**Chapter 4: The Case of Universities**

The previous chapter was about the use of benchmarking in the development and the comparison of competitive advantages in many cases, and while we explored those cases, we noticed that the Algerian institution that can significantly benefit from this study is the university, Because of their importance in the development of economies and management theories and practices, the other reason is the absence of competitive aspects in Algerian universities.

In this chapter, we will project the previous knowledge on universities and teaching quality. The objective of this project is to identify the most important aspects of contemporary university life in changing times and to find ways of benchmark them. We suppose in this study that excellence and value adding are goals sought by all universities. We assume also that those aspects of excellence and value adding that can be easily quantified are not the only ones worth taking into account; the drivers of future performance are often qualitative.

We know that benchmarking can be applied in any organization interested in quality and performance. No single university, however large, can encompass all knowledge. Every university has to make choices. Nevertheless, it is demanding to be world class in few academic fields at least.

Each university has to prioritize the use of its resources and uses them to best effect knowing whether it is succeeding in its aims is another more demanding level of difficulty. The key question is how to determine the factors that can be considered as a competitive advantages and how to improve them; eventually the university will know where their institutions stand and how they can be improved.

Our role in this study is not to conduct an actual benchmarking study, because this kind of studies takes time to analyze, implement and monitor the process, in addition, this project need financial and human resources that exceeds our resource limitation, to examine the results and monitors any change in the moment it happens. Instead of that, I will reveal the competitive drivers of the Algerian universities in order to develop and improve a sustainable competitive advantage based on high internal performance and effective external impact.

**4.1: The Competitive Analysis of Universities**

The competitiveness in universities depends on many things; among them, we find student support, planning and management, finance and physical infrastructures, teaching quality, research and development….

If we want to conduct a competitive analysis or performance analysis of universities, we have only to assess the outcomes of this university; usually the outcomes are a reflection of the internal performance. In long term the university will develop another qualities related more to the marketing (but I think that the word marketing is inappropriate in the public education system, because of the absence of markets in this field unless we related it to the labor market) I consider them an external impact of the performance:

* Reputation
* Competitiveness
* Academic staff qualifications
* Community service

We will discuss them in the next points. However, now we have to explore the international standards of universities, and illustrate some of the prestigious universities in the world and in the same time to demonstrate the key factors of their success.

**4.1.1 World-Class Universities**

The universities can be distinguish by their quality, but the quality concept in universities cannot be ascertained by the bottom line measures that apply to commercial firms, or even by the yardsticks that might apply in large governmental organization. Therefore, the questions that can be discussed in this part are:

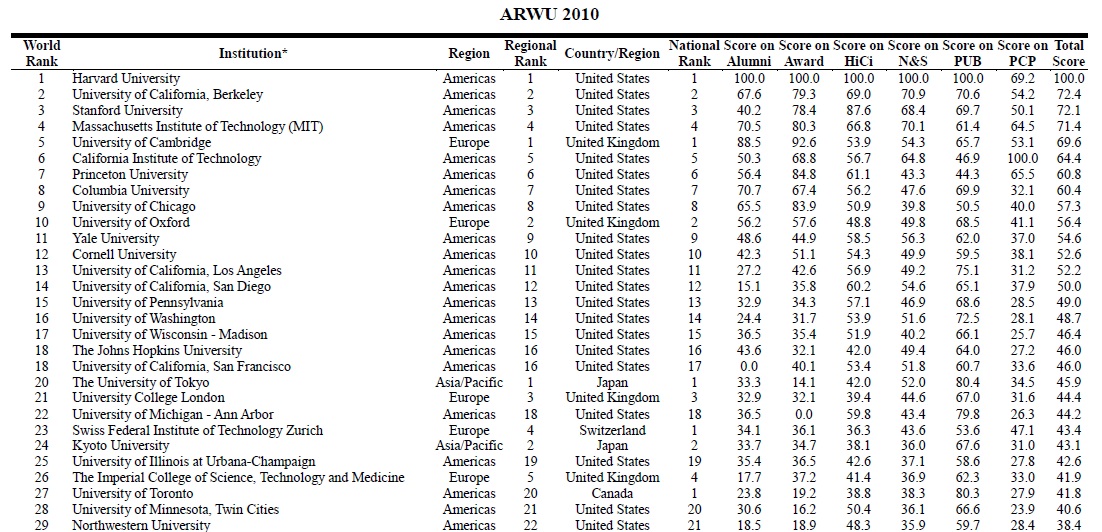
* What is the world university ranking?
* What are the known ranking criteria's?
* What makes the top universities special?
* **Academic Ranking of World Universities 2010**

The academic ranking of world universities (ARWU) or what is known as the *Shanghai Ranking,* is a publication that was found and compiled by the "*the Shanghai Jiao tong" University"* to rank universities globally. The ranking have been conducted since 2003 and updated annually. Since 2009, the ranking have been published by the Shanghai Ranking Consultancy.

It is not by accident that the china's university has a high level of performance; it is all related to the benchmarking process. They try every year to improve their level of performance by comparing it to the world-class universities even if that means a radical change. By considering that, we can also deduce the link between their high quality universities and their economy's fast growth.

The table below represents the 29 top universities according to the Academic Ranking of World Universities in 2010:

**Table 1: Top 29 World Universities**



Source: <http://www.lemonde.fr/mmpub/edt/doc/20100812/1398457_5eeb_arwu2010.pdf> (consulted in 27/10/2011)

* **Ranking Criteria**

The ranking methodology as known by the most universities depends on very particular elements: Faculty, Research outputs, Students, Facilities available, and Finances but there is many criticism for this evaluation system, especially when it favor some of the prestigious universities than other. For instance, the lack of financial resources (example of public universities) can affect negatively the rank of those universities. It is like the circle effect, if the students were not efficient enough, this negative effect will spread in many other economic institutions including the higher education system itself. From what I see, the Algerian universities are moving in the same circle for the last years. Therefore, they need to change this system in order to move to another circle that can lift the economy.

From my previous reading, I found two principal methodologies in the existing world university rankings:

* **Shanghai Jiao Tong University Ranking – SJTU**

This ranking is the most used and famous raking, it uses six parameters and arbitrarily attributed weights.

1. (20%)- N&S: number of articles published in Nature or science
2. (20%)- HiCi: Number of highly cited researchers in 21 board subject categories
3. (10%)- Size: Academic performance with respect to the size of the institutions
4. (20%)- Award: Number of staff of the institution winning Nobel Prize and Field medals
5. (10%)- Alumni: Number of Alumni (former students) of the institution wining Nobel Prizes and fields medals
6. (20%) - SCI: Articles in science Citation Index-expanded, social science citation index, and arts and humanities citation index.

Those are the main lines; if we go further into the details, we find that the process is much more complicated than that, I am aware of the interdependence between the higher education system and the other systems. If we take the example of Algerian education system we can discuss it from many angles, sociology, psychology, economy, internal cultures, transport system and more other things, it is what are referred to as "*anamoudhej al khaldouni*" the model of "Ibn Khaldoun", it means that the good governance have to consider the effect of interdependency.

In the other hand, there is the "Times Higher Education Supplement- THES"; it is a part of "*Times Higher Education*" magazine review, which first appeared in November 2004 with new rankings, published annually. This ranking system adopted the following parameters and respective weights:

1. (40%)- peer review – opinion of 2,375 research-active academics;
2. (20%)- Citation/faculty
3. (10%)- Recruiter's review (the opinion of the employers)
4. (20%)- Faculty to student ratio
5. (5%)- International student score (percentage of foreign student)
6. (5%) international faculty score – percentage of foreign staff.

As we can see, the most weighted element (peer review) and other criteria are based on opinion, which cannot reflect the reality of the university. Often the opinions are affected by personnel emotions and conditions, especially for the employee of the university. Therefore, it is hard to give an objective opinion about something related to you.

The other point is that the ranking is affected by the size of the institution, which in my opinion does not affect the performance, it only affect the outside appearances, and the reputation because it can also attract tourists and architecture fans.

