

Factors Affecting Internet Corporate Reporting  
(ICR) Adoption and Practices in Jordan

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## Declaration

This is to certify that this thesis is the result of an original investigation. The material has not been used in a submission for any other degree or qualification. Full acknowledgement has been given to all sources used.

Signed: *K. rayyem*

Date: 20.09.2014

## Dedication

To those who have been deprived from my care, love and sympathy  
throughout my PhD journey

My wife Amal

My daughter Yaqin

My sons

Aseel and Mansoor

## **Abstract**

Corporate websites open wide avenues for companies to disseminate financial and non-financial information to target audiences in a fast, efficient and widely accessible manner. While website communication became a standard means for companies in developed countries, its utilisation, however, by their counterparts in developing countries is still negligible (Oyelere and Kuruppu, 2012). The current study aims to achieve three objectives. Firstly, to explore the patterns and amount of internet corporate reporting (ICR) practices of listed companies in Jordan. Secondly, to identify the determinants of various ICR practices of these companies. Finally, to investigate the determinants and perceived factors contributing to ICR adoption/non-adoption in Jordan.

The key literature focuses mainly on economic-based theories in explaining different ICR practices as a voluntary disclosure channel. The theoretical foundation of this study, on the other hand, integrates several disclosure frameworks with innovation diffusion theories. The resulting framework involves dimensions of technology, management, organisation and environment. This was carried out to obtain a more in-depth interpretation of the ICR adoption phenomenon.

Within the premises of the positivistic-deductive paradigm, the study relies mainly on three quantitative methods in collecting the required data. Firstly, a self-designed disclosure index of 109 items was used to survey companies' websites, identifying levels of different forms of disclosure practices. Secondly, secondary data that include 15 companies' attributes was gathered, specifying determinants of ICR adoption and practices. Finally, a questionnaire survey was conducted among CEOs and CFOs of companies to determine perceived factors that may further contribute to the adoption of ICR.

Results of the survey from websites of 262 listed companies on the Amman Stock Exchange (ASE) in 2012, indicate that, around 150 companies (57%) had usable websites, while only 69 (26%) companies have engaged in reporting the investor relations information on their websites. Explanatory findings also show that, with varying degrees, ICR adoption and different disclosure practices of a firm are a function of its general characteristics, ownership and corporate governance structure. Based on managers' evaluation, four factors were further identified as significant contributors of ICR adoption, namely cost-benefit balance, management commitment, internal technology readiness and users' attention.

This study represents an investigation into ICR adoption and practices among the listed companies in Jordan. Therefore, the ability to generalise the results may be limited to this context. Future research may also consider retesting the study model, regarding the perceived factors of ICR adoption, in other contexts. The study contributes in providing managers and regulators with a diagnostic tool, assessing the status quo of ICR as a voluntary disclosure practice in Jordan. The study also presents an assessment framework for ICR adoption and practices, which enable managers to evaluate the current status of the company regarding multiple aspects of readiness for engaging in ICR: organisation, management, technology and environment.

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# Chapter 1: Introduction

## 1.1 Preface

Since the internet was commercialised in 1989, it has been growing exponentially in business setting especially in developed countries and afterward overall the world. Elliott (1992) predicted that, while information technology is tremendously changing how the business undertaken, accounting will not be an exception and its internal and external sides will be changed for advantages of investors' decision-making. To refer to some examples in this respect, in 1998, the internet was involved doing around 25% of all trade in the NYSE. In 2000, as a pioneer in distributing business news electronically, PR Newswire Association found that majority of investors make the final decision of investment after they back to companies' website. Likewise, a survey conducted by NUA (1998) indicated that a significant proportion of internet users in the US stressed its role in the investing decision made. Since ever, the internet, as a timely and value-relevant means of information, was ensured to be reliable and not dismissible medium in corporate communication (Wallman, 1995, 1996; Lymer, 1999; Beattie and Jones, 2001).

Advancements of the internet and web technologies have profoundly changed the communicative characteristics of companies' reporting practices over the past two decades (Al-Htaybat, 2011). The internet, as a worldwide electronic medium, enables companies to communicate a vast amount of frequent, fast, and dynamic financial and non-financial information to current and potential stockholders in a timely, useful and cost effective manner (Debreceeny et al., 2002; Beattie and Pratt, 2003; Jones and Xiao, 2004; Mohamed et al., 2009; Cordery, 2011). Also, information disseminated on the company's website can be accessed from all kinds of users all over the world (Debreceeny et al., 2002; Al Arussi et al., 2009).

Nowadays, disseminating corporate information via companies' websites has become established and common practice in developed countries, while developing countries are still lagging behind (Al-Hayale, 2010; Oyelere and Kuruppu, 2012). Prior studies, that have been recently conducted in developing countries, have indicated low propensity toward ICR utilisation (for example, 22% in Oman (Mohamed et al., 2009); 16% in Turkey (Bozcuk et al., 2011); 38% in

Morocco and 28% in Tunisia (Henchiri, 2011); 38% in Jordan (AbuGhazaleh et al., 2012a); and 26% in Bahrain (Desoky and Mousa, 2013)). Importantly, patterns of online disclosure practices in those countries, as an investor's informative tool, are also still below expectations (Oyelere and Kuruppu, 2012).

A closer look at relevant ICR studies reveals that they come mainly into two waves. In the early waves, the focus was intensive in the context of the developed world (e.g. Lymer, 1997; Lymer and Tallberg 1997); Gowthorpe and Amat, 1999), while recent and contemporary attention is widely paid to developing countries (e.g. Henchiri, 2011; Al-Htaybat, 2011; AbuGhazaleh et al., 2012a, b). This explicitly indicates that issues of ICR are no longer matters for developed countries, especially where studies' findings indicate that firms in the developed world have been largely taking advantages of using websites as a channel for communications with stakeholders. In contrast, their counterparts in developing countries are less frequent in utilising such initiatives (Al-Hayale, 2010; Oyelere and Kuruppu, 2012). This raises a question of why firms in developing countries are reluctant to exploiting the benefits of such a communication means, and what potential factors that significantly contribute to such reluctance?

ICR literature provides valuable insights about the possible determinants and factors that influence the voluntary choices of companies towards internet reporting adoption and practices, such as firms' general characteristics and corporate governance (Xiao et al., 2004). However, it, notably, relies heavily on conventional disclosure literature in identifying the influences of internet reporting adoption and practices as well as it sticks closely with economics-based theories (agency, signalling, capital needs and legitimacy theories) as the theoretical base in addressing the ICR phenomenon. This suggests some limitations of the current literature, especially where the nature of internet reporting is different from the nature of printed reporting. Internet reporting emerged as a result of development of technological innovations. Thus, all obstacles that may hinder the diffusion and adoption of new innovations, such as technological readiness, management willingness, environment preparedness and organisation attributes, should be considered when investigating adoption and prevalence of internet disclosure.

Since the early nineties, enhancing disclosure and transparency have received greater attention by controlling and regulatory agencies in Jordan. All this aims to improve stock market efficiency and attract foreign investment. Alongside this, Jordan has been increasingly utilising Information and Communications Technology (ICT) pillars until it has become one of the most important technology centres in the Middle East (Al-Hayale, 2010). Lately, acknowledging its advantages, the Jordan Securities Commission (JSC) has guided listed companies in Jordan to voluntarily use their websites, promoting disclosure and transparency. Nevertheless, similar to other developing countries, internet corporate reporting (ICR) is still at its infancy stage in Jordan (AbuGhazaleh et al., 2012a).

From the above discussion, it can be seen that a number of issues exist that have a bearing on in-depth investigating of the determinants of ICR adoption and practices. Firstly, surrounding company factors play an important role when it comes to corporate reporting in general and Internet corporate reporting in particular. Included in these factors, are new technological evolutions that theoretically support the adoption of ICR, but which nonetheless, are dependent upon the readiness of organisations and indeed countries generally, for such initiatives. Secondly, a study in ICR adoption is overdue, because to the best of the researcher's knowledge, to date no comprehensive publication has empirically addressed the factors that contribute to ICR adoption. Consequently, this study seeks to investigate the technological, managerial, organisational and environmental factors that might affect ICR adoption in a developing country, namely Jordan. Further, from the organisational characteristics, it seeks to identify determinants of various disclosure practices on the corporate website.

After the preface in section 1.1, this chapter will be organised as follows. Section 1.2 will provide an overview on the research context, including Jordan's economy, the regulatory and institutional framework of corporate reporting in Jordan, and ICT status in this country. The research purpose, questions and objectives will be presented in Sections 1.3, 1.4 and 1.5 respectively. Section 1.6 gives the justification for the study. Finally, Section 1.7 illustrates the structure of the current thesis.

## 1.2 Research context - Jordan

Attributes of corporate disclosure in any context are highly contingent on the changes in surrounding environmental conditions that happen over time, such as economic, political, social and technological changes (Cooke and Wallace, 1990). Jordan was selected as the research context, to study the effect of certain factors (including technology, management, environment and organisation), comprised in the current theoretical framework, on the ICR practices and adoption. What makes Jordan an interesting research context is that it is a Middle Eastern country with a developing economy that encountered new changes in the economic environment (Al-Htaybat et al, 2011).

Jordan has an emerging capital financial market, and was restructured in 1998, with a need for foreign investment. Thus, regulatory agencies in the country have been constantly stressing the significance of enhancing the market's efficiency through improving transparency and disclosure. On the other hand, in recent years, Jordan has been increasingly spending great efforts to bring Jordanian society into the information, communication and technology (ICT) era. This has been done by launching three ICT initiatives and establishing four ICT regulatory bodies, boosting the technology pillars in the country (Qasem, 2010).

As a response to the ICT revolution in the country, the Jordan Securities Commission (JSC) has recently guide-lined listed companies to voluntarily use their websites to enhance disclosure communications with stakeholders. Therefore, it is interesting to know to what extent companies in Jordan responded to such guidelines and what factors significantly contribute to whether to respond or not. The current part of this chapter provides overviews on Jordan's economy, the regulatory and institutional framework of financial reporting in Jordan, the development of ICT in the country and finally cultural dimensions in Jordan.

### 1.2.1 An overview on Jordan's economy<sup>1</sup>

Jordan has one of the smallest economies in the Middle East. It suffers from inadequate supplies of oil, water and other natural resources, pushing the state to rely heavily on foreign assistance. Other challenges face Jordan's economy, which comprise, for example, high rates of unemployment, poverty, inflation, and a large budget deficit (see Table 1.1 below). However, the largest challenge, and at the same time, the largest opportunity for Jordan, remains the importance of creating proper conditions to improve competitiveness and increase private investment. This will assist in delivering growth to minimise the severity of major economic challenges.

Since assuming the throne in 1999, King Abdallah II has undertaken crucial economic reforms, such as privatising state institutions, largely reducing fuel and agriculture subsidies, passing regulations targeting corruption, and starting tax reforms, including tax management and administration. Importantly, he has also pursued trade liberalisation, joining the World Trade Organization (WTO) in 2000; signing two trade agreements in 2001; the first is an Association Agreement with the European Union (EU) and the second is the first bilateral free trade agreement (FTA) between the United States and an Arab country. In 2007, the U.S. and Jordan also signed a Science and Technology Cooperation Agreement to support and facilitate scientific cooperation between the two countries. Such agreements boost efforts to aid economic diversity and promote growth, attracting foreign investment and creating some jobs. Similarly, it minimises reliance on the country's main exports of potash, phosphates, and most recently textiles. Recently, Jordan has stressed information technology (IT), tourism sectors, and pharmaceuticals, as other promising growth sectors. The global economic slowdown hit in 2008, and regional turmoil, however, have depressed GDP growth in Jordan, influencing key export sectors, construction and tourism.

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<sup>1</sup> Source: 1. THE WORLD FACTBOOK, The US Central Intelligence Agency website, available at: <https://www.cia.gov/library/publications/the-world-factbook/geos/jo.html>, accessed on 10/06/2014;  
2. The World Bank website, available at: <http://www.worldbank.org/en/country/jordan/overview>, accessed on 10/06/2014;  
3. The Global Edge website, Michigan State University, available at: <http://globaledge.msu.edu/countries/jordan/economy>, accessed on 10/06/2014.

In 2011 and 2012, two economic relief packages were approved by the government in addition to a budgetary supplement, targeting improving the living conditions for the poor and middle classes. Jordan's finances have also been strained by a series of attacks against a natural gas pipeline in Egypt, enforcing Jordan to substitute more expensive diesel imports to generate electricity. Jordan is currently implementing many activities to forestall energy shortfalls, such as exploring nuclear, exploitation of abundant oil shale reserves, and renewable and solar technologies. In 2012, to correct and balance budgetary imbalances of payments, Jordan entered into a Stand-By Arrangement of \$2.1 billion, with the International Monetary Fund (IMF). Due to the limited exposure to the overseas financial markets, the financial sector in Jordan has been barely impacted by the international financial crisis in 2008. In 2013, Jordan relied heavily on foreign aid to finance the budget deficit, as the influx of around 600,000 Syrian refugees placed extra pressures on expenditure. Table 1.1 provides a summary of major indicators of Jordan's economy; between 2008 and 2012, as follows:

Table 1.1 Main Economic Indicators in Jordan (2008 - 2012, JD Million)					
	2008	2009	2010	2011	2012
Population (In Million)	5.850	5.980	6.113	6.249	6.388
Unemployment Rate (%)	12.7	12.9	12.5	12.3	12.2
<b>Output and Prices</b>					
Gross National Product (GNP)	16087	17272.4	18697.3	20348.8	21751.8
Gross Domestic Product (GDP)	15593.4	16912.2	18762	20349	21965.5
<b>Money and Banking</b>					
JD Deposits Held at Banks	13348.4	15865.1	17617.2	19119.1	17711
Foreign Currency Deposits Held at Banks	4754.2	4433.4	4887.6	5258.8	7258.6
<b>Public Finance</b>					
Total Revenues and Grants	5093.7	4521.2	4,662.8	5413.9	5054.4
Total Expenditures	5431.9	6030.5	5708	6796.6	6862.1
Overall Deficit, Surplus (on a commitment basis)	-338.2	-1509.3	-1045.2	-1382.7	-1807.7
Net Outstanding Domestic Public Debt	4911	5791	6852	8915	11648
Outstanding External Public Debt (3)	3640	3869	4611	4487	4932
<b>External Trade and Balance of payments</b>					
Merchandise Exports (FOB)	5633	4526.3	4990.1	5684.5	5598.7
Merchandise Imports (FOB), excluding imports from non-residence	10717.4	8975.1	9813.9	11946.2	13047.5
Foreign Direct Investment in Jordan (Net)	2005.7	1713.3	1172.1	1046.2	996.1
Source: Central Bank of Jordan, Annual Report 2012 available at <a href="http://www.cbj.gov.jo/uploads/summary.pdf">www.cbj.gov.jo/uploads/summary.pdf</a> ; accessed on 10/06/2014					

### 1.2.2 The regulatory framework of financial reporting in Jordan

Trading in shares of public shareholding companies in Jordan started since their establishment; in the early 1930's. However, the trade dealings have been unregulated and done through private brokerage offices (Jordan Securities Commission (JSC) website; [www.jsc.gov.jo](http://www.jsc.gov.jo))<sup>2</sup>. The first legislation concerned with financial reporting and disclosure in Jordan is Companies Act No (12), enacted in 1964, and followed closely by Trade Act No (12) in 1966. The former Act required public shareholding companies to disclose an audited balance sheet, and profit and loss account. These statements must be published in a daily newspaper and sent to every shareholder. The 1966 Trade Act No (12), on the other hand, obliged companies to handle inventory records, a general journal, and a correspondence register. However, neither Acts specified the form and content of these accounts and records (Helles, 1992; Naser, 1998; Naser and Al-Khatib, 2000; Al-Akra et al., 2009).

The initiation of the Amman Financial Market (AFM) in 1976 is considered a landmark of Jordan's financial regulation development in the 1970s. The AFM served as a stock exchange and a regulatory body (Jordan Securities Commission (JSC) website; [www.jsc.gov.jo](http://www.jsc.gov.jo)). On January 1, 1978, the AFM commenced its operations with 57 listed companies (Abu-Nassar and Rutherford, 1996). Among the significant reporting requirements of AFM is that all listed companies should publicly disclose any material information that might affect stock prices, including performance and any significant changes (Article 17 of AFM Law No. 31, 1976). Also, the AFM obliged listed companies to provide audited financial statements in accordance with Companies Act No (12) of 1964 (Al-Htaybat, 2005; Al-Akra et al., 2009). However, requirements regarding the form and content of these statements had not been specified by the AFM (Rawashdeh, 2003).

To cope with economic changes in Jordan in the subsequent period, two laws were issued and a professional body established during the 1980s, having effects on financial reporting practice in the country. The 1985 Income Tax Law No (57)

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<sup>2</sup> Accessed online on 11/06/2014; at: [http://www.jsc.gov.jo/public/english.aspx?site\\_id=1&Lang=3&site\\_id=1&page\\_id=2011&menu\\_id2=160](http://www.jsc.gov.jo/public/english.aspx?site_id=1&Lang=3&site_id=1&page_id=2011&menu_id2=160).

and its amendments in 1989, 1992, 1995, and 2002 contain limited disclosure requirements pertaining specifically to income measurement (Al-Akra et al., 2009). These particularly are: using the straight-line method in assets depreciation and valuing inventory according to lower methods (cost or market value) (Abu-Nassar and Rutherford, 1996; Suwaidan, 1997; Al-Htaybat, 2005; Omar and Simon, 2011). On the other hand, in 1989, a new Companies Act No (1) was enacted to remedy deficiencies of the 1964 Companies Act. The additional disclosure requirements of this Act are that companies should disclose a statement of changes in financial position, enclosing explanatory notes to the financial statements, and publishing the auditor's and board of directors' reports (Al-Htaybat, 2005). Indeed, the major achievement of the 1985 Income Tax Law No (57) and 1989 Companies Act No (1) is that of requiring companies to prepare annual financial statements in accordance with Generally Accepted Accounting Principles (GAAP) (Al-Akra et al., 2009). However, neither Laws state which GAAP should be adopted (Suwaidan, 1997; Naser, 1998).

Furthermore, the 1980s witnessed the establishment of the first professional accounting body in Jordan. The Jordanian Association of Certified Public Accountants (JACPA) was founded in 1987 to set out licencing requirements for auditors and monitor their professional practices. In a key contribution of JACPA regarding corporate reporting, it recommended companies in 1989 to voluntarily adopt International Accounting Standards (IASs), through asking auditors to enforce it when auditing their financial statements (Naser and Al-Khatib, 2000; Al-Htaybat, 2005; Al-Akra et al., 2009). However, in a recent legislative development, the Audit Law 2003 specified the authority of JACPA and its role in enforcing international accounting and auditing standards (Omar and Simon, 2011).

The late 1990s is considered a revolutionary stage in regulating financial reporting and structuring the capital market in Jordan. Jordan was encouraged by the dramatic economic changes such as trade liberalisation and privatisation, which enforced drastic economic and legislative reforms. Therefore, 1997 saw the enactment of two Acts to reform corporate disclosure regulations in Jordan, specifically Company Act No (22) and Temporary Securities Law No (23) (which amended by the 2002 Securities Law NO (76). Both Acts require applying IASs in

preparing annual reports, of public shareholding companies, without amendments (Al-Akra et al., 2009), which is considered common practice in developing countries (Hove 1986). However, the 1997 Temporary Securities Law No (23) additionally requires listed companies, beside IASs, to comply with Directives of Disclosure and Auditing and Accounting Standards (DDAAS) of the capital market. In describing this Law, Omer and Simon (2011: 168) state that it “*was the first major source for mandatory disclosure in Jordan, and a turning point and qualitative leap for companies listed on the Jordanian capital market in respect to mandatory disclosure*”. Importantly, in 2004, an amendment on Article 14 from the Securities Law mandates all Jordanian listed firms to apply the full version of IFRS in preparing their annual reports (Al-Akra et al., 2009).

Indeed, restructuring the Jordanian capital market is the essential achievement of the 1997 Temporary Securities Law No (23). This seeks the “*separation of regulatory function from trading; restructuring the market in accordance with international standards; creating the legal framework for the issuance of new financial instruments; encouraging, attracting and protecting investors; establishing a transparent and fair market*” (Jordan Securities Commission website<sup>3</sup>). Thus, investors’ confidence will be enhanced and investments maximised (Al-Hataybat, 2005). Under this Law, Amman Financial Market (AFM) was replaced by three institutions, namely Jordan Securities Commission (JSC), the Amman Stock Exchange (ASE) and Securities Depository Centre (SDC). This is mainly to separate functions of supervision and regulation from the executive role in Jordan’s capital market. Supervision and regulation functions are entrusted to JSC, while the executive role is delegated to ASE and SDC, as private institutions (Al-Akra et al., 2009). Overviews on these regulatory and controlling bodies in Jordan will be provided in subsequent sections.

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<sup>3</sup> Available online at:  
[http://www.jsc.gov.jo/public/english.aspx?site\\_id=1&Lang=3&site\\_id=1&page\\_id=2011&menu\\_id2=160](http://www.jsc.gov.jo/public/english.aspx?site_id=1&Lang=3&site_id=1&page_id=2011&menu_id2=160);  
accessed on 16/06/2014.

### **1.2.2.1 The Jordan Securities Commission (JSC)**

The JSC is the regulator of the capital market in Jordan. It is an independent institution with administrative and financial autonomy, attached directly to the prime minister. The JSC aims mainly to protect investors from various types of risks; this is through regulating and monitoring the capital market, ensuring fairness, transparency and efficiency (article 8-A, 2002 securities Law). To achieve these aims, according to article 8-B of the 2002 Securities Law, the JSC is specifically responsible for regulating and monitoring securities issuance and trading, the ASE, the SDC, and any registered and licenced persons in the capital market, such as shareholding, financial services, and brokerage companies. Also, it is in charge of regulating and monitoring different forms of disclosure, ensuring its accuracy and completeness, comprising material and relevant information to investors.

The JSC has issued a number of important publications that influence the disclosure and governance practice in the country. In 1998, it issued the Directives of Disclosure and Auditing and Accounting Standards (DDAAS). The DDAAS consists of two main parts; the first covers directives of financial disclosure and the second sets out conditions for recruiting external auditors. Under these directives, IASs shall be applied when auditing annual reports. However, Securities Law No 23 of 1997 did not put penalties on noncompliance firms. This later in 2004, led to an amendment of the Securities Law, making applying listed firms to IAS/IFRS subject to oversight of The JSC. Another substantial publication of The JSC was issuing a corporate governance code in 2003; this is to enhance the internal control and governance environment in Jordan. Importantly, it published a guide of corporate governance rules, classifying them into compulsory, according to Law, and voluntary rules. However, checking the commitment of voluntary rules is done under the rule of 'Comply or explain', which means non-compliance with any guiding rules should be explained in the annual reports. For this reason, it provided a survey of disclosure highlighting to what extent (full, partial, none) a listed company complies with guiding rules of corporate governance of JSC, indicating reasons of non-

compliance. This should be included in the annual reports of the firms. Importantly, one of these voluntary rules stresses the importance of using the corporate website to promote transparency and disclosure (Principal 5. transparency and disclosure, Para 3-4).

### **1.2.2.2 The Amman Stock Exchange (ASE)**

The ASE was initiated on 11<sup>th</sup> of March, 1999 as a not-for-profit and private institution; independent administratively and financially. It is the only body in charge of operating the trading of securities in Jordan (the 1997 Securities Law, Article No 23). Among significant tasks of the ASE are: to organise listing of firms on the Exchange, realising a fair and transparent market, investor protection, recording of trades and publication of prices, monitoring and regulating trading (in coordination with the JSC, ensuring compliance with the regulations), promoting the provision of accurate and timely information of issuers, and publicising market information. In order to effectively carry out these tasks, especially ensuring a transparent and efficient market, and safeguarding rights of investors, the ASE has applied the recognised international directives with regard to market divisions and listing criteria (ASE website).<sup>4</sup>

In the ASE, Securities used to be traded on two separate markets, the first and the second market. Which market a company can be listed on is strictly determined based on certain listing criteria pertaining to, for example, realised profit, free float ratio and number of shareholders etc. Therefore, an investor is able to readily find out the status of the firm he/she is willing to invest in; and this in turn promotes the efficiency and transparency of the stock exchange. New and/or downgraded companies can list their stocks on the second market. To upgrade to the first market, specific conditions of listing must be satisfied.<sup>5</sup> In a recent restructuring of the bourse in the late 2012, a third market was developed to enhance market efficiency, including new listing requirements.<sup>6</sup>

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<sup>4</sup> Source : ASE website, Available online at: <http://www.ase.com.jo/en/about-ase>, accessed at 18/06/2014.

<sup>5</sup> Source : ASE website, Available online at: <http://www.ase.com.jo/en/capital-markets-profile>, accessed at 18/06/2014

<sup>6</sup> For more information of ASE divisions and listing criteria please see "*Directives for Listing Securities on*

Post its establishment in 1999, ASE had witnessed remarkable growth in terms of the number of listed firms and trading volume (Al-Hayale, 2010). It was even described as “*one of the largest and fastest growing markets in the region. The market capitalization to Gross Domestic Product (GDP) ratio of 73.1% for the year 2000 is one of the highest in the region, exceeding those of Egypt, Morocco, Saudi Arabia and Israel*” (Omer and Simon, 2011: 168). This might have been due to the shrinkage in the state ownership through launching the privatization program and other reforms, targeting market openness and liberalising the economy, attracting foreign direct investments to the market. According to statistics of the Securities Depository Centre in 2012, more than 51% of shareholders are non-Jordanian. Foreign investors, indeed, are considered the main source of capital inflow into exchanges of emerging economies, e.g. Jordan, which assists in increasing the value of the firm and reducing its cost of capital (Bekraet and Harvey, 2000). However, the success in attracting foreign investment, spread over large geographical distances, is highly contingent on the level of market transparency and timeliness of disclosure (Al-Hayale, 2010). In this case, the significant of the role of website reporting clearly rises.

In response to technological evolutions, ASE launched electronic trading on March 26, 2000, to facilitate and speed the trading process, irrespective of geographical location. Recently, to enhance dissemination of market information, the ASE upgraded its technical infrastructure, where it released the Internet Trading Service in 2010. This improves the ways investors can engage in trading of securities. Investors are allowed to register margin accounts and undertake short-selling. In addition, Commercial banks can hold securities for their customers in a sub-account format.<sup>7</sup>

Despite recent reforms and technological advancements, the ASE has been suffering from intermittent problems of lack of liquidity and declining trading activity. The bourse has been exposed to speculative movements. The market capitalization of ASE has grown and shrunk quickly and recurrently since 2003,

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*Amman Stock Exchange*”; available on the website at: <http://www.ase.com.jo/en/listing-securities-directives>; accessed on 18/06/2014.

<sup>7</sup> Source: U.S. Department of state, available online at: <http://www.state.gov/e/eb/rls/othr/ics/2013/204667.htm>, accessed on 18/06/2014.

e.g. it has increased from around JD13 billion in 2004, reached the peak at JD29 billion in 2007, dropped to JD19 billion in 2012. The ASE decrease in the price index was 1.9%, from 1995 points in 2011 to 1958 at the end of 2012. Similarly, trading volume has fallen sharply, dropping 41.1% to, JD2 billion, 2.4 billion shares. The speculative changes also affected the number of listed firms, where it increased from 192 firms in 2004 to 277 firms in 2010, and declined to 243 companies at the end of 2012. However, in spite of these dramatic changes and its consequences in ASE during the last period, it is still one of the largest stock exchanges in the region that allows foreign investment. The percentage of market capitalization of listed shares at the ASE to Gross Domestic Product (GDP) equalled 93.5% by the end of 2012.<sup>8</sup>

#### **1.2.2.2.1 Family ownership in the ASE**

It is commonly known that more than 85% of the private companies overall the world are family companies, and approximately 35% out of them are among large 500 international companies, which contribute to around 70% of international GDP. Jordan, specifically, is not an exception and family companies dominate the economic landscape in the private sector. This is due to the fact that the early stages of economic activities to establish the private business in Jordan were done by some families in twentieth and thirtieth of the last century (Jordan news agency).

According to the formal archives of Jordanian statistics department, these companies, at early stages of foundation, was entirely owned and controlled by families, however, with development of economic life and the expansion of their operations; they have gradually transmitted into public shareholding companies. Nonetheless, although of shrinkage of families' shares of companies' ownership; this does not widely affect their presence and power in management, dominating crucial investing and operational decisions regardless of development corporate governance and transparency.

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<sup>8</sup> Source:

1. U.S. Department of state, available online at: <http://www.state.gov/e/eb/rls/othr/ics/2013/204667.htm>, accessed on 18/06/2014;
2. ASE website, Available online at: <http://www.ase.com.jo/en/capital-markets-profile>, accessed at 18/06/2014.

A recent publication in the ASE (2014) indicates that more than 40% of listed companies in the market can be classified as family-controlled ones. In a detailed analysis about the ownership structure in the ASE, conducted by Alwshah (2009), it was found that most listed companies are family companies and founding families used to have strong presence in board of directors and management, which representing an increasing trend over time.

The dominant of families on ownership structure in the ASE might have a big influence on the market performance, where it is emphasised that there is strong correlation between risks and returns of family-controlled firms (Shleifer and Vishny, 1997), where their positive and negative performance - regarding particularly dividends, financial results and stock prices – will be related to the management style and way of running business of those dominant families regardless of the performance of the sector that they belong to (Morck et al., 1988).

Financial analysts in the ASE stress that investing policies to create investment portfolios started taking into consideration classifying shares according to family ownership. This is due to fact that having shares of different firms owned by the same family is not really considered meaningful diversification. This might be attributed to the increase in the unsystematic risks for family firms, because the failure of a company within the family group will definitely affect the rest of affiliated companies. This was notable in 2008 during the world financial crisis, where family firms widely suffered from remarkable collapses (ASE website).

### **1.2.2.3 The Securities Depository Centre (SDC)**

By virtue of 1997 Temporary Securities Law No (23), the SDC was the third institution founded, and officially started its operation on 10<sup>th</sup> May, 1999. It is a nonprofit private entity, having administrative and financial autonomy. The purpose of its establishment is to ensure a secure custody of securities ownership traded on the ASE, in terms of registering, depositing, and safekeeping and transferring the ownership of securities, as well as clearing and settling the prices of exchange transactions among brokers.

The SDC is an important agency in the Jordan Capital Market; it works in cooperation with the ASE and the JSC to improve investors' confidence in the market. This is through enabling investors to easily follow-up their investments in an established central registry, safekeeping the securities ownership. Also, it minimises risks of settling transactions, which were executed by implementing legislation, instructions and procedures, which are fair, safe and fast.

To efficiently achieve its objectives, the SDC has developed software named the Securities Central Operation Registry Processing & Information Online (SCORPIO) System. *“SCORPIO, an SDC-designed and implemented system, is a bilingual system that is a complete solution for the registration, deposit, safe-keeping and transfer of securities ownership. SCORPIO consists of a number of systems and modules for registration, depository, clearing and settlement and also provides a mechanism for risk management and surveillance of clearing and settlement. Its modules include brokers, issuers, custodians, surveillance and auditing, pledge, lien and website services systems, which taken together enable the SDC to provide investors with a wide range of services”* (SDC website)<sup>9</sup>.

### **1.2.3 Information and Communications Technology (ICT) in Jordan<sup>10</sup>**

Many international organisations, such as the World Bank, the United Nations and the US agency for international development, have asserted the role of ICT in improving the competitive status of the developing countries regionally and internationally. This is especially where ICT has its identified advantages, which help in enhancing business environment, improving governmental services, decreasing poverty rates and promoting the national industries.

Unlike the rest of the Arab region, Jordan possesses an emerging economy, suffers from scarcity of natural resources, but, however, it has a young population demographic and a thriving educational environment. Therefore, Jordan has been striving hard to exploit the high capacity of educated human resources to gain a competitive advantage. This is partly through acquiring and developing the

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<sup>9</sup> Available online at [http://www.sdc.com.jo/english/index.php?option=com\\_content&task=view&id=56](http://www.sdc.com.jo/english/index.php?option=com_content&task=view&id=56), Accessed on 12/7/2014

<sup>10</sup> Source : Information and communications Technology- Jordan (int@j) website, National ICT Strategy 2007-2011 of Jordan, available online at <http://www.intaj.net/publicationslist/18>, accessed on 20/06/2014.

information technology sector, in order to support the national economy and enhance the business environment. Consequently, since the middle of the nineties, Jordan has made serious efforts towards founding a well-established national ICT sector. Thus, for the purpose of regulating, developing and planning the Jordanian ICT sector, Jordan has established four ICT bodies in the period between 1994 and 2002, which are: National Information Technology Centre (NITC), Telecommunication Regulatory Commission (TRC), Information and Communications Technology- Jordan (int@j) and Ministry of Information and Communication Technology (MoICT).

In addition, Jordan has launched three national plans of action, covering the period from 2000 to 2016, in order to create clear strategies to enhance the ICT sector. These plans are: REACH initiative (2000-2005), the national ICT strategy (2007-2011), and the national ICT strategy (2012-2016). As a result of the efforts that have been made by the government, there were some positive indications regarding Jordan's ICT sector in the years 2009/2010, as can be seen in Table 1.2 below. Firstly, Jordan now represents the main provider of information technology services in the Arab region, at local and international levels.<sup>11</sup> Secondly, Jordan has engaged in embracing the pioneer international companies in ICT industry, such as Microsoft, HP, Cisco, Yahoo!, Oracle, Motorola, LG, Intel and Ericson. Thirdly, the ICT sector is considered currently one of the major contributors to the national economy, where the revenues (local and export) of IT and the telecom sector in Jordan reached around \$2 billion in 2010, which represents 31% of the gross domestic product (GDP). Fourthly, the ICT sector contributed in creating more than 80,000 working opportunities by 2011, in various telecom and IT related jobs. Finally, it achieved considerable penetration rate of the internet and mobile phones, which reached 38% and 108% respectively in 2010.

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<sup>11</sup> The main export markets of Jordan's ICT services in year 2010 are: Saudi Arabia (33.83%), Iraq (13.49%), United Arab Emirates (13.36%), the USA (6.56%), Oman (4.81%), Palestine (4.41%), Egypt (4.13%) and Netherlands (2.94%) ([int@j-a, 2012](#))

Table 1.2 summarises the indicators of ICT sector in Jordan for years 2009/2010		
The Indicators \ Year	2009	2010
<b><u>IT Revenues:</u></b>		
IT Local Revenue:	\$685,461,382	\$529,571,537
IT Export revenue:	\$209,526,864	\$202,275,754
IT Total Revenue:	\$894,988,247	\$731,847,291
<b><u>Internet :</u></b>		
Internet Revenues:	\$51,279,000	\$64,668,000
Internet Users:	1,742,000 users	2,324,000 users
Internet penetration:	29%	38%
<b><u>Mobile Telephony:</u></b>		
Mobile Revenues:	\$932,977,000	\$1,186,640,000
Mobile subscribers:	6,014,000 subscribers	6,620,000 subscribers
Mobile penetration:	101%	108%
<b><u>IT related Employment:</u></b>		
Male Employment:	38218 employees	39719 employees
Female Employment:	18670 employees	19543 employees
Total Employment:	56888 employees	59362 employees
Source: ICT & ITES Industry Statistics & Yearbook, <a href="http://www.intaj.net">www.intaj.net</a> , Information & - Communications Technology Association – Jordan, available online at: <a href="http://www.intaj.net/content/2010-it-and-ites-industry-statistics">http://www.intaj.net/content/2010-it-and-ites-industry-statistics</a> , accessed on 20/06/2014		

#### 1.2.4 Cultural dimensions in Jordan

Hofstede's work (1980, 1991) represents the hugest study endeavouring to classify nations based on broad value and cultural differences. His study is still considered relevant till today; in fact, most studies on culture depend on his research. Hofstede's (1980: 21) referred to culture as *"the collective programming of the Mind which distinguishes the members in one human group from another"*. In a cross-country study, people belong to different cultural backgrounds tend to have *"different mind sets"*, where *"mind sets"* back to all those concepts prevailing in a specific culture (Hofstede, 1991). Importantly, Hofstede emphasised that culture *"is learned"* besides the fact being *"inherited"*.

The four common cultural dimensions that might differ among people worldwide were determined by Hofstede (1980), which namely are: power distance, uncertainty avoidance, individualism versus collectivism, masculinity versus femininity, and a fifth dimension, Long term versus short term orientation, was added by Hofstede in 1991. Indeed, Hofstede (1991) classify Jordan, like any other Arab country, as society tends to have high power distance and uncertainty

avoidance, more collectivism, and masculinity and short term orientation. Here is a discussion of these concepts as follows:

- Power distance: refers to as the extent to which members with less power, in particular context, expect and accept the fact that power is unequally distributed. McCoy et al. (2007) concluded that employees in nations characterised by high power-distance believe that the power is unequally distributed. Therefore, they usually agree and accomplish missions assigned to them by the superior, irrespective whether they are persuaded by work ethics of the superior.
- Uncertainty avoidance: reflects the level of risk that members of a culture are prepared to take, regarding unknown or/and uncertain situation. Society with high uncertainty avoidance is mostly high risk-averse and not willing to bear risks and make individual decisions (McCoy et al., 2007).
- Individualism versus collectivism: while ties in societies with individualism are somewhat loose, they in collective ones stronger and tight. In addition, individualism calls everybody to take care about himself/herself, and his/her immediate family, while collectivism implies that the individuals in homogeneous societal groups look after each other as they exchange protection and loyalty. In high collectivism cultures, e.g. Jordan, it is highly important for people to affiliate to a group, where its members accept and respect opinions of each other (McCoy et al., 2007).
- Masculinity versus femininity: masculinity of society means roles of two genders are clearly dissimilar, while femininity ones gender roles are highly overlapped; both genders are often to be modest, tender and pay attention to the quality of life. In cultures where masculinity is high, like Jordan, males rather than females have more social pressures to be outstanding. However, both of them may be socialised to be ambitious, in feminine cultures (McCoy et al., 2007).
- Long term versus short term orientation: in societies oriented towards long term values, people are more concerned with future reward, specifically, perseverance and saving, while those with short term orientation, the these values are more related to the past and present, especially, tradition respect and social obligation fulfilment .

### 1.3 Research purpose

The aim of the study is two-fold. Firstly, the research aims to develop a generic framework for adoption and practices of internet corporate reporting (ICR) in developing countries. This framework should integrate technological, managerial, organisational and environmental factors that identify the main aspects of adopting any new technological innovation such as ICR, especially in developing countries. Secondly, the research aims to test the applicability of this framework by undertaking an empirical study in a developing country, namely Jordan.

### 1.4 Research questions

The study aims to answer the following questions:

**Q1:** To what extent do Jordanian companies succeed in practicing ICR in terms of content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability?

**Q2:** What are the substantial determinants of the levels of ICR among Jordanian companies listed on the ASE?

**Q3:** What are the important determinants that distinguish the adopters from non-adopters of ICR in Jordan?

**Q4:** What are the perceived factors that contribute significantly to the adoption or non-adoption of ICR in Jordan?

### 1.5 Research Objectives

The study strives to achieve three main objectives; including ten sub-objectives as follows:

**The FIRST OBJ:** To explore levels of ICR that Jordanian companies listed on ASE realise in general, and in terms of content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability.

**The SECOND OBJ:** To identify the determinants that influence variations of ICR practices among companies listed on ASE. This objective is divided into three sub-objectives, which aim to test the effect of organisational attributes (firms'

general characteristics and corporate governance (board and ownership structure) of companies on the ICR practices as follows:

**Sub-SECONDOBJ1:** to test the impact of firms' general characteristics (size, leverage, profitability, listing status and industry sector) on variations in levels of ICR practices, overall, content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability;

**Sub-SECONDOBJ2:** to test the impact of firms' board structure (size, independence, role duality, audit committee, and corporate governance and nominating committee) on variations in levels of ICR practices, overall, content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability;

**Sub-SECONDOBJ3:** to test the impact of firms' ownership structure (institutional, management, foreign and family ownerships) on variations in levels of ICR practices, overall, content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability.

**The THIRD OBJ:** To examine the determinants and the perceived factors that significantly contribute to the adoption of ICR, which distinguish the adopters from non-adopters of ICR in Jordan. This objective is divided into 6 sub-objectives, which aim to explore the impact of firms' surrounding conditions [organisational (firms' general characteristics, board structure and ownership structure), technology, management and environment]] on companies' propensity toward ICR adoption as follows:

**Sub-THIRDOBJ1:** to test the impact of firms' general characteristics (size, leverage, profitability, listing status and industry sector) on ICR adoption;

**Sub-THIRDOBJ2:** to test the impact of firms' board structure (size, independence, role duality, audit committee, and corporate governance and nominating committee) on ICR adoption;

**Sub-THIRDOBJ3:** to test the impact of firms' ownership structure (institutional, management, foreign and family ownerships) on ICR adoption;

**Sub-THIRDOBJ4:** to identify the effect of the perceived internal and external technology readiness on the status of ICR adoption;

**Sub-THIRDOBJ5:** to identify the effect of the perceived management awareness, commitment, and cost-benefit balance on the status of ICR adoption;

**Sub-THIRDOBJ6** to identify the effect of the perceived internal and external technology readiness on the status of ICR adoption;

**Sub-THIRDOBJ7:** to identify the effect of the perceived external environment readiness (users' attention and government) on the status of ICR adoption.

## **1.6 Justification for the study**

The motivations behind this study can be shown as follows:

1. A lack of a comprehensive theoretical framework to investigate the adoption and practices of internet corporate reporting. All prior studies have engaged in explaining the status of ICR practices using the same determinants that have already been employed by the printed voluntary disclosure literature. This is to explain the variability of the level of internet reporting among companies that have already adopted such practices. Consequently, they have neglected the issues regarding the factors causing low levels or non-adoption of ICR. They have also overlooked the differences between two types of disclosure, where the internet disclosure emerged due to the emergence of new technology. Therefore, the factors that motivate or restrict the new technological innovations to be adopted and diffused should be considered in internet disclosure research. Technology aspects, management attitudes toward change, organization resources and surrounding environment, these factors are considered key issues in studying the adoption and implications of new innovations especially in developing countries.
2. The manager is the core of the change process in the company. Managers' attitudes and perceptions towards the new innovations are very important to the success of adoption and implementation of these innovations, especially in developing countries, where the businesses tend to have highly centralised organisational structures (Vreede et al., 1999). None of the existing studies address the perceptions of the managers about the readiness of the management, technology, organization and environment to adopt internet reporting.
3. The intended ICR adoption framework can serve as an assessment exercise to provide companies in Jordan, and other developing countries, with a valuable tool determining strengths and weaknesses regarding aspects of ICR adoption at national and firm level. This assessment framework for ICR adoption is expected to enable managers and regulators to assess the current status of the degree of

companies' readiness for ICR initiatives, in order to set up prospective strategies, to make better use and best practices of ICR. Therefore, the companies will be capable to formulate action plans to improve the quality and quantity of ICR to meet the diversified needs of the corporate information users.

### 1.7 Thesis structure

This thesis consists of three main parts and nine chapters as shown in figure 1.1:

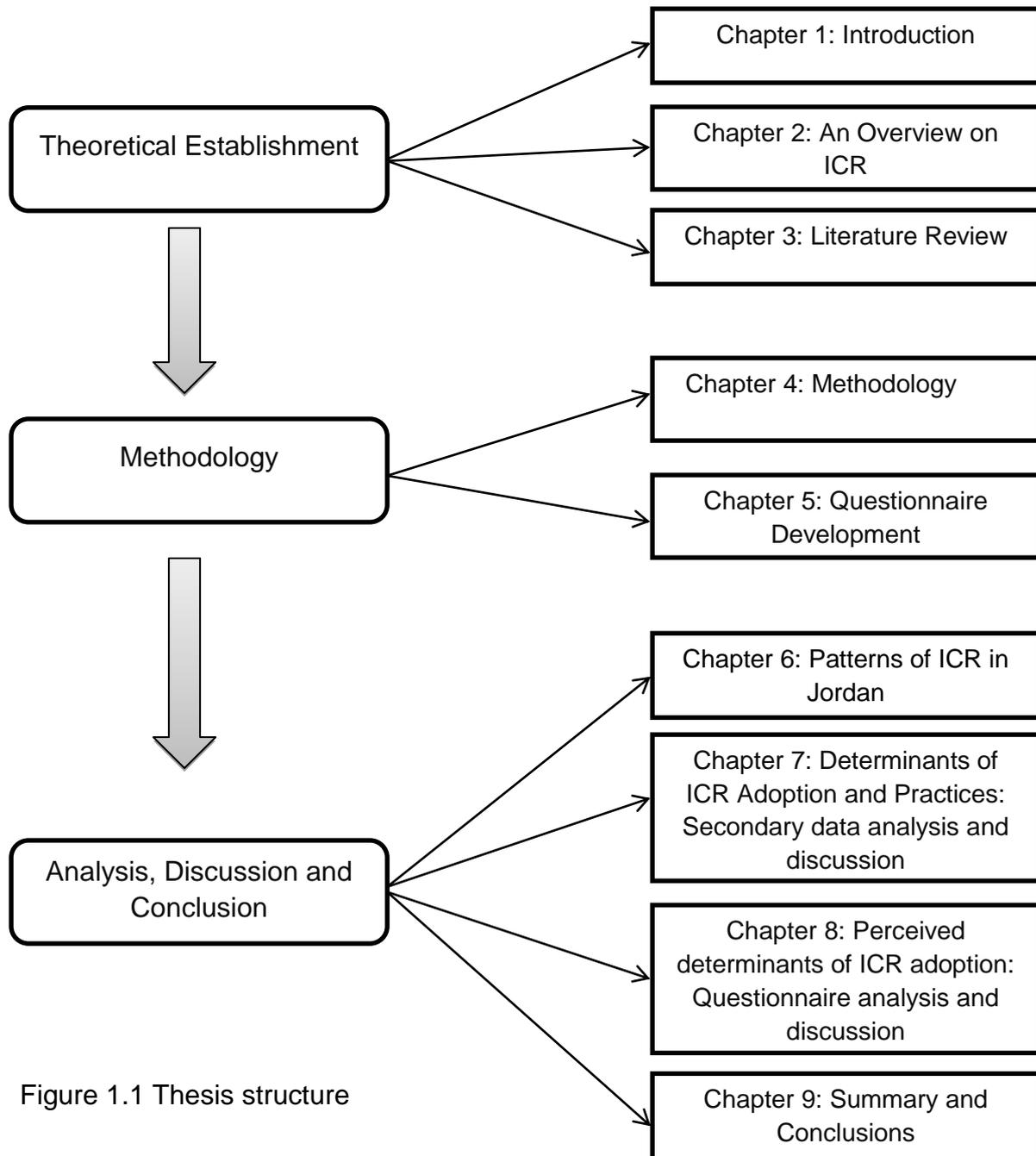


Figure 1.1 Thesis structure

**Chapter 1:** provides an overview of the main argument for investigating ICR, clarifying the importance of the study. The study questions, objectives and justifications for the study are set out. In addition, it provides a brief look at the research context, Jordan, in terms of economy, reporting regulations, institutional framework, as well as the status of information-communication technology (ICT) in the country.

**Chapter 2:** highlights the concept, nature, benefits and drawbacks of ICR, in order to illustrate its importance and the need for studying the current topic.

**Chapter 3:** covers three major sections. The first section provides summaries of the previous studies addressing different relevant aspects of ICR, and giving a critical assessment. These studies are classified into three categories: descriptive studies of ICR patterns, patterns explanatory studies and ICR adoption explanatory studies. The second section supplies the theoretical foundation of the study, including disclosure and innovations diffusion theories. Finally, the third section presents the development of the current theoretical framework of this study. This framework serves as a conceptual baseline to explain firms' behaviours towards ICR adoption and practices.

**Chapter 4:** highlights the various philosophies (paradigms), approaches, methods and strategies of collecting data and analysis, sampling techniques, illustrating the justifications for choosing among various methodological options employed in the study. Two data collection and analysis methods are covered in this chapter, disclosure index and secondary data methods.

**Chapter 5:** explains the process of developing the questionnaire survey. This includes a general overview on the questionnaire method, questionnaire administration and formulation of inherent hypotheses. In addition, it illustrates the lengthy procedures that have been followed to create, validate and refine the questionnaire. Indeed, the factor analysis is an essential part in this chapter.

**Chapter 6:** analyses the results of patterns of disclosure practices in Jordan. These were collected using the disclosure index, covering four types of ICR practices content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability. Percentages of ICR were calculated

regarding each item, category and separately for each industrial sector. This is to highlight strengths and weaknesses in those practices.

**Chapter 7:** presents the findings and discussion resulting from statistical tests of the relationships between independent variables pertaining to the organisational dimension (which are divided into three categories: firm characteristics, corporate governance and ownership structure), and the dependent variables (ICR adoption and practices). Logistic regression testifies to the factors that may explain the companies' ICR adoption status, whether to adopt ICR or not, while OLS regression attempts to predict the factors that might affect the levels of disclosure practices over companies' websites as they are measured by eight ICR indices. There will be a thorough discussion of findings for each variable separately.

**Chapter 8:** provides a detailed analysis of the data that have been collected using the research questionnaire, which seeks to explore the perceived technological, managerial, and environmental factors that might affect the adoption of ICR. This chapter has two main parts. The first reports the results of the discriminant analysis to clarify the factors that might contribute significantly to the companies' decision to adopt or not adopt the ICR's practices. The second is a discussion of those results.

**Chapter 9:** gives a short overview on the research, its objectives, methodology and methods. It also summarises the study's conclusions, contributions, limitations, and recommendations for future research.

# **Chapter 2: Internet Corporate Reporting: An Overview**

## **2.1 Introduction**

Over the past two decades, advancement of technology has massively boosted corporate communications with stakeholders. A company can utilise its website to deliver a huge amount of timely information, efficiently, any time, and worldwide (Beattie and Pratt, 2003; Jones and Xiao, 2004; Al-Htaybat, 2011).

While the current study is interested in examining the factors affecting adopting and practicing ICR, it is worthwhile looking at the concept, nature, benefits and drawbacks of ICR, in order to illustrate its importance and highlight the need for studying the current topic, in addition to drawing attention to the potential obstacles that might inhibit effective use of this communication tool. The rest of this chapter is structured as follows: Section 2.2 presents the concept and nature of ICR. Section 2.3 provides discussion of benefits and drawbacks of ICR, including a focus on the role of ICR in regards to the quality of disseminated information. This is in light of the fundamental and enhancing qualitative characteristics of financial information that were identified by the conceptual framework issued by International Accounting Standard Board (IASB, 2010). The chapter ends with a conclusion in section 2.4.

## 2.2 The nature and concept of ICR

Corporate disclosure via the internet provides an efficient and useful communication channel for companies to report financial results and other information to the wide range of corporate information users (Mohamed et al., 2009). Furthermore, internet reporting supports diversified formats and variety of content of disseminated material, which absolutely improve the quantity, quality and timeliness of disclosed information, in comparison with paper-based corporate disclosure (AICPA, 1994; Wallman, 1995; Al Arussi et al., 2009). The internet disclosure, as an extra dissemination medium available for the companies, presents features that are not available in paper-based disclosure, which aids in improving the interaction and quality of the overall corporate disclosure. Some of these features are: hyperlinks, dynamic presentations, downloadable spread sheets, multimedia, including graphics, video, audio, etc. (Ashbaugh et al., 1999; FASB, 2000; Debreceeny et al., 2002; Ettredge et al., 2002).

Many previous studies have defined ICR and described it in different ways. Among the early definitions of ICR, for instance, Xiao et al., (1996: 36) refer to ICR as “*a process of communicating information (mainly financial) about the resources and performances of a business entity which is useful in decision making and performance monitoring*”. In addition, researchers like Ashbaugh et al., (1999); IASC, (1999); Trites, 1999; FASB, (2000) regarded ICR as the process of the dissemination of performance and financial information of the company via internet technology on the World Wide Web (hereafter website). However, it is obvious that the above definitions of ICR concentrate mainly on the financial disclosure aspects of internet reporting, overlooking non-financial corporate disclosure aspects, as an essential part of corporate reporting on the internet. Also, these definitions neglected the fact that ICR is mostly a voluntary medium of disclosure.

Nonetheless, Elsayed, (2010: 38) presented a more inclusive definition, and defined ICR as a “*disclosure tool that aims to disseminate, voluntarily, various types of information - financial and non-financial- on the company’s website*”. Additionally, the FASB (2000: 30) determines two major dimensions of ICR. The first one is the presentation of internet reporting, which represents the external

format of the released information, which allows for a more dynamic interaction and extra analytical tools, between the user and company databases, than are available in the hard copy corporate disclosure (for examples, hyperlinks, multimedia: graphics, video and audio) (Debreceeny et al., 2002). The second is the content of internet reporting, which represents the nature of information that is published on the company's website. The ICR enables companies to disseminate all types of information comprised in the hard copy-disclosure, such as annual reports as well as additional information like board of directors meetings, financial analysts' records, and audit reports etc. (Debreceeny et al., 2002; Jones and Xiao, 2004).

ICR is considered a voluntary channel of disclosure practices that are used by a firm as a tool to communicate financial and non-financial information about the company to all interested users (Ettredge et al., 2001 and Elsayed, 2010). Therefore, there is no legal obligation upon the company to adopt such type of discretionary disclosure means, which might be directed by companies, to strategically manage the decisions produced by creditors, investors and other stakeholders, to reduce the cost of capital and increase stock liquidity (Healy and Palepu, 2001; HENCHIRI, 2011).

Overall, for the purpose of this study, ICR can be defined as: a discretionary medium of corporate disclosure aiming to electronically communicate financial and non-financial information for the interested users, using the company's website, in order to achieve certain strategic purposes of the company. The next section discusses the benefits and related drawbacks of ICR.

### **2.3 Benefits of ICR and the related drawbacks**

Since Elliott (1992) predicted, in his “*third wave*” paper, the imperative change of internal and external accounting practices, as a coercive outcome of information technology (IT) advancement, the world has increasingly witnessed accelerated steps toward the adoption of different internet reporting technologies. This is especially where the paper-based disclosure suffers many pitfalls, as for instance, incomparability, infrequent dissemination, high cost, limited diffusion and out of date information, which limit its ability to be useful for decision-making of different user-groups of the company’s information (Burry, 1999; Debreceeny et al., 2002).

