Managers' and Auditors' Perceptions of Intellectual Capital Disclosure

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Abstract

Purpose – We aim to explore managers' & auditors' perceptions on intellectual capital measurement and reporting in Egyptian companies.

Design/methodology/approach – The paper draws on a questionnaire survey sent to managers and external auditors were asked to provide their opinion about intellectual capital measurement and reporting for companies listed in the Egyptian Stock Exchange.

Findings – We find significant differences between respondents' rates on IC indicators. These differences are due to different industry sectors involved in our sample. Further, we find that Egyptian listed firms do not either measure or report IC indicators in their annual reports. In addition, we find that auditors' responsibilities on IC reporting are ambiguous. Finally, we find that work experience is the main determinant of managers' perceptions on IC indicators, while professional education is the main determinant of external auditors' perceptions on IC indicators.

Originality/value – Prior research on intellectual capital utilised the content analysis approach to measure levels of intellectual capital disclosure in annual reports. This paper add to the existing literature by utilising the results of a survey questionnaire distributed to managers working in (and auditors specialised in) Egyptian companies to explore their perceptions on intellectual capital measurement and reporting. Since prior research has focused on developed economies, we strongly believe that this paper provides a novel contribution to the existing literature as we are the first to examine this issue in Egypt.

Keywords: Intellectual capital, disclosure, managers, auditors, questionnaire, Egypt.

Paper type: Research paper.

1. Introduction

Over the last two decades, Intellectual Capital (IC, thereafter) disclosure has become the centre of increasing thought from academic researchers and practitioners in a similar way. Sonnier, et al. (2007:1) argued that:

"As our society has moved from the industrial age to the information age, the importance of intellectual capital in business has grown. During the industrial age, it was the cost of property, plant, equipment and raw materials that was essential to the viability of a business. In information age, it is the effective use of IC that often determines enterprise success or failure".

Noah, et al. (2000) and Bozbura (2004) argued that the difference between market and book value of companies reached unprecedented levels. They explained that this growing difference arises attributable to the characteristics of knowledge-based organisations (i.e.; Microsoft) and their dependence on IC, which have changed value creation process.

Bhartesh and Bandyopadhyay (2005) argued that IC is becoming the vital source for creating economic wealth. They also argued that IC is the main contributor for creating new types of businesses and new ways of doing businesses. Many firms – in practice – completely rely on intellectual assets for generating revenues. The software industry is a good example to support this case. In principle the software industry is knowledge-based with most products never taking a tangible form, being created and delivered electronically. Therefore, it is essential that intellectual capital related issues (i.e. measurement and reporting) be well understood and properly managed if organisations are to compete successfully in today's world economy.

The paper adds to the literature on intellectual capital disclosure in two crucial respects. First we examine managers' & auditors' perceptions on intellectual capital measurement and reporting in Egyptian companies. Second, we explore external auditors' responsibility of intellectual capital measurement and reporting in Egyptian companies. Our paper provides a novel contribution to the existing literature as we are the first to examine these issues in Egypt.

The paper is structured as follows. Section 2 reviews the prior literature and develops our research hypotheses. In Section 3, we describe the data and the research method. Descriptive analysis is presented in Section 4. Section 5 shows the results of testing our research hypotheses. Section 6 concludes.

2. Prior Literature

The majority of intellectual capital related studies are focused on American, Canadian and European companies. A group of these studies discuss the theoretical framework of the intellectual capital disclosure (i.e. Bhartesh and Bandyopadhyay, 2005; Kujansivu and Lo¨nnqvist, 2007; Noah, et al., 2000; Ng, 2006; Chen, 2008; Garcia-Ayuso, 2003; Sonnier, et al. 2007). In these papers, the authors explained the irrelevance of the current financial reporting for current and potential users. They also argued that there is a need to focus on intellectual capital measurement and reporting to provide value relevant information on a timely basis.