If we project the previous elements on the Algerian higher education system, we find that some of them do not fit, for example, the private university are more likely to be efficient than the public universities due to many reasons. For instance, the public universities differ from private university, as they need to follow national agenda and governmental procedures. When criteria and procedures are prepared to put oranges and apples in one category and are implied by external bodies' without consultation with the resource universities, objections are raised on each factor. Criticism becomes highly serious when ranking affects the reputation and prestige of a university and endanger the students and the staff position.

In order to obtain a valuable opinion about the Higher education system in developing countries, I will present part of *Dr. Faiq[[1]](#footnote-2)* article about the subject: "*the Ranking of universities in developing countries are performed by only some countries at national level, most of the universities in the developing world thus remain out of the international competition or any other ranking process, the international standards attained by the universities in the developed world are hard to be attained by most of the universities in the developing countries. The focus rest solely on teaching whereas the research criteria which provide the major weighting in the ranking process remains the most deficient part in almost all universities leaving behind few expectations. If the developing countries adopt different criteria and procedures for ranking of their universities, it will enhance the gap between developed and developing countries Higher education systems bringing further division between the north and the south. In most of Islamic countries, which are all developing countries, a number of universities have high standards and hold other indicators vital for competing to attain world-class positions. They need to pay attention to activate their national accreditation or quality assurance system and improve on quality of education to enter in international competition.*"[[2]](#footnote-3)

According to Dr. Faiq, the higher education system in the developing countries cannot be measured by the usual international universities standards; there for it has become an obligation to create a new assessment ways and methodologies in order to obtain an objective evaluation of those countries' universities and based on that we can improve the system.

We have seen in the Table 1 that "Harvard University" is the top raking university in 2010 and I have notice that it has been the top university for 5 continuous years, so I will explore the main characteristics of this university.

* **Harvard University**

Harvard University is private university located in Cambridge, Massachusetts, United States, established in 1636 by the Massachusetts legislature. Harvard is the oldest institution of higher learning in the United States and the first corporation chartered in the country, Harvard's history, influence and wealth have made it one of the most prestigious universities in the world.

The management of this university is more similar to a business organization, the management staffs have planned for her success through many strategies: improvement of internal performance, marketing and business planning, productivity, competition strategy, even promotion by contributing in charity events and international sports events, sponsoring and many more other.

The following figure can resume the main characteristic of the university:

**Figure 1: The Main Characteristic of Harvard University**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Motto | *Veritas* | Location | [Cambridge](http://en.wikipedia.org/wiki/Cambridge,_Massachusetts), [Massachusetts](http://en.wikipedia.org/wiki/Massachusetts), [U.S.](http://en.wikipedia.org/wiki/United_States) | |
| Motto in English | Truth | Campus | [Urban](http://en.wikipedia.org/wiki/Urban_area) 210 acres (85 ha) (Main campus) 22 acres (8.9 ha) (Medical campus) 359 acres (145 ha) (Allston campus)[[6]](http://en.wikipedia.org/wiki/Harvard_University#cite_note-Campus-5) | |
| Established | 1636[[2]](http://en.wikipedia.org/wiki/Harvard_University#cite_note-founding-1) | Newspaper | [*The Harvard Crimson*](http://en.wikipedia.org/wiki/The_Harvard_Crimson) | |
| Type | [Private](http://en.wikipedia.org/wiki/Private_university) | [Colors](http://en.wikipedia.org/wiki/School_colors) | [Crimson](http://en.wikipedia.org/wiki/Crimson) | |
| [Endowment](http://en.wikipedia.org/wiki/Financial_endowment) | [US$](http://en.wikipedia.org/wiki/United_States_dollar)32.0 [billion](http://en.wikipedia.org/wiki/1000000000_(number)) | Athletics | 41 Varsity Teams [Ivy League](http://en.wikipedia.org/wiki/Ivy_League) [NCAA](http://en.wikipedia.org/wiki/National_Collegiate_Athletic_Association) [Division I](http://en.wikipedia.org/wiki/Division_I_(NCAA)) | |
| [President](http://en.wikipedia.org/wiki/University_president) | [Drew Gilpin Faust](http://en.wikipedia.org/wiki/Drew_Gilpin_Faust) | [Nickname](http://en.wikipedia.org/wiki/Athletic_nickname) | [Harvard Crimson](http://en.wikipedia.org/wiki/Harvard_Crimson) | |
| [Academic staff](http://en.wikipedia.org/wiki/Faculty_(teaching_staff)) | 2,107 | Website | [harvard.edu](http://www.harvard.edu/) | |
| Admin. staff | 2,497 non-medical 10,674 medical | [Postgraduates](http://en.wikipedia.org/wiki/Postgraduate_education) | | 14,044 |
| Students | 21,225 |
| [Undergraduates](http://en.wikipedia.org/wiki/Undergraduate_education) | 7,181 total 6,655 College 526 Extension |

Source**:** <http://en.wikipedia.org/wiki/Harvard_University#Rankings> (consulted in 29/10/2011)

From the previous presentation of Harvard University, we can see that it has natural competitive advantages that we cannot benchmark, for example:

* *The Location:* the location is not just the geographical location, what I mean is that the university can benefit from the economic situation of USA, the culture, the political influence, the reputation, and the institutions cooperation environment.
* *The size of the institution:* it is very clear that size of the university can be consider without doubt as large, which can help build complementary services clusters.
* *375 year:* the creation of the university was in 1636, which means two elements, 375 year of experience and the reputation that can be obtained by relating famous historical figures to the university.

The other competitive advantages of this university, it can be benchmarked by analyzing and implementing and monitoring the changes through a regular benchmarking process.

First, we have to illustrate the factors that contribute in internal performance, than we will illustrate how to benchmark the relation between the internal performance and the external impact of this performance (competitiveness, reputation, academic staff qualification…).

**4.1.2 Governance and Strategic Management in University**

When we discuss the internal performance, we will not go through all the technical details of the teaching process and the financial ratios and the physical assets and space utilization and research methods…but we can discuss the top of the pyramid, which is the effective management. All the rest will be just a result of the best use of resources. For that reason, benchmarks that cover governance, leadership, planning and management are crucial.

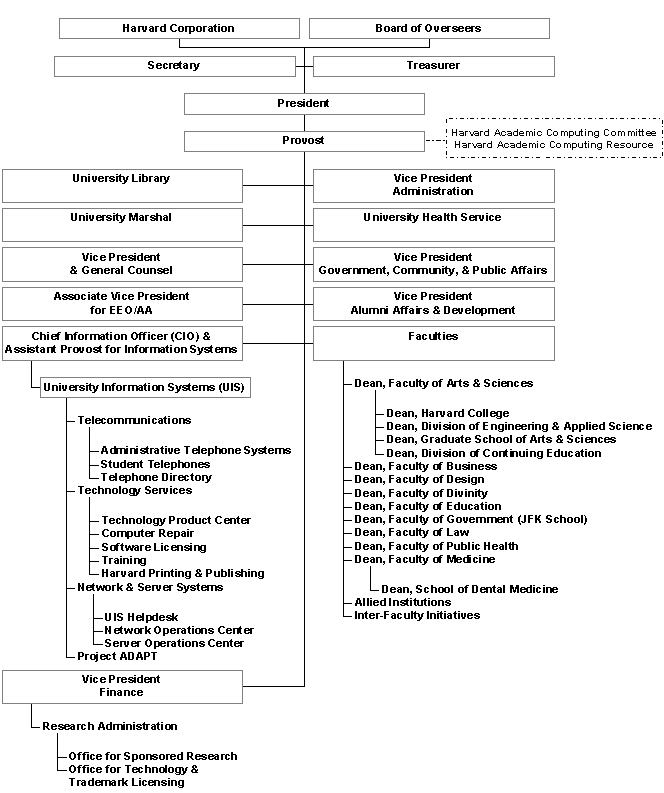
* **Governance and Leadership**

Governance and leadership monitors good practice in the harmonization of governance and management, the effectiveness of the governing body in reviewing its own operations, the setting of a framework for leadership and reporting, and achieving a high level of confidence and efficiency. The benchmark is about the systems and arrangements for governance and leadership rather than actual levels of the performance of individuals.