Internet technology offers unique features, such as speed, wider reach, low cost and more which assist in avoiding some of the pitfalls (if not all) that result from using traditional hard copy reporting (Wallman, 1995; Joshi and Al-Modhahki, 2003; Al Arussi, 2009). Therefore, these features will improve the communicative traits of corporate disclosure in many aspects, such as accessibility any time from everywhere, interactivity with different information users, the quantity of dissemination, flexibility of presentation formats, enhancing the quality of disseminated information and cost-effective dissemination.

The limitations of paper-based reporting in addition to the features available by internet reporting have driven many researchers to claim that the hard copy reporting paradigm has progressively diminished, opening the way for the internet reporting paradigm (Nordberg, 1999; Romain, 2000). However, it should be mentioned that the disclosure via the internet medium is not free from some drawbacks. For example, information overload, Internet-based fraud, information boundaries, poor website design, which may affect the reliability, comparability, integrity and credibility, of reported information (Joshi and Al-Modhahki, 2003; Lodhia, 2004; Jones and Xiao, 2004; HENCHIRI, 2011). Such drawbacks may mitigate the power of the internet to be a perfect communication tool for disseminating information to the interested users (Al Arussi et al., 2009). The next section highlights the benefits and related drawbacks in respect of six characteristics of internet corporate reporting, which are: accessibility, interactivity, quantity of dissemination, presentation formats, quality of information and cost-efficiency.

### **2.3.1 Accessibility**

The widespread coverage of the internet enables companies to provide updatable and sharable information on their websites, which can be accessed directly and promptly by all types of information users from everywhere and at any point of time (Xiao et al., 2002; Adham and Ahmed, 2005; Al Arussi et al., 2009; Mohamed et al., 2009). In addition, the ease of search and ease of access through using various searching techniques and hyperlinks available over internet technology, also enables each user-group non-sequential access to required information that satisfies their specific needs, in order to make rational decisions about their diverse interests, on a real-time basis (Lodhia, 2004; Oyelere et al, 2003; Al Arussi et al., 2009; Mohamed et al., 2009).

In contrast, there are some pitfalls that might mitigate the effective access to the published information via the internet. Poor website design by the company, and using it for multi purposes such as advertising; may cause information overload that consequently limits the ability of information users to make efficient access to the targeted information (Lodhia, 2004; Laswad et al., 2005). Therefore, the range of acceptability of the financial and non-financial information disseminated over the internet medium will be reduced instead of traditional paper-based reporting among the interested users (Laswad et al., 2005). Furthermore, Lodhia (2004) argues that users of corporate information have different preferences, interests, abilities, skills and competences in using website corporate reporting, which in turn creates a relative competitive advantage to sophisticated information users.

### **2.3.2 Interactivity**

A variety of options are available in online reporting via medium of the internet such as hyperlinking, downloading, multimedia, animated graphs format, video, audio, etc. These help in enhancing the level of interactive communication between the company and the different groups of stakeholders (Ashbaugh et al., 1999; FASB, 2000; Debreceny et al., 2002; Ettredge et al., 2002; Xaio et al., 2002; Gowthorpe, 2004). Similarly, ICR allows interactive and collaborative communication between the company and its audiences through the flexibility of options presented by internet technology.

Firstly, the presence of multimedia options on the website of the company, such as sound and video tabs, create an opportunity for the company to communicate many recorded or live activities about the company virtually or in voice form. Some of these activities are: annual general meeting (AGM), performance analysis records, and analysts and audit meetings (Louwers et al., 1996; Ralvic and Stretton, 2000; Debreceny, 2002; Ettredge, 2002). Moreover, graphic animations assist the company to outline figures regarding the company activities and performances (such as, stock prices trends, quarterly and annual profits diagrams, and growth levels, etc.). Additionally, tables, graphs, charts and other presentation forms can be provided, which accordingly increase the level of comprehension of the stakeholders about certain aspects of the company.

Secondly, internet technology affords the ability to the companies for uploading various and huge quantities of financial and non-financial information about the different activities of the company on a cheap, fast and continuous basis. Consequently, downloadable files, like Excel spreadsheets that show financial summaries about the company performance, offer the opportunity for the interested parties to download the targeted information, and use it in preparing the computer based financial analyses any time and from their personal computers, in order to make rational decisions about their investments (e.g. stocks and debts) (Hedlin, 1999).

Thirdly, hyperlinks also enable the users of information to navigate through the internet pages to get desired and more detailed information related to their diversified interests, wherever they are willing to receive it. Furthermore, the hyperlinks provide information, either this information being available on the companies' websites or available on other websites (for example, information about stock prices available on the financial market's website) (IASC, 1999). Finally, internet technology also facilitates interacting with stakeholders through the use of electronic-mail (e-mails) on websites, called web mail, where the company being able to communicate various types of information to specific stakeholders, as required, any time and when needed (Deller et al., 1999; Wagenhofer, 2003; Wickramasinghe and Lichtenstein, 2006).

### **2.3.3 Quantity of disseminations**

The variety and amount of corporate disclosure are conditional upon the purpose of disclosure and the means used in disclosure (Healy and Palepu 2001). The features of internet technology, in terms of high loading capacity, connectivity and speed, afford the capability for companies to communicate a vast amount of all types of information, to all groups of information users. Also, the amount of information disseminated via internet reporting considerably exceeds that included in the traditional paper-based annual reports, containing extra financial information, non-financial information, audio and video tabs and qualitative data, to the stakeholders in frequent mode and at relatively low cost (Louwers et al., 1996; Ettredge et al., 2002; Oyelere et al, 2003; Beattie and Pratt, 2003; Jones and Xiao, 2004; Wickramasinghe, 2006; Al Arussi et al., 2009). In this context, Elliot, (1994); and Jones and Xiao, (2004) anticipated that information technology will widely change the characteristics of external corporate reporting, where companies will be able to disclose great volumes of financial and non-financial information, interactive and disaggregate reporting, on a timely basis.

Instead of the advantages that are gained by interested users from the high quantity of disseminated information, it can cause a problem called 'information overload' (Jones and Xiao, 2004; Lodhia, 2004). This problem results from accumulating old information, resulting in a huge amount of information. Hence, this accumulated old information may create a fatigue in interested users who wish to access the appropriate and/or most recent information that meets their particular needs, and would be useful in the decision making process (Jones and Xiao, 2004).

### **2.3.4 Presentation formats**

The traditional hard-copy corporate disclosure could be described as a static reporting form of corporate disclosure (FASB, 2000; Jones and Xiao, 2004), where the annual reports are issued almost once a year, and the information included in it cannot be changed once released (Al-Motrafi, 2008). Consequently, because of the static nature of the paper-based paradigm, it denies the effective interaction in communication between the company and its stakeholders.

On the other hand, online corporate reporting represents a dynamic form of corporate disclosure (Jones and Xiao, 2004). This is due to its inherent characteristics and divergent options available for the users, such as video, audio, multimedia graphics, downloadable spread sheets, etc (Ashbaugh et al., 1999; FASB, 2000; Debreceny et al., 2002; Ettredge et al., 2002) . Furthermore, the flexible nature of presentation formats of internet reporting permits more interactive and direct communication between the company's databases and the users of financial information (Debreceny et al., 2002).

The main problem related to the presentation of information over the company website is the 'boundaries problem'. The financial information presented over internet reporting usually suffers from a lack of clear boundaries between separate disclosed information, which making it difficult for a regular user of corporate information, to identify the real layout of disclosed information (Debreceny et al, 1998). Consequently, this inhibits an easy and successful determination of the targeted information. Therefore, unclear boundaries involving disseminated information, like the lack of clear boundaries between audited and unaudited financial statement (Trites et al., 1999; Fisher, 2004), may cause problems and almost prevent regular users of the company's website from accessing the required information and, in turn, taking the right decision in the course of action (Flynn and Gowthorpe, 1997; Bury, 1999; Trites et al, 1999).

### **2.3.5 Quality of information**

The conceptual framework issued by the International Accounting Standard Board (IASB, 2010: 33-38) discusses the qualitative characteristics of financial information that is either reported in the financial statements or reported in other ways, which make it useful for making decisions by different types of users, such as current and potential investors, creditors and analysts. The conceptual framework divides the qualitative characteristics of the reported information into two groups: *fundamental qualitative characteristics and enhancing qualitative characteristics*. According to IASB (2010), the former group represents the core characteristics to get useful information for the decision making process, which are: the *relevance and faithful representation*. The latter group represents assistant characteristics, improving the usefulness of reported information, which

is already relevant and faithfully represented. These characteristics are: *comparability, timeliness, verifiability and understandability*. Additionally, the conceptual framework by IASB (2010) stated that the cost represents the main constraint facing firms in achieving useful reported information. In line with the qualitative characteristics of useful financial information presented in the conceptual framework by IASB (2010), this section illustrates the advantages and disadvantages of internet reporting in gaining useful financial information. In addition, it discusses the role of internet reporting in mitigating and/or enlarging the cost constraint problem.

### **2.3.5.1 Fundamental qualitative characteristics of corporate disclosure**

The fundamental characteristics represent the core characteristics of useful financial information, which should be relevant and faithfully represented IASB (2010).

#### **2.3.5.1.1 Relevance**

The useful financial information should be basically relevant for the decision made by the users of this information. The financial information could be described as relevant information if it has the ability to influence decisions made by the user (IASB, 2010). The financial information could influence the decisions made by the user if it possesses “*predictive value, confirmatory value or both*” (IASB, 2010: 33). The predictive value of the financial information could be achieved where the user is capable of forecasting future events from the historical information available, while the confirmatory value of the financial information means that, the reported information is able to feedback the users about the previous events of the company (IASB, 2010).

Unlike hard-copy annual reports, the fast and cheapness of disseminating financial information of the company through internet channels provides the opportunity to the company to increase the frequency of disclosure, in order to communicate up to date information to the interested users, in a timely manner (Debreceeny et al., 2002; Oyelere et al, 2003; Beattie and Pratt, 2003; Jones and Xiao, 2004). Consequently, the quick availability of information to the users leads

to speed in processing this information, and therefore the ability to take the appropriate decisions by the users for the best course of action. In other words, the increase of timely information assists the availability of more relevant information, and hence the increase of the impact on the decisions made by the users (Debreceeny et al., 2002; HENCHIRI, 2011).

Many researchers (such as Debreceeny et al., 2002; Abdelsalam, and Street, 2007; Al Arussi et al., 2009; HENCHIRI, 2011) emphasise the role of internet technology in formulating the actions of the shareholders in the financial markets. Furthermore, they assert that the features available in internet reporting such as, high speed, low cost, wide coverage and ease of access boost the ability of the company to provide frequent, comprehensive and timely information for debt and equity holders. As a result, the firm's value, liquidity and efficiency of the financial market will be increased on the one hand, while the cost of capital and market risk will be reduced on the other (Debreceeny et al., 2002; HENCHIRI, 2011).

#### **2.3.5.1.2 Faithful representation**

The financial information disseminated in the annual reports, according to IASB (2010), should possess three characteristics to faithfully represent a particular reported item: "*completeness, neutrality and free from error*" (IASB, 2010: 34). Indeed, there is no barrier for the company to use internet reporting to communicate financial information characterised by completeness, neutrality and free from error to the stakeholders. However, this absolutely relies on the ways of usage, the degree of control, and attention and concern, given by the companies to their internet corporate reporting systems.

Many researchers (such as, Green and Spaul, 1997; Lymer, 1997; Hussey and Sowinska., 1999; Trites et al., 1999; Hodge, 2001; Oyelere et al., 2003; Jones and Xiao, 2004; Mohamed et al., 2009) mentioned that internet reporting is exposed to some risks (for example, hacking, internet fraud, etc.), as well as some problems (e.g. boundaries problems), which may violate the reliability and integrity of financial information, and therefore affect its faithful representation.

The risks that threaten the faithful representation of financial information can be presented as follows. Firstly, the information disseminated over the company's

website is subject to the alteration and omission either deliberately by the company (in case of the manager wanting to omit some facts intentionally) or through, for example, unauthorised access to the company's website by any external party (Xiao et al., 2002; Hodge and Maines, 2004; Mohamed et al., 2009). This consequently affects the completeness of the financial information, and hence reduces its integrity and reliability. In this respect, researchers like Jones and Xiao (2004); and Mohamed et al. (2009) assert that the security exposures represent one of the most important challenges facing the integrity and reliability of reported financial information via the internet. However, the company is able to enhance security of information by implementing effective security and safeguarding procedures such as anti-hacking and filtering software.

Secondly, the financial information should be presented neutrally in financial statements rather than directed, manipulated or biased in such ways as to influence the decisions made by users (IASB, 2010). However, whereas the internet represents a voluntary disclosure channel available for companies, managers sometimes abuse internet reporting through disclosing information selectively, or omitting certain information, in line with their interests, to affect the decision taken by certain users (Flynn and Gowthorpe, 1997; Hussey and Sowinska., 1999). Finally, the financial information disseminated on the company website is vulnerable to the errors more than those reported in the paper based paradigm. In this context, Mohamed et al., (2009) argues that accuracy and credibility of ICR might be influenced by errors incurred during the re-keying and extracting processes of the reported information.

Overall, faithful representation could be successfully achieved in internet corporate reporting, but it depends on the efforts made by the company to enhance the security systems, reducing the potential errors and maintaining neutrality of the disclosed information.

### **2.3.5.2 Enhancing qualitative characteristics of corporate disclosure**

The *comparability, timeliness, verifiability and understandability* are the enhancing qualitative characteristics that boost the usefulness of reported financial information, which is relevant and faithfully represented (IASB, 2010).

#### **2.3.5.2.1 Comparability**

The consistency in using the accounting methods among companies and across periods enhances the comparability of the information reported in the financial statements (IASB, 2010). Therefore, the investors in the financial markets will be able to rely on the information included in the financial statement to evaluate the performance of various companies for the same period, and for the same company across periods. Accordingly, they can compare the available investing options and make rational decisions about their investment portfolios (IASB, 2010).

At the present time, the widening of the geographic spread of investors over the world invokes the need for comparable reported financial information of a firm. The unique characteristics of internet technology, such as wide coverage, high capacity, high speed, and ease of accessibility, give an opportunity for companies to communicate multiple versions of financial information, and according to different sets of standards applicable internationally (e.g. publishing versions of financial statements according to GAAP, IFRS, local requirements, etc.). As a result, the world wide investors can compare financial results, either within the same company or/and among companies from different nations. Hence, the financial information becomes more comparable.

Nevertheless, many researchers (for instance, Trites, 1999; Etterdge et al., 2001; Fisher et al., 2004; Jones and Xiao, 2004) argue that, because website reporting represents, mostly, an unregulated and voluntary type of corporate disclosure, it is likely that the companies would not disclose the financial reports consistent with Generally Accepted Accounting Principles (GAAP). Thus, companies may follow their interests and present financial statements outside the local or international regulations, which consequently violate the comparability of published financial statements. Moreover, the lack of standardisation and customization of financial

statements published over the company's websites will reduce the consistency and comparability of this financial information, in contrast with the information reported in the hard-copy annual reports (Debreceeny et al, 1998; Jones and Xiao, 2004, HENCHIRI, 2011).

#### **2.3.5.2.2 Timeliness**

The remarkable increase of financial fraud and scandal in the last two decades has motivated the regulators of financial markets to claim more transparency and timeliness for disclosed corporate information (Bozcuk et al., 2011). The features offered by the internet, facilitate transferring up to date and relevant information to the investors on a real time basis, which consequently enhances the efficiency of the financial market (Abdel-Salam and Street, 2007).

The IASB (2010: 37) stresses the usefulness of timely information in rational decision making, and refers to timeliness as "*having information available to decision-makers in time to be capable of influencing their decisions*". Therefore, the financial and non-financial information reported by the company, should be available in convenient real-time, to be useful in decision making by the users of the corporate information. The internet represents an effective medium to communicate corporate information to the interested users at high speed and relatively low cost (Debreceeny et al., 2002; Jones and Xiao, 2004). It therefore enhances the capability of the company to increase the frequency of disseminating information, and thus improves the timeliness of disclosure (Debreceeny et al., 2002).

#### **2.3.5.2.3 Verifiability**

The financial information can be described as verifiable information, if the various users of the information are capable of approximately concluding the same results about a specific item reported in the financial statements (IASB, 2010). Furthermore, the verifiability improves the ability of users of financial information to make sure (either directly through direct observation of the item or indirectly through recalculating the inputs to check out the outputs of the specific item) that

the presented item faithfully represents the real status quo of an economic phenomenon (IASB, 2010).

Unlike the features of the paper-based disclosure paradigm, the high capacity and variety of options available on the internet, as a transporter of corporate information, enables the company to disseminate an unlimited amount of different types of financial information (Al Arussi et al., 2009). Therefore, the users can easily access various information sources, and verify the credibility of any item under examination. Moreover, in this context, Debreceeny et al., (2002) argue that the presence of some options on the internet technology, such as hyperlinks, facilitating the linkage to various information sources, will definitely enhance the verifiability of the financial information. Additionally, the internet offers downloadable spread sheets, like Excel sheets, which facilitate the direct access and recalculation of the items of financial statement items to verify their reliability, accuracy and truthfulness.

#### **2.3.5.2.4 Understandability**

The useful financial information should be easily understandable for regular and sophisticated users. *“The classifying, characterising and presenting information clearly and concisely make it understandable”* (IASB, 2010: 37).

Indeed, reporting information over the internet is considered more complex to understand than traditional paper-based reporting (Debreceeny et al., 1998). There are many sources of distortions and complexity of internet reporting, which therefore reduce the level of comprehension of financial information. Firstly, the unstructured formats and massive quantity of detailed reported information is likely to create an ‘information overload’ problem, which consequently confuses and inhibits the users from accessing the required information (FASB, 2000; Xiao, and Jensen 2001; Xaio et al., 2002). Secondly, the wide use of hyperlinks and hypertexts may prevent the users from discriminating between different classes of information, such as, differentiate between audited and unaudited financial statements (Flynn and Gowthorpe, 1997; Bury, 1999; Trites et al, 1999; FASB, 2000; Jones and Xiao, 2004). Finally, there is the boundaries problem, where the financial information presented over internet reporting suffers from the lack of

clear borders between separate disclosed information, which might mislead the users of financial information to identify the real layouts of disclosed information (Debreceeny et al, 2002), which therefore prevents the successful determination of the targeted information (Flynn and Gowthorpe, 1997; Trites et al., 1999; Fisher, 2004).

However, the decision is in the hands of companies to disseminate understandable information, where they can organise online disclosed information in such a way as to be clearly presented and classified. In addition, some experts and researchers urge businesses to standardise their external business online reporting through adopting eXtensible Business Reporting Language (XBRL) (Cordery et al, 2011).

### **2.3.6 Cost efficiency**

The paper-based corporate reporting incurs costs in terms of gathering, assuring, processing and distributing quantitative and qualitative information (IASB, 2010). Additionally, these costs will increase significantly with geographical spread of information users as well as with the frequency of corporate reporting during the year. In contrast, in the presence of the internet, the cost as a pervasive constraint of corporate disclosure does not exist anymore. The internet, as a cheap electronic transporter of financial and non-financial information of any volume, is definitely able to save these costs, irrespective of the frequency of disclosure and geographic scope covered (Allam and Lymer, 2002; Debreceeny et al. 2002; Jones and Xiao 2004; Khadaroo, 2005; Mohamed et al., 2009). Comparatively, the study conducted in the UK by Investor Relation Society (1998) revealed that the average cost to distribute one version of printed financial statements to stakeholders is around £5, while the annual maintaining costs of the financial information on the company website are approximately from £20,000 to £30,000.

However, some researchers like Jones and Xiao (2004) and Adams and Frost (2006) argue that internet reporting incurs some additional costs, which may reduce the efficiency of online reporting, such as updating and maintenance cost, security programs, licence rights, periodical repair, designing and programming

fees and staff total costs in respect of the upgrade, maintenance and monitoring the company's webpages. In addition, Mohamed et al., (2009) mention that online reporting creates unnecessary additional costs upon the companies in developing countries, where the online reporting represents a voluntary form of corporate disclosure; it does not officially substitute the mandatory hard-copy annual reports.

Furthermore, Oyelere and Kuruppu (2012) argue that perceptions about costs may be among other issues that limits the wide diffusion of online financial disclosure in the Middle East. Oyelere and Kuruppu (2012: 311) also specifically state that *“apart from initial set-up costs, which are relatively minor, the ongoing long-term costs of operating and maintaining corporate web sites for IFR purposes are minimal. Initial set-up costs could include computers systems and equipment acquisition, system design and implementation costs, including consultancy charges, general and application controls costs of the system, and ICT space and infrastructural requirements. While initial set-up costs could be substantial, they are usually relatively minor in comparison to other corporate costs. The benefits to be derived from IFR in the current age of globalisation and endemic market inter-linkages are likely to far outweigh the pecuniary costs”*.

## 2.4 Conclusion

This chapter provides a summary about the nature and concept of ICR as well as illustrates the benefits of ICR and its inherent drawbacks. Generally speaking ICR is a voluntary and unregulated means of corporate disclosure in most countries around the world. For the purpose of this study, ICR is defined as: *a discretionary medium of corporate disclosure aiming to electronically communicate financial and non-financial information for the interested users, using the company's website, in order to achieve certain strategic purposes of the company.*

ICR brings many advantages for corporate disclosure, but at the same time, creates several disadvantages. ICR enables companies to access and interact dynamically with geographically-dispersed interested users, providing them with a vast quantity of timely, multiple-format and less costly information. However, as it is a voluntary disclosure channel, some researchers argue that it burdens companies in developing countries, as it is usually characterised as small businesses, by additional costs, which can be avoided in the existence of hard-copy and third party disclosure.

Furthermore, some concerns regarding the quality of disseminated information were also raised, especially in the occurrence of some problems of ICR such as information overload, information security, deregulation, lack of boundaries and standardisation. These problems might limit some of the qualitative characteristics of reported financial information included in the conceptual framework issued by the International Accounting Standards Board (IASB, 2010: 33-38). While ICR is more likely to enhance the relevance, verifiability and timeliness of financial information, it might make it less faithfully representative, understandable and comparable. However, a company management has a great role to overcome or, at least, mitigate the severity of such shortcomings.

## **Chapter 3: Literature Review**

### **3.1 Introduction**

The current chapter consists of three major sections structured as follows:

Section 3.2 provides an overview on key previous studies addressing different aspects of ICR. Following the scope of this study, these studies will be classified into two main groups, which are: descriptive studies of ICR patterns and explanatory studies. The latter group will be divided into two categories as well: those concerned with explaining patterns of ICR practices as well as those concerned with ICR adoption.

Section 3.3 starts by presenting the main claims of theories and arguments that were used by prior studies in explaining ICR adoption and practices. Importantly, accompanying critiques will be provided through analysis of prior studies and their usage of these theories. Lastly, in this section, other theories will be examined, in order to consolidate them further in the theoretical foundation of this study. Two main sets of theoretical frameworks will be presented, namely voluntary disclosure theories and innovation diffusion theories.

Finally, Section 3.4 presents the development of the current theoretical framework of this study. This framework serves as a conceptual baseline to explain firms' behaviours towards ICR adoption and practices.

### **3.2 Prior studies in ICR**

This study is interested in achieving three main objectives: describing the patterns of ICR, identifying the determinants of levels of these patterns and finally specifying the factors that explain the variations in the adoption of ICR. In accordance with the study objectives, the relevant prior studies will be classified into three main categories as follows:

*First category:* studies that describe ICR practices;

*Second category:* studies that explain patterns of ICR practices;

*Third category:* studies that explain variations in ICR adoption.

#### **3.2.1 Studies that describe ICR practices**

These studies initially seek to identify the online status of the examined companies, whether they have websites or not. Further, these studies aim to realise whether the available websites were used in disclosing corporate information. If so, it attempts to specify the nature of what is being disseminated on the corporate website. Appendix 1 provides summaries about descriptive studies of ICR.

Two kinds of studies have been undertaken, which are limited in scope to the providing an overview of some online reporting practices. Studies (such as Lymer, 1997; Lymer and Tallberg 1997; Gowthorpe and Amat, 1999; Deller et al., 1999) have tried to describe website disclosure practices without using an ex ante set of criteria to evaluate the quality of reporting. They mainly aimed at detecting kinds of information content disclosed, and this was the main concern rather than assessing technology features or presentation techniques. In other studies, the focus was diverted towards preparing a catalogue of attributes, assessing the quality of presentation in addition to the content information, financial and non-financial (e.g. Hedlin, 1999; the IASC, 1999; FASB 2000; Khan and Ismail, 2011; and Oyelere and Kuruppu, 2012). Nevertheless, Lybaert, (2002) extended the checklist by including some timeliness and user support items.

In terms of the research context, the majority of studies have been either conducted solely in a single country or comparatively in several countries; this is in both developed and developing countries. It is, however, noticeable that most comparative studies were undertaken in developed countries (such as Lymer and Tallberg, 1997, UK and Finland; Deller et al., 1999, USA, UK and Germany and Ponte et al., 2000; Europe). Nonetheless, ISAC, (1999) implemented a survey among 22 countries, indicating that, compared to developing countries, firms in developed countries have a more online presence as well as being more advanced in their web financial communications.

It can be concluded from Appendix (1) that the intention to describe ICR practices started early in developed countries, for example, Lymer, (1997), in the UK, and has stopped since 2004, e.g. studies by Fisher et al. 2004, in New Zealand and Lodhia et al. 2004, in Australia, while in developing countries, this topic, however, is still dynamic (for instance: studies of Mohamed et al., 2009, Oman; Salehi et al., 2010, Iran; Buzcuk et al., 2011, Turkey; Khan and Ismail, 2011, Malaysia; and Oyelere and Kuruppu, 2012, United Arab Emirates).

### **3.2.2 Studies that explain patterns of ICR practices**

This category of studies is not only interested in describing ICR practices, but rather it attempts to justify the patterns and levels of these practices, as highlighted in Appendix (2). Thus, several variables were hypothesised as determinants of levels of ICR as a whole or/and of its common dimensions, content, presentation, timeliness and technology features.

In identifying motivations behind ICR patterns, explanatory studies have built mainly upon economic theories (agency, signalling, capital needs and legitimacy theory) as a theoretical explanatory foundation. However, agency and signalling theories have been most frequently used. As a result, two major groups of explanatory determinants have been identified, firm characteristics (general and market related) and corporate governance variables (board and ownership structure) as depicted later in Figure 3.1.

It can be noted that the general firms' characteristics, especially the size, have been widely relied upon by early stages of these studies in predicting voluntary disclosure practices on the website. Till 2006, except Debreceeny et al., (2002), who depended on the data of international survey gathered by ISAC (1999), and Al-htaybat, (2005), Jordan, all other studies have targeted developed countries in one or multi-contexts; e.g. Pirchegger and Wagenhofer (1999), Austria and Germany; Bonson and Escobar (2002 and 2006), Europe; Larran and Giner, (2002), Spain; Allam and Lymer, (2003), USA, UK, Canada, Australia, and Hong Kong; Marston (2003), Japan; Marston and Polei (2004), Germany; and Bollen et al., (2006), UK, Australia, France, Belgium, Netherlands and South Africa.

However, in addition to firm-related attributes, Xiao et al., (2004), China, realised that ICR levels can be explained by foreign and individual ownership and independent directors, shifting the attention to such variables. In two studies in the UK, 2007, it was found that corporate governance variables influence the content and usability (Abdelsalam and street, 2007), and timeliness (Abdelsalam et al., 2007) of ICR. A year later, 2008, Ezat and El-Masry, Egypt, and Kelton and Yang, USA, addressed the impact of corporate governance (board and ownership structure) on ICR, while, Abdelsalam and El-Masry (Ireland), and Al-Motrafi (Saudi Arabia) limited their analysis to only exploring the impact of ownership structure.

Since then, except Boubaker et al (2012), France, addressing the determinants of ICR has been only concerned with in developing countries, where no study could be found in the context of developed countries. Still, all categories identified as predicting variables of ICR practices are in the interest of later studies in developing countries. For instance, researchers, such as Al Arussi et al (2009), Malaysia ; Aly et al (2010) Egypt ; Al-Htybat (2011), Jordan; Henchiri (2011), Tunisia and Morocco; and Uyar (2012), Turkey, have provided evidence of the relationship of several companies attributes (e.g. size, profitability, etc.) and various ICR practices. Such evidence has been presented regarding corporate governance variables (ownership and board structure; e.g. Elsayed, (2010), Egypt; Nurnnabi and Hossain (2012), Bangladesh; Samaha et al. (2012), Egypt; Desoky and Mousa (2013), Bahrain; and Sharma (2013), Nepal. Nonetheless,

AbuGazaleh et al. (2012a), Jordan, in addition to levels of ICR, they found a significant influence of the different forms of ownership on the presence of the corporate website and its use in reporting investor relations information.

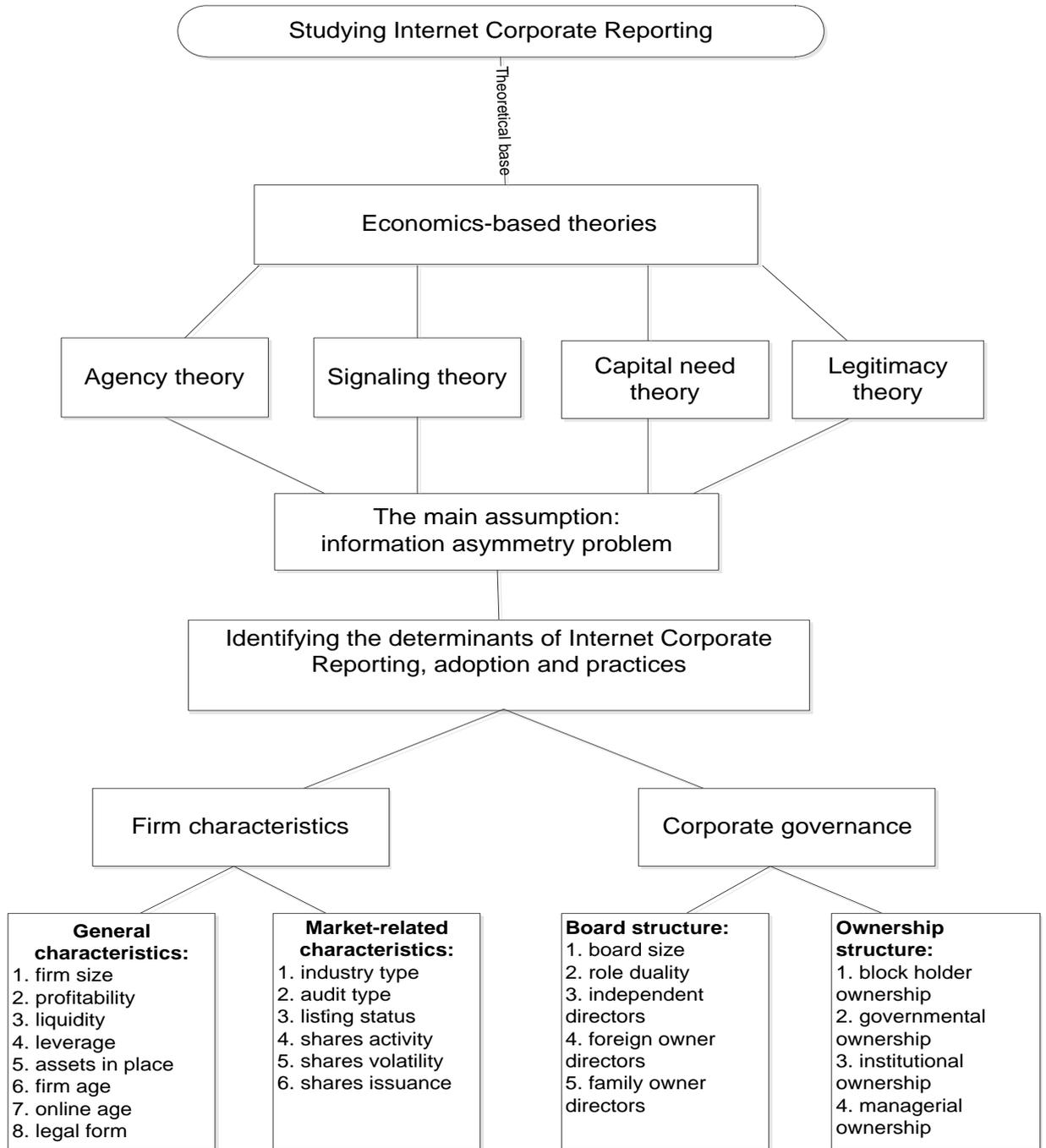


Figure 3.1 The theoretical background of investigating the determinants of ICR

Source: developed by the present researcher

### **3.2.3 Studies that explain ICR adoption**

Two sets of studies have been conducted to identify determinants of ICR adoption. The first has built upon the same propositions of explanatory literature that predicted variations in levels of ICR practices. Thus, building upon economic-based theories, the secondary data method, firms' characteristics and corporate governance is largely used to identify determinants of ICR adoption as outlined in figure 3.1. The second represents perspectives-oriented studies, which consider the innovative nature of ICR adoption. Using interview or questionnaire methods, these studies seek explanatory factors that are almost beyond those that can be measured using the secondary data. Full details about these two sets of studies can be found in the Appendix (3).

Unlike explanatory studies of patterns of ICR, addressing determinants of ICR adoption has been early and equally interesting, for both developed and developing countries, for instance, in UK, Marston and Leow (1998), Bernnan and Hourigan (1999), in Ireland; Hassan et al. (1999), in Malaysia; and in South Africa Haasbroek (2002). This is perhaps due to the fact that ICR practices in developing countries at the early stages were very minimal. Thus, the priority of research attention was directed towards studying the adoption of ICR only.

However, similar to studies explaining levels of ICR, early waves of these studies basically consider various companies' attributes as determinants of ICR adoption. The size, profitability, leverage, and industry sector were the most common predictor variables that identify the companies' adoption status (for example, in addition to the above studies, Craven and Marston, (1999), UK; Ettredge et al (2002), USA; Ismail (2002), in Qatar; Saudi Arabia and Bahrain; Joshi and Al-Modhahki (2003), Bahrain and Kuwait; Oyelere et al. (2003), in New Zealand; and Rodrigues and Menezes (2003), in Portugal. Nonetheless, in over 118 listed Canadian companies, Trabelsi and Labelle (2006) found that delivering incremental information content on the website is mainly associated with litigation risk and investors' demand.

Later, some studies have included some aspects of ownership and governance structures as potential motives towards a voluntary choice of firms for ICR

adoption. While Momany and Al-Shorman (2006), in Jordan, provided evidence of the significance of ownership structure in the online disclosure presence, Al-Shammari (2007), however, in the Kuwaiti context, failed to find such evidence. Likewise, Barako et al (2008) found, in addition to ownership structure, board and audit committee independence was not significant to explain the use of ICR over a sample of Indonesian firms. Recently, in an international analysis of ICR adoption among 44 developed and developing countries, Ojah and Mokoaleli-Mokoteli (2012) concluded that macro-environment variables, namely technology infrastructure, financial market structure and political structure all positively affected the propensity toward ICR adoption, controlling to the ownership structure applied. Further, as micro-environment players, more profitability and less financing needs reduce desirability for using the website for investors' communications.

The other category of relevant studies focused on using perceptions of various stakeholders to identify facilitators and barriers of ICR adoption. Contingency, institutional, and innovation diffusion frameworks were the main theoretical frameworks utilised. Xiao et al. (1996, 1997), using contingency theory, from a questionnaire survey found that the greater use of IT leads to more sophisticated internal and external financial reporting. However, it is subject to mediating of many contingent factors such as user type, firm size, gearing ratio, listing status and management compensation plans. Similarly, drawing on a contingency framework, Xiao et al. (2002) evaluated different views of a number of experts obtained from an open-ended questionnaire about the *immediate trends* of website disclosure. They suggested that the future of online reporting is largely dependent upon several technological and non-technological factors. Building substantially on the research by Xiao et al. (2002), Jones and Xiao (2004) sought a consensus view to predict the determinants of future change of online reporting by 2010, among 20 UK experts relating to corporate reporting. Analysing the data of the multi-staged Delphi technique<sup>12</sup> resulted in three possible perspectives on determinants of online reporting change by 2010, which are either social determinism (social, organisational or behavioural factors), technological

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<sup>12</sup> "The Delphi technique is an iterative, systematic forecasting method (Gupta & Clarke, 1996; Jones & Twiss, 1978). It is particularly useful where there is little prior, systematic research." Jones and Xiao (2004: 241)

determinism or, based on the contingency perspective, a mix of technological and non-technological factors.

As a part of their study, Ashbaugh et al. (1999), the results of their questionnaire survey of 67 companies in the USA indicated that among the strongest incentives to have a corporate website is to maintain good communication with stakeholders and customers as well as to cope with competitors' practices. Moreover, Gowthorpe (2004) conducted 20 semi-structured interviews, with senior corporate managers, financing managers and investor relations managers, about incentives towards the adoption and the nature of corporate reporting on the internet in smaller UK listed firms, outside the FTSE 100. Findings show involvement of top management (managing directors) is the main driver of the presence and provision of information disclosed on the website.

Recently, three studies, in Arab countries, were found to examine views of stakeholders, exploring companies' reluctance towards adoption of ICR. Utilising diffusion of innovation and institutional theories, Aly (2008), in Egypt; and AbuGhazaleh et al. (2012b), in Jordan, qualitatively and using semi-structured interviews, investigated factors that lead to not creating a website as well as not engaging in online disclosure. Among important findings that Aly's (2008) interviewees pointed out, was that the propensity towards ICR is highly influenced by management style, culture, organisational culture, resistance to change, technical abilities, imitating rivals, and rules and regulations. AbuGhazaleh et al. (2012b) concluded that bridging the geographical divide with international shareholders and responding to pressures of major stakeholders are the fundamental incentives of adopting online reporting. Interviewees further highlighted that top management support plays a core role in influencing the ways in which companies use their website both in general and for investor relations activities in particular. However, the lack of a corporate online disclosure is highly related to the management belief that stakeholders are not yet ready or willing to use it. Al-Hayale (2010) draws on the views of financial managers, analysts and internal auditors of industrial listed companies in Jordan. Questionnaire respondents indicated several obstacles to maintaining online financial disclosure,

which are: a lack of, expertise, importance to company, regulation, management and government support, and high initial setup costs.

### **3.2.4 A critical assessment of relevant ICR literature**

This section aims to critically analyse the previous ICR studies, in order to be able to identify the scope of current literature, take the insights from this literature, and determine its gaps and limitations, in order to investigate them in the current study. The limitations of the current ICR studies can be linked to the disclosure indices employed, its theoretical foundation, explanatory variables identified, approaches used and contexts examined.

In describing online disclosure practices, a method of disclosure index has been mainly employed. The number of items included and dimensions covered widely diverge among ICR studies; this is based on the aims and scope of these studies (see Appendices 1, 2 and 3). For example, the checklists of Marston (2003) and Bonson and Escobar (2002) contains 10 and 23 elements of disclosure respectively, while the FASB's (2000) checklist entails 325 attributes of website and disclosure. In addition, dimensions covered by these checklists largely vary in terms of number, nature of classifications, cross listing of items as well as miss-listing of items. For instance, some researchers (such as Ettredge et al., 2002; Bollon et al., 2006; and Alhtaybat, 2010) put all items in one list, while others (like ISAC, 1999; Allam and Lymer, 2003 and Khan and Ismail, 2011) divide it into two aspects: content and presentation. Other checklists like those of Pirchegger and Wagenhofers (1999), and Laebart (2002) added dimensions of timeliness and users support criteria to their indices. Others limit their search to a specific dimension such as timeliness of disclosure (e.g. Abdelsalam and Street, 2007; and Ezat and El-Masry, 2008) or environmental reporting (Al Arussi et al., 2009).

Differences among disclosure indices relating to items contained, dimensions addressed and classification will constrain the ability to make valid comparisons among these studies. However, due to variations in studies' goals, frames and national disclosure frameworks, claiming harmonisation of disclosure checklists in real practice, is largely difficult. Nonetheless, for the sake of a disaggregate presentation of the study's index; the current study follows mainly the

classification of Elsayed (2010). However, avoiding misclassifications of items and seeking relative comprehensiveness, an extensive review of prior indices and reference to companies' practices in the light of Jordan's disclosure framework were implemented (see Appendix 4). Further, the checklist was checked by two academics with relevant experience in ICR to avoid cross or miss-listing of items, establishing face validity of the index. As a result, four main categories were included: content, presentation, timeliness and usability. Content items were divided into three sets of financial, corporate governance (CG) and corporate social responsibility (CSR).

ICR is a voluntary channel of corporate disclosure (Oyelere and Kuruppu, 2012). Disclosure targets many information user groups (e.g. investors, creditors and regulators), with different needs and interests (Solmons, 1986). Thus, a potential conflict among users about the relevance and materiality of information is substantial (Omar and Simon, 2011). Consequently, disclosure as a multifaceted phenomenon is not easy to be exclusively explained using a single theory (Hope, 2003). Aly and Simon (2008) advocate that three main theoretical frameworks can be specified as motivations toward voluntary corporate disclosure. These are economics-based, institutional change, and innovation diffusion theories. However, in the context of ICR, the economics-based theories, namely agency, capital needs, signaling, and legitimacy theories, have been the most cited theories (Debreceeny et al., 2002; Oyelere and Kuruppu, 2012).

Therefore, one of the shortcomings that can be identified around the economics-based theories is their main assumption: information asymmetry in the capital markets, between the manager (agent) and the owner of the company (principal). Reducing information asymmetry according to these theories can be achieved through enhancing the level of voluntary disclosure practices, which definitely become easier with new enhancements of technological innovation on the internet. However, this approach suffers from many limitations that perhaps mitigate its effectiveness in interpreting the various companies' practices of voluntary disclosure, particularly in less developed countries (Elsayed, 2010).

The economics-based theories assume the efficiency of financial markets. Thus, all information about the company available in the capital market is directly

experienced by the investors, which is then automatically reflected in the company stock prices (Ross et al., 2010). This assumption may not be applicable in the case of developing countries (Abdelsalam, 1999). Therefore, in case of lack of efficiency in the financial market, this possibly will lead to mitigate the signalling effect of the disclosed information (Leventis and Weetman, 2004). In this context, Keane (1993) and Abdelsalam (1999) argue that the foundation of applicability of economic approach as an appropriate theoretical base to explain the voluntary adoption of disclosure practices is contingent on two propositions: efficiency of financial market and rationality of investors in the market. They asserted that both propositions may not exist in emerging financial markets in developing countries.

Another criticism against the economics-based theories is their main focus, which is mainly on the relationship between the managers and owners of the company, as well as limiting the incentives of managers from voluntary disclosure only to avoid the conflict and/or signalling to those owners, aiming at reducing the potential costs that might be incurred due to this conflict. Consequently, cost of capital is reduced and the value of the firm is increased. In contrast to this approach, organisations in the modern economy are responsible for discharging the accountability about their activities not merely to shareholders but rather to all stakeholders in society (Guthrie et al., 2006; Elsayed, 2010). Nevertheless, the responsibility of the firm in addressing various stakeholders in society such as creditors, governmental bodies, employees, suppliers, and others, would constitute an impetus that motivates the managers to engage in different types of corporate disclosure practices, to deliver the accountability and gain legitimate status in society (An et al., 2011).

Accordingly, research in the internet disclosure stream follows on the voluntary disclosure literature for printed corporate reporting, where they usually build upon economics-based theories to interpret the relationship between internet reporting practices and the various firms' characteristics. In other words, they have used the same explanatory factors that have been investigated in conventional disclosure research (Oyelere et al., 2003). Therefore, the existing studies have overlooked the fact that internet reporting has emerged as a result of the

advancement of new technological innovations, and the factors that might affect its use are more likely to be different.

Nonetheless, some researchers have attempted to involve other theoretical frameworks into their analyses. Xiao et al., (2004), Bonson and Escobar (2006) and Nurnnabi and Hossain (2012) used institutional change theories (Mimic, coercive and normative changes) in justifying the association of some predicting variables such as industry sector and size. Moreover, for the same purpose, in addition to institutional change theories, innovation diffusion theory was employed by Aly, (2008) and AbuGhazaleh et al., (2012b). Nevertheless, Elsayed (2010) involved a more inclusive framework to examine determinants of ICR in the Egyptian context. However, findings of these studies were not fully integrated with theories used (Aly et al., 2010). Therefore, Xiao et al. (2002) emphasised that future research has to be more theory-oriented, to obtain more convergence between the utilised theory premises and their findings. In responding to that, in addition to these three frameworks, new theories will be introduced in the current theoretical framework, namely stakeholders, information cost and political cost theories.

Studies based on the economics-approach provide valuable insights about the possible determinants and factors that influence the voluntary choices of companies toward internet reporting adoption and practices, in both developed and developing countries (Xiao et al., 2004). Two main groups of explanatory factors were identified, each of them divided into two subgroups as well. These two groups are firms' characteristics factors (general and market-related characteristics) and corporate governance factors (board structure and ownership structure) disclosure (Ettredge et al., 2002; Oyelere et al., 2003; Xiao et al., 2004; Al-Motrafi, 2008; Elsayed, 2010; Oyelere and Kuruppu, 2012). One weakness can be attributed to these studies is their reliance on the conventional corporate reporting in identifying these explanatory factors, and they suggest that the same proposed factors that affect the traditional paper based disclosure may influence different practices of internet reporting (Al Arussi et al, 2009; Oyelere and Kuruppu, 2012). This might largely lead to the failure to find evidence to support the relationship of some predicting factors with ICR practices. In this context,

Oyelere et al. (2003) argue that the culture and environment of ICR is to some extent different from conventional paper-based reporting, which might in turn reflect differences in structures of benefit, cost, demand and supply of disclosure. Oyelere et al. (2003: 58) further suggest considering explanatory variables, which are more related to the nature of ICR. They added that “*Such factors may include the age and levels of education of company directors/ managers, attitude of management to IT and new ideas, the age and strategic position of each company in its industry, and the stage in the life cycle of the company’s major products*”. Likewise, Xiao et al. (2004) argue that the unique attributes of ICR, such as high capacity, dynamicity, and information overload related problems and others, should draw attention to different factors and determinants, other than those factors addressed to explain the voluntary disclosure over traditional paper based research. Xiao et al. (2004: 197) also state that these attributes “*Suggest that adoption of this technological-based innovation may involve complex tradeoffs beyond the typical factors considered by agency and signaling theories*”.

It is obvious that explanatory studies conducted in developing countries, which depended upon historical data in addressing ICR adoption and practices, follows developed countries’ literature in picking up their explanatory variables. This may result in not finding a proper interpretation to the adoption and patterns of ICR, due to the differences between these countries in business environment, stage of development and culture. However, some explanatory variables have never been considered in the two contexts, e.g. family ownership, and presence of audit committees as well as corporate governance and nominating committees. Similarly, in Jordan, the effect of some corporate governance variables (role duality, board size and independence) has never been explored. This raises the need to discover their influence on different ICR practices in a developing country, namely Jordan.

It has been observed that prior relevant studies of ICR come in two main stages. In the early stage, the focus was on the context of the developed world, while later and current attention is widely concentrated on developing countries. This explicitly highlights that issues of ICR are no longer matters for developed countries, especially where studies’ findings indicate that firms in the developed

world have been largely taking advantages of using websites as an investor relation tool. In contrast, their counterparts in developing countries are lagging behind in utilising such initiatives (Al-Hayale, 2010; Oyelere and Kuruppu, 2012), as revealed from studies' results exhibited in Appendices 1, 2 and 3. This indicates the importance of addressing factors of time lag in exploiting different practices of such information channels, especially those contributing to its non-adoption.

Yet, a few attempts have been undertaken to gain in-depth comprehension of catalysts and obstacles to ICR adoption (e.g. Aly, 2008, Egypt; Al-Hayale, 2010; AbuGhazaleh et al., 2012b, Jordan). Indeed, these studies provided valuable insights concerning some factors that may influence the voluntary choices of companies in adopting ICR. However, these studies suffer from lack of an apparent theoretical framework about the factors that may affect the adoption of ICR. Thus, the chance for guessing increased and common factors that influence diffusion of new innovation were dismissed. For instance, AbuGhazaleh et al. (2012b) were more interested in the adoption of corporate websites rather than ICR. Furthermore, studies of Aly (2008) and AbuGhazaleh et al. (2012b) have undertaken qualitative research, employing the interview data collection method. This limits the generalizability of findings of such studies as well as the quality of analyses used. Also, they have only covered some aspects of factors which may affect ICR. Moreover, interviewees were mostly people from outside the corporate settings. Nonetheless, Al-Hayale (2010) conducted a questionnaire survey with senior managers in industrial listed companies in Jordan about reasons for not adopting website reporting. However, the proposed factors were partially representative, less theory-guided and superficially analysed.

Therefore, as ICR is described as a multidisciplinary topic (AbuGhazaleh et al., 2012b), for in-depth investigation of the determinants of ICR adoption, the current study will adapt and extend a theoretical framework - PERM model (Molla and Licker, 2005) - from an established research stream of studying technological innovation adoption, namely e-business. Further, it will be integrated with some aspects of theoretical frameworks of disclosure, in order to create a holistic view, obtaining fuller picture about influences of ICR adoption. This framework will

combine management initiatives, technology pillars, environment players and organisational determinants.

To conclude, for the purpose of filling in the gaps of the current literature, this study seeks to build an overarching framework for studying internet reporting, especially in developing countries. This framework includes several factors (organizational, managerial, technological and environmental) that may affect internet corporate reporting, adoption and practices. In order to develop a comprehensive framework, the study will incorporate some of the disclosure theories such as: economics-based (agency, signalling, financial, legitimacy theories), information cost, political cost, stakeholder theories, and innovation diffusion theories and models (namely, Diffusion of Innovation (DOI), institutional change and Technology-Organization-Environment (T-O-E) Model). These will be presented in the next section.

### **3.3 Theoretical foundations**

The explanatory ICR studies are criticised as less theory-guided (Oyelere et al., 2003, Oyelere and Kuruppu, 2012). Disclosure is considered as a sophisticated and multifaceted phenomenon, which targets different stakeholder groups (Solmons, 1986). Thus, it is not sensible to simply explain its practices using the premises of a single theoretical approach (Hope, 2003).

Aly and Simon (2008) identified three main theoretical frameworks as potential motivations towards voluntary corporate disclosure. These are economics-based, institutional change, and innovation diffusion theories. However, in the context of ICR, the economics-based theories, namely agency, capital needs, signaling, and legitimacy theories, have been the most cited (Debreceeny et al., 2002; Oyelere and Kuruppu, 2012).

To minimise this weakness in the literature, in addition to the economic-based theories, the theoretical establishment of the current study will incorporate some voluntary disclosure-interpreted theories, namely stakeholders, information cost and political cost theories. Additionally, some innovation diffusion theories will be involved, to further justify ICR adoption and practices. These are: Diffusion of Innovation (DOI) and institutional change. These will be respectively presented in the following sections.

#### **3.3.1 Voluntary disclosure theories**

This section presents some theories that are usually used to explain voluntary disclosure practices, which include agency, signalling, equity needs, legitimacy, stakeholders, political cost and information cost theories.

### 3.3.1.1 Agency theory

Agency theory deals with the agency relationship, which is called the principal-agent relationship, emerging from detaching corporate management from its ownership, or from detaching decision making from risk bearing (Jensen and Meckling, 1976; Fama and Jensen, 1983; Morris, 1987, Gray et al., 1995; Marston and Polei 2004). Jensen and Meckling (1976: 308) define the principal-agent relationship as a *“Contract under which one or more persons (the principals) engage another person (the agent) to perform some service on their behalf which involves delegating some decision making authority to the agent”*.

Indeed, the relationship between the shareholder (the principal) and the management (the agent) is the most common principal-agent relationship. However, the relationships between the management (and shareholders) with debt-holder and/or employee are also popular principal-agent relationships (Abdelsalam, 1999; An et al., 2011). The separation between the owner and the manager will lead to a potential conflict of interests, because each party will act to maximise his own benefits (Denis, 2001). This conflict will exacerbate the problem, the so called agency cost problem, which is in turn increased by the asymmetric information gap between those parties (Bromwich, 1992). There are three types of agency cost, which are commonly incurred due to the agency conflict. These particularly were identified by Jensen and Meckling (1976: 311): monitoring costs, bonding costs and residual loss<sup>13</sup>.

Agency problems and targeting minimising agency costs have been widely used in disclosure literature to justify the various voluntary disclosure practices (Suwaidan, 1997; Helay and Palepu, 2001; Barako et al., 2006). In essence, managers' performance is assessed and compensated based on the additional

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<sup>13</sup> In describing these costs, Jensen and Meckling (1976: 308) stated that *“The principal can limit divergences from his interest by establishing appropriate incentives for the agent and by incurring monitoring costs designed to limit the aberrant activities, of the agent. In addition in some situations it will pay the agent to expend resources (bonding costs) to guarantee that he will not take certain actions which would harm the principal or to ensure that the principal will be compensated if he does take such actions. However, it is generally impossible for the principal or the agent at zero cost to ensure that the agent will make optimal decisions from the principal's viewpoint. In most agency relationships the principal and the agent will incur positive monitoring and bonding costs (non-pecuniary as well as pecuniary), and in addition there will be some divergence between the agent's decisions and those decisions which would maximize the welfare of the principal. The dollar equivalent of the reduction in welfare experienced by the principal due to this divergence is also a cost of the agency relationship, and we refer to this latter cost as the “residual loss”*.

disclosed information (Omar and Simon, 2011). While agency costs decrease managers' remunerations (such as wages and privileges) and hence they have motives to communicate additional information to reduce these costs.

The agency theory suggests that as owners are relatively remote of firm conditions, they desire to make sure that their equity rights are not vulnerable to any unethical expropriations by the managers (Al Arussi, 2009). Management, in order to alleviate owners' problems, is more likely to voluntarily take several actions, such as opening investigations and disclosures (Marston, 1996; Xiao et al., 2004; Marston and Polei, 2004). It is also argued that voluntary disclosure is a device of control, which assists in safeguarding shareholders against opportunistic behaviour of managers. This thereby may contribute in ameliorating agency costs, either arising from an interests' divergence between managers and stockholders or between stockholders and debt-holders (Henchiri, 2011).

The agency theory assumes that the disclosure level will vary with corporate attributes such as leverage, size, audit type, listing status, and compliance to corporate governance etc. (Nurunnabi and Hossain, 2012). Most previous studies in internet disclosure, as depicted previously in Figure (3.1), hypothesise upon the target of reducing agency costs in justifying the causality of the relationship between these variables and the voluntary adoption of website reporting practices (e.g. Marston and Polei, 2004; Xiao et al., 2004; Kelton and Yang, 2008; Elsayed, 2010). For instance, larger size companies would demand more financing needs, especially through debt issuance; this is due to tax advantages. Therefore, they will disseminate more disclosures that meet needs of the investors and creditors, and hence minimise the cost of capital (Oyelere et al., 2003; Nurunnabi and Hossain, 2012). The remaining corporate characteristics may be explained in the same pattern. In conclusion, disclosing more information makes managers trustworthy to the shareholders and then the agency costs will be reduced, and the agency theory would be in this way justified (Nurunnabi and Hossain, 2012).

