless, it did not make it in the rank in other areas (Shanghai Ranking 2017).

The university income was 3141 million dollars in 2014, the majority of this (80%) came from governmental sources. Non-governmental sources account for 20% of its income, namely: research (13%), investments and donations in sort of endowment and intellectual investments (6%), and tuition (1%) (Shanghai Ranking 2017b). The university council, chaired by the minister of education, is solely responsible of the management, distribution, and auditing these funds. (Bureau of experts 2017). Analyzing these facts show that the university is little autonomous in this aspect, as its main dependence is on governmental sources, and its council is chaired by the minister. Nevertheless, it is noticed that the average income per students is high (51364 dollars/student) which allow for a lot of research investment and creative activities.

**Table (5) Status of staff, students, and ranking of the selected Arabic universities**

University Name	King Abdul Aziz	King Saud	Cairo
Year of Establishment	1967	1957	1908
# of students (x1000)	173	61	215
# of teaching staff	3744	3799	14518
Staff student ratio	1:46	1:16	1:15
% post graduate students	10	15	4
# of colleges	42	21	26
General Rank	101-150	101-150	401-500
Pure sci. Rank	32	200-151	X
Engineering Sci. Rank	5	100-76	X
Life Sci. Rank	X	200-151	X
Medical Sci. Rank	X	X	X
Social Sciences Rank	X	X	X

### 6.3.3 Cairo University:

Cairo University is in Egypt and is one of the oldest universities in the Arabic world established in 1908. It has 215000 students in 26 colleges and institutes, 4% of its students are in postgraduate programs, and it has 14518 teaching staff members (Cairo University 2017). Thereby, its staff student ratio is 1:15, which is a good ratio that allow enough time for the staff for research and creativity. Nevertheless, it is noticed that it has a low percentage of post-graduate students, who are an important asset in research.

The university is active in education and research as it is the fifth ranked Arabic university. In the international rank, it was among the 401–500 universities in the general rank. Nevertheless, it did not make it in any subject rank. (Shanghai Ranking 2017).

The university income was 507 million dollars in 2014, the majority of this income (90%) came from governmental sources, Non-governmental sources account for 10% of its income, namely: tuition (5%), research (3%), and investments and donations in sort of endowment and intellectual investments (2%) (Shanghai Ranking 2017b) .The university council, chaired by the president of the university, is solely responsible of the management, distribution, and auditing these funds (Cairo University 2017). Analyzing these facts shows that in spite of the sole responsibility for funding is by the university council, but the university is little autonomous in this aspect as its main dependence is on governmental sources. It is also noticed that the average income per students is very low (2358 dollars/student) which does not allow for a lot of research investment and creative activities.

**Table (6) Status of Funding & its management in the selected Arabic Universities**

Name of the University	King Abdul Aziz	King Saud	Cairo
Total Income (million \$)	2012	3141	507
Income/student (\$)	11632	51364	2358
% Governmental Income	%68	80	%90
% Tuition Income	%5	1	%5
% Investments and Donation Income	%16	%6	%2
%Research Income	%11	%13	%3
Financial Autonomy	No	No	Limited

### 6.4 Answer to the fourth question:

The fourth question reads as: What is the status of the selected Arabic universities in view of the extracted relations in this study? This was answered by comparing the status of the selected Arabic universities in the view of the above found relationships of rank to funding amount, source, and financial autonomy.

#### 6.4.1 Status in view of universities' total income:

The selected Arabic universities vary in the amount of their total income. Some of them, namely King Saud and King Abdul Aziz universities have a high income, both of which achieved the highest rank among Arabic universities. On the other hand, Cairo University does not have a lot of income, and came as the last university in ranking among the Arabic universities.

#### 6.4.2 Status in view of universities' average income/student:

The selected Arabic universities vary in the average income/student. King Saud University have a high average, which may be due to its high income and a smaller number of students compared to other Arabic universities. While King Abdul Aziz University have a low average due to its high number of students. And Cairo University have the lowest average, which may be due to its high number of students and a small total income.

#### 6.4.3 Status in view of universities' percentage governmental income:

The selected Arabic universities vary in the degree of dependence on governmental income. Nevertheless, all of them depend highly on the government for its funding which make the universities vulnerable to political and financial situations.

#### 6.4.4 Status in view of universities' percentage non-governmental income:

The selected Arabic universities vary in the ratio of its dependence on non-governmental sources. Nevertheless, all of them are a bit shy in this aspect as their self-finance activities are limited. This indicates the need to find ways and regulations to allow more investment of the universities' physical, human and intellectual capabilities.

#### 6.4.4 Status in view of universities' financial autonomy:

The selected Arabic universities vary in the extent of autonomy but all of them are tied up to the government, and affected highly by it.

#### 6.5 Answer to the fifth question:

The fifth question reads as: What are the proposed considerations need to be addressed in order to improve funding and its management in Arabic Universities? This question was answered from analyzing the above findings of this study.

In spite of the presence of hundreds of universities in the Arabic countries, but only five of them appeared among the top 500 international universities' rank. Several reasons and obstacles caused this shy appearance among international universities, among these funding and financial autonomy are of prime importance. However, in spite of these reasons and obstacles the three selected Arabic universities made it to the international rank. This shows that a deficit in one or more funding factors does not necessarily lead to be inferior in the ranking if the other funding factors are adequately effective. This indicates that Arabic universities have some strong funding factors if it is concentrated on, and if the weak factors are dealt with, these universities would be able to achieve the required excellence. Of course, there are several aspects in this regard, but we are concentrating in this study only on the financial aspect, in which the following considerations need to be addressed in order for these universities to improve its financial affairs.

##### 6.5.1 Differentiation:

It is not possible or feasible to work to achieve total excellence in all aspects in all universities. Not only because of cost and possibility, but also because of the need and necessity. Every country should have a clear vision in categorizing its universities into educational, research, and productive universities.

##### 6.5.2 Privatization:

Efforts should be made to privatize universities especially the productive universities. This is to make it completely autonomous, and responsible of achieving the country's vision.

##### 6.5.3 Self-Funding:

Efforts should be made to have universities invest their competitive advantages of having good

sources of physical, human, and intellectual capabilities. This would lead to a better self-dependence and decrease the need for governmental support.

6.5.4 Endowments:

Each university should have its own endowment funds and facilities to be invested freely and wisely.

6.5.5 Students' number:

Number of students should be decreased especially in productive universities, and the ratio of post-graduate students should be increased as well. This is to allow more concentration on research and production, thereby increase the quality of education and focusing on intellectual production, which will lead to better income and prosperity of the university, its students, staff, and the country.

6.5.6 Diversification of income:

Income sources should be diversified and balanced. This is to ensure the continuity of funding, regardless of financial changes in the environment.

6.5.7 Intellectual concentration:

Universities should not over invest in real estate or service oriented activities, as these are not its main objectives. They should try to invest on intellectual activities that they are superior. This will lead to more innovations, patents, and creative projects. This will benefit the community and the economy of the country.

6.5.8 Regulations:

Efforts should be focused in changing and adjusting bylaws and regulations to allow the change of present administrative culture and practices, in order to achieve the abovementioned considerations.

## 7. Final words:

International universities that are superior to Arabic universities in ranking and number of patents and intellectual products do not differ a lot from the Arabic universities in capabilities and abilities. Its main superiority is in its organization, governance and administration. This is supported by the great achievements of Arab scholars when they work in western environment and international universities. Therefore, I believe that if the Arabic universities improve their environment by making it more productive, stimulative, and attractive of minds, more Arabic universities will make it in the international ranking and achieve advancement and excellence.

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