So first, we must benefit from the good management of the international universities. For example in Harvard University, the governing body follows a consultative system based on election, the same as in Business Company system (shareholders vote for major decisions), even the president of the university has to be elected every few years. During his election, he has to present his agenda as the leader of the university and the council committee vote for or against him based on his program and his previous accomplishments.

The known organization chart of "Harvard University" is the following:

**Figure 2: Organization Chart of "Harvard University"**



Source: <http://www.itpb.ucla.edu/history/it_retreat_1999/notebook/universityreviews/harvard/Harvard-Figure-1.htm> (Consulted in 29/10/2011)

Based on that, it is crucial to work on the organizational benchmarking in the higher education system of the developing countries. In Algeria, the first objective is the independency of the university management, so the dean can run it independently of the ministry of higher education, while the whole process will maintain under the supervision and the financing of the higher education system.

* **Planning**

A modern university (faculty, school or department) should not have a mission or goals and values without at least general plans for reaching those goals and objective.

Planning is a dynamic rather than static process. It is not just one time exercise setting out of unchanging map of activities for three to five years ahead. It requires regularity of attention. Given the volatility of the environment, part of the planning capability of a university should involve risk assessment and capacity for rapid, flexible adjustment, and even recovery, in adverse circumstances.

For benchmarking the university wide planning, the primary requirement is that the plan or plans (University plan and subordinate academic and administrative unit plan should be closely integrated) should give a defined guidance on the university direction.

The planning is consider to be the primary driver for a significant improvement in performance, but we have to make sure that we follow the process step by step, in university the planning process is not different from any other organization planning, but we should follow this check list based on previous studies:

* Clear objectives and articulation (the way we assemble all the sub-plans for the general plan)
* Capacity for flexible adjustment (that step require continuous monitoring).
* Acceptance by the university community (in the Algerian case acceptance by the ministry of higher education)
* Closely linked planning and resource allocation
* Assignment of implementation responsibilities
* Finally the test of planning

The final step is about testing whether the goals chosen were exactly right. Find the degree to which there has been success in implementation. I find myself obligated to mention that the change in the university must also affect the used technology or else we cannot achieve the expected level of performance.

* **Management**

Management is benchmarked with reference to five areas.

The first is the need for comprehensive and effective systems, with appropriate formal links throughout the university, to ensure that decisions are made and implemented efficiently, in ways consistent with the organizational intentions. Often the efficiency of staff work depends on two points:

* How well the formal structural arrangements work
* How successful the university is in getting information to those who need it.

Therefore, the first benchmark is ***the clearly defined lines of responsibilities*** ***and decision-making.***

The second is ***the core business system***. That means to ensure successful management of incomes,

The third is ***risk management benchmark***: Refers to the management of high-risk decision, whether those risks ought to be accepted as part of the university's normal functions.

I will not discuss (the core business system and risk management) further, because those two elements concern more the private universities and I am pursuing the common factors of success between the public university (Algeria case) and the private university.

***Teaching and research expenditure ratio.*** This element refers to maximize resources for academic programs and to minimize unnecessary administrative expenses. Detailed administrative processes, unlike academic activities, are often identical with the same process in private enterprise.

The last benchmark in management of university is ***corporate information system,*** that system covers the need for an integrated corporate information system and for operational plan to realize the system.

Discussing the managerial aspect and his relation to the performance does not mean that we have to neglect the technical performance such as, improving and innovating a new way of teaching, or benefit from the communication and technology revolution, but those aspects are part of another study related to *process benchmarking.*

The other important element of the managerial performance is the *Organizational climate.*

* **Organizational Climate**

The organizational climate is concerned with the university's capacity to manage change by continuing to maintain a high level of confidence and a sense of job worth and job satisfaction among its staff. In times of massive change this is a tricky and sensitive task, but crucial to maximizing the success of the university.

A good organizational depends on the level of trust and on the presence of two-way communication between the executive and staff and students, also, it depends on the effectiveness of that communication and the reliability of follow-up action. In benchmarking study, we have to assess the existing organizational climate, including staff attitudes, staff confidence, and the comprehensiveness of communication flows, the regency, and the accessibility of disseminate information. After that, we have to work on implementing the key-factors of success from a successful organization in this department and implementing the changes in way that we respect the chain of command.

**4.1.3 External Impact**

Fundamentally, the impact of a university is determined by the degree to which it achieves and communicates the quality of its standards, its competitiveness, the quality and the importance of its research and the range and quality of its community service. To the degree that it is recognized for these aspects it will have a high reputation and receive adequate recognition for this among stakeholders such as prospective students, patents, employers locally and nationally, and the national media.

This part is the foundation of our study. The benchmark in this area is the most important in a marketing aspect, for that we have to assume that the reputation is at least partially manageable. Some universities are better than others in projecting their strength. As we can deduce from many cases, not only the internal performance can improve the external impact such as the reputation, but also it can be greatly improved through it. For example: if a university has projected a higher level of performance (Level A) and her actual performance is less than the projected (Level B), eventually it has to upgrade its internal performance from B to A in order to balance the general image of the university. We can notice this phenomenon even in the micro economy level, when the consumer change his consumption habits based on rumor of salary increase, or the example of increase in prices of one good based on a rumor of massive consumption of that good (the case of the real estate market in Algeria). This mechanism is called "***the announcement effect***". This same mechanism applies as a positive effect on reputation and internal performance, and that mechanism will work to improve the internal and the external performance of the university.

**Figure 3:** **The General Image Balance**

Projected performance

Actual performance

**(A)**

**(B)**

The four aspects of external impact that will be benchmarked are *reputation, competitiveness, academic staff qualification, and the community service.* Those four aspects are concerned by the national universities as in "Algeria case", but if we take an international university, we have to consider other aspects such as internationalization, and if we take a private universities we have also take into account another elements such as the P.R (public relations).

In this part, I will illustrate the four aspects of external impact in order to use them in the competitiveness benchmarking. I chose to demonstrate the external impact for benchmarking because it is crucial, whether for attracting and holding students or staff, securing endowment, attracting researchers or marshalling community support.

* **Reputation**

Reputation is an elusive area to benchmark with any precision. The difficulty of pinning down any data or hard information must be offset by the need for a benchmark, given the importance of the area. Despite the difficulties and, inevitably, some lack of precision in making assessment, reputation is both assessable and manageable.

It has to be admitted that a university may have a local reputation that is different from its national/international reputation. Given the increased competition, the challenge is to turn a good local (national) reputation into international standing.

The reputation is not a happenstance result, or an inevitable outcome of excellence like many people thinks. It happened many times; an excellent company did not signalize its performance, and other companies lost their markets by a negative signal of internal performance. There for the reputation is certainly not simply image making irrespective of substance. It is at least in part dependent on clear understanding of the need for attention to this area, skilled use of the available communication channels, and good management.

Any business organization after controlling its internal resources and perfect its production and management methodology, demonstrate the need to form a public perceptions about her, by using the analysts and interpreters in informing the media and acting as intermediaries in projecting their performance. Universities are subject to the same demands for transparency and openness, the same need to communicate successfully to the public their academic work and their excellence in doing it. Moreover, the pressures on universities to explain and justify their use of government funds can only increase the need to improve their performance and express it through sustainable reputation, which I consider as competitive advantage.

The benchmarking included *the Reputation*, acknowledged to be the more difficult to assess because of the unlimited reasons of reputation, even a bad events can contribute somehow in build a good reputation, so we stick to the controllable causes that may be improved as experience in identifying the relevant factors grows.

After a study of the benchmarking process in Australian universities conducted by "K R McKinnon" and others, they have been able to assess the academic reputation of universities by the following checklist:

* Volume and ratio of positive to negative media comment.
* Industry and employer views
* Graduate/alumni evaluation
* Crisis response and capability and effectiveness
* External media and guide books
* Growth of private inputs (sponsoring in the case of public universities)

In my opinion, I can add the *reputation of higher education system of local area or country (the universities as a cluster).* The education environment affects tremendously the reputation of one university; consequently, we cannot neglect this mutual influence.