### **3.3.1.2 Signaling theory**

Signaling theory was initially introduced by Spence (1973) to explain the signaling relationship between the seller and the buyer in a market setting (An et al., 2011). It is normal to say that the sellers have information about their products and services more than the information available for the buyers. Therefore, if the sellers of high quality products failed in alerting the market about the unique features of these products, then the buyers will value these products depending on the average of general perception of such products in the markets. Consequently, the normal products in the markets are more likely to justify prices equal to those with high quality products (Morris, 1987). As a result, to avoid undervaluing the prices of high quality products, the information advantages that are possessed by the seller about their products should be exploited to distinguish the products with superior attributes from those products with low quality attributes through advertising these superior attributes to the targeted buyers (An et al., 2011). Thus, the high quality products will be valued at fair prices by the buyers in the market.

Accordingly, signaling theory tries to find answers to all problems emerging from information asymmetry between any two parties in all social fields. Reducing the information asymmetry between any two parties could be through communicating the entire unknown attributes and features of the high quality products by the signaller to the various interested parties. However, the signalled information is most likely to imply preferable characteristics and traits by the respondent (An et al., 2011).

By simulating the main assumptions of signaling theory to the business reporting process, like the agency theory, signaling theory suggests that the voluntary disseminating of corporate information is merely directed to treat the information asymmetry problem in the financial markets. Managers possess information advantages more than the owners of the company (Nurunnabi and Hossain, 2012). Therefore, if they are successfully capable of disclosing more information about their sound achievements, then they will decrease the information asymmetry with interested parties, and therefore avoid undervaluing stocks prices in the financial market.

Building upon signaling theory, it can explain the reasons for variations in corporate disclosure practices among companies (Watts and Zimmerman 1986; Suwaidan, 1997; Watson et al., 2002). The high performance companies strive to distinguish themselves from those low performance ones. In this context, Healy and Palepu (2001) argue that good managers, in terms of performance, expansion and growth etc., always attempt to differentiate their achievements through voluntary disseminating of information around these achievements. They also state that the managers' incentives to increase the extent of the voluntary disclosure of the company will be enhanced, especially in the presence of sound performance or a large-size audit firm. In addition, HENCHIRI, (2011) points out that the high performing management perhaps undertakes voluntary disclosure practices to alert the equity and debt holders of the real value and quality of company's shares and consequently reducing the cost of the financing needs (the cost of capital) and enhancing the firm's value.

Signaling theory was applied in the prior studies into internet reporting, as a voluntary type of corporate disclosure, to justify testing the effect of many factors on the adoption and levels of ICR; among these factors, as shown earlier in Figure 3.1, are profitability (Ashbaugh et al., 1999; Hassan et al., 1999), liquidity (Ettredge et al., 2002; Mareston and Polei, 2004), company age (Al-Shammari, 2007; Al-Htaybat, 2011), audit firm type (Joshi and Al-Modhahki, 2003; Xio et al. 2004) and industry type (Marston and Leow, 1998, Bernnan and Hourigan, 1999). Firstly, in relating to profitability and liquidity factors, the good quality performance managers tend to distinguish themselves from those with bad quality performance, over disclosing voluntary information to the public market. Thus, more profitable and highly liquid companies are more willing to voluntarily disseminate information about their good performance more than loss making and/or low liquid companies (Marston, 1996; HENCHIRI, 2011; Al-Htaybat, 2011). Secondly, longer established firms desire to distinguish themselves from those recently established firms by voluntarily disclosing information about their activities to all interested users (Al-Shammari, 2007; Nurunnabi and Hossain, 2012). Thirdly, the reputation of audit firms hired by the company is highly associated with the common view around the reliability and credibility of the published financial information (Helay and Palepu, 2001; Dopuch et al., 2001).

Therefore, the companies, that hire large audit firms (such as the big 4 firms), intend to persuade the stakeholders of the trust quality of financial information included in the companies' annual reports (DeAngelo, 1981; O'Keef et al., 1994; Verrecchia, 2001). The same assumption might be applied to the firms that use high quality financial reporting standards, large size and numbers of audit committees, and number of independent directors and so on. Finally, the industry type factor is usually used as logical justification of voluntary disclosure adoption, where the companies try to avoid signaling to the market their bad news, if they do not engage in voluntary disclosure as their counterparts do, in the same industry sector (Watts and Zimmerman 1986). Furthermore, Cooke (1991) argues that the voluntary disclosure practices may become established norms in particular sectors; this is in case of the presence of firms in a specific industry sector, with high levels of voluntary disclosure practices, this will motivate the other firms in the same sector to imitate them.

### **3.3.1.3 Capital needs theory**

Companies regularly need to finance their activities through debts or/and shares issuance. In this case, investors demand information that enables them to rationally choose among available investing opportunities. Therefore, disclosing information, extra than mandated, leads to explaining the company more to investors, and in turn mitigating the uncertainty and risks of firm's securities (Choi, 1973; Dhaliwal, 1979; Swuaidan, 1997). As a result, its cost of capital can be optimally reduced (Copeland and Galai, 1983; Cooke 1989, Diamond and Verrecchia; Hail, 2002; Gietzmann and Ireland, 2005). In this respect, Meek et al. (1995) state that there is a competition among companies in the capital market over the kinds of offered shares and the estimated promised returns. The companies that are more successful in funding their capital more cheaply are those that have the ability to assure investors about timing and certainty of forthcoming cash flows. Similarly, Cooke (1989) argues that while scarce funds are available in the market, voluntary disclosure is the best way to maximise a firm's share of these funds.

Capital needs theory is concerned about ameliorating the gap of information asymmetries between managers and investors. Hail (2002) views that minimising

information asymmetry in capital markets is the significant role of financial reporting, which in turn may enhance market efficiency. Correspondingly, Core (2001) advises firms with growth opportunities to reduce the gap of information asymmetry in financial markets by optimising the level of voluntary disclosure. Suwaidan (1997) further indicates that where the information is asymmetrical, the markets are uncertain and risky, and thus firms' external funds raising missions become harder and costlier. This is because, under these conditions, high investing premiums will be required from investors to qualify risks that they will bear. He suggests that firms may face this situation by communicating more information voluntarily, and in that case, they will be satisfied by a lower rate of return on their investments.

Development of websites as an investor relation communication tool may ease the task of companies in disseminating extensive and timely information. Therefore, managers who seek to obtain capital have more incentives to engage in such investors' communication channels. In this context, some studies use the proposition of capital needs theory to explain voluntary adoption of ICR practices. For example, Craven and Marston (1999) linked companies' propensity for online reporting practices with managers' motives for collecting needed funds at lowest possible cost. In addition, Aly et al. (2010) and AbuGhazaleh et al. (2012) interpreted these practices based on the leverage status of companies. Furthermore, Elsayed (2010) studied shares issuance as incentives for undertaking website reporting systems. Therefore, this theory can be utilised in the current study to explain the relationship between leverage, as a proxy of the level of needs for financing by debts, and ICR adoption and practices.

#### **3.3.1.4 Legitimacy theory**

Legitimacy theory suggests that the relationship between the organisation and surrounding society is implicitly or explicitly governed by a "social contract", which grants it the legitimacy to operate (Tilt, 1994; Deegan and Samkin, 2009). Therefore, apart from the traditional view of meeting only shareholders expectations, this social contract implies that organisation's operations should be conducted within the expectations, values and norms of society as whole (Brown and Deegan, 1998; An et al., 2011). Otherwise, the organisation will not be able to

survive its operations within that society (Shocker and Sethi, 1974; and Deegan, 2006).

However, societal expectations, norms and values are exposed to change over time (Brown and Deegan, 1998). Hence, the legitimate status of an organisation may be in turn affected. Therefore, in order to maintain social legitimacy for survival, changing and divergence requirements of society should be continuously adapted and reflected in the organisations' activities (Deegan, 2006). Practically, expectations convergence among key society players is not easily obtainable. Hence, this creates a problem called a "legitimacy gap" (An et al., 2011). However, various strategies of corporate disclosure can largely mitigate the effect of that gap (Lindblom, 1994; Dowling and Pfeffer, 1975).

Technological advancements on the website have resulted in drastic changes of communicative attributes of corporate disclosure. At present, firms are able to disseminate a huge amount of financial and non-financial information in a widespread, frequent and timely manner. So, this facilitates communications between the firm and different stakeholders groups in society (investors, creditors, controlling agencies). In responding to these changes, firms may utilise this voluntary disclosure means in external communications to improve their legitimacy status in society. In this respect, Lindblom (1994) advocates that organisation can enhance its legitimacy through, at least, one out of four disclosure strategies. First, reporting intended activities to stakeholders; second, attempting to change perceptions of stakeholders about an issue; third, drawing attention away from bad news to good news; finally, diverting public expectations about performance of an organisation. Thus, companies may voluntarily adopt various ICR practices, which widely assist in achieving these legitimacy strategies in an efficient way.

#### **3.3.1.5 Stakeholder theory**

Stakeholder theory is interested in identifying the relationship between an organisation's management with all related parties who may influence, or/and are influenced by its activities; e.g. owners, creditors, employees, suppliers customers, and others. It enlarges the conventional view of the shareholder theories (such as

agency and signalling theories), which focus only on the relationship with the shareholder. The focal point of the stakeholder theory is that a company is responsible for discharging the 'accountability' of its operations not merely to the shareholders, but rather to all stakeholders at large. This, according to Solomon (2007), is due to the fact that contemporary companies are so huge and their effect so pervasive on the entire society.

'Accountability', from the point view of accounting, points to the responsibility of management to disclose information concerning its financial and non-financial operations, which assist various stakeholders to make suitable decisions. This information includes financial position, performance, financing and investing, CSR and compliance (Australian Accounting Research Foundation, 1990). Hence, disclosure can be used as a tool in the hand of manager to manage attitudes of diverse stakeholders either to attain their support or, at least, avoid their confrontation (Gray et al., 1996). In this context, Deegan (2002) argues that out of several management incentives, to voluntarily disclose information is to manage the perceptions of powerful stakeholder groups. Importantly, Collier (2008) advocates that the role of management is to direct disclosure practices in such a way as to strike a proper balance among competing interests of those stakeholders, avoiding conflict.

Nowadays, companies are too large, their operations complicated, financial markets so complex and stakeholders diverse and widespread. Thus, it is difficult for companies to satisfy the competing interests of stakeholders only over traditional channels of disclosure. Developments of website technologies create opportunities for companies to meet divergence of expectations among different stakeholders. The speed and wide-diffusion of disseminations can assist in bridging the geographical divide with those stakeholders. In the modern economy, companies put a great deal effort into enhancing the transparency and control environment, covering stakeholders needs (Guthrie et al., 2006). Therefore, it is more likely that companies wishing to broaden the scope of their communications efficiently with stakeholders will urge the discretionary use of ICR, having its superior advantages.

### **3.3.1.6 Political cost theory**

Political cost theory is based on the notion that a company encounters many political costs resulting from dealing with any lobbyists' power in society, especially political and governmental agencies (e.g. taxation, and regulatory and controlling bodies) (Watts and Zimmerman, 1978). Therefore, politicians possess the power, which enables them to influence 'wealth redistributions' of companies (Watts and Zimmerman, 1990).

Watts and Zimmerman (1978) argue that management is able to use many devices to minimise the probability of 'adverse political action' and, hence, lessen its potential costs. Among these devices, for instance, are: campaigns of social responsibility in the media, government lobbies and selection among accounting discretions. Thus, alleviating political costs reflects another motivation for managers to disclose information voluntarily to investors (Milne, 2002). In this respect, Xiao et al. (1996) argues that certain companies are more in the public eye and closely scrutinised by government bodies and, thereby, better and higher disclosure is more likely to moderate unwanted pressures and interventions. Similarly, Leventis and Weetman (2004) suggest that companies more vulnerable to political attacks may voluntarily enhance their level of disclosure to reduce governmental interference and pressures from regulatory bodies.

Political cost theory has been utilised by several studies as an explanatory baseline of different voluntary disclosure practices. However, contradictory outcomes have occurred. While a positive association was proven between political costs and some voluntary disclosure practices (i.e. Firth, 1980; Cooke, 1989; Guthrie and Parker, 1990; Raffournier, 1995; and Gray et al., 1996), others (like Belkaoui and Karpik, 1989; Panchapakesan and McKinnon, 1992; Milne, 2002) concluded that such an association is suspicious. However, researchers such as Cooke (1989) and Curuk (1999) did not find evidence to support the presence of a link between engagement on voluntary disclosure and political costs.

With regards to internet reporting, many studies, (such as Xiao et al., 1996; Craven and Marston, 1999; Marston and Polei, 2004; Elsayed, 2010;

AbuGhazaleh, 2012b) used predictions of political cost theory to explain some practices of such a voluntary disclosure channel. The core argument of these studies is that certain states of some companies put them more in the public eye and visible for scrutiny agencies. For example, larger and profitable firms as well as particular industrial sectors have more influence on the economy, and therefore are exposed to more intervention from regulatory and controlling bodies.

By simulating this to listed companies in Jordan, the status of some companies puts them under public interference and control. For instance, some companies broadly contribute to the national economy such as banks. This pushes public authorities to exert greater pressures upon them. Therefore, this may constitute an incentive for managers of these companies to alleviate these pressures by undertaking different forms of website disclosures.

### **3.3.1.7 Information cost theory**

Voluntary disclosure might be seen as a compensation for deficiencies in obligatory disclosure (Omar and Simon, 2011). However, a costs and benefits analysis is often applied before deciding to disclose any additional information (Levinsohn, 2001). Hence, managers usually tend to disseminate extra disclosures voluntarily, if the benefits of disclosed information outweigh its costs (Gray et al., 1990; Bhushan, and Lessard, 1992; Cooke, 1992; Suwaidan, 1997). In this context, Xiao et al. (1996: 217) argue that *"...while financial reporting is costly, an accepted price system for exchanging information does not exist. Therefore, managers have difficulty in identifying the benefits from a disclosure and, unless they foresee a benefit such that they believe the firm may be undervalued (Verrecchia, 1983), they are reluctant to disclose information beyond minimum requirements."*

Two kinds of disclosure costs were identified: direct and indirect costs (Foster, 1986). The direct costs involve all tangible costs needed to get the information disseminated, such as the expenses of collecting, organising, assuring, legal fees and distribution of the information (Cooke, 1992). The indirect costs, on the other hand, represent either intangible costs such as competitive disadvantages, or potential costs such as litigation. Some information disclosed by a firm might be

useful for its competitors, and thereby it becomes as a competitive disadvantage (Edwards and Smith, 1996; Radebaugh and Gray, 1997). In this respect, Xiao et al. (1996) advocate that protecting 'proprietary information' is among various barriers inhibiting external users enjoying many of the information benefits, equally with managers. Legal actions, on the other hand, might affect the level of voluntary disclosure either upward or downward. Managers may increase voluntary disclosure to avoid litigation risks due to insufficient or/and untimely disclosures (Elliott and Jacobson, 1994; Healy and Palepu, 2001). In contrast, for the same reason, they might deliberately reduce the disseminated information because of, for example, incorrect or misleading disclosures (Foster, 1986; Healy and Palepu, 2001).

Compared to paper-based disclosure, the internet is considered as a cheap electronic transporter of information in addition to wide-diffusion and frequency of disseminations (Allam and Lymer, 2002; Debreceeny et al. 2002; Jones and Xiao 2004; Khadaroo, 2005; Mohamed et al., 2009). This brings benefits relating to timeliness and adequacy, mitigating litigation costs. However, other researchers mention that the internet reporting incurs some additional costs, which may reduce the efficiency of online reporting, such as updating and maintenance cost, security programs, licence rights, periodical repair, designing and programming fees and total staff costs in respect to upgrading, maintaining and monitoring the company's website (Adams and Frost, 2004; Jones and Xiao, 2004; Oyelere and Kuruppu, 2012). In addition, less security and assurance over disseminated information may increase the probability of legal actions (Lawsed et al, 2005). However, some companies possess the flexibility to cope with these costs better than others; e.g. large, profitable or technology firms (Xiao et al., 1997; Marston and Polei, 2004; Xiao et al., 2004).

Voluntary disclosure as well as implementing new technologies is subject to balance between the perceived costs and relative benefits by the top management of the company (Oliver et al., 2005; HENCHIRI, 2011). Therefore, it is up to managers to exercise balance; whether to disclose or not over this extra disclosure channel. In doing so, the perceived benefits of adopting such

disclosure means must prevail over its costs (Levinsohn, 2001; Ferguson et al., 2002; HENCHIRI, 2011).

### **3.3.2 Innovation theories**

The process of understanding how new innovations get accepted and diffused has been addressed for over 40 years. As a result, several theories and frameworks have emerged and been proposed, such as Diffusion of Innovation theory (DIO) and Institutional Change theories. However, the DIO by Rogers (1995 and 2003) is considered the most common, influential and leading model in investigating adoption of new technological innovations, despite the fact that he has been preceded by some researchers such as Tornatzky and Klein, (1982) (Sahin, 2006; Lee et al., 2011). This section will critically analyse two theories concerning innovations diffusion, and further theoretically link it to ICR adoption as a technological innovation. These are: DIO and Institutional Change theories.

#### **3.3.2.1 Diffusion of innovation theory (DOI)**

The DOI model has achieved wide popularity and been broadly applied in various types of disciplines, in order to identify the factors that explain variations in rates of new innovations adoption. For instance, some of these disciplines are: political science, medicine, marketing, health, communications, history, economics, technology, education, sociology, agriculture, and information technology.

The first use of the DOI model was in 1957, when Rogers studied the sociology of agriculture in his doctoral thesis. In it, he studied lowan farmers' patterns of use toward a new weed spray. This work required a review of mechanisms of adoption of new notions and ideas. In 1983, Rogers introduced the first version of the DIO model, implying the main constructs that might influence new innovations rates of adoption, which was further refined in 1995 in his book "*Diffusion of Innovations*". In a recent version of this book, in 2003, Rogers regarded the innovation more as the technology, and even that the two terms have been usually used interchangeably (Sahin, 2006).

Studying the process of diffusion of technological innovations, like corporate reporting over the internet technology, involves three items, which are: innovation, technology and diffusion. This is because internet disclosure represents an innovation that has emerged due to development of the internet and websites technologies. In fact, Rogers (2003) defines these three terms as follows:

Firstly, innovation is defined as: *“any idea, practice, or project that is perceived as new by an individual or other unit of adoption”* (Rogers, 2003: 12). Secondly, he describes the technology as: *“a design for instrumental action that reduces the uncertainty in the cause-effect relationships involved in achieving a desired outcome”* (Rogers, 2003: 13). Finally, diffusion of innovation for Rogers (2003: 5) is *“the process in which the innovation is communicated through certain channels over time among members of a social system”*.

Rogers (2003) provides a holistic model of the adoption-decision process of innovations, where it is divided into five time-sequence stages. During these stages he has included the factors that are more likely to explain variance in innovations rate of adoption. Rogers (2003: 172) describes this process as: *“an information-seeking and information-processing activity, where an individual is motivated to reduce uncertainty about the advantages and disadvantages of an innovation”*.

It can be seen from figure 3.2 below that the Innovation-Decision Process includes five steps. These are: knowledge, persuasion, decision, implementation, and confirmation.

1. Knowledge: the process begins with the knowledge step. In this stage, an organisation gets informed about the presence of the innovation and looks for information about it.
2. Persuasion: during this stage the organisation will form an attitude, negative or positive, toward the innovation, but, either way, this attitude does not necessarily always lead to a specific outcome, adoption or rejection (Rogers, 2003).
3. Decision: two possible outcomes might occur in this stage, adoption or rejection of the innovation. Rogers (2003: 177) refers to adoption as a: *“full use of an*

*innovation as the best course of action available”, while rejection as “not to adopt an innovation”.*

The roles of these outcomes could be exchanged. While the adoption of innovation may convert later post trial to rejection (discontinuance), the initial rejection may be a temporary decision, and become after a while a real adoption.

4. Implementation: hereby the innovation is placed into practice. In fact, Rogers (1995 and 2003) warns, at this stage, of the risks of consequences of uncertainties that were brought by the newness of an innovation. He asserted (Rogers, 2003) that these uncertainties can be mitigated through efforts of change agents.
5. Confirmation: the innovation at this stage has been fully adopted, but it is still threatened with the rejection if the adopter is exposed to the opposite messages about the innovation. Rogers (2003) demonstrates that the adopter always seeks supportive messages to confirm the correctness of his/her decision.

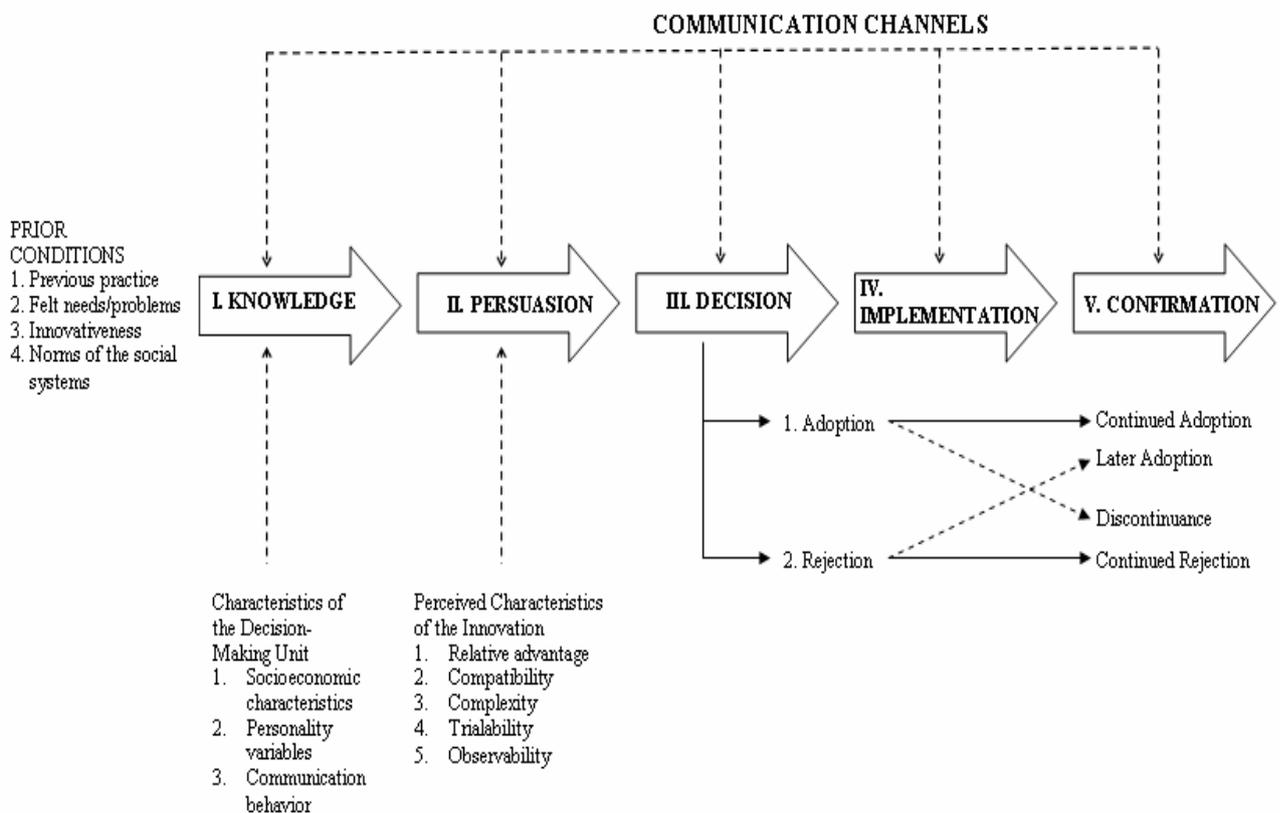


Figure 3.2 a model of five stages in the innovation-decision process. Adopted from Rogers (2003: 169)

Rogers (1995 and 2003) attached different stages of the innovation-decision process by five factors that most probably impact the rate of innovations adoption. Firstly, as can be noted from Figure 3.2, before the process has started, there are many pre-conditions that hinder or trigger the adoption process. For instance, the nature of previous experiences, current needs, norms of the social system and the level of innovativeness of individuals. Secondly, at the knowledge stage, there is a high importance of characteristics of the unit responsible for the adoption decision. It is argued that the innovation decisions that need to be made by an individual are usually adopted more quickly than those required to take a general decision from a group of people. Also, Rogers (2003) distinguishes among three innovation adoption decisions: optional, collective and authority. Thirdly, five perceived attributes of the innovation are involved during the persuasion stage of the decision process. These are: “*relative advantages, compatibility, complexity, trialability, and observability*” (Rogers, 2003: 219). Fourthly, communication channels (e.g. mass media or interpersonal) are seen as a network that links the process from start to finish. Hereby, the suitability of a communication channel chosen for the nature of the innovation and the stage that the decision is in impact the degree of speed up or slowdown of innovation diffusion and adoption. Finally, as mentioned earlier, there is a big role can be played by change agents reducing uncertainties surrounding new innovations.

It is worth saying that Rogers (2003) stresses that between 49% and 87% of the variance of rate of adoption of innovations can be explained based on the adopters' perceptions of five attributes of an innovation. These five attributes will be presented in more detail as follows:

1. Relative advantages: Rogers (2003: 229) refers to relative advantages as “*the degree to which an innovation is perceived as being better than the idea it supersedes*”.

The adoption of an innovation incurs costs, efforts, time consumption, and uncertainty. Therefore, if organisations are not persuaded by the advantages of that innovation, they are more likely not to adopt it and vice versa.

2. Compatibility: some innovation diffusion research views compatibility and relative advantage as analogous, even though they are really conceptually dissimilar

(Sahin, 2006). Compatibility is referred to as the extent to which the potential adopters perceive a new innovation to be consistent with their current values, needs and past experiences (Rogers, 2003). Therefore, in the case where a new innovation does not match an organisation's needs, values and experiences, there is a lesser chance to be adopted (Aly, 2008; Qasem, 2010; Lee et al., 2011). Thus, innovations, to get diffused, should enhance and supplement these qualities rather than oppose it.

3. Complexity: while an innovation is being considered to be adopted, the inherent difficulties of understanding and using the technology are essential concerns. Conversely to other attributes, complexity according to Rogers (2003) negatively influences the rate of adoption of new innovations. In contrast, as much as an innovation is easier to be understood and used, the faster it is diffused and adopted.
4. Trialability: the greater the ability of potential adopters to try and experience an innovation before implementing it, the greater the opportunity to be real adopters of that innovation. Of course, this is because the trialability significantly contributes in ameliorating uncertainties, which often surround innovations. In terms of technology, it can be suggested that demos, simulations, prototypes and test drives might serve as tools to experience the innovations. In fact, trials could perhaps be an effective source of information needed and searched for through the persuasion stage (Rogers, 2003).
5. Observability: Rogers (2003: 16) defines observability as: *“the degree to which the results of an innovation are visible to others”*. Thus, it pertains to how the usage of technology is noticeable by those around. Simply, for an organisation to adopt a specific technology, hearing about, seeing and/or otherwise knowing that their counterparts are utilising that technology, dramatically promotes the process of adoption. Awareness about the innovation is being stimulated by observing it over time. Through plotting normal curves, Rogers (2003) demonstrated the extent of progress of rate of innovation adoption parallel with advance in time. He further attributed that to the enhancement of levels of public awareness with increase of use and diffusion of that innovation over time.

### **3.3.2.1.1 The link between DOI and ICR**

After showing the factors that might affect the diffusion of innovations during adoption-decision process, it should clarify implications of using DOI in explaining the adoption of ICR in Jordan. First, if any shareholding company in Jordan perceives that the relative advantages of website reporting are higher than its inherent expenses, efforts and time consumed, then it is more likely to undertake it. Indeed, the internet brought new features such as speed, cost efficiency and multiple presentation-formats, which add to the dynamicity of corporate disclosure. This implies that companies always, when they deciding to adopt ICR, tend to make a trade-off between benefits versus costs. If the perceived benefits of ICR as an innovation outweigh its costs it is more likely to be adopted. Second, it is expected that an organisation adopts the internet as an extra channel for disseminating corporate information, if it is seen as compatible to the current needs, existing values and experiences. Thus, companies in Jordan are more likely to adopt ICR practices, if they feel the demand from information users for the online disclosure; also if it agrees with their committed values such as disclosure policy and culture; and finally if it possesses financial and technological competences to engage in such disclosure media. In this context, Aly (2008) argues that the availability of an IT department encourages companies to adopt ICR. In addition, the level of development of their internal technology (human and IT resources) and at a national level might assist in mitigating the complexity and make it easier to try. Fourth, knowledge about ICR attributes could be gained through observing its utilisation by other companies in Jordan. Furthermore, controlling and government bodies in Jordan may enhance awareness about ICR, where it perhaps serves as a “change agent” for adopting ICR. The reason behind this is back to the fact that these bodies concern improving levels of transparency of financial markets, in order to maintain owners’ interests and attract new investors (ASE website).

Actually, it can be argued that DOI theory is appropriate to investigate the determinants of adoption of ICR in the Jordanian context. This is due to the variation in adoption status of companies in Jordan, where it is divided into adopters and non-adopters of ICR (Aly, 2008; AbuGhazaleh et al., 2012b).

It is generally agreed that the integration of innovation attributes with other external factors is the most important contribution of the DOI theory, which puts the innovation as a sort of diffusion network (Tan, 2011). Other researchers such as Chwelos et al. (2001) direct criticisms, arguing that the theory over-relies on the characteristics of technology itself, neglecting other organisational factors that may influence the adoption of an innovation such as management support and external pressures. For this reason, the current study will incorporate another theory, institutional change, in studying the adoption of ICR, which will be analysed subsequently.

### **3.3.2.2 Institutional change theories**

Institutional change theories predicate that the formation of internal structures of an organization is highly contingent on the surrounding external factors (Nurunnabi and Hossain, 2012). Also, they seek to explain how some institutions influence organisations working in the environment. Thus, it assumes that practices, designs and structures will be similar for those organisations operating in the same setting (Meyer and Rowan 1977; Meyer, 1981; DiMaggio and Powell, 1991), for instance: similar organisational fields (DiMaggio and Powell, 1983), the same societal sectors (Scott and Meyer, 1992), or environments (Scott, 1992). Further, Scott (2001) argues that organisational structures should mirror the forms and rules that are prevailing in that society.

DiMaggio and Powell (1983) indicate that organisations are exposed to external pressures to share diffused structures with others in the institutional field, which finally leads to becoming isomorphic with them. In fact, two general types of isomorphism have been identified: competitive (Hannan and Freeman, 1977) and institutional isomorphism (DiMaggio and Powell, 1983). Indeed, the latter has been more emphasised than the former isomorphism (Burns and Scapens, 2000). Further, institutional isomorphism is classified into three forms: coercive, mimetic and normative isomorphism (DiMaggio and Powell, 1983). Actually, the main player of the change process in each of these types of isomorphism is dissimilar. While the government usually is the key player in coercive change, imitating other organisations and professionalization are the main sources of change for mimetic and normative isomorphism respectively.

1. Coercive isomorphism: in this form of isomorphism the change results from the pressures that are exercised upon an organisation by a dominant party in the society such as the government. This may happen through imposing the change or being persuaded. In this context, Xiao et al. (2004) argue that companies might adopt innovations as a response to the mandates of government or requirements of capital providers regardless whether it is beneficial to them or not. To apply this kind of isomorphism to the adoption of ICR among listed companies in Jordan, governmental agencies such as ASE can mandate the corporate disclosure on the website or at least make efforts to promote it among companies; to be adopted voluntarily. Likewise, stockholders and creditors may exert pressures on these companies to adopt such technologies.
2. Mimetic isomorphism: organisations try to follow actions of leading and successful organisations in society, in order to legitimise themselves. Liu et al. (2008) argue that organisations more likely to adopt organisational structures which are commonly known as novels in their industries. Furthermore, Xiao et al. (2004: 198) summarise the reasons behind why a company is most likely to imitate other organisations in the same environment, and they said: *“Mimetic isomorphism entails organizations modelling themselves on others in response to uncertainty surrounding technology, ambiguous organizational goals, or to enhance organizational legitimacy.”*

Building upon mimetic isomorphism theory, it can be anticipated that Jordanian listed companies operating in a specific industry may engage in ICR practices using new technologies as a response to common practices and current trends in that industry (Qasim, 2010).

3. Normative isomorphism: this isomorphism emerges primarily as a result of professionalization of occupations (DiMaggio and Powell, 1983). While presenting the established profession with members who share the same norms and cognitions, then it is normal they will adhere to practices that are seen as legitimate within the profession. Thus, the presence of professionals who belong to the similar cognitive school of specific occupation will facilitate accepting and diffusion of innovation among organisations.

DiMaggio and Powell, (1983) identify two main sources of professionalism, formal education such universities and professionals networks such as accounting training associations. In this context, Aly (2008: 49) argues that: *“the Investor*

*Relations Society (IRS) in the UK and National Investor Relations Institute (NIRI) in the USA are examples of normative isomorphism; they create Best Practice guidelines and provide training courses and conferences for the development of the profession and adoption of innovations e.g. internet financial reporting and disclosure.”*

In Jordan, there is a role that can be played by professional accounting bodies such as the Jordanian Association of Certified Public Accountants (JACPA), to increase the awareness as well as encourage the adoption of website disclosure practices among stakeholders of the accounting profession.

To conclude, it is apparent that institutional theory focuses on the organisational changes -such as adopting online reporting- resulting from institutional pressures in the surrounding environment. However, this pertains more to the external more than internal influences. Thus, it will be employed as a supporting theory, beside DIO and other disclosure theories, when investigating the determinants of ICR adoption.

### **3.3.3 Summary of theories**

This section illustrates the theoretical foundations of the current study. The focal point of this study is to explain using corporate website as a voluntary channel for disclosure practices. Importantly, this study seeks to understand why companies adopt or do not adopt ICR. Therefore, the study incorporates innovation theories, which explain why new innovations get adopted and spread, beside theories that are often used to justify voluntary disclosure practices. This is to build a relatively inclusive theoretical framework based on a solid theoretical background.

While it noticeable that firms in developing countries are reluctant to enter the online reporting world, understanding and explaining this phenomenon is the main concern. Therefore, the study initially strives for a model to study adoption of technological innovations from a well-established research stream. This model should reflect the perspectives of discussed theories.

Indeed, the final choice has fallen on the Perceived eReadiness Model (PERM) (Molla and Licker, 2005), which is used in addressing the factors influencing the adoption of e-commerce in developing countries. Aspects of this model are adapted and further integrated with other aspects of disclosure literature and theory. This results in creating the theoretical framework of this study, explaining the factors affecting the adoption and practices of ICR. The process of developing the current theoretical framework will be highlighted in the next section.

### **3.4 Development of the theoretical framework**

From the review of literature, it is apparent that there is a lack of a comprehensive theoretical framework to investigate the adoption and practices of ICR. The majority of ICR literature has engaged in explaining the companies' disclosure practices via the internet through using the same determinants that have already been employed by the printed voluntary disclosure literature. Therefore, they have neglected the differences between two types of disclosure, where the internet disclosure emerged due to the emergence of technological innovations. Therefore, the factors that motivate or restrict the emergent technological innovations to be adopted and diffused should be considered in internet disclosure research. Technology aspects, management attitudes toward change, organisation resources and attributes, and governmental supports are core issues in studying adoption and implications of innovations especially in developing countries.

Therefore, the study initially aims to build a comprehensive framework for studying the adoption and practices of internet corporate disclosure. This framework takes into consideration the innovative nature of the internet disclosure in addition to the fact that it is a voluntary means of disclosure. Thus, the current study intends to combine innovation diffusion literature with internet disclosure literature; in order to fill in the identified limitations and gaps in internet disclosure research, considering the lack of inclusive study that has empirically addressed the catalysts and hindrances to ICR adoption. Therefore, the current framework will include technological, managerial, organisational and environmental aspects, which are usually related to the adoption and diffusion of innovations.

Where ICR is described as a multidisciplinary topic (AbuGhazaleh et al., 2012b), in achieving this purpose, the study has recourse to information systems (IS) research and introduces the Perceived eReadiness Model (PERM) (Molla and Licker, 2005). This model has been adapted and extended to be appropriate for studying the context of internet corporate reporting (ICR), adoption and practices.

### **3.4.1 Perceived eReadiness Model (the PERM)**

This model was initially introduced as a general construct by Molla and Licker (2002), to investigate the phenomenon of e-commerce adoption. Three years later, in 2005, the scholars refined the original version and developed it into the current version of this model, as shown below in figure 3.3. As part of developing an inclusive framework for studying exogenous and indigenous factors that may influence e-commerce adoption in developing countries, the authors considered Diffusion of Innovation theory (DOI) and the Technology-Organisation-Environment model (TOE), in addition to a review of related prior innovation adoption studies.

The motivation behind developing this model according to Molla and Licker, (2005) is two-fold:

1. to create a generic view for examining e-commerce adoption, where most of the existing research has focused on specific aspects and overlooking other aspects such as studying organisational factors and leaving technological and environmental factors, and vice versa. Thus, this model combines micro, meso and macro issues to understand e-commerce adoption.

2. to develop a comprehensive model suitable to investigate e-commerce adoption in the context of developing countries; whereas most IS research has used the same models for developed countries to explain the facilitators and constraints of the new innovation adoption in developing countries. In this context, Tan et al. (2007) and Tan (2011) argue that both motivations of this model can be evaluated as significant contributions conducted for the innovation diffusion literature. In addition, Tan (2011) highlights that the achievement of this work meets the concerns that have been voiced by Rogers (1995). Concerns regarding contextual differences among countries should be considered in the case of investigating the diffusion and adoption of new innovations in a certain country.

### 3.4.1.1 The basic constructs of the PERM

In general, Molla and Licker (2005) included four main imperatives in the PERM, which represent dimensions that are commonly addressed in the IS research when conducting an investigation about IT related innovation adoption issues. These imperatives particularly are: managerial, organisational, technological and environmental imperatives. In addition to these four imperatives, they introduced a fifth imperative to the model, the interactionism approach. This serves in treating the co-influence amongst all imperatives of new innovation adoption, in one dynamic framework (Molla and Licker, 2005). The researchers have justified the dependence on the interactionism perspective when they built their model; because of its explanatory power proven by previous research such as Kuan and Chau (2001) and Mehtens et al. (2001). In this respect, Markus (1983) found neither the organisational factors nor the system characteristics cause the resistance of a new information system, but their interaction.

The four imperatives are further assembled in two basic constructs, as outlined in Figure 3.3 below:

The first: Perceived Organisational eReadiness (POER), which was defined as follows: *“managers’ evaluation of the degree to which they believed that their organisation had the awareness (A), resources (R), commitment (C) and governance (G) to adopt eCommerce.”* (Molla and Licker, 2005: 880);

The second: Perceived Environmental eReadiness (PEER): This was defined as follows: *“the degree to which managers believed that the market forces, the government, and other supporting industries were ready to aid in the organisations’ eCommerce implementation”* (Molla and Licker, 2005: 880)

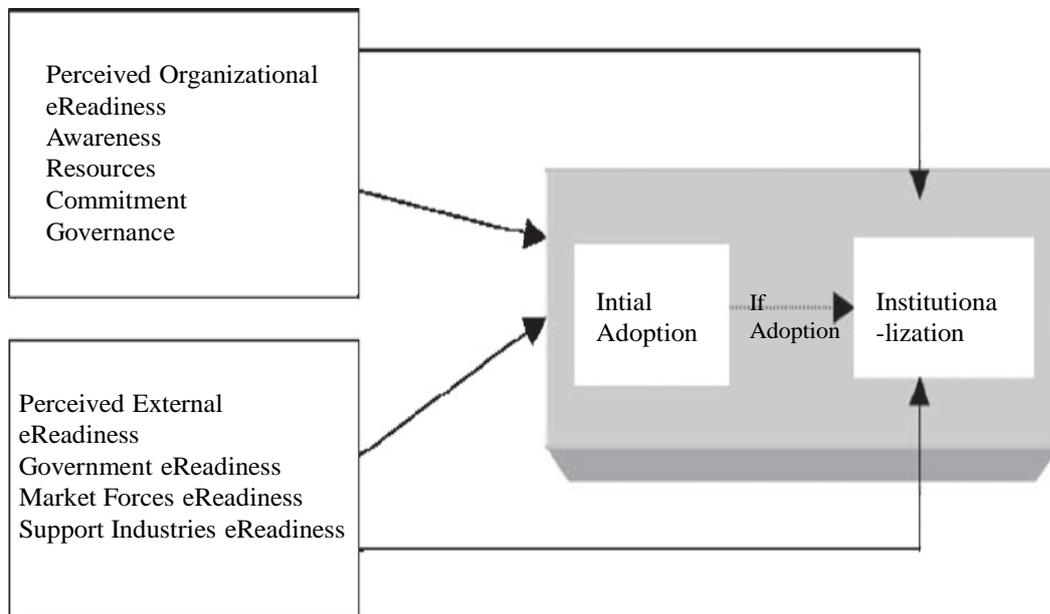


Figure 3.3 the Perceived eReadiness Model (Molla and Licker 2005: 881)

The researchers have proposed the concept of “Perceived eReadiness” to stands for managers’ evaluation and assessment of the extent of readiness of the four stated imperatives of the adoption of new innovations. They (Molla and Licker, 2005: 880) further define the “Perceived eReadiness” as: *“an organisation’s assessment of the eCommerce, managerial, organisational, and external situations in making decisions about adopting eCommerce.”*

### 3.4.1.2 Reasons behind involving the PERM in investigating ICR

The current study aims to create a holistic view to investigate the adoption and practices of internet reporting in a developing country, namely Jordan. In doing so, the study depends on IS research, in order to merge the main dimensions of the PERM with basic determinants of the voluntary disclosure as identified in the ICR literature. So, this study will adapt and extend the PERM framework to be appropriate for studying the ICR context. The selection of the PERM (Molla and Licker, 2005), can be justified by the following points:

1. A lack of inclusive framework in internet disclosure literature for studying the companies' practices towards adoption and diffusion of innovations. Both e-business and internet reporting have emerged as a result of technological innovation. Also, both of them are executed over the company website. Therefore, it is expected that the factors affecting the adoption of e-commerce and ICR will be relatively similar.
2. The PERM represents a generic and comprehensive framework (Fathian et al, 2008 and Tan, 2011). It not only includes all the imperatives needed to examine the catalysts and obstacles of adoption and diffusion of new innovation, but also it considers the effect of the interaction of these imperatives in one dynamic framework.
3. The PERM was designed to investigate new technological innovation adoption in the context of developing countries (Molla and Licker, 2005). In this respect, Tan (2011) points out that, what distinguishes the PERM from other models is that it defines some of the variables in such a way, in order to meet the status of developing countries.
4. The validity and reliability of the model were profoundly tested throughout multi stages procedures on data from South Africa as a developing country (Molla and Licker, 2005). To achieve model soundness, these procedures are: interviewing a panel of 6 experts, surveying a panel of 20 experts, pilot study, and the full study. Over the full study, they have tested the following: initial reliability, construct validity, convergent and discriminant validity, predictive validity and final reliability. In addition, the reliability and validity of the PERM were tested further twice more in a Chinese context, Tan et al (2007) and Tan (2011).
5. The research instrument developed based on this model considers the perceptions of the companies' managers using a five-point Likert scale questionnaire. This meets the interests of this study, which seeks to quantitatively explore managers' perceptions about the technological, organisational, managerial and environmental dimensions that may affect the adoption of ICR, in order to obtain generalizable findings about influences of ICR adoption.

### **3.4.2 Comparison between ICR determinants and the PERM: Cross-referencing**

In order to develop an overarching theoretical framework for studying ICR in Jordan, the present study aims to integrate the main determinants and factors of ICR as identified in the disclosure literature with the basic dimensions of the PERM (Molla and Licker, 2005). To create an overall view of the major dimensions from the two research streams, as well as to highlight the contribution added by the current study, factors from both research fields are carefully investigated and subsequently cross-referenced, as depicted below in table 3.1.

Table 3.1 aims to show many issues. To begin with, to make a comparison between determinants of ICR that are commonly used in internet reporting research -particularly firms' characteristics and corporate governance factors- on the one hand, with the main constructs of the Perceived eReadiness Model (the PERM) Molla and Licker (2005) on the other hand. This is to show the possible similarities and differences between the two frameworks, which can be summarised as follows:

1. The corporate governance dimension is mentioned in both frameworks, but the difference is that ICR studies deal with this dimension through using proxies such as board independence, number of directors on the board, role duality, audit and corporate governance and nominating committees. Conversely, the PERM represents it through questionnaire figures. In the current study, proxies of corporate governance will be used.
2. Availability of financial resources mentioned in the PERM could be alternatively replaced by the level of performance in the ICR framework, for example, once the company is profitable; this therefore means that it has the financial resources necessary to implement the new projects.

In addition, Table 3.1 demonstrates the variables will be included in the study framework based on these differences and similarities. For instance, awareness and commitment of the corporate manager, which exist in the PERM, are not stated in the ICR determinants; therefore it will be integrated in the new framework.

Table 3.1 cross-referencing between ICR determinants and the PERM factors, illustrating the variables to be included in the study framework

ICR determinants	The PERM	Current framework inclusion	Measurement
<b>Firm characteristics and corporate governance</b>	<b>Perceived Organisational eReadiness</b>		
X	Awareness	Awareness	Perception-scale
X	Commitment	Commitment	Perception-scale
Corporate governance: ownership structure and board structure factors	Governance	Corporate governance: ownership structure and board structure factors	Proxies of secondary data
Performance measures: profitability, leverage...etc	Financial resources	Profitability and Leverage	Proxies of secondary data
Industry type and online age	Technology resources	Technology resources	Perception-scale
X	Human resources	Human resources	Perception-scale
Other firm characteristics: Firm size, industry sector, audit type, listing status, shares activity and etc.	X	Other firms' characteristics: Firm size, industry type, listing status etc.	Proxies of secondary data
<b>Suggested factors</b>			
Cost-benefit analysis	X	Cost-benefit analysis	Perception-scale
Users' attention	X	Users' attention	Perception-scale
	<b>Perceived Environmental. eReadiness</b>		
X	Government	Government	Perception-scale
Users' readiness	Market forces	Users' readiness	Perception-scale
X	Supported industries	Supported industries	Perception-scale

Notes:

1. The symbol X stands for the missing dimension in a specific framework
2. Proxies of secondary data are those variables represented as attributes of a firm, which can be obtained from the company's secondary data sources.
3. Perception-scale variables are those variables which could be gathered from the perception of the targeted respondents, through employing a questionnaire.
4. Further suggested determinants are regarded as the new aspects that emerged throughout the research process, which are not stated in both frameworks

Source: developed by the present researcher

Furthermore, the comparison Table 3.1 illustrates new suggested dimensions such as cost-benefit analysis and users' attention. These dimensions are obviously recommended based on the discussion with academics who have relevant experience in ICR, the analysis of the limitations of ICR reporting studies,

as well as the discussion of the disclosure theories in the previous section. Finally, Table 3.1 demonstrates where to use proxies of secondary data or perception-scale variables incorporated in the study framework. Perception-scale variables are those variables that could be collected from the secondary databases sources of the firm. For example, the firm's profitability (for example ROA) will be used to proxy the financial capability of the company. Perception-scale variables could not be represented through employing a proxy, but rather it should be extracted from the primary sources of information, for instance, administering a questionnaire and/or an interview to targeted respondents. Following the above analysis of variables that will be addressed in the current study, the next section will show the development of the theoretical framework of the study.

### **3.4.3 Theoretical framework of the study**

In the light of the findings from cross-referencing between PERM model and ICR framework factors in Table 3.1, it is obvious that there are some gaps in the previous research that deals with internet reporting adoption and practices. For this reason, the study proposes new dimensions to be considered when investigating ICR adoption. Therefore, this study combines the main aspects of Perceived eReadiness Model (the PERM) (Molla and Licker, 2005), with the ICR frameworks that are usually used in explaining the companies' voluntary disclosure practices. Consequently, the study suggests some factors that may affect the management decision to engage in ICR adoption and practices, which are proposed based on the analysis of disclosure research and theory. The following discussion briefly highlights the theoretical linkage between the proposed factors and ICR adoption and practices.

Internet disclosure represents one form of voluntary disclosure, whereas the managers employ internet technology to communicate an unlimited amount of financial and non-financial information to the targeted users at lower cost, very quickly, and in a real-time manner. The managers' decisions to voluntarily engage in online reporting practices, should not be dismissed as irrelevant, but should be motivated by inherent incentives of those managers (Elsayed and Hoque, 2010). In this context, many researchers reviewed the motivations behind voluntary disclosure, which benefit the firms in reducing information asymmetry problems

between firms' managers and users of corporate information (Ports and Rey, 2005, Deberency et al., 2002; Al Arussi et al., 2009). Some of these incentives are: reducing agency costs with shareholders (Chow and Wong-Boren, 1987); increasing the firm's value (Livitt, 1999; Richardson and Welker, 2001); and finally, lowering the cost of capital (Diamond and Verrecchia, 1991; Clarkson, 1996).

The existing literature on internet disclosure, which is based mainly on the economics-approach, has provided valuable insights into the possible determinants and factors that influence the voluntary choices of companies toward internet reporting adoption and practices –as shown earlier in Figure 3.1-, in both developed and developing countries (Xiao et al., 2004). Some of these determinants will be used in the current study and regarded as the organisational domain of the current theoretical framework as outlined later in Figure 3.4. Firms characteristics (such as size, profitability and leverage etc.), and corporate governance attributes (including board of directors and ownership structure) will be included in the analysis. However, these static characteristics are unable to reflect all issues pertaining to what makes ICR, as a technological innovation, be adopted and diffused, especially where the adoption decision involves behavioural aspects that are not easily captured using merely historical firm's characteristics.

Therefore, the literature on diffusion of technological innovation has proposed theoretical frameworks about the potential aspects that may influence the adoption and prevalence of technological innovation such as ICR (Xiao et al., 2004; Cordery et al., 2011). Some of these aspects are technology readiness, organisational aspects, management championship, government supports and costs-benefits analysis (Molla and Licker, 2005; Doolin and Torshani, 2007; Cordery et al., 2011; Tan, 2011). In the context, Xiao et al. (2004) argue that the unique attributes of ICR (such as dynamicity, large-volume and information overload related problems and others) should draw attention to different factors and determinants, other than those factors addressed to explain the voluntary disclosure over traditional paper-based research. Xiao et al. (2004: 197) also stated that these attributes *“suggest that adoption of this technological-based*

*innovation may involve complex tradeoffs beyond the typical factors considered by agency and signaling theories”.*

It is worth noting that corporate disclosure via the company website is different from traditional hard copy reporting, where the technology represents a focal point of the company's attitude towards internet reporting adoption. Companies and even countries differ in their technological readiness to host the new technologies in terms of infrastructure, expert human capital, supported industries and government support and regulations (Molla and Licker, 2005; Doolin and Torshani, 2007; Tan et al., 2007). In this respect, Molla and Licker (2005) and Tan (2011) state that the challenges that face companies in developing countries are different from the challenges in developed countries. They also demonstrate that businesses in developing countries suffer from the lack of availability of well-established, low cost and affordable (ICT) infrastructure in contrast to businesses in developed countries where such qualities of infrastructure are relatively available. The other pillars of technology, namely, availability of expert human capital, supported industries and development of IT regulations, are also mostly dissimilar in these two groups of countries (Vreede et al., 1999; Molla and Licker, 2005). Molla and Licker (2005) highlight that the sizes of companies in emerging countries are almost small, and this means that these companies have a less complex structure, which accordingly facilitates the adopting and implementing of new IT systems. But it, on the other hand, means the lack of sufficient resources (financial and human) to do so.

Furthermore, in the modern economies, the concerns are to enhance the transparency and control environment of organisations. Therefore, the company is required to discharge responsibility not merely to the shareholders but rather to all stakeholders in society. Therefore, the perceived pressures that are exerted from various corporate users might impact managers' decision towards ICR adoption.

Additionally, disclosure choices as well as adoption of new technology are driven by the decision of the top management of the company (Tarafdar and Vaidya, 2007). Internet reporting brings these two attributes together; where it represents one form of voluntary disclosure on the one hand, it is considered as imperative for diffusion of new technology on the other. Thus, a lack of success in getting the

necessary support from the management of the company towards new reporting techniques may result in failure in adopting corporate disclosure over internet technology. Molla and Licker (2005) and Troshani and Doolin, (2005) suggest that the awareness and commitment of the top management represent fundamental factors in adopting new technologies. This suggestion may be applicable in the context of ICR.

Moreover, voluntary disclosure practices and implementing new technologies are subject to balance between the perceived costs and relative benefits and advantages by the top management of the company (Oliver et al., 2005; HENCHIRI, 2011). In terms of voluntary disclosure, according to Omar and Simon (2011) additional information disseminated by the company serves in bridging the gaps in mandatory disclosure. However, the managers' decisions whether to disclose or not the extra information are under the cost-benefit analysis. Hereby, the expected benefits of such disclosure must prevail over its cost (Levinsohn, 2001; Ferguson et al., 2002; HENCHIRI, 2011). In terms of technology, if the perceived benefits of new technology, such as enhancing the competitive advantages and reducing compliance cost, outweighs its perceived cost then it is more likely for a company to adopt such new technology (Rogers, 2003; Oliver et al., 2005; Cordery et al., 2011). However, some researchers like Adams and Frost (2004) and Jones and Xiao (2004) state that internet reporting incurs some additional cost, such as updating and maintenance costs, security programs, licence rights, periodical repair, designing and programming fees and total staff costs in respect of upgrading, maintaining and monitoring the company's webpage. All these issues will be considered under the cost-benefits framework by the managers when they decide whether or not to adopt reporting via the internet.

Following the above discussion of the potential determinants and factors that may influence the adoption and practices of ICR, the theoretical framework of the study can be presented. The proposed theoretical framework for studying ICR for the current study consists of four main domains: Technology, Management, Environment, and Organisation, and each of these domains are divided into partial factors. At that end, as theoretically justified, ICR practices (such as the levels of financial and accounting disclosure) will be explained using only the

organisational domain, while all domains will contribute to interpretation of ICR adoption phenomenon. A visual presentation of the theoretical framework of this study is depicted in Figure 3.4.

