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Intellectual Capital Disclosure by Listed Companies in Jordan: A Comparative Inter-sector Analysis

Krayyem Al-Hajaya*, Mohammad Saleh Altarawneh, Bayan Altarawneh

Department of Accounting, Faculty of Business, Mu'tah University, Jordan. *Email: hajaya@mutah.edu.jo

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ABSTRACT

This study examines the level and quality of the disclosures of intellectual capital (IC) by listed companies in Jordan as a case for emerging economies, especially those from Arab nations. Using content analysis, 2016's annual reports of all 215 listed companies on the Amman Stock Exchange (ASE) were analyzed and compared for the main sectors: Financial, service and manufacturing. The key findings indicate a low disclosure level of IC. The most disclosed components of IC were the items of internal capital. Financial companies were found to disclose the most items, followed by manufacturing firms and finally the service sector. This research has implications for policy makers and standard setters regarding mechanisms to boost the practice of IC disclosure in annual reports. This in turn enhances the quality of disclosed information as well as facilitating a better assessment of firm value. This research fills a void in the comparative study of IC disclosure practices among main sectors in the ASE, Jordan.

Keywords: Intellectual Capital Disclosure, Intangibles Disclosure, ICD, Corporate Reporting, ASE, Jordan
JEL Classifications: M4, M49

1. INTRODUCTION

The success of companies in the first half of the last century was basically measured by what is owned of their tangible assets (physical capital), their economic activity associated with the productivity of these assets, the large size of the factories, and the large size of the labour force. However, this situation was less dominant with the onset of globalization and the knowledge economy. Creative capabilities and innovation, with the associated skills and experience, have become the basis for success and development, eventually leading to added value of a company's products as well as enhancing its competitive position (Curado et al., 2011; Catalfo and Wolf, 2016).

The human element has become the main source of company growth, because knowledge is linked to it. Hence, companies aim to provide employees with the appropriate environment to innovate, recognizing intellectual capital (IC) as a major resource (Joshi et al., 2012; Nimtrakoon, 2015).

IC combines the idea of the intellect or brainpower with the economic concept of capital, the saving of entitled benefits so that they can be invested in producing more goods and services. Therefore, IC includes the skills and knowledge that a company has developed to improve and boost its goods and services. Thus, it is apparent that individual or groups of employees who gain the appropriate knowledge are critical to a company's sustainable success (Joshi et al., 2012).

IC issues are now of great interest to researchers, for their importance to contemporary economic development. This importance is reflected in the following points. First, IC is considered the main engine in a company's growth and excellence. Second, investors need more information to be disclosed about IC as it will bring about a competitive advantage. In this vein, Alfraih (2017) concluded that IC disclosures contain value-relevant information for investors in Kuwait, which is in turn reflected in the company value. Finally, the primary role of IC in the company, necessarily leads to more disclosure in financial reporting.

IC disclosure takes many forms: Quantitative, qualitative, monetary and others. In fact, companies usually ignore the concept of IC and the forms and requirements of its disclosure, possibly leading to significant distortion in the financial statements, which fail to express a faithful representation of the company and its real value. This reduces the usefulness of information reported for decision making by various information users. Consequently, investigating the level of IC disclosure in financial statements is valuable in determining whether listed companies in Jordan have sufficient knowledge about IC, the extent to which these companies take advantage of disclosing IC information. This is especially true since IC was found by Dzenopoljac et al. (2017) to be the main driver of earnings and profitability of leading companies in the Arab region. This might also contribute to drawing the attention of companies to assess the status of their success in reporting IC information qualitatively and quantitatively. Moreover, the study will provide governmental agencies in Jordan with the level of development and various forms of reporting of IC information by Jordanian listed companies in all sectors.

The rest of this article is organized as follows. The next section, 1.2, critically reviews the literature on IC disclosure. Section 1.3 describes the methods employed in the current study, and Section 1.4 reports the findings. Finally, section 1.5 provides discussion and conclusion.

