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The Effects of Intellectual Capital on top-performing Iranian firms

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Abstract

Purpose The objective of this paper is to measure intellectual capital (IC) in top-performing Iranian firms.

Methodology There are different approaches based on the measurement of organizations intangible assets, therefore managers who are going to focus on IC as a performance driver do not know how to choose "the right" approach. This research tries to shed light on this problem by calculating different measures and investigating their relationships. Data for this research are gathered from the publicly published data of Iranian firms by the Iranian stock market's website, and the companies were chosen from the IMI100- list, which ranks Iranian large firms based on their net sales annually. IC is measured based on three different measures which have been chosen from the extended literature review conducted in this research, namely Market to Book Value (MBV), Scandia and Value Added Intellectual Capital (VAIC)

Findings Researchers have investigated the relationship between different IC measures. The results indicate that these three indices are correlated.

Originality/value One index could be used to represent the three IC indices.

Keywords Intellectual capital, Iranian Firms, measurement performance

Paper type Research paper

Introduction

The literature is in complete agreement on the importance of IC for firms, and its role in creating value and competitive advantage for companies. However, different studies show different results on the effects and importance of this relationship. This research attempts to investigate this relationship in more detail. The contribution was split into three categories, which are discussed below. Principally, this research investigates the relationship between IC in the Iranian top-performing companies and their performance. Other researchers have conducted limited studies on a few companies in special sectors for Iranian use, including Jafari (2012) and Mehralian et al. (2012). This study uses an extensive sample of 57 companies to explore this relationship. In addition, researchers have investigated the relationship between different IC measures. To achieve this, this study carried out an extensive literature review on various IC indices, and then chose three of them, namely MBV, Scandia and VAIC. The results indicate that these three indices are correlated. This was a new idea compared to prior literature.

In this respect, the sample firms of this study are selected from the IMI-100 list, which ranks the Iranian firms based on their sales. The performance of these firms is measured based on three indexes: the IMI-100 rank, Earnings per Share (EPS) and Return on Assets (ROA). This research concludes that IC measures are correlated with EPS and ROA, but not with IMI-Rank. Exploring the moderating effect of industry on the relationship between IC and performance was the main focus of the remaining hypothesis. It was found that by adding the control variable, the relationship of IC index and IMI-100 Rank becomes significant but not strong. In addition, the effects of industry as a control variable could not improve the strength of relationship between IC and EPS, but the relationship did remain significant. This is also true for the ROA.

Meanwhile, intellectual capital (IC) is viewed as the most valuable intangible asset in a company that stimulates value creation and boosts overall corporate competitiveness (Bounfor, 2003; Roos et al., 2005). According to Roos et al. (2005), a company's IC is the difference between its market value and book value. A company's value is made up of both tangible and intangible assets. IC includes information, knowledge, skills, experience, innovation, customer loyalty, patents, trademarks, relationships and intellectual property that will force innovation and value creation in an organization (Bontis et al., 2000; Usoff et al., 2002; Tayles et al., 2002). The empirical studies (Lopes and Matos, 2005 and 2006) indicate that organizational innovation, considered as the capacity that organizations have to develop themselves in a balanced manner, is related to how the internal innovation of their intellectual capital is managed, in providing goods and services able to satisfy the client.

As evident in Bontis et al. (2000b), Bontis (2001a), Usoff et al. (2002), Pek (2005), Roos et al. (2005), Tayles et al. (2002) and Ting and Lean (2009), IC is a positive attribute that influences corporate performance. The IC, as a key factor in organizational performance,

has been studied by several authors, who have proposed different methodologies for its evaluation. In the sixties, authors such as Schultz (1961) or Becker (1964) were precursors in the development of methodologies for evaluating IC. However, further development of these models was carried out by authors such as Sveiby (1997) and Edvinsson and Malone (Edvinsson and Malone, 1997).