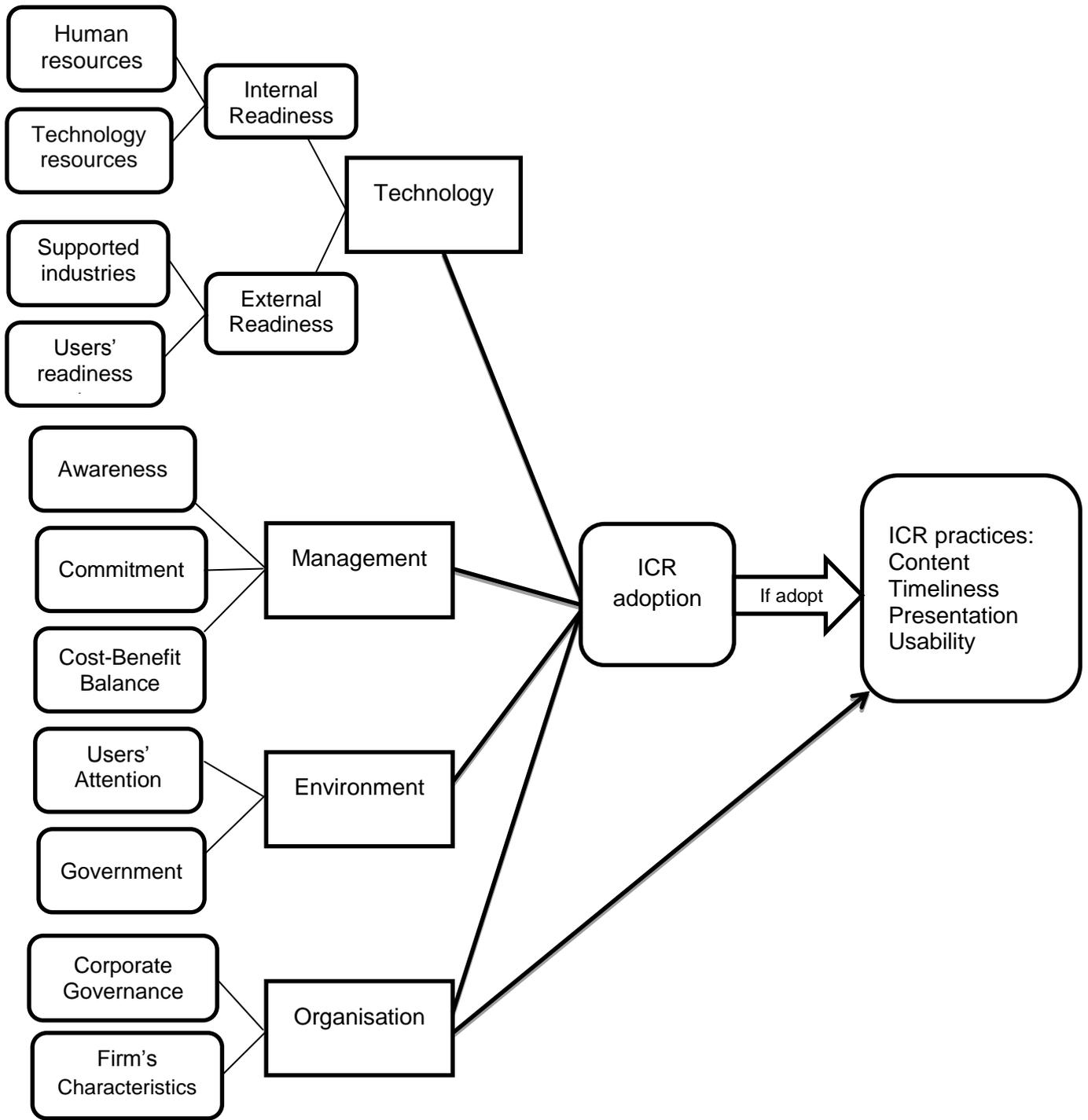


Figure 3.4 the theoretical framework of the study Developed by the current researcher

### 3.4.3.1 Variables definitions

#### ***Management domain:***

This reflects the extent to which top management is aware and committed in implementing ICR, with attention to the managers' balance between ICR costs and benefits. This domain consists of the following factors:

- Awareness: the extent of management knowledge of different issues relating to website reporting, particularly requirements, technologies, forms, costs and benefits.
- Commitment: it reflects the top management vision and support that is given to internet financial reporting initiatives. It also refers to the strategy adopted by the company leadership to deal with new technological changes, in order to improve disclosure approaches.
- Cost benefits balance: reflects management perspective of the benefits of internet reporting versus its costs.

#### ***Technology domain:***

It represents the management assessment of the extent to which, technology pillars, inside and outside the organisation, are ready for engaging in ICR. This domain divides into two major factors:

1. Internal technology readiness: management view of the level of the company's preparedness for the technology resources and human resources, to implement the ICR. This factor includes the following two variables:
  - Human resources: is an availability of competent staff that have enough experience to deal with IT resources as well as possess the appropriate qualifications to succeed handling different systems of internet reporting.
  - Technology resources: represents the e-infrastructure of the company, such as connectivity of the internet network, availability of IT resources and the level of computerisation.

2. External technology readiness: management view of the level of technological preparedness of the environment regarding supported industries and interested parties that encourage adoption of ICR.
  - Supported industries' readiness: management's evaluation of the availability and affordability of the providers of IT and communication aspects at the national level, which serve and facilitate implementation of ICR applications, such as internet networks, employees' training and maintenance agents.
  - Users' readiness: reflects the management notions about the extent to which the users of corporate information are ready to interact with the internet reporting outputs, in terms of computerisation, computer literacy and internet connectivity and affordability.

***Environment domain:***

This domain reflects the effect of factors outside the company, other than external technology pillars, on the management decision towards adoption of ICR, such as government and Users' Attention factors.

- Users' Attention: the management's perception of the importance of internet reporting to meet the different needs of the corporate information users.
- Government: it involves management assessment of the readiness and support from the government and its institutions that promote ICR adoption, such as, the extent of encouragement by local controlling and financial bodies to engage ICR, the presence of electronic crimes law and regulating the online reporting.

***Organisation domain:***

It points out the organisational attributes of the company that may stimulate or hinder the implementation of ICR. These attributes are corporate governance and firm's characteristics variables.

1. Company's characteristics variables: these variables are:
  - Size: actual total assets at the end of the financial year ;

- ROA: return on the total assets at the end of the financial year, and it proxies firm's profitability;
- Leverage: it represents the corporate needs for credit, counted by dividing the total debts on total assets at the end of the financial year;
- Listing status: knowing if the company is listed on the first or second market;
- Audit type: to ensure whether that the company is being audited by a big four or non-big four auditor;
- Industry sector: identify which sector that a company belongs to, banking, insurance, service and manufacturing.

2. Corporate governance variables: this group is divided into two groups as well, board of directors structure and ownership structure.

➤ board of directors structure: this contains the following variables:

- role duality: to acknowledge if the CEO in the company holds the position of chairman or not;
- board independence: it is measured by percentage of non-executive directors on the board;
- board size: represents number of directors on the board;
- audit committee: to ensure if there is an audit committee in the company or not;
- corporate governance and nominating committee: does the company possess a corporate governance nominating committee or not.

➤ Ownership structure: it comprises four variables, representing four forms of corporate ownership

- Institutional Ownership: it represents that percentage of company's shares owned by institutions;
- Management Ownership: percentage of CEO ownership of company stocks
- Foreign Ownership: the percentage of shares controlled by non-Jordanian shareholders;
- Family Ownership: the percentage of the company's capital owned by one family or group of relatives.

### **3.5 Conclusion**

It is apparent that the ICR literature relies heavily on conventional disclosure literature in identifying the influences of internet reporting adoption and practices as well as it is stuck closely with economics-based theories (agency, signalling, capital needs and legitimacy theories) as a theoretical base in addressing the ICR phenomenon. This raises some limitations of the current literature, which can be summarised as follows. Firstly, the economics-based theories assume that various voluntary disclosure applications aim to reduce information asymmetry with shareholders in the capital market. For the validity of the information asymmetry assumption, the financial markets should be efficient. This is often not achievable in developing countries (Keane 1993; Abdelsalam, 1999). Secondly, the modern economy is concerned with enhancing the transparency and control environment of organisations. Therefore, the company is required to discharge responsibility not merely to the shareholders but rather to all stakeholders in society. Thirdly, the nature of internet reporting is different from the nature of printed reporting, where the internet reporting emerged as a result of development of technological innovations. So, all obstacles that hinder and/or encourage the diffusion and adoption of such innovations such as technological readiness, management willingness, environment readiness and etc., should be considered in investigating internet disclosure, especially in developing countries. Finally, internet disclosure brings additional costs upon the company. Thus, the managers will balance these costs versus the potential benefits of such disclosure, before the decision of engagement has been made.

The first section of this chapter provides a review of prior ICR studies, and highlights that more theory-guided studies of ICR are required. For this reason, in the second section of this chapter, the theoretical foundation of the study, in addition to the economics-based theories, incorporates several voluntary disclosure theories (political costs, information costs and stakeholders theories) as well as some innovation diffusion theories (DOI and institutional change theories)). This is to rigorously explain companies' online disclosure practices and adoption. In the light of these theoretical bases, the current theoretical framework was developed, as demonstrated in the third section. In the course of this, factors

from the PERM model (Molla and Licker's, 2005) were adapted and merged with common determinants of ICR practices. As a result, four dimensions were included in the generated framework, namely technology, management, environment and organisation. The organisation dimension contains only proxies of the firm's general and corporate governance characteristics. Due to the lack of theoretical connect between other dimensions and reporting and disclosure practices, it was the only dimension used to explain variations of companies' disclosure practices via their websites, if any. On the other hand, in addressing the factors that affect ICR adoption, all dimensions in the framework were employed.

## **Chapter 4: Methodology and Design**

### **4.1 Introduction**

Research methodology can be referred to as the whole process of carrying out the research, starting with the theoretical base and ending by methods of data collection and analysis (Collis and Hussey, 2003). In terms, it is the way of answering the research questions and/or achieving its objectives (Silverman, 2000). Easterby-Smith et al. (2004) point out that the ultimate goal of research methodology is to obtain a consistency between the main research purpose and its philosophical stance. Therefore, this chapter is devoted to discuss the research methodology used in this study, in order to examine the practices and adoption of ICR in Jordan. In doing so, this chapter highlights the various different philosophies (paradigms), approaches, methods and strategies of collecting data and analysis, illustrating the justifications for choosing among various methodological options employed in the study. The rest of this chapter is organised into two main sections as follows:

Section 4.2 discusses the research philosophy, justifying the suitability of undertaking positivism versus interpretivism paradigm. Next, attributes of research approaches, deduction versus induction, will be demonstrated, and finally, the relevance of the chosen research methods, quantitative, will be compared with qualitative methods;

Section 4.3 describes the study design, including purpose of the research, the time horizon, unit of analysis, data sources, research strategies and sampling design. The research strategy describes methods of data gathering and analysis utilised in the current research such as questionnaire, disclosure index and secondary data methods. Furthermore, this section will clarify the process of ensuring the validity and reliability of these methods. In addition, Section 4.3 provides a short description of sampling methods as well as different samples involved in each part of the study.

## **4.2 Research methodology**

### **4.2.1 Research philosophy**

In the course of social sciences, the research philosophy – also hereby referred to as the research paradigm (Collis and Hussey, 2009) - is related to the researcher's notions and beliefs about the external world pre undertaking the research (Hopper and Powell, 1985). Further, the research philosophy is associated with the researcher's view of underlying assumptions of developing knowledge (Collis and Hussey, 2003; Saunders et al., 2009). In turn, the appropriate way of handling the underlying research will be identified (Saunders et al., 2009).

Easterby-Smith et al. (2008) emphasise that awareness of the followed philosophical stance assists in guiding the researcher in how to design his/her research properly. Hence, it helps in determining suitable strategies, methods and techniques employed in the research. Further, knowing the research philosophy is useful in informing the researcher about designs outside his/her experience, alleviating inefficient efforts.

Generally speaking, authors distinguish between two broad research philosophies: positivism and interpretivism (e.g. Remenyi et al., 1998; Easterby-Smith et al., 2008; Saunders et al., 2009; Collis and Hussey and 2009). This section will clarify the philosophical view that underpins this study, positivism, in parallel with justifying why interpretivism is rejected. Then, a discussion of research approaches, deductive or inductive, will be presented, in order to reveal the need to choose between the quantitative or qualitative methods. The following section will briefly discuss the positivism and interpretivism paradigms.

#### **4.2.1.1 Interpretivism vs positivism**

Interpretivism, phenomenological and constructive are all interchangeable terms of interpretivistic paradigm of research. Interpretivism advocates that the detachment between reality and its observer cannot be claimed. Within interpretivism, according to Saunders et al., (2009), the researcher should

understand humans as social actors and differences in their role in society. Therefore, phenomenologists (interpretivists) consider that the social reality is not independent from the researchers' intrinsic thoughts and feelings (Collis and Hussey, 2003). To put it differently, what is being researched (an object) is dependent on the researcher personality, knowledge, beliefs, experience, etc. Hence, subjectivity is an inherent attribute of this philosophical paradigm.

Unlike interpretivism, positivism tends to comply with rules of natural scientific research in developing knowledge. In this context, Remenyi et al. (1998: 32) argue that it is *“working with an observable social reality and that the end product of such research can be law-like generalisations similar to those produced by the physical and natural scientists”*. The core notion behind this is that the external world is independent from us. Hence, objective criteria, rather than subjective ones like sensation, can be employed to measure its properties (Easterby-Smith et al., 2004). Hereby, Cassell and Symon (1994: 2) voice that *“the assumption behind the positivist paradigm is that there is an objective truth existing in the world which can be revealed through the scientific method where the focus is on measuring relationships between variables systematically and statistically”*.

Consequently, in contrast to interpretivism, the researcher's involvement in knowing social reality through subjective human beliefs is beyond the premises of positivism. It conversely depends on beliefs that can be quantifiably verified. In this vein, Saunders et al. (2009) emphasise that positivism is attached to the quantifiable phenomena that allow statistical tests to make inferences. Therefore, positivist research is more associated with the deductive approach based on quantitative methods, while inducing interpretations through qualitative methods more related to the interpretivist paradigm. In short, according to Collis and Hussey (2003: 47), *“positivism paradigm is quantitative, objectivist, scientific and experimentalist, and phenomenological paradigm is qualitative, subjectivist, humanistic and interpretive”*. The current study chooses positivism as a philosophical paradigm, due to the convergence of its predictions with the research objectives. Table 4.1 summarises the main differences between these two philosophical paradigms as follows:

Table 4.1 characteristics of positivism and phenomenology (interpretivism)		
	Positivism	Phenomenology
<i>The observer</i>	<i>Must be independent</i>	<i>Is part of what is being observed</i>
<i>Human interests</i>	<i>Should be irrelevant</i>	<i>Are the main drivers of science</i>
<i>Explanation</i>	<i>Must demonstrate causality</i>	<i>Aim to increase general understanding of the situation</i>
<i>Research progresses through</i>	<i>Hypotheses and deductions</i>	<i>Gathering rich data from which ideas are induced</i>
<i>Concepts</i>	<i>Need to be operationalised so that they can be measured</i>	<i>Should incorporate stakeholders perspectives</i>
<i>Units of analysis</i>	<i>Should be reduced to simplest terms</i>	<i>May include the complexity of whole situations</i>
<i>Generalisation through</i>	<i>Statistical probability</i>	<i>Theoretical abstraction</i>
<i>Sampling requires</i>	<i>Large numbers selected randomly</i>	<i>Small numbers of cases chosen for specific reasons</i>
Source: adopted from Easterby-Smith et al. (2004: 30)		

#### 4.2.2 Research approach (deductive vs inductive)

The main purpose of the research and the nature of the questionable phenomenon are crucial attributes that might determine the research approach. In the course of acquiring new knowledge, there are two main approaches, specifically deductive and inductive. The **deductive approach** is described as a process of testing out theory, which begins with an established theory or general facts, ending by assuring whether it works to underlying instances or not (Hyde, 2000). Further, Saunders et al. (2009: 124) describe it as a process that "*involves the development of a theory that is subjected to a rigorous test*". On the other hand, the **inductive approach** is described as a process of building up a theory around the observed phenomenon, in order to identify its specifications (Hyde, 2000). Unlike the deductive approach, according to Parsa (2001: 120), the inductive approach is "*moving from the plan of observation of the empirical world to the construction of explanations and theories about what has been observed*".

Accordingly, it is obvious that the option to choose between these two approaches depends on the way of utilising the existing theory to direct the research. Within the deductive approach, the research layouts, (themes, aims and relationships,

etc.) are clearly specified from the literature before starting collection of data (Patton, 2002). As a result, the existing theory will be verified through building causality relationships, which is then converted into operational hypotheses, ending by providing explanations of the findings based on the literature (Saunders et al., 2009). In contrast, in the induction approach, the research layouts are gradually identified during the research progress in the field (Creswell, 2003). At the end, data analysis will result in grounding a theory.

The current research seeks to identify the factors affecting the adoption and practices of ICR in Jordan. The study started building a theoretical framework based on the existing body of literature to explain the underlying phenomenon, as highlighted in Chapter 3. In the light of this, causality interrelationships and hypotheses were developed and subsequently tested. The theory in the former step will be utilised later in explaining and justifying the research results. Therefore, this study can be described as a deductive research.

#### **4.2.3 Quantitative vs qualitative research**

Concerning discovering the required knowledge, quantitative research is more linked to the claims of positivism, while qualitative research goes correspondingly with the interpretivism claims (Easterby-Smith et al., 2008).

**Quantitative research** is concerned in collecting data that can be numerically measured and further statistically tested. In the meanwhile, interrelationships among variables are assembled, forming underlying hypotheses (Creswell, 2003). In addition, identical measures, including a small number of attributes, are used to collect the data across all cases in the sample, seeking uniform patterns and generalisations (ibid). In the context of suitability of quantitative research, Liebscher (1998: 669), as referred to in Orlikowsky and Baroudi (1991), points out that it *“is appropriate where quantifiable measures of variables of interest are possible, where hypotheses can be formulated and tested, and inferences drawn from samples of populations”*.

On the other hand, **qualitative research** involves human experiences and beliefs to attain more in-depth understanding of the examined phenomenon (Stake,

1995). In qualitative research, the aim is increasing a theoretical portfolio about the searched subject rather than verifying it and generalisation. Thus, unlike quantitative research, hereby numerical and measurable data is not sought (Denzin and Lincoln, 2003). In this vein, Liebscher, (1998: 669) states that qualitative research is *“appropriate when the phenomena under study are complex, social in nature and do not lend themselves to quantification”*. It can be stated that qualitative research mainly attempts to answer questions of “how” or “why” types (Yin, 2009), while quantitative research is more concerned with addressing questions, for example, starting by ‘How much?’, ‘How often?’ and ‘How many?’ (Gummesson, 2000) as well as ‘what’ forms of questions (Yin, 2009).

Furthermore, while the research techniques commonly used for collecting quantitative data are questionnaires, structured interviews and other types of surveys (Creswell, 2003), unstructured interviews, observation, open-ended questionnaires are examples of sources of qualitative data (Patton, 1990).

The main differences between qualitative and quantitative research are advocated by Saunders et al (2009: 472) as follows:

1. *Quantitative data is based on meanings derived from numbers; however, qualitative data is based on meanings expressed through words.*
2. *Quantitative data collection results in numerical and standardized data, while qualitative data collection results in non-standardised requiring classification into categories.*
3. *Quantitative data analysis is conducted through the use of diagrams and statistics, by contrast qualitative data analysis is conducted through the use of conceptualisation.*

The next section brings all elements of research methodology together, in order to provide a complete picture about the utilised methodology of this study.

#### 4.2.4 Considerations of research methodology

As previously indicated, the premises of deductive research are highly corresponded to positivism philosophy, whilst premises of inductive research are closer to interpretivism philosophy. In the same stream, deduction, as a testing theory approach, is largely viewed as dependent on conducting the research quantitatively. Instead, a building theory approach, induction, is mainly seen as a qualitative-oriented approach. However, when it comes to employing research methods in particular research settings, it is far less than precise to ever broadly say that positivism is limited to using these methods and interpretivism uses only those methods, despite the differences in knowledge claims of two research paradigms. Patton (1990) and Saunders et al. (2009) rather argue that employing more than one method in the same piece of research is hugely beneficial, especially where the shortcomings of each method will be compromised. In this context, authors like (Richards (1993), Jankowicz (2000), and Robson (2002) assert that there is no strict rule of thumb, which forces the researcher to select a certain method for specific research and another for another research. They further add that utilising mixed methods, qualitative and quantitative, in the same investigation improve the rigorous nature of the research design and enhance the accuracy of obtained evidence, providing validity checks across the data.

However, despite several advantages of using mixed methodology, many considerations should be taken into account in selecting among different research methods, namely qualitative, quantitative and mixed methods. The research objectives, questions and nature of the topic; this in the light of the volume of literature available in the given area of research, all highly determine the chosen research methodology (Patton, 1990 and Saunders et al., 2009). Patton (1990) further adds the availability of resources as another determinant of methodology selection. He (Patton, 1990: 39) states that: *"Rather than believing that one must choose to align with one paradigm or the other, I advocate a paradigm of choices ..... the issue then becomes not whether one has uniformly adhered to prescribed canons of either logical-positivism or phenomenology but whether one has made sensible methods decisions given the purpose of the inquiry, the questions being investigated, and the resources available"*.

Due to the above considerations, and in order to address the aims of the present study, the study will depend on the claims of positivism, adhering to the deduction propositions, and through employing quantitative methods. The chosen research methodology will be discussed further in the next section.

#### **4.2.5 Selected research methodology**

Research methodology is the framework that serves as a road map that guides the study, starting by the theoretical design, ending with data collection and analysis (Churchill, 1991). Further, it draws on the structure that underpins the research process, ensuring that all the important elements work together properly to tackle the core research questions.

As previously stressed, the methodology decisions are highly affected by the nature of the research objectives and the traditions of philosophical assumptions of the research. Therefore, the fact that there is a broad tradition of studying corporate practices of disclosure choices in the disclosure literature stream, several theories have already emerged and been frequently tested and verified, both in printed and internet disclosure, yielding a well-established theoretical background. Such theories include: agency theory, signalling theory, stakeholders' theory, and others. While this study is concerned with studying disclosure practices on the internet, a great deal of relevant research is empirical and quantitative based, adopting a positivist perspective, using deduction as an approach to testing existing theories (see prior studies in Chapter 3).

Likewise, the literature of diffusion of innovation provides several established theories in addressing the adoption of technological innovations, such as Diffusion of Innovation (Rogers, 1995) and Institutional Change Theories (Scott, 1995) (see Chapter 3). Some studies have employed such theories in quantitatively addressing the determinants of patterns and adoption of ICR (e.g. Xiao et al., 2004; Elsayed, 2010; Nurnnabi and Hossain; 2012). In addition, a few researchers have attempted to investigate the adoption of ICR in a qualitative way, Aly, (2008) and AbuGhazaleh et al., (2012b). This is due to the fact that, apart from the diffusion of innovation literature in general, studying the topic of adopting ICR as a new innovation, in specific, is relatively new. Thus, the necessity of more

in-depth exploration is required to obtain closer understanding for this phenomenon through qualitative techniques.

The main purpose of this study is to build up a theoretical framework to identify the factors affecting the adoption and practices of ICR, and then, try to test this framework in a developing country, namely Jordan. Therefore, the present study is considered a positivistic research; it aims to quantitatively test out theories, adopting a deduction perspective. Many reasons are behind this selection. To begin with, the traditions and norms of ICR literature, in both developed and developing countries, used to employ quantitative methods in addressing disclosure practices on the website. Jordan, as a unique research context, might be viewed as a vibrant environment to test out present theories. Being similar to some Middle Eastern countries, the results of the current study might contribute in generating interesting generalizable findings. These findings explain the causal associations among variables, which perhaps determine the drivers of ICR practices. Hereby, the need to collect large amounts of measurable data is clear, in order to test and verify underlying established theories.

The second reason for selecting the current methodology is the nature of the research questions themselves. As it is previously mentioned, the nature of the research is one of the crucial criteria that identify the followed research methodology (Patton, 1990; Creswell, 2003 and Saunders et al., 2009). This study mainly asks about what the factors are that determine ICR adoption and practices in Jordan. Thus, the best answer to 'what questions' is by using positivism-deductive-quantitative methodology (Yin, 2009). Finally, it is due to the need to gain more in-depth understanding of factors -outside those related to the proxies of companies' characteristics- that may affect the adoption of ICR in one developing country, namely Jordan. The study involves the information systems (IS) literature stream, which depends essentially on innovation of diffusion theories. In this stream, theory is well established and the themes are obvious in the literature. It is mentioned by Tan (2011) that despite there being some qualitative inductive studies in the IS research stream, a tremendous amount of research in this area is directed toward quantitative deductive studies. Hence, because of the close similarity between areas of the research subject, this opens

the way to apply the traditions of IS research to the current research. Consequently, the research questions will be tackled and the theory will be tested and verified.

To sum up, this study primarily aims to determine factors that affect the adoption and practices of a technological innovation, namely ICR, over listed companies in ASE. The development of the theoretical framework of the study is built upon integration of multiple theories, such as diffusion of innovation theory and economic based theories. Thus, the current study follows the claims of the positivism paradigm, employing deduction which relies on testing out existing theories. Within the deductive approach, the hypotheses of the study shall be developed based on a solid and rational theoretical framework that indicates the causality of the relationships between factors and dependant variables. Furthermore, the current study will empirically examine the relationships between independent variables (organisational, managerial, technological and environmental factors) and dependent variables (ICR adoption and practices). Once the quantifiable and measurable data have been collected from primary and secondary sources, quantitative statistical techniques will be implemented to analyse the results of the study. The entire process of research methodology is depicted in Figure 4.1 below.

For the sake of carrying out research objectives, the study has employed three types of research surveys for data collection and analysis: the secondary data, the content analysis and the questionnaire. All these tools will be illustrated when presenting the next part of this chapter, research methods.

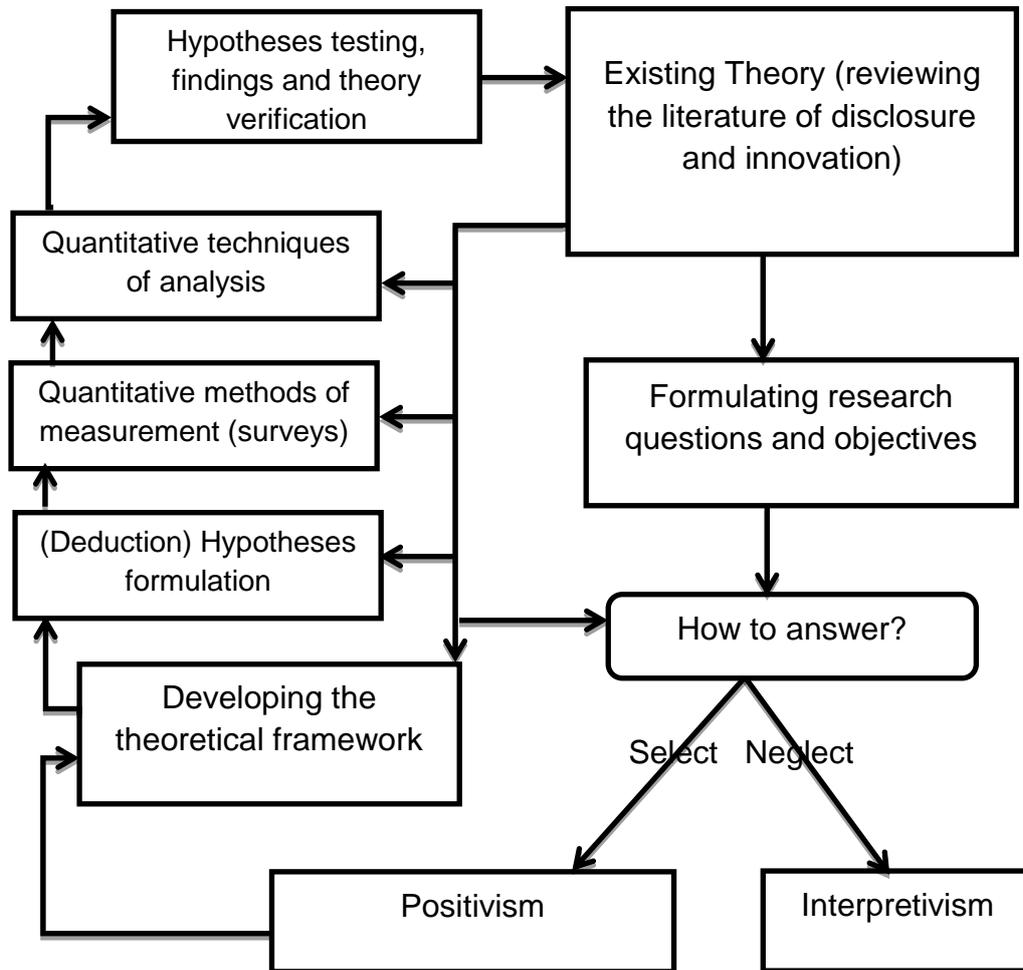


Figure 4.1 selected research methodology  
 Source: developed by present researcher

### 4.3 Research design

Research design is defined by Yin (2003: 20) as *“a logical plan for getting from here to there, where here may be defined as the initial set of questions to be answered, and there is some set of conclusions (answers) about these questions”*. Therefore, it can be described as a bridge that transmits the research from theory planning to the real implementation, getting the research question answered. Of course, research design implies a process of multi-step procedures to undertake research, in order to obtain valid findings (Collis and Hussey, 2003). In this sense, Sekaran (2003: 117) states that research design *“involves a series of rational decision-making choices”* of conducting research. Elements regarding these decisions might pertain to the purpose of the research, research strategies, the time horizon, unit of analysis, data sources and sampling design (Sekaran, 2003; Saunders et al., 2009). In the following sections, each of these elements will be discussed.

#### 4.3.1 Purpose of the study

In general, according to the purpose behind a study, it can be divided into three types, exploratory, explanatory and descriptive (Yin, 2003, Hair et al., 2007; Saunders et al., 2009). **Exploratory research** is conducted according to Sekaran (2003: 119) *“when not much is known about the situation at hand or no information how similar problems or research issues have been solved in the past”*. Furthermore, seeking more insights and revealing some patterns around phenomenon in question is also an essential purpose of explorative studies (Collis and Hussey, 2003; Robson, 2003; Hair et al., 2007). It largely tends to use qualitative techniques such as observation and in-depth interviews (Sekaran, 2003). **Explanatory research**, or hypotheses testing research as it is referred to by Sekaran (2003), aims basically at establishing causality relationships among variables to explain variations (Collis and Hussey, 2003). As such, Saunders et al. (2009: 134) regard the objective of explanatory studies, as to study *“a situation or a problem in order to explain the relationships between variables”*. **Descriptive research** is undertaken *“to portray an accurate profile of persons, events, or situations”* (Robson, 2003: 59).

The current study comprises two parts; the first is descriptive and the other is explanatory. In the descriptive part, the current study strives initially to highlight the status quo of disclosure practices over the corporate website in Jordan. On the other hand, the explanatory part of the study attempts to use a number of corporate attributes to explain the variation in ICR practices and adoption among listed companies in Jordan. In order to conduct this research, many types of survey strategy were adopted to gather the required data, namely content analysis (Disclosure index), secondary data and questionnaire. These will be presented later in this chapter.

#### **4.3.2 Time horizon**

Depending on the number of times the data about a specific issue from the same subjects is collected, studies are usually classified into either cross-sectional or longitudinal studies (Bryman and Bell, 2007; Saunders, et al., 2009). While **cross-sectional studies** achieve their goals by collecting data from the field once, even if it extends through a certain period of time, **longitudinal studies** need data to be gathered more than once; this is to measure expected effects of certain changes over time (Sekaran, 2003). However, research questions and objectives direct any study towards a cross section or longitudinal form (Easterby-Smith et al., 2008).

A part from making comparisons over time, the holistic aim of this study is to identify the current status of ICR adoption and practices of listed Jordanian companies and try to explain the variations, if any. Therefore, this aim can be achieved through conducting a cross-sectional study. Time periods and sources of collecting data will be shown in the next section.

#### **4.3.3 Data sources and unit of analysis**

According to the source of data, there are two divisions: primary and secondary. **Primary data** are referred to by Sekaran (2003: 219) as those collected "*first-hand by the researcher on the variables of the interest for the specific purpose of the study*", while, **secondary data** are not often collected and organised for the purposes of a particular study in hand, but are rather available for various other

purposes (Saunders, et al., 2009). Data extracted from archival records, industry indices and governmental publications are common examples of secondary data sources (Sekaran, 2003; Saunders, et al., 2009). On the other hand, the usual primary data are: interviews, questionnaires and focus groups (Sekaran, 2003; Saunders, et al., 2009).

The data required for carrying out the current study were gathered from two data sources, primary and secondary, as follows:

1. Secondary sources: two tools will be used to collect secondary data:
  - Content analysis (Disclosure index): it was done through doing a survey of the companies' websites that adopt ICR. The Disclosure index approach was employed to observe levels of ICR practices among companies that adopt ICR in the mid of 2012. The working sample for the content analysis is 69 listed Jordanian companies.
  - Secondary data (Archival data): the data available in the ASE and its bodies, in addition to companies databases have been surveyed to gather companies' characteristics such as size, profitability, ownership structure etc. these factors may serve as determinants to ICR adoption and practices. The required data have been collected, of 150 companies had usable websites.
2. Primary sources, a questionnaire survey: it has been administered to CEOs and CFOs of the companies listed on ASE that possessed working websites. The final sample applicable for a questionnaire survey is 150 companies. The survey has been undertaken between Jan. and April, 2013. The purpose of this survey is to explore the potential factors that may affect the adoption and non-adoption of ICR. Table 4.2 below illustrates the sources of data collection, research tools, number of cases and unit of analysis:

Table 4.2 summarises sources of data, research tools, number of cases and unit of analysis			
Research Tool	Source of data	Number of cases	Unit of analysis
Disclosure index	Secondary	69 firms	Listed firms on ASE
Survey of secondary data	Secondary	150 firms	Listed firms on ASE
Questionnaire	Primary	174 respondents	CEOs and CFOs of listed firms on ASE

#### 4.3.4 Research strategy

Roughly, there are seven common forms of research strategies. These are: case study, survey, experiment, grounded theory, archival research, action research and ethnography. While selecting a specific research strategy, the most important criterion is its appropriateness for the underlying research objectives and questions (Robson 2002; Creswell, 2003; Saunders et al., 2009; Yin, 2009). In this respect, Saunders et al. (2009: 141) state that *“we must emphasise that no research strategy is inherently superior or inferior to any other.....Your choice of research strategy will be guided by your research question(s) and objectives, the extent of existing knowledge, the amount of time and other resources you have available, as well as your own philosophical underpinnings.”* Consequently, the current research philosophical stance leads to the adoption several forms of survey strategy, in order to achieve the objectives of the current study. First, a **disclosure index survey** has been undertaken to identify the different levels of disclosure practices over corporate websites. Second, for the sake of collecting some of the companies' attributes such as profitability, a **secondary data survey** has been implemented, and in turn variations among companies, regarding adoption and practices can be explained. Finally, a **questionnaire survey** has been conducted to obtain more information about companies' characteristics that cannot be gathered through secondary data survey, capturing more factors that contribute to the adoption/non-adoption of ICR.

##### 4.3.4.1 Survey

The survey is a frequently used method in data collection in the social sciences (Sarantakos, 1998), and business studies are not exception. More relevant, it is a most commonly utilised tool in accounting research (Abdolmohammadi and McQuade, 2002). Survey techniques have inherent traits which may contribute to their wide use. Such of these traits are, firstly, its ability to gauge frequencies, behaviours, attitudes and beliefs (Yin, 2009). The current study needs to obtain frequencies of ICR practices, historical corporate attributes as well as perceptions of corporate managers about factors affecting adoption of ICR. Secondly, it is also viewed as an efficient and fast strategy in collecting a large volume of data from a dispersed and sizeable population, in a cost-effective way (Blumberg et al., 2005;

Yin, 2009). Therefore, surveys undertaken in this research, especially the questionnaire, allow the collection of a large amount of responses from diverse and widely spread participants, CEOs and CFOs of listed companies in Jordan with active websites. In addition, a questionnaire survey, if formulated efficiently and properly, needs only a basic and minimal ability to be administered, compared with other data gathering methods (Delamont, 2006; Saunders et al., 2009). Moreover, a survey strategy offers a high degree of control through the research process, which aids in suggesting causality for a specific relationship between the variables, allowing hypotheses testing (Jankowicz, 2000; Blumberg et al., 2005; Saunders et al., 2009). As mentioned above, three forms of survey methods were employed to tackle the research questions of the current study, namely the disclosure index, secondary data and questionnaire. These will be illustrated in detail in subsequent sections.

#### **4.3.4.1.1 Survey of dependent variables**

The study basically has two dependent variables: ICR adoption and practices. Survey was the appropriate method to measure and collect the data of these variables. Data about ICR adoption is simply obtained and measured, while the mission becomes harder when it comes to the ICR practices. However, disclosure index, as a survey method, is a common method widely used to achieve that mission.

##### **4.3.4.1.1.1 Survey as data collection and a measurement method of ICR adoption**

A survey of companies' websites is a mechanism used to establish whether they have engaged in internet reporting or not. Having sections on the website concerning investors' relations, financials, financial statements reports or any reciprocal terms is important to consider a firm with ICR presence. If so, as a dichotomous approach is utilised, a value '1' will be assigned for that firm; or '0' otherwise.<sup>14</sup> However, where the company is found with the presence of ICR practices, a disclosure index approach will be further used to identify the levels of

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<sup>14</sup> More in depth details about how to determine a company with web and/or ICR presence will be discussed in sample description in chapter 7.

these practices. The next section provides detailed illustrations about the use, construction, weighting, validation of the ICR index of this study.

#### **4.3.4.1.1.1 A tool of gathering and measuring ICR: the disclosure index**

The first aim of this study is to explore the amount and levels of corporate reporting and other qualities over companies' websites. For this reason, the study has adopted the disclosure index approach as a commonly agreed tool to measure such a practice. In the followed sections, an overview of the selected method, its construction, scoring and weighting techniques and finally reliability and validity issues, will all be discussed.

#### **4.3.4.1.1.2 Overview on the disclosure index method**

It is commonly agreed that corporate disclosure, especially the voluntary form, implies elastic nature, which makes it difficult to precisely capture its intensity or quality (Wallace, 1988; Healy and Palepu 2001). This is largely seen as a criticism directed at disclosure studies, as Gray and Haslam (1990: 53) say, "*there is no one single, agreed framework within which to conceptualise, articulate and collect empirical evidence about the external reporting activity of organisations*". However, Wallace (1987: 431) advocates that regardless which type of a scale is adopted to measure disclosure, specifying the procedures of scoring is essential to prove that "*the measures are valid and reliable*".

In the course of striving to gauge disclosure practices, researchers have essentially followed two approaches: rating of expert users and content analysis (Trabelsi and Labelle, 2006). The first approach involves mainly the assessment of financial analysts of the quality of corporate disclosure<sup>15</sup>, which is in turn characterised as a subjective approach (Beattie et al., 2004). Nevertheless, due to the lack of an available rating, studies have intensively depended on a more objective approach, which is content analysis<sup>16</sup> (Trabelsi and Labelle, 2006). Content analysis was described by Neuendorf (2002) as the fastest growing trend

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<sup>15</sup> (e.g. Lang and Lundholm, 1996; Barron et al., 1999; Clarkson et al., 1999; Botosan and Harris, 2000; Botosan and Plumlee, 2002; Trabelsi et al., 2004)

<sup>16</sup> (e.g. Firer and Meth, 1986; Wallace, 1988; Cooke, 1989; Guthrie and Parker, 1990; Marston and Shrivs, 1991; Wallace et al., 1994; Gray et al., 1995; Botosan, 1997; Healy and Palepu, 1993, 2001; Beattie et al., 2004; Guthrie et al., 2004)

in quantitative accounting research. The roots of content analysis date back to the early fifties, and it was defined by Berelson (1952: 173) as *"a research technique for the objective, systematic, and quantitative description of the manifest content of communication"*. Wolfe (1991: 282) later provided a more comprehensive definition, and regarded it as *"coding words or other units of text against particular schema of interest reducing the text to more structured and concise units of information so that inferences can be drawn about the text or its source"*. Recently, Guthrie et al. (2004: 287) referred to content analysis as involving *"codifying quantitative and qualitative information into pre-defined categories in order to derive patterns in the presentation and reporting of information"*.

According to the party that conducts the content analysis, it can be divided into three approaches, sender, receiver and third-party approach (Gruning, 2007). Within the sender approach, the managers are asked to give an assessment of their corporate disclosure, while, on the other hand, financial analysts are requested to do so in the receiver approach. Abdel-Fattah (2008) argues that these approaches may fit more mandatory rather than voluntary disclosure. In the third approach, third-party, an independent agent is asked to undertake an evaluation of the firm's disclosure quality. In this respect, Wolfe (1991: 282) highlights that one of the advantages of employing the third party approach is that it is *"unobtrusive, neither the sender nor the receiver of the analysed messages is aware that the messages will be analysed"*.

In the context of advantages of content analysis, Wolfe (1991: 282) adds that if the work in content analysis is conducted on the scheduled and regular basis, it opens the way to perform longitudinal studies. It also permits the researcher directly contacting with core behavioural and communicative aspects of human and organisation (Weber, 1990); Analysing naturally-occurring language has advantages over numerical analyses, especially for understanding and describing many organisational phenomena; and finally content analysis facilitates linking summary statistics to natural language, which can result in research outcomes that add validity and meaning to everyday actors as well as scientists.

As indicated earlier, content analysis builds basically upon classifying targeted units of text into categories (themes) in order to derive valid inferences (Beattie et

al., 2004). This type of analysis of textual content is referred to as thematic analysis (Jones and Shoemaker, 1994). In measuring corporate disclosure, Trabelsi and Labelle (2006) classify thematic analysis into three forms. First, it relies on counting the number of sought words and synonymous forms contained in the underlying reports (Copeland and Fredericks, 1968). Two critiques can be attributed to this approach, pertaining to the subjective way of scoring, which varies between 0 and 100%, in addition to failure in considering the items redundancy. Second, a dichotomous approach of scoring items, where it gives an assigned value such as 1 or 5 if an item is present and 0 if not (it depends if it weighted or not). Trabelsi and Labelle (2006) argue that, despite this does remedy the subjectivity concerns of the former approach, but it does not provide extensive assessment of details around a specific theme to indicate its importance or quality. As employed by the current study, the third approach follows the same scoring technique, but it compromises the shortcomings of the former approach by creating a sort of categorisation of homogenous items (Ingram and Frazier, 1980; Botosan, 1997). This thematic aggregation helps in clarifying the quality of disclosure through amount of details disseminated around a certain element. However, the second and third approaches have been adopted by researchers as tools to measure corporate disclosure practices as they are widely known as the disclosure index method.

The disclosure index involves preparing a predetermined checklist of criteria, and then searching through certain objects (annual reports) to ensure the presence or the absence of targeted elements, in order to rate or score the quality of disclosure for a specific firm (Hossain et al., 1994; Abdel-Salam, 1999). Disclosure indices are a commonly used approach in addressing corporate reports in accounting research, which is employed to draw '*a single-figure summary*', providing either a holistic view of reports contents of similar organisations or specific aspects of researcher interest contained in such reports (Coy and Dixon, 2004: 79). In addition, Beattie et al. (2004) advocate that the disclosure index is a highly designed research tool that is mainly established building on essentials of thematic analysis, and its purpose is to measure levels of firms' disclosure. The thematic analysis included in the disclosure index, needs firstly categorising items into classes (themes), and secondly selecting a proper

coding technique to sign a score to each class, and then finally accumulating the scores in all classes to obtain a uniform measure, allowing using statistical inferences (Beattie et al., 2004).

Due to its various advantages, the disclosure index is a widely used approach to measure the quality and quantity of disclosure in both printed and internet corporate reporting research (e.g. Marston and Shrives, 1991; Ahmed and Courtis, 1999; Pirchegger and Wagenhofer, 1999; Abd-Elsalam, 1999; Haniffa and Cooke, 2002; Allam and Lymer, 2003; Coy and Dixon, 2004; Leventis and Weetman, 2004; Al- Htaybat, 2011; Oyelere and Kuruppu, 2012; Hassan, 2012; and others). Consequently, the current research adopted the disclosure index approach, in order to capture the status quo of corporate online disclosure practices of listed companies in Jordan. The measure is a self-constructed and un-weighted, and was designed based on extensive reviews of ICR literature. The construction, items' inclusion, weighting the index, and establishing the validity of current disclosure index will be clarified in the following sections.

#### **4.3.4.1.1.3 Construction of the disclosure index**

The first objective of the present study is to capture a snapshot of the contemporary disclosure properties and practices over the website communications of listed companies in Jordan. Thus, the first key task of the current research is to build up a disclosure index, containing an appropriate catalogue of criteria that enable a precise evaluation of the characteristics of information disseminated through online broadcasting. This disclosure index should reflect the perspective of developing countries, with special reference to Jordan's environment. Marston and Shrives (1991) argue that carefulness in selecting items included in disclosure index is crucial to ensure getting an effective and useful disclosure measure. Nevertheless, Deller et al. (1999) suggest that there is a lack of commonly agreed theory to identify various needs of information users. Likewise, Wallace and Naser (1995) also add there is no commonly accepted or optimal model to select the items to be comprised in a specific disclosure checklist, enabling judgment of the quality of disclosed information. This notion can be typically extended to the current ICR index (Al-Htaybat, 2011). Therefore, the intended disclosure index should be cautiously

developed, and three sources have mainly contributed in the course of developing it. These are:

1. A comprehensive review of the wide range of checklists that have been employed by prior studies (see appendix 1);
2. Disclosure instructions issued by ASE or any of its bodies such as JSC and SDC;
3. Jordanian Corporate Governance Code.

On their analysis of a wide range of previous indices of online disclosure practices, Hanafi et al. (2009) voiced some critiques of these indices. First, they largely focus on capturing the status of reported financial information, while the attention given to non-financial information is very limited. Second, the assessment tool usually suffers from a lack of apparent boundaries between the financial and non-financial items. Finally, a small number of these indices have considered the features regarding the design of the website in the evaluation. These criticisms are to be avoided in the crafted disclosure index of the study.

The process of developing the present ICR index has passed four steps. In the first step, the study selected the checklist developed by Elsayed (2010) as a baseline to create its own checklist. This is because the comprehensiveness and way of categorisation highly serves the aims of this study as well as it was applied to a developing country, namely Egypt. That checklist contains 100 items, which has divided into four main subcategories: Content, Timeliness, Presentation and Usability. The content index consists of four sub-indices, specifically contact details, accounting and financial, corporate governance and corporate social responsibility. Through the second step, the researcher has conducted an extensive review of existing indices applied to ICR literature as outlined in appendix 4. As a result, a list of total 146 items was generated. In the light of regulatory framework in Jordan, in the third step the index was modified and minimised to leave 132 items. For this purpose, self-review and a panel of academics review were implemented. In the final step, a pilot survey over real companies' practices, including 30 companies from all sectors resulted in

dropping a further 23 items. Omitting these items ascertained that undisclosed and irrelevant items will not be penalised over non-applicable companies (Abdelsalam et al, 2007). Hence, the final checklist of current disclosure index comprises 109 items; divided into four main categories as follows (see appendix 3):

*First category: **Content*** (63 items): this represents financial and non-financial information that is located on the companies' websites, which might be obligated by law or voluntarily disclosed. Non-financial information contains two separate groups, corporate governance information, 19 items, and 13 of CSR items. Financial and accounting information is shown in the same list of criteria including 31 items. Except Elsayed (2010) and Samaha et al. (2012a), there is no study addressing the content of website reporting in such a detailed classification. However, unlike Elsayed (2010), investor related information was combined with other financial and accounting information instead of being presented separately. In addition, it can be noticed that financial and accounting sub-index is the biggest one among the utilised content disclosure indices. This is attributed to the relative importance of this kind of information for users of corporate disclosure, especially the investors. It is assumed that they are highly interested in the accounting and financial information disclosed (Marston and Pelio, 2004).

*Second category: **Timeliness*** reflects how up to date the disclosed information is. Abdelsalam and Street (2007) stress that, at least one of two criteria should be satisfied, in order to consider a specific item as a timely online disclosure influencer. This either reflects the perception of users on how timely the content of information disseminated on the website or the quality of technologies used to access information, which should be free of delay. 12 items were specified to represent the timeliness of website disclosure, for example disclosing the latest interim financial reports, latest stock prices, indicators of the last webpages updates and mailing lists etc.

*Third category: **Presentation***: there is an obvious overlap in ICR literature between items in the disclosure indices which represent the presentation of disclosure elements and features of technology, which reflect the degree of usability of the website (e.g. Debreceeny et al., 2002; Marston and Pelio, 2004;

Xiao et al., 2004; Yap et al., 2011). In this study, clear boundaries were made between these two dimensions. Presentation is regarded mainly as how the corporate information, conveyed over the website, is displayed. There are various alternatives of presentation formats of corporate information which may contribute in improving transparency (Hodge et al., 2004). Therefore, it enhances accessibility, readability and understandability of that information (FASB, 2000). In addition, Debreceeny et al. (2002) argue that presentation is no less important than the content; this is because it promotes the verifiability and speed of information and in turn the quality of dissemination. Consequently, 15 items reflected the presentation dimension were included in the index. For instance, financial statements formats, HTML, PDF or Word; video and audio files; and languages of presenting websites and financial reports etc. (see appendix 5 for more).

*Final category: Usability:* this index involves 19 items to highlight the technological features and properties that usually make the website user-friendly (Marston and Pelio, 2004; Yap et al., 2011). Therefore, it can be used and navigated in an easy and convenient way (Xiao et al., 2004; Abdelsalam et al., 2007). Additionally, navigational tools available on the website provide users with several options for information inquiry and searching, which may enhance the transparency and accessibility of disclosure (Kelton and Yang, 2008). The criteria used assess attributes of user support features and the website design and layout, which comprise, for example, multiple hyperlinks, pull-down menus, site map and internal search engines etc.

To sum up, the final index to measure ICR practices of listed companies in Jordan consists of 109 items. These items divided into four sub-indices as follows: Content (63 items), Timeliness (12 items), Presentation (15 items) and Usability (19). The content dimension was further divided into 3 independent sub-indices, which are: Financial and Accounting, Corporate Governance and CSR, containing 31, 19, 13 items respectively. Figure 4.2 provide a fuller picture about details of components of the disclosure index of the study.

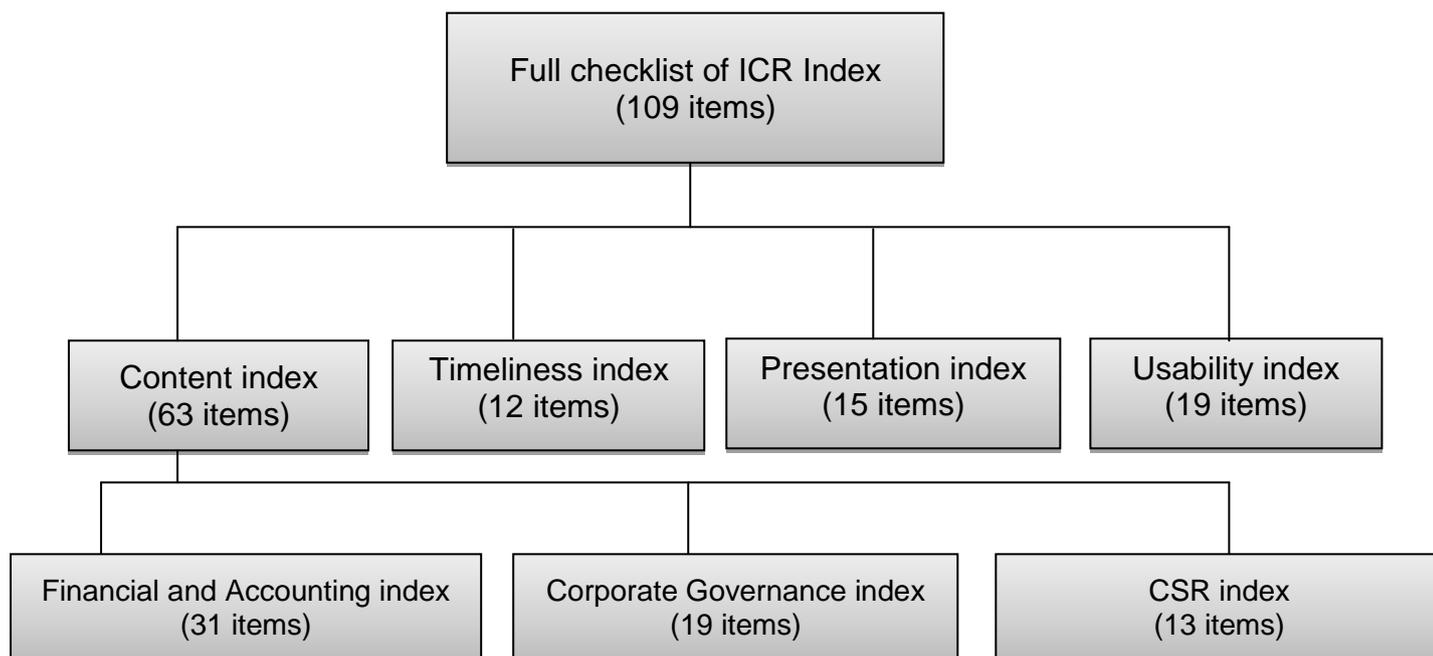


Figure 4.2 distribution of the ICR checklist  
Source: developed by the researcher

#### 4.3.4.1.1.4 Weighting the disclosure index

Addressing both the quality and quantity of corporate disclosure is one of the core aspects of disclosure index studies (Hassan, 2012). Based on the purpose of each study, there are two main approaches, in scoring the disclosure index, which have been largely deployed by prior disclosure studies, weighted and un-weighted indices. Weighted index can be used when the researcher is concerned about the quality of disclosed items. In contrast, un-weighted index can be used, where the quantity of disclosed items is the essential consideration of the researcher (Al-Htaybat, 2011). However, some researchers viewed the quantity of disclosure as a proxy of its quality (e.g. Botosan 1997; Lang and Lundholm; 1996; Healy and Palepu, 2001).