2. LITERATURE REVIEW

There is no unified definition of IC (Dumay, 2014; Chiucchi and Dumay, 2015; An et al., 2015), although it is deemed as a vital source of boosting economic wealth as well as business growth (Lev, 2001; Ariff et al., 2014; Curado et al., 2011), and a key driver in achieving organizational goals (Striukova et al., 2008). Several researchers, such as Sveiby (1997) and Stewart (1997) defined IC based on their individual awareness of IC. For instance, Stewart (1997) associated it with the employees' talent and skills, the significance of proprietary knowledge, and the valuable interaction with both customers and suppliers, as these knowledge factors convert raw materials into valuable products or ideal services.

Many countries the importance of IC as a valuable asset for companies. Recently the focus on the amount of information and knowledge of human capabilities has been widened, in order to take advantage of the available information and knowledge, strengthening financial, material and intellectual resources for the purpose of achieving the aspired goals. IC may represent up to 90% of the total market value of a company. The most important form of investment is to increase productive capacity and exploit the physical and human resources effectively. In this vein, Evidence recently extracted from Baltic countries (Latvia, Estonia and Lithuania) demonstrates a positive impact of IC on firm value (Berzkalne and Zelgalve, 2014).

Nevertheless, the financial position of the majority of companies in several contexts fails to disclose the main components of IC focusing instead on the present value of current and non-current assets, other than intangibles. In this respect, many practitioners have passed judgment on the inadequate disclosure of intangible assets (Ariff et al., 2014), which might be caused by conservatism, leading to a gap between stakeholders' information needs and what companies disclose.

Several researchers (Sveiby, 1997; Curado et al., 2011; Villasalero, 2014) took a major part in developing frameworks for IC in the hope of increasing awareness and understandability of IC. Sveiby (1997) suggested intellectual asset components that can be divided into three broad categories: Internal structure; external structure; and employee competence. The Skandia value scheme built by Edvinsson and Malone (1997) which categorized IC into two main classes: Human capital and structural capital. Brooking (1997) developed a framework for IC that consisted of four classes: Human, market, infrastructure and intellectual property assets.

Many researchers have adopted the framework developed by Sveiby (1997) for their empirical studies; for instance, Yi and Davey (2010), Liao et al. (2013), Curado et al. (2011), Goh and Lim (2004), April et al. (2003), Guthrie and Petty (2000) and An et al. (2014). They customized the IC items within classes according to the purpose of their research.

The first category of Sveiby's (1997) framework is internal capital, produced by staff and owned by the company. Typically, this category has a higher value than that of the tangible assets (Yi and Davey, 2010; Sveiby, 1997). At the other extreme, external capital reflects the extent of the value created by the firms' association with external parties, including clients and suppliers, and the reputation built through successful performance over time (Sveiby, 1997; Yi and Davey, 2010; Curado et al., 2011). In terms of human capital, the development of employees' skills through education and training mirrors the items belonging to this category (Sveiby, 1997; Guthrie and Petty, 2000). These developments are accumulated value, echoing the extent to which the organization invests in its employees (Pablos, 2002).

More recently, various empirical researchers have paid considerable attention to the practice of IC disclosure all over the world (for example, Yi and Davey, 2010; Liao et al., 2013; Vishnu and Gupta, 2014; Low et al., 2015). The majority of these studies examine quality by identifying the level and extent of IC disclosure. Guthrie and Petty (2000) evaluated the level of disclosure in the annual reports of 20 Australian listed firms. Their findings revealed that few firms were concerned with either measuring or reporting IC; the lack of a commonly approved framework to measure and report IC by large Australian corporations was manifest. Yi and Davey (2010) and Singh and Kansal (2011) reached parallel conclusions, that IC is not often reported.

Most research on the level of IC disclosure has been across diverse industries (Yi and Davey, 2010); however, the results on the quality of IC disclosure differ. Bozzolan et al. (2003) tested 30 Italian non-public companies, establishing that industry and size are pertinent factors in differentiating IC disclosure practices. Their results were similar to those of Bruggen et al. (2009) conducted in Australia, pointing toward sector type and the size of company as significantly influencing the disclosure of IC in annual reports. Sharma and Dharni (2017) also conducted an analysis of status and

trends of IC disclosure among sectors of manufacturing companies in India; and industry-type was found to be a significant contributor to the level of IC disclosure. In the Italian context, industry type was among other variables significantly affecting the practice of IC value and disclosure (Forte et al., 2017).