* **Competitiveness:** the competitiveness can be viewed as a result of other dynamic factors or as macro-economic factor that companies (in our case, universities) can determine its drivers and point it toward the mutual benefit of other competitors and our company.

* *The competitiveness as a result:*

The highly competitive environment can be viewed as a result of the advanced application of benchmarking processes, in other word if we can benchmark a world-class university; consequently, we have benchmarked its competitive performance and with the local or national universities this competitive performance became a competitive advantage. The problem with competitiveness benchmarking in Algerian universities is the lack of motivations, there is no real objectives or motivations for improving the universities, in long-term it became just a routine management of universities.

Some argue that the competitiveness of a university can only be assessed in the context of that institution's particularly circumstances rather than its proportion of first choice applicants (student who applied to join the university). That point is debatable but there is little doubt that applications trend data is one of the most watched of the benchmarks within universities. A downward trend is one of the most telling early warning signs that a course, a department, a campus, or whole university has problems that need attention.

* *The competitiveness as a manageable factor:*

There are various ways of measuring the trends, like the share of top 5 per cent of baccalaureate student. If we can pretend that the market in this field is the new applicant of the university (students who have baccalaureate degree) and the purchase power is the score of this student, and the university admission conditions as the price of this service, than we can apply the regular competition rules and choose the right strategy for the university to attract students.

By improving the competitiveness in public universities, I was not suggesting that we have to create private universities (privatization of university); there was always a competition between the private sector and the public sector. In my opinion the Algerian universities should analyze their competitive advantages, or we can say their strongest and weakest departments to find the best way of leading the human resource toward a fewer objectives. In fact, the university does not have to be best in all departments and courses, but I find that is required for the university to specialize in one department at least and manage it with efficiency.

Leading an efficient benchmarking study about competitive advantage in university requires the following steps:

* Collect data about the current competitive level
* SWOT analysis (In universities, this analysis is about the departments)
* Find the competitiveness drivers in the selected university
* Implement those drivers in our university
* Monitoring the changes continuously

*Note:* In a competitiveness benchmarking process in universities, we have to make sure after a SWOT analysis that we have a common strength factors, even if it was in different levels. Investing in benchmarking the weakest department is far from being a rational decision.

* **Academic Staff Qualifications**

A university where the proportion of staff with doctoral qualification is seriously below the levels of other universities in the country has a problem in achieving the academic reputation it may deserve. Many universities do not like to be compared in this way. Arguments swirl about the relevance of doctorates to good teaching as distinct from their assumed relevance to research.

Nevertheless, the academic world does put store on the proportion of staff in a university with earned doctorates involving a substantial thesis. Research-intensive universities put particular store on the proportion with earned PhDs. This kind of benchmarking is furthermore one that is used in the USA, Canada and United Kingdom, which means that it can be used as an international comparator.

If we discuss the case of Algerian universities among other African universities, we find that most of earned doctorates, do not reflect the required level of performance according to professor "jack kier" (his study in 2009 reveals that the Algerian university are classified in the third category, and the Algerian universities among other 43 counties contributes in 25% of the scientific production in Africa, in the other hand Egypt and south Africa alone producing 49%). In order to put back the Algerian higher education system into international track we have to give more importance to the staff qualification. As we have mentioned earlier that the Algerian higher education is moving in the same circle, the students with a doctorate degree are often teachers in universities, in this case it is safe to say that we create our own staff, and the staff qualification depends in first place on the performance of university. However, it is unjust to assume that all the universities, all the staff or even all the students are underperforming.

Conducting a benchmarking study in this area requires benchmarking many leaning and teaching processes:

* *Learning and teaching plan:* planning is expected to go beyond generalizations to specifics of both targets and rates of progress and the individuals responsible for achieving the targets in each segment of the plan.

* *Courses establishment processes:* tough-minded assessment of the longer-term need for proposed courses, testing processes, rigorous accreditation and continuing improvement of courses ensuring consistently high standards are the key aspects tested in this benchmark.
* *Teaching quality:* is the induction system effective? Is there more than token variation in teaching loads? Are the reasons for the variations rational? Do all staff have regular performance appraisal? …all those kind of questions to ensure efficiency in teaching.
* *Student outcomes:* this is the real factor for teaching quality evaluation, and generally, the student outcomes depend on many elements; the quality of incomes the quality of teaching and the performance of the student itself, in this case, we can be selective about the students and benchmarks the rest.

I am treating the subject from a student point of view (student qualification not the staff) due to the particularity of Algerian universities; for the reason that when I talk about qualification I do not mean just the academic title or degree, but I mean the kind of qualification that reflect the real performance. In this case, we can argue that Best student qualification means best staff qualification. Gathering the maximum proportion of staff with at least doctoral qualification does not necessary reflect their actual performance, consequently does not significantly increase the general performance of the university. In international standards or in developed country usually the higher degree is a sign of a higher performance especially in highly ranked universities or prestigious private universities; because they fear the most about their reputation, consequently, they hardly allow the underperformance from both staff and students.

* **The Community Service**

The community service is one from the best strategies for gaining reputation, if it was for Business Company I would say it is from top strategies to extend the market share. In early years, the universities concerned themselves with community service in a variety of ways. Sometimes this takes the form of individuals participating in community organizations or public commentary on facets on community life. Sometimes it takes the form of clinical services, or law and advocacy services for law students with free or subsidies access.

Recently the community support activities have known a significant increase in developed countries due to a political agendas and individual actions, until few universities have taken the lead on this by developing a formal strategy of community service as a means of enhancing their external impact.

In a benchmarking study, precisely in benchmarking the external impact strategies, the relevant steps are:

* Reviewing the current internal situation
* Reviewing the current external position
* Analyzing the environment
* The strategic planning (in community service, it means planning the free services in terms of hours volume in a year, the schedules for students or staff volunteers and the specific objectives according to the timeline)
* Implementing the actions
* Review of the progress.

the benchmarking process of the external impact strategies should not take place until ensuring that the internal benchmarking has been implemented with success. For marketing purposes, the external impact should be a complementary action for a high internal performance.

**4.2: The Link between the Performance Variables and the Competitive Advantage of University**

Based on my literature review, my past knowledge, analyze of facts, and some of the statements of Algerian universities professors, I have been able to define six key variables that presumably increase the competitive advantage of the university (the organizational aspects, the technical aspects, the teaching process, the student contribution, the research aspects, and the unmanageable aspects.

In the first part of this section, I will introduce each variable in my study; demonstrate its importance and the reason for choosing it. The second part is about identifying the contribution of each variable in the general performance and the competitive advantage, also explaining the interrelation between variables, and finally, selecting the most significant, and representing model for the existing relation between the internal variables (performance variables) and the external impact variables (competitive advantage). In the last part of this section, I will introduce *the best model,* (linkage between internal performances and external competitive advantage) as the initial factor for competitiveness benchmarking of university.

**4.2.1 Defining the Study Variables**

I devised the variables of this study to three parts: external impact variables, performance variables, and the unmanageable variables.

* **The Competitive Advantage based on External Impact**

According to Michael E. Porter regarding the value chain concept, every productive organization including the university has many tasks and activities, where each activities contributes in varied level in the final service or product value. Therefore, taking our example as a subject of service organization, we can apply the same principles on university. Taking in account the difference between the private and the public university, which is the financial profit, we can exclude the financial profit as a competitive advantage or a generator of competitive advantage, eventually *the cost leadership strategy* or *the cost advantage* is of no use to us in this study. *The Differentiation strategy* requires a high level of experience and performance, which is an objective in a benchmarking process, the remaining strategy, is *focus strategy*. The absence of higher education market for the public universities force us to introduce an imaginary markets (students with baccalaurean degree) or relate the university to indirect market (labor market), in order to ease the application of *the focus* competitive strategy.

