THE IMPACT OF BASIC COMPONENTS OF INTELLECTUAL CAPITAL ON THE PROFITABILITY OF JORDANIAN COMMERCIAL BANKS (2007- 2012)

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Abstract

This study aimed to examine the impact of intellectual capital disclosure (ICD) on the profitability of Jordanian commercial banks. To achieving these objectives data were collected from annual reports of 13 Jordanian commercial banks for the period (2007-2012). The study applied content analysis techniques to gather data for the disclosure of intellectual capital components (human capital, structural capital and relational capital), while earnings per share (EPS) and the market value of the company (MV) were used as profitability measures. The study revealed that there was statistically significant effect of human capital and structural capital on profitability of banks and their market value, while showing no such effect of the relational capital.

Keywords: Intellectual capital, disclosure, human capital, structural, relational capital.

Intellectual capital

The economist John Keneth Galbrait (1969) was the first to use the term intellectual capital, then the interest in this concept increased in the eighties of the last century, especially when researchers, managers and analysts around the world noticed that intangible assets form a major determinant of a company's profitability (Ungerer, 2004, 101).

Considering the importance of the intellectual capital and the role it plays in the organization, many companies sought to acquire human resources that characterize with a high level of competency, skills, expertise and high capacity; and to take advantage of the to the fullest in order to achieve their goals, and access to a stage of development and creativity in the institutional and organizational performance. As those competencies, skills and abilities contribute to creation of new ideas and improve old ideas in

order to drive the whole organization towards progress and prosperity (Stewart, 1997, 95).

Many concepts and terms that refer to the intellectual capital have been presented by academics, practitioners and those interested in this field according to their respective approach. (Daft, 2001, 257) referred to intellectual capital as a set of information resources, which consist of two types of knowledge: explicit knowledge that can be expressed or written, and implicit knowledge that based on personal experiences and the rules that are used in the development of the organization. (Guthrie, 2001.6), on the other hand, defined it as a set of skills and mental abilities possessed by a specific group of individuals working in the organization and characterized with a higher cognitive level that leads to innovation, excellence of organizational performance, and achieving a high level of productivity. In addition, Schermerhorn defined it as the collective brainpower or common knowledge held by members of the organization, which can be used to create value to the organization (Schermerhorn, 2002, 64).

Intellectual Capital Components

There are many aspects that are included in the concept of intellectual capital, but authors generally agree on three essential components intellectual capital, namely: human capital, structural capital and relational capital (Tayles et al., 2007; Roos et al., 2005; Wall et al., 2004; Edvinsson & Malone, 1997; Sullivan, 1999.

Human Capital

(Daft, 2003, 408) referred to human capital as the economic value of the knowledge, skills and expertise enjoyed by workers in the organization. (Phatak, 2003, 6), on the other hand, indicated to human capital as the loop that links together the knowledge, abilities, skills, experiences and creations owned by the members of the organization. (Westhuizen , 2005, 13) indicated to human capital as the human potential owned by the organization and used to find appropriate solutions to business problems. Further, human capital has also been defined as a set of capabilities and human potential that is tapped to take advantage of economic resources available to the organization, which implies mental capacity and competencies derived from the information and experiences that affect the market value and operating of the organization (Malhotra, 2003, 4).

Human capital refers to the knowledge, skills and capabilities of staff, and implies the ability of staff to solve the problems they face during the course of business, and efficiency in the exploitation of human resources, as measured by innovation and creativity. (Edvinsson & Malone 1997)

Structural Capital

Structural capital represents a significant solid ground upon which human capital stands (Hamdani and Ali, 2010.128). (Phatak, 2003, 6) described structural capital as capital involving all internal operations in the organization, including all components and capabilities possessed by the organization such as traditional material, software, and processes, and system information that contribute to the provision of adequate support to human capital, and thus is the property of the organization (Atiya, 2008, 150). (Mazlan, 2005, 9) referred to structural capital as a set of capabilities and organizational competencies that enable the organization to carry out the functions entrusted to it including the organizational structure, procedures, databases and information systems,

The structural capital refers to the means and facilities owned by the organization to support personnel in carrying out their duties to the fullest and considered as the infrastructure enabling the human capital to work. According to Edvinsson & Malone structural capital includes traditional property such as buildings, machinery, software and processes, patents and trademarks, as well as the mental image of the organization, information systems and databases. Because of this diversity in structural capital concept, Edvinsson & Malone divided this kind of intellectual capital to the following: (Edvinsson & Malone 1997)

i) Organizational capital: includes the philosophy of the organization and its ability to raise the performance of the business.
ii) Process capital: includes techniques, programs and procedures in place to deliver products and services to the client optimally.
iii) Innovation capital: includes intellectual property and intangible assets. The intellectual property includes copyright, trademarks and patents. The intangible assets include the skills and talents and theories that run the organization's work.

