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Intellectual Capital Management and Reporting in Jordanian Universities

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Abstract
The purpose of this paper is to provide assistance and put initial step to Jordanian universities in the process of developing their ability to identify, measure, manage, value, and report their intangible assets. By taking a review of the most important intellectual capital management initiatives at European universities; this paper, tries to propose a model for an Intellectual Capital Report for Jordanian universities. It has been a valuable attempt to create a framework in order to make Jordanian universities aware of the importance of managing intellectual capital. Since the intellectual assets are specific to each university; there is no homogenous model. Rather, every university, according to its own strategic consideration should make the effort of selecting the best instruments for the measurement and management of its intangible assets.
Keywords: Intellectual Capital, Knowledge Management, Reporting Intellectual Capital, Measuring Intellectual Capital

1. Introduction

There is a general agreement on the ideas that, under the new paradigm of the knowledge-based economy, wealth and economic growth are driven primarily by intellectual assets. According to this, intangibles and intellectual capital have become a major issue not only for academics but also for governments, regulators, companies, public organizations, investors and other stakeholders (Sánchez, et al., 2006).

It becomes popular that it is difficult to define intellectual capital due to its invisible and dynamic nature. Many writers defined intellectual capital in different perspectives. The researcher prefers to use The Chartered Institute of Management Accountants (CIMA, {n.d.}) definition, which is, "Intellectual Capital is a broad concept which is often split into different categories – most commonly human, relational and structural capital. Or: Human capital, relational (customer) capital, intellectual property, and infrastructure assets".

It is now considered obviously that a common model for disclosure should be used in an intellectual capital scheme if the goal is to achieve the greatest potential impact on organizations. For this reason, Intellectual Capital Reporting (ICR) is gaining importance day by day as an approach for measuring intangibles.

The importance of education and educational co-operation in the development and strengthening of stable, peaceful and democratic societies is universally acknowledged as vital. Despite the fact that the most knowledge management and intellectual capital analysis developed during the last decades refers to private companies, there is a growing interest in universities and research centers. This latest concern is due to the fact that universities' main goals are the production and diffusion of knowledge and their most important investments are in research and human resources (Cañibano and Sánchez, 2004).

Presently, in Jordanian universities no framework is available for the identification, measurement and disclosure of information on the intangible determinants of corporate value. Therefore, it seems appropriate to devote some effort to developing new measurements and management techniques to help Jordanian universities to identify, measure and monitor their intangible sources of value to increase the efficiency and effectiveness of their management.

2. Present Situation of Jordanian Universities

Up to now, none of Jordanian universities have taken the challenge of trying to measure, manage, and report on its intangible assets in a comprehensive view; comparing that with the situation in the European side. Taking a study made by Sánchez, Elena and Castrillo, (2009), that analyzes the increasing attention to universities at political level, the growing implementation in these institutions of intellectual capital management and reporting, found that there is a growing evidence in support of the application of intellectual capital tools in universities.

The same as European Universities; universities in Jordan are faced with numerous challenges. These include:

- Extend competition with other organizations such as the creation of new public and private universities.
- The increasing level of internationalization of education and research.
- The claims and aspirations of various stakeholders.
- Increased demand for transparency and accountability regarding the "results" and "benefits" derived from public funds. (Warden, 2003; European Commission, 2005)

In Jordan, Interest in higher education has increasingly grown since1980 where the "Law of Higher Education" was issued and followed by the establishment of Higher Education Council (HEC) in 1982 to work on supervising institutions of higher education, through its:

Vision: Entrepreneurship in higher education by rooting the culture of excellence, innovation and scientific research**.**

Mission: Upgrading the qualitative higher education to reach a distinct higher education system which is capable of keeping up with the developments and national needs of higher education outputs and the adoption of innovation, excellence and scientific research within a modern participatory concept with the private sector.

Values of the Ministry:

- Transparency and credibility.
- Team spirit at work.
- Focusing on the convenience of the service`s recipients.
- Equal opportunities.
- Innovation and excellence.
- Development and sustainable improvement.
- Partnerships with related parties.