A number of empirical studies also examine the value relevance of IC information. Bozbura (2004), for example, examined the association between IC and market value in Turkey. He divided IC into three components: human capital; relation capital and structure

capital. He found that both human capital and relation capital have a positive association with market value/book value of firms. Another study of interest is that of Ng (2006). Ng (2006) provided evidence that there is an inter-relationship between components of intellectual capital and business growth performance. He also suggests that IC reporting would improve the predictability of future performance. Ng (2006) is limited to the technology sector. As a result, its findings may not be generalisable in other knowledge intensive/technology-based sectors. Similarly, Kujansivu and Lo¨nnqvist (2007) examined the association between the value of IC and efficiency of IC in Finnish firms; however, he did not find any statistically significant results.

Subsequent papers on linked IC reporting with competitive advantage. For example, Tayles et al. (2007) examined the relationship between manager's perception of the level and shape of IC within firms and management accounting practices. It also explored whether the firms that investigating heavily in IC is able to respond to unanticipated economic and market changes and achieves relatively higher performance within their sector. The results suggested some evolution in management accounting practices for firms investing heavily in IC. He also showed that IC is a major source of corporate competitive advantage. In addition, Chen (2008) explored the link between green IC and competitive advantages for of Taiwanese companies. He found that the three types of green IC - green human Capital, green structural Capital, green relational capital- had positive effects on competitive advantages. However, the author did not find differences of IC in the different stages of the development of the information and electronics industry in Taiwan.

Considerable attention has been given to examining IC reporting. One such study is Abeysekera (2007) which compared the differences in patterns of IC disclosure between developing and developed nations. Using the content analysis approach, the researcher analysed the content of the annual reports of the top 30 firms listed on the Colombo stock exchange from 1998 to 2000 to identify the types of IC reported items in Sri Lanka and compared those reported in Australia. The results draw attention to the need for a uniform ICR reporting definition and a reporting framework that provides comparative and consistent reporting under the auspices of statutory institutions, accounting regulators, and stock exchanges. It also suggested that the differences in IC reporting between developing and developed countries can be attributed to economic, social, and political factors. In a related study, Sonnier et al, (2007) examined the association between management's disclosure level of IC and financial performance for high-technology companies in USA. The results supported a statistically significant negative association between the level of IC disclosure and profitability measures. On the other hand, the study did not cover firms in traditional sectors.

Few studies have examined IC disclosure in the Middle East in general and in Egypt in particular. In a study related more closely to our paper, Seleim et al. (2004) aimed to explore the nature of IC in Egyptian software companies, and the relationship between IC indicators and financial performance. They found that Egyptian software companies possess many elements of IC and these elements can be measured. However, the authors did not empirically test their research hypotheses on the association between IC indicators and performance. In addition, the focus on one single sector (software sector) and a small

sample size (35.5% of total Egyptian software companies) make it difficult to generalize their findings.

The above discussion of IC prior research has exposed a number of gaps in the existing IC literature. First, there are no generally accepted models for measuring IC in organisations. Banegil, and Sanguino (2003) argued that there are many proposed models with some similarities. However, these models are different because of their complexity and adaptability. Second, a number of studies suggested that financial statements have lost their value relevance over time because of higher levels of intangibles assets (Garcia-Ayuso, 2003; Sonnier, et al. 2007; Hussainey and Walker, 2009). Considering this fact, Banegil & Galvan (2007) argued that it is of great importance to develop and offer general guidelines that would help companies to identify, measure and follow-up their intangibles. Third prior research showed that there is a lack of a conceptual framework for IC disclosure – even though there are no statistically significant differences among the analysed guidelines (Banegil & Galvan, 2007). Finally**,** most of the IC studies that have been conducted in Western developed countries (i.e. Australia, U.K, Canada, USA, Scandinavia, Spain and Denmark). In addition, to the best of our knowledge, only one study – Seleim et al. (2004) - has explored IC topic within the context of developing countries like Egypt.

Our paper is different from Seleim et al. (2004) in two crucial aspects: First, we will use a large sample size compared with the sample used in Seleim et al. (2004). The current study covers big-knowledge-based companies listed on the Egyptian Stock Exchange. In addition, the present study will cover different industry sectors, while Seleim et al. (2004) covered only one sector (i.e. software companies). Second, the present study

will examine the perceptions of managers and big auditing firms on the IC reporting and measurement in the Egyptian listed companies.