Moreover, Edvinsson and Malone (1997) proposed a model, "Skandia Navigator", which divides IC into two categories: human capital and structural capital. Thus, according to this vision, IC is the sum of structural capital and human capital, this being the basic capacity for the creation of high quality value. Sveiby (2010), developed a measurement methodology, "The Intangible Asset Monitor", by dividing the intangible assets into three groups: individual skills, internal structure and external structure. This methodology is based on quantitative and qualitative indicators to assess IC. An ICS (Intellectual Capital Services) intellectual capital methodology was put forward by Roos et al. (2005) as a way of analysing in detail an organization's IC. This methodology is based on the analysis of the company's strategy, its daily operations, and its business. More recently, this author proposed the driving forces, which impel European companies to consider IC as a valuable resource and suggested establishing a method of operational reporting to enable the consistent evaluation of European companies (Burgman and Roos, 2007).

Furthermore, according to Brooking (1996), IC measurement is based on four intangible assets: market assets, human assets, assets of intellectual ownership, assets that need legal protection, such as brands, patents, etc., and assets of substructures (technologies, databases, methods, processes, etc.). Among the most relevant methodologies are the Balanced Scorecard" (Kaplan and Norton, 1992, 1996, 1996a), the "IC Accounting System" (Mouritsen et al., 2001), the "Value Explorer" (Andriessen, 2004), and the "Intellectual Capital Benchmarking System" (Viedma, 2001, 2003, 2003a, 2003b). These different approaches are based on the measurement of organizations intangible assets. Investigations are now focused on how the IC is used to create value within organizations and improve the performance of the firm. According to Bontis (2000), there are many other models and methodologies for assessment of IC and many IC models have similar constructs and measures that are merely labelled differently. In the late 1990s, the problems encountered in trying to put into practice the prevailing IC models and methodologies led to the development of new methodologies and an alternative theoretical paradigm (Titova, 2010). Today, there are several research projects on the evaluation of IC (see for example: DATI 2001; FASB 2001; MERITUM 2001; FRAME 2003; DMSTI 2003; Capital Statements – Made in Germany", 2004; RICARDIS 2006; InCAS, 2006).

Methodology and estimation procedure

The framework described is based on the past studies, and every variable is defined. The holistic framework is depicted by a diagram showing all the possible relationships that will be explored, and hypotheses of this research are explained. The analysis methods are regression tests and correlation tests.

Based on the theoretical framework below, we focused on how IC has an effect on the economic performance of

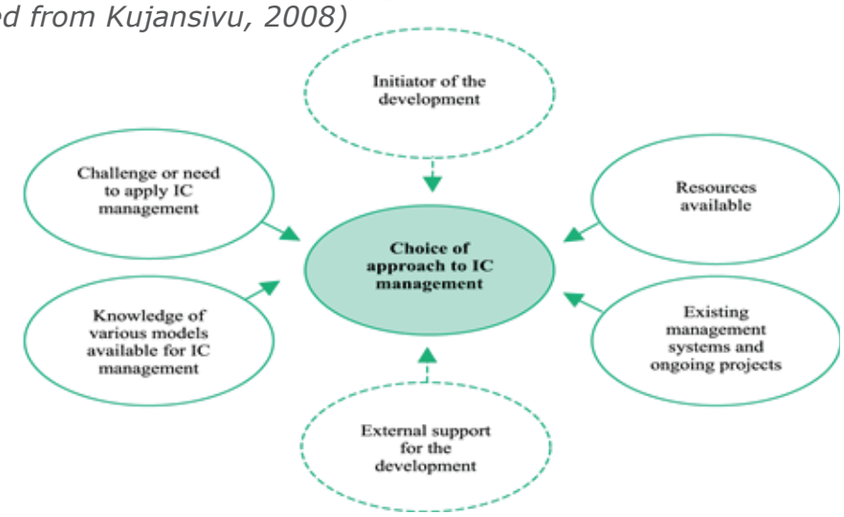
the firms. The concept of IC is based on the literature; this concept is measured in three different ways by three different indices. In addition, the economic performance of the firm is shown by three main indices.

This framework as a whole is supported by the findings of different researchers. As discussed, most researchers have found a positive relationship between the IC of the firm and operational and financial performance; however, choosing the performance index differs in various research settings. The operational performance is consistent with the financial results of the firm; as a result, we have chosen financial performance as the indicator for the firm's performance. Some researchers consider that dependent variables such as return on assets (ROA), asset turnover (ATO), revenue growth (RG) and operating cash flow ratio (OCF) relate to the dimensions of profitability, productivity and growth.

