The Impact of Human Capital on Business Performance in Algerian Companies

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Abstract: ***Objective*** – The objective of this research is to empirically test the influence of the human capital on business performance through different Algerian companies. ***Design/methodology/approach*** – An empirical research was applied to test the hypothesis of this study through 307 employees worked in different administrations levels in Algerian companies. ***Findings*** – A positive correlation and impact of the human capital on business performance is conducted to ascertain the validity of the measures and models. Statistical support was found for the hypothesized relationships. ***Research limitations/implications*** – The findings offer valuable insights on the generalizability of human capital in a novel research setting. ***Practical implications*** – Human capital has become the substantial key to attain strategic goals and for the optimal utilize of the human resources. ***Originality/value*** – This paper is one of the few research concerned with the issues of human capital in Algeria.

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Introduction:

In the last century and following the classical approach of Adam Smith labor; land and capital were considered as an economic production factors. But today, the researchers emphasize that the main source to achieve the competitive advantage is based on a company's labor workforce also known as "Human resource". Moreover, the world transforms from an industrial to a service and knowledge–based economy and dot.com (internet based companies) that allow an increasing number of organizations to regard the intellectual assets as tools to add value to their services, as opposed to physical assets such as machinery. Now, it is a fact that human capital is absolutely essential to growth in the modern world. Nowadays a primary determinant of a country's standard of living is how well it succeeds in utilizing the skills, knowledge and health of its people. These skills, knowledge and health are necessarily developed though investment in the people, and are used in an economic environment, in a sound structure, the market structure. (Becker.G)

The aim of this research is to investigate the role of investment in human capital to achieve the competitive advantage of the company.

The first part will focus on the concept of human capital, then the second part will investigate the concept of business performance and its relationships with the human capital and finally we will test the effect of the human capital on the business performance in Algerian companies.

Literature review:

1-Definition of Human capital:

The topic of human capital was been elaborated in the beginning of 1960 by the researchers of Chicago school to built human capital theory. (Altbeta K,2011)

The leader of this theory was Th Schultz (1961), when he talks about taking into account the innate and acquired skills. Those are important and may invest to expand, will form the human capital. The basic idea of the human capital theory is that the variety of talents is mainly acquired through different activities, such as education or working experience. These activities have a cost, but produce benefits in future (Bernardina A, 2006), he shows that the human capital is the most important key to success in affecting any development economic. Then Baker completed Schultz's research using the processes of learning by doing which workers become more productive and qualified, as results to increase their wages. He discusses about the formation of human capital through the working experience at specific firms or working places. (Bernardina Algieri, 2006). Becker analyzed the human resources microscopically, and expounded a various types of investment for human capital formation and its return. (Yang Y)

During the same period, the development of neoclassical (Solow-Swan) growth theory failed to provide a framework for incorporating human capital as an engine of growth.

According to human capital theory, one's incentive to invest in training is directly proportional to the time one expects to work over one's lifetime. (Polachek S.W, 2004).

There is no single definition of human capital or a single view of the scientific understanding of its nature, status, and role. (Altbeta K, 2011)

Human Capital is defined as the combined knowledge, skill, innovativeness, and ability of the company's individual employees to meet the task at hand. It also includes the company's values, culture, and philosophy. Organizations are increasingly looking at human resources as a unique asset that can provide sustained competitive advantage. (Bouguesri S, Benabou D and Tabeti. H,2013). Human capital cannot be owned by the company. It is a source that can be measured by innovation and creativity. (Bollen et al 2005)

It can be increased by investing in health care, education and job training. (Parts E, 2003).

Bontis has defines human capital as tacit individual knowledge posses. This is defined as a combination of education, genetic inheritance, experience and attitudes about life and work. It is measured as a function of volume –Structural capital– tacit knowledge that embraces the organization. It recognizes the great variety of relationships required to manage the company in a coordinated manner. Without this, intellectual capital would only be human capital. Yondt MA and Snell S A (2004) showed that there is a consistent support for the notion that human resource systems are fundamental in the development of intellectual capital. Sandra M. Sánchez-Cañizares, Miguel Ángel Ayuso Muñoz, Tomás López-Guzmán, (2007) suggest that human capital is knowledge that groups and people possess, such as the capacity to generate it, which it is useful for the mission of the organization. Furthermore, Mayo (2000) shows that the human capital is capability, knowledge, skill, experience and networking with the ability to achieve results and the potential for growth. Edvinsson and Malone (1997) define Human capital as employees and managers and what they can do individually and collectively Brooking (1996) called human capital as Human-centered Assets which comprise the collective expertise, creative and problem solving capability, leadership, entrepreneurial and managerial skills embodied by the employees of the organization. They also include psychometric data and indicators, such as in a team or under stress. We promote a view–point that we are not only looking at an individual, in order to perform a particular job function, but view the individual as a dynamic entity who may fit into a variety of jobs over time. It is the job of a good manager to ensure that each human asset has access and opportunity to mechanisms, which enable the employee to achieve their full potential within the organization.