Based on the above discussion, the purpose of this research is our paper adds to the academic literature on IC disclosure in two crucial respects. First it examines the perceptions of the Egyptian listed companies on measuring and reporting intellectual capital indicators. In addition, it identifies the potential factors that potentially affect managers' perceptions on IC measurement and reporting. Second, it explores the extent to which external auditors' responsibility on IC measurement and reporting are obvious under current accounting and auditing standards. In addition, it investigates the potential factors that potentially drive external auditors' perceptions on IC measurement and reporting. We, therefore, aim to test the following research hypotheses:

H1: *There are significant differences between Egyptian industry sectors concerning human capital indicators.*

H2: *There are significant differences between Egyptian industry sectors concerning structural capital indicators.*

H3: *There are significant differences between Egyptian industry sectors concerning relational capital indicators.*

H4: *Egyptian listed companies do not measure their intellectual capital.*

H5: *Egyptian listed companies do not disclose intellectual capital information in their annual reports.*

H6: *Responsibilities of external auditors on the intellectual capital indicators are ambiguous under accounting and auditing standards.*

H7: *Managers' perceptions on intellectual capital indicators are affected by their academic and professional education and their work experience.*

H8: *Auditors' perceptions on intellectual capital indicators are affected by their academic and professional education and their work experience.*

3. Data and Research Method

In the present paper, we use a questionnaire survey to collect data from 150 external auditors and executive and finance managers on their perceptions on intellectual capital measurement and reporting in companies listed on the Egyptian Stock Exchange. Our sample mainly covers 8 industry sectors and big auditing firms. We choose the leading firms in each industry sectors. Our industry sectors include the Telecommunication sector (3 firms); the Information Technology sector (1 firm); the Real Estate sector (1 firm); the Basic Resources sector (1 firm); the Building and Constriction sector (I firm); the Tourism and Entertainment sector (1 firm); the Financial Services sector (2 firms) and the Banking sector (1 bank). The big auditing firms in our sample include Deloitte & Touche; Ernst & Young; KPMG and PricewaterhouseCooper.

The questionnaire used a five-point Likert scale with 1 equalling 'strongly agree' and 5 indicating 'strongly disagree'. It contains 6 questions as follows. Question 1 is related to the perceptions of managers and auditors on human capital indicators. Respondents asked to rate 19 statements which reflect the employees' ability, experience and skills in the Egyptian listed companies. These include: (1) Number of experts with PhD and M.Sc. degrees; (2) Number of experts with professional education; (3) Managers' work experience; (4) Employees' skills; (5) Management leadership; (6) Continuous improvement in the company financial results; (7) The firm's support to new ideas and innovations; (8) Effective strategy for the selection of new employees; (9) Effective system for salaries and wages; (10) A clear promotion policy; (11) Offering training courses for employees to improve their skills; (12) Increasing salaries and remuneration

for experts; (13) Encouraging employees for innovation and accepting risk; (14) Listen to employees' opinions and ideas; (15) The ability of employees to provide feedback to decision makers; (16) Information should be available to all employees, so they can contribute to the success of the firms; (17) Team work encouragement and employees' development; (18) Reducing employees' and experts' turnover ratio; (19) Investment costs of employees learning.

Question 2 is related to managers' and auditors' perceptions on structure capital indicators. Respondents are asked to rate 18 statements to explore how Egyptian managers are able to translate their innovations and human capital to valuable assets for creating economic value for their companies. These include: (1) Cost of actual work; (2) Time of actual work; (3) Costs-to-Revenues ratio; (4) The extent to which new ideas are implemented; (5) Company's support for ideas developments; (6) firms' leadership in producing new products and ideas; (7) Increasing employees' output; (8) Quick reach to information; (9) Practical procedure for supporting innovations and new ideas; (10)The system under which Egyptian firms operate; (11) No restrictions on information; (12) Clear quality objectives; (13) Effective management information system; (14) Number of new products and innovations; (15) Investment in research and development; (16) Investment in information technology; (17) Company support for innovations and creations; (18) Improvement in companies' financial results.

