

The Role of Intellectual Capital in Achieving a Competitive Advantage: A Field Study on Jordanian Private Universities in the Northern Region

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Abstract

This study aims to determine the role of intellectual capital and its elements (human capital, relational capital, structural capital) and to achieve the competitive advantage and its dimensions (quality, efficiency, innovation, responsiveness) in the Jordanian private universities in the northern region (Jadara university, Irbid national university, Jarash university, Philadelphia university), where the study sample (90) person of the total study population (120), so questionnaire was designed to verify approaches in the theoretical frameworks of the intellectual capital independent variable, and its relation to the dependent variables, which is the competitive advantage. The hypotheses were tested based on statistical analysis programs, one of the most important results of the study is the existence of a relation of statistical significant between intellectual capital and its three dimensions and achieving competitive advantage, where the study showed that the dimensions of human and social capital are more available than structural capital, so both of them are contributing in the competitive advantage more than structural capital.

Keywords: intellectual capital, competitive advantage, private universities, northern region, Jordan.

1. Introduction

The increasing attention of organizations at all levels in the intellectual capital until it's became one of the most important assets and factors of its success if it can benefit from the expertise and skills well, and solve problems that help to form intellectual capital. Therefore, intellectual capital has become the main element in the processes of innovation, change and creativity, thus creating a competitive advantage for the organization. Accordingly, whenever the organization is able to assess the intellectual capital well, it will be able to achieve its goals and make decisions related to the re-engineering of its programs, which leads to be more efficient, profitable and competitive whether on the quality of the product or service or cost and price or any other excellence strategies.

The competition among universities has intensified sharply, and the effectiveness of the university is strongly related to its ability to compete, continue and survive through the

development of its leaders and employees, who constitute its intellectual capital, in addition to its external and internal relations and its system. This made it in constant search for what achieves progress and success in various field.

2. Problems of the study

Intellectual capital in the Jordanian economy is one of the main resources of business organizations, including universities which its progress and excellence have become linked to the good management and utilization of their mental resources.

Through the work of the researcher at the Jordanian private universities he noticed that there is still a weak interest in the intellectual capital and lack of awareness of the its impact and its importance in achieving the competitive advantage, and most of its attention was focused on the ways of applying its regulations and the instructions related to its physical assets. so the research aims to answer the following main question:

What is the role of intellectual capital in achieving a competitive advantage?

- a. Its divided into the following sub-questions:
- b. Is there a relation of statistical significant for human capital to the competitive advantage of the Jordanian private universities?
- c. Is there a relation of statistical significant for the relational capital to the competitive advantage of the Jordanian private universities?
- d. Is there a relation of statistical significant for the structural capital to the competitive advantage of the Jordanian private universities?

3. Aims of the study:

- a. Explain the importance of the intellectual capital as a tool to achieve competitive advantage.
- b. Explain how university administration is interested in the intellectual capital.
- c. Explain the methods used by universities in managing their capital.
- d. Explain the concept of competitive advantage.
- e. Explain how Jordanian universities benefit from the intellectual capital.

4. Importance of the Study:

- a. Explain the importance of intellectual capital as a contribution to support the cognitive and organizational capacities of the employee that enable them to produce new products for the organization then to increase their marketing share and gaining a competitive advantage over others.
- b. Emphasis of the administration and employees of private Jordanian universities that the university cannot achieve its objectives efficiently without realizing the importance of the intellectual capital.
- c. The need to preserve the intellectual capital and means of investment that support the competitive advantages.

- d. The research is an academic attempt to shed light on the importance of intellectual capital in business organizations and the economic in general and how can be developed and maintained to achieve a competitive advantage.
- e. The importance of the field aspect , which shows the patterns of strengthening intellectual capital in Jordanian higher education institutions, and clarifying strengths and weaknesses point, and the ways to develop and maintain their intellectual capital.

5. Hypotheses of the study

The first main hypothesis

There is a statistical significance correlation at the level of significance (0.05) between the ability of the Jordanian private universities in the northern region to manage their intellectual capital and to achieve their competitive advantage.