2- Business performance:

2-1 Definitions:

Firm performance is viewed in two perspectives; financial performance and non-financial performance. Financial performance contains productivity, market share and profitability, whereas, non-financial performance contains customer satisfaction, innovation, workflow improvement and skills development. It gives the companies information about their state (success, future outlook...).

About the measurement of business performance, large companies employ Business Performance Measurement Systems, which are supported by Information Technology like Data Mining.

Business performance is a descriptive concept for the effectiveness and the efficiency of the action, process and strategy of the company. While the term "success" describes the positive effective overall turnout of a company´s activities, Business Performance can be characterized with attributes, for example as "well" or "poor", depending on the expectations of the individual analyzing the data he or she has chosen to examine, in order to gain insight into the state the company is in at a given moment.

Business Performance can be described like an indicator of the company. If Business Performance is weak, managers need to intervene in order to return to the path of growth, especially in an environment characterized by the continuous great competition when the best one who stays in the market is the one who obtains a competitive advantage. This situation needs to pay close attention to Business Performance. However, although the necessity to partake in Business Performance analysis and evaluation in order to improve policies and processes is easily understood in theory, putting this concept into practice is not as easy as it may seem. Figure 1 describes the relationship between the Business Performance of a company and its management, to the business strategy and to the company´s processes. It is clear from the figure that there are two approaches to Business Performance.

The first one is called **normative definitions**: that is described by the framework of business strategies such as TQM (top-down relation). The leadership's inherent responsibility is to set out a Business Strategy in which Business Performance is defined: Business Performance must meet or exceed the expectations of the leadership. The second one, (the bottom-up relation) called **descriptive measurements**: through indicators describing the status quo of the business process, and the management if expectations are met and gives vital information about necessary adjustments to the business processes that need to be made. However, newer developments in Business Strategies, such as the Bald ridge Performance Excellence Program and the EFQM model; include the descriptive components already in its strategy model. (Dd. Dipl.-Vw. Malte Kaufmann & Marieta Olaru, 2012).

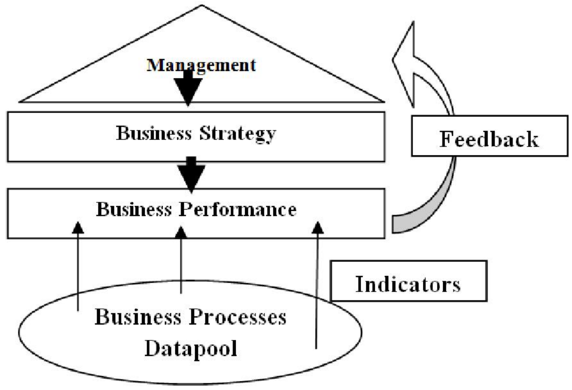


Figure 1: Business Performance in the Business architecture

Source: Dd. Dipl.-Vw. Malte Kaufmann & Marieta Olaru. (2012), THE IMPACT OF CORPORATE SOCIAL RESPONSIBILITY ON BUSINESS PERFORMANCE –CAN IT BE MEASURED, AND IF SO, HOW? The Berlin International Economics Congress, March 7th-10th, 2012, p4.

2-2 The relationship between Business performance and human capital:

As it is stated bellow; skilled people or human capital, form critical source to attain the competitive advantage in many of today's companies. Skilled workers enable the company to increase its performance by both raising customer satisfaction and decreasing organizational costs. For example, human assets can help the company lowering cost process by developing new process and eliminating costly steps in the production, reducing inputs, and so on. The best employees have a positive impact on the performance of the company because it usually propose new ideas in the design of the service or product, innovating new process, and solving problems related to the customers…. all these actions can allow the company to increase the satisfaction of the consumers and reduce the organizational costs. Human capital have also an impact in improving customer benefits. Practitioners in Total quality management (*e.g.* Deming, 1986) have argued for years that people are the central to realize the total quality and form the foundation of quality improvement strategies. When smarter workers improve production and service delivery processes, they both reduce costs and increase product reliability and customer satisfaction. The human capital can also allows the company to become more flexible by quickly provide different products and services relating to the needs and preference of the customers in the time and the place they want them, this increase the customers satisfaction and benefits. Moreover, the innovations of the employees in the product and service provided are the heart and soul behind the increase customer value by better meeting their needs. (Mark A. Youndt and Scott A. Snell. 2004)