Meanwhile, other researchers discuss the market value of firms, presented by the closing price (per share) of the company at the last trading day of the year in building their statistical model. This research tends towards the first category, and considers the IMI-100 Rank, ROA and EPS of the firm as an index for performance. In this respect, the industrial sector of the firm is considered to have a moderating effect in the research framework. Some researchers, including Maditinos et al. (2011) proposed moderating factors like size as their concluding variable. As the IMI-100 list is about relatively large companies in the economic climate of Iran, this variable does not seem to have variance for different companies on the list. Another factor that seems important in IMI-100 ranking is the company's sector. The sector has been a major part of this ranking since the second year of its appearance, for categorizing tables. Three different indices have been proposed for measuring IC. As is obvious from the literature review, empirical studies that test the correlation between IC and company performance are varied. They differ, in particular, depending on the method used to measure IC (Tajdari et al, 2012). As a result, three different measurement methods were chosen, and their results will be studied.

In addition, Kujansivu, (2008) proposed a set of factors to be considered in selecting the suitable IC measurement and management framework for every context (Figure 1). This framework consists of six different factors; some of them are internal to the company. As this research is focused on the national context, some of these factors are not relevant.

Figure 1. *Different factors affecting the choice of IC approach (adapted from Kujansivu, 2008)*



From the other point of view, the main constraint of choosing the index of IC for these companies is the accessible data. In the most fortunate case, when these companies are in the Iranian stock exchange, their financial data is published because of the regulatory rules. It means that the researcher has access to the balance sheet, P/L accounts, and in some cases, their attached notes. As a result, the first consideration in selecting the IC measurement method is the required data. As mentioned before; there are different methods to evaluate the IC stock of a firm. Among these methods, this study chose the following methods, which are based on accessible data.

1) Market-to-book value (MBV ratio), which is calculated based on the difference between the firm's market value – the number of shares issued multiplied by the market value of the share – and the net value of its assets. Another formula for this index is the ratio of Market Value to Asset Value. The latter is used in this study.
MBV= Market Value / Asset Value

2) A revised form of the Skandia Navigator, as used by Dong-wei and Ke-yi (2009). As they state, there are 113 measurement indicators of IC elements in the Skandia Navigator, but many of them use non-public information. As they wanted to explore IC indicators through annual reports and other public information, as in the current research, they reviewed a great deal of relevant literature to select representative measurement indicators of IC elements. They established IC elements, as shown in Table 1.

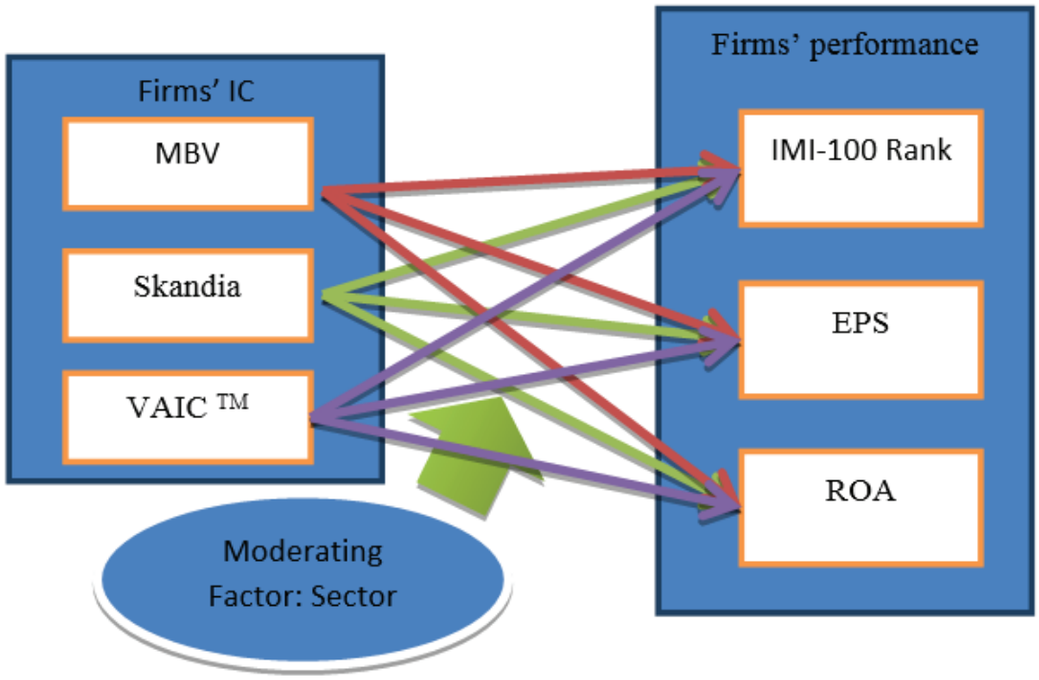
3) VAICTM: Value Added Intellectual Coefficient is an analytical tool to measure the intellectual capital efficiency within an organization, and was developed by Ante Pulic in 1998. As mentioned in the literature review, this index is calculated as follows:
VA = OUT - IN,
VA = OP + EC + D + A,
HCE = VA / HC,
SC = VA - HC,
SCE = SC / VA,
ICE = HCE + SCE,
CEE = VA / CE,
VAIC = ICE + CEE,