Question 3 is related to managers' and auditors' perceptions on relational capital indicators. Respondents are asked to rate 18 statements to explore the degree to which managers of Egyptian companies can positively interact with others to create value for their companies. These include: (1) An increase in customer satisfaction; (2) A reduce in

time for solving customers' problems; (3) An increase in customer loyalty; (4) Offer competitive product and services; (5) The focus on customer's demand; (6) The improvement in market share; (7) Market share leadership; (8) Marketing leadership; (9) Employees; understanding for both the market and customers; (10) The acquisition of the good imagine in the market; (11) the acquisition of the leading brand names in the markets; (12) Company's support for social activities; (13) Analysing the competitors very well; (14) Good relationship with suppliers; (15) Increasing environmental awareness between employees; (16) Good relationships with shareholders; (17) Decreasing customers' complaints percentage; (18) Employees' attendance of conferences and meetings.

Question 4 is related to the measurement of intellectual capital indicators. Respondents are asked to rate 9 statements to explore their perceptions on the measurement issues of IC indicators. Question 5 is related to intellectual capital related issues. Respondents are asked to rate 10 statements to explore their perceptions on IC reporting. Question 6 is related to the responsibilities of external auditors towards intellectual capital disclosure. Respondents are asked to rate 7 statements to explore their perceptions on IC reporting. Statements related to Questions 4, 5 and 6 are reported in Table 3. Finally, the questionnaire ends by individual data on the respondents (academic and professional education; current position, work experience). Respondents' data is reported in Table 1.

4. Descriptive Analysis

In this section, we show the descriptive analysis for the respondents according to their academic and professional qualification; current position; work experience and the industry sectors that the managers is related to or the auditor is specialized in. Table 1 shows the descriptive analysis. In particular, Panel A shows that the majority of respondents are B.Sc. degree holders; while Panel B shows the majority of respondents are holding a certificate from the Egyptian Certified Accountants and Auditors. Panel C shows that 36% of respondents are finance managers; while external auditors, executive managers represent 26% and 24% of the respondents. Panel D shows that over one third of respondents have work experience between 5 to 10 years. In addition, about 30% of the respondents have work experience greater than 10 years. This indicates that we collect data from highly experienced people in the filed. Finally Panel E shows that respondents represent 28% from big audit firms; 14% from the telecommunication sectors and between 6.7- 10 for other industry sectors.

Insert Table 1 here

5. Test of hypotheses

Table 2 shows the mean values and the standard deviation of intellectual capital indicators for each industry sector and for respondents from the big auditing firms. It also includes F-value and p-values for testing hypotheses 1, 2 and 3. Panel A shows that the financial service sector is found to have the highest mean (4.48), while the banking sector has the lower mean (3.53). The panel also shows that there are statistically significant differences between industry sectors and auditing firms concerning human capital

indicators (F value = 18,627 and p-value = 0.001). Based on these findings, we accept hypothesis 1. Panel B presents the mean and the standard deviation for structure capital indicators for each industry. One can see from Panel B that the tourism and entertainment sector has the highest mean (4.27), while the real estate sector has the lower mean (3.63). There is also evidence that there are statistically significant differences between industry sectors and auditing firms concerning structure capital indicators (F value = 7.022 and p-value = 0.001). Based on these findings, we accept hypothesis 2. Finally, Panel C presents the results related to hypothesis 3. It shows that the auditing firms has the highest mean (4.47), while the construction and building sector has the lower mean (3.27). There is also evidence that there are statistically significant differences between industry sectors and auditing firms concerning relational capital indicators (F value = 21.472 and p-value = 0.001). Based on these findings, we accept hypothesis 3.