It's divided into the following sub- hypotheses:

- a. There is a statistical significance correlation at the level of significance (0.05) between the ability of the Jordanian private universities in the northern region to manage their human capital and to achieve their competitive advantage.
- b. There is a statistical significance correlation at the level of significance (0.05) between the ability of the Jordanian private universities in the northern region to manage their structural capital and to achieve their competitive advantage.
- c. There is a statistical significance correlation at the level of significance (0.05) between the ability of the Jordanian private universities in the northern region to manage their relational capital and to achieve their competitive advantage.

6. Research methodology:

The research relies on two methods; the first is theoretical study; by using descriptive analytical method to describe the intellectual capital and its role in achieving the competitive advantages of privet Jordanian universities in the northern region and by relying on what is stated in the administrative literature on the subject of study in addition to what is on the internet. The second method is the field study; through the preparation of survey lists to collect data, in addition to rely on previous studies.

7. Research plan:

In order to achieve the research objectives, it has been divided as follows:

First: previous studies in the field of studies.

Second: the conceptual frame work of intellectual capital.

Third: the competitive advantage and its basic determinants.

Fourth: the field study.

8. First: previous studies in the field of studies.

• **Bisaria,2013,india study:**

This study aims to know the reasons for using competitive advantages in the education sector, And to define the different types of competitive advantages in the education sector, which it consider as a very pure field, In addition to the impact and effectiveness of competitive advantage used by private colleges or universities.

• **Greco and others study,2013, Italy:**

This study presented an analysis within a University Spin-Off, based on interviews submitted to five key figures (the CEO, the scientific supervisor, a shareholder, an employee and a long-term customer). The analysis is aimed both at identifying which future investments should be made, and at identifying possible misalignments among the perceptions of the organization's stakeholders .The implementation of the framework creates a useful panel for the planning of investments in intellectual capital assets in order to create value. Moreover, it may emphasize possible discrepancies among interviewees about the importance of each intellectual capital asset.

• **Makdadi and others study,2010, Jordan:**

This study aims to clarifying the role of marketing knowledge in determining the strategies for academic programs in (7Jordanian universities in Amman) and to explain how the competitive advantages are achieved. This study has been applied on two groups (administrations and the student of business).

• **Mitchell, 2010 study:" a model for managing intellectual capital to generate wealth". Massey University.**

The objective of this study was to develop and test a model for managing of intellectual capital. Three sources of intellectual capital- human capital, internal capital, and external capital- contributes to the outcomes essential to differentiate the organization in the marketplace.

Second: Conceptual framework of intellectual capital

For many years, physical asset indicators were the main evidence of an organizations successful performance. However, the situation has changed after information technology revolution in the knowledge-based economy. Since 1980 business performance has not been limited only to physical assets instead intellectual capital are increasingly playing a major role in business performance.

Intellectual capital concept:

Ralph Stayer was the first one who use the term intellectual capital in the early 1990s, when he pointed out that natural resources were the most important components of national wealth and most important assets of the organizations until the emergence of intellectual capital, which is the most important components of national wealth and highest assets of organizations (Harhoosh 2007) .

As for **(OECD,1999)** was defined the intellectual capital as the knowledge, experience and technology of the organization in addition to its relationship with customers and the skills that help the organizations to gain competitive advantages .

(T.Stewart,1998,p11) was defined the intellectual capital as the skills available in an organization that has a wide knowledge make it capable of making the organization global by responding to customer requirements and the opportunities offered by technology.

There for, the researcher agrees with all the previous concepts that good knowledge, experience and skills can be used to achieve the objective of the organization with high efficiency and achieve a competitive advantage.

Components of the intellectual Capital:

Despite the differences between the researchers about the component of the intellectual capital, but most of the agreed that it consists of the following three dimensions:

1. Human capital: (Algarer and others 2104)

The value that the employees of a business provide through the application of skills, and expertise. Human capital is an organization's combined human capability for solving business problems and exploiting its intellectual portray. Human capital is inherent in people and cannot be owned by an organization. Therefore, human capital can leave an organization when people leave, and if management has failed to provide a setting where others can pick up their know-how. Human capital also encompasses how effectively an organization uses its people resources as measured by creativity and innovation.