From Michael E Porter's ideas, any variables that can increase *the buyer value* can be considered as a competitive advantage, according to that, the accumulation and the interaction between the variables that forms the external impact is a competitive advantage.

By Further examination of competitive strategies in public universities, we can deduce that the only remaining applicable competitive advantages are the intangible ones; the advantages based on external impact, this type of competitive advantage can be controlled and managed by marketing techniques. In my case study, I introduced five variables that forms *the competitive advantage based on external impact* (reputation, contribution in economic and social level, research and technology, the staff qualification, the competitiveness).

* **Contribution in Economic and Social Level**

Barney [2002:9] says that "*firm experiences competitive advantage when its actions in an industry or market create economic value and when few competing firms are engaging in similar actions*"[[3]](#footnote-4)\* Barney goes on tie competitive advantage to performance. Arguing that a firm obtain above-normal performance when it generate greater-than-expected value from the resources it employs. For example, if the owners of resources think they are worth 10 million units of any currency and the firm creates 12 million units in value using them. This positive difference between expected value and actual value is known as an economic profit or an economic rent.

Based on that, the contribution level in the economy is considered as a competitive advantage when this contribution grows to the level when it will be indispensable. In long run the organization, develop an external competitive advantage if it was able to generate a considerable economic value, consequently increases its share in national economy, which we call "*Economic Pillar*". By the same principle, this theory can be applied in the social aspect.

* **Research and Technology**

The research and technology is often mixed-up with research and development. It is not the same thing, the research and technology is a wider fields that development. The research and technology should be treated as a separate object where the technology theory is an objective not a means.

The development is frequently used by a specific organization to develop specific units in order to fill various market needs, so the development is about using a specific technology for a momentary profit. In the other hand, the research and technology generate a higher value and continuous progress in the scientific field. As I mentioned before the technology can be considered as the ultimate competitive advantage, in fact, after a study conducted by (Shay & Rothaermel, 1999) about the contribution of technology in the competitive advantage, they concluded that the only constant in technology intensive industries is change, therefore sustained competitive advantage can be only be accomplished through continued innovation. This in turn requires the continuous introduction of new product or services.

In the current case, the universities advantage is largely rest on the research field as we have seen before in the two known ranking criteria. The Algerian universities suffer from either the lack of productive research outputs, or the poor system of communication that led to the burial of all high-level research outputs.

The staff qualification and the reputation of university are already discussed in the previous point. Joachim Klewes and Robert Wreschniok in their book "Reputation Capital: Building and maintaining trust in the 21st Century", have argued this point when they said "*Delivering functional and social expectations of the public on the hand and manage to build a unique identity on the other hand creates trust and this trust builds the informal framework of company, this framework provides return in cooperation and produces reputation capital. A positive reputation will secure a company or organization long-term competitive advantage. The higher the reputation capital, the less the costs for supervising and exercising control"*[[4]](#footnote-5)\*, it is clear by now that the reputation is directly related to the competitive advantage. The staff qualification is consider a performance variable and competitive advantage in the same time.

* **Performance Variables**

In the seeking of competitive advantage of university, I have preselected five variables that I believe will contribute in varied levels in the increase of external competitive advantage of university.

* **Organizational Aspect**

I devised the organizational aspect in two parts; the management styles and the organizational climate (explained before), which include the interrelations between co-workers and the motivation forms decided by the high administration to provide a dynamic factor in work environment.

* *Management styles:* basically, there are four different forms of management styles.

**Figure 4: The Management Types**

Management styles

Autocratic

Democratic

Consultative

Laissez Faire

* *Autocratic Management:* In contrast to above, an autocratic manager dictates orders to their staff and makes decisions without any consultation. The benefit of this model is that decisions are quick because the staff are not involved in the decision making process and the work is usually completed on time. However, this type of management can decrease motivation an increase staff turnover because staffs are not consulted there for for they do not feel valued.
* *Democratic Management:* a democratic manager delegates authority to the staff. Giving them responsibility to complete task given to them (it is Know as empowerment). Negative point, is that it slows the process of decision-making, positive side, is high motivation of staff because of the sense of importance resulting from responsibility.
* *Consultative Management:* it is a combination between the two previous types, the manager asks for different opinions and points of view without delegating tasks, but the final decision will return to him.
* *Laissez Faire Management:* which refers to the minimal involvement of the manager, and each member of the stuff is in control of his work without any consultation. In Business organization, this form of management is another word of bad management. However, in certain organization, this model proven to be the best and effective style of management, for instance, the hospital management, we notice that every doctor is responsible for himself and he can take decisions separately from the manager and still the hospital general management is often considered good. The condition for this model to work is the high level of awareness and sense of responsibility.
* **Technical Aspect**

Technical aspects include many variables; financial ratios, Commercialization, physical assets, space utilization, equipments, and information technology, except we are discussing the case of public universities therefore we have to introduce less variables. For instance, if we have to benchmark the financial process in private university, many benchmarking factors appears; Operating result, Diversity of revenue, Liquidity, External debt, quick ratio, academic salaries expenditure trends.

In my study, I included three basic variables, which I believe they have a positive and direct relation with the general performance; consequently, they influence the external competitive advantage, those variables are:

* *Finance:* the major part of finance incomes in public university comes from the government, along with other contributions of some organization, also, sometimes sponsoring of some scientific events such as seminars, so the finance process of public universities is almost controlled by the government and by that, we mean the higher education ministry.

* *Equipment and physical assets:* it is better to benefit from the evolution of information technology in order to increase the general performance and capabilities of universities in the scientific field and the academic field. The equipment and the physical assets quality supposed reflect the external competitive advantage if we respect two essential points; we have to respect the amortization time and renew the equipment every specific period. The second element is the search for new tools and equipment that fulfill the same purpose, but in a better way (reducing the time or/and the cost and increasing the performance).
* *The architecture, space utilization:* this elements mean the internal conditions and the external appearances, there is a growing need to respect the norms of space provision and efficiency in space utilization, in addition, I believe that the architecture style contribute as well in increasing the reputation rate, for instance if we visit one of the world class universities such as Harvard (USA), Oxford and Cambridge (UK), the first thing that raises our attention and admiration is the magnificent architecture style dating back to the 16 century, therefore, I presume that the universities having this high styles architecture are not the highest in world ranking universities by accident.

Therefore, I have introduced the architecture attractiveness and style as performance generator and competitiveness driver.

* **Teaching and Learning Quality**

It is fairly to say that the teaching and learning quality is one of the two pillars of university performance, this element is the most essential because our external competitive advantage is worthless if our real value is less than the normal rate. The educational strength of a university can only monitored using multiple avenues, including assessment of its planning for learning and teaching, the learning environment provided for students, teaching quality, student outcomes, including student progress, satisfaction and employability. For this matter, we can use a checklist as a monitoring instrument, than, establish a full diagnostic of teaching and learning process, and eventually we have to benchmark the defective elements or the inefficient process. The related variables to this aspect, which I have introduced, are:

* Hour volume and work time plan ;
* Quality of courses compared to the international level;
* Quality of teaching and the academic degree of the teacher
* **The Student Performance**

The students' performance is the second pillar in university performance. In the Book of K.R Mackinnon "Benchmarking: a manual for Australian universities", they have introduced five variables in the student outcomes aspect, student progress, equity group outcomes, student satisfaction and employability. except, in Algeria universities case I have to disagree, for instance, the employability refers to a separate department called "The Graduate Careers Council" which annually surveys the destinations of student in May of the year following their graduation. This gives a measure of those in employment, the proportion unemployed, and those in further study. First, this element does not depend on student and there are many variables interfere with this element; the economic condition, the location of student either in areas of structurally high unemployment or in the opposite, also the part-time students, of whom many are in steady employment when they enroll.

By the observation of student's condition and capabilities in Algerian universities, I have been able to introduce five variables that are more significant in the Algerian case:

* Psychology of the student
* Student environment, general ethics and behaviors
* Student capabilities
* Secondary data access (books, articles, research subjects…)
* Primary data access (documents, statements, financial ratios, and statistics, provided by other institutions).
* **The Research Aspect**

Research benchmarking has had close attention in universities for nearly decade, which is perfectly logical if taken into account that 80% of SJTU (Shanghai Jiao Tong University Ranking) is directly related to research; 20% N&S, 20% HiCi, 20% Award, 20% SCI.