Relational capital

Relational capital represents external capital of the organization, which refers to the vital external relations established by the organization (Hussein and Jameel 2009.189). Relational capital was defined by Obaid (2000.13) as a set of relationships and values linking the organization with its customers through the achievement of their desires and meet their needs, and thereby the organization ensures customer satisfaction, and increase their loyalty and belonging to the organization through paying greater attention to customer views and comments and taking them into account. Hassan (2005.366) indicated that the relationship between the organization and all the parties that contribute to the development of ideas, and create new products and services. However, Altaweel & Sammak (2010.178) described relational capital as the relationship between the organization and its

customers that arise from meeting the needs and desires of customers, solve their problems and satisfy their needs.

Relational capital is also called customer capital and Hussein and Jameel (2009.189) described the elements composing the relational capital namely: defined market channels, relationships with customers, suppliers and industry associations. Furthermore, Gannon et al. (2008 0.9) indicated that the relational capital consists of ties associating the organization to its customers, and the established strategic alliances with other organizations that perform the same role. The researcher believes that relational capital is the link that connects between the organization and its customers, through which to create ideas, develop and offer new products and services. The relationship between the two parties is established through the satisfaction of customer desires by the organization and provide for their needs and taking their opinions and suggestions into account, and thus achieving its satisfaction and increase loyalty and belongingness to the organization and its products and services.

Concept of disclosure

Al-Razeen and Karbhari (2004, 351) described disclosure as any financial information, whether quantitative or qualitative the company has published using official and unofficial means. Ghazali (2008) divided the information contained in the financial reports to two types of optional and mandatory disclosure; the mandatory disclosure is required by national legislation such as the Companies Act and the requirements of listing securities; whereas optional disclosure is done by some companies to provide other optional information in their annual reports that are not required by the accounting standards or national legislation.

The American Institute of Certified Accountants has defined disclosure as the "clear presentation of the financial statements in accordance with generally accepted accounting principles in terms of form, classification and meaning of the terms used (AICPA, 1975, p.83).

The main purpose of the disclosure is to provide useful information to users of financial statements that enable them take appropriate decisions. To achieve this goal, disclosure need to be adequate in that the information disclosed in the financial statements should not be misleading, rather they should be fair enough to fully serve all categories without bias, so that to present all the information appropriately, and the disclosure need to demonstrate that benefits overweigh costs, while discarding meaningless information (Hendrikson, 2005, 766). Deegan indicates that the level of disclosure as practiced by the company in compliance with legislations differs from its level resulting from management's view of the right of the

community to recognize some aspects of the organization's operations (Deegan, 2011)

Intellectual Capital Disclosure

The last decades have witnessed interest by business organizations in the intellectual capital and its role in achieving many advantages to it, and this was due to the global interest in the knowledge economy, and as a result of that companies have come be evaluated with their intangible more than tangible assets, which in turn led to the need to disclose of the components of intellectual capital through either being included in the financial statements at historical cost or separate report annexed to the financial statements and reported along with the accounting reports. This, of course, makes available useful information to the beneficiaries from those statements when the organizations to disclose the intellectual property by issuing voluntary reports accompanying the accounting reports (Taliyang & Jasop, 2011)

Disclosure-as already mentioned- is all about providing financial and accounting data about the organization, and to clearly state the budget items and statements of income and cash flows properly and presented them to the beneficiaries in order to make appropriate and rational decisions. However, disclosure is concerned with the information provided by the financial statements or other complimentary methods to provide financial information.

Many countries, realizing the importance of recruiting the intellectual capital and the results they derive from being established there, has showed greater interest in disclosure of the intellectual capital on the financial reports, as there are some enterprises their physical capital constitutes a small percentage of the total capital they have (Ghaban and Yassin, 2007).

Methods

Sample

The study population consists of all Jordanian commercial banks whose shares traded on the Amman Financial Market during the study period (2007-2012). A representative sample of 13 banks has been chosen to represent all the banks in the study population.

Variables of the study

The dependent variable in the study model study was the return on the assets ROA and the market value MV of the Bank; whereas major independent variables, were the following: disclosure of the components of intellectual capital (human capital, structural capital, and relational capital).

Measuring the disclosure level of intellectual capital components

The study relied on annual reports and information regarding the industrial firms published on Amman Financial Market and corporate websites.

A set of items related to components of intellectual capital (human capital, structural capital and relational capital) were identified to determine their disclosure level, by assigning (1) for disclosures included on the financial reports and (0) for disclosures not included on the financial reports. All disclosures were collected for each bank per year and divided by the total number of disclosures to calculate the percentage of disclosures to the components of the bank's intellectual capital. The following are the disclosure items adopted by the study in accordance with components of intellectual capital, which have been selected based on previous studies that addressed this topic, including: (Jing Li et al. 2012; Indra, 2011; Nielsen & Madsen, 2009; Beattie & Thomson, 2007)

A - Human capital disclosure scale include: worker experience, and skills, and level of education, and level of productivity, training programs, and benefits of workers, and the age of employees, public safety measures, and social participation of workers.