Table 1. *Scandia IC elements (from Dong-wei and Ke-yi, 2009)*

IC elements	IC variables
Human capital	VA (Value Added) The expense ratio of salaries The total no of employees The average education level of employees
Customer capital	Export ratio Income Growth Rate
Process capital	Current asset turnover Management expense per person
Innovation capital	R&D expenses/all expenses R&D expenses per personnel

As mentioned previously, the independent variable IC is calculated in the three ways mentioned, and the correlation is measured. Figure 2 shows the modified framework used in this study.

Figure 2. *The relationship between the effects of different IC indices and firm's performance in Iranian high-performance companies (IMI100-)*



Hypothesis development

This research has two different sets of hypotheses. The first set is related to the IC indices for firms, and the second set is about the relationship between IC indices and firm's performance. As a result, the hypotheses that will be tested are as follows:

H1: The amount of IC measured by MBV, Skandia, and VAIC for Iranian premier firms are correlated (therefore one measure is enough to represent the IC in this context)
H2: The IC of the firms is related to their sector
H3: The IC is positively correlated with the firm's rank in the IMI-100 list
H4: The IC is positively correlated with the EPS
H5: The IC is positively correlated with ROA
H6: The relationship between IC and firm's rank is affected by mediating effects of sector
H7: The relationship between IC and firm's EPS is affected by mediating effects of sector
H8: The relationship between IC and firm's ROA is affected by mediating effects of sector

Model specification

In order to test the relationship between intellectual capital (IC) and the firm's performance in the case of

Iranian premier companies introduced by IMI-100, four steps will be performed. Firstly, this study calculates three different measures of IC, namely MBV, Skandia and VAIC, and then tests their correlation. In this step, it has been decided to replace one measure in order to sufficiently show the amount of IC for each firm.

Secondly, after establishing one index for IC, the effects of sector on the amount of IC for each firm will be studied. The Ordinary Least Square Regression test will be used to determine whether one variable is dependent on another variable as the third step. The regression test will then ascertain the relationship between IC index and different measures of the firm's performance, which are EPS, IMI-100 Rank and ROA. Lastly, after establishing the relationship between IC and the firm's performance, the effects of sector on the amount of IC for each firm will be investigated. This can be done by running the regression test again.

Results and discussion

This section explains the results generated based on the model specified previously. Based on the research model proposed, the performance measures chosen for showing the performance of IMI-100 firms are:

- An index related to the performance between another firm in the list (IMI 100 Rank, which is based on the net sales)

- An index related to the firm's performance in the stock market (EPS, which is Earnings per Share)

- An index related to the firm's performance leveraging its assets, which is ROA (Return on Assets)

Based on the gathered data, the following data are calculated for the performance of firms.

Calculating MBV

Based on the introduction regarding the MBV index, this index can be calculated using this formula (see Table 2).