Given the developments that took place in the sector of higher education in Jordan recently, laws and regulations that govern the work of the sector required reconsideration in order to maintain the quality of higher educational outputs and supporting universities autonomy; which leads to issue the Law of Higher Education Accreditation Commission No. (20) For the year 2007. According to this law a new independent entity was established "Higher Education Accreditation Commission" which its objectives are:

- Ensuring that the institution of higher education applies the Criteria of Programs and Institutional Accreditation.
- Improving and assuring the quality of higher education in the Kingdom.
- Stimulate institutions of higher education to open up and interact with universities, institutions of scientific research and international accreditation and quality assurance commissions.
- Developing higher education by applying specific measurement criteria.

There was a rapid increasing in Jordanian universities and students since 1962 (when first university was established, University of Jordan), that reach now to 26 universities and 250 thousands of students; as can seen in the Appendixes. Therefore, the importance of universities as knowledge producers have been increased through their resources such as researchers, mangers and students, which they are part of their intellectual capital. All of that shows the increasing importance for them to deal with their intellectual capital.

3. Importance of Intellectual Capital for Universities

Up to now, Jordanian universities have not deal with their most important output which it is the knowledge. Universities are considered knowledge producers *per se*, incorporated in research results, publications, educated students and productive relationships with their stakeholders (Warden, 2004).

Researcher believes that Jordanian universities have to take the challenge of trying to measure, manage and report on its intellectual capital; since universities have continuous external demands for greater information and transparency about the use of public funds (Warden, 2003), and are increasingly provided with greater autonomy regarding their organization, management, and budget allocation. This situation requires new management and reporting system: intellectual capital management (ICM) and knowledge management (KM) are a set of managerial activities aimed at identifying and valuing the knowledge assets of the organizations, leveraging these assets through knowledge sharing and creating new knowledge (Easterby-Smith and Lyles, 2003). They also provide an efficient methodology to identify, measure, manage and diffuse knowledge, that it is to say, a proper way to improve internal management and transparency. This should be translated into greater dynamic excellence and multidisciplinary in higher education organizations (Elena, 2004).

However, the researcher sees that the importance can be driven from the need and importance of accounting, measuring, managing and reporting the intellectual capital in universities, which can be summarized as follows:

- create transparency about the use of public funds;
- explain the achievements of research, training, innovation and their benefits to stakeholders;
- illustrate the development of intangible assets;
- reveal leverage effects and externalities;
- communicate (new) organizational values; and
- Demonstrate their competitiveness.

4. Operational Definitions

From the definition in the introduction of intellectual capital and for the purposes of this paper, intellectual

capital is composed of three basic and strongly interrelated components:

1- Human Capital
2- Organizational Capital; and
3- Relational Capital.

Firstly, Human Capital is defined as the knowledge that the human resources (teachers, researchers, students and administrative staff) would take with them if they left the institution.

Secondly, Organizational Capital is defined as the knowledge that stays within the institution at the end of the working day. It comprises the governance principles, the organizational routines, procedures, systems, cultures, databases, publications, intellectual property, etc.

Finally, Relational Capital is defined as all resources linked to the external relationships of the institution such as "customers", "suppliers", R&D partners, government, etc. The Relational Capital is very similar to what the Observatory of European Universities (OEU) has called the Third Mission, which includes all the activities and relations between university and non-academic partners: firms, non-profit organizations, public authorities, local government, and society as a whole (Sanchez and Elena, 2006).

However, intellectual capital is more than simply the sum of these three components, "it is about how to let the knowledge of a firm work for it and have it create value" (Roberts, 1999). It is able to generate an increase in the company's value, and its purpose is to allow a given company to take advantage of opportunities better than competitors and give rise to the generation of future profits.

5. The Intellectual Capital in Universities (ICU) Report

Basically, the researcher will depend on the suggested ICU Report proposed by Sánchez, P., Castrillo, R. and Elena, S. (2005).The ICU Report has three different parts which in one way or another show the logical movement from internal strategy (design of vision and goals of the institution) and management to the disclosure of a system of indicators for disclosure.

They declared that MERITUM and the Danish IC Guidelines strongly recommend including a narrative of the institution's strategy at the very beginning of the document. It is important to state that many indicators do not provide new information: most universities have been gathering information of some indicators (such as the number of publications or patents) for many years. However, it has not usually been done systematically or on a regular basis, and intellectual capital information is spread over various documents. Therefore, the ICU Report must be regarded as a new model to provide homogenized information, presenting intellectual capital information in a single document.