Awareness of potential benefits that can be derived from IC disclosure in specific sectors is limited, as few studies cover them (Yi and Davey, 2010; Villasalero, 2014). Of those studies investigating IC disclosure in a particular industry, Kamath (2007) proposed a value-added intellectual coefficient to measure the value-based performance in the banking sector in India from 2000 to 2004; Schneider and Samkin (2008) investigated the level of IC disclosure in 82 local government establishments in New Zealand; and Shareef and Davey (2006) examined the quality and extent of IC disclosure of 19 UK football clubs. The level of IC disclosure varied across industries in the same country and abroad. Abdull et al. (2016), in a study of 12 Saudi banks, found low levels of IC disclosure, scoring under 40% for all components.

Several researchers have compared the voluntary disclosure of IC in two different jurisdictions. For example, Joshi et al. (2012) found a variation in disclosure practices between Australian and Indian IT firms. Abeysekera (2008) published similar results when comparing the level of disclosure in Sri Lanka and Singapore. Ramanauskaite and Laginauskaite (2014) revealed that Lithuanian companies are superior in disclosing IC information when compared to the Estonian and Latvian in annual reports of Nasdaq OMX Baltic-listed companies. Most recently, an investigation into Australian and Sir Lankan firms indicated that external structure disclosures were most common among Austrian firms, while intellectual property disclosures were more preferable by Sri Lankan larger firms (Pratheepkanth, 2018). Overall, few studies have investigated the level of disclosure by sector. None has compared the level and quality of IC disclosures across several sectors in the same country, which will be the purpose of this study.

3. METHODOLOGY AND METHODS

The study aims to compares the annual reports for the 2016 financial year of listed financial, service and manufacturing firms in Jordan. The method adopted is content analysis, which involves using information on IC disclosed in the annual reports. Guthrie and Petty (2000) assert that annual reports are the most widely dispersed documents, compared to other general public documents such as company websites or the press.

3.1. Sampling

The study sample comprises all listed firms on Amman Stock Exchange (ASE) for the period ending 2016: 215 firms divided into three main sectors, as illustrated in Table 1.

Table 1: Sampling details

Sector	Frequency
Financial	35
Service	109
Manufacturing	71
Total	215

The reason for selecting only listed companies is that these companies are obliged by Jordanian company law to publish audited annual financial reports, regardless of the amount of their capital or turnover, like other legal forms. The cost associated with collecting the relevant information is also relatively low.

3.2. Content Analysis

Content analysis was adopted in this study as the core framework for surveying firms' annual reports in order to provide insight into IC reporting practices (Guthrie and Petty, 2000; Dumay and Cai, 2015). Content analysis is appropriate for gathering secondary data (Abeysekera, 2007), and involves coding both qualitative and quantitative data into pre-set categories to produce quantitative scales of different levels (Abeysekera, 2007; Dumay and Cai, 2015).

Content analysis has been widely adopted empirically in corporate reporting literature, for example for corporate social responsibility, IC disclosure as well as ethical and environmental disclosure (Schneider and Samkin, 2008; Yi and Davey, 2010).

3.3. Measurement of IC Disclosure

An IC disclosure index must be constructed to describe the quality of IC disclosure included in the annual reports; this is mainly a qualitative-based tool (Yi and Davey, 2010).

Researchers select items in the IC disclosure index based on the framework developed by Sveiby's (1997) three categories: Internal, external and human capital. The current list of IC items is divided into these three categories, although researchers vary in the way they allocate these items, based on the nature of their study.

The index used in the current study, as shown in Table 2, comprises 15 sub-items: Seven representing internal capital, four external capital and four human capital. These items have been widely used by previous researchers (e.g., Shareef and Davey 2006; Schneider and Samkin 2008; Yi and Davey 2010; Bozzolan et al., 2003; Whiting and Miller, 2008; Liao et al., 2013).

In terms of scoring, a five-point scale ranging from 0 to 4 was used and coded by the method of Liao et al. (2013. p. 664), that is as follows:

- No disclosure (0): The disclosure information does not appear in annual reports;
- Narrative (1): The disclosure information is presented in a narrative form;
- Numerical (2): The disclosure items are presented in a numerical form;
- Monetary (3): The disclosure items are presented in a monetary form;
- Qualitative and quantitative (4): The disclosure is clear with a combination of qualitative and quantitative information.