3-Methodology research

This study is designed to examine the relationship between the Intellectual Capital and Business Performance in different Algerian companies using two models of measuring (model of A. Sharbati, S. Jawad & N. Bontis (2010)

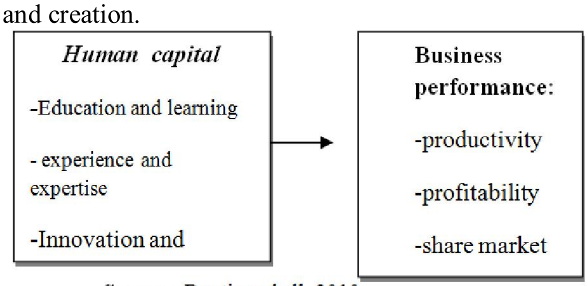
With a growing interest in the use of intangible assets to grow businesses, the purpose of this study is to study **how can human capital impact the business performance?**

Using the model of Bontis, Sharbati and Jawad (2010). Human capital was measured using three items. The dependent variable in the study was business performance which was measured using six items. with replacing market value by market share (For the nature of the prevailing economic environment in Algeria). All items were measured with a five-point Likert-type scale.

The questionnaire was validated through academics and professional professors in different Algerian universities. Interviews with professors were conducted to collect information about human capital measurement tools, models and to insuring the clear language to the respondent.

3-1 Research model

Figure 2 outlines the proposed research model of this study. Essentially, this model posits that there is a direct and positive association between intellectual capital and business performance (Stewart, 1997). By subdividing the higher-order construct of human capital into its three components learning and education, experience and expertise, and innovation and creation.



Source : Bontis and all ,2010

Figure. 2: Conceptual model

Data Collection:

The HC questionnaire developed by Bontis (1997). The respondents were all employees in Algerian companies. The questionnaire contained 10 statements to which respondents indicated the extent of their agreement on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree).

Our sample of this research was including: Banks, Industrial Goods and Services, Insurance, Telecommunications. (Table 1)

Table 1: List of the companies used as sample in the study

Company	**The Sector**
Pepsi	
Coca Cola	Drinks
Mobilis	
Djezzy	Telecommunications
Ooredoo	
Touring Voyage Algérie	Tourism
CNEP	
NATIXIS	Banks
BDL	
CPA	
Sancella	
Nestle	
LU	Foods
La Vache Qui Rit	

Most of the respondents are situated in the medium level of the companies mentioned in the table 2.

The response rate was 67.3 per cent. A description of the respondents is represented in the table 2 mentioned bellow.

Respondents were encouraged to ask questions about the purpose of the survey and to make sure that the meanings of the questions were clear. All such questions were answered during the administration of the survey.

Very few concerns regarding the meanings of the questions were reported. About 60% of the respondents were from financial services (Banks) and the remaining 40% were from non service industries (e.g., production). See Table 1 for descriptive information.

Data will be collected through quantitative survey approach. This data will be collected through field survey. The questionnaires is distributed to 320 employees that work in different companies.

In this study, the responses and information collected from the various statistical methods will be used to analyze the data that we will collect from the 307 respondents. The Statistical Package for the Social Sciences (SPSS, version 17.0) package.

Table 2: Respondents Profile

Parameter	**Group**	#	%
Sex	Female	181	59
	Male	126	41
Age	20-30	48	15,6
	31-40	139	45.3
	41-50	91	29,6
	>50	29	9.4
Education	Primary	60	19.6
	Medium	68	22,1
	Secondary	83	27
	License	88	28,7
	Post Graduation	8	2,6
Profession	General manager	54	17,6
	Account	46	15
	Branch manager	121	39,4
	Others	86	28
Total Experience	>5years	173	56,35
	< 5 years	134	43,65
Total		307	100

Source: from SPSS

3-2 Respondents Profile:

The data for the study were collected from 307 respondents from various Algerian organisations. The data set covers various aspects of intellectual capital and business performance. As per the table-2 demographic profiles of the respondents consist of small, medium, and large organisation, where respondents from large organization constitute almost half of the total population in the study. Female participants in the study was one third where as male participants consisted of two third of the total population. Age wise distribution depicts 31-40 age group dominates in the study consisting of more than 40% of the total sample, The almost of the respondent have the license diploma, it consists27%. The respondents having less than 5years of experience at current organisation is very well present in the study consisting of 56, 35%.