2. Structural capital:

It Is owned by an organization and remains with an organization even people leave. It includes proprietary software, processes, patents, and trademarks, as well as the organization's image, and proprietary databases.

3. Relational capital

It is a value of the relation between the organization and its customers which is focusing on the satisfaction of the customers by paying its attention to their customers and listens to their complaints and fined solution to them.

Therefore, the researcher believes that the interaction between these components helps to determine the value of the total intellectual capital of the organization. In other words, the organization who's members possess competencies, skills, creativity, and have the ability to learn ,in addition to possessing organizational structures, data base, policies and procedures, communication technology, and it has a good relations with its customers, it will contribute significantly to achieve its goals.

The importance of measuring and evaluating intellectual capital:

The importance of the intellectual capital emerged at two levels: the first one is internal level which is related to management, the second level is external which is related to stakeholders.

The importance of measuring intellectual capital at the internal level (management):

- a. Formulation of the organization strategy. (kannan and aulbur 2004)
- b. Contributes in evaluating the implementation of the strategy.
- c. Contributes to the development of reward systems. (marr et al 2003)

The importance of measuring intellectual capital at the external level (stakeholders):

- a) Provide information about the future performance of the organization that can be utilized by investors, lenders and interested parties.
- b) Reduce the problem of the available information asymmetry between beneficiaries.
- c) Encouraging educational institutions and support their abilities to influence stock price.

Third: Competitive Advantage.

The researcher differed about the definition of competitive advantage; some of them defined it as "a set of methods that make other organizations incapable to keep up with it currently or future (Kolter 1997). While (AL-Qairoty and others, 2014) defined it as" a set of characteristics owned by the organization during a given period of time, which superior it over their competitors and qualify it for more opportunities. As for (Stevenson, 2005, 4) asserts that competitive advantage is aimed to meet customer needs in order to attract the customer.

As for the concept of competitive advantage in university education , (Mustafa 2003) pointed out that : it includes two main elements; the first one is the ability to excel upon the competitor universities in the vital fields such as study programs libraries, halls, etc. the second one is the ability to attract students from domestic and overseas market.

Accordingly we can say that the competitive advantage is conditions that allow a company or country to produce a good or service at a lower price or in a more desirable fashion for customers. Matching core competencies to the opportunities.

The Main Types of Competitive Advantage.

There are three main types of competitive advantage (Afaf Alsaed, 2012):

- a) Low coast: the ability of company to produce a good or service at a lower price or in a more desirable fashion for customers. the quality: ability of company to produce a high quality good or service to meet customer needs.
- b) Just-in-time (JIT): is an inventory strategy companies employ to increase efficiency and decrease waste by receiving goods only as they are needed in the production process, thereby reducing inventory costs.

Source of competitive advantage: (Aboud, 1999:9):

- a) Innovation; which is means the continuous improvement in products.
- b) Just-in-time (JIT) ; which is mean to increase efficiency and decrease waste by receiving goods only as they are needed in the production process, thereby reducing inventory costs.
- c) Knowledge; which is means the experiences of the employees of the organization.

Competitive Advantage Strategies:

There are three main strategies of competitive advantage (Mustafa Rajab,2011):

- a) Low coast: the ability of company to produce a good or service at a lower price or in a more desirable fashion for customers. These conditions allow the productive entity to generate more sales or superior margins than its competition
- b) Differentiation Strategy: A superiority gained by an organization when it can provide the same value as its competitors but at a lower price, or can charge higher prices by providing

greater value through differentiation. Competitive advantage results from matching core competencies to the opportunities.

- c) Focus strategy: s the process of determining customer needs and wants in order to drive the working force behind the company's products or services.