Scores given provide a weight by which to rank the level and quality of a company's IC disclosure practices.

4. ANALYSIS AND FINDINGS

The quality and the level of IC disclosure are determined by their mean score and their ranking in the both sector and components

of the disclosure index. An ANOVA test was conducted to specify the differences in the level of IC disclosure based on the sectors. The assumptions for using a parametric test were examined and indicated that the data are normally distributed, and their variances are homogenous.

As shown in Table 3, the level of IC disclosure overall was low. The most disclosed component was internal capital, especially by financial companies, as indicated by the mean rank based on both sector and component.

The least IC disclosure was associated with human capital, where the financial companies occupied the highest rank. Overall, financial companies show the highest level of IC disclosure for all components except the disclosure of external capital; the manufacturing companies approached the highest level. The result of ANOVA tests indicated significant differences between sectors regarding internal and human capital. *Post hoc* analysis with LSD indicated that the three groups varied significantly in terms of internal capital, while the only difference regarding human capital was between financial and service companies where the latter tended not to disclose specific issues.

In terms of items making up the components of internal capital, as illustrated in Table 4, the listed companies overall disclosed financial ratios at the first position followed, by information technology and intellectual property respectively. Subsidiaries, corporate culture and management process were the lowest, and very weak in terms of disclosure, ranging from 0.6 to 1.35. Financial firms occupied the highest rank for the majority of items belonging to internal capital, except for intellectual property and financial ratio which were disclosed most by service companies. With respect to subsidiaries, although the disclosure was very low manufacturing was the sector displaying the highest level of disclosure. Significant differences among industries were indicated by ANOVA for all items, excluding intellectual property, financial ratio and subsidiaries, which were disclosed similarly by all sectors *Post hoc* analysis with LSD indicated that service and manufacturing companies differed significantly in terms of

Table 2: IC disclosure index

Item	Description
Internal capital	
Intellectual property	Patents, copyrights and trademarks
Corporate culture	Vision, attitudes, experiences, beliefs and value of a company
Management process/strategy	Relating to process within a company
Research and development	Details on research and development
Information technology	Details on the development, application and impact of information system
Financial relations	Relationships between the company and finance providers
Subsidiaries	Company contribution and effects from subsidiaries
External capital	
Goodwill	Details on brand recognition and building
Stakeholder relationship	Relationships with stakeholders: Social responsibility, government relationship, waste reduction, environment protection and customer relationships
Market share	Information about the market share of a company
Business partnership	Relationship with partners
Human capital	
Employee	Information relating to employees
Education/training	Education or training program provided by a company
Work-related knowledge	Obtained from the job or training by employees
Employee satisfaction	Employee support, safety, retention, work-family balance, motivation and satisfaction

Source: (Adopted from Wang et al., 2016. p. 514)

Table 3: ANOVA for the overall three components of IC disclosure

Item	Mean rank based on sector	Mean±SD	Mean rank based on component	ANOVA results	
				F	Sig
Internal capital					
Financial	1	2.0909±0.42867	1	15.137	0.000
Service	2	1.6971±0.41305			
Manufacturing	3	1.2967±0.41017			
Total		1.7548±0.50872			
External capital					
Financial	2	1.3182±0.91020	3	1.622	0.206
Service	3	1.0400±0.58931			
Manufacturing	1	1.4808±0.78701			
Total		1.2375±0.77079			
Human capital					
Financial	1	1.9909±0.92680	2	6.373	0.003
Service	3	0.8960±1.08800			
Manufacturing	2	1.4308±1.16575			
Total		1.4133±1.14084			

the level of disclosing corporate culture. Management strategy and research and development differed among all groups, and information technology differed between financial and manufacturing companies.

With respect to external capital, Table 5 shows that the overall level of disclosure of all items was the lowest of all. The disclosure of stakeholder relationship was moderate; manufacturing companies held the first place followed by service companies while the level of disclosure by financial firms was low. The remaining items of external capital were disclosed slightly low, especially good will, except for the moderate disclosure presented by service companies. The external capital items were disclosed similarly by all firms, except that goodwill and business partnership varied significantly in terms of disclosure level between service and financial firms, as indicated by the *post hoc* analysis.