3-3 Descriptive analysis:

3-3-1 Reliability test:

In order to test for the reliability Cronbach's alpha was used to test the reliability of the measures. All variable and sub-variable items were confirmed valid since their factor loading values were more than 0.4.; as shown in the table 3.

Table 3: The test of the reliability and Normality

Items	***Cronbach's alpha***	**(K-S) Z**	**Sig**
Human capital	0.678	0.674	0.345
Business performance	0.566	0.789	0.213

Source: From SPSS

3-3-2 The Kolmogorov-Smirnov test:

The Kolmogorov-Smirnov test for normality was used to see whether the responses had a normal curve about the mean. Just over half of the items were considered to have normal distributions. However, the assumption of normality is not a major issue for structural modelling.

All dependent and independent variables were tested for normality. If the significance level was more than 5 percent, normality was assumed (Bollen et. al. 2005, Sharabati et. al. 2010, Sharbati et, al. 2013).

Table (3) shows that all the independent and dependent variables are normally distributed.

Table 4 depicts the mean scores of each variable and its corresponding construct. Generally speaking, all items scored in the affirmative (1 = strongly disagree, 5 = strongly agree, with 3 the mid-point) with mean values greater than 3.0. The only item below the mid-point was the use of intellectual property at 2.45.

Table- 4: Statistical results of summary variables

Items	**Mean**	**Std.Dev**	**t-value**
Intellectual capital	**3,69**	**0,904**	**42,249**
Human capital	**4.03**	**0.843**	**48,177**
1-Learning and education	4.55	0.364	62.744
2- Experience and expertise	3.78	1.089	38.098
3- Innovation and creation	3.76	1.078	43.691
Business Performance	**3.25**	**0.461**	**28,602**
Productivity	3.02	0.117	12.324
Profitability	3.67	1.123	54.087
Market share	3.07	0.144	19.396

Source: from SPSS

3-3-2 Testing hypothesis:

The study is intended to open few windows towards intellectual capital management and measurement. Since the accumulation of intellectual capital is outpacing the accumulation of physical assets as the key driver of competitiveness in the so called new economy the study is aimed at measuring the extent to which intellectual capital enhances business performance and adds value to the organisation and the hypotheses for the study is described as follows:

Hypothesis 3: An organisation's level of human capital is positively related to business performance.

Since the population for the study is heterogeneous, a stratified random technique has been adopted to select the respondents for the study, 307 respondents were selected randomly from different levels of Algerian organisation. A linear regression model was drawn to explain the relationship between business performance and human capital.

Table 5: Business performance Vs intellectual capital

Business Performance	**Intellectual capital**	**Multiple R**	**R^2**	**Adjusted R^2**	**Std Error**
Productivity	HC	0.290	0.084	0.059	4.977
Profitability	HC	0.438	0.191	0.003	3.283
Market share	HC	0.445	0.198	0,077	3.159

Source: From SPSS

As defined in table-5, the regression equation of the business performance with human capital, structural capital and relational capital.

The linear regression equation productivity with human capital depicts that the model is well fit with adjusted R^2 close to 0.5.

The regression equation of the profitability component with human capital influences significantly with R^2 value close to 0.5. The effect of human capital on profitability is not significant with R^2 value 0.400.

The regression equation of market share component with human capital clearly depict the model is poorly fit with R^2 less than 0.5**.**

In conclusion, the results of multiple regression analysis agree hypothesis 3, that there is a relationship between human capital and business performance, but a weak relationship with R = 0.420.

Table 6: human capital Vs Business performance (Summary)

Performance	***Intellectual Capital***	***R***	***R^2***	***Adjusted R^2***	***Std.Error***
Business Performance	*Human capital*	0.220	0.048	0.032	1.407

Source:From SPSS

As defined in table-6, the regression equation of the business performance with human capital. The regression equation of business performance component with human capital clearly depict the model is well fit with R less than 0.5**.** human capital is weak in explaining the relationship with R value 0.22.

The effect of human capital on business performance are significant with R value 0.22. Human capital has a positive relationship with business performance with R value 0.22 but a weak relationship (that means the reject of the null hypothesis and accept the alternative hypothesis).

Table 7 Correlation matrix

Variables	1	2	3	4	5
1.Learning and education					
2.Employees satisfaction	**0.446**				
3.Innovation and creation	**0.583**	**0.412**			
4.Human capital	**0.330**	**0.311**	**0.200**		
5.Business performance	**0.2550**	**0.385**	**0.360**	**0.220**	

Note: All correlation values are significant at the 0.01 level (two-tailed)

Source: From SPSS

Table 7 represents a correlation matrix across all variables with only the component of intellectual capital and intellectual capital values being statistically significant ($p < 0.01$)

Hypothesis 4: Business performance is positively influenced by human capital.