Insert Table 2 here

Table 3 shows the means and standard deviations for respondents' view on the expect to which Egyptian firms are measuring and reporting IC and also the degree to which the respondents agree that external auditors have responsibilities on IC reporting. Panel A shows that Egyptian companies do not measure their IC as the mean for statements 1-8 in the panel is 3.55. In particular, they agreed that there is a need for the importance of measuring IC in Egyptian companies. However, they show that the failure of Egyptian and Accounting Standards to guide the Egyptian listed companies on this issue is the key reasons for not measuring IC in Egypt (the mean for statements 7 and 8 in Panel A is around 3.35). As a result, we accept hypothesis 4. We also can see from Panel B that Egyptian companies do not report IC information in their annual reports as the mean for

statements 1-9 in the panel is 3.11. In particular, respondents agreed that there is a need for reporting IC information in annual reports. However, they show that the failure of current Egyptian and International Accounting standards as well as Egyptian stock market exchange and financial supervisory authority rules does not motivates companies to report IC information. As a result, we accept hypothesis 5. Finally Panel C shows that external auditor' responsibilities toward IC disclosure under current Egyptian accounting and auditing standards and IFRS is ambiguous. The mean for statements 1-6 in the panel is 3.23. This leads us to accept hypothesis 6.

Insert Table 3 here

Table 4 shows the determinants of managers' perceptions on intellectual capital indicators (i.e. academic and professional education and their work experience and industry sector type). Panels A and B show that neither academic education nor professional education has any effect of managers' perceptions on intellectual capital indicators. The Panels show that the p-value for the difference in means between respondents' academic education is 0.460 and the p-value for the difference in mean between respondents' professional education is 0.780. Panel C shows a marginal effect of the work experience on managers' perceptions on intellectual capital indicators and this effect is marginally significant at the 10 per cent level. Panel D shows an effect of the industry sector type on managers' perceptions on intellectual capital indicators and this effect is fully significant at the 10 per cent level .As a result, we partially accept hypothesis 7 as managers' perceptions on intellectual capital indicators are affected by respondents' work experience. We did not find the same results for academic and professional education.

Insert Table 4 here

Table 5 shows the determinants of external auditors' perceptions on intellectual capital indicators (i.e. academic and professional education and their experience). It is clear from Panel A that academic education has no effect on external auditors' perceptions on intellectual capital indicators. The Panel shows that the p-value for the difference in means between respondents' academic education is 0.183. Similarly Panel C shows no effect of work experience on external auditors' perceptions on intellectual capital indicators (difference in mean between work experience is statistically insignificant with a p-value of 0.457). Finally, one can see from Panel B that professional education of external auditors has a significant effect on their perceptions on intellectual capital indicators and this effect is statistically significant at the 1 per cent level. As a result, we partially accept hypothesis 8 as external auditors' perceptions on intellectual capital indicators are affected by professional education. We did not find the same results for academic education and the work experience.

Insert Table 5 here

6. Conclusions

The present article, undertaken in an Egyptian setting, using a questionnaire survey of 150 managers an external auditors, finds that respondents' rates on IC indicators are differ between industry sectors involved in the sample. In addition, it provides evidence that companies listed on the Egyptian Stock Exchange aware that there is a need to measure IC in the information technology age. However, respondents rates on IC measurement shows that this measurement issue is not supported by Egyptian accounting standards, Egyptian stock market exchanges rules or the Egyptian financial supervisory authority rules. Finally, respondents agree that both Egyptian and international accounting standards failed to guide Egyptian firms to measure IC.

For the reporting issue, respondents' rates on IC reporting show that Egyptian firms are aware that there is a need to report IC information in their annual report. However, these rates show that the IC reporting issue is not supported by Egyptian accounting standards, Egyptian stock market exchanges rules or the Egyptian financial supervisory authority rules. Finally, respondents agree that both Egyptian and international accounting standards failed to guide Egyptian firms on IC measurement reporting.

For the auditing issue, we find that auditors' responsibilities on IC reporting are ambiguous. External auditors agree that Egyptian accounting standards and IFRS on IC reporting should be modified.

Finally, we find that years of experience is the main determinant of managers' perceptions on IC indicators, while professional education is the main determinant of external auditors' perceptions on IC indicators. Further research could be undertaken to

examine the types of intellectual capital information that actually disclosed in annual reports of Egyptian listed companies. It might be of interest to study the properties of these types of information (i.e. qualitative or quantitative). It would be interesting to examine the drivers of Intellectual capital disclosure in Egypt. Finally, it would be interesting to study the degree to which online reporting provides value-relevant information for stakeholders.