5.1 Mission, Vision and Values of the Institution

Mission or Purpose is a precise description of what an organization does. It should describe the business the organization is in. Each member of an organization should be able to in words express this mission. General questions could be answered in this section such as:

- What main services does the organization provide?
- What are the main objectives of the institution?
- What makes a difference with respect to other institutions?
- What resources (human, organizational and relational) are necessary to be able to reach the objectives and to provide the target services while ensuring quality?
- How are those intangible resources related to the value of the institution?
- What is the combination of tangibles and intangible resources that create value?

A vision is a statement about what an organization wants to become. It should vibrate with all members of the organization and help them feel proud, excited, and part of something much bigger than themselves. A vision should stretch the organization's capabilities and image of itself. It gives shape and direction to the organization's future.

Values are traits or qualities that are considered worthwhile; they represent an individual's highest priorities and deeply held driving forces. Value statements are grounded in values and define how people want to behave with each other in the organization. They are statements about how the organization will value customers, suppliers, and the internal community. Value statements describe actions which are the living enactment of the fundamental values held by most individuals within the organization.

Although the ICU Report is engaged in the disclosure of intellectual capital, it is also important to take into account the tangible resources that participate in the process of creating value. Moreover, it is the interaction among the different types of capital (Physical, Monetary and Intellectual Capital) what creates wealth within an organization (Marr and Roos, 2005).

5.2 Summary of intangible resources and activities

Refers to Sánchez, P., Castrillo, R. and Elena, S., (2005).it describes the intangible resources that the institution

can mobilize and the different activities undertake to improve the value of those resources. The goal of this part is to highlight the knowledge resources that need to be strengthened and to list the initiatives that have been taken, are in process or planned to improve these resources. The questions that this second section should answer are (DMSTI, 2003):

- Which existing intangible resources should be strengthened?
- What new intangible resources are needed?
- What activities can be launched?
- What activities should be prioritized?

This section deals with the definition of priority lines in university terms. In this case, the section is of crucial importance, since each university must define areas of interest, in order to focus on areas of excellence or diversify into various areas of knowledge.

5.3 Quality Assurance

The researcher sees that quality assurance is a subject that could be added to the ICU Report. Depending on The Subject Review Handbook by Al Hussein Fund for Excellence Quality Assessment and Enhancement for Higher Education in Jordan[•], (2005), the following aspects can help in covering this section of quality assurance in the ICU Report.

5.3.1 Teaching, Learning and Assessment

To evaluate the organization of teaching, learning and assessment the following questions could be asked:

- What is the strategy for teaching, learning and assessment?
- Are the programmes of teaching, learning and assessment activities appropriate in terms of the intended learning outcomes (ILOs), in particular the development and assessment of:
    - Knowledge and understanding.
    - Cognitive skills.
    - Subject-specific skills, including practical/professional skills.
    - Progression to employment and further study.
    - Personal development including independent learning.

To evaluate the quality of the teaching by staff and how it supports learning the following questions could be asked:

- How effective is teaching in relation to the programme's specification(s)?
- How effectively do staff drawn upon their research, scholarship or professional activity to inform their teaching?
- How good are the materials, including e-learning, provided to support learning?
- Is there effective engagement with and participation by students?
- Is the quality of teaching maintained and enhanced through effective staff development, peer review of teaching, integration of part-time and visiting staff, effective team teaching and induction and mentoring of new staff?
- How effectively is learning facilitated in terms of student workloads?

To evaluate the assessment process and the academic standards it demonstrates the following questions could be asked:

- Dose the assessment process enable learners to demonstrate achievement of the ILOs?
- Are there criteria that enable teachers, students, internal and external examiners to distinguish between different levels of achievement?
- Dose the assessment strategy have an adequate formative function in promoting student learning, and how (e.g. feedback, further reading tasks)?
- Can there be full confidence in the objectivity, fairness and transparency of assessment procedures?

5.3.2 Student Progression and Achievement

To evaluate the profile of students the following questions could be asked:

- Dose the profile of applications and admissions match the mission and the stated aims in terms of:
    - Ratio of applications to places.
    - Entry qualifications.