The equation for business performance was expressed in the following equation:

$Y's = \beta'_0 + B'_1X_1$, Where,

Ys = Business performance

B'_0 = constant (coefficient of intercept)

X_1 = Human capital

B'_1 = regression coefficient of three variables.

Table 8: Regression results of business performance based on the dimensions (N=307) dependent variable: Business performance independent variable: Three intellectual capitals

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	3906.946	1	3906.946	65.175	0.000
	Residual	18283.406	305	59.946		
	Total	22190.352	306			

Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta	B	Std. Error
1	(Constant)	0.987	1.805		6.098	0.000
	HC	0.396	0.086	0.220	8.073	0.000

$p > 0.05$

$Ys = 0.987 + 0.396\,X$

Table (8) showed the results of the regression analysis and the impact of intellectual capital to the business performance. To predict the goodness-of fit of the regression model, the multiple correlation coefficient (R), coefficient of determination (R^2), and F ratio were examined. First, the R of independent variable (human capital) on the dependent variable (Business Performance, or Ys) is 0,396, which showed that the business performance had positive and low association with human capital. Second, the R (correlation between human capital and business performance) is 0.220, suggesting that more than 20% of the variation of business performance was explained by the human capital. Last, the F ratio, which explained whether the results of the regression model could have occurred by chance, had a value of 65.175 ($p = 0.000$) and was considered significant. The regression model achieved a satisfactory level of goodness-of-fit in predicting the variance of business performance in relation to human capital, as measured by the below – mentioned R, R^2, and F ratio. In other words, at least one of the human capital was important in contributing to business performance. In the regression analysis, the beta coefficients could be used to explain the relative importance of the human capital (independent variables) in contributing to the variance in business performance (dependent variable).

The results showed that one-unit increase in human capital would lead to a 0.220 unit increase in business performance.

In conclusion, the results of multiple regression analysis agree hypothesis 2, that there is the effect of human capital to the overall business performance. So, there is a relationship and an impact of human capital capital on the business performance.

The table also shows the results of the statistical analysis that mentions that there is an influence of the human capital dimensions on business performance, with F calculated (65.175), which amounted to 30 that means it is significant at the level of 0.05 that means the reject of the null hypothesis and accept the alternative hypothesis.

The results are summarized in the figure 3:

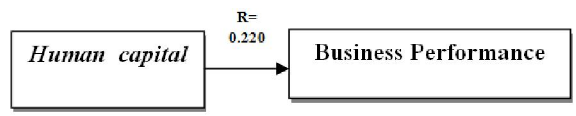


Figure 3: Summaries results

Discussion:

The present study found human capital to be associated with increased business performance.

The relationship between structural capital and performance become statistically significant in the study with weakness relationship.

Since individuals form the basis of organisational level of learning and knowledge accumulation (Structural Capital) and institutionalization of knowledge and knowledge sharing is lowly encouraged in Algerian industries, there is weak co-relation between structural capitals with its bottom line.

These results refer the necessary to increase the awareness of the manager to the importance of the human capital in result to increase the business performance.

This study finds that human capital presents the poorest performance, showing that Algerian firms give little prominence to human resource management. It is observed that there is a significant positive correlation among the human capital and business performance, and also a positive correlation.

It is clearly seen from the average score of the items in the sub-dimensions that "staff education and training" in the human capital presents the poorest performance. As pointed out by Hecker: establish training and education as top priority: transform your firm into a "learning institution". Companies should encourage lifelong learners. (Sharbati, 2010)

To gain the maximum advantages from the notion of human capital, it is important for the firms to invest in the human capital by supporting the employees in front of to increase wealth and the position of the company in the market.

Conclusion:

This research found that there is a positive relationship and impact of the human capital on the business performance, this is means that the Algerian companies should head the management team and directs the company's business policy. A charismatic leader with vision, energy and a strong desire to succeed, he generates commitment and loyalty within all levels of the company. The top managers are functional specialists who have the task of agreeing goals and milestones for the activities within their functions. The top managers also act as key project members. They assume entrepreneurial roles and are required to continue the process of innovation, in which they proactively seek to create opportunities or solve problems to serve business needs. The key project members affect the performance of the project at two levels. Firstly they influence the day-to-day operations of the project. This ensures the effectiveness of the resulting activities and processes that produce the innovative output of the project. Secondly, they work to interconnect the activities that drive value creation by working closely with their alliance partners.

The Algerian companies should adopt an HC strategy that help their to built a competitive advantage by identifying key people in each department. Managers at the organizations would be responsible for preparing a plan for managing HC and linking it to the organization's strategic goals.

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