Table 1: Descriptive analysis:

Panel A: Academic Education	No.	%
PhD	5	3.3
MSc	6	4
BSc	139	92.7
Total	**150**	**100**
Panel B: Professional Education		
CPA	3	2
CIMA	11	7.3
CIA	1	0.7
CFA	0	0
Egyptian Certified Accountants and Auditors certificate	15	10
Others	7	4.7
No answer	113	75.3
Total	**150**	**100**
Panel C: Current Position		
Owner of Auditing Firm	5	3.3
Partner of Auditing Firm	1	0.7
Auditing Manager	15	10
External Auditor	39	26
Executive Manager	36	24
Finance Manager	54	36
Total	**150**	**100**
Panel D: Years of Experience		
Less than 1 year	15	10
From 1 year to less than 5 years	38	25.3
From 5 years to 10 years	53	35.3
More than 10 years	44	29.3
Total	**150**	**100**
Panel E: Industry Sectors		
Telecommunication	22	14.7
Information Technology	15	10
Real Estate	10	6.7
Basic Resources	11	7.3
Building and Construction	10	6.7
Tourism and Entertainment	13	8.7
Financial Services	14	9.3
Banking	13	8.7
Big Audit Firms	42	28
Total	**150**	**100**

Table 2: Test of hypotheses 1-3:

Indicators	Sectors	Mean	SD	F-value	p-value
Panel A: Human Capital	Telecommunication	4.10	0.42	18.627	0.001**
	Information Technology	3.84	0.20		
	Real Estate	3.79	0.24		
	Basic Resources	4.07	0.36		
	Building and Construction	3.57	0.16		
	Tourism and Entertainment	4.30	0.31		
	Financial Services	**4.48**	**0.38**		
	Banking	3.53	0.20		
	Big Audit Firms	**4.42**	**0.34**		
Panel B: Structure Capital	Telecommunication	3.85	0.62	7.022	0.001**
	Information Technology	3.88	0.12		
	Real Estate	3.63	0.19		
	Basic Resources	4.01	0.46		
	Building and Construction	3.72	0.19		
	Tourism and Entertainment	**4.27**	**0.30**		
	Financial Services	4.19	0.53		
	Banking	3.65	0.15		
	Big Audit Firms	**4.26**	**0.37**		
Panel C: Relational Capital	Telecommunication	3.96	0.53	21.472	0.001**
	Information Technology	3.55	0.23		
	Real Estate	3.47	0.11		
	Basic Resources	3.96	0.70		
	Building and Construction	3.27	0.18		
	Tourism and Entertainment	**4.35**	**0.27**		
	Financial Services	4.21	0.69		
	Banking	3.32	0.12		
	Big Audit Firms	**4.47**	**0.32**		

****: Significant at significant level < 0.01**

Table 3: Test of hypotheses 4-6:

Statements	Mean	SD
Panel A: IC Measurement		
1. There is a need to measure IC in information technology age	4.65	0.63
2. The company measures IC	3.41	1.18
3. The company use clear models to measure IC	3.13	1.12
4. The Egyptian Accounting Standard encourages firms to measure IC	2.8	1.14
5. The Egyptian Financial Supervisory Authority encourages firms to measure IC	2.83	1.12
6. The Egyptian Stock Market Exchange encourages firms to measure IC	2.9	1.22
7. The Egyptian Accounting Standard failed to guide firms to measure IC	4.37	1.05
8. The International Accounting Standard failed to guide firms to measure IC	4.35	0.91
MEAN	**3.55**	**0.57**
Panel B: IC Reporting		
1. There is a need to IC reporting in the annual report.	4.51	0.73
2. The company reports IC information in the annual report.	3.07	1.15
3. The Egyptian Accounting Standard encourages firms to report IC information in the annual report.	2.87	1.27
4. The International Accounting Standard encourages firms to report IC information in the annual report.	3.05	1.23
5. The Egyptian Accounting Standard is suitable enough for IC reporting by Egyptian firms.	2.33	1.18
6. The International Accounting Standard is suitable enough for IC reporting by Egyptian firms.	2.47	1.27
7. IC reporting in the annual report is positively the market value of the stock prices in Egyptian Stock Exchange.	3.95	1.06
8. The Egyptian Financial Supervisory Authority encourages firms to report IC information in the annual report	2.81	1.19
9. The Egyptian Stock Market Exchange encourages firms to report IC information in the annual report	2.89	1.25
MEAN	**3.11**	**0.70**
Panel C: Auditors Responsibilities on IC		
1. Auditors are responsible for IC reporting in the annual report based on current accounting and auditing standards.	2.08	1.15
2. IFRS are suitable enough for IC reporting in the annual report.	2.15	1.00
3. Auditors write their views on IC indicators on the audited annual report.	2.23	1.00
4. Egyptian Accounting standards should be modified to make measuring and reporting IC indicators a compulsory requirement for all firms.	4.59	0.63
5. IFRS should be modified to make measuring and reporting IC indicators a compulsory requirement for all firms.	**4.55**	**0.65**
6. Auditors' views on IC disclosure positively affect the market value of the stock prices in Egyptian Stock Exchange.	3.80	1.02
MEAN	**3.23**	**0.52**