[•] Al Hussein Fund for Excellence was established in 1999 under the patronage of King Abdullah II. It is a not-for-profit organization dedicated to promoting excellence and innovation among individuals and groups in both the public and private sectors in The Hashemite Kingdom of Jordan. The Fund has initiated pilot projects to develop robust internal and external assessments of the quality of higher education in the Kingdom.

- Any special features related to the mission, such as profile at entry in relation to the labor market, and regional cross-border recruitment?

- Are the rates and trends in student progression and completion satisfactory in terms of:
  - progression and non-progression at each stage of the programme (differentiate failure, length of study, withdrawal and transfers in and out)
  - completion of the programme
  - Qualifications awarded (for example, degree results)?

To evaluate student achievement at appropriate academic standards the following questions could be asked:

- Dose the range of students' levels of attainment, given the entry profile, confirm that an appropriate proportion of able students demonstrate exceptional achievement?
- How is student achievement, including progression to employment/further study, verified?

5.3.3 Student Support and Guidance

To evaluate the quality of support and guidance, the following questions could be asked:

- Is there an appropriate overall strategy for academic support, including written guidance, which is consistent with the student profile and the overall aims of the provision?
- Is there clear written guidance relating to the programme(s) and the support and guidance available?
- Are the students' need identified and addressed appropriately through practical arrangements for students' access to tutors and the systematic monitoring of students' progress?
- Are arrangements made to identify and support students with special learning needs, including outstanding students?
- If the language of teaching is not the mother language, do students have an adequate level of skills in the language? Do students receive adequate foreign language support to support their learning (for example, to enable them to access up-to date textbooks, technical literature, the Internet)?
- How effectively is learning facilitated by academic guidance, feedback and supervisory arrangements?
- Are students studying off-site or on internships receiving academic support?
- Are the arrangements for academic tutorial support clear, effective and generally understood by staff and students?
- Are there appropriate arrangements for non-academic support such as personal and welfare considerations?
- Are the careers information and guidance well matched to the labour market?

5.3.4 Learning Resources

To evaluate the quality of learning resources and their deployment, the following questions could be asked:

- Is there an overall strategy for the deployment and continuing enhancement of learning resources?
- How effectively is learning facilitated in terms of the provision of physical resources?
- Is suitable teaching and learning accommodation available?
- Are the subject book and periodical stocks appropriate and accessible?
- Are suitable equipment and appropriate IT facilities available to learners, including internet and intranet access?
- Do students make full use of the available facilities?
- Is appropriate technical and administrative support available?

5.3.5 The Effectiveness of Quality Management and Enhancement

To evaluate the effectiveness of the arrangements for quality management and enhancement the following questions could be asked:

- How effective are the internal arrangements for specifying, monitoring and evaluating the programme(s) provided?
- Do these arrangements involve appropriate consideration of:
  - national policies and priorities
  - the mission of the institution
  - the policies, regulations and procedures of the institution
  - the use of management information such as internal monitoring data (for example, on the quality of teaching and learning, student satisfaction surveys, student progression and achievement, learning and other support services)
  - the views of staff
  - the views of students
  - the views of other key stakeholders including employers and professional bodies where

appropriate
- other internal or external reviews and reports
- Professional development needs?

- How effective are the processes of self-evaluation and continuing improvement, including:
  - the clarity of the programme's specification(s)
  - Appraisal and internal peer review of teaching.
  - A focused professional development programme.
  - The contributions of staff in the range of activities such as professional development and scholarship and academic research.
- What is the evident impact of the quality management and enhancement systems and processes in terms of:
  - The quality of learning opportunities.
  - The level of achievement of graduate.
  - Improvement arising from earlier action plans.
  - The generation and use of internal reports.

5.4 A system of indicators for the intangible resources and activities

The researcher finds that all indicators in this part presented by Sánchez, P., Castrillo, R. and Elena, S., (2005). interms of intellectual capital report at universities are adequate and suitable to cover all related issues at Jordanian universities. Consequently, the researcher finds no need for any changes on these indicators particularly at this stage through which Jordanian universities are encouraged to disclose its intellectual capital report, as seen in appendix D.

6. Conclusions

Nowadays Jordanian universities are impressed in strong transformational processes; development of Higher Education Accreditation Commission which is making Jordanian educational and research systems more comparable, increasing their level of quality, improving their flexibility, and, basically, making higher education and research activities more transparent and competitive.

