The effect of Structural Capital on Business Performance in Algerian Companies.

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Abstract: Today, for most of the organizations, the changes have become more frequent and appear faster than their ability for adjustment and speed in responsibility. For the companies, to achieve a competitive advantage, it is important to take consideration to one of the component of the intellectual capital: structural capital. This paper aims to examine the role and the impact of structural capital on business performance in Algerian companies, which shows that there is a better impact of structural capital on business performance through its dimensions.
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Key words: structural capital- business performance –Algerian companies.

Introduction:

Nowadays, for most of the organizations, the changes have become more frequent and appear faster than their ability for adjustment and speed in responsibility. The research interest on structural capital has been growing fast in later years, due to the desires of the organizations to be competitive in the market. The approach of the structural capital is linked to the disturbing influences of the external environment and must be designed so as to facilitate market share growth of the organization. Just the fact that structural capital has to adapt to the market's demand primarily involves flexibility, therefore cannot give a general valid definition. (Luminita Maria Gogana, Dan Cristian Durana and Anca Draghicia, 2015).

This paper aims to investigate the effect of structural capital on business performance in Algerian companies.

1- Structural capital:

1-1 Definition:

Sandra M. Sánchez-Cañizares, Miguel Ángel Ayuso Muñoz, Tomás López-Guzmán, (2007): defined structural capital as knowledge and intangible assets derived from share processes, which are owned by the organization. This capital remains even when people leave.

- *Organizational capital*: Made up of natural and implicit, formal and informal intangibles. These structure and develop effective and efficient activity of the organization. – *Technological capital*: Consisting of intangible directly linked with the development of the activities and functions of the technical, operational system of the organization.

Structural Capital is the hardware, software, databases, organizational structure, patents, trademarks, and everything else of organizational capability that supports those employees' productivity - in other words, everything that gets left behind at the office when employees go home. It contain four elements in which can improve the productivity (system, structure, strategy and culture) (Fah and Hsueh, 2007). Structural capital is described as the body, the base that supports human capital. Likewise, it is the capacity of the organization to transmit and store the intellectual material that flows through itself. It is comprised of the following elements: - *Organizational capital*: Company systems, tools and work philosophy, as well as organizational culture. Elements that accelerate the flow of knowledge through the organization. This can be divided into **innovation capital** (renovation capacity and results of the innovations obtained by means of commercial rights, intellectual property, managerial secrets, and so on) and **process capital** (techniques of work, procedures that increase the value of the product or service and programs that increase the work efficiency).

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.

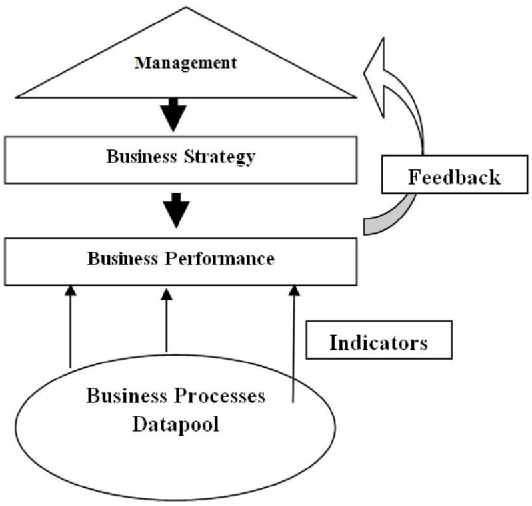

Figure 1: Business Performance in the Business architecture

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.

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)

3- The relationship between Business performance and structural capital:

When the company can reduce their costs this means it has a good business performance. Structural capital can play a significant role in this way. Researchers distinguish three forces that result from reducing costs:

1- Institutionalized experience and knowledge (i.e., organizational capital) can prevent organizations from repeating mistakes, thereby reducing their operating costs.

2- Structural capital can be retrieved and brought to bear on new situations. The company used term "wholesale" in its current form to meet the currently needs of the customers, this help to reduce costs. Structural capital contains routines, procedures, information systems, can help providing direct and simplify information processing and organizational sense making, all of which should reduce organizational costs.

3- The structural capital enables to reduce the costs of the companies and help them to extend customer benefits by some actions like minimize the repeating mistakes, increase the knowledge utilization, and the facilitate of better information processing/sense making. For example, the company can increase its capability to provide new product or service in the market by minimizing mistakes.

Furthermore, the organizational memory devices in which store the important customer information enables companies to better facing the preferences, needs, behaviors of their customers., thereby increasing loyalty customer. In short, organizational capital can support companies in giving customers what, when wnd where they want.