9. Fourth: field of study.

Research Population

Includes 4 private Jordanian universities in the northern region incensed by the ministry of Higher education as shown in the following table:

Table 1. Names of universities

serial	names of universities
1	Jadara university
2	Irbid national university
3	Philadelphia university
4	Jarash university

Sample of the study

the study sample was selected from the universities mentioned in table(1) which include administrative staff(deans of the faculties, heads of departments and directors of the administrative departments in the university, which were (120) ,then it has been selected randomly(90) person, after that questionnaires were distributed to them, (83) has been retrieved by (%92.42) . after counting, (7) questionnaires were excluded because they were not valid for analysis because ere not completed. thus, the number of questionnaires analyzed (76) by (%91). Tale (2) shows the distributed, retrieved and valid questionnaires for analysis.

Table 2. The distributed, retrieved and valid questionnaires for analysis.

Serial	Names of universities	Samples of the study	Distributed questionnaires	Retrieved questionnaires		Valid questionnaires	
				Number	%	number	%
1	Jadara university	36	27	24	88.88	23	95.8
2	Irbid national university	30	22	20	90.90	17	0.85
3	Philadelphia university	28	20	18	0.90	18	100.00
4	Jarash university	26	21	21	100.0	18	85.7
1	total	120	90	83	92.42	76	0.91

Source: preparing by researcher based on the analysis results.

Tools of the Study

The researcher relied on questionnaire as a data collection tool, where the tool was developed to measure the impact of intellectual capital in achieving a competitive advantage in private Jordanian universities in the north. Tool of study included the dimensions of intellectual capital (human capital, relational capital, structural capital) and competitive advantage (quality, efficiency, innovation, responsiveness). The researcher asked a group of experts and academics to study the questionnaire and to give their comments and suggestions thereon.

Table 3. Cronbach's alpha coefficient for measuring tools of study

variable	Number of paragraphs	Coefficient of stability Cronbach's alpha) (
human capital	15	0.812
structural capital	15	0.886
relational capital	9	0.677
Competitive advantage	16	0.886
All axes	55	0.948

Source: preparing by researcher based on the analysis results.

The study tools divided into two parts:

The first: includes personal data and fictional data related to the personal characteristic of the study sample (gender, academic qualification and occupation).

The second: includes the data of intellectual capital and its elements as follow:

- a) **Human capital** includes fifteen paragraphs.
- b) **Relational capital** includes nine paragraphs.
- c) **Relational capital** includes fifteen paragraphs.
- d) **Competitive advantage** includes its elements (quality, efficiency, innovation, responsiveness).

Each paragraph has five choices according to fifth Likert scale starting from (1) strongly disagree until (5) totally agree. It has been used Cronbach's alpha Coefficient to determine the stability of research variables as shown in table (1). Where the study showed that the full scale e of the study tool has a high degree of stability amounted to (0.948), while the human capital scale has high degree of stability (0.812), and the structural capital has high degree of stability (0.886), while the relational capital has (0.577) which is acceptable. As for competitive advantage has a high degree of stability (0.886).

Findings of the study

First: characteristics of the population research sample

Table 4. frequency and percentage of the characteristics of the population research sample

variable		frequency	%
gender	male	66	82.5
	female	11	17.5
qualification	bachelor	3	38.3
	master	5	51.7
	PHD	68	10
occupation	Dean	28	10.8
	Head of department	41	34.2
	Director of department	8	55

Source: preparing by researcher based on the analysis results.

Table (4) shows findings of the characteristics of the population research sample, where it is noted that the majority of the study sample are male (%66). While the employee who holds PHD degree in the Jordanian privet universities in the north (%68) that’s because a dean must have obtained PHD. While the percentage of those who occupy the position of head of department is (34.2%).

Analyzing the study questions:

Table 5. Average, standard deviation, relative weight and (T) value for each dimension of the intellectual capital.

	dimension	average	standard deviation	(T) value	relative weight	Significance level
1	Human capital	3.6554	0.54707	12.748	73.162	0.000
2	Structural capital	3.5112	0.38901	11.109	70.118	0.000
3	Relational capital	3.7145	0.44490	11.650	73.29	0.000
	Total of intellectual capital	3.6276	0.4603	11.835	72.19	0.000

Source: preparing by researcher based on the analysis results.