Table 6 demonstrates that the level of disclosing the items of human capital was relatively low for all components; training was the highest and work-related knowledge the lowest level of disclosure for all companies. As with internal capital, financial companies were located at the top in terms of level of disclosure for all items except employee satisfaction, which was higher in manufacturing firms. The ANOVA test illustrates that all items making up human capital were disclosed significantly differently by the three sectors, except for work-related knowledge which was disclosed similarly. *Post hoc* analysis with LSD revealed that there were differences among all three groups, except that disclosure of the employee item differed only between financial and service companies.

5. DISCUSSION

The results show that the level of IC disclosure is apparently at minimal levels across all three main components: Internal, external and human capital. The results are consistent with those of Joshi et al. (2012), who pointed out that IC disclosure by Indian IT firms continues to be low. This is in line with the findings of Alfraih (2017), in another Arab context, Kuwait, the IC disclosure level was only around 28 percent. However, these findings contradict those of Yi and Davey (2010), which indicated a good quality of disclosure in the annual reports of Chinese listed IT companies. An explanation of our results can be traced back to the point of view of Ariff et al. (2014), of a conservatism accounting regarding disclosure of intangibles, which may in turn lead to create a gap between stakeholders' information needs and what companies are prepared to disclose.

Table 4: Results of ANOVA for internal capital components

Item	Mean rank based on sector	Mean	Mean rank based on components	ANOVA	
				F	Sig.
Intellectual property					
Financial	2	1.9091	3	1.861	0.165
Service	1	2.4800			
Manufacturing	3	1.5385			
Total		2.0667			
Corporate culture					
Financial	1	1.1818	6	8.258	0.001
Service	2	1.1600			
Manufacturing	3	0.3846			
Total		1.0000			
Management process/strategy					
Financial	1	2.2727	5	13.127	0.000
Service	2	1.0000			
Manufacturing	3	0.4615			
Total		1.3500			
Research and development					
Financial	1	2.8636	4	18.149	0.000
Service	3	0.9200			
Manufacturing	2	1.0000			
Total		1.6500			
Information technology					
Financial	1	2.7727	2	8.005	0.001
Service	2	2.7200			
Manufacturing	3	1.2308			
Total		2.4167			
Financial ratio					
Financial	3	2.8182	1	2.763	0.072
Service	1	3.4400			
Manufacturing	2	3.3846			
Total		3.2000			
Subsidiaries					
Financial	2	0.8182	7	2.482	0.093
Service	3	0.1600			
Manufacturing	1	1.0769			
Total		0.6000			

Table 5: Results of ANOVA for external capital components

Item	Mean rank	Mean±SD	Mean rank based on component	ANOVA	
				F	Sig.
Goodwill					
Financial	3	1.0000±1.41421	4	4.218	0.020
Service	1	0.2000±0.64550			
Manufacturing	2	1.1538±1.34450			
Total		0.7000±1.19745			
Stakeholder relationship					
Financial	3	1.6818±1.61500	1	0.696	0.503
Service	2	2.0800±1.57903			
Manufacturing	1	2.3077±1.65250			
Total		1.9833±1.59970			
Market share					
Financial	2	1.0909±0.68376	2	1.660	0.199
Service	1	1.2800±0.54160			
Manufacturing	3	0.9231±0.49355			
Total		1.1333±0.59565			
Business partnership					
Financial	2	1.5000±1.50396	3	3.595	0.034
Service	3	0.6000±0.86603			
Manufacturing	1	1.5385±1.61325			
Total		1.1333±1.35880			

Table 6: Results of ANOVA for human capital components

Item	Mean rank based on sector	Mean	Mean rank based on component	ANOVA	
				F	Sig.
Employee					
Financial	1	1.9545	3	4.066	0.022
Service	3	0.9200			
Manufacturing	2	1.4615			
Total		1.4167			
Education					
Financial	1	2.3636	2	9.993	0.000
Service	3	0.8800			
Manufacturing	2	1.0769			
Total		1.4667			
Training					
Financial	1	2.4091	1	8.296	0.001
Service	3	0.9600			
Manufacturing	2	1.4615			
Total		1.6000			
Work-related knowledge					
Financial	1	1.6364	5	1.833	0.169
Service	3	0.9200			
Manufacturing	2	1.3846			
Total		1.2833			
Employee satisfaction					
Financial	2	1.5909	4	3.832	0.027
Service	3	0.8000			
Manufacturing	1	1.7692			
Total		1.3000			