The literature review of research benchmarking in universities cited six related variables; *Research context*, *Research training plan*, *Staff participation in research*, *Research student experience*, *Research outcomes*, and *research impact*.

My critical view based on the Algerian case involves four of those variables,

First, *the research context*: this refers to the general conditions of research such as research funds (I included in technical aspect), data access (I included in student performance), proportions which I believe is the same as staff participation, Diversity in research outcomes which refers indirectly to research quality and IT. The IT is debatable, in one hand, the research field depends on it, and in the other hand, one of the research field's objectives is to improve the existing IT system, therefore I chose to include it in the external impact (external competitive advantage) due to the need for efficient IT system in Algerian university.

Secondly, the *research outcomes* is a general form of research quality, *research student experience* is included in student performance aspect, and *research impact* depends on other external factors such as, the collaboration forms between the university and other corporation.

Instead of that, I introduced two new variables in the research aspects, *the efficiency of communication channels* *and research publication mechanisms*, and *the size of annual research outcomes*. Of course, the quality of the outcomes is an essential factor, but research field in Algeria did not reach maturity yet, so it would be unsuitable to evaluate the quality of research outcomes in such early phase. The staff participation and the research training plan (in Algerian university, mostly refers of quality of supervision), are valuable factors to competitiveness benchmarking study.

* **The Unmanageable Variables**

Some of the external impact factors are out of control at least in the short and the medium run, since they are related to natural causes or accumulation and interaction of many other variables. In this study, those variables presumably affect the internal performance and the external impact (competitive advantage) of the university, the measurement and the study of those variables have one objective, separate there negative effect and neutralize the bad consequences resulting from neglecting themes. If their effect is significantly high, a supplementary study has to be conducted in order to find alternatives that compensate that effect.

In my current study, I introduced only two unmanageable variables:

* **The Age Of The University**

The age of the university refers to two related factors; the first is the experience of the university, if the university established in the past centuries, this should greatly affect its experience, the second factor is the reputation of the university and I will explain that second factor;

As we examine the SJTU ranking criteria's, we can notice that the age of university is more likely an indirect source of higher score in these ranking criteria's. The age of university, increase the probability of having higher number of alumni of the institution wining Nobel prizes and field medals or the probability of having a higher number of highly cited researchers in 21 board subject categories or the probability of higher score in any other criteria, not to mention, the obvious relation between the SJTU ranking criteria's. From all that we conclude the important role of age of university and its impact on the reputation.

* **The Reputation of University Location/Country**

My argument in this point is the American university established in Dubai, we cannot deny the performance of this university or the equipments used to guaranty efficiency in the teaching methods, but until now, this university has not reached the same reputation level as the American universities (by location). In fact, this university does not figure in the 2010 world universities ranking. In addition, it is difficult to imagine an efficient university gaining reputation in developing country. The economic and social reputation of the university location is supposed to affect the reputation of the university either negatively of positively. However, this factor alone does not increase the university reputation or performance, the example of Utah University (USA).

After presenting all the related variables and the possible factors that are presumed to affect the university performance, we will test the hypothesis that the Algerian university can be improved to the world-class level based on differentiation study in order to bring out the inefficient process either in management or in technical process.

**4.2.2 Empirical Assessment of Competitive Drivers in Algerian Higher Education System**

* **The Study Background**

In order to get the most objective evaluation of Algerian higher education system and to define the fundamental flaws and weakness in the Algerian universities from an objective point of view, I used the traditional approach (the questionnaire) to get primary information about the study subject by selecting a unique proportion (statistic sample) containing four types:

* The professors worked in three universities at least
* The teachers with five years of experience at least
* The professors contributing in the Algerian research outcomes
* The staff within the directorial department with five years experience at least

I have distributed questionnaire includes six parts:

* The effect of organizational aspect on external competitive advantage
* The effect of technical aspect on external competitive advantage
* The effect of teaching quality on external competitive advantage
* The effect of student performance on external competitive advantage
* The effect of research and technology development on external competitive advantage
* The effect of Unmanageable Factors Effect on External Competitive Advantage

In addition, I have introduced 105 variables including in the current study that presumably affect the external competitive advantage. Those variables are selected based on literature review and interviews conducted on some of the statistic sample members.

I designed the original sample to be sixty individuals, but according to the sample conditions, I have been able to collect only 33 questionnaires, so we cannot deduce the response rate based on that, because there are only 33 individuals that fulfill the previous conditions.

First, I will analyze the results by depending mostly on the final variables founded by merging six groups of 105 variables including inter-variables (by merging other variables. Then I will use a different approach to define the study results.

* **Model Validation Tests**

In order to ensure the validity of the questionnaire and the reliability of the informations obtained through it, I have performed the "Cronbach's Alpha" which also called "half-split":

| **Table 2: Reliability Test (Cronbach's Alpha)** | | | | |
| --- | --- | --- | --- | --- |
|  | **Scale Mean if Item Deleted** | **Scale Variance if Item Deleted** | **Corrected Item-Total Correlation** | **Cronbach's Alpha if Item Deleted** |
| **Organizational Aspect Effect on External Competitive Advantage** | **20,26819** | **7,09** | **0,7** | **,857** |
| **Technical Aspect Effect on External Competitive Advantage** | **20,21306** | **7,08** | **0,88** | **,832** |
| **Teaching Aspect Effect on External Competitive Advantage** | **20,02222** | **7** | **0,85** | **,834** |
| **Student Aspect Effect on External Competitive Advantage** | **20,31667** | **7,25** | **0,81** | **,841** |
| **Research Aspect Effect on External Competitive Advantage** | **20,03181** | **7,48** | **0,77** | **,849** |
| **Unmanageable Factors Effect on External Competitive Advantage** | **20,47306** | **7,67** | **0,35** | **,936** |

|  | |
| --- | --- |
| **Cronbach's Alpha** | **N of Items** |
| **,880** | **6** |

We can notice from the previous table that all variables have high Cronbach's Alpha rate, which indicate that the selected variables are highly reliable, which is confirmed by the general Cronbach's Alpha value (0.880).

* *Validity test:* = 0.9
* *Chi-Square independency test:* the Chi-square independency test confirms the variables independency, accept between teaching aspect and the research aspect (Table 3:**sig=**0.03<0.05), research and student aspect (**sig=**0.036<0.05), teaching aspect and student aspect (**sig=**0.026<0.05), teaching and unmanageable factors (**sig=**0.031<0.05), technical and organizational aspect (**sig=**0.041<0.05)

| **Table 3: Chi-Square Tests** | | | |
| --- | --- | --- | --- |
|  | **Value** | **df** | **Asymp. Sig. (2-sided)** |
| **Pearson Chi-Square** | **505,9a** | **420** | **0.03** |
| **Likelihood Ratio** | **163,68** | **420** | **1** |
| **Linear-by-Linear Association** | **19,97** | **1** | **7,87E-6** |
| **N of Valid Cases** | **31** |  |  |
|  | | | |

* *The Normality test:* in order to perform the different statistical tests and to obtain significant results from the statistical model the normality hypothesis is required in this study.