T-Test value at significant level 0.05 and the freedom degree 74 is 1.63.

Table (5) shows that the average of all intellectual capital dimensions was (3.6276) and standard deviation (0.4603) while (T) value was (11.835) which is more than T-test value (1.63). The table also shows that the significant level was (0.000) which is less than (0.05). Which means that Jordanian private universities that have been studied in this research have a high level of intellectual capital and it achieves the competitive advantage through the effective management of intellectual capital?

Table 6. Average and standard deviation of competitive advantage.

variables	average	standard deviation	level	(T) value	Relative weight	Level of significance
quality	84.102	17.214	high	0.60120	4.1332	0.000
efficiency	66.346	3.613	high	0.74673	3.2155	0.000
innovation	75.064	9.761	high	0.67823	3.6433	0.000
responsiveness	75.32	11.246	high	0.60111	3.6712	0.000
Total of competitive advantage	75.208	10.4585	high	0.65681	3.6658	0.000

Source: preparing by researcher based on the analysis results.

T-Test value at significant level 0.05 and the freedom degree 74 is 1.63.

Table(6) shows the average and standard deviation of competitive advantage dimensions; (quality, efficiency, innovation, responsiveness) in the Jordanian private universities in the northern region. As we notice that the level of competitive advantage is very high .also, the quality dimension is in the first place (4.1332) with standard deviation (0.6012) and high level. This means that Jordanian private universities apply the competitive dimensions well. While the dimension of responsiveness came in the second place with average (4.1332) and standard deviation (0.6012). As for innovation it came in the third place with average was (3.643) and standard deviation (0.678). While the efficiency was in the fourth place with average (3.215) standard deviation (0.746). The table also shows that the average of all dimensions of the competitive advantage was (3.6658) and relative weight was (75.208), while (T) value was (10.458) which is more than T-test value (1.63). In addition the tale shows that the significant level was (0.000) which is less than (0.05). Which means that Jordanian private universities that have been studied in this research have a high level of competitive advantage and it achieve the through the effective management of intellectual capital.

10. Test hypotheses

The first hypotheses test

There is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their human capital and to achieve its competitive advantage.

Table (7) results of simple regression analysis for the first hypothesis test.

	(β) value	(T) value	(F) value	Significance level	(R2) value	(R) value	Results of hypothesis
			93.386	0.000	0.551	0.741	acceptable
Independent variable	0.649	2.006					
Human capital	0.840	9.554					

Source: preparing th researcher based on the analysis results.

T-Test value at significant level 0.05 and the freedom degree 74 is 1.63 .

as we see in table (7) that (T) value = (9.554) at the level of significance (0.00) is less than (0.05) which is indicate that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their human capital and to achieve its competitive advantage. Also, the table mentioned that the coefficient of correlation (R) = (0.741) which is means that there is a strong relation between human capital and competitive advantage in the Jordanian privet universities that have been studied in this research. In addition we can notice that the coefficient of correlation (R2) = (0.551). this means that the variance in the competitive advantage variable is due to the change in human capital while the rest variables is due to other factors, therefore we accept the first sup-hypothesis which states that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their human capital and to achieve its competitive advantage.

The second hypotheses test

There is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their relational capital and to achieve its competitive advantage.

Table 8. results of simple regression analysis for the second hypothesis test

	(β) value	(T) value	(F) value	Significance level	(R2) value	(R) value	Results of hypothesis
			134.89	0.000	0.466	0.799	acceptable
Independent variable	0.910	3.699					
Relational capital	0.755	11.68					

Source: statistical analysis results

as we see in table (8) that (T) value = (11.688) at the level of significance (0.00) is less than (0.05) which is indicate that there is a relation with a statistical significance at the level of

significance (0.05) between the ability of Jordanian private universities to manage their relational capital and to achieve its competitive advantage. Also, the table mentioned that the coefficient of correlation (R) = (0.799) which is means that there is a strong relation between human capital and competitive advantage in the Jordanian privet universities that have been studied in this research. In addition we can notice that the coefficient of correlation (R2) = (0.644). this means that the variance in the competitive advantage variable is due to the change in relational capital while the rest variables is due to other factors, therefore we accept the first sup-hypothesis which states that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their relational capital and to achieve its competitive advantage.