4- Methodology research:

4-1 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 intellectual

capital into its three components human capital, structural capital and relational capital, with replacing market value by market share (For the nature of the prevailing economic environment in Algeria:

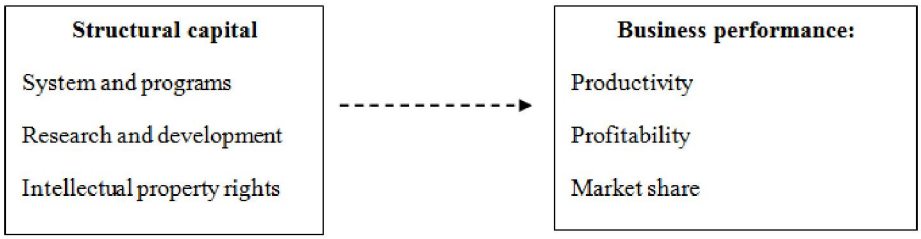

Figure (2): Conceptual model
Source: Bontis, Sharbati and Jawad, 2010

There were 14 Algerian companies or international companies that have a branch in Algeria like Pepsi, Coca Cola, La Vache Qui Rit. The entire population was chosen to explore the topic of intellectual capital, thus negating any need for sampling. The survey unit of analysis was composed of all employees of our Population. Financial information was also collected from annual reports, journals, books, and trade magazines. Primary information was also collected from expert interviews, and a pilot study conducted by the research team.

4-2 Data Collection:

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

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

The SC 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). See appendix B for a summary of these items.

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

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 nonservice industries (e.g., production). See Table 2 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.

4-3 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 5 years of experience at

current organisation is very well present in the study consisting of 56, 35%.

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

4-4 Descriptive analysis:

4-4-1 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**
Structural capital	0.756	0.104	0.634
Business performance	0.566	0.789	0.213

Source: From SPSS

4-4-2 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: Statistical results of summary variables

Items	**Mean**	**Std. Dev**	**t-value**
Structural capital	**3.19**	**0.945**	**32,552**
4- Systems and programs.	3.59	1.074	30.500
5-. Research and development	3.55	1.065	29.435
6- Intellectual property rights.	2.45	0.698	37.721
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

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.

4-5 Testing hypothesis:

The hypotheses for the study is described as follows:

Hypothesis 1 An organisation's level of structural 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 structural capital.

Table 5: Business performance Vs structural capital

Business Performance		Multiple R	R^2	Adjusted R^2	Std Error
Productivity	SC	0.263	0.069	0.094	4.885
Profitability	SC	0.237	0.056	0.051	3.536
Market share	SC	0,441	0.194	0,054	3,532

Source: From SPSS

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

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

The regression equation of the profitability component with structural capital influences significantly with R^2 value close to 0.5.

The regression equation of market share component with structural 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 structural capital and business performance, but a weak relationship.

Table 6: structural capital Vs Business performance (Summary)

Performance	*Intellectual Capital*	*R*	R^2	*Adjusted* R^2	*Std. Error*
Business Performance	*Structural capital*	0.387	0.149	0.054	1.414

Source: From SPSS

As defined in table6, the regression equation of the business performance with structural capital.

The regression equation of business performance component with structural capital clearly depict the model is well fit with R less than 0.5**.**

The effect of structural capital on business performance are significant with R value 0.387. (that means the reject of the null hypothesis and accept the alternative hypothesis).

Hypothesis 2: Business performance is positively influenced by structural capital.

The sub hypothesis are:

Business performance was regressed again three variables of structural capital namely.

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

$Y's = \beta'_0 + B'_1X$, Where,

Ys = Business performance

B'_0 = constant (coefficient of intercept)

X = Structural capital

B'_1 = regression coefficient of three variables.

Table 7: Regression results of business performance based on the dimensions (N=307) dependent variable: Business performance independent variable: structural capital

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
	SC	0.449	0.2107	0.387	4.190	0.000

p> 0.05

Ys = 0.987 + 0.449 X Table (7) showed the results of the regression analysis and the impact of structural 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 (x) on the dependent variable (Business Performance, or Ys) is 0,449, which showed that the business performance had positive and low overall association.

The results showed that a one-unit increase in structural capital would lead to a 0,433 unit increase in business performance.

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

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

4-6 Discussion:

The present study found that structural capital exhibited weak relationship with 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.

Conclusion:

This study explores that structural capital has better performance.

The company should embed its knowledge in the routines, structures and procedure through social interaction and codification processes, adding to the organisational memory.

Algerian company's routines, procedures and structures defined how projects were managed, how it coordinated the activities of different functions and how it served the customer.

The Algerian companies should adopt a new technologies and procedures to ameliorate there performance.

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