The normality hypothesis assumes that the data come from normal distribution, which allows us to obtain reliable results in the following points. In order to ensure that this is a normalized distribution we have to perform (Shapiro-Wilks test and Kolmogorov-Smirnov test).

| **Table 4:Tests of Normality** | | | | | | |
| --- | --- | --- | --- | --- | --- | --- |
|  | **Kolmogorov-Smirnova** | | | **Shapiro-Wilk** | | |
|  | Statistic | df | Sig. | Statistic | df | Sig. |
| **Organizational Aspect Effect on External Competitive Advantage** | **,156** | **30** | **,059** | **,887** | **30** | **,004** |
| **Technical Aspect Effect on External Competitive Advantage** | **,118** | **30** | **,200\*** | **,952** | **30** | **,194** |
| **Teaching Aspect Effect on External Competitive Advantage** | **,145** | **30** | **,109** | **,896** | **30** | **,007** |
| **Student Aspect Effect on External Competitive Advantage** | **,157** | **30** | **,057** | **,931** | **30** | **,053** |
| **Research Aspect Effect on External Competitive Advantage** | **,158** | **30** | **,054** | **,893** | **30** | **,006** |
| **Unmanageable Factors Effect on External Competitive Advantage** | **,105** | **30** | **,200\*** | **,938** | **30** | **,078** |
| a. Lilliefors Significance Correction | | | | | | |
| \*. This is a lower bound of the true significance. | | | | | | |

According to the table above, all Shapiro-Wilk statistics differ significantly from zero (Sig > 0.05), and the same thing regarding Kolmogorov-Smirnov test. That result confirms the Normality Hypothesis. That means that the variables introduced based on other variables are following the normal distribution.

According to the previous validation tests, the data obtained through the questionnaire are reliable and the results concluded from them are significant.

* **The Competitive Drivers of The University**

We have study the individual impact of each variable on the external competitive advantage. By dividing the external competitive advantage on five parts, the reputation of university, the competitiveness, the real qualifications of staff and students, the level of contribution in economy and social environment, we have been able study the effect of the previous variables on each part separately.

* **The Reputation Drivers**

In order to study the effect of each variable on the reputation, we have conducted the descriptive analysis, and the table below summarizes the results.

| **Table 5:Effect of the Six Aspects on Reputation** | | | |
| --- | --- | --- | --- |
|  | **N** | **Mean** | **Std. Deviation** |
| **Organizational Aspect Effect on Reputation** | **32** | **4,09896** | **,740059** |
| **Technical Aspect Effect on Reputation** | **33** | **4,12626** | **,771712** |
| **Student Aspect Effect on Reputation** | **33** | **3,7758** | **,82207** |
| **Research Aspect Effect on Reputation** | **31** | **4,2984** | **,55309** |
| **Unmanageable Factors Effect on Reputation** | **31** | **3,9677** | **,92137** |
| **Teaching Aspect Effect on Reputation** | **33** | **4,0556** | **,82144** |
| **Valid N (listwise)** | **30** |  |  |

From the previous table, we conclude that the research aspect has the greater impact on the reputation of the university.

To be more specific, *The Research Publication and Communication Mechanisms Efficiency* have the the greater influence on the reputation with the highest mean (Mean=4.41).

* **The Competitiveness Drivers**

By the same methodology listed above, the table below summarizes the results.

| **Table 6:Effect of the Six Aspects on Competitiveness** | | | |
| --- | --- | --- | --- |
|  | **N** | **Mean** | **Std. Deviation** |
| **Organizational Aspect Effect on Competitiveness** | **31** | **3,96237** | **,964614** |
| **Technical Aspect Effect on Competitiveness** | **32** | **4,0312** | **,80147** |
| **Teaching Aspect Effect on Competitiveness** | **32** | **4,1615** | **,77075** |
| **Student Aspect Effect on Competitiveness** | **32** | **3,7984** | **,82935** |
| **Research Aspect Effect on Competitiveness** | **30** | **4,2444** | **,66484** |
| **Unmanageable Factors Effect on Competitiveness** | **30** | **3,8500** | **,90163** |
| **Valid N (listwise)** | **29** |  |  |

We conclude from the table above that the research aspect has also the greater impact on the competitiveness, however, in the detailed analysis (include all the primary variables in the analysis) we deduce that *The Courses Quality* and *The Teaching Quality* have the greater influence on the competitiveness of the university (Mean=4.31, 4.34).

* **The Real Qualifications Drivers**

By using the same principle as before, the descriptive analysis can illustrate which aspect has the greater impact on the real qualifications of the student and the staff.

| **Table 7:Effect of the Six Aspects on Real Qualifications** | | | |
| --- | --- | --- | --- |
|  | **N** | **Mean** | **Std. Deviation** |
| **Organizational aspect Effect on Real Qualifications** | **32** | **3,80208** | **,890952** |
| **Technical aspect Effect on Real Qualifications** | **33** | **3,8081** | **,84894** |
| **Teaching aspect Effect on Real Qualifications** | **33** | **4,359** | **,7478** |
| **Student aspect Effect on Real Qualifications** | **33** | **4,0970** | **,78531** |
| **Research aspect Effect on Real Qualifications** | **31** | **4,0403** | **,84680** |
| **Unmanageable Factors Effect on Real Qualifications** | **31** | **3,6613** | **,98647** |
| **Valid N (listwise)** | **30** |  |  |

From the table above it is clear that teaching aspect has the greater impact on the real qualifications of the students and the staff, the detailed analysis is only confirming it, which we can conclude from comparing the primary variables means; *The Teaching Quality* has the highest mean (Mean=4.48). In other word, *The Teaching Quality* has the greater influence on the real qualifications.

* **The Contribution Rate in Economic and Social Level**

By considering the contribution rate in economic and social level one of the most important factors of the external competitive advantage, we have also to develop an advantage in this factor by identifying and developing its drivers.

| **Table 8:Effect of the Six Aspects on Economic & Social Level** | | | |
| --- | --- | --- | --- |
|  | **N** | **Mean** | **Std. Deviation** |
| **Organizational Aspect Effect on Economic and Social Level** | **31** | **3,47849** | **1,070213** |
| **Technical Aspect Effect on Economic and Social Level** | **31** | **3,6237** | **1,01102** |
| **Teaching Aspect Effect on Economic and Social Level** | **31** | **3,7742** | **1,16869** |
| **Student Aspect Effect on Economic and Social Level** | **31** | **3,3339** | **1,07373** |
| **Research Aspect Effect on Economic and Social Level** | **30** | **4,0833** | **,74084** |
| **Unmanageable Factors Effect on Economic and Social Level** | **28** | **3,6964** | **,98450** |
| **Valid N (listwise)** | **28** |  |  |

The analysis of the six aspects impact on the economic and the social contribution show that the research aspect is again the most effective factor on the economic and the social contribution rate.

The detailed analysis shows that four primary variables are approximately equally in the highest influence rate on the economic and social contribution; *The Size of the Annual Research Outcomes* (Mean=4.07), *The Research Training Quality* (Mean=4.10), *The Research Publication and Communication Mechanisms Efficiency* (Mean=4.14), *Staff Participation in Research* (Mean=4.10), which confirms the first analysis results.

* **The Research and Technology Development Drivers**

Most of the innovative researches and the genius technologies are the fruit of the cooperation between the business companies and the university laboratories based on juridical contracts; therefore, we have to identify the basic key factors of the university research development.

| **Table 9: Effect of the Six Aspects on Research and Technology Development** | | | |
| --- | --- | --- | --- |
|  | **N** | **Mean** | **Std. Deviation** |
| **Organizational Aspect Effect on Research and Technology** | **31** | **3,97849** | **1,053207** |
| **Technical Aspect Effect on Research and Technology** | **33** | **4,0505** | **,84521** |
| **Teaching Aspect Effect on Research and Technology** | **33** | **4,2374** | **,89076** |
| **Student Aspect Effect on Research and Technology** | **33** | **4,1227** | **,81020** |
| **Research Aspect Effect on Research and Technology** | **31** | **4,4785** | **,63281** |
| **Unmanageable Factors Effect on Research and Technology** | **26** | **3,9231** | **,94543** |
| **Valid N (listwise)** | **26** |  |  |

Based on the table above, we can conclude that the research aspect has the greater impact on the research and technology development, which is perfectly normal and logical.

The detailed analysis of each primary variable impact on research and technology development shows that *The Research Training Quality* has the greater influence (Mean=4.65).