Table 2. *Calculating MBV Index for IMI100- companies: a sample*

IMI rank	Company name	MVB index
1	IKHOD	2.64
2	NAFES	5.71
3	SAIPA	1.45
5	SADER	1.39
6	MOKHA	3.61
7	PARSI	1.74
8	MELAT	1.2
10	TEJAR	1.91

Table 3. *Calculating performance index for IMI100- companies (Rank, EPS, and ROA): an excerpt*

IMI rank	Company name	EPS index	ROA index
1	IKHOD	4	1488
2	NAFES	8.3	646
3	SAIPA	8.1	589
5	SADER	1.5	3670
6	MOKHA	14.6	613
7	PARSI	2.29	501
8	MELAT	1.3	441
10	TEJAR	1.06	330

MBV= Market Value of the company/ net assets centered on this formula. This index was calculated for the IMI100 companies that were in the stock market. Regarding these data, an excerpt of descriptive statistics about these companies is shown in Table 3.

Calculating VAIC

As mentioned previously, VAIC (Value Added Intellectual Coefficient) consists of four sub-indices, namely ICE (Intellectual Capital Efficiency), CEE (Capital Employed Efficiency), SCE (Structural Capital Efficiency), and HCE (Human Capital Efficiency). The results of calculating these sub-indices are shown in Table 4.

Table 4. *Calculating VAIC sub-indices for IMI100- companies – an excerpt*

IMI rank	Company name	HCE	SCE	CEE	ICE	VAIC
1	IKHOD	6.0489	0.8347	0.0736	6.8836	6.9572
2	NAFES	13.1968	0.9242	0.1535	14.121	14.2745
3	SAIPA	3.3091	0.6978	0.2903	4.0069	4.2972
5	SADER	2.4548	0.5926	0.0332	3.0474	3.0806
6	MOKHA	3.9481	0.7467	0.2233	4.6948	4.9181
7	PARSI	8.9637	0.8884	0.0267	9.8522	9.8789
8	MELAT	3.2463	0.692	0.0278	3.9383	3.9661
10	TEJAR	2.0532	0.513	0.0306	2.5662	2.5967

Calculating Scandia IC and correlation of IC methods

As mentioned, the revised version of the Scandia Index consists of four sub-indices. Before doing the correlation tests, it is best to identify the outliers. Analysis of the IC indices (MBV, VAIC and ScIndex) with box plots is configured in Figure 3. The outliers are marked.

As shown in Figure 3, Company number 9 is an outlier because of its MBV values. Moreover, consideration reveals that Company 47 is also an outlier. Figure 3 adds Companies 2, 13, 9 and 47 as outliers. In conclusion, four companies are outliers (out of a total of 52); this means that 48 companies are remaining for the analysis. The results of Correlation analysis by Pearson's Index are shown in Table 5.

As observable in Table 5, the Pearson's correlation coefficient between variables exceeds the threshold of 0.01; as a result, the indices are correlated. Therefore, one index (MBV) is selected to represent the three IC indices.