Assuming that measurement is a first and necessary step before management, it has been a valuable attempt to create a framework in order to make universities aware of the importance of managing intellectual capital.

The intellectual assets are specific to each university, so there is no homogeneous model of intellectual measurement in universities. Rather, every university, according to its own specific features and environment, must define the best instruments for the measurement and management of its intangible assets.

The ICU Reports is a proposal to the next logical step after managing intellectual capital. This tool deals with a first attempt to create homogenized IC Report specifically designed for Jordanian universities.

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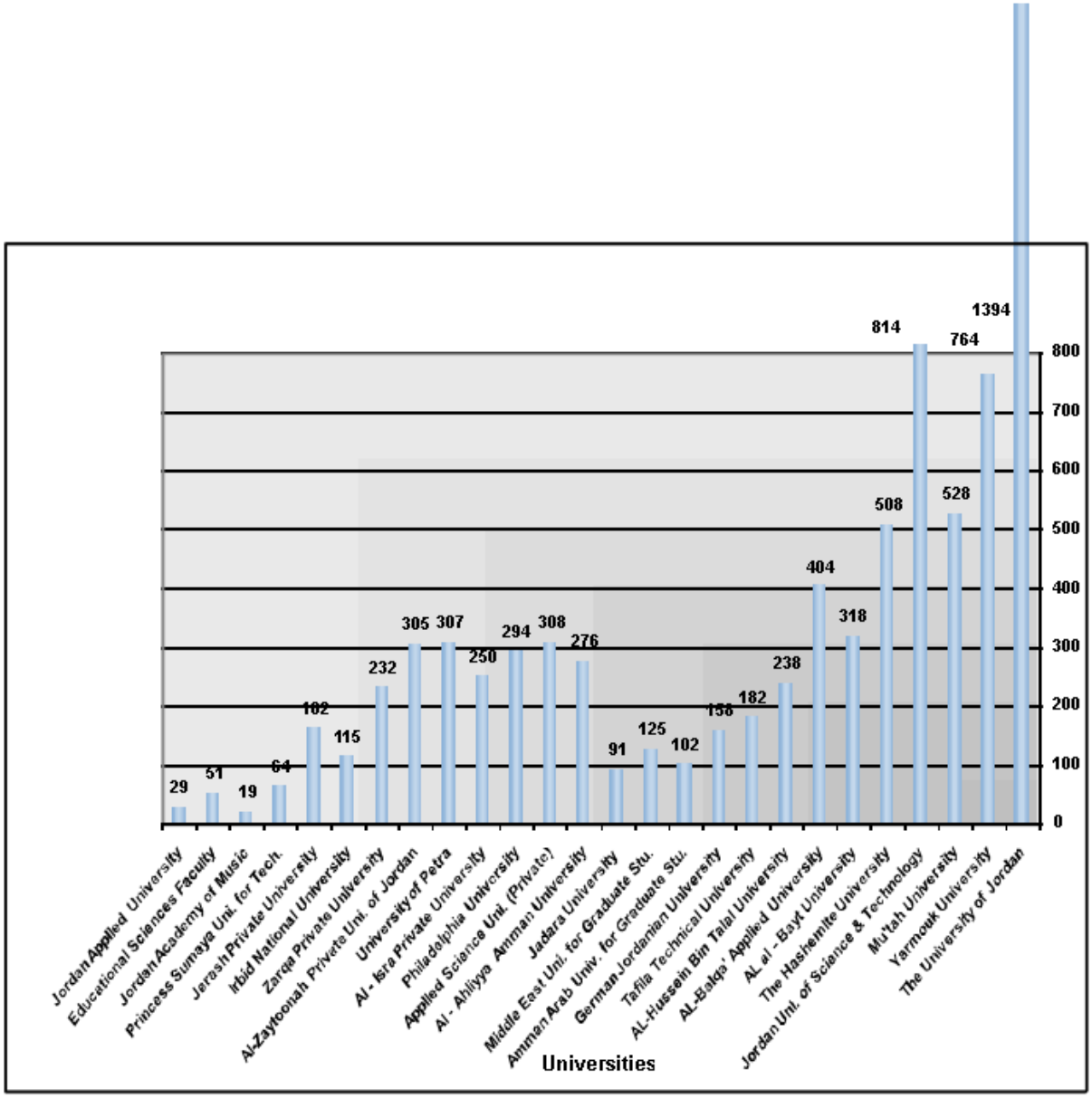
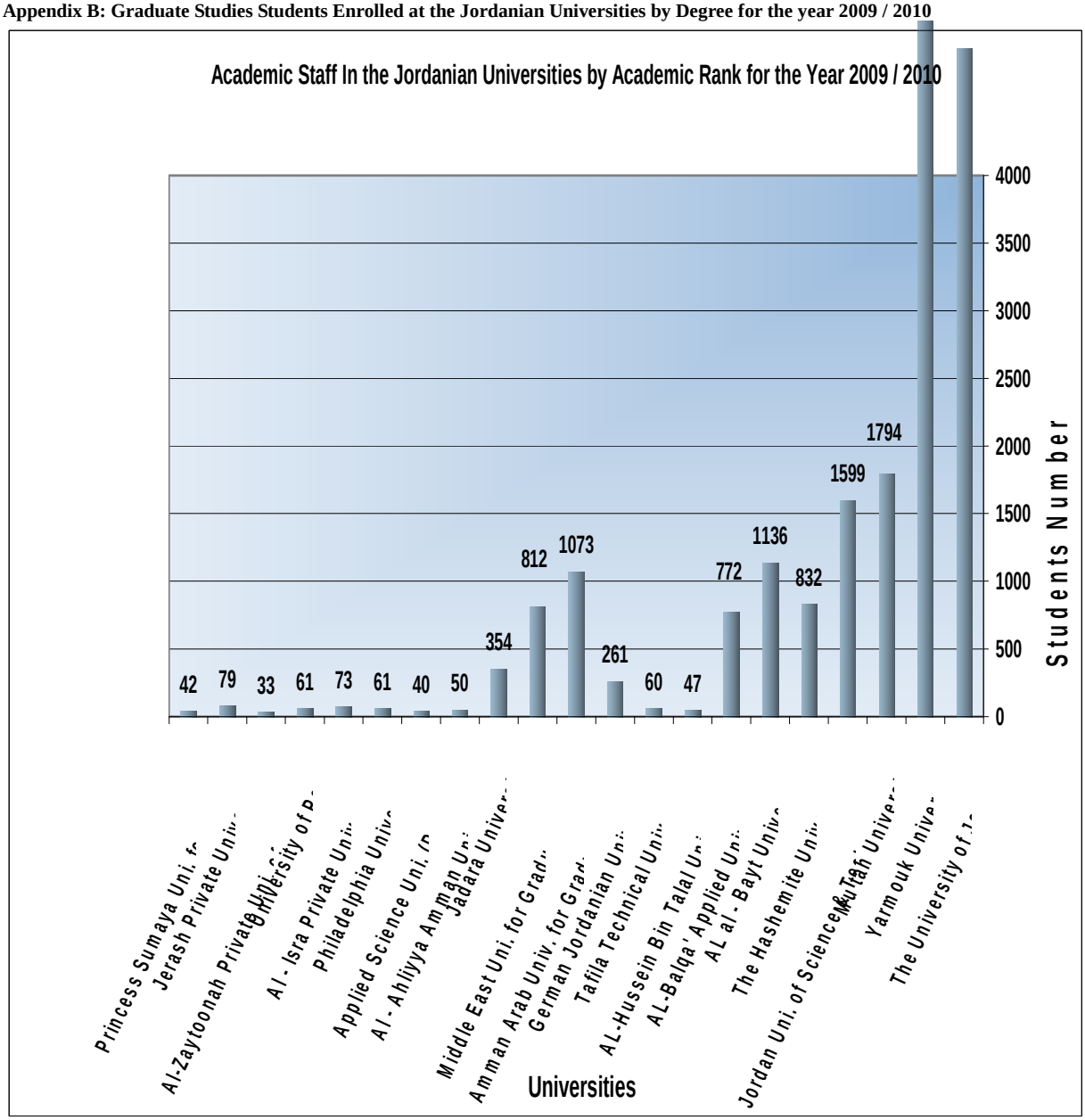
Appendix A: Academic Staff in the Jordanian Universities by Academic Rank for the Year 2009 / 2010