* **The Generalized Results: The External Competitive Advantage Drivers**

By combining and using the secondary variables in the same analysis (the variables resulted from merging primary variables), we have been able to conclude which secondary variable have the greater impact on external competitive advantage.

| **Table 10:Effect of the Six Aspects on the External Competitive Advantage** | | | |
| --- | --- | --- | --- |
|  | **N** | **Percentages (100%)** | **Std. Deviation** |
| **Organizational Aspect Effect on External Competitive Advantage** | **32** | **16,27%** | **,850727** |
| **Technical Aspect Effect on External Competitive Advantage** | **33** | **16,56%** | **,75430** |
| **Teaching Aspect Effect on External Competitive Advantage** | **33** | **17,34%** | **,75784** |
| **Student Aspect Effect on External Competitive Advantage** | **33** | **16,15%** | **,76602** |
| **Research Aspect Effect on External Competitive Advantage** | **31** | **17,75%** | **,56804** |
| **Unmanageable Factors Effect on External Competitive Advantage** | **31** | **15,91%** | **,87942** |
| **Valid N (listwise)** | **30** |  |  |

In global point of view, the research aspect has the bigger influence on the external competitive advantage (17.75%), which is approximately equal with the teaching aspect effect on the external competitive advantage (17.34%).

After this study, we will demonstrate the significant results and the recommendation based on that.

**4.2.3 Results and Recommendations Drawn from the Study**

First, I have to state that the study objective is to identify the key factors that develop the external competitive advantage and to find the forces that shape the competitive strategy of the Algerian public universities as a case study. After defining those competitive drivers, the next step as mentioned in the first chapter of this thesis is to identify the best in class organizations in those fields, by conducting an exhaustive field search. At last, we have to plan for the benchmarking process in order to control the three last steps (developing action plan, implementation, recalibrate benchmarks or what is called also the monitoring phase).

* **The Results**

In order to summarize the finding of this chapter, I will illustrate the principal results of this section:

The findings of the competitive analysis of public universities in Algeria:

* *External Competitive Advantage definition:* every business company or organization has two capital types; the physical assets (includes the financial capital, the economic capital, the human capital, the social capital…) and the intangible assets (includes the image of the organization, the reputation capital, the trust rate, the information systems and the databases, the communication mechanisms…). The external competitive advantage is when the company or the organization develop an advantage in the intangible assets (the second type of capitals) compared to its rivals.
* *The Reputation Drivers:* the secondary variables analysis shows that the *Research Aspect* is the most influential factor on the reputation; the exhaustive analysis confirms it by presenting *The Research Publication and Communication Mechanisms Efficiency* as the most influential primary variable.
* *The Competitiveness Drivers:* the secondary variables analysis shows that the Research aspect is also the most influential factor on the competitiveness, but the exhaustive analysis shows that *The Courses Quality* and *Teaching Quality* are the most influential factors on Competitiveness of University.
* *The Real Qualifications Drivers:*  in this analysis, *The Teaching Aspect* has the superior impact on Qualifications Drivers. The exhaustive analysis has demonstrated that *The Teaching Quality* is the most influential primary variable, which confirms the first analysis.
* *Contribution Rate in Economic and Social Level:* this analysis shows that *The Research aspect* is again the most influential factor on the economic and social contribution rate. The exhaustive analysis confirms it by demonstrating that four variables directly related to research are approximately equally, the highest influential factors, *Research Training, the Size of Annual Research outcomes, The Research Publication and Communication Mechanisms Efficiency*, *Staff participation in Research.*
* *The Research and Technology Development Drivers:* the first analysis shows that the research aspect has the greater influence, which is logical, and the exhaustive analysis show that *The Research Training Quality* has the superior impact on the research and technology development.
* *The External Competitive Advantage Drivers:* from the last analysis conducted (Table 10), the results shows that the research aspect is the most qualified factor for developing an external competitive advantage, and the second qualified factor is teaching aspect.
* **The Recommendations**

The recommendations addressed to the Algerian higher education department:

* Based on the previous study, it is crucial to develop an external competitive advantage by conducting a benchmarking process concerning the following point:

1. *The Research training program:* in my literature review, I have found that "Harvard University" has the highest research advantage among universities along with "Tokyo University" and the most developed research methods and methodologies. The benchmarking process will help to develop an effective research training methods and allow the Algerian universities to establish a long-term research processes.
2. *The Research Publication and Communication Mechanisms:* by considering this element, it is crucial to develop new mechanisms of research publication through benchmarking process, the Algerian universities do not have their own newspaper, I found that all the international level universities have more than one common point including the newspaper, or a specialized scientific magazine.
3. *The Staff Participation in the Research:* this element can be processed from three angles; the first is to find a better motivation ways besides the salaries and the bonuses, it is clearly by now that this policy does not work in the Algerian universities. The second angle is the cooperation between the business companies and the research department in universities also; I will add that this cooperation has to take a juridical form (contracts). The third angle is that the staff participation in the research has to be very selective based on objective measures, in order to allow the qualified staff only to participate in research including the younger qualified staff, and this will help build a trust and reputation that ease the participation of the business companies based on mutual benefit.
4. *The Teaching Aspect:* the benchmarking process has to consider two elements regarding the teaching aspect, the teaching quality, which means selecting the teachers that are qualified in both academic field and communication. The benchmarking of this element, will lead us to benchmark the employment tests (both writing tests and interviews methodologies). The second element is the courses quality, this element obligate us to conduct further study on language effect on study courses (if the Arabic is sufficient to provide efficient information and good understanding in the globalization context) and selecting the best-established courses for benchmarking process.
5. *The Competitive Aspect:* my recommendation regarding the competitive aspect is that the university or any Algerian firm has to update its competitive information periodically, to determine its national and international positioning. According to that, the SWOT Analysis will decide which elements should be benchmarked. the next competitive analysis will confirm the success of the process. Otherwise, we have to adjust the benchmarks accordingly.

In this chapter, we presented the Algerian University, as a demonstration of the effectiveness of benchmarking process in the competitive aspect. The case study of university is not the only application of competitive benchmarking. The competitive benchmarking is a wide study that should be treated with more attention according to the international competitiveness evaluation, were the Algerian case, figure among the last countries in almost every ranking (the industrial field, the economic, the scientific field, and many more other fields).

We divided this chapter in two sections; we started the first one by presenting the world-class universities; the last international raking of universities (2010), the two known ranking methodologies, and some of the special characteristics of Harvard University, in order to introduce an objective context of the Algerian university according to the international level. Then we have concluded from the first point that Harvard University has a strict management system and efficient organization that ensure the efficiency in the planning and the monitoring phase, and according to that, we have chosen to illustrate best model in the governance and strategic management of universities. The last point of this section is the external impact study, where we take the Australian experience in this field as a basis of the comparative analysis.

The second section is mostly about the empirical assessment of the external competitive advantages drivers based on application study I conducted, based on sixty university staff members, and I drawn a general conclusion about the Algerian competitive condition in university based on interviews and preselected variables analysis.

The result of this application study shows a serious failing in the research aspect and the research publication and communication mechanisms efficiency. Accordingly, I recommend the development of the competitive aspect in the Algerian institutions and especially the Algerian universities by conducting a benchmarking process in the research training, the research publication methods, along with a benchmarking process in the teaching aspect including the teaching quality and the courses quality comparing to the international courses establishment methodology.

At last, according to the literature review, we have to remind that if there is interdependence between the government sectors in one hand and there is a general inefficiency state among those sectors in the other hand, according to Ibn Khaldoun Theory, the development of one department or sector will not last for long due to the interdependency effect. The Khaldounien model suggests that the government should develop all interdependent departments or sectors simultaneously to achieve overall efficiency.

1. *Dr. Faiq* Billal: is the director of Islamic educational scientific and cultural organization (ISESCO) [↑](#footnote-ref-2)
2. Dr. Faiq Billal - Academic Ranking of Universities- Healthy Competition, ISECO, 2011, p.6 [↑](#footnote-ref-3)
3. \* Harry, Elsa Kunin, «What in the World is Competitive Advantage? », Policy Working Paper 2003-105, The Anderson school, UCLA, August 2003, P.1 [↑](#footnote-ref-4)
4. \* <http://en.wikipedia.org/wiki/Reputation> (consulted in 20/11/2011) [↑](#footnote-ref-5)