B – Structural capital disclosure scale including patents, trademarks, and organizational structure, information systems, and technology support, and intranet, management style, and research and development R&D.

C – Relational capital disclosure scale include: the relationship with the customers, suppliers, investors, outside community, and privileges, and distribution channels, and market share.

Empirical results

Correlation

Table 1 illustrates the relationship between MB and EPS as dependent variables and the independent variables. The correlation coefficients thus reveal a significant association between MB and HC & RC suggesting that both components yield information that is perceived important by the stock market. On the other hand, table 1 reveals a significant association between EPS and SC suggesting relationship between the structural capital and profitability.

Moreover, correlation coefficients values indicate no multicollinearirty between independent variables since the highest correlation can be observed between SC and RC (0.548540).

Table1 Correlation Matrix

Correlation					
lnMV	lnMV	EPS	HC	SC	RC
	1.000				
EPS	0.570 0.000	1.000			
HC	0.164 0.045	0.075 0.365	1.00		
SC	0.147 0.074	0.175 0.033	0.411 0.000	1.000	
RC	0.179 0.029	0.115 0.162	0.198 0.015	0.548 0.000	1.000

Descriptive analysis

Table 2 Presents the descriptive statistics of IC disclosure components and dependent variables of market value (MV) and earnings per share (EPS).

Variable	Mean	SD	Max	Min
MV (JD)	693,297,569	1,709,115,085	11,140,800,000	22,727
EPS	16.48	1.89	19.70	0.00
HCD	0.54	0.25	1.00	0.00
SCD	0.43	0.22	0.75	0.00
RCD	0.51	0.25	1.00	0.00
ICD	0.49	0.19	0.83	0.00

Table 2 Shows that the mean of banks' market value (MV) equals to (693,297,569) JD, and the mean of earnings per share (EPS) equals to (16.48%). The mean for overall IC disclosure is (0.49) (ranging from (0.00 to 0.83) (i.e. almost half items were disclosed). As for the IC components, banks appear to provide greater human capital information at (0.54) than both structural and relational capital disclosures at (0.43) and (0.510) respectively.

Multiple regression results

To test hypotheses, a multiple regression analysis was used to analyze the relationship between the Intellectual Capital (IC) components disclosure and banks' MB and EPS. Regression analysis is robust against non-normality, therefore, applicable in the case at hand. The coefficient of determination (R^2) indicates the goodness and fitness of the model.

H01: IC components disclosure (ICD) do not have a direct significant impact on banks' market value, *at* $\alpha = 0.05$.

Table3. Results of Multiple Regressions Analysis: Regressing IC components disclosure against market value

Variable	**R**	**R^2**	**F- Value**	**Sig.**
ICD	0.333	0.111	6.334	0.000

The results of the multiple regression analysis that regress the three components disclosure of the IC are shown on table 3. The disclosure of three components together explained 11.1 percent of the variance, where (R^2 =0.111, F=6.334, Sig.=0.000), therefore, the null hypothesis is rejected and the alternative hypothesis is accepted, indicating that the IC components disclosure affect the market value, at α =0.05. The following table shows significant effect of each component within the IC.

The results of table 3 shows that the HCD has the highest effect on banks' MV, where (Beta=0.1.859, sig.=0.003). Thus, it indicates that the HCD is the most significant and positively and directly regresses to the banks' MV, followed by SCD, where (Beta=1.756 sig.=0.043), while RCD has the lowest effect on banks' MV, where (Beta=1.182 sig.=0.675).

Table 4 Un-standardized and Standardized Coefficients of Multiple Regression Model for IC components

IC components	**Un-standardized Coefficients**		**Standardized Coefficients**			
	B	**Std. Error**	**Beta**	**t-value**	**P**	***VIF***
(Constant)	18.635	0.394		47.244	0.000*	.943
HCD	1.859	0.612	0.259	3.036	0.003*	2.033
SCD	1.756	0.862	0.209	2.036	0.043*	.874
RCD	1.182	0.675	0.166	1.750	0.082	.562

*Calculate is less than 0.05

The relationship between the dependent and independent variables derived by this model can thus be expressed as:

lnMV = 18.635 + 1.859 (HCD) + 1.756 (SCD) + 1.182 (RCD).

H01.1: HCD does not have a direct significant impact on banks' MV, at α =0.05.