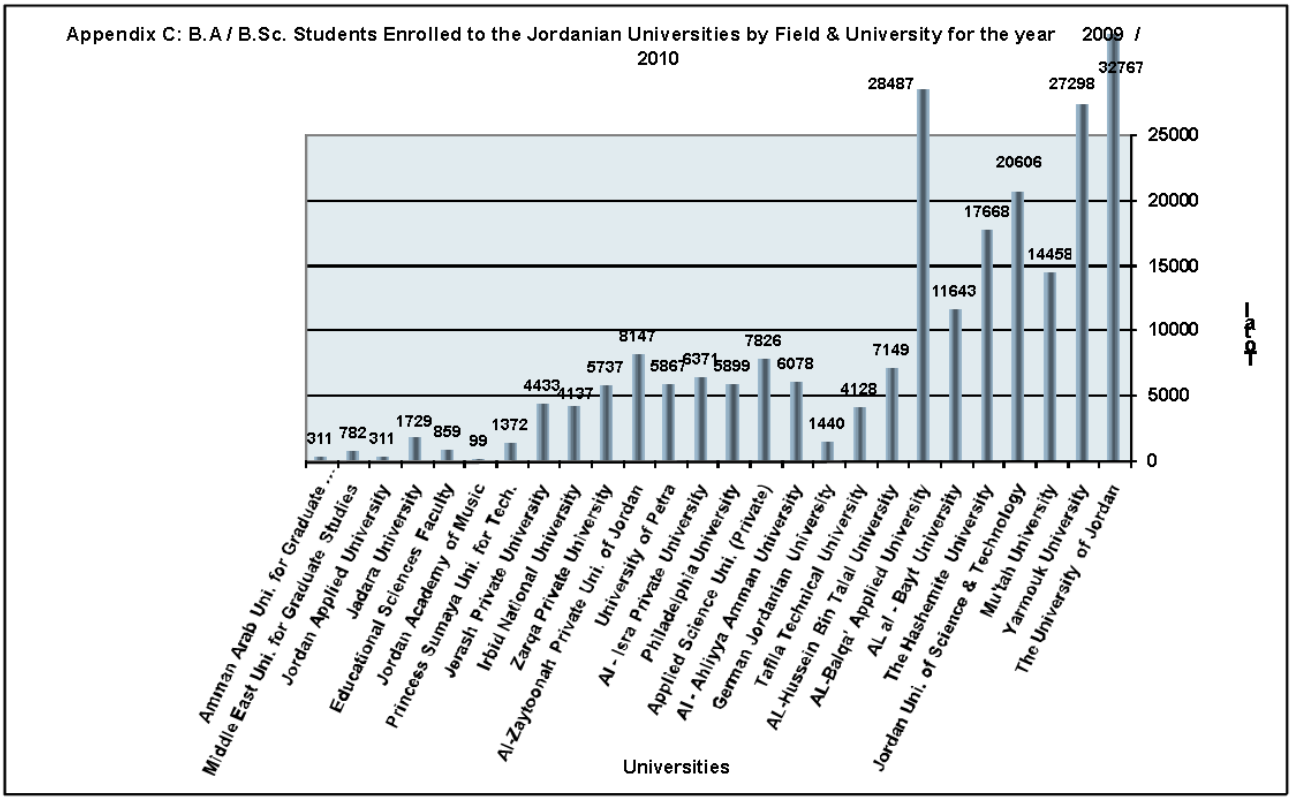


Source : http://www.mohe.gov.jo/Statistics2010/tabid/579/language/ar-JO/Default.aspx

Appendix B: Graduate Studies Students Enrolled at the Jordanian Universities by Degree for the year 2009 / 2010



Source : http://www.mohe.gov.jo/Statistics2010/tabid/579/language/ar-JO/Default.aspx



Appendix D: **List of Suggested Indicators**[1]

		HUMAN CAPITAL
		EFFICIENCY
1	F	Total funds for R&D / Number of researchers
2	NF	Number of PhD (master) students / Number of Researchers
3	NF	Number of Researchers / Number of Administrative Personnel
		OPENNESS
4	NF	Number of visiting fellows from other universities/Number of Researchers (per field) (A. National, B. International)
5	NF	Number of PhD (master) students coming from other universities/Total number PhD (master) students (per field) (A. Nat., B. International).