Figure 4. *The box plots for Scandia, MBV and VAIC indices (left to right)*

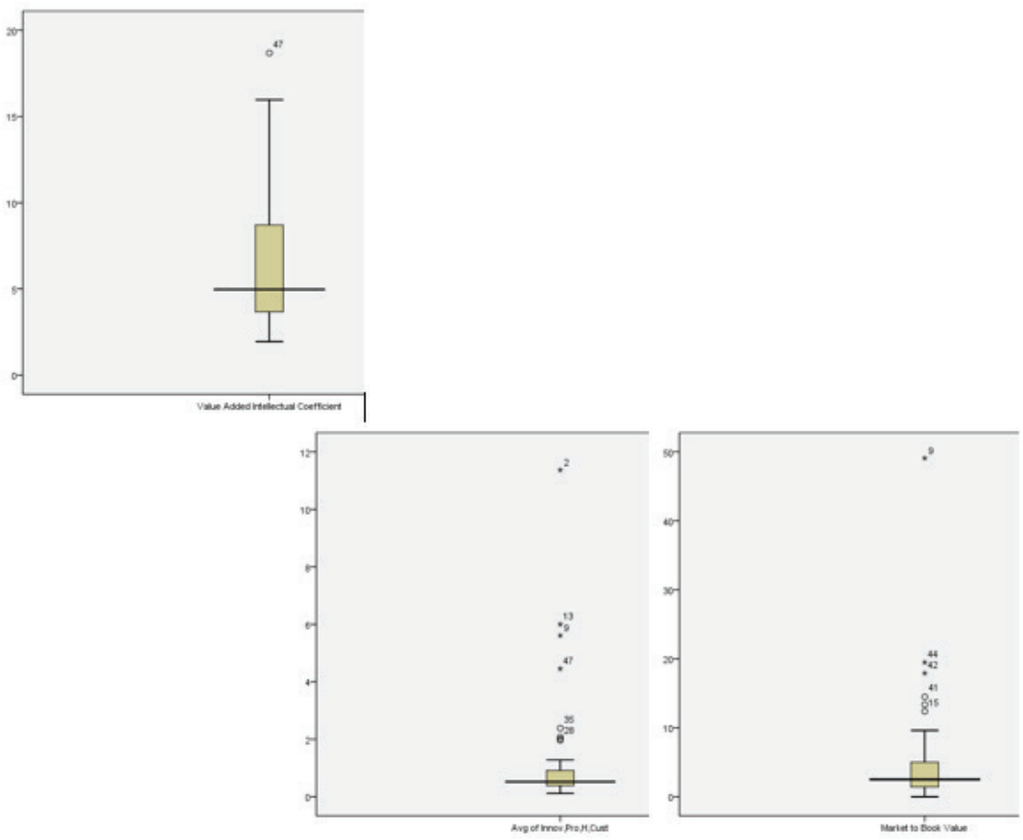


Table 5. *Correlation analysis of IC measure*

		VAIC	MBV	Scandia
VAIC	Pearson Correlation	1	.125	0.17
	Sig. (-2tailed)		.396	0.330
	N	48	48	48
MBV	Pearson Correlation	.125	1	0.18
	sig. (2-tailed)	.396		0.350
	N	48	48	48
Scandia	Pearson Correlation	0.17	0.18	1
	Sig. (-2tailed)	0.330	0.350	
	N	48	48	48

Relationship between IC and performance

In this section of the report, the relationship between the selected IC index (MBV) and performance is tested. The selected indices for performance are three-fold:

- An index related to the performance of another firm in the list (IMI 100 Rank, which is based on the net sales)

- An index related to the firm's performance in the stock market (EPS, which is Earnings per Share)

- An index related to the firm's performance leveraging its assets, which is ROA(Return on Asset)The results of the tests are shown in the appendix

Relationship between IC and IMI-100 Rank

By applying Linear Regression between IC and IMI Rank of the companies, the following results are provided by the software. As concluded from Table 5, the relationship between MBV and IMI Rank follows the equation:

IMI Rank = 2.191* MBV + 41.247

However, referring to the ANOVA tables, it is obvious that the significance of the model (0.19) is not considerable (less that 0.05); as a result, the model does not fit the data. Comparison of Sum of Squares for the Regression and Residual also confirms that about 10% of the variance is explained by the model (ratio of 4661.6 to 36420.317); consequently, this model is not good. The value of R in the model summary table is particularly low (about 0.3), which shows that the relationship between real values and the values predicted by the model is low. Moreover, R square shows that only about 11.3% of variation is explained by the model.

Relationship between IC and EPS

After applying Linear Regression between IC and EPS of the companies, the following results were provided by the software. As concluded from Table 5, the relationship between MBV and EPS follows the equation:

EPS =423.168* MBV + 139.721

However, referring to the ANOVA tables, it is obvious that the significance of the model (0) is considerable (less

that 0.05); as a result, the model fits the data. Comparison of Sum of Squares for the Regression and Residual confirms that about 20% of the variance is explained by the model (ratio of 1.858E7 to5.381E7). Value of R in the model summary table is at a moderate level (about 0.5), which shows the relationship between real values and the values predicted by the model is moderate. Moreover, R square shows that only about 25.7% of variation is explained by the model. Partial correlation of MBV and EPS with industry as the control factor is shown in Table 6.

adds Companies 2, 13, 9 and 47 as outliers. In conclusion, four companies are outliers (out of a total of 52); this means that 48 companies are remaining for the analysis. The results of Correlation analysis by Pearson's Index are shown in Table 5.