From table ( ), it is concluded that there is a significant effect of the HCD on the banks' MV, where (Beta=1.859, sig.=0.003). Since (t=3.036, $p < 0.05$), the null hypothesis is rejected, indicating that the HCD does have significant effect on banks' MV, at α =0.05.

H01.2: SCD does not have a direct significant impact on banks' MV, at α =0.05.

From table ( ), it is concluded that there is a significant effect of the SCD on the banks' MV, where (Beta=1.756, sig.=0.043). Since (t=2.036, $p < 0.05$), the null hypothesis is rejected, indicating that the SCD does affect the banks' MV, at α =0.05.

H01.3: RCD does not have a direct significant impact on banks' MV, at α =0.05.

From table ( ), it is concluded that there is no significant effect of the RCD on the banks' MV, where (Beta=1.182, sig.=0.082). Since (t=1.750, $p >$

0.05), the null hypothesis is accepted, indicating that the RC variable does not affect the banks' MV, at α =0.05.

H02: IC components disclosure (ICD) do not have a direct significant impact on banks' EPS, *at α =0.05.*

Table 5 Results of Multiple Regressions Analysis: Regressing IC disclosure components against EPS

Variable	**R**	**R^2**	**F- Value**	**Sig.**
ICD	0.240	0.057	2.907	0.037

The results of the multiple regression analysis that regress the three disclosure components of the IC are shown on table5. The disclosure of three components together explained 5.7 percent of the variance, where (R^2 =0.057, F=2.907, Sig.=0.037), therefore, the null hypothesis is rejected and the alternative hypothesis is accepted indicating that the IC components disclosure affect EPS, at α =0.05. The following table shows the significant effect of each component within the IC.

The results of table 5 shows that the SCD had the highest effect on banks' EPS, where (Beta=1.461, sig.=0.025). Thus, it indicates that the SCD is the most significant and positively and directly regresses to the banks' EPS, followed by HCD, where (Beta=0.931 sig.=0.049), while RCD has the lowest effect on banks' MV, where (Beta=0.108 sig.=0.832).

Table 6 Un-standardized and Standardized Coefficients of Multiple Regression Model for IC components

IC components	**Un-standardized Coefficients**		**Standardized Coefficients**			
	B	**Std. Error**	**Beta**	**t-value**	**P**	***VIF***
(Constant)	16.397	0.315		51.986	0.000	1.378
HCD	0.931	0.469	0.177	1.985	0.049	1.427
SCD	1.461	0.643	0.237	2.273	0.025	1.374
RCD	0.108	0.509	0.021	0.213	0.832	1.445

*Calculate is less than 0.05

The relationship between the dependent and independent variables derived by this model can thus be expressed as:

EPS = 16.397 + 0.931 (HCD) + 1.461 (SCD) + 0.108 (RCD).

H01.1: HCD has no direct significant impact on banks' EPS, at α =0.05.

From table 6, it is concluded that there is a significant effect of the HCD on the banks' EPS, where (Beta=0.931, sig.=0.049). Since (t=1.985, $p < 0.05$), the null hypothesis is rejected, indicating that the HCD does have significant effect on banks' EPS, at α =0.05.

H01.2: SCD has no direct significant impact on banks' EPS, at α =0.05.

From table 6, it is concluded that there is a significant effect of the SCD on the banks' EPS, where (Beta=1.461, sig.=0.025). Since (t=2.273, $p <$

0.05), the null hypothesis is rejected, indicating that the SCD does affect the banks' EPS, at α =0.05.

H01.3: RCD does not have a direct significant impact on banks' EPS, at α =0.05.

From table 6, it is concluded that there is no significant effect of the RCD on the banks' EPS, where (Beta=0.108, sig.=0.832). Since (t=0.213, *p* > 0.05), the null hypothesis is accepted, indicating that the RC variable does not affect the banks' EPS, at α =0.05.

Conclusion

In this paper we examine the effect of intellectual capital components of disclosure on banks market value and earnings per share. Specifically, we investigate the relationship between disclosures of human capital, structural capital and relational capital of Jordanian banks and their market value and earnings per share. We find a significant positive relationship between bank's market value and both of human and structural capital disclosures with considerable effect for human capital disclosure. Surprisingly, we find no significant relationship between relational capital disclosure and bank market value. The same results applies for earnings per share except that structural capital disclosure has the considerable effect.

Results of the study

This study depends on data collected from 13 Jordanian commercial banks listed on the Amman Financial Market. The current study aimed to test the impact of the disclosure on the intellectual capital components on profitability of commercial banks and their market value. The study concluded that there are traces of the disclosure of the components of intellectual capital on the banks' profitability and market value; where human capital had the most prominent effect on the market value of the bank, followed by capital structural disclosure, where the effect was most prominent on EPS followed by the disclosure of human capital. Results from the current study did not show presence effect of relational capital on the profitability of the company and its market value.

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