The weighted disclosure index is designed depending on perceived materiality of each item listed in the index checklist by a specific user group (investors, creditors or analyst ...etc.) or by the researchers based on the estimated needs of those users. Therefore, each item in the checklist will take either the given weight if it is present or "0" otherwise (Elsayed, 2010; Al-Htaybat, 2011). Many prior studies have adopted a weighted disclosure index such as Pirchegger and Wagenhofer

(1999); Debreceny et al. (2002); Larran and Giner (2002); Marston and Polei (2004); Bollen et al. (2006) and Hanafi et al. (2009). In contrast, assuming the equal relative importance of items to all users groups, the un-weighted disclosure index gives equal weights to each item in the checklist. The un-weighted disclosure index uses a dichotomous measure and assigns the same weight to all items in the index checklist. So, each item takes the values “1” if disclosed and “0” otherwise. Many researchers used this approach as for instance: Ashbaugh et al. (1999); Xiao et al. (2004); Trabelsi and Labelle (2006); Abd-Esalam et al. (2007); Al-Hayale (2010); Al-Htaybat (2011); Oylere and Kuruppu (2012); Hassan (2012).

However, a few studies such as Debreceny et al. (2002); Xiao et al. (2004) and Bollen et al. (2006) have employed both weighted and un-weighted disclosure indices; they found consistent findings with no significant differences occurred. For this reason and in addition to the limitations that the weighted approach suffers from, this study adopts an **un-weighted approach**. To begin with these limitations, in the course of generating correct coefficients of weighting, the function should involve each item and category weighting given by each targeted group of users (Bonson and Escobar, 2006). Hereby, users’ subjectivity and bias cannot be avoided (Cooke, 1989; Chow and Wong-Boren, 1987; Botosan, 1997; Ahmed and Courtis, 1999; Wang et al., 2008). In this respect, generally speaking, some users might lack proper understanding and self-insight about their priorities of information use (Dhaliwal, 1979; Bonson and Escobar, 2006). Furthermore, Elsayed and Hoque (2010) argue that it would be misleading relying on subjective opinions of a particular group of information users in scoring disclosed items. This is due to the fact that the extent of usefulness assigned to each item is not rigid or absolute, but rather it varies among different countries, users, industries and over time. Moreover, corporate disclosure is not targeted to meeting the needs of a specific group of users, but rather it aims to satisfy different purposes of users (Firth, 1980; Cooke, 1991; Raffournier, 1995; Hossain et al., 1994; Ahmed and Courtis, 1999). As this study is not interested in addressing disclosure preferences and needs of a particular group of information users, and in turn an un-weighted disclosure index was employed (Trabelsi and Labelle, 2006; Elsayed and Hoque, 2010; Nurunnabi and Hossain, 2012).

#### 4.3.4.1.1.1.4 A scoring mechanism of the indices

As explained earlier, the un-weighted disclosure index approach was chosen, in order to identify the levels of disclosure practices over companies' websites in Jordan. This implies that equal importance and in turn equal values will be assigned to all elements embedded in the checklist. In this case, dichotomous scoring will be applied, with values 1 if an element is present and 0 if not. A total score of a specific index for a particular company can be calculated by dividing the aggregate of the whole items disclosed on the maximum value on that index. The generated ratio represents the realised disclosure level of this company regarding that disclosure component, for instance content, timeliness etc., for example, in calculating the overall content disclosure index for X company which presumably had 46 items presented during the survey time, the score of the total index can be computed based on the following equation:

$$C - ICRI = \frac{\textit{Total disclosed or realised items}}{\textit{Maximum value of the index}} \times 100\%$$

Whereas:

*C-ICRI*: Content of Internet Corporate reporting Index;

*Total disclosed or realised items*: actual items that are visible on the corporate website;

*Maximum value of the disclosure index*: the highest score that can be achieved by the company.

Therefore, level or percentage of content disclosure of that company, knowing that the maximum value of content items is 63, will be:

$$C - ICRI = \frac{46}{63} \times 100\%$$

$$C-ICRI= 73\%$$

Then the ratio of content disclosure on the internet is 73%. The rest of the disclosure indices would be computed in the same way. Based on extracted indices or ratios, the magnitude of distance and/or deviations of various companies' actual disclosure practices via the internet, from best practices as presumed by the indices, will be easily and precisely determined. The higher the value of a certain index, the lesser the deviations will be present, and evident that there are more transparency and disclosure, which companies provide via their website (Bonson and Escobar, 2006). In addition, variations among companies concerning ICR practices could be clearly measured, analysed and compared.

#### **4.3.4.1.1.1.5 Validity of ICR index:**

Validity suggests that the instrument used really gauges what is intended to be gauged (Sekaran, 2003). The current ICR index possesses its validity from three procedures that have been taken by the researcher:

1. The disclosure index was initially designed through a careful review of most ICR checklists that have been applied in developed and developing countries. The tentative checklist includes exactly 146 items.
2. In the course of ensuring **content and face validity**, the content of the preliminary ICR checklist was critically reviewed firstly by the researcher in the light of the regulatory framework in Jordan, and secondly by two academics, with relevant experience in website reporting field, who were requested to verify the content of the sub-disclosure indices. This ensures elimination of some irrelevant items from the indices. Also, it is necessary to exclude duplicated items. Consequently, a few items were dropped out of the index based on their suggestions such as providing profit and loss accounts on companies' websites. This is because the common practice of companies in Jordan is to disclose income statements instead of such accounts in published annual reports. In addition, the two academics were asked to check out misclassification of some criteria, especially with the presence of a messy cross-classification of many items in the literature. For instance, some researchers classify hyperlinks as a presentation feature, while others view it as one of the technology-support or usability items. However, they asserted that this feature belongs more to the

usability dimension. Overall, after conducting construct validity, the disclosure index was reduced to 132 items.

3. A pilot test has been done for the revised copy of the checklist through checking out the websites of 30 Jordanian listed companies from all sectors. This was to ensure if there are some items included in the index that are not applicable or relevant in the Jordanian context. Consequently, a further number of items was omitted from the list such as segmental reporting and consolidated financial statements because not all companies possess branches nor all companies have subsidiaries. Lastly, the final copy of the disclosure index contained 109 items. This procedure mitigates the concerns found in some research regarding treating non-applicable items (Marston and Shrivess 1991; Abdelsalam et al., 2007; Aly et al., 2010); especially where the sample of this study includes firms belonging to four different sectors.

#### **4.3.4.1.2 Surveys of independent variables**

The nature of the data required for a study influences the method of data collection as well as the measurement tool applied. The data for independent variables needed in this study can be obtained from two sources: secondary and primary sources. Two types of survey can be conducted to get these data: first, a survey of secondary data records to measure and collect data regarding companies' characteristics that might determine their adoption status and disclosure practices via websites; second, since more investigation was sought about the potential determinants of adoption of ICR, a questionnaire survey was used. Hence, both perspectives of disclosure theory and diffusion of innovation theory were utilised to develop perception based scales. These two methods will be subsequently highlighted.

##### **4.3.4.1.2.1 Secondary data: collection and measurement**

In order to collect the data about underlying variables, a survey of secondary data records available in the Jordan's Financial Market and its bodies (the ASE, SDC and JSC) has been undertaken. A survey sheet contains 15 variables belonging to 3 main groups of variables (See Appendix 6). Specifically, these groups are: company's general characteristics, board of directors' structure and ownership structure. Nevertheless, in terms of measurement, these variables can also be divided into categorical and continuous variables. Table 4.3 postulates types, measurement and proxies of secondary data variables.

Table 4.3 Secondary data of the study		
Variable	Type	Measurement
<b>Company's general characteristics</b>		
Company size	Continuous	Actual value of total assets at the year end
Listing status	Categorical	A dichotomous variable takes the value 1 if the firm listed in first market and 0 otherwise
Leverage	Continuous	Measured by dividing the total debts by the total assets at the end of year
Return on assets (ROA)	Continuous	Measured by dividing the net profits by the total assets at the end of year
Audit type	Categorical	A dichotomous variable takes the value 1 if a company being audited by Big 4 audit firm and the value 0 otherwise
Industry sector	Categorical	A multinomial variable having 4 values according to the company's sector, 1 for industrial, 2 for service, 3 for banking, and 4 for insurance
<b>Board structure</b>		
Board size	Continuous	Number of directors on board
Role duality	Categorical	A dichotomous variable takes the value 1 if the CEO holds the chairman position and 0 otherwise
Board independence	Continuous	Represented by percentage of non-executive directors in the board, which is calculated by dividing number of non-executive directors by total directors on the board
Audit committee	Categorical	A dichotomous variable takes the value 1 if the firm have an audit committee and 0 otherwise
Corporate governance and nominating committee	Categorical	A dichotomous variable takes the value 1 if the firm have an Corporate governance and nominating committee and 0 otherwise
<b>Ownership structure</b>		
Family ownership	Continuous	The percentage of shares owned by a group of relatives in the company
Institutional ownership	Continuous	The percentage of shares owned by other institutions in the company
Foreign ownership	Continuous	The percentage of shares owned by foreign investors in the company
Management ownership	Continuous	The percentage of shares owned by CEO in the company

#### 4.3.4.1.2.2 Questionnaire survey

Secondary variables, discussed in the previous section, initially represent one domain out of four contained in the theoretical framework of the study, namely the organisational domain (see Chapter 3). The remaining domains, technology, management and environment, are all covered in the questionnaire survey. As

mentioned earlier, the disclosure and innovation diffusion theory contributed in building these three measurement scales. Depending on historical facts around companies, the aim of the former survey is to extract insights about the potential determinants of adoption and practices of ICR. The later survey involves perceptions of companies' managers (CEOs and CFOs) to identify further perceived influences of ICR adoption. Indeed, long procedures have been followed for creating, validating and refining the questionnaire. Due to that, a separate chapter (Chapter 5) is devoted to highlight these procedures, including formulation of inherent hypotheses. Developing hypotheses associated with secondary data will be discussed in the next section.

#### **4.3.5 Secondary data: hypotheses development**

As previously pointed out, the current study follows a positivistic-deductive approach or as Sekaran (2003: 35) regarded it as a 'hypothetic-deductive approach. Hereby, the need arises for formulating hypotheses to be further statistically tested and verified in the light of existing literature. Therefore, based on a theoretical foundation, variables that might explain the questionable phenomenon should be, at first hand, clearly identified.

The current theoretical framework involves several theoretical approaches, such as economic, political and information cost, socio-economic and innovation diffusion. A part of the theoretical framework presented in Chapter 3 suggests that the adoption decision and amount of various disclosure practices are a function of a number of influential variables related to a firm's specific attributes. However, the selection of a number of variables involved could not be systematically determined (Al-Htaybat, 2005). Further, as can be easily noticed from empirical findings of previous studies, there is no uniform pattern of direction of the relationships between these firms' attributes and propensity to adopt and levels of ICR practices. This might be attributed to differences among these studies regarding objectives, proxies employed, statistical tests utilised, and research contexts chosen.

The second and third objective of this study strives identifying which of the firm's specific attributes explain companies' behaviours towards voluntary adoption of

ICR as well as how to explain variations in levels of website disclosure practices among companies, using these attributes. Hence, in addition to the ICR adoption variable, eight further independent variables were identified, representing ICR properties and practices, distributed within 4 main categories, namely overall disclosure index, content (financial, CG, CSR), timeliness, presentation and Usability indices. Therefore, to fully attain the latter objective and partially achieve the former<sup>17</sup>, three general groups of independent variables were specified including 15 variables. The first group represents firms' general characteristics (6 variables), the second is associated with proxies of corporate governance (board structure: 5 variables), while the third is related to corporate ownership structure (4 variables). Hence, three general hypotheses can be attached to the explanatory factors as follows:

H1: there is a significant impact of firms' general characteristics on ICR (adoption, content (financial, CG, CSR), timeliness, presentation, usability and overall indices) by companies listed on ASE.

H2: there is a significant impact of variables of board structure on ICR (adoption, content (financial, CG, CSR), timeliness, presentation, usability and overall indices) by companies listed on ASE.

H3: there is a significant impact of ownership structure variables on ICR (adoption, content (financial, CG, CSR), timeliness, presentation, usability and overall indices) by companies listed on ASE.

To disaggregate this, Table 4.4 briefly lists the hypotheses which will be tested in the current study. A deeper analysis of the theoretical linkage between dependent and independent variables will be provided later when discussing the results of the study in Chapter 7. To this end, 135 identical hypotheses are generated as a result of that disaggregation. Moreover, all of them are formulated in a positive form.

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<sup>17</sup> As stated earlier, due to the importance of spotlighting more over factors which contribute to adoption or non-adoption of ICR, it will be investigated further using explanatory factors, building essentially upon innovation diffusion literature. A Questionnaire survey will be employed to get the required data for the study.

Table 4.4 A list of hypotheses related to the secondary data									
<b>Firms' General Characteristics:</b> <i>first general hypothesis: there is a significant impact of firms' general characteristics on ICR (adoption, content (financial, CG, CSR), timeliness, presentation, usability and overall indices) by companies listed on ASE</i>									
Independent variables	Dependent variables								
	ICR adoption	ICR Levels (Indices)							
		Financial	CG	CSR	Content	Timeliness	Presentation	Usability	Overall
H1: Size	H1a	H1b	H1c	H1d	H1e	H1f	H1g	H1h	H1i
H2: Listing status	H2a	H2b	H2c	H2d	H2e	H2f	H2g	H2h	H2i
H3: Leverage	H3a	H3b	H3c	H3d	H3e	H3f	H3g	H3h	H3i
H4: ROA	H4a	H4b	H4c	H4d	H4e	H4f	H4g	H4h	H4i
H5: Audit type	H5a	H5b	H5c	H5d	H5e	H5f	H5g	H5h	H5i
H6: Industry sector	H6a	H6b	H6c	H6d	H6e	H6f	H6g	H6h	H6i
<b>Corporate Governance (Board structure):</b> <i>the second general hypothesis: there is a significant impact of variables of board structure on ICR's (adoption, content (financial, CG, CSR), timeliness, presentation, usability and overall indices) by companies listed on ASE.</i>									
Independent variables	Dependent variables								
	ICR adoption	ICR Levels (Indices)							
		Financial	CG	CSR	Content	Timeliness	Presentation	Usability	Overall
H7: Board size	H7a	H7b	H7c	H7d	H7e	H7f	H7g	H7h	H7i
H8: Role duality	H8a	H8b	H8c	H8d	H8e	H8f	H8g	H8h	H8i
H9: Board independence	H9a	H9b	H9c	H9d	H9e	H9f	H9g	H9h	H9i
H10: Audit committee	H10a	H10b	H10c	H10d	H10e	H10f	H10g	H10h	H10i
H11: CG committee	H11a	H11b	H11c	H11d	H11e	H11f	H11g	H11h	H11i
<b>Ownership Structure:</b> <i>the third general hypothesis: there is a significant impact of ownership structure variables on ICR's (adoption, content (financial, CG, CSR), timeliness, presentation, usability and overall indices) by companies listed on ASE.</i>									
Independent variables	Dependent variables								
	ICR adoption	ICR Levels (Indices)							
		Financial	CG	CSR	Content	Timeliness	Presentation	Usability	Overall
H12: Family ownership	H12a	H12b	H12c	H12d	H12e	H12f	H12g	H12h	H12i
H13: Institutional ownership	H13a	H13b	H13c	H13d	H13e	H13f	H13g	H13h	H13i
H14: Foreign ownership	H14a	H14b	H14c	H14d	H14e	H14f	H14g	H14h	H14i
H15: Management ownership	H15a	H15b	H15c	H15d	H15e	H15f	H15g	H15h	H15i

#### 4.3.6 Population and samples

This section provides an overview of the population and sampling design of the current study. Nonetheless, thorough details about sub-samples' frames will be discussed later, at the beginning of each analysis chapter.

The current study aims firstly to explore the levels of ICR adoption and practices for companies listed on ASE, Jordan. Secondly, it attempts to identify factors that explain variations among these companies, if they exist. To this end, the whole population that might be applicable reached, in the mid of 2012, 262 listed companies. However, sub-samples' frames and sizes are largely determined based on conditions applied and the task to be accomplished.

As the study is interested only in companies that had active and usable websites, an intensive survey has been conducted over several relevant search pathways (e.g. directory of SDC, arabianbusiness.com, zawya.com, google.com.jo and phone calls). As a result, 150 companies were identified as a total sample of the study. After that, following the required tasks of the study, three sub-samples were designed. First, only 69 companies were found disseminating corporate information via their website. These represent the valid sample to achieve the **first task**, which is that of knowing levels of ICR practices and explaining variations among companies, if any. In the **second task**, the study strives to compare historical general characteristics of adopters and non-adopters of ICR to predict factors that contribute towards belonging to either of these groups. Hereby, a sample involves all 150 companies that are initially determined.

In the **final task**, in spite of the fact that any of all 150 companies can be an object of the sample, the purpose of and the nature of data needed restrict the equation parameters. The final aim of this study is to dig deeper in the push and pull factors toward adoption and non-adoption of ICR. Therefore, in order to attain the required data, a questionnaire survey was implemented. CEOs and CFOs of these 150 companies were the targeted participants. This is due to the strategic role that they handle with regards to corporate reporting and adoption decisions. Also, the level of their knowledge about different company operations may widely assist in understanding and answering survey questions. Indeed, there is no

available database, giving the number of CEOs and CFOs in these companies. However, as an arbitrary calculation, if it is supposed that each company has one CEO and one CFO; a total of 300 prospective respondents will be accounted for. However, due to some restrictions of accessibility only 261 questionnaires were handed out. After serious follow up efforts, 179 questionnaires were returned, achieving a response ratio of approximately 69%. Later, 5 unusable questionnaires were eliminated, resulting in a final sample of 174 respondents. 64 respondents out of total respondents were CEOs, while 110 respondents were CFOs'. The nature of the job, ranking and country's culture often make it more difficult to approach and obtain the responses from CEOs in Jordan. Table 4.5 below describes sub-samples used in the study.

Table 4.5 Population and samples			
Research task	Research tool	Targeted sample	Number of cases
All	—	Listed companies in ASE	Whole population 262 firms
Determinants of ICR adoption	Survey of secondary data	Listed firms in ASE with active websites	150 firms
More determinants of ICR adoption	Questionnaire survey	CEOs and CFOs of listed firms in ASE that had active websites	174 respondents
Levels of ICR practices and its determinants	Disclosure index and Survey of secondary data	Listed firms in ASE with ICR	69 firms

#### **4.4 Conclusion**

This chapter discusses the methodology of the current study. In this vein, the research philosophy, approaches, methods, design and strategies have been explained and justified. Furthermore, it highlights the hypotheses development, sampling designs, tools used in collecting secondary data as well as information about the status of disclosure practices over the internet. However, due to the size of the section on development, administration and hypotheses regarding the questionnaire survey, these will be separately presented in the next chapter.

To sum all, identifying determinants of fluctuations of adoption and levels of ICR practices is the focal point of this study. The study targets listed companies in ASE, Jordan. The current theoretical framework is a result of the integration of various theoretical grounds (e.g. agency, signalling, cost-benefit, stakeholders and several of diffusion of innovation theories). Thus, the current study follows the claims of the positivism paradigm, employing deduction, which relies on testing out existing theories. Within the deductive approach, the hypotheses of the study shall be developed, based on an established theoretical framework that indicates the causality of the relationships between factors and dependant variables. This opens the way to employ the quantitative methods in data collection and analysis. Three types of survey instruments were used, namely secondary data, disclosure index and questionnaire. Samples frames and sizes were determined in convergence with conducted research tasks.

After obtaining the quantifiable and measurable data collected from primary and secondary sources, quantitative statistical analysis will be implemented (e.g. Logistic and Multiple regression, and Discriminant analysis). This is to empirically examine the relationships between independent variables (organisational, managerial, technological and environmental factors) and dependent variables (ICR adoption and practices). As a result, hypotheses will be tested, research questions answered and findings will be plausibly explained in line with available literature. The entire process of research methodology is depicted in Figure 4.3 below.

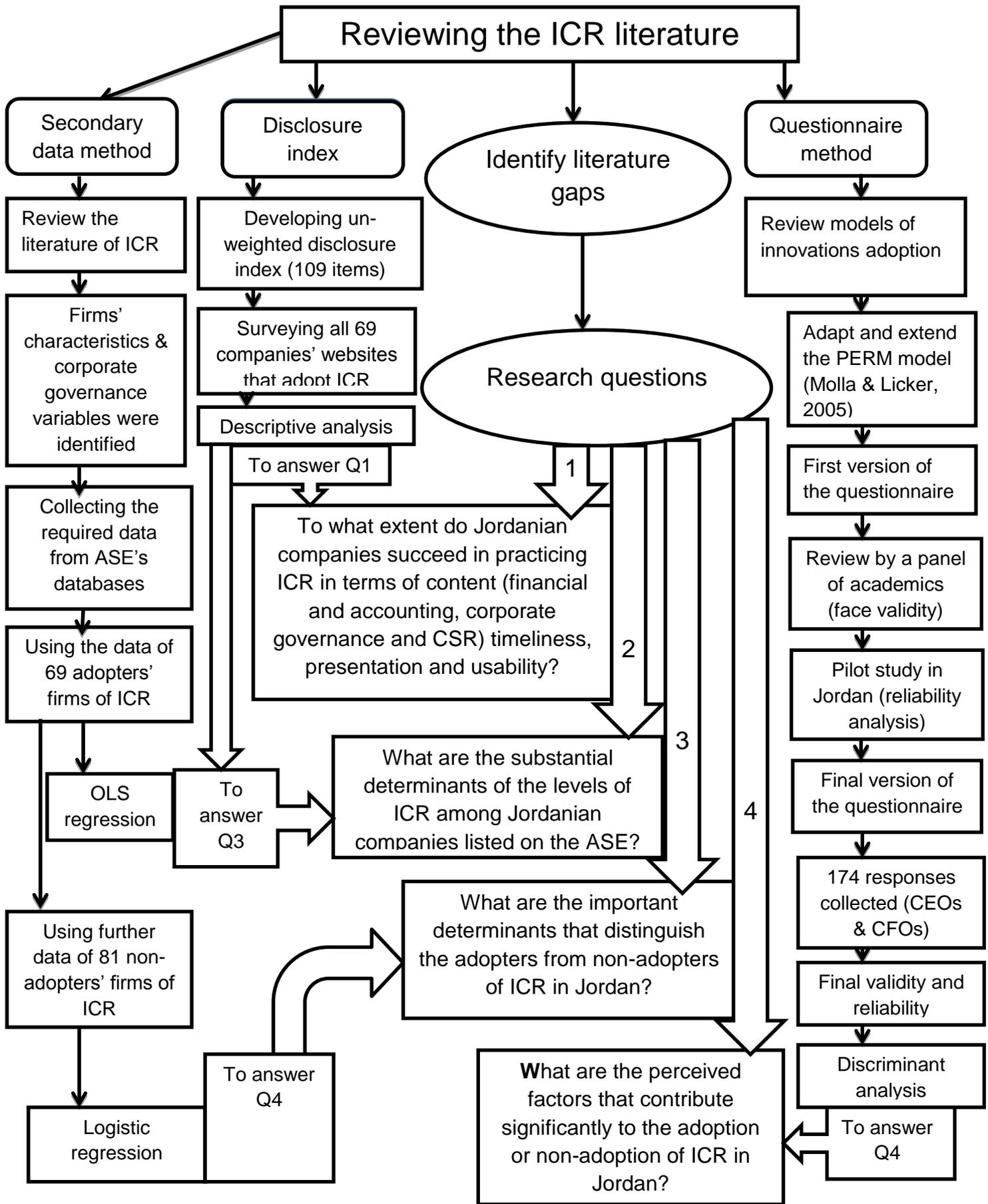


Figure 4.3 Research process  
 Source: developed by the current researcher

# **Chapter 5: Questionnaire Development**

## **5.1 Introduction**

As presented in Chapter 3, the theoretical framework of the study consists of four main domains, which might explain the phenomena in question, ICR adoption and practices. As illustrated in the previous chapter, variables measured using proxies of secondary data are initially regarded as one domain, namely the organisational domain. The rest, technology, management and environment domains are all represented employing a questionnaire survey. They were produced based upon integration of multiple theories, mainly innovation diffusion theories in addition to information cost, stakeholders and legitimacy theory.

The third objective of this study is to determine the factors contributing to the adoption and non-adoption of ICR. Similar to ICR practices, a part of this objective will be achieved depending on historical facts around companies (secondary data), while the other part will be addressed using a questionnaire survey. A questionnaire survey seeks involving perceptions of companies' managers (CEOs and CFOs) to identify further perceived influences of ICR adoption. Hence, it comes as a complementary step of secondary data analysis. Indeed, long procedures have been followed for creating, validating and refining the questionnaire. Consequently, a large part of the current chapter is devoted to highlighting these procedures in section 5.6. These procedures resulted in a revised theoretical framework of the study to be presented in section 5.7. However, this chapter is begun by a general overview about questionnaire method as illustrated in sections 5.2 and 5.3. Section 5.4 postulates the process of crafting the questionnaire. Questionnaire administration and formulation of inherent hypotheses will be presented in sections 5.5 and 5.8 respectively.

## **5.2 Selecting a questionnaire method**

Generally speaking, individuals' opinions, perceptions and perspectives can be addressed either by questionnaire or interview (Hussey and Hussey, 1997; Jankowicz, 2000). However, the nature and purposes behind an investigation would largely determine which method is more appropriate to be adopted. In the

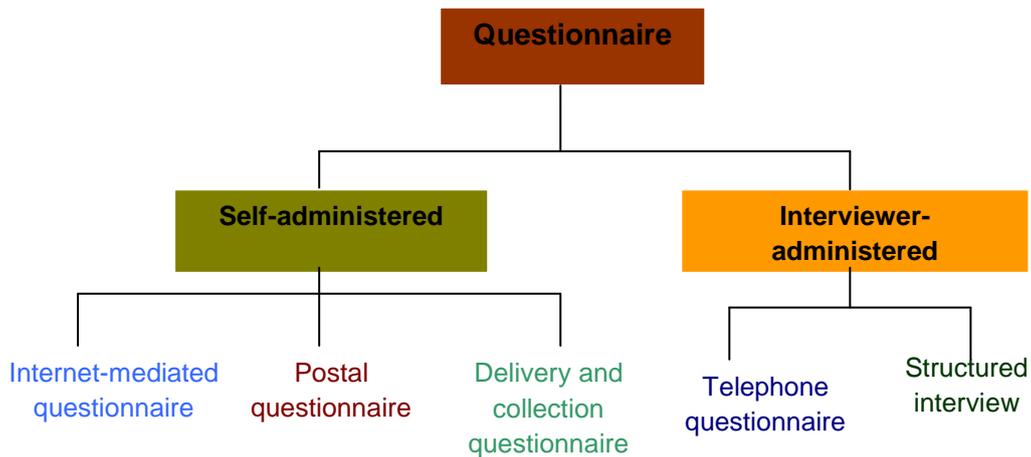
current study, many reasons pushed towards employing a close-ended questionnaire survey, enabling a more in-depth empirical explanation of the factors significantly contributing to the adoption or non-adoption of ICR in Jordan. To begin with, a quantifiable and vast amount of data is sought (Ticehurst and Veal, 2000). In addition, the study seeks to ensure that questions are understood and interpreted in a largely standard way, where all respondents will be asked to answer the same set of standardised and highly structured questions (Oppenheim, 1992). Furthermore, the study requires contacting companies' managers in Jordan, over widely geographical distances. Therefore, the questionnaire survey is considered an effective and efficient way, demanding less effort and time, and hence a large number of participants may be covered (Bryman and Bell, 2007; Saunders et al., 2009). Moreover, if a questionnaire is wisely designed; it requires only a basic ability to be administered (Oppenheim, 1992). Moreover, as the study is of an explanatory nature, a close-ended questionnaire tends to be a more suitable method, attempting to explain causes of the variability of a particular phenomenon (Saunders et al., 2009). To finalise, another reason for employing a questionnaire is due to its enormous advantages compared to its disadvantages, as outlined in Table 5.1 below.

Table 5.1 Advantages and disadvantages of the questionnaire	
Advantages	Disadvantages
Low cost compared to other methods	Lack of flexibility, with no chance for explanation and clarification
Less influence of the interviewer's bias	Lack of flexibility limits the opportunity to seek more information
Fast in producing results due to time flexibility	It depends heavily on respondents' honesty and care
Anonymity	It sometimes yields a low response rate, especially to a mailed questionnaire
Easy administration and approaching of respondents	Lack of control may lead to doubts whether it was filled in by the right person.
Accessibility and wider coverage	Lack of control may result in collecting incomplete responses
Standardised wording	
Source: adapted from Oppenheim, 1992; Sarantakos, 1998; Sekaran, 2003; Nachmais and Nachmais, 2004; Saunders et al., 2009	

### 5.3 Choosing a particular mode of questionnaire delivery

In general, a questionnaire survey can be executed in two different ways, self and interviewer administered, as depicted in Figure 5.1 (Saunders et al., 2009). Under the self-administered type, the role of data collector is just limited to distributing the questionnaire – by internet, post and/or delivery and collection - to participants to be completed by them personally. In contrast, the data collector, in an interviewer - administered questionnaire, fills it in based on the answers of respondents. This might be conducted through either telephone or face to face interviews.

Figure (5.1) Questionnaire types



Source: Saunders et al. (2009: 363)

An interviewer-administered survey was excluded as a data collection choice due to the time needed and difficulty to manage accessing targeted respondents. Hence, two types of self-administered platforms were utilised in gathering the required data, namely email, and delivery and collection (personal and fax) questionnaires. The postal mode in questionnaire administration was not considered due to the lack of either clear correspondence addresses or efficient postal services in Jordan. However, the mixed-mode method used in distributing the questionnaire would largely contribute to enhancing the amount of collected data, within the given time and with less costs incurred (Blumberg et al., 2005). In addition, another advantage of using two platforms as distribution channels is the nature of the research participants. The targeted respondents are CEOs and

CFOs of listed companies on ASE. Therefore, the nature of their working conditions and job status impose offering respondents a frame of flexibility in modes of completing the questionnaire, whichever is more convenient.

#### **5.4 Crafting the questionnaire**

This section aims at presenting a brief overview about construction of the study instrument. Detailed information about construction of the study model and instrument can be found in the part devoted to the theoretical framework development: Chapter 3.

As stated previously, a questionnaire survey was undertaken to enable further empirical investigation of the factors that might influence the adoption of ICR in Jordan. As indicated in the development of the theoretical framework (Chapter 3), three main domains were intended to be captured by the questionnaire, namely management, technology and environment. Variables attached to each domain can be highlighted as follows:

***Management domain:*** Awareness, Commitment and Cost-Benefit Balance;

***Technology domain:*** Human Resources, Technology Resources, Supported industries Readiness and Users Readiness;

***Environment domain:*** Users' Attention and Government.

In designing the current questionnaire, the instrument initially incorporated some items used by the final questionnaire of Molla and Licker (2005), which was used to investigate e-commerce adoption<sup>18</sup>. This is due to the lack of a model or questionnaire capturing determinants of ICR adoption from an innovation diffusion perspective. However, despite the emergence of two streams from technological innovations, yet that instrument is still linked to a relatively different subject. Therefore, a careful review of the disclosure theory as well as informal interviews with academics were further conducted. This was to specify relevant factors and identify missing dimensions and variables. As a result, Users' Attention, Users'

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<sup>18</sup> The instrument of Molla and Licker (2005) has been tested and validated three times; firstly in South Africa (2005); secondly and thirdly in China with slight amendments by Tan et al. (2007) and Tan, (2011).

Readiness and Cost-Benefit Balance were added to the instrument. Furthermore, wording of items covered by the questionnaire was modified and extended to suit addressing the ICR topic (for more details in crafting and dimensions included in the current questionnaire, see the cross-referencing Table 3.1 in Chapter 3).

Overall, the crafted questionnaire consists of 52 questions, which were divided into 10 sections, as outlined in Table 5.2 below. The first section contains two items, seeking general information. The first asks the name of the company, while the other investigates whether a company adopts ICR or not. The remaining 9 sections are formulated as perception-based measures, and depends on a five-point Likert scale, ranging from 1 strongly disagree to 5 strongly agree (an illustration of definitions of the study factors shown in this section can be found in Chapter 3 while discussing the theoretical framework of the study). Practically, Likert scale questions are user-friendly and speedy to answer (McDaniel and Gates, 1993)

Table 5.2 Questionnaire Sections		
<b>SECTION</b>	<b>FACTOR</b>	<b># ITEMS</b>
<b>Section 1</b>	General Information	2
<b>Section 2</b>	Awareness	9
<b>Section 3</b>	Commitment	9
<b>Section 4</b>	Cost-Benefit Balance	3
<b>Section 5</b>	Human Resources	5
<b>Section 6</b>	Technology Resources	4
<b>Section 7</b>	Supported industries Readiness	4
<b>Section 8</b>	Users' Readiness	5
<b>Section 9</b>	Users' Attention	5
<b>Section 10</b>	Government	6

Considering the debate that producing a good questionnaire is practically quite difficult (Dillman, 2000), however, many procedures were followed to ensure quality of the data collected by the current instrument. These procedures are mostly related to questions formulation and design to gain a valid and rational measurement, which are specifically wording, translation, initial validity and piloting.

#### **5.4.1 Questions wording**

Close attention was given to applying the commonly agreed principles in assembling questions. This is because including questions that are wrongly worded might create several problems such as ambiguity, misunderstanding and irrelevance (Dillman, 2000). Practically, it is acknowledged that it is difficult to absolutely identify the best model of questions wording and appearance (Gillham, 2000; Dillman, 2000; Nachmais and Nachmias, 2004). However, to ensure that the questionnaire is valid and clear in terms of tone and wording of questions, a number of criteria were implemented to produce a sound questionnaire. To start with, questions were ordered in logical sequence, permitting for smooth flow and transition, and alleviating problems and distortions (Sarantakos, 1998). In addition, simple linguistic design and short questions were used instead of sophisticated or long questions (Sekaran, 2003). Furthermore, questionnaire questions should be neutrally assembled, and really reflect the study objectives, but never represent the researcher's personal preferences (Robson, 2003). Therefore, leading questions were avoided. Moreover, the researcher tries not to use questions that need great mental effort (Saunders et al., 2009). This is to ensure avoiding problems of 'completion friction' and therefore maximising retention rate. Finally, the researcher was keen not to include some types of questions such as negative and/or double-barrelled questions. The former often uses the term 'not', which makes it tricky to be answered, while the latter comprises double questions that might puzzle the respondent and force them to decide which one to answer (Sekaran, 2003; Saunders et al., 2009). However, loaded questions were used in a few cases, where the norms of research in this field usually pair some concepts together such as 'costs and benefits' and 'advantages and disadvantages.

#### **5.4.2 Instrument translation**

Despite preparing the questionnaire in the English language, the responses are intended to be collected in Arabic. Imprecise translation might influence the meaning of used words or expressions in the questionnaire. This may lead to failure to extract the right perceptions about the phenomenon in question. In this context, Emery (1987) for example argues that, generally speaking, Arabic seeks openness more than English, and therefore implicit meanings in English usually need to be explicitly spelled out in Arabic. Therefore, additional caution and attention were assigned to the translation process to mitigate lots of common translation problems. As his first language is Arabic as well as the closeness to the research topic, the questionnaire was carefully translated into Arabic by the researcher. Then, Arabic and English versions of the questionnaire were sent out to a professional translator in Jordan to assure the integrity of the translation process. The amendments and comments that were made by the translator were discussed in-depth with the researcher. Further, the questionnaire, in its two versions, was later referred to two academics with relevant experience in fields of accounting and management information systems; their recommendations were considered as well.

#### **5.4.3 Initial validity**

The research instrument can be initially validated by assuring that its content (items and dimensions) sufficiently reflects what is intended to be measured (Sekaran, 2003; Saunders et al., 2009). Sekaran (2003: 206) states that “*content validity ensures that the measure includes an adequate and representative set of items that tap the concept*”. Saunders et al. (2003: 373) mentioned that it can fairly ensure adequacy of measurement of investigated questions through several ways. “*One is through careful definition of the research through the literature reviewed and, where appropriate, prior discussion with others. Another is to use a panel of individuals to assess whether each measurement question in the questionnaire is ‘essential’, ‘useful but not essential’, or ‘not necessary’.*”

In the current study, the two ways have been followed. First, the initial questionnaire was derived from the IS literature, where dimensions are clearly

defined. Later, it was adapted and extended to suit studying ICR adoption. Therefore, both amendments happened to the questionnaire and inclusion of items were further discussed with a group of academics, to gain face validity of the questionnaire. Therefore, Arabic and English versions of the questionnaire were then handed out and discussed with a group of academics that have appropriate experience and wide knowledge. They include three in accounting, one in accounting information systems and two in management information systems specialists. This was to test the content validity through ensuring the relevance of the items of the study tool for each underlying factor, as well as to double check on the wording and suitability of the questions included in the questionnaire.

#### **5.4.4 Pilot analysis**

After establishing the face validity of the questionnaire throughout the steps mentioned earlier, it was preferred to undertake a pilot test before the full study took place. The pilot test aims to refine any ambiguity or problems facing the respondents in answering the questions due to their wording and sequence (Saunders et al., 2009). In other words, the questionnaire is pretested to ascertain that the questions are fully comprehended and understood by the respondents, in order to ensure soundness and suitability of the research instrument. The pilot study also helps in clarifying the study factors through collecting additional information and useful feedback (Sekaran, 2003).

The pilot questionnaire was administered in two ways: personally and electronically via email. It contained covering letters asking respondents to make suggestions and indicate any problems that faced them completing the questionnaire. Often, it is preferable to pre-test the questionnaire among people that are related or similar to the people in the study (Hussey and Hussey, 1997; Babbie, 2001). Therefore, 54 randomly distributed questionnaires were sent out to CEOs (17) and CFOs (37) of listed companies in Jordan. However, only 25 were returned, although frequent follow-up efforts over the telephone were made. This number is considered fairly sufficient for the purposes of pilot testing; according to Fink, (2003) who states that the minimum number of responses for a pilot study should be 10.

Furthermore, the questionnaire figures have been discussed thoroughly with three financing managers to indicate any problems experienced in completing the questionnaire. Insights given contributed in making further improvements of the study measure. Moreover, to ensure tentative internal consistency reliability, Cronbach's Alpha coefficient was implemented (Saunders et al., 2009). This was to attest whether items set out to measure the same concept are homogeneous (Sekaran, 2003). Thus, the results indicate that Cronbach's Alpha coefficient -for each of the nine-subscales as well as overall items in the questionnaire- is above the cut-off points of this test (0.7).

After attaining preliminary validity and reliability of the questionnaire as shown above, this suggests that the study instrument is subsequently valid and reliable for the full data collection.

### **5.5 Administration of the questionnaire: full study**

As mentioned earlier, CEOs and CFOs, of listed companies on ASE, are the targeted recipients of the crafted questionnaire. Similarly, only those companies with active websites were involved. Hence, the survey will include CEOs and CFOs of 150 companies. Being in the strategic management apex, they are most probably aware of the current position of the adoption and deployment of strategies of corporate reporting in their companies. In addition, a level of knowledge about their firms' operations is more likely to assist in properly answering survey questions. Actually, an accurate frame of the sample can be simply identified when a mailing list is available (Churchill, 1991), yet there are no available databases, giving the number of CEOs and CFOs in listed companies in Jordan. However, as an arbitrary calculation, if it is assumed that each company has 1 CEO and 1 CFO; a total of 300 prospective respondents can be accounted.

The researcher started the fieldwork by preparing a directory comprised of a list of companies, addresses, and names of their CEOs and CFOs. Their contacts numbers –private and/or business-, faxes and emails addresses were sought from various sources such as databases of ASE, websites, and personal relations. The distribution of the questionnaire was conducted in the period between 7/1/2013 to 11/5/2013. The survey initially began by contacting

scheduled respondents by telephone to have their tentative consent to participate in the survey. In a few cases, where the telephone number was absent, they were contacted via email, asking for their contact numbers for more clarity. Either way, many points were highlighted, specifically the identity of the researcher, the institution he belongs to, the purposes of the study, its benefits to them, confirming anonymity and encouragement to participate. Furthermore, respondents were asked about a questionnaire delivery mode –email, fax or personal-, whichever they would prefer. Information about their contact details such as email addresses or fax numbers were requested as well.

To get the distribution started, a cover letter with LJMU logo was prepared, setting out the investigation aim, benefits, confidentiality and the right of withdrawal (see Appendix 7). Also, to make participants more confident in completing the questionnaire, a mission facilitation letter from LJMU -signed, stamped with a logo-, was sent assuring them that the study is only for academic and educational purposes. Two versions of the questionnaire were designed, an electronic Word document and printed formats. The former is for an email platform and the latter for fax and personal channels. Eventually, due to some restrictions of accessibility and respondents' refusals, a total of 261 questionnaires were successfully distributed. 219 questionnaires were sent out via email and 27 via fax, while only 15 were handed out personally. Follow-ups were made every two weeks, according to the time of distribution using reminder emails and phone calls. In some cases, respondents asked for the resending of the email questionnaire via fax or to be handed personally or vice versa. This was due to some technical issues with the computerised version or mislaying the already received questionnaire.

After serious follow-up efforts, 179 questionnaires were returned, giving approximately a 69% retention ratio. Table 5.3 outlined the response rate, which resulted from each employed mode. Later, 5 unusable questionnaires were eliminated, resulting in a final sample equalling 174 respondents (64 respondents out of total respondents are CEOs, while 110 respondents are CFOs). The nature of the job, ranking and country's culture make it often more difficult to approach and obtain the responses from CEOs in Jordan.

Table 5.3 Questionnaires distributed and retention rate				
Channel \ Questionnaire	Email	Fax	Personal	Total
Distributed	219	27	15	<b>261</b>
Returned	155	16	8	<b>179</b>
Response Ratio	71%	59%	53%	<b>69%</b>
Unusable	2	2	1	<b>5</b>

## 5.6 Reliability and validity of questionnaire

As an initial step in ensuring the questionnaire reliability and validity, a panel of academics and pilot testing were conducted. After gathering the full data, further procedures were undertaken, establishing goodness of measure, which can be attained based on validity and reliability tests, as follows:

1. Preliminary reliability: this will be obtained through conducting Cronbach's Alpha coefficient, initially ensuring the homogeneity of items that reflect the same factor;
2. Construct validity: which is claimed over applying long procedures of factor analysis (thereby principal component analysis). This is to testify the uni-dimensionality of the measures, which brings together the variables belonging to the same construct, and conversely prevents the variables related to other constructs;
3. Finally, Cronbach's Alpha test will be applied again post implementing factor analysis to gain final reliability of the study instrument.

### 5.6.1 Preliminary instrument reliability

The reliability test is conducted to measure the internal consistency of the research instrument across different items within a specific construct (Saunders et al., 2009). To put it differently, this test indicates the extent to which the items that tap the same construct are homogeneous (Sekaran, 2003; Field, 2009). Two reliability tests were conducted for 9 questionnaire sub-scales separately (Field, 2009), containing 50 questionnaire items, using alpha coefficient and item-scale correlation as shown in Table 5.4 below. The inter-item correlation has been added alongside the Alpha coefficient; to identify the extent to which the items in a

particular subscale are inter-correlated (Fink, 2003). In this context, Field (2009) emphasises the necessity of running inter-item correlation alongside the coefficient alpha if a factor analysis has not already been done.

The questionnaire has a five-point- Likert-scale. All the questions ranged from (1) strongly disagree to 5 strongly agree except question CBB3 "*We believe that the internet reporting creates additional costs that can be avoided in the presence of other sources of disclosure such as printed and third parties reporting services*", which was coded reversely. This treatment of reverse-phrase included in the questionnaire is recommended by Field (2009), because it causes a difference in reliability analysis.

The cut-off points of these tests are over 0.7 for overall Cronbach's Alpha coefficient of main factors. In addition to that, any inter-item correlation value under 0.3 for a specific question or any variable if deleted contributes to increase overall Alpha for a specific factor; then it should be dropped out (Field, 2009). As exhibited below in Table 5.4, all the factors achieved overall Alpha coefficients greater than 0.7. Surprisingly, for three questions, their inter-item correlation was found under 0.3 and there is an increase to overall Alpha if deleted, at the same time as depicted below. These are: A4, "*Internet reporting is well known in our company at different levels*", A8 "*We believe that the companies in our industry that engage in internet reporting would gain a competitive advantage*" and C9 "*Our company considers internet reporting as a voluntary disclosure practice to; discharge the accountability to company's stakeholders*". These three questions have been discarded, and the final questionnaire for subsequent validity analysis includes 47 items.

Table 5.4 describes the coefficients alpha and items related correlation of the study instrument					
Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Awareness Alpha= 0.952 (0.936 before A4 and A8 dropped out)					
A1	27.67	43.810	.888	.930	.921
A2	27.73	41.781	.911	.990	.919
A3	27.67	42.238	.949	.982	.917
<b>A4</b>	<b>28.27</b>	<b>45.210</b>	<b>.277</b>	<b>.616</b>	<b>.961</b>
A5	28.13	42.695	.722	.783	.933
A6	27.53	43.695	.937	.962	.919
A7	27.53	45.124	.809	.970	.926
<b>A8</b>	<b>28.00</b>	<b>51.571</b>	<b>.298</b>	<b>.649</b>	<b>.952</b>
A9	28.13	46.981	.649	.749	.935
Commitment Alpha= 0.932 (0.904 before C9 dropped out)					
C1	28.00	34.000	.783	.894	.885
C2	27.73	33.067	.887	.884	.877
C3	27.73	35.352	.730	.900	.889
C4	28.07	34.210	.851	.797	.881
C5	28.33	36.095	.754	.817	.889
C6	27.87	31.124	.812	.933	.882
C7	28.07	34.638	.730	.809	.889
C8	27.53	39.552	.498	.691	.905
<b>C9</b>	<b>27.87</b>	<b>38.410</b>	<b>.260</b>	<b>.677</b>	<b>.932</b>
Costs-benefits balance Alpha= 0.90					
CBB1	6.73	2.781	.889	.792	.836
CBB2	7.13	2.981	.818	.708	.895
CBB3	6.93	2.924	.797	.660	.912
Human resources Alpha= 0.704					
HR1	15.87	3.267	.468	.462	.657
HR2	15.93	3.638	.397	.349	.684
HR3	15.67	3.667	.406	.477	.679
HR4	15.33	3.952	.404	.346	.678
HR5	15.60	3.543	.710	.544	.577
Technology resources Alpha= 0.860					
TR1	12.67	4.095	.677	.847	.834
TR2	12.67	3.667	.853	.888	.756
TR3	12.87	4.410	.653	.665	.842
TR4	12.80	4.314	.648	.521	.844
Supported industries readiness Alpha= 0.766					
SIR1	11.60	1.114	.635	.433	.705
SIR2	11.87	1.695	.487	.350	.750
SIR3	11.53	1.695	.726	.740	.666

Table 5.4 describes the coefficients alpha and items related correlation of the study instrument					
Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
SIR4	11.60	1.686	.553	.697	.720
Users' readiness Alpha= 0.958					
UR1	13.50	20.423	.947	.	.937
UR2	13.50	20.423	.947	.	.937
UR3	13.50	20.423	.947	.	.937
UR4	13.93	21.610	.808	.	.960
UR5	13.86	21.824	.769	.	.967
Users' attention Alpha= 0.729					
UA1	15.53	3.410	.410	.227	.726
UA2	15.80	3.314	.476	.236	.693
UA3	15.67	3.810	.473	.388	.690
UA4	15.60	3.257	.665	.479	.612
UA5	15.80	4.171	.541	.365	.688
Government Alpha= 0.884					
G1	16.73	12.495	.747	.793	.856
G2	16.73	14.781	.599	.636	.880
G3	16.87	13.267	.669	.569	.869
G4	16.53	12.695	.667	.596	.870
G5	16.20	13.457	.635	.629	.874
G6	16.60	11.543	.883	.839	.830

**5.6.2 Instrument Validity (Principal Component Analysis)**

The current study employed principal component analysis (PCA) to test the construct validity of the research instrument, the questionnaire. Principal component analysis is a test similar to factor analysis and researchers usually use the two terms interchangeably (Field, 2009; Pallant, 2011). Both principal component and factor analysis aim to show the inter-correlations among a set of variables, in order to clarify the network of associations between the underlying variables (Field, 2009; Hair et al., 2006). Therefore, it could be vital in revealing the hypothetical structure of factors that represent the phenomenon in question, reducing a large set of variables into a small and manageable number of factors, and identifying which variables statistically belong to a specific factor and those that do not (Field, 2009; Hair et al., 2006; Pallant, 2011). Consequently, the

researcher is able to precisely build up the questionnaire, and further refine the theoretical framework of the study (Field, 2009).

The suitability of factor analysis and the degree of reliability of solutions that yield from a particular set of data can be assessed based on two main aspects: sample size and the extent of strength of interrelationships among the items that are included in the study tool (Pallant, 2011). Indeed, there is a contradiction between authors about the appropriate sample size to conduct the factor analysis (Field, 2009; Pallant, 2011). However, sample size, ranged between 100 and 200, is considered fairly sufficient to produce a reliable factor solution, in case of the average of common variance (communalities) of the variables around 0.5 or more (MacCallum, et al., 1999). Untabulated results indicated that all variables, included in the data set of the survey, have a communality extraction of 0.75 and above. Hence, the current sample size (174 responses) can be considered suitable for undertaking factor analysis. Additionally, the study used the Kaiser–Meyer–Olkin measure of sampling adequacy (KMO) (Kaiser, 1970), in order to evaluate the suitability of the current sample size. The KMO index varies from 0 to 1. The closer to a value of 1 produces more goodness of factor results. According to Kaiser (1974), greater than 0.5, is the recommended value of KMO to accept the current sample size for further factor extraction. As shown in Table 5.4 below, the KMO’s value for the study data set is 0.8294, which also supports the suitability of sample size for conducting factor analysis.

Table 5.4 KMO and Bartlett’s test		
Kaiser–Meyer–Olkin measure of sampling adequacy (KMO)	0.8294	
Bartlett’s test of sphericity	Chi-Square	3255.254
	df	216
	Sig.	0.000

To assess the strength of interrelationships among variables, two statistical techniques can be used: inspection of correlation matrix for the values above 0.30 and Bartlett's test of sphericity, which should be significant at 0.05 or less (Tabachnick and Fidell, 2007). The value of Bartlett's test of sphericity is significant at 0.000 ( $p < 0.05$ ) as shown in Table 5.4 above. In addition, it is obvious from a visual inspection of the correlation matrix (Appendix 8) that there are a lot of variables correlated at 0.3 and above. Therefore, these results suggest that the data and sample criteria required for applying factor analysis were satisfied, and further factor extraction will be performed.

### **5.6.2.1 Initial factor extraction**

As stated earlier, the factor extraction process serves to purify the model of the study by reducing the number of factors and revealing the real factor-affiliate variables. It is also useful to ensure that variables that are theoretically assigned to specific factor(s) are really related to them. There are many approaches that can be employed to extract the factors from a specific data set such as principal components, principal factors, maximum likelihood, etc. (Pallant, 2011). The current study adopts the principal components technique because its results are easy to interpret (Field, 2009; Pallant, 2011), and multicollinearity does not affect the findings and its interpretations (Field, 2009). The analysis was conducted using SPSS version 20. The sample included 174 responses; each one contained 47 items (questions). The following extraction techniques were implemented:

1. Kaiser's Criterion (eigenvalue rule) was applied;
2. Varimax rotation technique was used;
3. Missing data was treated using case-wise deletion.

In addition, the following inclusion/ exclusion of factors and variables rules were used (Field, 2009; Hair et al., 2006; Pallant, 2011):

1. Only factors that realised eigenvalue 1 or more were retained for further analysis;
2. Retaining the variables only with a factor loading 0.5 or more for subsequent analysis, and dropping the variables otherwise;

3. The factors that load at 0.5 or above in two or more factors have been discarded from further analysis;
4. Dropping the factors with a single variable to enhance the model's parsimony.

The results of PCA indicate that there are 11 factors generated from the extraction with eigenvalue greater than 1 as shown in Table 5.2 below. They explained a total of 86.49% of the variance, while the inspection of the rotated component matrix reveals that 3 out of a total of 11 extracted factors are single-item factors. These variables were dropped from further analysis: UA2, HR1, and HR3. Furthermore, variables TR3 and UR4 are omitted from the final questionnaire. The former loaded less than 0.5 in its hypothesised factor and the latter did not reach the cut-off loading value 0.5 with any extracted factor. Thus, this result suggests retaining 8 factors containing 42 items, with a total variance explained equal to 77.61%.

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Vari.	Cum. %	Total	% of Vari.	Cum. %	Total	% of Var.	Cum. %
1	11.04	23.00	23.00	11.04	23.00	23.00	6.64	13.83	13.83
2	7.79	16.22	39.22	7.79	16.22	39.22	5.51	11.48	25.31
3	4.42	9.21	48.43	4.42	9.21	48.43	5.26	10.95	36.26
4	3.63	7.56	55.98	3.63	7.56	55.98	4.42	9.21	45.46
5	3.34	6.95	62.93	3.34	6.95	62.93	4.41	9.18	54.65
6	2.66	5.55	68.48	2.66	5.55	68.48	3.68	7.66	62.31
7	2.39	4.97	73.46	2.39	4.97	73.46	2.85	5.93	68.24
8	1.99	4.15	<b>77.61</b>	1.99	4.15	77.61	2.83	5.90	74.15
9	1.66	3.45	81.06	1.66	3.45	81.06	2.05	4.27	78.41
10	1.38	2.88	83.93	1.38	2.88	83.93	1.98	4.12	82.54
11	1.23	2.56	<b>86.49</b>	1.23	2.56	86.49	1.58	3.29	85.82

Extraction Method: Principal Component Analysis.

### 5.6.2.2 Factor extraction: results and discussion

As mentioned before, the Varimax rotation technique was employed to extract the potential factors that may affect the phenomenon in question, and to ascertain whether the variables, which are already theoretically assigned to the particular factor, are really loading under that factor or not. Furthermore, it is worth mentioning that the results of factor analysis are not taken as an endless fact (Field, 2009), but it is further subject to reasonable analysis of the researcher (Field, 2009; Pallant, 2011). In other words, the results of factor analysis should be sensible and capable of being plausibly explained.