As observable in Table 5, the Pearson's correlation coefficient between variables exceeds the threshold of 0.01; as a result, the indices are correlated. Therefore, one index (MBV) is selected to represent the three IC indices.

Table 6. *Partial correlation of MBV and EPS by industry as the control factor*

Control Variables			MBV	EPS	Industry
-none-[a]	Market to Book Value	Correlation	1.000	.507	-.200
		Sig (2-tailed)	.	.000	.182
		Df	0	44	44
	Earnings per Share	Correlation	.507	1.000	-.101
		Sig (2-tailed)	.000	.	.505
		Df	44	0	44
	Code of Industry	Correlation	-.200	-.101	1.000
		Sig (2-tailed)	.182	.505	.
		Df	44	44	0
Code of Industry	Market to Book Value	Correlation	1.000	.499	
		Sig (2-tailed)	.	.000	
		Df	0	43	
	Earnings per Share	Correlation	.499	1.000	
		Sig (2-tailed)	.000	.	
		Df	43	0	

Relationship between IC and ROA

After applying Linear Regression between IC and ROA of the companies, the following results were provided by the software. As shown in Table 7, the relationship between MBV and ROA follows the equation:

ROA = 1.004* MBV + 6.195

Table 7. *Partial correlation of MBV and ROA by industry as the control factor*

Control variables			MBV	ROA	Industry
-none-[a]	Market to Book Value	Correlation	1.000	.362	-.199
		Sig (2-tailed)	.	.012	.175
		Df	0	46	46
	Return on Asset	Correlation	.362	1.000	-.528
		Sig (2-tailed)	.012	.	.000
		Df	46	0	46
	Code of Industry	Correlation	-.199	-.528	1.000
		Sig(2-tailed)	.175	.000	.
		Df	46	46	0
Code of Industry	Market to Book Value	Correlation	1.000	.308	
		Sig (2-tailed)	.	.035	
		Df	0	45	
	Return on Asset	Correlation	.308	1.000	
		Sig (2-tailed)	.035	.	
		Df	45	0	

As the ANOVA tables show, it is obvious that the significance of the model (0.012) is considerable (less that 0.05); as a result, the model fits the data. Comparison of Sum of Squares for the Regression and Residual shows that just about 20% of the variance is explained by the model (ratio of 978.762 to 6503.615). Value of R in the model summary table is particularly low (about 0.3), which shows the relationship between real values and the values predicted by the model is low. Moreover, R square shows that only about 13.1% of the variation is explained by the model.

The moderating effect of industry

In order to test the moderating effect of industry on the relationship between the IC index and the performance indices, a partial correlation factor is used. The partial correlations coefficients describe the linear relationship between two variables while controlling the effects of one or more additional variables. Correlations are measures of linear association. Two variables can be perfectly related, but if the relationship is not linear, a correlation coefficient is not an appropriate statistic for measuring their association.

The moderating effect of industry on the relationship between IC and IMI-100 rank, has been shown based on the partial correlation test done on the IC index (MBV) and performance index (IMI-100 Rank). The results are shown in Table 8.

Table 8. *Partial correlation of MBV and IMI100- Rank by industry (control factor)*

Control variables			MBV	IMI Rank	Industry
-none-[a]	Market to Book Value	Correlation	1.000	.337	-.199
		Sig (2-tailed)	.	.019	.175
		Df	0	46	46
	IMI Rank	Correlation	.337	1.000	-.223
		Sig (2-tailed)	.019	.	.128
		Df	46	0	46
	Code of Industry	Correlation	-.199	-.223	1.000
		Sig (2-tailed)	.175	.128	.
		Df	46	46	0
Code of Industry	Market to Book Value	Correlation	1.000	.306	
		Sig (2-tailed)	.	.036	
		Df	0	45	
	IMI Rank	Correlation	.306	1.000	
		Sig(2-tailed)	.036	.	
		Df	45	0	