Regarding the IC disclosure practice across sectors, the results reveal that the majority of items were disclosed in varying degrees over the three sectors, with the highest level of practice found in the financial firms for the majority of items, followed by manufacturing firms and finally service firms. This result is not surprising as the financial sector, especially banks, represents the biggest as well as the richest sector in the ASE and the major engine for Jordan's economy. Moreover, banks, are overseen not only by the financial market but also by the Central Bank of Jordan, meaning that they are in the public eye more than other companies. The fluctuating levels of IC disclosure among different industries were also identified in several previous studies (such as Shareef and Davey, 2006; Yi and Davey, 2010; Sharma and Dharni, 2017; Alfraih, 2018), indicating that IC disclosures varied across industries in the same country and abroad. Also, Kamath (2017) found that the type of industry is a significant determinant of levels of IC disclosure for large-capitalization firms in India. This might be consistent with the theory that imitating industry rivals is a prominent motivation for disclosure practices (institutional change theory). Furthermore, Signaling, legitimacy

and political cost theories might provide plausible explanations of why the financial sector is superior in IC disclosure. Practices of voluntary disclosure may turn to be a norm in certain industrial sectors. consequently, failure of a particular firm to follow such practices might be considered as an a signal of bad news (Craven and Marston, 1999). Additionally, owing to the significance of the financial sector in emerging economies, it will be subject to more public control in comparison to other sectors. Therefore, it is apparent that financial companies have more incentives to engage in voluntary disclosure practices to gain legitimacy and avoid the potential political costs.

In terms of components of IC, although disclosure was generally low, internal capital received the highest level of disclosure especially from financial firms, followed by human capital which was also higher for financial firms. This result contradicts the findings of Abdull et al. (2016) in the Saudi banking sector. Disclosure of items of external capital was the lowest in all sectors, with manufacturing showing a slightly higher level. This disagrees with the findings of Yi and Davey (2010), who indicated that internal capital disclosure was the lowest and external capital the highest. Conversely, this finding concurs with those of Liao et al. (2013), which showed that internal capital was disclosed more frequently than external capital. The result can be justified by the fact that a few companies in Jordan are engaged in acquisition transactions.

6. CONCLUSION

The current study represents an investigation into quantity and quality of the IC reporting practices by listed companies in Jordan as a case for emerging economies, especially those from Arab nations. In doing so, annual reports of all 215 listed companies, in 2016, on the ASE were analyzed and compared for the main sectors: Financial, service and manufacturing. The findings indicate that the level of IC disclosure is seemingly at minimal levels across all three main components: Internal, external and human capital. The majority of items were disclosed in varying degrees over the three sectors, with the highest level of practice found in the financial firms for the majority of items, followed by manufacturing firms and finally service firms. Although disclosure was generally low, internal capital received the highest level of disclosure especially from financial firms, followed by human capital which was also higher for financial firms.

The current study extends and contributes to the current literature, especially in emerging countries, through a comparative study of patterns IC disclosure among main sectors in Jordan. The results of this research have implications for policy makers and standard setters regarding finding a mechanism to motivate companies to report IC information voluntarily. This both enhances the quality of information and facilitates stakeholders' assessment of the firm's value. The researchers therefore suggest that underlying government agencies in Jordan might host conferences or training courses for financial managers to spread knowledge about the importance of IC and possible ways of its measurement and presentation.

The current study presents a snapshot of IC disclosure practices in 2016 by listed companies in an emerging economy, Jordan. Therefore, the findings might be limited to this context. The analysis was comparative on the main economic sectors, and future research might address other determinants of IC disclosure. Similarly, comparative studies across more Arabs nations might prove valuable. Moreover, the current study could be extended through a longitudinal study to detect the trend of IC disclosure practices over time. Equally important, further studies could be conducted to examine the effect of IC disclosure on other elements, such as the quality of financial reports, its ability to boost investment, and performance.

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