The subsequent points discuss the results of Varimax rotation solution that are shown in Table 5.6 below, as follows:

1. All Awareness (A) variables loaded together at more than 0.5 as theoretically hypothesised; but the variable C1 also found loading with this group; even though that was assumed to be loaded with Commitment group. Therefore, this question was grouped with Awareness factor. Referring to the question C1 “*Our company has a clear vision on internet reporting*”, it can be seen that despite it being loaded in Commitment category by 0.423, which reflects the presence of a relatively good relationship with that group, the researcher found that the question is worded in such a way as to be closer to the awareness of the respondent or its company more than exploring their commitment to internet reporting.

2. Technology related factors namely, Technology Resources (TR), Human Resources (HR), Supported Industries Readiness (SIR), and Users’ Readiness (UR), which were initially theorised to be independent factors from each other, after eliminating HR1, HR3, UR4 and TR3, loaded later under only two categories above the specified cut-off edge. The first was called Internal Technology Readiness (ITR), which contains two factors (HR and TR) and six variables (TR1, TR4, HR4, TR2, HR2, and HR5). The second was named the External Technology Readiness (ETR), which combined two further factors (SIR and UR) containing eight items (SIR3, UR3, SIR2, SIR4, SIR1, UR2, UR1, UR5). Reasons relating to the language of the omitted questions, translation quality or the ways of comprehension of these questions by respondents might be behind the

contrariness of some of these questions to its already hypothesised stance. For example, HR3 gives a broad statement, which might prevent the respondent from giving a proper answer, when asking about the ability of IT staff to deal with most IT problems. In addition, another reasonable explanation for omitting some of these variables is the level of simplicity of acquiring some technology-related pillars, which therefore make it no longer an obstacle for adoption of internet reporting for any organisation (Tan, 2011). For instance, HR1 aims to indicate the extent of IT skills of the staff to undertake ICR. Actually, technological skills become an essential issue when the firm is about to decide whether to recruit any financial department personnel. The case is the same when discussing UR1, asking about the level of computer literacy of users of the corporate information. Moreover, the original research instrument (The PERM) was initially adapted from e-commerce literature, where it requires complicated transactions and an advanced technology infrastructure more than website disclosure. Indeed, website reporting is far simple than e-commerce, and does not need developed technological underpinnings like those in e-commerce.

Accordingly, to apply more emphasis in explaining the statistical behaviour of technology-related factors resulting from PCA, this led to grouping all four theorised technology factors in only two factors; this might be attributed to the existence of interdependent relationships among endogenous as well as exogenous technology pillars. Meanwhile, the development of one of these pillars should be directly reflected in other pillars and vice versa. To put it differently, it is difficult to improve one of the technology aspects at a country or company level, while neglecting the others. So, it is an integrated and coherent process. In this respect, Jordan has made serious efforts to develop the technology sector in the country, as stated previously in Chapter Two. These efforts led to enhancing different aspects of technology, at the national level, such as internet connectivity and bandwidth, expert human capital, and supporting industries. Furthermore, Jordan presently is a thriving place in relation to the level of ICT development in the Arab region and even in the Middle East, where it has become one of the main providers of skilled workforces and a technology out-sourcing centre (Al-Hayale, 2010). As a result, the factors related to technology preparedness for a

specific company or country are more likely to be perceived similarly as one collective factor, following each context.

3. All Users' Attention (UA) items, after removing UA2, loaded in the same factor as assumed. Instead, the C8 variable, which was supposed to be loaded with the Commitment factor, was found loading significantly with this factor. Consequently, this variable was placed in the Users' Attention (UA) category. Two amendments arisen regarding this factor. Firstly, removing question UA2 "*We feel the pressures that are undertaken by corporate information users to disclose financial information via company's website*". This factor had a strong uni-factor loading 0.877, apart from Users' Attention group. The logical explanation is that the language of creating this question is different from the rest of the questions in this group. The word "*pressures*" might imply a heavy and tough tone to the respondents; which differs from being something in the interest of information users. Conversely, the initial formation of the question C8 "*Our company perceives the importance of the internet reporting to satisfy multiple needs of all company's stakeholders*" indicates its homogeneity with other questions in Users' Attention factor. The item C8 points to managers' assessment of the role of the company website in providing the stakeholders with necessary information. Thus, it does not reflect a level of managers' commitment of utilising ICR, but it rather tends to be an element of Users' Attention factor.

4. The variables of Government (G) factor split off into two new factors; contrasting with its expected original substance. Each group loaded more than the cut-off threshold, 0.5, independently. The first group was named Government Regulation (GR) and the second Government Support (GS). A careful review of the items of government factor could easily indicate the reasonableness of this result, and this factor should be dichotomous rather than assembled collectively in one. Thereafter, the nature of the first factor, government regulations, which stands for the existence of an effective electronic law to protect the security of published information over the company website, is considerably different from the nature of the support given by the government to promote the adoption of ICR; although the fact is that it is government, which is responsible for both of them.

Hence, the perception of the respondents of these two factors is presumably different.

5. All Cost-Benefit Balance (CBB) items and the rest of Commitment (C) items (from C2 to C7) loaded perfectly with its initially presumed factors.

Factors	1	2	3	4	5	6	7	8	9	10	11
A3	<b>0.934</b>	-0.116	0.079	0.027	0.100	0.131	0.181	0.083	-0.041	-0.019	-0.033
A2	<b>0.930</b>	0.082	0.071	0.15	0.066	-0.068	0.02	0.069	-0.056	0.178	-0.016
A6	<b>0.898</b>	0.054	-0.08	0.258	-0.052	-0.121	0.113	0.025	-0.055	0.098	-0.045
A1	<b>0.850</b>	-0.101	0.139	0.173	0.126	0.128	0.301	0.115	-0.028	-0.023	-0.082
A7	<b>0.817</b>	0.131	0.251	0.059	0.112	0.091	0.106	0.328	-0.118	-0.044	-0.059
A5	<b>0.765</b>	-0.053	-0.396	0.022	-0.046	-0.266	0.105	-0.136	0.163	0.047	0.165
A9	<b>0.650</b>	0.190	0.003	0.393	-0.021	0.275	-0.107	0.075	0.012	-0.261	0.259
C1	<b>0.576</b>	0.217	0.072	0.423	0.046	0.225	0.146	0.300	0.174	-0.15	0.127
SIR3	0.021	<b>0.929</b>	0.022	0.147	0.098	-0.014	-0.147	-0.012	-0.068	0.025	0.116
UR3	-0.062	<b>0.909</b>	-0.020	0.110	-0.013	0.053	-0.073	0.205	0.084	0.069	0.074
SIR2	0.141	<b>0.877</b>	-0.011	-0.023	0.02	0.009	0.011	-0.003	0.184	-0.032	-0.025
SIR4	-0.109	<b>0.866</b>	0.086	0.014	0.227	0.103	0.006	0.108	-0.268	0.051	0.062
SIR1	0.162	<b>0.787</b>	0.076	0.014	0.166	0.274	0.116	0.205	0.142	-0.219	-0.106
UR2	-0.055	<b>0.713</b>	-0.087	-0.118	0.318	-0.024	-0.040	0.157	-0.129	0.006	0.110
UR1	-0.093	<b>0.634</b>	0.003	-0.094	0.155	0.084	0.060	0.180	-0.197	0.010	0.063
UR5	0.187	<b>0.584</b>	0.272	0.135	0.382	-0.092	-0.288	0.300	-0.093	0.056	0.136
TR1	0.037	-0.073	<b>0.866</b>	0.096	0.331	0.298	0.035	0.312	-0.234	-0.051	-0.218
TR4	0.245	-0.091	<b>0.853</b>	0.045	0.147	0.358	0.009	0.289	-0.221	-0.163	-0.391
HR4	0.024	0.266	<b>0.741</b>	0.221	0.401	0.138	-0.203	-0.182	0.265	-0.089	0.260
TR2	0.279	0.091	<b>0.728</b>	-0.049	0.226	-0.010	-0.167	0.381	-0.173	-0.036	0.005
HR2	0.235	0.276	<b>0.702</b>	0.227	-0.172	-0.212	-0.030	0.387	0.339	0.478	-0.058
HR5	-0.079	<b>0.200</b>	<b>0.621</b>	0.123	0.331	0.225	-0.449	-0.028	0.041	-0.452	0.043
C6	0.170	-0.259	-0.026	<b>0.844</b>	0.111	-0.208	0.068	-0.099	0.091	-0.099	0.047
C4	0.107	0.284	-0.058	<b>0.803</b>	0.213	-0.178	-0.010	-0.020	0.071	0.035	-0.348
C5	0.180	-0.041	0.117	<b>0.793</b>	-0.172	-0.048	-0.058	0.045	-0.036	0.156	0.044
C3	0.433	0.027	0.019	<b>0.722</b>	0.145	0.023	-0.136	-0.087	-0.132	-0.199	0.179
C7	0.278	0.075	0.034	<b>0.590</b>	-0.198	-0.106	0.504	0.217	-0.101	0.024	0.213
C2	0.514	0.097	0.000	<b>0.521</b>	0.262	0.230	0.175	0.268	0.035	-0.207	0.110
UA4	-0.100	0.039	-0.008	0.027	<b>0.881</b>	-0.126	-0.024	0.152	0.178	-0.228	-0.059
UA3	0.075	-0.059	-0.182	0.031	<b>0.829</b>	0.025	-0.094	-0.05	-0.088	0.043	0.004
UA5	0.189	0.080	0.114	0.082	<b>0.816</b>	0.085	-0.239	-0.214	0.056	0.133	0.021
UA1	-0.173	0.058	0.200	-0.267	<b>0.758</b>	-0.196	-0.165	-0.234	-0.116	0.062	-0.059
C8	0.062	0.429	-0.123	0.383	<b>0.635</b>	0.047	0.174	0.410	-0.135	-0.078	0.167
G6	0.018	0.007	0.176	0.052	-0.015	<b>0.852</b>	-0.129	0.241	0.021	0.187	-0.161
G4	0.121	0.374	0.024	-0.008	-0.302	<b>0.748</b>	-0.196	-0.230	0.085	-0.04	0.093
G5	0.252	-0.035	-0.168	-0.204	-0.058	<b>0.717</b>	-0.197	0.011	0.167	-0.315	0.034
CBB1	0.317	0.062	0.082	0.200	0.021	-0.429	<b>0.881</b>	-0.423	0.369	-0.07	-0.311
CBB3	0.218	-0.050	-0.114	0.035	-0.254	-0.053	<b>0.872</b>	-0.014	0.111	-0.022	-0.064
CBB2	0.367	-0.175	0.141	0.006	-0.152	-0.130	<b>0.773</b>	-0.118	-0.16	0.019	-0.037
TR3	0.276	0.412	0.172	0.004	-0.046	-0.225	0.062	-0.012	-0.174	-0.15	0.127
UA2	-0.159	0.274	0.160	-0.005	0.062	0.078	-0.043	0.154	0.127	0.877	0.060
G1	-0.061	0.072	0.013	-0.253	0.281	0.312	0.238	<b>0.793</b>	-0.145	-0.153	0.110
G2	0.118	0.158	-0.028	-0.237	0.067	0.332	-0.018	<b>0.775</b>	0.188	-0.337	0.110
G3	0.182	0.172	0.085	0.228	-0.171	0.419	-0.085	<b>0.492</b>	0.274	0.128	-0.198
HR1	0.235	0.225	0.262	0.171	0.002	0.094	-0.074	0.381	0.818	0.218	0.050
UR4	0.164	0.460	0.382	0.207	0.143	-0.008	-0.152	0.216	0.081	0.064	0.255
HR3	0.143	0.380	0.362	0.021	-0.091	0.127	0.000	0.103	0.069	0.017	0.655

A discussion of the results of the PCA demonstrates the construct validity of the instrument used in measuring the factors, which possibly contribute to the adoption/non-adoption of ICR in Jordan. Construct validity seeks to ensure to what extent the variables that theoretically belong to the same dimension are practically correlated based on the existing set of data (Sekaran, 2003). In other words, it testifies the uni-dimensionality of the measure, which collects together the variables representing the same construct, and conversely prevents the variables related to other constructs.

To ensure the uni-dimensionality of the extracted factors, the correlation matrix inspection was conducted (Hair et al., 2006; Sekaran, 2003). In order to support the uni-dimensionality hypothesis, the correlation coefficients should be positive and close to 0.30 or above among items measuring the same construct, (Hair et al., 2006; Pallant, 2011). A visual check of the correlation matrix (Appendix 8) shows that the least intra-factor correlations for extracted factors were: Awareness 0.28, commitment 0.39, Cost-Benefit Balance 0.45, Technology Readiness 0.27, Users Attention 0.33, Government Regulation 0.30, and Government Support 0.48. Actually, these results highlight the strength of interrelationships within each extracted factor of the study model, especially when it is noticeable that there are exceptional cases of high correlations among the items related to different factors.

### 5.6.3 The final reliability

The statistical process to validate the research instrument has passed many stages. The first, initial reliability was conducted using Alpha coefficients and item-scale correlation. Thus, three items (A4, A8, and C9) were omitted because they fall below the assigned criteria. The second, principal component analysis was employed to assess the construct validity of the questionnaire. Therefore, five new items (HR1, HR3, UR4, UA2, and TR3) were eliminated, and new factors emerged with new variables combinations, as indicated earlier. As a result, the final study instrument resulted in eight different factors containing 42 questions.

Accordingly, this section aims to evaluate the internal reliability consistency of this final version of the questionnaire, in order to ensure that the new generated factors, after validation process, really 'hang to gather' to measure their underlying factors (Pallant, 2011). Cronbach's Alpha was performed for each factor separately (Field, 2009; Pallant, 2011), and overall collectively.

Table 5.7 Cronbach's alpha of the final questionnaire			
Factors	Generated factors	N. of items	Cronbach's Alphas
Awareness (A)	A1,A2, A3, A5, A6, A7, A9 and C1	8	0.974
Commitment (C)	C2, C3 , C4, C5, C6 and C7	6	0.945
Costs-benefits balance (CBB)	CBB1, CBB2 and CBB3	3	0.914
Internal Technology readiness (ITR)	TR1, TR2, TR4, HR2, HR4, and HR5	6	0.902
External Technology readiness (ETR)	SIR1, SIR2, SIR3, SIR4, UR1, UR2, UR3 and UR5	8	0.921
Users' attention (UA)	UA1, UA3, UA4, UA5 and C8	5	0.962
Government regulations (GR)	G1,G2 and G3	3	0.911
Government support (GS)	G4, G5 and G6	3	0.903
Overall alpha	All items above	42	0.958

All factors are working well, indicating high values of Cronbach's Alphas, which are greater than 0.90 as shown in Table 5.7 above. This result reinforces the internal consistency reliability of the final version of the research instrument (see Appendix 7). Also it indicates that the obtained questionnaire and its constructs are reliable enough to precisely discriminate the level of differences among responses in the subsequent analyses.

### **5.7 Revised theoretical framework related to the questionnaire**

Following the reliability and validity analyses, a few amendments have been made to the original theoretical framework of the ICR reporting adoption and practices in developing countries that were introduced in Chapter Three. The initial proposed model consists of 11 factors distributed in four research domains. Indeed, there are no changes to the organisational dimensions attached to the secondary data, because of the fact that validation process is irrelevant to them. However, it will be shown here in the analysis for clarification issues.

The results of PCA suggest maintaining the same four domains of that assembled in the original model of the study. On the other hand, it demonstrates reducing the number of these factors to 10 instead of 11; but in a new formation for some of these factors, as outlined before. The following Table 5.8 shows the changes that occurred to the original model for studying the adoption and practices of ICR.

Table 5.8 the process of reliability and validity of the research framework

Domain	Initial framework	Reliability: (Cronbach's alpha)	Validity: (PCA)	Modified framework	Notes
Organisation	Firm's characteristics & Corporate governance	_____	_____	Firm's characteristics & Corporate governance	The factors remain the same because it relates to the determinants of ICR, which reflect the companies' historical characteristics
Management	Awareness: A1 to A9 commitment: C1 to C9 cost-benefit balance: CBB1 to CBB3	Awareness: A4 & A8 commitment: C9 cost-benefit balance: Non	Awareness: + C1 commitment: C1 & C8 cost-benefit balance: Non	Awareness: A1 to A3 & A5 to A7 + C1 commitment: C2 to C7 cost-benefit balance: CBB1 to CBB3	<b>Awareness:</b> the items A4 and A8 are removed and C1 was added. <b>Commitment:</b> the items C1, C8 and C9 were omitted. <b>Cost-benefit balance</b> remained the same.
Technology	Human Resources: HR1 to HR5 Technology Resources: TR1 to TR4 Supported industries Readiness: SIR1 to SIR4 Users Readiness: UR1 to UR5	Human Resources: Non Technology Resources: Non Supported industries Readiness: Non Users Readiness: Non	Human Resources: HR1, HR3 and HR5 Technology Resources: TR3 Supported industries Readiness: Non Users Readiness: UR4	Internal Technology Readiness: 1. HR2, HR4 and HR5 2. TR1, TR2 and TR4 External Technology Readiness: 3. SIR1 to SIR4 4. UR1, UR2, UR3 and UR5	The technology domain is combined together under only two factors instead of four, <b>Internal and External Technology Readiness</b> . Further, the following items were discarded: Human Resources: HR1, HR3 and HR5 Technology Resources: TR3 Supported industries Readiness: Non Users Readiness: UR4
Environment	Users' Attention: UA1 to UA5 Government: G1 to G6	Users' Attention: Non Government: Non	Users' Attention: UA2 Government: Non	Users' Attention: UA1, UA2, UA3 and UA5 + C8 Government Regulation: G1, G2 and G3 Government Support: G4, G5 and G6	<b>Users' Attention:</b> item UA2 was dropped out. Government factor was slipped off into two factors, <b>Government Regulation and Government Support</b> .

Notice: the fields included in the table indicate the following:

1. Initial framework: shows the factors and its items that were included in the original framework;
2. Reliability (Cronbach's Alpha): reveals the items that were discarded in the initial reliability stage;
3. Validity (PCA): reports items, which were eliminated from specific factor due to a PCA treatment;
4. Modified framework: summarises the emerging and final factors after the validation process.

Table 5.8 summarises the whole process of refining the study's framework. The final instrument included 42 items. These items assembled in ten different factors,

which grouped together into four main domains forming the final theoretical framework of the study as outlined in Figure 5.2.

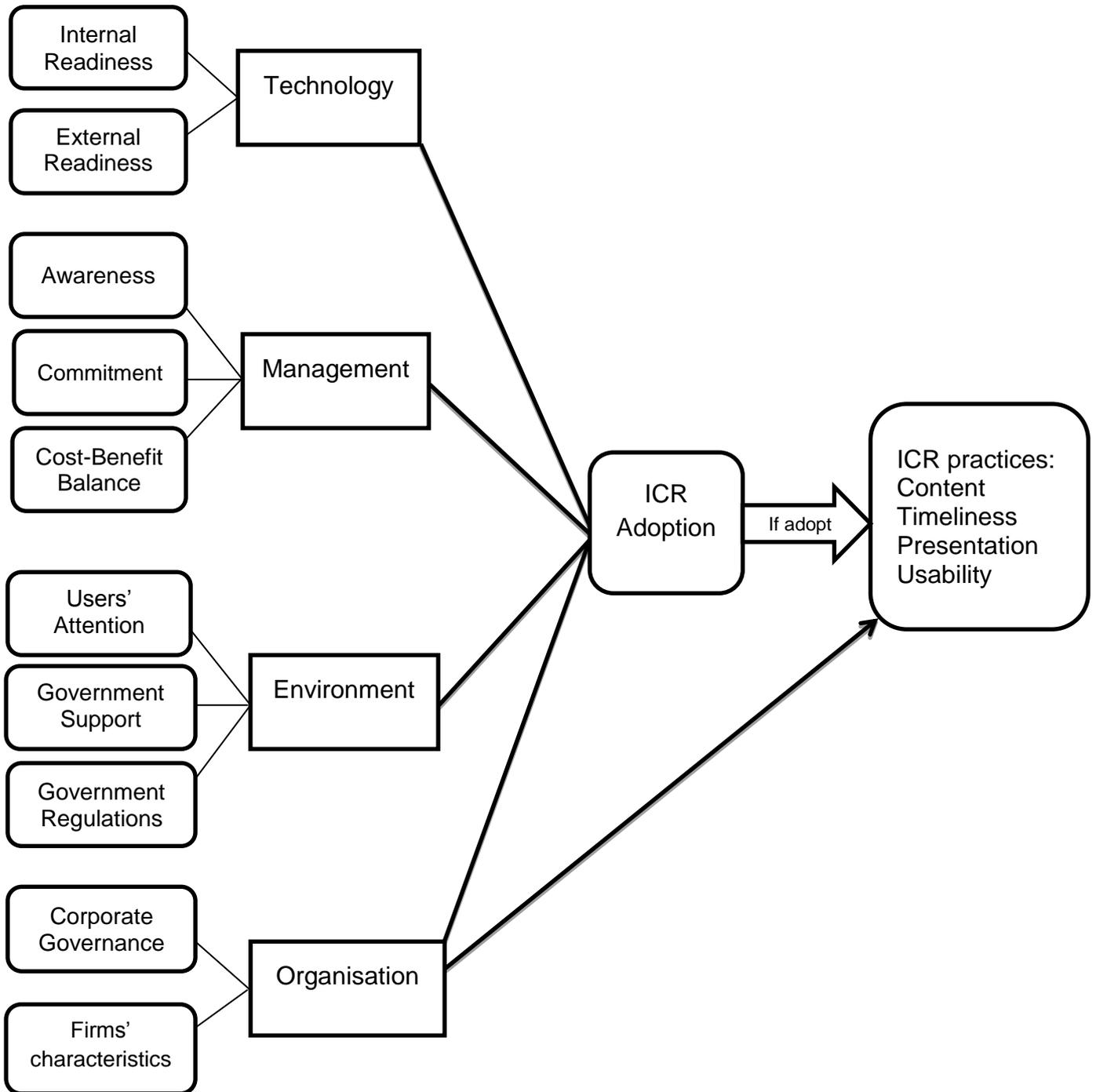


Figure 5.2 the revised theoretical framework  
Developed by the current researcher

These main four domains are:

**Technology domain:**

It represents the management assessment of the extent to which technology pillars, inside and outside the organisation, are ready for engaging in ICR. This domain implies basic underpinnings of technology that represent the Technology Readiness factor. External technology readiness includes supported industries and information users' readiness. Internal technology readiness represents technological infrastructure of the company and human resources.

**Management domain:**

This reflects the extent to which top management is aware and committed in implementing ICR, with attention to the managers' balance between ICR costs and benefits. This domain consists of the following factors:

- Awareness: the extent of management knowledge of different issues relating to website reporting, particularly its requirements, technologies, forms, costs and benefits.
- Commitment: it reflects the top management care and support that is given to internet financial reporting initiatives. It also refers to the strategy adopted by the company leadership to deal with new technological changes, in order to improve disclosure approaches.
- Cost benefits balance: reflects the management perspective of the benefits of internet reporting versus its costs.

**Environment domain:**

This domain reflects the effect of factors outside the company, other than external technology pillars, on the management decision towards adoption of ICR, such as Government and Users' Attention factors.

1. Users' Attention: the management's perception of the importance of internet reporting to meet the different needs of the corporate information users.

2. **Government Regulations:** management evaluation of the presence of electronic crime laws that maintain the security and integrity of the financial information to be published on the company's website.
3. **Government support:** it involves management assessment of the extent of support from the government and its institutions that promote ICR adoption, such as, the extent of encouragement by local controlling and financial bodies to engage in ICR.

### **Organisation domain:**

It points out the organisational attributes of the company that may stimulate or hinder the implementation of ICR. These attributes are: firm's characteristics and corporate governance variables.

3. **Firm's characteristics:** these variables are:
  - Size: actual total assets at the end of the financial year ;
  - ROA: return on the total assets at the end of the financial year, and it represents firm's profitability;
  - Leverage: it represents the magnitude of a company's needs for debts; it is counted by dividing the total debts by total assets at the end of the financial year;
  - Listing Status: knowing if the company is listed on the first or second market;
  - Audit Type: to ensure whether the company is being audited by a big four or non-big four auditor;
  - Industry Sector: identify which sector that a company belongs to: banking, insurance, service and manufacturing.
4. **Corporate Governance:** this group is divided into two groups as well, board of director structure and ownership structure.
  - **Board of Directors Structure:** this contains the following variables:
    - Role Duality: to acknowledge whether the CEO in the company holds the position of chairman or not;
    - Board Independence: it is measured by percentage of non-executive directors on the board;

- Board Size: represents number of directors on the board;
  - Audit Committee: to establish if there is an audit committee in the company or not;
  - Corporate Governance and nominating committee: does the company possess a corporate governance and nominating committee or not.
- **Ownership structure:** it comprises four variables, representing four forms of corporate ownership
- Institutional Ownership: it represents that percentage of company's shares owned by institutions;
  - Management Ownership: percentage of CEO ownership of company's stocks
  - Foreign Ownership: the percentage of shares controlled by non-Jordanian shareholders;
  - Family Ownership: the percentage of company's capital owned by one family or group of relatives.

## 5.8 Questionnaire: hypotheses development

Similar to the secondary data analysis in the previous chapter, this part of the research also falls within the positivistic philosophy depending on deduction premises. Hence, the deductive approach seeks to test out the integration of theories resulting in the building of the theoretical framework of the study (Easterby-Smith, et al., 2008; Phillips and Pugh, 2010). This is to explore, based on the variations in perceptions, the factors contributing significantly in the adoption of ICR in Jordan.

After long procedures in validating the questionnaire, considerable changes have ensued in the basic formation of the perception-based variables of the study. Now, the hypotheses concerning questionnaire data can be formulated with certainty. As pointed out in Chapter 4, development of hypotheses related to the secondary data resulted in 15 main hypotheses. Parallel to the number of resulting factors from PCA, 8 extra hypotheses in positive form will be developed regarding the questionnaire as follows:

Table 5.9 a list of hypotheses related to the questionnaire	
Hypothesis	Description
H16	Awareness significantly contributes to ICR adoption in Jordan;
H17	Commitment significantly contributes to ICR adoption in Jordan;
H18	Cost-Benefit Balance significantly contributes to ICR adoption in Jordan;
H19	Internal Technology Readiness significantly contributes to ICR adoption in Jordan;
H20	External Technology Readiness significantly contributes to ICR adoption in Jordan;
H21	Users' Attention significantly contributes to ICR adoption in Jordan;
H22	Government Support significantly contributes to ICR adoption in Jordan;
H23	Government Regulations significantly contributes to ICR adoption in Jordan.

## 5.9 Conclusion

This chapter is entirely devoted to cover the issues relating to the questionnaire development. The chapter starts with the justification for using the questionnaire method as well as selecting particular modes of questionnaire distribution. Furthermore, it highlights procedures for gaining the initial validity and piloting of the questionnaire. Moreover, it gives an insight into the process of crafting the questionnaire and its administration and the resulting data.

To that end, the process of validating and finalising the research instrument began, starting and ending with testing Cronbach's Alpha Coefficient, ensuring instrument reliability. In the meantime, Principal Component Analysis was implemented to establish the validity of the questionnaire. Hence, problematic items were eliminated and the residual items appropriately assigned into the factors extracted. Importantly, new factors have emerged and others were merged together. As a result, the theoretical framework of the current study is hence refined and slightly modified.

As a result, the 9 factors attached to the perception-based measure, which were initially suggested, are later reduced to 8. Based on this, 8 hypotheses were developed, adding to those 15 main hypotheses formulated in Chapter 4, which related to the secondary data.

## **Chapter 6: Patterns of ICR in Jordan**

### **6.1 Introduction**

The first objective of this study is to explore levels and patterns of internet reporting practices that companies listed on ASE showed in general, and in terms of content (financial and accounting, corporate governance and CSR), timeliness, presentation and usability. Therefore, a disclosure index was prepared, and after the validation process shown in Chapter 4 on methodology, a total of 109 items were included. Thereafter, a survey has been conducted over companies' websites to identify patterns of these disclosure practices and techniques in the mid of 2012. This chapter summarises the results of the analysis of that survey. Following this introduction, section 6.2 describes the sample of the study including how to determine companies with or without websites in each industry sector on ASE. Section 6.3 reports the result of disclosure index analysis, including patterns of content information published on the web (accounting and financial, corporate governance and corporate social responsibility), the extent of timeliness of disseminations, its presentation formats and usability of the websites. Section 6.4 provides a conclusion.

### **6.2 Sample description**

The study sample constitutes the whole 262 listed companies listed on the ASE in 2012. These companies, according to the database available on the ASE website ([www.ase.gov.jo](http://www.ase.gov.jo)), are subsumed into four sectors as follows (as outlined in Table 6.1 below): 15 banking companies, 27 insurance companies, 144 service companies and 76 industrial companies. The survey was undertaken in the period between 5<sup>th</sup> and 25<sup>th</sup> July 2012. Assurance of availability of the companies' website addresses initially took place through referring to the companies' directory available on the website of the Jordanian Securities Depository Centre (SDC) ([www.sdc.gov.jo](http://www.sdc.gov.jo)). In the case of those website addresses of companies which were not found in the SDC directory, other alternative websites such as ([www.arabianbusiness.com](http://www.arabianbusiness.com), [www.zawya.com](http://www.zawya.com) and [www.google.com.jo](http://www.google.com.jo)) were used, to establish if the company does have a website or not. Indeed, in a few cases the

website addresses did not exist in the SDC database, but were located in other stated websites.

Table 6.1 An overview of the firms listed on ASE: websites availability and ICR adoption							
Sector	No. listed firms on ASE	No. Firms with Websites	No. Firms without websites	% of having websites	No. Firms adopt-ICR	No. Firms do not adopt-ICR	% of ICR adoption
Banking	15	15	0	100%	15	0	100%
Insurance	27	21	6	78%	13	14	48%
Service	144	69	75	48%	28	116	20%
Industry	76	45	31	59%	13	63	17%
Total	262	150	112	57%	69	193	26%

Notes: (1) % of having websites: stands for the percentage of companies listed on ASE that have working websites, which was calculated by dividing number firms with websites column on the number of listed firms on ASE column; (2) % of ICR Adoption: means the proportion of companies listed on ASE that engage in ICR practices, which was calculated dividing number of firms adopt-ICR column on the number of listed firms on ASE column.

The information included in Table 6.1 indicates that 57% (150 companies) from Jordanian listed companies had usable websites. The presence of websites, according to companies' sectors, were as follows: 15 banks (100%), 21 insurance companies (78%), 45 industrial companies (59%), 69 service companies (48%).

Table 6.1 also shows the levels of the ICR adoption among Jordanian listed companies. It reveals that only 26% (69) of Jordanian companies listed on ASE have engaged in reporting the investor relations information on their websites. The highest percentage of ICR adoption was in the banking sector (100%) followed by insurance sector (48%), service sector (20%) and industry sector (17%) respectively. It is noticed that the banking sector has achieved the full percentage in both website presence and ICR adoption. These results suggest that the industry sector might be a significant factor that explains the variation among companies regarding these two factors.

### **6.3 Analysis of ICR index**

This study adopts un-weighted disclosure indices to gauge the percentage of ICR practices of the listed companies in Jordan. To measure the extent of disclosure for a specific index, such as financial and accounting information, at the company level, the proportion of disclosed items from that index for that company will be calculated. On the other hand, to measure the level of disclosure for a particular item in the sample level, the number of frequencies of this item will be divided by the sample size. As stated previously, the final checklist contains 109 items spread over 4 main sub-indices; content (63 items) (which includes financial and accounting, corporate governance and corporate social responsibility indices), timeliness (12 items), presentation (15 items) and usability index (19 items). This section presents a detailed analysis of these ICR indices for listed companies in Jordan that engage in ICR.

#### **6.3.1 Analysis of content information**

63 items were specified to explore the patterns of corporate information disclosed on the companies' websites in Jordan. This index consists of three sub-indices representing three common types of disseminated information, which namely are: financial and accounting information (31 items), corporate governance (CG) information (19 items), and corporate social responsibility (CSR) information (13 items). A disaggregate analysis of patterns of these disclosure practices in Jordan will be provided in the subsequent sections.

##### **6.3.1.1 Patterns of accounting and financial information**

Table 6.2 presents the results of financial and accounting information that are usually disseminated on companies' websites in Jordan. The index includes 31 items, the balance sheet was the most disclosed item, where 80% of the total sample (55 companies) provided balance sheet on their websites, followed closely by income statement and cash flow statement by 77% and 70% respectively. This indicates that financial online reporting in Jordan is generally a reflection of mandatory printed annual reports. In contrast, it can be seen in Table 6.2 that it largely lacks the information necessary to direct investors to the reports

of financial analysts about the company, future earnings estimates, industry statistics, and voluntary financial statements such as interim reports.

Table 6.2 Reporting the financial and accounting information on the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The index (31 items)	7	47%	3	23%	14	50%	6	46%	30	43%
Investor relations Section	15	100%	11	85%	19	68%	10	77%	55	80%
Balance sheet	15	100%	9	69%	19	68%	10	77%	53	77%
Income statement	15	100%	7	54%	16	57%	10	77%	48	70%
Cash flow statement	14	93%	6	46%	14	50%	6	46%	40	58%
Statement of comprehensive income	14	93%	5	38%	15	54%	7	54%	41	59%
Notes to financial statements	14	93%	7	54%	11	39%	6	46%	38	55%
Financial ratios	15	100%	4	31%	23	82%	12	92%	54	78%
Previous annual reports	14	93%	5	38%	16	57%	8	62%	43	62%
Current annual report	14	93%	5	38%	14	50%	8	62%	41	59%
Board of directors' report	14	93%	5	38%	15	54%	9	69%	43	62%
Auditor's report	7	47%	1	8%	7	25%	2	15%	17	25%
Interim reporting	12	80%	3	23%	10	36%	4	31%	29	42%
Financial state. time series	14	93%	5	38%	15	54%	8	62%	42	61%
Audited financial statements	11	73%	3	23%	10	36%	3	23%	27	39%
Historical dividends	13	87%	5	38%	16	57%	7	54%	41	59%
Selective accounting data	9	60%	3	23%	16	57%	4	31%	32	46%
Earning releases	13	87%	8	62%	8	29%	7	54%	36	52%
Sales of key products	13	87%	8	62%	20	71%	6	46%	47	68%
Previous press releases	12	80%	6	46%	12	43%	6	46%	36	52%
Past financial performance	7	47%	2	15%	7	25%	3	23%	19	28%
Earnings estimates	6	40%	0	0%	8	29%	3	23%	17	25%
Industry statistics	11	73%	5	38%	8	29%	5	38%	29	42%
Market share of key products	12	80%	1	8%	13	46%	3	23%	29	42%
Historical stock prices	9	60%	0	0%	8	29%	1	8%	18	26%
Share prices to market index	9	60%	4	31%	15	54%	5	38%	33	48%
Link to ASE	3	20%	1	8%	5	18%	0	0%	9	13%
Links to financial analysts	11	73%	5	38%	11	39%	5	38%	32	46%
Significant company's events	8	53%	3	23%	10	36%	9	69%	30	43%
Non-financial performance review	13	87%	4	31%	10	36%	5	38%	32	46%
Future expansions										
<b>Total</b>	<b>344</b>	<b>74%</b>	<b>134</b>	<b>33%</b>	<b>385</b>	<b>44%</b>	<b>178</b>	<b>44%</b>	<b>1041</b>	<b>49%</b>

Table 6.2 Reporting the financial and accounting information on the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
The index (31 items)	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
Notes: (1) freq. stands for the number of frequencies of items in the index; (2) % stands for the percentage of disclosure of items, which is calculated by dividing the number of frequencies of each item by the total companies in each sector; (3) total percentage is calculated by firstly dividing the total frequency of whole index by a number of items on the index, and then dividing the resulting number by the number of companies in each sample.										

From Table 6.2, it can be concluded that the overall level of internet disclosure of financial and accounting information was 49%; the banking sector is the first at 74% followed by the service and industry sectors at 44% each and the insurance sector came lowest at 33%.

### 6.3.1.2 Patterns of corporate governance (CG) information

Table 6.3 describes the corporate governance information reported on the companies' websites, which consists of 19 items. Based on Table 5.3, it is obvious that the companies are very concerned to publish the names of the board of directors and executive managers, where 94% and 88% of companies respectively made such disclosures. In contrast, most companies did not have a link for corporate governance information (only 14% of total companies). This means that listed companies in Jordan are not interested in creating a special section to report corporate governance information.

Table 6.3 Reporting corporate governance information on the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
The index (19 items)	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
Link for corporate governance	5	33%	1	8%	1	4%	3	23%	10	14%
Notice to AGM	10	67%	2	15%	15	54%	4	31%	31	45%
List of board of directors	15	100%	13	100%	25	89%	12	92%	65	94%
List of executive managers	15	100%	12	92%	24	86%	10	77%	61	88%
Board of directors' profiles	15	100%	5	38%	17	61%	9	69%	46	67%
Executive managers' profiles	15	100%	5	38%	15	54%	8	62%	43	62%
Compensations of BD and MT	14	93%	5	38%	13	46%	5	38%	37	54%

Table 6.3 Reporting corporate governance information on the Jordanian companies' websites

Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The index (19 items)										
Message to shareholders	15	100%	7	54%	21	75%	8	62%	51	74%
Key shareholders	15	100%	6	46%	17	61%	8	62%	46	67%
CG guidelines	14	93%	3	23%	7	25%	3	23%	27	39%
Code of conduct	10	67%	1	8%	3	11%	3	23%	17	25%
Organisational structure	15	100%	6	46%	17	61%	7	54%	45	65%
Management plans	13	87%	4	31%	12	43%	4	31%	33	48%
Audit committee	14	93%	5	38%	4	14%	2	15%	25	36%
Other committees	14	93%	5	38%	4	14%	2	15%	25	36%
Shares information	9	60%	3	23%	10	36%	3	23%	25	36%
Links to supervisory bodies	5	33%	5	38%	8	29%	3	23%	21	30%
Disclosure of insiders	14	93%	5	38%	11	39%	5	38%	35	51%
CG compliance report	13	87%	3	23%	7	25%	3	23%	26	38%
<b>Total</b>	<b>240</b>	<b>84%</b>	<b>96</b>	<b>39%</b>	<b>231</b>	<b>43%</b>	<b>102</b>	<b>41%</b>	<b>669</b>	<b>51%</b>

Notes: (1) freq. stands for the number of frequencies of items in the index; (2) % stands for the percentage of disclosure of items, which is calculated by dividing the number of frequencies of each item on the total companies in each sector; (3) total percentage is calculated by firstly dividing the total frequency of the whole index by number of items on the index, and then dividing the resulting number by the number of companies in each sample.

Table 6.3 also shows that the total score on the corporate governance disclosure index over the internet was around the midpoint, achieving 51%. With a considerable distance from the following sectors, the banks achieved the highest percentage exceeding the closest sector by around 41%, which is industrial companies that realised (43%) of the index, then service (41%) and insurance companies (39 %).

### 6.3.1.3 Patterns of corporate social responsibility (CSR) information

Table 6.4 shows levels of internet reporting of CSR for 13 items included in the index. The gross percentage, by average, is relatively low for all sectors, accounting for 46% of total index. The banking and industry sector came first at 59% and 53% respectively, while services and insurance came lowest at 42% and 31% respectively. The proportion of disclosure fluctuated among the items; the company history was the greatest disclosed item by 90% of companies followed

by company profile (86%) and mission/vision statements (80%). On the other hand, the sustainability report and stand-alone CSR report rose with least disclosure at 13% and 14% of companies respectively.

Table 6.4 Reporting corporate social responsibility information on the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The index (13 items)										
Link to CSR	4	27%	1	8%	6	21%	4	31%	15	22%
Company history	13	87%	11	85%	27	96%	11	85%	62	90%
Company profile	13	87%	11	85%	24	86%	11	85%	59	86%
Key customers' profile	11	73%	4	31%	10	36%	8	62%	33	48%
Intellectual capital	14	93%	5	38%	11	39%	6	46%	36	52%
Environmental report	9	60%	3	23%	5	18%	7	54%	24	35%
Safety or health report	6	40%	1	8%	5	18%	8	62%	20	29%
CSR report	8	53%	0	0%	10	36%	7	54%	25	36%
Stand-alone CSR report	2	13%	0	0%	6	21%	2	15%	10	14%
Sustainability report	1	7%	0	0%	6	21%	2	15%	9	13%
Mission/vision	13	87%	9	69%	23	82%	10	77%	55	80%
Donations/Grants	12	80%	4	31%	12	43%	7	54%	35	51%
Other information On CSR	10	67%	3	23%	7	25%	7	54%	27	39%
<b>Total</b>	<b>116</b>	<b>59%</b>	<b>52</b>	<b>31%</b>	<b>152</b>	<b>42%</b>	<b>90</b>	<b>53%</b>	<b>410</b>	<b>46%</b>

Notes: (1) freq. stands for the number of frequencies of items in the index; (2) % stands for the percentage of disclosure of items, which is calculated by dividing the number of frequencies of each item by the total companies in each sector; (3) total percentage is calculated by firstly dividing the total frequency of the whole index by number of items on the index, and then dividing the resulting number by the number of companies in each sample.

### 6.3.1.4 Analysis of overall internet reporting of content information

Table 6.5 summarises the results of three former indices, to indicate the total level of content information published on the websites of companies listed on ASE as well as to make comparison among the important figures of each of the three indices separately, and collectively. The total items of the content index are 63 items, which are distributed into three indices. The overall level of online content disclosed information reached 49%. It was 74% for banking and 45% and 44% for industry and service sectors respectively, and lastly the insurance sector with 34%. The total proportions of internet disclosure for three indices that constitute

the content index were very close. Disclosure of CG information came the top, with 51%; followed by financial and accounting at 49% and CSR at 46%.

As can be noted from Table 6.5, the banking sector is situated in the top position for all disclosure indices that constitute the content index. Conversely, the insurance sector had the lowest percentage of disclosure for these indices. Finally, the service and industry sectors showed, by average, close scores, coming in the middle of the index.

Table 6.5 Total content information reported on the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The indices (63 items)										
Financial and accounting	344	74%	134	33%	385	44%	178	44%	1041	49%
Corporate governance	240	84%	96	39%	231	43%	102	41%	669	51%
Corporate social responsibility	116	59%	52	31%	152	42%	90	53%	410	46%
<b>Total content</b>	<b>700</b>	<b>74%</b>	<b>282</b>	<b>34%</b>	<b>768</b>	<b>44%</b>	<b>370</b>	<b>45%</b>	<b>2120</b>	<b>49%</b>

Notes: (1) freq. stands for the frequency of items in the total index for whole sample; (2) % stands for the percentage of disclosure of items, which calculated by dividing the number of frequencies of each index by the number of the index's items, and then dividing the resulting value by the total companies in each sector. For example, the percentage of total content index for the banking sector is calculated as follows:  $700/63 \approx 11.11$ ,  $11.11/15 \approx 74\%$  (3) the overall score index is calculated in the same way.

### 6.3.2 Timeliness of ICR

Table 6.6 summarises the percentages of timeliness of ICR as it is reflected using 12 items that are incorporated in the index. The total score of timeliness of reported corporate information was severely low for all sectors at 26%. Likewise, it was also low for each individual sector, which ranged from 39% for banking to 13% for insurance, while service and industry sectors were located in between, achieving percentages of 27% and 21% respectively. These results reveal that the Jordanian companies listed on ASE are disseminating out of date information on their websites.

Table 6.6 Index of the Timeliness of reported information on Jordanian companies' websites

Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The index (12 items)										
Latest press releases	14	93%	7	54%	16	57%	7	54%	44	64%
Latest stock prices	9	60%	1	8%	9	32%	2	15%	21	30%
Calendar of future events	3	20%	2	15%	7	25%	0	0%	12	17%
Date of webpages' last update	1	7%	0	0%	2	7%	0	0%	3	4%
Frequency of updates	1	7%	0	0%	0	0%	0	0%	1	1%
Latest financial ratios	7	47%	0	0%	6	21%	0	0%	13	19%
Latest financial highlights	8	53%	0	0%	11	39%	4	31%	23	33%
Mailing list/E-mail alerts	2	13%	2	15%	11	39%	5	38%	20	29%
Latest interim report	6	40%	0	0%	7	25%	1	8%	14	20%
Latest dividends	6	40%	2	15%	4	14%	2	15%	14	20%
Monthly or weekly sales data	5	33%	0	0%	6	21%	1	8%	12	17%
Inquiry and response date	9	60%	7	54%	13	46%	10	77%	39	57%
<b>Total</b>	<b>71</b>	<b>39%</b>	<b>21</b>	<b>13%</b>	<b>92</b>	<b>27%</b>	<b>32</b>	<b>21%</b>	<b>216</b>	<b>26%</b>

Notes: (1) freq. stands for the frequency of items in the index; (2) % stands for the percentage of disclosure of items, which calculated by dividing the number of frequencies of each item by the total companies in each sector; (3) total percentage is calculated by firstly dividing the total frequency of whole index by number of items on the index, and then dividing the resulting number by the number of companies in each sample.

As exhibited in Table 6.6 above, the lowest levels of items measuring timeliness of ICR are assigned to frequency of updates of websites pages and date of webpages' last update with 1% and 4% respectively, indicating that companies do not draw attention to publically show how up to date their information is on the website. On the other hand, companies seems interested in broadcasting the latest news about the company and providing a system for customer inquiries, where the latest press releases got the highest score in the checklist at 64% (44 companies), followed by inquiry and response date at 57%.

### 6.3.3 Presentation formats of ICR

The results of the presentation format index of ICR (15 items) are exhibited in Table 6.7 below. The total percentage of presentation index was 47%. The banking sector came top of the list achieving 61% of the index, followed by

industry 49% and service 43% and the insurance came bottom of the list with 37%.

In terms of presentation formats of financial information, 80% of companies publish their information using a PDF-format, 36% HTML-format, while only 3% utilise a Word-format. The findings also reveal that only one company presents financial information in Excel format, while no company presents it in Power Point or XBRL-format. Surprisingly, 91% of companies had an English version of the website versus only 67% with an Arabic version. As such, the proportion of companies that published annual reports in English (71%) is higher than those that disclose them in Arabic (62%). This indicates that international audiences are the main target of companies that engage in ICR practices in Jordan. Furthermore, findings showed that ICR practices are characterised by low dynamicity and interactivity with corporate information users, making minimal use of sound and video files as well as animation techniques.

Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The index (15 items)										
Word-format	1	7%	0	0%	0	0%	1	8%	2	3%
PDF-Format	14	93%	8	62%	23	82%	10	77%	55	80%
HTML-Format	6	40%	6	46%	10	36%	3	23%	25	36%
Graphics images	9	60%	4	31%	10	36%	7	54%	30	43%
Chart of stock price	2	13%	0	0%	2	7%	2	15%	6	9%
Sound files	1	7%	0	0%	2	7%	0	0%	3	4%
Video files	3	20%	1	8%	3	11%	3	23%	10	14%
Clear boundaries (financial and non-financial)	14	93%	6	46%	18	64%	11	85%	49	71%
Clear boundaries (audited and non-audited)	11	73%	2	15%	5	18%	8	62%	26	38%
Printing friendly format	8	53%	3	23%	7	25%	2	15%	20	29%
Downloadable files	14	93%	9	69%	24	86%	10	77%	57	83%
English website	14	93%	11	85%	26	93%	12	92%	63	91%
Arabic website	14	93%	8	62%	16	57%	8	62%	46	67%
English Annual reports	13	87%	7	54%	21	75%	8	62%	49	71%
Arabic annual reports	14	93%	7	54%	12	43%	10	77%	43	62%

Table 6.7 Index of the Presentation of reported information on the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
<b>Total</b>	<b>138</b>	<b>61%</b>	<b>72</b>	<b>37%</b>	<b>179</b>	<b>43%</b>	<b>95</b>	<b>49%</b>	<b>484</b>	<b>47%</b>
Notes: (1) freq. stands for the number of frequency of items in the index; (2) % stands for the percentage of disclosure of items, which calculated by dividing the number of frequencies of each item by the total companies in each sector; (3) total percentage is calculated by firstly dividing the total frequency of the whole index by number of items on the index, and then dividing the resulting number by the number of companies in each sample.										

### 6.3.4 The usability of ICR

Table 6.8 represents the index of usability of companies' websites listed on ASE. The checklist contains 19 items. Results also reveal relatively poor website designs of companies listed on ASE in terms of usability, whereas the overall score of usability index was 43%. The total usability index scores were relatively close for the banking and industry sectors, which were 54% and 45% respectively, while, on the other hand, close for service and insurance sectors at 39% and 35% respectively.

The highest level of presence was attained by the 'contact us' option at 94% (65 companies) followed by the 'next-previous' option at 86%, while currency converter was the lowest in the index with only 9% (6 companies). Then, features, like webmail, help site, and online investor order, are ranked next to the lowest level of presence (currency converter); at under 20%. This indicates that companies in Jordan do not pay sufficient attention to make effective interaction with stakeholders over the company website. In addition, while 57% of websites need one click to get into investor relations sections, only 14% and 10% of websites possess this option to enter into CSR and corporate governance information respectively.

Table 6.8 Index of the Usability of the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
The index (19 items)	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
Contact us option	14	93%	12	92%	26	93%	13	100%	65	94%

Table 6.8 Index of the Usability of the Jordanian companies' websites										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The index (19 items)										
Help site	2	13%	1	8%	6	21%	1	8%	10	14%
Sitemap	12	80%	10	77%	18	64%	7	54%	47	68%
Search engine	12	80%	7	54%	19	68%	9	69%	47	68%
Pull-down menu	12	80%	8	62%	17	61%	7	54%	44	64%
Frequently asked questions	6	40%	3	23%	10	36%	6	46%	25	36%
One click to get into IR	8	53%	8	62%	16	57%	7	54%	39	57%
One click to get into CG	2	13%	0	0%	1	4%	4	31%	7	10%
One click to get into CSR	3	20%	0	0%	4	14%	3	23%	10	14%
Link to annual reports on homepage	9	60%	4	31%	8	29%	7	54%	28	41%
Homepage button	15	100%	7	54%	18	64%	11	85%	51	74%
Multiple links	8	53%	4	31%	10	36%	5	38%	27	39%
Next/Previous buttons	13	87%	13	100%	22	79%	11	85%	59	86%
Privacy statement	10	67%	1	8%	5	18%	0	0%	16	23%
Legal Statement	6	40%	2	15%	7	25%	1	8%	16	23%
online investor order	2	13%	0	0%	5	18%	6	46%	13	19%
Currency converter	4	27%	0	0%	1	4%	1	8%	6	9%
Webmail	3	20%	2	15%	4	14%	2	15%	11	16%
Feed back	12	80%	4	31%	12	43%	9	69%	37	54%
<b>Total</b>	<b>153</b>	<b>54%</b>	<b>86</b>	<b>35%</b>	<b>209</b>	<b>39%</b>	<b>110</b>	<b>45%</b>	<b>558</b>	<b>43%</b>

Notes: (1) freq. stands for the frequency of items in the index; (2) % stands for the percentage of disclosure of items, which is calculated by dividing the number of frequencies of each item by the total companies in each sector; (3) total percentage is calculated by firstly dividing the total frequency of whole index by number of items on the index, and then dividing the resulting number on the number of companies in each sample.

### 6.3.5 Overall analysis of ICR disclosure index

Table 6.9 below summarises the levels of the four ICR indices: content (63 items), timeliness (12 items), presentation (15 items) and usability (19 items), which total 109 items. In total, the overall score for ICR index was under the average at 45%. This score varies between 65% for banking, which was the only sector located above the average, and 33% for insurance, which had the lowest score. However, this percentage was very close for industry and service sectors at 43% and 41%

respectively. Similarly, the average of percentages of content, presentation and usability indices were very close, at 49%, 47% and 43% respectively. In contrast, the timeliness index had the lowest average score at 26%.

From Table 6.9, the following points could be concluded. Firstly, the banking sector achieved, on average, the highest scores of the four ICR indices, which were all exclusively above the average except the timeliness score, while the insurance sector had the lowest scores. Secondly, the ICR indices levels were very close between industry and service sectors. Thirdly, the timeliness index had the lowest scores among all ICR indices for all sectors.

Table 6.9 Overall ICR index of the Jordanian listed companies										
Sector	Banking (15)		Insurance (13)		Service (28)		Industry (13)		All sectors (69)	
	freq.	%	freq.	%	freq.	%	freq.	%	freq.	%
The indices (109 items)										
Content (63 items)	700	74%	282	34%	768	44%	370	45%	2120	49%
Timeliness (12 items)	71	39%	21	13%	92	27%	32	21%	216	26%
Presentation (15 items)	138	61%	72	37%	179	43%	95	49%	484	47%
Usability (19 items)	153	54%	86	35%	209	39%	110	45%	558	43%
<b>Overall ICR index/109 items</b>	<b>1062</b>	<b>65%</b>	<b>461</b>	<b>33%</b>	<b>1248</b>	<b>41%</b>	<b>607</b>	<b>43%</b>	<b>3378</b>	<b>45%</b>

Notes: (1) freq. stands for the frequency of items in the total index for whole sample; (2) % stands for the percentage of disclosure of items, which is calculated by dividing the number of frequencies of each index by the number of the index's items, and then dividing the result by the total companies in each sector. For example, the percentage of content index for banking sector calculated as follows:  $700/63 \approx 11.11$ ,  $11.11/15 \approx 74\%$  (3) the overall score index is calculated in the same way.

Un-tabulated results of content analysis of companies' websites indicate the following:

1. Only one company provided contact details for investor relations departments such as name of investor relations officer, e-mail, phone number and postal address to investor relations.
2. Only one company disseminated the voting results of the AGM, and one company provided text of speeches and presentations of the board of directors during the AGM.
3. Only one company published a dividends policy, concerning distribution and reinvestment.

4. Only one company presents financial information in Excel format, while no company presents it in PowerPoint or XBRL-format.
5. No company disclosed financial statements in multiple currencies.
6. No company provides a list of the analysts following the firm and no company publishes summaries about analysts' forecasts analysis.
7. No company disseminated information about the advantages of holding the firm's stocks.
8. No company gave financial glossary on the website.

#### **6.4 Conclusion**

The chapter aims to describe and analyse the patterns of companies' disclosure practices on their websites in Jordan. Out of 150 listed companies on ASE with an active websites, only 69 companies were found to engage in such practices. A disclosure checklist was used to measure the quantity and quality of online reporting practices, containing 109 items spread over 4 main sub-indices; content (63 items) (which includes financial and accounting (31 items), corporate governance (19 items) and corporate social responsibility (13 items), timeliness (12 items), presentation (15 items) and usability (19 items).