Table 9. *The summary of regression model*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.337[a]	.113	.094	28.138

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	4661.600	1	4661.600	5.888	.019[a]
	Residual	36420.317	46	791.746		
	Total	41081.917	47			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	41.247	5.583		7.388	.000			
	MBV	2.191	.903	.337	2.426	.019	.337	.337	.337

Table 10. *The summary of regression model Model summaryb*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.507[a]	.257	.240	1105.908

ANOVA[b]

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	1.858E7	1	1.858E7	15.195	.000[a]
	Residual	5.381E7	44	1223033.367		
	Total	7.240E7	45			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	423.168	225.542		1.876	.067			
	MBV	139.721	35.843	.507	3.898	.000	.507	.507	.507

Table 11. *The summary of regression model Model Summaryb*

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.362[a]	.131	.112	11.89046

ANOVA[b]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	978.762	1	978.762	6.923	.012[a]
	Residual	6503.615	46	141.383		
	Total	7482.377	47			

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	6.195	2.359		2.626	.012			
	MBV	1.004	.382	.362	2.631	.012	.362	.362	.362

The summary of regression model is shown in tables 9–11. As shown in Table 10, the relationship between MBV and IMI-Rank is not significant (0.19>0.05), and is relatively weak (about 0.3). In addition, the effects of industry as a control variable could not improve the strength of relationship (it is also about 0.3, but it improves the significance [0.036<0.05]). As a result, the relationship becomes significant but not strong. Meanwhile, the moderating effect of industry on the relationship between IC and EPS has been shown based on the partial correlation test done on the IC index (MBV) and performance index (EPS). The relationship between MBV and EPS is significant (less than 0.05), and moderate (about 0.5). In addition, the effects of industry as a control variable could not improve the strength of relationship (it is also about 0.5); but the relationship remains significant.

It should be mentioned that the relationship between MBV and ROA is significant (0.012<0.05), but is relatively weak (about 0.36). In addition, the effects of industry as a control variable could not improve the strength of relationship (it is also about 0.3) but it remains significant (0.035<0.05). As a result, the relationship remains significant but not strong.

Conclusion and policy implications

Intellectual capital (IC) is viewed as the most valuable intangible asset in a company that stimulates value creation and boosts overall corporate competitiveness. Though IC typically remains hidden, nevertheless, it exists in every organization and ultimately contributes to a company's success. All the literature agrees on the importance of IC for the firm, and its role in creating value and competitive advantage for companies. Nevertheless, different studies show different results on the effects and importance of this relationship. This research tries to show the ability of IC to create value in organizations, in the Iranian context.

This research verifies the ability of IC to create value in organizations, in the Iranian context, apart from the industry factor, as the results indicate. The results could be used to convince managers to focus their efforts on IC management. It also indicates that choosing the IC index is not the main focus because the three indices are correlated; apart from that, managers should try to measure IC first, and then try to elaborate it to gain better financial results.

Exploring the relationship between the IC measure (MBV) and performance measures, no significant relationship was found for IMI-Rank, but for EPS and ROA there was a significant relationship. Exploring the moderating effect of industry on the relationship between IC and performance was the main focus of the remaining hypothesis. It was found that by adding the control variable, the relationship of IC index and IMI-100 rank was significant but not strong. In addition, the effects of industry as a control variable could not improve the strength of the relationship between IC and EPS, but the relationship remains significant. It is also true for the ROA.

This study recommends that for future research, the accurateness of the methodology must be taken into account, as this study only focused on three indices for evaluating the IC of the firms. Other researchers could use other indices. This kind of research could verify the results of this study as a preliminary research for unifying different IC indices presented by different researchers and practitioners around the globe. Furthermore, there is a need to take into account different control variables, such as a company size, both in terms of number of personnel and also sales volume. In this research the sample was selected from the IMI-100 list, which contains the most successful companies in terms of sales. It means that the companies were homogenous according to at least one variable of size. However, other researchers could extend the sample, and take other companies into account. In addition, the age of the company could be suggested as a relevant factor to be investigated.

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