Table 4: Test of hypothesis 7:

	Human Capital	Structure Capital	Relational Capital
Panel A: Academic Education			
PhD (mean)	4.36	4.55	0
MSc (mean)	3.94	3.90	0.64
B.Sc. (mean)	3.91	3.81	0.53
F value	**0.625**	**1.52**	**0.78**
p. value	**0.530**	**0.210**	**0.460**
Panel B: Professional Education			
CIMA (mean)	4.04	4.10	4.00
CPA (mean)	4.73	4.22	4.44
Egyptian Professional Certificate (mean)	4.23	4.01	4.10
Other (mean)	4.47	4.66	4.38
F value	**1.74**	**0.51**	**0.34**
p. value	**0.257**	**0.689**	**0.780**
Panel C: Years of Experience			
Less than 1 year (mean)	4.44	4.36	4.52
From 1 to 5 years (mean)	4.01	3.81	3.80
From 6 to 10 years (mean)	3.86	3.83	3.65
More than 10 years (mean)	3.89	3.80	3.62
F value	**1.78**	**1.09**	**2.152**
p. value	**0.157**	**0.357**	**0.100****
Panel D:Industry Sector Type			
Telecommunication Sec. (mean)	3.99	3.67	3.83
IT Sector (mean)	3.84	3.88	3.55
Real Estate Sec. (mean)	3.79	3.63	3.47
Basic Resource Sec. (mean)	3.98	3.93	3.80
Building& Construction (mean)	3.57	3.72	3.27
Big Four audit firms (mean)	4.27	3.98	4.37
Financial Services (mean)	4.45	4.17	4.18
Banking Sec. (mean)	3.53	3.68	3.31
F.Value	**12.17**	**2.49**	**7.26**
P.Value	**0.001****	**0.023****	**0.001****

****: Significant at level < 0.01**

Table 5: Test of hypothesis 8:

	Human Capital	Structure Capital	Relational Capital
Panel A: Academic Education			
PhD (mean)	4.73	4.55	4.79
MSc (mean)	4.44	4.02	4.19
B.Sc. (mean)	4.36	4.25	4.40
F value	**1.31**	**1.39**	**1.67**
p. value	**0.282**	**0.257**	**0.183**
Panel B: Professional Education			
CIMA (mean)	4.50	4.29	4.54
CPA (mean)	4.66	4.61	4.90
Egyptian Professional Certificate (mean)	4.24	4.21	4.27
Other (mean)	4.48	4.40	4.53
F value	**2.31**	**1.62**	**5.47**
p. value	**0.103**	**0.211**	**0.006****
Panel C: Years of Experience			
Less than 1 year (mean)	4.13	4.02	4.32
From 1 to 5 years (mean)	4.42	4.23	4.41
From 6 to 10 years (mean)	4.51	4.35	4.40
More than 10 years (mean)	4.46	4.45	4.55
F value	**3.12**	**4.03**	**0.88**
p. value	**0.030****	**0.010****	**0.457**

****: Significant at level < 0.01**

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