The third hypotheses test

Table 9. results of simple regression analysis for the third hypothesis test

	(β) value	(T) value	(F) value	Significance level	(R2) value	(R) value	Results of hypothesis
			20.600	0.000	0.214	0.459	acceptable
Independen t variable	1.665	3.619					
structural capital	0.600	4.540					

Source: Statistical Analysis Results

as we see in table (9) that (T) value = (4.540) at the level of significance (0.00) is less than (0.05) which is indicate that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their structural capital and to achieve its competitive advantage. Also, the table mentioned that the coefficient of correlation (R) = (0.459) which is means that there is a strong relation between structural capital and competitive advantage in the Jordanian privet universities that have been studied in this research. In addition we can notice that the coefficient of correlation (R2) = (0.214). this means that the variance in the competitive advantage variable is due to the change in structural capital while the rest variables is due to other factors, therefore we accept the first sup-hypothesis which states that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their structural capital and to achieve its competitive advantage.

Main hypothesis test

There is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their intellectual capital and to achieve its competitive advantage.

Table (10) Results Of Simple Regression Analysis For The Main Hypothesis Test

	(β) value	(T) value	(F) value	Significance level	(R2) value	(R) value	Results of hypothesis
			52.740	0.000	0.678	0.830	acceptable
Independent variable	0.439	1.352					
Intellectual capital	0.360	3.110					
Relational capital	0.540	5.414					
Structural capital	0.344	3.106					

Source: Statistical Analysis Results

as we see in table (9) that (T) value = (1.352) at the level of significance (0.00) is less than (0.05) which indicates that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their intellectual capital and to achieve its competitive advantage. Also, the table mentioned that the coefficient of correlation (R) = (0.830) which means that there is a strong relation between structural capital and competitive advantage in the Jordanian private universities that have been studied in this research. In addition we can notice that the coefficient of correlation (R2) = (0.678). This means that the variance in the competitive advantage variable is due to the change in intellectual capital while the rest variables are due to other factors, therefore we accept the first hypothesis which states that there is a relation with a statistical significance at the level of significance (0.05) between the ability of Jordanian private universities to manage their intellectual capital and to achieve its competitive advantage.

11. Findings

- a) The study showed the results of the first hypothesis test using correlation coefficient to determine the relation between the intellectual capitals and to achieve the competitive advantage. The study found that there is a statistical significance relation with a correlation coefficient (0.830) at the level of significance (0.05) between the ability of Jordanian private universities to manage their human capital and to achieve its competitive advantage in varying proportions, which is their dimensions can be arranged according to their importance as follows: (relational, human and structural).
- b) There is a strong relation between the human capital management and enhancing the competitive advantage of Jordanian private universities, where the correlation coefficient was 0.741 and relative weight 73,162.
- c) There is a strong relation between the relational capital management and enhancing the competitive advantage of Jordanian private universities, where the correlation coefficient was 0.799 and relative weight 73, 29.

- d) There is an accepted relation between the structural capital management and enhancing the competitive advantage of Jordanian private universities, where the correlation coefficient was 0.459 and relative weight 70,118.
- e) The results showed that the Jordanian private universities applied the competitive advantage well, where the quality dimension is in the first place then it followed by responsiveness and finally came the efficiency.
- f) The study showed the majority of the employees in private universities are male who hold a hold PHD degree and works as head of department.

12. Recommendations

- a) Jordanian private universities must realize the importance of intellectual capital in order to develop it by achieving the competitive element that contributes to universities success.
- b) Universities must recognize the importance of maintaining their qualified and experienced staff by improving their functional positions, which helps them materially and morally.
- c) Universities need to pay attention to the requirements of structural capital through the development of data system and new technologies and update the databases.
- d) Universities must to encourage the creativity and innovation by experimenting the innovative ideas presented by the employee and put them under execution.

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