Results indicate that the quantity and quality of overall usage of ICR was below the average, revealing that the banking sector is the best sector in utilising such practices. In details, financial and accounting information published on the websites is mostly a soft copy of printed annual reports, and CG and CSR are less considered in such disclosure. The online disclosed information in Jordan tends to be presented in a static format, where the PDF-format is dominant, with little use of video, audio, or animation. English language was used more common than the Arabic language for both, the website and corporate disclosure. Furthermore, timeliness of online disseminations was the poorest characteristic of ICR, indicating that companies in Jordan tend to publish out of date corporate information. Eventually, although the website might be widely exploited for marketing and advertising purposes, its usability among listed companies in Jordan, as it was gauged by the study index, is below average. The percentage is very poor regarding the use of a money converter, help sites, online investor orders, webmail, and privacy and legal statements.

# Chapter 7: Determinants of ICR Adoption and Practices: Secondary Data Analysis and Discussion

## 7.1 Introduction

This chapter reports and discusses the results of statistical analyses that describe and test the relationships between independent variables attached to the secondary data (organisational domain) (which are divided into three categories: firm's characteristics, corporate governance and ownership structure), on the one hand, and the dependent variables, ICR adoption and practices, on the other. Given two separate dependent variables, reporting the results will be shown in two separate parts. **Part 7.2** describes and statistically tests the factors that may explain the company's ICR adoption status, whether to adopt ICR or not. **Part 7.3** provides descriptive analyses of both dependent and independent variables, and also shows the results of inferential statistics of the factors that might affect the levels of disclosure practices over companies' websites, as measured by nine ICR indices. These are: content (which include: accounting and financial, CG, and CSR indices), timeliness, presentation, usability and overall ICR indices. Finally, the discussion of the findings of the study will be presented in **Part 7.4**.

## 7.2 The determinants of ICR adoption

This part summarises the findings of univariate and multivariate analyses of the factors that possibly have an impact on companies' inclination to adopt or not adopt ICR. However, univariate analyses mainly aim to describe the general characteristics of dependent variables of the adopters and non-adopters of ICR. The multivariate analysis, employing logistic regression, will assist in clarifying the significant variables that are likely to have an impact, contributing towards ICR adoption. The whole sample involved in the analysis is 150 companies, 69 of which are adopters of ICR and 81 are not, as outlined in Table 7.1 below.

### 7.2.1 Descriptive statistics

This section describes the main characteristics of the independent variables for adopters and non-adopters of ICR in Jordan, and the significance of differences between these two groups will be assessed and presented as well. For this purpose, univariate statistical tests, specifically Chi Square test for independence and t-test for independent samples have been employed. The former is a non-parametric test aiming at establishing if there are any significant differences in the proportion of the adopters and non-adopters of ICR regarding the categorical variables. The latter is a parametric test seeking to diagnose whether the mean scores of each metric variable significantly differ between these two groups.

Table 7.1 below was generated from the cross-tabulation option available on SPSS. The table includes two sections. The first is labelled “*ICR adoption status*”, which classifies the frequencies of companies according to the adopters and non-adopters; this is for every categorical independent variable. The second reported the results of the Chi Square test for independence. The values of Yates’ Continuity Correction demonstrate that there is a significant association between all independent categorical variables and the status of ICR adoption.<sup>19</sup> This finding demonstrates that the proportions of companies in each independent categorical variable are significantly different between adopters and non-adopters of ICR. However, it should be noticed that all listed banks in Jordan undertake ICR. This means that, definitely, there is no observation has appeared in the opposite (non-adopters) group. Therefore, the industry sector variable will be eliminated from consequent logistic analysis, because it may prevent the model from reaching a solution (Hair et al., 2010). To this end, this study will rely and be established upon the results obtained from the Chi Square test, indicating that the adoption of ICR is more related to affiliation with the Banking sector.

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<sup>19</sup> All the values of this column are based on the value of the Yates’ continuity correction except *industry sector variable*; it was extracted from Pearson Chi-Square value; because it has more than two categories (Pallant, 2011). In addition, phi values are correlation coefficients which vary between 0 and 1, more closeness to 1 indicates stronger relationship between two underlying variables. In addition, the value reported in the industry sector represents the Cramer’s V value for the same reason mentioned above (Pallant, 2011). The values of phi coefficients fluctuate around the medium effect according to the Cohen’s criteria (1988). These criteria are divided into 0.10, 0.30 and 0.50 standing for small, medium and large effect respectively.

Table 7.1 Chi square for independence of the categorical variables						
variable	ICR adoption status			Chi square statistics		
	Adopters of ICR (69 firms)	Non-adopter of ICR (81 firms)	Total	Continuity <sup>a</sup> correction (Yates)	p-value	Phi <sup>b</sup>
<u>Listing status:</u>						
First	39	28	67	6.405	0.011	0.220
Second	30	53	83			
<u>Industry sector:</u>						
Banking	15	0	15	25.868	0.000	0.415
Insurance	13	8	21			
Service	28	41	69			
Industry	13	32	45			
<u>Audit Type:</u>						
Big four	47	26	73	17.931	0.000	0.359
Non-big four	22	55	77			
<u>Role Duality:</u>						
With role duality	14	46	60	19.191	0.000	0.371
Without role duality	55	35	90			
<u>Audit Committee:</u>						
Available	53	45	98	6.524	0.006	0.223
Unavailable	16	36	52			
<u>CGN Committee*:</u>						
Available	42	26	78	12.377	0.000	0.307
Unavailable	27	55	72			

Notices: a. all the values of this column are based on the value of the Yates' continuity correction except *industry sector variable*, it was extracted from Pearson Chi-Square value; because it has more than two categories (Pallant, 2011).  
b phi values are correlation coefficients which vary between 0 and 1, more closeness to 1 indicates stronger relationship between the two underlying variables. In addition, the value reported in the industry sector represents the Cramer's V value for the same reason mentioned above (Pallant, 2011). \* *CGN Committee*: stands for corporate governance and nominating committee

An independent samples t-test was carried out to provide the scores of the mean and standard deviations of metric (continuous) independent variables and also, to identify the existence of significant differences between mean scores of the adopter and non-adopter companies of ICR relating to each of these variables. The significant differences point initially to the presence of a relationship between a particular independent variable and ICR adoption, which hence justifies going further into multivariate analysis to obtain more robust and rigorous results.

The results summarised in Table 7.2 below illustrate that the magnitude of differences of the mean scores is significant in five out of nine variables. These variables are: size, leverage, board size, board independence and institutional ownership. The results indicate that all or at least some of these variables might be able to predict the status of a specific company regarding adoption or non-adoption of ICR in the subsequent multivariate logistic regression.

Table 7.2 t-test of the groups' continuous variables							
variable	Adopters of ICR (69 companies)		Non-adopters of ICR (81 companies)		t-test statistics		
	Mean	Std. Deviation	Mean	Std. Deviation	Mean Difference	t-value	p- value
Size	811*	300	56	168	754	5.104	0.000
ROA	-0.000747	0.0912824	-0.018142	0.1029303	0.0173952	1.086	0.275
Leverage	0.484585	0.2892418	0.351787	0.2094816	0.1327987	3.171	0.002
Board size	9.06	2.313	8.1	2.119	0.959	2.649	0.009
Independence	0.876744	0.1342893	0.833508	0.1357763	0.0432365	2.054	0.043
Institutional Ownership	0.556409	0.2613305	0.441395	0.2843896	0.1150136	2.562	0.011
Management Ownership	0.028784	0.0776268	0.043224	0.0673843	-0.0144401	-1.220	0.225
Foreign Ownership	0.274837	0.2644038	0.204886	0.2277627	0.0699512	1.741	0.084
Family Ownership	0.171614	0.2054735	0.234134	0.2600189	-0.0625198	-1.644	0.102

\*Notice: the Size statistics are in millions and in Jordanian Dinar (JD).

## 7.2.2 Inferential statistics: logistic regression

Having the binary categorical nature of the dependent variable, the adoption/non-adoption of ICR, the study has employed logistic regression, in order to predict the likelihood of the presence or absence of internet reporting of listed companies that have websites in Jordan, using a combination of predicting independent variables. Logistic regression enables assessing the degree of precision of cases' classification based on the given model (Pallant, 2011; Field, 2013). After dropping the industry sector variable, the fourteen remaining independent variables have been assigned to three main regression models for the sake of

robustness of logistic regression results (Pallant, 2011 and Field, 2013).<sup>20</sup> These models are related to the firms' general characteristics corporate governance and ownership structure independent variables' groups, which as follows

**The first model: Firms' general characteristics**

$$ICR\ adoption = \alpha_0 + \beta_1 MARKET\_LISTING_i + \beta_2 SIZE_i + \beta_3 AUDIT\_TYPE_i + \beta_4 ROA_i + \beta_5 LEVERAGE_i + e_i$$

Whereas,

*ICR adoption*= a dummy variable takes the value one if the company engages in ICR and the value zero otherwise;

$\alpha_0$ = the constant of the model;

*MARKET\_LISTING*= a variable takes the value 1 if the company is listed on the first market and takes the value 2 if it listed on the second market in the year 2011;

*SIZE*= the natural log of the mean of the total assets at the end of the year of the last three financial years, 2011, 2010 and 2009;

*AUDIT\_TYPE*= a dummy variable takes the value one if the company is audited by one of the big-four firms and the value zero otherwise;

*ROA*= the average of the companies' return on assets ratio over the last three years 2011, 2010 and 2009;

*LEVERAGE*= the average of the companies' leverage ratio of the last three years 2011, 2010 and 2009;

$\beta$ = model's coefficients;

$i$ = the company;

$e$  = error term.

**The second model: corporate governance**

$$ICR\ adoption = \alpha_0 + \beta_1 BOARD\_SIZE_i + \beta_2 ROLE\_DUALITY_i + \beta_3 INDEPENDENCE_i + \beta_4 AUDIT\_COMMITTEE_i + \beta_5 CGN\_COMMITTEE_i + e_i$$

Whereas,

*ICR adoption*= a dummy variable takes the value one if the company engages in ICR and the value zero otherwise;

$\alpha_0$ = the constant of the model;

*BOARD\_SIZE*= the average of number of the board of directors members of the company in the last three years 2011, 2010 and 2009;

*ROLE\_DUALITY*= a dummy variable takes the value one if the CEO occupies the chairman's position in the company and the value zero otherwise;

*INDEPENDENCE* = the average of the percentage of non-executive directors of the company in the last three years 2011, 2010 and 2009;

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<sup>20</sup> The researcher should consider the number of parameters (predictor variables) included in the model relative to the sample size when using the logistic regression in the analysis (Hair et al., 2010; Pallant, 2011). In case of getting a large number of independent variables with small sample sizes in each outcome group; this may cause problems to the analysis, especially once having a limited number of categorical independent variables in each predicted group (Pallant, 2011).

*AUDIT\_COMMITTEE* = a dummy variable takes the value one if the company has an audit committee and the value zero otherwise;

*CGN\_COMMITTEE*= a dummy variable takes the value one if the company has a corporate governance and nominating committee and the value zero otherwise;

$\beta$ = model's coefficients;

$i$  = the company;

$e$  = error term.

### **The third model: ownership structure**

$ICR_{adoption} = \alpha_0 + \beta_1 INSTITUTIONAL_i + \beta_2 MANAGEMENT_i + \beta_3 FAMILY_i + \beta_4 FOREIGN_i + e_i$

Whereas,

*ICR adoption*= a dummy variable takes the value one if the company engages in ICR and the value zero otherwise;

$\alpha_0$ = the constant of the model;

*INSTITUTIONAL* = the average of the institutional ownership percentage in the company in the last three financial years, 2011, 2010 and 2009;

*MANAGEMENT* = the average of the CEO ownership percentage in the company in the last three financial years, 2011, 2010 and 2009;

*FAMILY* = the average of the group of relatives ownership percentage in the company in the last three financial years, 2011, 2010 and 2009;

*FOREIGN* = the average of the non-Jordanians ownership percentage in the company in the last three financial years, 2011, 2010 and 2009;

$\beta$ = model's coefficients;

$i$  = the company;

$e$  = error term

#### **7.2.2.1 Assumptions of the logistic regression**

Logistic regression is characterised by providing a remedy to violations of some assumptions required for multivariate analyses. This is due to the dichotomous nature of the dependent variable and doing a log transformation of the predicting variables (Hair et al., 2010; Field, 2013), for example, issues regarding normality and homogeneity of variance that are considered when conducting either OLS regression or discriminant analysis. Furthermore, unlike OLS regression, logistic regression is tolerant to the assumption of the linearity of the relationship between the independent and dependent variables, which are assumed as a fundamental matter to obtain valid results from OLS regression.

In fact, issues of outliers and multicollinearity are potential sources of bias of the logistic regression results (Hair et al., 2010; Pallant, 2011; Field, 2013). The

outliers have been remedied through the option of case wise listing of residuals existing on SPSS and any residual outside 3 was removed (Field, 2013; Pallant, 2011). To ascertain whether the independent variables are highly inter-correlated or not, the collinearity diagnostic procedures from multiple regression option available on SPSS were used, utilising the same independent and dependent variables of the models (Pallant, 2011; Field, 2013). Results shown in Tables 7.5 and 7.6 below reveal that all VIF's values were below the cut-off point, 10, as well as all Tolerance values above 0.10 for all variables, indicating that the multicollinearity problem does not occur (Hair et al., 2010; Field, 2013).

### 7.2.2.2 Results of logistic regression: determinants of ICR adoption

Direct logistic regression was conducted to evaluate the effect of a number of predicting variables on the likelihood that companies would adopt/non-adopt internet disclosure. As stated earlier, the study incorporates three models containing fourteen variables to enhance their rigor. Table 7.3 provides general information about models' goodness of fit and power to assess the impact of predictors on the probability of being in a specific ICR status (adopt or not). Figures of the Omnibus test showed that the overall fit of the models is statistically significant,  $p$ -value  $< 0.05$ , demonstrating that the models are capable of efficiently differentiating between adopters and non-adopters of ICR. The first and second models explain substantial amounts of the variances of the ICR adoption status, which range from 0.216 and 0.231 (Cox & Snell R square) to 0.289 and 0.309 (Nagelkerke R square) respectively. In contrast, the third model only explains between 0.079 and 0.099 of the variance of outcomes. However, models were found to be able to correctly classify 72.7%, 70.7% and 63.3% of the cases respectively.

Table 7.3 Chi square statistics						
models	Omnibus test			Variance explained		Classification accuracy
	Chi square	df	p-value	Cox & Snell R square	Nagelkerke R square	
first	36.512	5	0.000	0.216	0.289	72.7%
second	39.485	5	0.000	0.231	0.309	70.7%
third	9.98	4	0.046	0.079	0.099	63.3%

Table 7.4 below summarises the relative importance of contribution of each predicting variable to the models; which can be demonstrated as follows. In the **first model**, only MARKET LISTING and AUDIT TYPE were found to significantly positively contribute to the predictive power of the model. The odds ratio is close for both of them by 0.47 and 0.37 respectively.<sup>21</sup> These values indicate that companies that are listed in the first market and/or audited by a big-four firm are 0.47 and 0.37 times more likely to adopt ICR practices, controlling to other variables in the model. This result is in line with hypotheses H2a and H5a. In the **second model**, three of the corporate governance variables made a significant contribution to the predictive ability of the model; namely ROLE DUALITY, INDEPENDENCE and CGN COMMITTEE, supporting H8a, H9a and H11a hypotheses. The strongest predictor of ICR adoption in the model is the CG COMMITTEE, presenting an odds ratio of 6.45. This demonstrates that the presence of corporate governance and nominating committee increases the probability for more than 6 times for a specific company to adopt ICR. In contrast, the presence of dual role of CEOs will decrease the likelihood of ICR adoption by 0.11 times. The possibility of ICR adoption will be enlarged by 0.03 times with every single per cent increase in the ratio of number of non-executive directors on the board. Finally, only one variable from the **ownership structure model** has a significant impact on the probability of ICR adoption in the Jordanian context, which is institutional ownership. The odds ratio is 0.17, illustrating that for every additional per cent of institutional ownership; it is more likely by 0.17 times for a particular firm to adopt ICR. This finding proves the hypothesis H13a.

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<sup>21</sup> The direction of the relationship between the independent and dependent variables can be determined based on the sign of B values. The B values represent coefficients of the variables, and it is equivalent to B values in OLS regression (Hair et al., 2010; Pallant, 2011).

Table 7.4 Results of logistic regression predicting likelihood of an ICR adoption

**The first model: firm characteristics**

$$ICR\ adoption = \alpha_0 + \beta_1 MARKET\_LISTING_i + \beta_3 SIZE_i + \beta_4 AUDIT\_TYPE_i + \beta_5 ROA_i + \beta_1 LEVERAGE_i + e_i$$

Variables	B	S.E.	Wald	P-value	Odds Ratio	95% C.I. for Odds Ratio	
						Lower	Upper
MARKET LISTING (1)	0.77	0.39	3.89	<b>0.050</b>	0.47	0.22	1.00
SIZE	0.65	0.38	2.87	0.090	1.92	0.90	4.07
LEVERAGE	1.29	1.01	1.63	0.200	3.62	0.50	26.17
AUDIT TYPE (1)	0.99	0.40	6.05	<b>0.010</b>	0.37	0.17	0.82
ROA	1.26	2.20	0.32	0.570	3.51	0.05	263.29
Constant	-4.67	2.87	2.66	0.100	0.01		

**The second model: corporate governance**

$$ICR\ adoption = \alpha_0 + \beta_1 BOARD\_SIZE_i + \beta_2 ROLE\_DUALITY_i + \beta_3 INDEPENDENCE_i + \beta_4 AUDIT\_COMMITTEE_i + \beta_5 CGN\_COMMITTEE_i + e_i$$

Variables	B	S.E.	Wald	P-value	Odds Ratio	95% C.I. for Odds Ratio	
						Lower	Upper
BOARD SIZE	0.11	0.09	1.59	0.210	1.12	0.94	1.34
ROLE DUALITY(1)	-2.18	0.55	15.85	<b>0.000</b>	0.11	0.04	0.33
INDEPENDENCE	3.44	1.87	3.39	<b>0.040</b>	0.03	0.00	1.25
AUDIT COMMITTEE (1)	0.24	0.42	0.32	0.570	1.27	0.56	2.86
CGN COMMITTEE (1)	1.87	0.73	6.56	<b>0.010</b>	6.49	1.55	27.17
Constant	2.26	1.81	1.55	0.210	9.54		

**The third model: ownership structure**

$$ICR\ adoption = \alpha_0 + \beta_1 INSTITUTIONAL_i + \beta_2 MANAGEMENT_i + \beta_3 FAMILY_i + \beta_4 FOREIGN_i + e_i$$

Variables	B	S.E.	Wald	P-value	Odds Ratio	95% C.I. for Odds Ratio	
						Lower	Upper
FAMILY OWNERSHIP	0.66	1.07	0.38	0.540	1.93	0.24	15.82
FOREIGN OWNERSHIP	0.38	0.78	0.24	0.620	1.47	0.32	6.72
MANAGEMENT OWNERSHIP	-1.60	2.87	0.31	0.580	0.20	0.00	56.70
INSTITUTIONAL OWNERSHIP	-1.80	0.84	4.59	<b>0.030</b>	0.17	0.03	0.86
Constant	0.53	0.47	1.31	0.250	1.70		

Notes: 1) this table provides information of the relative importance, as reflected by the predictive contribution, of each independent variable incorporated in the model. The significant ones are those that achieve a probability of 0.05 or less as indicated in the p-value column, which appear in bold; 2) the test here is called Wald test and Wald statistics were reported as shown; 3) B values reflect variables' coefficients that show the direction of the relationship (positive or negative) between predictors and outcome variables; 4) finally, odds ratio represents the likelihood of being in one of the dependent variable groups when the value of an independent variable increases by one unit (Tabachnick and Fidell, 2007).

### **7.3 The determinants of ICR practices**

The valid sample that can be included in this part of the analysis is 69 companies, due to their engagement in the ICR practices. The current part will firstly provide descriptive statistics of the outcome variables (eight ICR indices) and the predicting ones, which are a total of 15 variables split into three categories (firm characteristics, corporate governance and ownership structure), in order to give a general idea about parameters of multiple regression presented in the following part. OLS regression, however, was implemented to identify the factors that might make a significant unique contribution to predict levels of ICR in Jordan, controlling to the other variables in the models.

#### **7.3.1 Descriptive statistics**

This section provides some descriptive measures of the independent and dependent variables of the 69 companies that adopt ICR. Also, it reports the Tolerances and VIFs for independent variables as measures of multicollinearity, which will be discussed in the next section, regarding multiple regression assumptions.

Table 7.5 outlines some measures of descriptive statistics, namely, mean, standard deviation, minimum and maximum observations of the metric (continuous) independent variables that may explain different levels of ICR indices of listed companies in Jordan.

The statistics of actual value of the total assets of Jordanian listed companies that engage in ICR, which is used as a proxy of the firm size, reveals that the mean is approximately 811JD million with a Standard Deviation of 300JD million, indicating a relative volatility among those companies in respect to their sizes. The values of the mean of ROA and Leverage, which are: -0.001 and 0.485 respectively, as measures of the firm's profitability, indicate that Jordanian listed companies that adopt ICR have generally poor financial performance. The negative sign of ROA mean score accompanying a low value of standard deviation (0.091) demonstrate that the companies that reported losses, represent either a major proportion of the sample or they incur large losses, or both. In

addition, the mean score of Leverage was 0.485, indicating the magnitude of the debts proportion in the capital structure of those companies, despite the relatively high value of variability among companies (Std. Deviation = 0.289).

The statistics on BOARD SIZE variable indicate that the number of board of director's members is between 4 and 13 members. In fact this is not surprising, because Company Law in Jordan states that the number of directors on the board for public shareholding companies must be not fewer than 3 and not more than 13 members (Jordanian Company Law No. 22, 1997). Regarding the percentage of non-executive directors as a proxy of BOARD INDEPENDENCE, the mean value is 0.877 in addition to the minimum value, which is 0.50, indicates high levels of independence of boards of directors of the study's sample.

Table 7.5 Descriptive statistics of the continuous independent variables						
Variables	Minimum	Mean	Std. Deviation	Maximum	Tolerance	VIF
SIZE	2.5	811	301	23921	0.203	4.917
ROA	-0.269	-0.001	0.091	0.315	0.601	1.665
LEVERAGE	0.051	0.485	0.289	0.946	0.300	3.339
BOARD SIZE	4.000	9.060	2.313	13.000	0.529	1.892
BOARD INDEPENDENCE	0.500	0.877	0.134	1.000	0.506	1.978
INSTITUTIONAL OWNERSHIP	0.004	0.556	0.261	1.000	0.404	2.472
MANAGEMENT OWNERSHIP	0.000	0.029	0.078	0.490	0.461	2.169
FAMILY OWNERSHIP	0.000	0.172	0.205	0.950	0.285	3.513
FOREIGN OWNERSHIP	0.000	0.275	0.264	0.957	0.472	2.120

Notice: the SIZE statistics are in millions and in Jordanian Dinar (JD)

Finally, with respect to ownership structure, the highest mean percentage is institutional ownership at 0.556, followed by foreign and family ownership which are 0.275 and 0.172 respectively. This indicates that more than the half of these companies are owned by institutions and more than a quarter of these companies' capital is foreign investments, while families only control around a sixth of the

capital. Management ownership is the lowest proportion of those companies' capital structure at approximately 3%. This suggests that, generally speaking, Jordanian companies that engage in ICR practices separate between ownership and management.

Table 7.6 displays the totals and percentages of observations in each group of categorical variables. Actually, 5 out of 6 variables are dichotomous and only the industry sector is multinomial. As previously stated in Chapter 4, due to its size in the ASE, the service sector has the biggest share of the sample at 40.6%. The Table also shows that more than half (about 57%) of the adopters of ICR companies are listed in the first market of ASE. This means that these companies are distributed fairly in both markets.

Table 7.6 Descriptive statistics of the categorical independent variables				
Variable	counts	percentages	Tolerance	VIF
<u>Market Listing:</u>				
First	39	56.5%	0.562	1.78
Second	30	45.5%		
<u>Industry sector:</u>				
Banking	15	21.8%	0.335	2.986
Insurance	13	18.8%		
Service	28	40.6%		
Industry	13	18.8%		
<u>Audit Type:</u>				
Big four	47	68.1%	0.47	2.128
Non-big four	22	31.9%		
<u>Role Duality:</u>				
With role duality	14	20.3%	0.529	1.892
Without role duality	55	79.7%		
<u>Audit Committee:</u>				
Available	53	76.8%	0.623	1.606
Unavailable	16	23.2%		
<u>CGN Committee:</u>				
Available	42	60.9%	0.307	3.262
Unavailable	27	39.1%		

It is clear from the figures in Table 7.6 that a big proportion of the sample has good quality external audit, where around 68% of companies have been audited by one of the big four audit firms. The majority (80%) of executive managers of those companies do not hold the position of chairman, indicating a good commitment to one of the main rules of corporate governance. The matter is the

same regarding the presence of audit committees and corporate governance and nominating committees, where around 77% and 61% of companies respectively have such committees.

Table 7.7 gives descriptive statistics about the dependent variables, ICR indices. Except for the Timeliness index, which achieved a score of 0.258, all the indices on average are close to each other, fluctuating mostly around the midpoint of the indices; between 0.423 (usability index) and 0.501 (corporate governance index). This reveals two points: firstly, Jordanian listed companies that adopt ICR usually disseminate out of date information on their websites; secondly, the levels of ICR reporting practices of these companies are generally an intermediate.

Table 7.7 Descriptive statistics of the dependent variables (ICR indices)				
Indices	Minimum	Mean	Std. Deviation	Maximum
Financial and Accounting	0.032	0.477	0.275	0.935
Corporate Governance	0.000	0.501	0.301	0.947
CSR	0.077	0.455	0.263	1.000
Total Content	0.095	0.480	0.259	0.905
Timeliness	0.000	0.258	0.209	0.917
Presentation	0.200	0.465	0.173	0.867
Usability	0.105	0.423	0.163	0.789
Overall ICR	0.128	0.442	0.203	0.826

### 7.3.2 Inferential Statistics: OLS regression

In this piece of research, the study attempts to reveal the combined impact of a set of independent variables on the variations of specific continuous outcome variables, ICR practices. Therefore, multiple OLS regression analysis is seen as a proper statistical technique to test such an impact of these independent variables (Pallant, 2011). It is viable to employ OLS regression when having a single metric dependent variable and is sought to be explained by a number of -metric or categorical- independent variables (Hair et al., 2010). Eight dependent variables have been involved in the analysis, representing ICR indices, namely, Financial, Corporate Governance (CG), Corporate Social Responsibility (CSR), Total

Content, Timeliness, Presentation, Usability, and Overall ICR indices. The score of each index was assigned to each company. The independent variables consist of eighteen variables distributed in three groups: firm characteristics (which includes 9 variables: size, market listing, audit type, ROA, leverage and banking, insurance, industry and service sector), corporate governance (which includes 5 variables: number of board of directors, role duality, board independence, audit committee and corporate governance and nominating committee) and ownership structure (which includes 4 variables: management, institutional, family and foreign ownership).

The following OLS regression model has been used, denoting that running the model has been done eight separate times:

$$ICR\ INDICES = \alpha_0 + \beta_1 ROA_i + \beta_2 LEVERAGE_i + \beta_3 MARKET\_LISTING_i + \beta_4 AUDIT\_TYPE_i + \beta_5 BOARD\_SIZE_i + \beta_6 ROLE\_DUALITY_i + \beta_7 INDEPENDENCE_i + \beta_8 INSTITUTIONAL_i + \beta_9 MANAGEMENT_i + \beta_{10} FAMILY_i + \beta_{11} FOREIGN_i + \beta_{12} AUDIT\_COMMITTEE_i + \beta_{13} CGN\_COMMITTEE_i + \beta_{14} SIZE_i + \beta_{15} BANKING_i + \beta_{16} INSURANCE_i + \beta_{17} INDUSTRY_i + \beta_{18} SERVICE_i + e_i$$

Whereas

*ICR INDICES*= are percentage scores of ICR indices; which are Financial, Corporate Governance (CG), Corporate Social Responsibility (CSR), Total Content, Timeliness, Presentation, Usability and Overall ICR index;

$\alpha_0$ = the constant of the models;

*ROA*= the average of the companies' return of assets ratio of the last three years: 2011, 2010 and 2009;

*LEVERAGE*= the average of the companies' leverage ratio of the last three years: 2011, 2010 and 2009;

*MARKET\_LISTING*= a variable takes the value 1 if the company is listed on the first market and takes the value 2 if it listed in the second market in 2011;

*AUDIT\_TYPE*= a dummy variable takes the value one if the company is audited by one of the big-four firms and the value zero otherwise;

*BOARD\_SIZE*= the average of number of directors on the board of the company in the last three years: 2011, 2010 and 2009;

*ROLE\_DUALITY*= a dummy variable takes the value one if the CEO occupies the chairman's position in the company and the value zero otherwise;

*INDEPENDENCE* = the average of the percentage of non-executive directors of the company in last three years: 2011, 2010 and 2009;

*INSTITUTIONAL* = the average of the institutional ownership percentage of the company in the last three financial years: 2011, 2010 and 2009;

*MANAGEMENT* = the average of the CEO ownership percentage of the company in the last three financial years: 2011, 2010 and 2009;

*FAMILY* = the average of the group of relatives' ownership percentage of the company in the last three financial years: 2011, 2010 and 2009;

*FOREIGN* = the average of the non-Jordanians ownership percentage of the company in the last three financial years: 2011, 2010 and 2009;  
*AUDIT\_COMMITTEE* = a dummy variable takes the value one if the company has an audit committee and the value zero otherwise;  
*CGN\_COMMITTEE*= a dummy variable takes the value one if the company has a corporate governance and nominating committee and the value zero otherwise;  
*SIZE*= the natural log of the mean of the total assets at the end of the year of last three financial years: 2011, 2010 and 2009;  
*BANKING*= a dummy variable takes the value one if the company belongs to the banking sector and the value zero otherwise;  
*INSURANCE*= a dummy variable takes the value one if the company belongs to the insurance sector and the value zero otherwise;  
*INDUSTRY*= a dummy variable takes the value one if the company belongs to the industry sector and the value zero otherwise;  
*SERVICE* a dummy variable takes the value one if the company belongs to the service sector and the value zero otherwise;  
 $\beta$ = model coefficients;  
 $i$  = the company;  
 $e$  = error term.

### **7.3.2.1 Assumptions of OLS regression**

To obtain generalizable and valid findings from multiple OLS regression, its underlying assumptions must be met (Hair et al., 2010; Pallant, 2011; Field, 2013). Six main assumptions are required for multiple OLS regression, namely, multicollinearity, outliers, linearity, homoscedasticity, normality and independence of residuals (Tabachinck and Fidell, 2007; Hair et al., 2010; Pallant, 2011; Field, 2013). However, all of these assumptions can be tested and treated through the available options on SPSS that accompanied the OLS regression procedures.

The first assumption is the multicollinearity, which gauges how strong the correlation is among predicting variables. These can be identified by checking values of Tolerance and VIF exhibited in Tables 7.6 and 7.7 shown previously. Figures indicated that the assumption of collinearity of independent variables was not violated, where there is no Tolerance value below 0.1 and no VIF value greater than 10 (Tabachinck and Fidell, 2007; Hair et al., 2010; Pallant, 2011; Field, 2013).

In reality, one of the available methods of testing other assumptions is by checking the residuals of the models as a whole (Tabachinck and Fidell, 2007; Field, 2013). Inspecting these assumptions, however, is possibly done through

generating Normal P-P Plots and Scatterplots from the SPSS for all models of the study (Tabachinck and Fidell, 2007; Pallant, 2011; Field, 2013). The former is to check out the normality and the latter to examine the rest of the assumptions. Visual investigation of all Normal P-P Plots shows that all residuals of the underlying models are normally distributed.<sup>22</sup>

Assumptions of linearity, homoscedasticity and independence of residuals can be assured if the standardised residuals are randomly scattered as a rectangle (Pallant, 2011). In other words, it should not be an organised pattern of the standardised residuals (Field, 2013). Actually, this pattern is supported in all Scatterplots of the models yield from the analysis, which hence means these assumptions have been satisfied. Finally, Scatterplots also can be used in detecting outliers (Hair et al., 2010). Tabachinck and Fidell, (2007) referred to outliers as those cases with standardised residuals below -3.3 or greater than 3.3. Such cases have never occurred in the plots. Therefore, there are no extreme observations in the residuals of the models. To support these visual-based results concerning outliers, the Casewise Diagnostics option of standardised residuals has been chosen. Cases which have standardised residuals out of 3 will be reported. Tables of Casewise Diagnostics have not been displayed in the outputs, indicating absence of unusual cases. In conclusion, all assumptions of multiple regression were not violated, and therefore, it can proceed safely further for subsequent analyses pertaining models fit and predictors testing.

### **7.3.2.2 Results of OLS regression: determinants of ICR practices**

OLS regression was conducted to test if the 18 independent variables (firm's characteristics, corporate governance and ownership structure variables) significantly predict the levels (indices) of ICR of those 69 adopters in Jordan. Eight ICR indices have been involved to be predicted by the independent variables as outlined in Tables 7.8 and 7.9 below. Therefore, the analysis has been run eight separate times.

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<sup>22</sup> To identify the normality of the residuals, the dots of residuals (*will lie in a reasonably straight diagonal line from bottom left to the top right. This would suggest no major deviation from normality*) (Pallant, 2011: 158)

Table 7.8 OLS regression results of models of Financial, Corporate Governance, CSR and total content indices								
Models statistics								
	Financial Index		CG Index		CSR Index		Content Index	
R	0.813		0.802		0.693		0.807	
R Square	0.660		0.643		0.480		0.652	
Adjusted R Square	0.572		0.551		0.345		0.562	
F-Statistics	7.498		6.949		3.560		7.227	
P-Value	0.000		0.000		0.000		0.000	
Predictors statistics								
Dependent variables	Financial Index		CG Index		CSR Index		Content Index	
	Beta	P-value	Beta	P-value	Beta	P-value	Beta	P-value
Independent variables								
CONSTANT		0.032		0.007		0.008		0.006
ROA	-0.019	0.855	-0.091	0.386	0.162	0.205	-0.008	0.940
LEVERAGE	-0.272	<b>0.051</b>	-0.290	<b>0.043</b>	-0.210	0.220	-0.288	<b>0.042</b>
LISTING MARKET	-0.037	0.712	0.016	0.877	-0.071	0.563	-0.029	0.776
AUDIT TYPE	0.122	0.273	0.148	0.197	-0.037	0.786	0.108	0.338
BOARD SIZE	-0.140	0.201	-0.105	0.346	-0.092	0.495	-0.129	0.242
ROLE DUALITY	-0.086	0.455	-0.147	0.215	-0.018	0.898	-0.101	0.389
BOARD INDEPENDENCE	0.372	<b>0.001</b>	0.386	<b>0.001</b>	0.247	0.069	0.382	<b>0.001</b>
INSTITUTIONAL OWNERSHIP	-0.478	<b>0.000</b>	-0.189	0.142	0.116	0.454	-0.292	<b>0.024</b>
MANAGEMENT OWNERSHIP	0.194	0.101	0.204	0.093	0.142	0.326	0.203	0.090
FAMILY OWNERSHIP	-0.517	<b>0.000</b>	-0.176	0.219	-0.052	0.763	-0.343	<b>0.018</b>
FOREIGN OWNERSHIP	0.041	0.718	0.132	0.261	0.271	<b>0.050</b>	0.125	0.281
AUDIT COMMITTEE	0.020	0.844	0.025	0.811	0.274	<b>0.032</b>	0.056	0.584
CGN COMMITTEE	0.298	<b>0.027</b>	0.352	<b>0.012</b>	0.018	0.910	0.283	<b>0.038</b>
SIZE	0.531	<b>0.003</b>	0.517	<b>0.005</b>	0.733	<b>0.001</b>	0.613	<b>0.001</b>
BANKING	0.138	0.491	0.309	0.129	-0.005	0.985	0.180	0.374
INSURANCE	-0.025	0.812	0.068	0.528	-0.010	0.942	0.009	0.936
INDUSTRY	0.019	0.853	0.042	0.685	0.194	0.121	0.065	0.526
SERVICE	0.027	0.801	0.055	0.602	0.253	0.182	0.011	0.911
Notice: numbers in the bold stand for the significant variables in the models								

Table 7.8 summarises the results of the models that constitute the content of the information published over the companies' websites, which include the indices of Financial, Corporate Governance (CG), Corporate Social Responsibility (CSR) as well as the Total Content index. As shown in Table 7.8, all four models are

statistically significant,  $F(17, 58) =$  between 3.560 and 7.498,  $P < 0.0001$ . The models are working quite well in explaining the variance in the levels of all contextual information disseminated via internet reporting, where Adjusted  $R^2$  fluctuated from 0.345 to 0.572. The lowest level of variance explained was achieved by the CSR model (adjusted  $R^2 = 0.345$ ), while it was better and very close in the other three models, which accounted for around 56% of the total variance explained. It can be seen from Table 7.8 that the size of the firm is a positive significant contributor ( $p < 0.05$ ) in all models, which predict the percentages of content information published via website disclosure. This provides evidence of correctness of hypotheses H1b, c, d and e.

In addition, the high levels of all types of information content disclosure, except CSR, can be significantly predicted by the increase of percentage of independent non-executive directors and the presence of corporate governance and nominating committee as well as, conversely, the decrease in leverage levels. This is in line with the hypotheses b, c and e attached to H3, H9 and H11. Institutional and family ownership negatively affect the levels of financial and total content of online disclosed information, statistically evidencing the significance of (b and e) of H12 and H13 hypotheses. Finally, two independent variables were found uniquely have a positive significant contribution unequally with the CSR model, namely, foreign ownership and audit committee. This means that H10d and H14d hypotheses are substantiated.

Table 7.9 below outlines the findings of the further four models, attempting to explain levels of other attributes of ICR, which specifically are: Timeliness, Presentation, Usability, and Overall ICR indices. Actually, regression analyses yields in significant models,  $F(17, 58) =$  between 1.954 and 7.252,  $p < 0.0001$  for Timeliness and Overall models and ( $p < 0.01$  and  $0.05$ ) for Presentation and Usability models respectively. Similar to the average of content models, the model was the best in explaining the variability of Overall ICR level, where it accounts for about 56.3% (adjusted  $R^2$ ) of a total variance explained. The explanatory power of the model (adjusted  $R^2$ ) was considerably lower in regards to Timeliness and Presentation levels, equalling 0.377 and 0.334 respectively. Lastly, the variability

of Usability levels was the least explained by the study model, whereas the adjusted R<sup>2</sup> was 0.164.

Table 7.9 Multiple regression results of models of Timeliness, Presentation, Usability and Overall indices								
Models statistics								
	Timeliness Index		Presentation Index		Usability Index		Overall Index	
R	0.711		0.686		0.58		0.808	
R Square	0.505		0.471		0.336		0.653	
Adjusted R Square	0.377		0.334		0.164		0.563	
F-Statistics	3.937		3.434		1.954		7.252	
P-Value	0.000		0.001		0.040		0.000	
Predictors statistics								
Dependent variables	Timeliness Index		Presentation Index		Usability Index		Overall Index	
	Beta	P-value	Beta	P-value	Beta	P-value	Beta	P-value
Independent variables								
CONSTANT		0.053		0.41		0.101		0.007
ROA	-0.111	0.372	0.047	0.715	-0.076	0.595	-0.024	0.820
LEVERAGE	-0.32	<b>0.045</b>	0.037	0.830	-0.144	0.453	-0.263	<b>0.052</b>
LISTING MARKET	0.018	0.883	0.042	0.734	-0.103	0.459	-0.029	0.776
AUDIT TYPE	0.165	0.220	0.168	0.228	0.135	0.385	0.137	0.225
BOARD SIZE	-0.330	<b>0.012</b>	-0.027	0.844	-0.136	0.371	-0.156	0.159
ROLE DUALITY	-0.123	0.377	0.074	0.606	0.131	0.416	-0.061	0.601
BOARD INDEPENDENCE	0.26	<b>0.051</b>	0.164	0.228	0.179	0.241	0.355	<b>0.002</b>
INSTITUTIONAL OWNERSHIP	-0.293	<b>0.050</b>	-0.317	<b>0.045</b>	-0.003	0.987	-0.286	<b>0.027</b>
MANAGEMENT OWNERSHIP	0.163	0.250	-0.001	0.995	-0.011	0.946	0.166	0.163
FAMILY OWNERSHIP	-0.293	0.085	-0.383	<b>0.031</b>	0.003	0.989	-0.330	<b>0.022</b>
FOREIGN OWNERSHIP	0.027	0.842	-0.155	0.276	0.083	0.599	-0.095	0.408
AUDIT COMMITTEE	0.035	0.772	0.034	0.786	0.044	0.754	0.039	0.699
CGN COMMITTEE	0.229	0.153	0.123	0.457	-0.047	0.798	0.272	<b>0.043</b>
SIZE	0.593	<b>0.006</b>	0.439	<b>0.045</b>	0.625	<b>0.012</b>	0.658	<b>0.000</b>
BANKING	-0.258	0.281	-0.089	0.716	0.289	<b>0.033</b>	0.112	0.575
INSURANCE	-0.107	0.404	-0.068	0.606	-0.065	0.652	-0.023	0.832
INDUSTRY	0.051	0.676	0.170	0.177	0.143	0.601	0.110	0.284
SERVICE	-0.072	0.512	0.152	0.198	0.056	0.681	0.801	0.552
Notice: numbers in the bold stand for the significant variables in the models								

Similar to the content information indices, the firm size hereby remains the key variable that has, positively, a significant (P < 0.05) impact on the levels of the

rest of the ICR indices: Timeliness, Presentation, Usability and Overall ICR, as can be observed from Table 7.9 above. These findings suggest proving H1f, g, h and i hypotheses. Furthermore, in addition to large size, the lower company's leverage, the lower percentage of institutional ownership, smaller board size and more proportion of non-executive directors on the board all lead to publishing more timely information, aligning with the hypotheses (f) of H1, 3, 7, 9 and 13. Similarly, excluding the board size, all these variables contribute significantly in enhancing the overall level of ICR, in conjunction with a lower proportion of family ownership and the presence of corporate governance and nominating committee. This supports hypotheses H1i, H2i, H9i, H11i, H12i and H13i. Both Institutional and Family ownership, in addition to the size, add a significant contribution to the predictive power of the model to explain the variations in levels of presentation indices in a negative direction. This agrees with hypotheses H1g, H12g, and H13g. Finally, controlling to the firm size, industry sector made a significant unique contribution to the Usability model, predicting the extent of website usability, proving H1h and H6H hypotheses. This demonstrates that the level of usability of companies' websites is significantly enhanced with affiliation to the banking sector.

#### **7.4 The discussion of findings**

Parts 7.2 and 7.3 report on findings about the explanatory variables impacting on ICR adoption and practices. The theoretical foundation provided in Chapters 3, provides a base that enables justifying and explaining causal relationships among these variables, in line with positivistic-deduction premises. The current part aims to discuss and explain the research findings by linking them to the existing theory, in order to be compared and verified. Nine dependent variables were involved in the analysis. One of them reflects the adoption of ICR and the rest represents its practices. These dependent variables were sought to be explained by 15 independent variables belong to three groups: firm's characteristics, corporate governance and ownership structure<sup>23</sup>. Table 7.10 summarises the findings of this part of the study as follows:

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<sup>23</sup> Notice that the industry sector was divided into four dummy variables representing the industrial sectors in ASE. This was for the purpose of getting valid results from multiple regression analysis.

Table 7.10 A summary of findings of determinants of ICR adoption and practices

<b>Firms' Characteristics Variables</b>									
	ICR adoption	ICR Levels (Indices)							
		Financial	CG	CSR	Content	Timeliness	Presentation	Usability	Overall
Size		✓ (+)	✓ (+)	✓ (+)	✓ (+)	✓ (+)	✓ (+)	✓ (+)	✓ (+)
Listing status	✓ (+)								
Leverage		✓ (-)	✓ (-)		✓ (-)	✓ (-)			✓ (-)
ROA									
Audit type	✓ (+)								
Banking	✓ (+) <sup>a</sup>							✓ (+)	
Insurance									
Industry									
Service									
<b>Corporate Governance Variables</b>									
	ICR adoption	ICR Levels (Indices)							
		Financial	CG	CSR	Content	Timeliness	Presentation	Usability	Overall
Board size						✓ (-)			
Role duality	✓ (-)								
Board independence	✓ (+)	✓ (+)	✓ (+)		✓ (+)	✓ (+)			✓ (+)
Audit committee				✓ (+)					
CGN committee	✓ (+)	✓ (+)	✓ (+)		✓ (+)				✓ (+)
<b>Ownership Structure Variables</b>									
	ICR adoption	ICR Levels (Indices)							
		Financial	CG	CSR	Content	Timeliness	Presentation	Usability	Overall
Family ownership		✓ (-)			✓ (-)		✓ (-)		✓ (-)
Institutional ownership	✓ (-)	✓ (-)			✓ (-)	✓ (-)	✓ (-)		✓ (-)
Foreign ownership				✓ (+)					
Management ownership									
Notice: this table reports the significant results at level 0.05 or less; the checkmark and the sign ✓ (-) stand for the significant result at 0.05 or less and the direction of the relationship respectively, either positive or negative; and finally (a) points to that the evidence of this result was only obtained from univariate statistical analyses.									

It is obvious from Table 7.10 that all explanatory variables have an association with at least one of the independent variables except management ownership, ROA, insurance and service sector variables, whereas no substantial evidence supports their relationship with the presence, extent and quality of ICR in this part of the study. The results summarised in Table 7.10 will be discussed as follows:

#### **7.4.1 Firm's characteristics**

##### **7.4.1.1 Firm size**

Except the ICR adoption variable, the results of multivariate analyses indicate a positive significant effect of the company size on all eight indices (levels) of corporate disclosure on a website. Many theories can be employed to explain such an effect of the firm size on the amount and attributes of ICR totally and its forms; these theories namely are: agency, legitimacy, signalling, information cost and political cost theory. According to agency theory, the information asymmetry between the owners and managers is likely to increase with firm size and hence, increasing agency costs as well (Jensen and Meckling, 1976). Therefore, the need for more corporate information disclosed voluntarily will be increased with firm size, in order to reduce different forms of agency costs (Oyerlere et al., 2003). As a result, it is widely expected that levels of corporate disclosure tend to be high in large firms in comparison with small ones.

Legitimacy theory suggests that a company ought to discharge the accountability to its society at large. Larger companies are usually in the eye of public and monitoring and controlling agencies more than smaller companies. Hence, managers in large-size companies have a greater motivation to enhance the extent of discretionary corporate disseminations, in order to discharge their general responsibility, improving their public image and reputation on the one hand, and thus reducing political costs resulting from interventions of government bodies in line with predictions political cost theory on the other (Debreceeny et al., 2002).

Information cost theory predicts that larger firms usually possess a well-established technology and information system infrastructure as well as the

needed financial resources due to the magnitude of their activities and diversity of products. Consequently, the costs of collecting, organising, updating and publishing information over the company websites will be reduced and therefore the levels (content) and quality (timeliness, presentation and usability) of ICR is supposed to be increased for large companies relative to small ones. Finally, Craven and Marston (1999) emphasise that bigger companies tend to enhance practices of voluntary disclosure to signal to the financial market their quality.

The findings of the study, that reveal a significant positive impact of the firm size on the levels of disclosure and quality of disseminating corporate information through the company's website, are in line with findings of several previous studies (for instance, Pirchegger and Wagenhofer, 1999; Bonson and Escobar, 2002; Larran and Giner, 2002; Marston, 2003; Marston and Polei, 2004; Al-Htaybat, 2005; Bollen et al., 2006; Abdel-Salam et al., 2007; Abdel-Salam and El-Masry, 2008; Al-Motrafi, 2008; Aly, 2008, Ezat and El-Masry, 2008; Kelton and Yang, 2008; Al Arussi et al., 2009; Elsayed, 2010; Al-Htaybat, 2011; AbuGhazaleh et al., 2012a; Uyar, 2012; Desoky and Mousa, 2013; Sharma, 2013). However, researchers like Allam and Lymer (2003), Aly et al. 2010 and Henchiri (2011) did not find a significant association between company's size and the extent of website disclosure.

In spite of the current findings supporting the proposition that company size is an important predictor of levels of ICR and its components, it was surprisingly not found as a significant predictor at the ICR adoption stage. Hence, this result contradicts the majority of prior studies, (such as Mareston and Leow, 1998; Ashbaugh et al., 1999; Brennan and Hourigan, 1999; Hassan et al., 1999; Craven and Marston, 1999; Ettredge et al., 2002; Ismail, 2002; Joshi and Al-Modhahki, 2003; Oyelere et al., 2003; Rodrigues and Menezes, 2003; Momany and Al-Shorman 2006; Al-Shammari, 2007; Barako et al., 2008; Bonson and Escobar, 2010). This might be attributed to the fact that some small firms are profitable and therefore strive to adopt ICR to enhance their image and reputation, eliminating differences with the large companies. However, they perhaps cannot keep, in the long run, rivalry with large companies regarding levels of disclosure practices on the internet. This is especially where the initial costs of installing and initiating

pillars of ICR are negligible in comparison with ongoing costs of ICR such as maintaining, updating, oversight, organising information published on the website (Oyelere et al., 2012).

#### **7.4.1.2 Listing status**

The vast majority of previous literature, that addressed the effect of listing status on quality and quantity of ICR, used to have overseas listing as a proxy of listing status (for example, Larrán and Giner, 2002; Oyelere et al., 2003; Marston and Polei, 2004; Xiao et al., 2004; Bollen et al., 2006; Al-Shammari, 2007 and Aly et al., 2010). However, Al-Motrafi (2008) employed a different proxy of listing status, classifying the Saudi companies under examination into listed and unlisted companies, to measure its effect on disclosure practices on the internet.

This study indeed views this variable from a different angle, following the speciality of Jordan's capital market. Securities listed on ASE used to be traded on two separate markets, the first and second market. However, recently, after 1<sup>st</sup> November 2012, a new third market has been introduced by ASE. This is in order to enhance the market efficiency and liquidity, as well as improving governance, transparency and disclosure practices (see ASE website: [www.ase.com.jo/ar/node/810](http://www.ase.com.jo/ar/node/810)). Actually, before and after the recent listing directives in late 2012, companies listed on the first market adhere to more difficult listing conditions than the other two markets. These conditions are related to three main indicators: profitability and liquidity, capital structure and disclosure. Examples of these conditions are: number of shareholders (not less than 100), free float ratio (not less than 10%), incurring respective net profits for at least two years out of last three years), net owners' equity not to be less than paid-in capital, and 7.5 % allowed fluctuations in share prices relative to the market index etc. (ibid).

Therefore, many incentives motivate companies, in Jordan, listed on the first market to disclose more information than those in the second market. Firstly, Jordanian companies that wish to be listed on the first market need to enhance their levels of disclosure to fulfil some of these conditions. For instance, according to capital need theory, firms need to improve the transparency to facilitate

obtaining required funds. This would increase shareholders' equity, free float ratio and number of shareholders, but these in turn will increase information asymmetry, which also needs more disclosure to be mitigated. In addition, disclosing more information will reduce the uncertainty about the company's circumstances and hence decreasing stock price fluctuation. Secondly, companies on the first market are mostly characterised by high quality financial criteria. Therefore, they are more likely to engage in voluntary disclosure practices such as ICR to signal to the market their qualities. Finally, these companies are more publically visible. So, they tend to adopt disseminating information through web communication to improve corporate image and public reputation. Thus, adhering to legitimacy and political cost theory, more voluntary disclosure will reduce costs of governmental interventions, as well as legitimise their public position.

The findings of the current study revealed that listing status (first or second market) of the company only affects ICR at the adoption stage. Other variables that demonstrate levels of corporate disclosure on the website cannot be explained using this variable. This might refer to the fact that among the guiding instructions of the ASE is that listed companies should utilise their websites in undertaking ICR to boost disclosure and transparency. Therefore, it does not mention detailed instructions on how or what type of information should be disclosed on the website.

#### **7.4.1.3 Leverage**

In general, prior studies depend heavily on agency theory to explain the relationship between various practices of voluntary disclosure and the debt ratio (leverage). It is argued that highly leveraged firms would be keen to enlarge the scope and quantity of its disclosure to enable debt-holders and/or creditors to assess the financial position of these companies (Ismail, 2002; Oyelere et al., 2003; Al Arussi et al., 2009). Therefore, they can obtain the required funds with less agency costs and a lower cost of capital. Mixed evidence has been revealed by previous literature that addresses the relationship between leverage and the extent of paper-based voluntary disclosure. Researchers (such as Salamon and Dhaliwal, 1980; Bradbury, 1992; Mitchell et al., 1995; Hossain et al., 1995; Naser,

1998) concluded a positive effect of the corporate leverage on levels of voluntary disclosure, while others (like Leftwich et al., 1981; Bazley et al., 1985; Mckinnon and Dalimunthe, 1993; Kelly, 1994; Wallace et al., 1994; Raffournier, 1995; Aitken et al., 1997) did not prove such an effect. However, Meek et al. (1995) showed a contradictory finding, where they found a negatively significant association between the debt ratio and levels of voluntary disclosure in a sample that included companies from the US, UK, and Europe.

Accordingly, while ICR is one type of voluntary disclosure, the literature of ICR justifies the impact of leverage on corporate disclosure applications via the internet in the same way as explaining printed voluntary disclosure practices (e.g. Bernan and Horgarain, 1999; Debreceeny et al., 2002; Elsayed, 2010; Bonson and Escabar, 2010). Different measures have been employed to represent the leverage such as debt to equity and debt to total assets ratio. This study uses the latter ratio as a proxy of leverage.

The findings of the current study show a significant negative impact of leverage on the levels of corporate disclosure and its quality over website reporting, namely Financial, CG, Total content, Timeliness and Overall ICR index. This result is consistent with the result that was revealed by Ojah and Mokoaleli-Mokoteli (2012). Likewise, Bollon et al., (2006) reached such a negative but insignificant relationship. They conclude that it is difficult to deny the effect of leverage on amount of ICR practice, especially when considering the level of significance of the result, at 0.10. In contrast, findings of Ismail, (2002); Bonson and Escabar, (2010); and Elsayed, (2010) challenge such results. However, a number of prior studies reported no relationship between several ICR practices and leverage (for instance, Brennan and Hourigan, 2000; Debreceeny et al., 2002; Larran and Giner, 2002; Joshi and Al-Modhahki, 2003; Oyelere et al., 2003, Bollen et al., 2006; Al-Shammari, 2007; Barako et al., 2008; Ezat and El-Masry, 2008; Al Arussi et al., 2009; Sharma, 2013).