		ORGANISATIONAL CAPITAL
		AUTONOMY
6	F	Amount of resources devoted to R&D / Total Budget (personnel cost is not included)
7	F	Structure of the Research Budget by scientific fields (by disciplines)
8	F	Amount of budget constraints (personnel cost + equipment cost) / Research Budget
9	F	Amount of research budget managed at the central level / Research Budget
10	F	Lump-sum for Research (A. Governmental funding, B. Non-governmental funding) / Total Funding for Research
11	F	Share of staff appointed through autonomous formal procedure (at the University level + by type, by field and by units) (consider procedures dealing with positions and academics)
12	F	Non-core funding / A. Total budget, B. Budget for Research
13	NF	Thresholds imposed to fund-raising (including weight of tuition fees on total budget and incentives given to private donors to support research activities)
14	NF	Structure of non-core funding
		CODIFICATION OF KNOWLEDGE THROUGH PUBLICATIONS
15	NF	Number of publications by disciplines / Total publications of the university

[1] For more information about the related points and notes of the ICU Report for these indicators, please see Sánchez,et al., (2005).

16	NF	Number of co publications per field (6 Frascati levels) (A. National, B. International)
17	NF	Number of citations of publications by discipline / Total publications of the university
18	NF	Share of specialization publication in a discipline compared to the total publication of the university.
19	NF	Indicators of Production for books, chapters, e-journals, etc.
20	NF	Indicators of Visibility for books, chapters, e-journals, etc.
		CODIFICATION OF KNOWLEDGE THROUGH INTELLECTUAL PROPERTY
21	NF	Number of active patents owned by the university (by field)
22	NF	Number of active patents produced by the university (by field)
23	F	Returns for the university; licenses from patents, copyright, (sum & % to non public resources)
24	F	Joint IPRs by university professors and firm employees
		STRATEGIC DECISIONS
25	NF	Existence of a Strategic Plan for Research
26	NF	Existence of mechanisms to evaluate the Strategic Research Plan
	NF	- Frequency
	NF	- Brief Description of the process

		RELATIONAL CAPITAL
		SPIN OFFS
27	NF	Number of Spin-offs supported by the university
28	NF	Number of Spin-offs funded by the university and % above the total number of Spin-offs (funded + supported)
		CONTRACTS AND R&D PROJECTS
29	NF	Number of contracts with Industry (by field and by a competitive/non competitive classification)
30	NF	Number of contracts with Public Organizations (by field and by a competitive/non competitive classification)
31	F	Funds from Industry / Total budget for Research
32	F	Funds from Public Organizations / Total budget for Research
		KNOWLEDGE TRANSFER THROUGH TECHNOLOGY TRANSFER INSTITUTIONS
33	NF	Existence of a Technology Transfer Institution
34	NF	Checklist of activities of the TTI
		-Intellectual Property Management
		-Research contract activities
		-Spin-offs
		-Others
35	F	Budget of TTI / Total budget of the university
		KNOWLEDGE TRANSFER THROUGH HUMAN RESOURCES
36	NF	Number of PhD (master) students with private support / Total PhD (master) students
37	NF	Number of PhD (master) students with public support / Total PhD (master) students
		PARTICIPATION INTO POLICY MAKING
38	NF	Existence of activities related to policy making
39	NF	Checklist of activities related to policy making
		-Involvement into national and international standard setting committees
		-Participation in the formulation of long-term programs
		-Policy studies
		INVOLVEMENT INTO SOCIAL AND CULTURAL LIFE
40	NF	Existence of special events serving social and cultural life of society
41	NF	Checklist of special events serving social and cultural life of society
		-Cultural activities
		-Social activities
		-Sport activities
		-Others
		PUBLIC UNDERSTANDING OF SCIENCE
42	NF	Existence of specific events to promote science
43	NF	Checklist of specific events to promote science, to classical involvement of researchers into dissemination and other forms of public understanding of science
		-Researchers in Media
		-Researchers in Forums
		-Others

F = Financial indicator - NF = Non-financial indicator
Source: Sánchez ,*et al.*, (2005), p. 233.

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