A contradiction in these findings with the initial prediction of capital need theory could be explained in several points. First, it is commonly known that debt-holders possess the priority to claim their rights before shareholders (Bonson and Escabar, 2010). Thus, financial risks will be maximised with increasing leverage

(Dichev and Skinner, 2002; Al Arussi et al., 2009). Therefore, companies with low levels of leverage are more likely to enhance their disclosure practices, signalling the investors and hence maintaining inherent risks to be evaluated fairly in financial markets (Ahmed et al., 2002). Second, leverage is considered an indicator of firm performance. Consequently, lower leverage firms have greater motivation to disseminate more information to signal their good performance (signaling theory). Finally, firms in the Middle East countries usually have a small number of creditors such as banks and financing firms, especially where bonds are not an effective way in obtaining debt in those countries. Those few creditors can be informed about the company's information through other communication media such as direct contact (Bollon et al., 2006).

#### **7.4.1.4 Return on assets (ROA)**

Signaling theory states that more profitable firms have more motivation to increase their voluntary disclosure practices such as online reporting. This is to broaden the ways of informing the financial market about a firm's good news, which hence enhances the company's shares value. Accordingly, many previous studies show a positive significant relationship between different measures of firm profitability like ROA and ROE and levels of different forms of ICR (for example, Craven and Marston, 1999; Hassan et al., 1999; Aly et al., 2010; Al-Htaybat, 2011; Henchiri, 2011). The current study selected the ROA as a proxy of the firm's profitability. However, the findings revealed that ROA did not associate significantly with any ICR variables, adoption and practices. These findings are in line with a large amount of ICR previous research, (such as Ettredge et al., 2002; Larran and Giner, 2002; Oyelere et al., 2003; Marston, 2003; Xiao et al., 2004; Al-Motrafi, 2008; Aly et al., 2010; Elsayed, 2010; AbuGhazaleh et al., 2012a; Ojah et al., 2012; Uyar, 2012).

A plausible justification for such findings can be based on the theoretical foundation of this study. While highly profitable companies desire voluntarily to signal to the stockholders their sound performance, low-profitable (and/or losses in) companies tend to legitimise themselves, build upon legitimacy theory, through discretionary disclosure of information, attempting to justify bad performance to discharge their accountability (Hutton et al., 2003). In addition, they might seek

avoiding public intervention costs, such as litigations, in accordance with political cost theory (Richardson and Welker, 2001; Oyelere et al., 2003). In addition, profitable firms sometimes prefer to lessen their levels of disclosure, if their competitive position is likely to be affected (Butler et al., 2007; Elsayed, 2010). Moreover, Xiao et al. (2004) attributed such unproven association to the engagement in earnings management practices as well as independency of management compensation from the performance measures.

#### **7.4.1.5 Audit type**

The findings of statistical tests of the current study emphasise the importance of audit type (Big 4 or not) only in determining the adoption status of a company, not variations in levels of disclosure practices on the internet. This result indicates that companies being audited by the big 4 firms may affect the decision of top management in the early stages of adoption, but it does not move further to influence their levels of disclosure.

The plausible explanation of such a result could be built based on many theories, especially signalling, agency and political cost theory. Hiring a big 4 firm increases the degree of trust of audited corporate information due to its extra integrity and credibility (Al-Motrafi, 2008). Therefore, companies that are audited by such auditing firms have strong incentives to signal to the stakeholders the high quality of corporate information irrespective of quantities and types of this information. In addition, endorsing corporate information by brand name audit firms minimises the level of uncertainty about disclosed information over online reporting (Elsayed, 2010). Thus, the extent of involvement by stakeholders, especially shareholders and government will be reduced and hence the agency and political costs such as litigation are more probably decreased. The presence of a positive relationship between a big or brand name audit firm and the adoption of ICR, was previously supported by Trabelsi and Labelle (2006) and Al-Shammari (2007). However, Joshi and Al-Madhahki (2003) and Hassan et al. (1999) did not find such a significant relationship.

Similarly, while researchers such as Xiao et al. (2004), Bonson and Escobar (2006), and Boubaker et al. (2012) concluded a significant association between

audit type and ICR practices, findings of other prior studies, however, agree with the findings of another part of the analysis of this study, reporting no significant impact of audit type on levels of various ICR measures (for example, Al-Motrafi, 2008; Aly et al., 2010; AbuGhazaleh et al., 2012a).

#### **7.4.1.6 Industry sector**

Evidence has been extracted from univariate analyses, showing a significant relationship between the banking sector and the adoption of internet disclosure on the companies' websites. Also, only level of usability of corporate website appeared significantly influenced by belonging to the banking sector.

Many previous studies reveal a significant relationship of sector affiliation and the presence of ICR (for instance, Debreceeny et al., 2002; Ismail, 2002; Joshi and Al-Madhahki, 2003; Trabelsi and Labelle, 2006; Aly et al., 2010; AbuGhazaleh et al., 2012a). Findings highlights that all listed Jordanian banks undertake corporate disclosure over their websites. Signaling, political cost, legitimacy theory and information cost theory might provide sensible explanations of why the banking sector is superior in adopting ICR. Some disclosure practices may become the norm in certain industrial sectors. Therefore, failure of a specific company to follow such practices might be considered as an indicator (a signal) of bad news (Craven and Marston, 1999). In addition, owing to the significance and importance of the banking sector in emerging economies like Jordan, it will be subject to more public control than other sectors. Hence, it is more likely that banks are inclined to adopt ICR practices to look more legitimate as well as to avoid incurring potential political costs. In this context, Aly et al. (2010) argue that in contrast to other listed companies, banks follow the disclosure instructions and rules issued by the central bank as well as to those that are imposed by other regulatory and controlling bodies (e.g. securities commission and stock exchange).

The other variable, that was found significantly predicted by banking industry affiliation, is the level of usability of the corporate website. Banks are used to having well designed and high quality websites because it assists them in providing online banking services, which have been recently launched as a core business competence (AbuGhazaleh et al., 2012a). As a result, it is normal that

banks websites would be more developed and usable than other companies' websites in Jordan. This result is in convergence with the findings of (Elsayed, 2010; AbuGhazaleh et al., 2012a). Furthermore, in line with information cost theory, it is worthwhile to say that owning a well-established website aids in saving the costs of developing a new website, which therefore encourages these banks to urge adopting ICR practices.

## **7.4.2 Corporate governance**

### **7.4.2.1 Role duality**

Amongst the common principles of modern management, is the separation between ownership and management in businesses. As a consequence, and adhering to the agency theory, a potential conflict will occur due to an information asymmetry gap between these two groups (Jensen and Mackling, 1973). Nevertheless, the board of directors is elected to represent owners, control managers' activities and enhance levels of disclosure and thus protect the shareholders' wealth from opportunistic management. Indeed, when the CEO holds the position of chairman in the company the most important baseline of control and corporate governance is breached (Kelton and Yang, 2008). This is because the role duality increases the power of the CEO to dominate board responsibilities, like choosing board members, agendas, decisions and meetings (Abdelsalam and Street, 2007; Abdelsalam and El-Masry, 2008; Ezat and Al-Masry, 2008; Al Arussi et al., 2009).

As a result, it is suggested that the presence of a dual role leads to a decline in the structure of corporate governance and therefore moderate levels, scope and qualities of voluntary disclosure - ICR applications as an example -, in order to hide potential improper management actions (Elsayed, 2010). In line with this notion, studies like Forker (1992), Haniffa and Cooke (2002) and Gul and Leung (2004) have demonstrated a negative influence of the role duality of the CEO on the levels of hard-copy voluntary disclosure.

The current study added evidence that there is a negative significant influence of the dual role on the adoption of corporate reporting on the internet. This result is

in line with findings of studies of Abdel-Salam and Street (2007) and Abdel-Salam and El-Masry (2008), which found a negative relationship between the role duality and the presence of timely online disclosure. Likewise, Al Arussi et al. (2009) reached such a relationship with internet financial disclosure.

On the other hand, the study did not find an impact of the dual role on the rest of study variables regarding levels of corporate disclosure on the internet and its components. This finding is consistent with the majority of previous research (e.g. Abdelsalam et al., 2007; Al-Motrafi, 2008; Ezat and El-Masry, 2008; Kelton and Yang, 2008; Samaha et al., 2012a; Desoky and Mousa; 2013). The reasonable explanation of these results is that the adoption process of ICR is a voluntary practice. Thus, once a company with role duality decides to undertake such practice, this implicitly means that the company intends to properly exploit this communication channel in corporate reporting. Therefore, it is more likely that differences between companies with and/ or without a dual role may occur in the ICR adoption phase, but not in the differences among disclosure practices levels.

#### **7.4.2.2 Board size**

The effectiveness of the role of board size -in terms of number of board members- in monitoring the executive management actions is a debatable issue in corporate governance literature (Al-Motrafi, 2008). Some researchers emphasise the importance of larger boards, which assist in enhancing the control mechanisms over companies' managers due to the potential diversity of knowledge, expertise as well as it is less likely to be dominated by the CEO as small size boards (Beasley, 1996; Klein, 2002; Laksmana, 2008). In contrast, other researchers argue that smaller boards are more effective in monitoring the activities of corporate managers, since it tends to have high cohesiveness and less conflict. So, unlike larger boards, small ones are more likely to enjoy active communications, better coordination, be more manageable and therefore improve the flexibility and quickness in making the decisions related to corporate affairs (Yermack, 1996; Andrés-Alonso et al., 2009; Samaha et al., 2012b).

The findings of the study revealed that the number of directors on the board has a significant and negative impact only on the timeliness of corporate disclosure on

the company's website. This finding is parallel with the point of view concerning the potential effect of board size on effectiveness of decisions made by the board. Hence, a large number of board members are more likely to impede the speed of making the decisions relating to corporate disclosure, where they need more time, for example, in discussing, approving and endorsing financial information. Thus, this will result in delay in disclosing corporate information, and consequently publishing less timely corporate information on the companies' websites. This result is uniquely reported by the current study due to the scarcity of studies that addressed the association between the timelessness of ICR and the board size. Nonetheless, Elsayed (2010) did not find any association between these two variables in the Egyptian context.

With respect to the findings relating to other ICR indices, Al-Motrafi (2008), in line with current results, did not prove any relationship between number of directors and levels of content, credibility, usability and overall disclosure over online reporting. However, Elsayed (2010) brought significant positive multivariate evidence of the effect of the board size, only on presentation and usability. Finally, Samaha et al. (2012a) and Desoky and Mousa's (2013) reached a positive relationship of the number of board members on several indices of ICR in Egyptian and Bahraini samples respectively.

#### **7.4.2.3 Board independence**

As is the case for the firm chairman, other directors on the board share the responsibility to supervise and control the performance of executive management as they are elected as representatives of shareholders. Likewise, as the dual role of the chairman limits the efficiency of the board in executing its mission, the same should be expected if that dual role occurs regarding the directors. This is because if the board of directors is dominated by executives, it is more likely to act opportunistically, achieving the CEO desires, such as delaying and/or minimising disclosure practices (Xiao et al., 2004; Kelton and Yang, 2008; Samaha et al., 2012b). Therefore, it is recommended, as a common principle of corporate governance, to enhance the board independence through reducing the number of executive managers on the board.

Many previous studies stress the role of board independence in enhancing monitoring tools, and hence improving several aspects of traditional corporate disclosure practices (e.g. Beasley, 1996; Cheng and Jaggi, 2000; Ajinkya et al., 2005). Extending the case to corporate disclosure on the internet, the study predicts the presence of a positive relationship between percentage of non-executive directors on the board and various ICR practices; in accordance with findings of several prior studies (e.g. Abdelsalam et al., 2007; Abdelsalam and El-Masry, 2008; Desoky and Mousa, 2013).

The current study uses the percentage of non-executive directors on the board as a measure of the level of board independence. The findings agree with initial prediction of the study, whereas a significant positive impact was found of the percentage of non-executive directors on ICR adoption as well as levels of financial, corporate governance, total content, timeliness and overall disclosure on the companies' websites. These results suggest that there is a major effect of board of directors' independence on the firm's decision to voluntarily widen and improve its disclosure applications by using the internet.

Several previous studies supported the study results, as for instance Abdelsalam et al. (2007); Abdelsalam and El-Masry (2008); and Ezat and El-Masry (2008) who reported a positive relationship between the level of board independence and timeliness of internet reporting. Kelton and Yang, (2008) found such a relationship with financial corporate governance, format and overall disclosure on the internet, while Xiao et al. (2004) reached the same result respecting only the format of ICR. Finally, Desoky and Mousa (2013) extracted evidence of the presence of such an association with total ICR in Bahrain.

In contrast, Abdelsalam and Street, (2007) found a negative impact of proportion of non-executive directors on the timeliness of ICR in the UK. However, Elsayed (2010) and Samaha et al., (2012a) failed to prove such an effect on many measures of ICR in the Egyptian context. They justified their results by referring it to lack of experience, business knowledge and time to monitor the company's activities effectively.

#### 7.4.2.4 Audit committee

It can be said that there is consensus about the importance of the controlling role that is taken by the audit committee, which assists in boosting various corporate practices, especially governance and disclosure. Vanasco (1994) emphasises the benefits of the audit committee for the firm's stakeholders. Vanasco (1994: 38) also cited the most common functions of the audit committee as follows:

*“1. Strengthening the internal and external audit functions; 2. Co-ordinating the work of the external and internal auditors; 3. Strengthening the position of non-executive directors; 4. Assisting the board of directors to fulfil their legal responsibilities”.*

In addition, it is argued that audit committees usually exercise more control procedures over management actions, which in turn ameliorate the effect of agency problems (Samaha et al., 2012b). Bradbury (1990) highlights that audit committees are often established in the situations where agency costs are high, in order to enhance the information transmission from managers to owners.

Previous literature has addressed the impact not merely of the presence of audit committee but rather of the attributes of the audit committee – such as the size, expertise, number of meetings and independence- on the different aspects of corporate matters (Kelton and Yang, 2008). These matters, for example, include: undertaking the restatement (Abbott et al., 2004; Lin et al., 2006); engaging in earnings management and fraud (Abbott et al., 2000; Beasley et al., 2000, Xie et al., 2003; Bedard et al., 2004; Yang and Krishnan, 2005); type of external auditor's report (Carcello and Neal, 2000; Pucheta-Martinez and Fuentes, 2007) and also disclosing of management's reports voluntarily (Bronson et al., 2006). Additionally, many studies have examined the association between the audit committee characteristics and levels and qualities of corporate reporting. For instance, quality of the financial reporting (McMullen 1996; Felo et al., 2003), timeliness of disclosure (Abdullah, 2006; Afify, 2009; Ika and Ghazali, 2012), levels of corporate reporting (Ho and Wong 2001; Mangena and Pike, 2005; Barako et al., 2006, Samaha and Dahawy 2011; Samaha et al., 2012b), the extent of intellectual capital disclosure (Li et al., 2009).

Similarly, two prior studies found a linkage between certain attributes of audit committees with website disclosure. Kelton and Yang (2008) concluded levels of disclosure on the website are positively associated with the frequency of meetings and the presence of financial expertise of the audit committee in the US context. Conversely, Nurunnabi and Hossain (2012) did not find evidence supporting the relationship between the percentage of audit committee members on the board of directors and the extent and quality of internet disclosure in Bangladesh.

Extending the notion presented above, it is expected that there will be a substantial relationship between the existence of an audit committee and the adoption as well as levels of ICR qualities. Therefore, this part of the study tested the impact of the existence of audit committee on the adoption, levels of financial, corporate governance, CSR, total content, timeliness, presentation, usability and overall disclosure on the companies' websites. However, the results indicated that its relationship appeared significant and positive only with the level of CSR disclosure.

Actually, in recent years, the disclosure of CSR information has been increasingly concerned by international controlling and regulatory agencies. This might be because such disclosure does contribute in improving public firms' images as well as delivering information with value-relevance for decision making such as intellectual capital information (Li et al., 2009). Li et al., (2009) revealed that the levels of intellectual capital disclosure are positively related to the size and frequency of meetings of the audit committee. They argue that an effective audit committee will improve internal control mechanisms and is therefore more likely to substantially enhance disclosures of value-relevant information like the intellectual capital information, which represents a significant component in some companies' assets base. In addition, CSR disclosure contain important information, such as environmental reporting and donations, which make the company look more publically legitimate, avoiding potential political attracts.

#### **7.4.2.5 Corporate governance and nominating committee**

Extending the subject of board of directors committees that was started by discussing audit committees, governance and/or nominating committees also

possess an essential role in oversight of the board and executive management members (John and Senbet, 1998; Gillan and Starks 2000; Lam and Lee, 2012). Many codes of corporate governance in developed countries – such as the Sarbanes-Oxley Act (2002) in the US and the UK corporate governance code (2010) - assert the importance of establishment and independence of these committees, because of its positive role in enhancing the efficiency of the board and improving corporate governance quality. Further, in November 2003, the New York Stock Exchange (NYSE) required that all companies listed on the market must have governance/nominating committee, which consists only of independent directors.

Among the common responsibilities of governance and nominating committee mentioned in these codes are: identify the qualifications, experience and skills that should be available in board members; nominating and leading the process of recruiting board members, suggesting corporate governance principles appropriate for the firm, and overseeing the performance of directors and executives.

Therefore, the presence of a governance and nominating committee is more likely to assist in limiting the power and influence of the CEO over the board of directors, and hence open the way for sound control and governance mechanisms. In this context, Jones et al. (2013) demonstrate why the oversight role of the board is notably improved through establishment of governance committees. They (Jones et al., 2013: 4) specifically state:

*“First, to the extent that directors feel obligated to the CEO because he or she appointed them, their ability to challenge the CEO is compromised (Johnson, Daily, & Ellstrand, 1996). If the new governance committee is fully in charge of new director nominations and it consists entirely of independent directors, the CEO’s role in new director selection is reduced if not eliminated. Second, the charge that the committee should clearly state its “corporate governance principles” specifically commits its members to avoid certain behaviours. Presumably, having documented specific governance principles should reduce the extent to which directors violate those principles. Finally, the charge that the committee should “oversee the evaluation of the board and management” places*

*great power and discretion in the hands of governance committee members, all of whom are independent directors. This specifically charges the committee with the overall evaluation of corporate governance, and without representation or formal involvement from management”.*

Consequently, governance and control mechanisms will be enhanced and directors will freely enable discharge of their accountability to the stakeholders. This is more likely to contribute in mitigating the agency problems through increasing the levels of disclosure to interested users. So, it is expected that with the existence of a governance and nominating committee, the companies are more likely to engage in disclosure practices over the internet.

Actually, a few prior studies can be found that addressed the relationship between firm performance and various attributes of governance committees, while, however, pertaining to corporate disclosure, to the best of researcher’s knowledge, such a relationship has not yet been explored. For example, Brown and Caylor (2006) found a significant positive impact on the number of annual governance committee meetings as well as independence of nominating committees on some firm performance measures, while Lam and Lee (2012) revealed such an effect in relation only to the presence of a nomination committee.

Building on the preceding discussion, the study examined the effect of the presence of a governance and/or nominating committee on the disclosure practices on the websites of listed companies in Jordan. Indeed, the findings of the study strongly support the initial proposition respecting the existence of positive impact of establishing the governance and/or nominating committee on internet reporting practices. Five out of nine of internet disclosure variables were found significantly influenced by the presence of that committee, namely the adoption, and levels of financial, CG, total content and overall ICR disclosure.

### **7.4.3 Ownership structure**

#### **7.4.3.1 Family ownership**

Companies can be classified in terms of concentration of ownership into closely and widely-held ones. While the majority of shares' ownership in widely-held companies spread over a large number of shareholders, large stakes of shares in closely-held companies are owned by one or a group of homogeneous owners such as individuals, families and institutions. According to agency theory, in contrast to closely-held ones, widely-held companies tend to disclose more information voluntarily, in order to reduce information asymmetry with divergent shareholders and hence its inherent costs (Oyelere et al., 2003; Kelton and Yang, 2008; Elsayed, 2010). In view of that, many previous studies have proven the effect of the concentration of ownership structure on the various applications of online corporate disclosure (e.g. Oyelere et al., 2003, Trabelsi and Labelle, 2006; Al-Shammari, 2007; Abdelsalam and Street, 2007; Al-Motrafi, 2008; Kelton and Yang, 2008; Elsayed, 2010)

Family ownership refers to that fraction of companies' capital- usually equal to 5% or more- that is owned by one or a group of relatives, which becomes a blockholder(s) (Chen et al., 2008). Blockholder families are most likely to have members on the executive management or/and board of directors, which therefore enables them to influence the strategic decisions in the company such as governance and disclosure (Ali et al., 2007).

Family-controlled companies are relatively less exposed agency costs compared to non-family controlled ones, which occur as a result of manager-owner relationship, they are, however, exposed to another type of agency costs resulting from a potential conflict between dominant (family owners) and less dominant owners (Gilson and Gordon, 2003). In light of this, mixed findings have arisen about the impact of the presence of family-control factors (e.g. ownership, board and managements representatives) and different disclosure practices. Chen et al., (2008) concluded that, relative to nonfamily-controlled firms, family-controlled firms disclose less earnings forecasts and conference calls, but greater earnings warnings. Also, Ali et al. (2007) reached the finding that family firms tend to report

better quality earnings and are more likely to communicate bad news, while they are inclined generally to disclose less financial and corporate governance information. Researchers like Ho and Wong (2001) and Chau and Gray (2002) provide negative proofs of a relationship between family firms and levels of corporate disclosure. Finally, Chau and Gray (2010) found a negative effect of percentage of family ownership on the extent of voluntary disclosure.

The current study tests the impact of the proportion of family ownership on the different practices of ICR. The findings reveal that family ownership negatively impacts on the levels of financial, total content, presentation and overall ICR. This result implies that the higher the percentage of family ownership, the lower the amount and quality of website reporting. These results are consistent with findings of Nurunnabi and Hossain (2012). As stated earlier, these results can be explained that family owners are more likely to have strong power in the company through their representatives in top management and board of directors. As a result, firm's information can be accessed by them easily, quickly and as needed (Chen et al., 2008; Chau and Gray 2010, and Nurunnabi and Hossain, 2012). Moreover, Dessertine (2000) argues that family businesses often suffer from a frequent failure of their communication. He further adds that the disclosure strategy of family businesses are "traditionally opaque", and tend to keep disclosed information to a minimum (cited from HENCHIRI, 2011: 163). This might be due to the fact that family owners want to keep enjoying the advantage of owning the unique information.

#### **7.4.3.2 Institutional ownership**

As highlighted earlier, based on ownership dispersion, the firm ownership is divided into concentrated and diffused ownership. Some authors refer to the former as a proportion of blockholder ownership and the latter as a free float ratio. These two types of ownership are contrasted and their ratios complement each other. Therefore addressing one of them, in a specific context, presumably reflects and substitutes for the other. Several prior studies have tested the effect of these two types of ownership on the various practices of ICR and different findings have been reported. For instance, Pirchegger and Wagenhofer (1999); Marston and Polei (2004); Ezat and El-Masry (2008); and Samaha et al. (2012)

found a positive relationship between several measures of internet disclosure and free float ratio (diffused ownership). On the other hand, Abdelsalam et al. (2007) and Kelton and Yang, (2008) reached a negative association with the blockholder ownership, while others like Abdelsalam and Street (2007) and Trabelsi and Labelle (2006) and Abdelsalam and El-Masry (2008) failed to prove an association between blockholder ownership and ICR various indices.

Institutional ownership is regarded as the proportion of companies' shares that are owned by institutions. Similar to family ownership, it is another type of concentrated ownership. Therefore, its relationship with voluntary disclosure can be justified at the same pattern of family ownership. Findings of the current study show that there is a negative effect on a percentage of institutional ownership on six ICR measures, namely ICR adoption, in addition to financial, total content, timeliness, presentation and overall ICR. This is in line with the results of Al-Motrafi, (2008) and Elsayed (2010). However, findings of Xiao et al. (2004) and AbuGhazaleh et al. (2012a) contradict these results and a positive was founded. They refer this association to the level of professionalism that institutions-owners usually possess, assisting enhancing control climate in companies.

As indicated earlier when discussing findings of family ownership, issues regarding the lower levels of information asymmetry and agency costs and the capability of big investors to access required information through their executives or board members as well as the desire to maintain the corporate information to their own advantages may stand behind the preference of closely-controlled firms to minimally engage in different practices of ICR (Trabelsi and Labelle, 2006).

#### **7.4.3.3 Foreign ownership**

Based on agency theory, signaling theory and diffusion of innovation theory (DOI), the relationship can be theoretically explained between the roles of foreign ownership in stimulating engagement of internet disclosure practices. Firstly, due to geographical divide, foreign shareholders often suffer from information asymmetry problems more than those local shareholders, as they usually experience a difficulty in gaining access to the paper-based corporate disclosure (Xiao et al., 2004; Henchiri, 2011). Thus, this will force companies to increase

disclosure horizons voluntarily to cope with potential agency costs. Secondly, in order to maintain current foreign shareholders as well as attracting new ones, companies may undertake ICR to satisfy their diversified needs and signal them by a sound image of quality corporate disclosure (Al-Htaybat, 2011). Finally, according to the DOI theory, the perceived relative advantages of new innovations in fulfilling firm's needs are essential to be adopted and diffused (Rogers, 2003). ICR is a vital tool in bridging the information gaps due to a geographical divide between the managers and foreign shareholders (AbuGhazaleh et al., 2012a). Therefore, it can be predicted that companies that have high proportions of foreign ownership are more likely to enhance levels of corporate disclosure through using the internet medium.

All the above arguments support the notion that percentage of foreign ownership positively impacts on the adoption and practices of corporate disclosure on the website. Researchers such as Al-Htaybat, (2011) and HENCHIRI (2011) found a positive relationship between foreign ownership and the extent of online disclosure. Likewise, Bollon et al. (2006) highlighted a strong relationship between the quality of ICR and orientation toward international activities.

Findings of the current study barely support the proposed relationship. Only the quality of ICR presentation was found having influenced by the percentage of foreign ownership, significantly, in a positive direction. It is argued that the website represents a mirror of the company to the outside world (Bollon et al., 2006). Thus, companies that seek foreign investors more probably to increase the quality of the corporate website, especially the presentation techniques. The current findings are consistent with findings of Xiao et al. (2004); Bollon et al. (2006) and AbuGhazaleh et al. (2012a), where they did not find any evidence supporting the association between foreign ownership and other ICR components.

This finding may be explained based on the fact that the majority of foreign investors in ASE usually own large fractions of their companies' shares (see SDC website). Therefore, they are capable of accessing the required information directly from the private channels, due to their anticipated involvement in the company's top management.

#### **7.4.3.4 Management ownership**

Several measures have been employed in the literature to represent management ownership such as the CEO's, director's ownership or both. This study refers it to as the share of a firm's equity that is owned by the CEO.

Agency theory predicts that one way to mitigate the effects of information asymmetry costs is to increase the proportion of managerial ownership (Samaha et al., 2012b). This is due to the alignment of interests which will happen between managers and shareholders with the increase of managers' ownership (Abdelsalam et al., 2007; Kelton and Yang, 2008). This argument represents the managerial convergence point of view (Healy and Palepu, 2001). To support this view, signaling theory suggests that the owners-managers are keen to improve corporate disclosure practices, in order to increase the firm's stock prices in the capital markets (Healy and Palepu, 2001 and Mangena and Pike, 2005). Therefore, maximising theirs and shareholders wealth at the same time.

In contrast, the management entrenchment view argues that the increase in managers' ownership may lead to entrenching the management situation, which therefore is more likely to harm governance and disclosure mechanisms (Gul and Leung, 2004; Samaha et al., 2012b). As a result, managers may act to maximise their own interests, limiting the disclosure practices to utilise opportunistically the advantages of the exclusive information.

Findings of the current study did not reveal any significant impact of percentage of CEO's ownership on any ICR measures. This is in agreement with the findings of Abdelsalam et al. (2007); Kelton and Yang (2008); and Samaha et al. (2012a). Conversely, Abdelsalam and El-Masry (2008); and Elsayed (2010) showed evidence of the presence of a positive association between managerial ownership and several components of website reporting. This finding can be plausibly explained based on the idea that owner-managers may feel that they are more in under the gaze of shareholders and public bodies. Therefore, they always try to improve the disclosure practices as those non-owner managers, in order to mitigate pressures and legitimise their actions. As a result, voluntary disclosure

applications, like ICR, tend to be comparable and similar for both groups and no statistical differences occurred.

## **7.4 Conclusion**

This chapter shows the results of the statistical analyses and provides discussion of the determinants of ICR adoption and practices, based on secondary data. Three groups of 15 independent variables are attached to the secondary data (organisational domain), which are: firm's characteristics, corporate governance and ownership structure. The statistical analyses were implemented on two separate datasets. The first is related to ICR adoption and the second related to ICR practices.

To identify the determinants of ICR adoption the data of 150 companies that had active websites were involved (69 adopters of ICR and 81 non-adopters). Logistic regression was run over three separate models, reflecting the groups of independent variables. Findings indicated that companies that are listed in the first market and/or audited by a big-four firm are more likely to adopt ICR practices. Also, the probability of adopting ICR increases with the presence of corporate governance/nominating committee, and with increase of the percentage of non-executive directors on the board, while it decreases in the presence of the dual role of CEOs. Finally, the increase of percentage of institutional ownership maximises the likelihood of ICR adoption.

Data of 69 adopters of ICR practices were used to explore the determinants of variations among companies' ICR practices, if any. Eight models of OLS regression was implemented 8 times, including one dependent variable (ICR practice) and 18 independent variables each time. The ICR practices are specifically: content (which include: accounting and financial, CG, and CSR indices), timeliness, presentation, usability and overall ICR indices. Findings revealed that company size is a positively significant predictor of all ICR practices. In addition to size, levels of financial, total content and overall ICR enhance with increase of board independence and the presence of a corporate governance/nominating committee, and with a decrease of leverage, family and institutional ownership. Except the effect of family and institutional ownership, the same can

be applied for levels of CG disclosure. Three variables were found uniquely have a positive significant contribution with the levels of CSR disclosure, namely the size, foreign ownership and audit committee. The probability of disclosing more timely information increases with increase of size and board independence, while it decreases with the decrease of leverage, institutional ownership and the presence of role duality. Companies are more likely to have better presentation techniques on their websites with larger size and less institutional and family ownership. Finally, in addition to large size, affiliation to the banking sector may have an influence on the degree of usability of corporate websites.

To sensibly explain these findings, multiple theoretical approaches were involved in the discussion, incorporating disclosure and innovation diffusion theory. The multi theoretical explanations are useful in bringing more evidence to support the results, compromising the weaknesses of each other. Also, it is vital when obtaining some contradictory findings. However, the explanatory capability of the theories varies widely depending on which a variable to be elucidated. While only agency theory, with its main prediction of reducing information asymmetry, was employed to explain the relationship between corporate governance (board and ownership structure) and different practices of ICR, many theories, on the other hand, were combined in order to justify the findings regarding such relationship between with firm's characteristics. For example, while the size is very important factor determinant of variations among companies in all aspects of quantity and quality of ICR, predictions of six theories were utilised to explain such associations, namely agency, signalling, legitimacy, political cost, information cost and diffusion of innovation. In addition, Firms listed on the first market tend to disclose more information online for more needs for capital, decrease the political costs and signal the financial market. Furthermore, while capital need failed to justify the negative relationship between leverage and levels of online disclosure, signalling theory was able to compromise. In contrast, while signalling theory has no logic to explain the findings of effects of ROA and audit type on ICR patterns in Jordan, political cost theory has such logic to do so. Finally, banking sector reached advanced stages regarding ICR initiatives, possibly, due to either its ability to cope with costs, reducing political costs, mimic isomorphism or avoiding bad signals.

# **Chapter 8: Perceived Determinants of ICR Adoption: Questionnaire Analysis and Discussion**

## **8.1 Introduction**

In Chapter 7, secondary analyses revealed some determinants of propensity towards ICR use, based on a number of company specific characteristics. However, secondary data analysis is described as a static analysis and not much can be understood about a phenomenon in question. In addition, theoretical frameworks, which are interested in explaining how innovations get adopted and diffused, focus on behavioural aspects, which cannot be easily captured using corporate historical characteristics. For instance, institutional theory predicts that the adoption of innovations is a result of pressures of one of three external change sources: coercive, mimetic and normative isomorphism. Diffusion of innovations theory suggests that perceived attributes of innovations are the main drivers of their adoption. The Technology-Organisation-Environment model sees that the interaction of these three dimensions may explain innovations adoption.

Therefore, it is essential to identify underlying perspectives and beliefs of people responsible for undertaking the change process in the company or/and who are knowledgeable about the company's circumstances. This is in order to specify the impact of perceived factors of change on the adoption decisions, for example, management awareness and support, external and internal technology readiness, and environment preparedness etc.

This chapter analyses and discusses the data that have been collected using the research questionnaire, which was employed to explore perceived factors that might affect the adoption of website corporate reporting. While secondary data analysis represents only the organisational dimension of the theoretical framework of the study, the questionnaire covers the other three dimensions, namely technology, management and environment. Both the chief executive officers (CEOs) and chief financial officers (CFOs) of companies listed in ASE were involved in the study, in order to identify their perceptions regarding these aspects. The selection of these two groups of respondents is based on their

fundamental role regarding disclosure and reporting decisions in the company (Al-Hayale, 2010).

This chapter is divided into three parts. The first part (8.2) briefly describes the respondents' profiles, generally and in each industry sector. The second part (8.3) reports the results of the discriminant analysis to clarify the factors that might contribute significantly to the companies' decision to adopt or not adopt the ICR practices. Finally, part 8.4 discusses the findings of the analysis.

## 8.2 A description of the questionnaire's respondents

Table 8.1 below exhibits the two main groups that responded to the research questionnaire, which are chief executive officers (CEOs) and chief financial officers (CFOs) of listed companies on ASE. Table 8.1 highlights that the final sample that participated in completing the questionnaire was 174 respondents. 36.8% (64 respondents) of the sample were CEOs versus 63.2% (110 respondents) for CFOs. The nature of the job, ranking and country's culture make it often more difficult to approach and obtain the responses from CEOs in emerging countries, e.g. Jordan.

Table 8.1 also shows that the percentage of adopters' responses [(44.8%) 78 responses] are considerably less than non-adopters' responses [(55.12 %) 96 responses]. This can be reasonably justified; because the number of non-adopters exceeds adopter companies in Jordan (see Chapter 5).

Table 8.1: general description of the questionnaire's respondents						
Adopt-status Position	ICR's Adopters		ICR's Non-adopters		Total	
	#	%	#	%	#	%
CEOs	29	16.7%	35	20.1%	64	36.8%
CFOs	49	28.1%	61	35.1%	110	63.2%
Total	78	44.8%	96	55.12%	174	100%

Notes: 1. Adopt-status stands for the real ICR practice of the respondents' companies, adoption or not adoption; 2. # means number of respondents in the sample; 3. % refers to the percentage of the sub-sample of total sample; 4. Position indicates an occupation that is held by the respondent, CEO or CFO.

Table 8.2 classifies the study respondents according to their specific sector. Approximately around half (48.9%) of respondents came from the service sector, and this is not surprising because more than 50% of listed companies in Jordan belong to the service sector (see Chapter 4). The rest of the respondents are distributed among the remaining industry sectors as follows: (24.7%) industry, (18.4%) insurance, and (8%) banking. Each sector also attains a percentage that is relatively appropriate to its proportion in the whole population.

Table 8.2: a description of the questionnaire's respondents according to sectors						
sector	ICR's Adopters		ICR's Non-adopters			
	CEOs	CFOs	CEOs	CFOs	total	%
banking	3	11	-	-	14	8%
Insurance	5	10	8	9	32	18.4%
service	14	19	19	33	85	48.9%
industry	7	9	8	19	43	24.7%
total	29	49	35	61	174	100%

### **8.3 Hypotheses testing**

In order to test the hypotheses regarding the perceived factors that might contribute to the adoption or non-adoption of ICR, the study selected discriminant analysis (DA) to differentiate between the perceptions of managers of the previously determined factors that might serve as motivators or obstacles of implementation of ICR.

#### **8.3.1 Discriminant analysis**

Discriminant analysis is considered a proper statistical technique to distinguish among two or more groups using multiple predicting factors, and based on averaging scores of their arithmetic means (Hair et al. 2010; Field, 2013). Also, discriminant analysis can be utilised when getting the non-metric dependent (categorical) and metric independent variables (continuous), in contrast to the OLS regression technique, which requires the presence of a continuous dependent variable to be implemented (Hair et al. 2010; Field, 2013).

In this study, discriminant analysis was performed using SPSS, to ensure that the predicting factors were able to distinguish between the adopters and non-adopters of ICR. Eight predicting factors were generated from factor analysis (Chapter 5): Awareness, Commitment, Cost-Benefit Balance, Internal Technology Readiness, External Technology Readiness, Users' Attention, Government Regulation, and Government Support. These factors have five-point Likert-scales ranging from 1 (strongly disagree) to 5 (strongly agree). On the other hand, the dependent variable is a dichotomous variable that takes two values; 0 if the company is a non-adopter of ICR and the value 1 if the company is an adopter of ICR. These two groups are defined as follows:

*Non-adopters of ICR:* those companies that have active websites, but do not engage in any type of corporate disclosure over that website. Investor relations section or any interchangeable names such as financials or reports etc. were considered.

*Adopters of ICR*: those companies that undertake any type of corporate disclosure via their websites.

### **8.3.1.1 Assumptions of discriminant analysis**

Similar to other multivariate analyses, to ensure that the results of the DA are at the same degree of power and robustness, three statistical assumptions were evaluated, which are (Hair et al, 2010):

1. Equality of sub-groups dispersion metrics;
2. Independent variables should be normally distributed;
3. Low multicollinearity among independent variables.

All these metrics will be tested before applying the discriminant analysis in the next section.

#### **8.3.1.1.1 Equality of dispersion**

This test refers to the level of dispersion of the data among the dependent variable sub-groups. In DA, the main assumption is that the dispersion (variance-co-covariance) matrices should be equal. Box's M is the most popular test to inspect the null hypothesis that there are no differences in covariance measures of the groups that emerged from the dependent variable (Hair et al., 2010). In this test, the researcher strives to retain the null hypothesis and reject the alternative; in order to confirm that the covariance matrices do not diverge between groups. Therefore, to accept the null hypothesis; the results should not to be significant (sig. > .05).

Briefly, while the Box's M has been tested to check out the equality of samples dispersions, a non-significant M is targeted to show a lack of significant differences. In the current data set, the Box's M was 76.51 and  $F = 2.615$ , accompanied by an insignificant probability (sig. = 0.09). Whilst the Box's M shows insignificant results (sig. > 0.05), this indicates that the null hypothesis of equality

of groups covariance is accepted, and hence the equality of dispersion condition is fulfilled.

#### **8.3.1.1.2 Multivariate normality**

To test whether the predicting factors generated from the factor analysis are normally distributed or not, kurtosis and skewness statistics were considered. The values between -2 and +2 of both statistics are employed to underline that a specific factor belongs to the normal distribution (Field, 2010). All eight independent factors were treated using SPSS for each sub-sample separately (adopters and non-adopters of ICR). Untabulated results indicate that all values of kurtosis and skewness are within an acceptable range for all factors related to adopters and non-adopters of ICR groups. This indicates that the assumption of normality of distribution is satisfied for all independent factors, and for each sub-sample of the study.

#### **8.3.1.1.3 Multicollinearity of the independent variables**

Finally, the last assumption to be fulfilled before running the discriminant analysis is multicollinearity. It refers to the strength of interrelationships (correlations) among independent factors. Having high levels of multicollinearity among two or more independent factors, the discriminant function is usually not able to reliably classify cases into the right group membership (Hair et al., 2010).

In order to detect multicollinearity among the independent factors the linear regression was conducted. To determine whether any two independent factors are multicollinear or not, the value inflation factor (VIF) and the tolerance values yielded from the regression were analysed. To claim the lack of multicollinearity between two particular factors, the value 4 of VIF as a cut-off point should not be exceeded.

Un-tabulated results show that the data does not suffer from a multicollinearity problem, where all VIFs of the factors were less than the stated cut-off value. As stated previously, using factor analysis mitigates the effect of multicollinearity among independent factors. Generally, these results suggest that the

multicollinearity does not form an obstacle to implement the discriminant analysis for the dataset of this study.

### 8.3.1.2 Results of discriminant analysis

Table 8.3 below exhibits groups' statistics, which were generated from the ANOVA test to identify whether significant differences between means of the groups relating to each independent factor exist or not. If the differences between groups' means are not significant with any of the predictors, proceeding further with DA is not worthwhile (Hair et al., 2010). The mean scores of five out of eight factors were found significantly different between adopters and non-adopters of ICR; which are: Commitment, Cost-Benefit Balance, Internal Technology Readiness, External Technology Readiness, and Users' Attention. This indicates that all or at least some of these five factors will serve as a best discriminator between those two groups.

Table 8.3: Test of Equality of Group Means							
<i>Status of ICR Adoption</i>	ICR's Adopter		Non-ICR's Adopters				
<i>Factors</i>	Mean	Std	Mean	Std	Wilks' $\lambda$	F	Sig.
Awareness	4.2484	0.71487	4.1362	0.84785	0.987	0.710	0.919
Commitment	3.5641	0.57749	2.3534	0.80531	0.581	124.288	0.000
Cost-Benefit Balance	3.7051	0.47743	2.3195	0.88244	0.526	155.273	0.000
Internal Tech. Readiness	3.5288	0.7355	3.1745	1.03579	0.764	16.474	0.012
External Tech. Readiness	4.4396	0.47692	4.1538	0.42015	0.811	5.587	0.049
Users' Attention	3.8872	0.43196	3.4875	0.59032	0.674	24.907	0.000
Government Regulation	3.5641	0.71936	3.4896	0.60977	0.997	0.547	0.461
Government Support	1.9574	0.72536	1.8854	0.69388	0.991	0.612	0.911

Notes: the acceptable level of significance for differences between groups means is sig.<0.05

The discriminant function demonstrates the overall power of the model fit in explaining the variation between adopters and non-adopters of ICR using the study predictors. As outlined in Table 8.4, only one discriminant function was produced, indicating a significant (Sig. < 0.000) relationship between all predicting

factors and these groups, which explained 68.8% of variances between adopters and non-adopters of ICR.<sup>24,25</sup>

Table 8.4: the discriminant function				
<i>Eigenvalues</i>				
Function	Eigenvalue	% of Variance	Cumulative %	Canonical Correlation
1	2.205	100	100	0.829
<i>Wilks' Lambda</i>				
Test of Function(s)	Wilks' Lambda	Chi-square	df	Sig.
1	0.312	195.67	8	0.000

Notes: 1. canonical discriminant functions were used in the analysis; *Eigenvalues* section gives information on the produced discriminant functions from the analysis. The number of generated discriminant functions is the number of categories in the study minus one. The study was applied on only two categories, namely adopters and non-adopters, therefore only one function is produced; 2. The percentage of total variance explained between groups is calculated using the square root of the canonical correlation value  $(0.829)^2$ , which represents the multiple correlation between the discriminant function and the independent factors; 3. *Wilks' lambda* section demonstrates the degree of significance of the yield discriminant function appear in the upper section. In case of this study, it shows a greatly significant function (sig. <0 .000). Wilks' lambda also indicates the proportion of not explained variability between groups. Moreover, It represents the opposite side of the squared canonical correlation. Hence, in this case, 31.1% of total variance is unexplained.

A further analysis of the structure matrix is produced from the analysis, in order to identify the relative importance of each discriminating factor in explaining the variability between the grouping factors. Scholars strongly recommend using discriminant loadings produced by the structure matrix in reporting the results of discriminant analysis instead of using other techniques such as standardised discriminant weights, because it is easier and more accurate in results interpretation (Hair et al., 2010). Discriminant loadings represent the Pearson correlation of each predictor with Z score of the discriminant function, and thus reflecting the level of variances' sharing between that predictor and this function (Hair et al., 2010). Similarly, they are analogous to factor loadings produced in

<sup>24</sup> The number of discriminant function is calculated based on the total number of groups minus one. In this study there are only two groups. Consequently, it is normal to get one function produced.

<sup>25</sup> The percentage of total variance explained between groups is calculated using the square root of the canonical correlation value  $(0.829)^2$ , which represents the multiple correlations between the discriminant function and the independent factors.

factor analysis. By recognising the margin contribution of each factor in the discriminant function, the researcher is capable of identifying the relative magnitude of a specific factor in a discrimination process.

Like any correlation test, ranges between -1 and 1 are the limits of discriminant loadings. Hair et al. (2010) and Field (2013) recommend using  $\pm 0.4$  as a cut-off value to gain a substantial interpretation of the discriminant analysis. Information summarised in Table 8.5 illustrates that all factors loaded positively; but only 4 factors exceeded the positive edge of the stated criterion, namely Cost-Benefit Balance 0.640; Commitment 0.572; Users' Attention 0.456; Internal Technology Readiness 0.401. Surprisingly, all these factors are related to the internal company conditions except Users' Attention. This result indicates that only these four factors contribute significantly in ICR adoption in the Jordanian context. This supports hypotheses H17, H18, H19, and H21.

Table 8.5: Structure Matrix	
factor	Loadings
Cost-Benefit Balance	0.640
Commitment	0.572
Users' Attention	0.456
Internal Tech. Readiness	0.401
External Tech. Readiness	0.165
Government Regulation	0.115
Government Support	0.038
Awareness	0.016
Notes: the significant factors in discriminant function are whose loadings equal 0.4 or above	

Finally, here is a classification phase of the study sample based on the generated discriminant function. The rows in the classification Table (8.6) below represent the observed groups, and the columns reflect the predicted groups. The cross-validated classification is displayed because it usually yields more reliable and accurate results than the original classification (Hair et al., 2010). The correct percentage of classifications is the diagonal percentage of the cases.

Overall, the results from Table 8.6 show that 92% of companies in the sample were correctly classified into adopters or non-adopters of ICR groups. The non-adopters group were classified more precisely than the adopters group, with level of accuracy reaching 94.8% and 88.5% respectively. The overall ratio of predictive classification power of the discriminant function is also referred to as the 'hit ratio'. To determine the level of the predictive accuracy of the hit ratio, chance-based measures should be employed (Hair et al., 2010).<sup>26</sup>

Table 8.6: Results of Cross-validated Cases' Classification				
Cross-validated classification	Status of ICR Adoption	Predicted Group Membership		Total
		non-ICR's adopter	ICR's adopter	
Count	non-ICR's adopter	91	5	96
	ICR's adopter	9	69	78
Percentage	non-ICR's adopter	94.8%	5.2%	100%
	ICR's adopter	11.5%	88.5%	100%

Notice: 92.0% of Cross- validated grouped cases correctly classified.

To accept the classification resulting from analysis, the hit ratio should exceed either of the chance criteria (the proportional and maximum) or both of them by at least 25% or more. The hit ratio actually exceeded both of them by around 42% and 37% respectively. Hence, the predictive accuracy of the classification function is considered substantial.

<sup>26</sup> The maximum and proportional chance criteria are computed as follows (Hair et al., 2010):

1) The maximum chance criterion =  $\frac{\text{largest group in the study sample}}{\text{total sample of the study}}$

So, in this study the  $C_{MAX} = \frac{\text{non-adopters of ICR (96 observations)}}{\text{total sample (174 observations)}} = 0.551$ ;

2) The proportional chance criterion =  $P^2 + (1-P)^2$

Where

P = the proportion of firms in smallest group

1-P = the proportion of firms in largest group

Therefore, in this study  $C_{PRO} = 0.43.9^2 + (1-0.551)^2 = 0.50$

## **8.4 Discussion**

The questionnaire of the study was designed to identify the perceived factors that might contribute significantly to the adoption of ICR in Jordan. These factors drew upon integration of innovation theories, disclosure theories and the review of previous literature. The factors belong to three main dimensions: management, technology and environment. Eight predicting factors were generated from factor analysis (Chapter 5): Awareness, Commitment, Cost-Benefit Balance, Internal Technology Readiness, External Technology Readiness, Users' Attention, Government Regulation, and Government Support. These factors have five-point Likert scales ranging from 1 (strongly disagree) to 5 (strongly agree).

To test the hypotheses of this part of the study, discriminant analysis was performed, ensuring that the predicting factors were able to distinguish between the adopters and non-adopters of ICR. The findings suggest that only four factors significantly contribute to the ICR adoption, which were ranked according to their importance as follows; Cost-Benefit Balance; Commitment, Users' Attention and Internal Technology Readiness. This part provides discussion of the questionnaire analysis results.

### **8.4.1 Management domain**

#### **8.4.1.1 Awareness**

Awareness can be referred to as the management perception of the organisation's total knowledge about elements of website reporting in the environment, including partners, competitors and government agencies. This implies acknowledging different aspects relating to website reporting, particularly requirements, technologies, forms, costs and benefits. In fact, Rogers (1995) considers the knowledge about any innovation as a preliminary step in the process of making a decision to adopt or reject that innovation. He also highlights that in the knowledge stage, an organisation gets informed about the presence of the innovation and look for information about it. Thus, it is apparent that awareness about patterns of ICR in the environment represents a crucial factor to get diffused and adopted. To put it differently, companies will not be able to

undertake website disclosure practices unless they have sufficient information about it.

Researchers like Joshi and Al-Modhahki (2003) and Al-Htaybat (2011) tried to address the effect of how well companies are aware and understand elements of ICR, on the practices of internet reporting in developing countries. They involved timing issues, “*online age*”, as a proxy of levels of companies’ understanding and familiarity with ICR, fully knowing its potential to improve corporate disclosure. Additionally, Al-Htaybat (2011) hypothesised that older companies on the website are more likely to be more knowledgeable about the advantages and applications of ICR. This is presumably due to the development, over time, of well-established infrastructures as well as expert human capital of various websites technologies (Al-Htaybat, 2011).

Surprisingly, the findings of discriminant analysis ranked the awareness factor at the bottom of the list, accompanying a very small, barely apparent, contribution to the discriminant function. This indicates that this factor plays a minimal role in adoption status of ICR in Jordan. In fact, results of the study also reveal that both adopters and non-adopters of ICR in Jordan have high levels of Knowledge about ICR, as indicated by their mean scores.

However, Institutional theory predicates that government’s mandates constitute a coercive source of change. Thus, the results might be plausibly explained based on governmental initiatives toward ICR. These initiatives can be represented by efforts of the Jordan Securities Commission (JSC) in guideline listed companies to enhance their levels of transparency and disclosure through engaging in business reporting on the website. The guidelines have been issued as directorial rules of disclosure for listed companies in the country, and from a review of firms’ annual reports, it was found that companies in Jordan that undertake ICR mostly mention that in their annual reports. Considering the small size of the Jordanian capital market, this may assist in enhancing the awareness and knowledge about ICR practices in the business environment irrespective of whether companies will adopt it or not. This might provide a proper justification for why awareness does not contribute in distinguishing between adopters and non-adopters of ICR in Jordan.

#### **8.4.1.2 Commitment**

Commitment stands for the top management vision and support that is given to internet financial reporting initiatives. It also refers to the strategy adopted by the company leadership to deal with new technological changes, in order to improve disclosure approaches.

Building upon propositions of DOI theory (Rogers, 2003), it is expected that an organisation will adopt the internet as an extra channel for disseminating corporate information, if it is seen as compatible to its current needs, existing values and experiences. Thus, companies in Jordan are more likely to adopt ICR practices, if they feel there is a demand from information users for online disclosure, and also if it agrees with their committed values such as their disclosure policy and culture.

Disclosure choices as well as adoption of new technology are highly driven by the interests of the top management of the company (Tarafdar and Vaidya, 2007). Internet reporting brings these two attributes together, where it represents one form of voluntary disclosure on the one hand, and it is considered as imperative for diffusion of new technology on the other. Thus, lack of success in getting the necessary support from the management of the company towards new reporting techniques may cause a failure in adopting corporate disclosure over internet technology. Molla and Licker (2005) and Troshani and Doolin (2005) suggest that the awareness and commitment of the top management represent fundamental issues in adopting new technologies. This suggestion may be applicable in the context of ICR.

Moreover, the manager is the core of the change process in the company. The manager's attitude and perception towards new innovations, such as ICR, is very important to success in the adoption and implementation of these innovations, especially in developing countries, where businesses mostly have highly centralised organisational structures (Vreede et al., 1999; Tan, 2011). Management commitment towards an innovation secures the allocation of needed funds to succeed in the adoption process (Tarafdar and Vaidya, 2007; Qasim,

2010). Thus, managerial champions represent a crucial issue, promoting the adoption of new technologies (Neufeld et al., 2007).

The findings of this study indicate that levels of top management support in adapting with new technological changes concerning disclosure practices on the internet play a crucial role, pushing toward adopting ICR. This factor was ranked as the second best predictor contributing significantly to discriminate between adopters and non-adopters of ICR in Jordan. This finding is in line with results of Aly (2008) in Egypt, Al-Hayale (2010) and AbuGhazaleh et al. (2012b) in Jordan.

They argue that such a result can be attributed to the culture in Arab countries, which is highly characterised, according to Hofstede (1980; 1991), by uncertainty avoidance and power distance. Uncertainty avoidance relates to procedures and rules that are deliberate to reduce risks and uncertainties as well as intolerance with abnormal initiatives and ideas. Power distance refers to the centralisation in the decision making in the organisation. Both characteristics fundamentally contribute in reducing the propensity towards adopting disclosure practices via the means of the internet (Al-Hayale, 2010).

Aly (2008) emphasises that the decision to engage in ICR practices should be made by the top managerial apex in company (the chairman). She further explains why non-adoption of ICR in Egypt is based on the idea that the organisational structure of companies is mostly tall (a centralised structure), which is opposite to the flexibility of accepting new technological changes. In addition, AbuGhazaleh et al. (2012b) also asserted that the centralisation represents an obstacle for ICR in the Jordanian context. They (AbuGhazaleh et al., 2012b: 5) further highlighted:

*“Although these insights provide evidence of high centralization in these companies, it has been noticed that they possess innovative characteristics when compared with other companies. However, the diffusion of innovation theory proposes the opposite. It is expected, according to the diffusion of innovation theory, that high levels of centralization will result in a low level of innovativeness..... Nevertheless, and no matter how open minded and innovative a company's top management is, the decision to adopt, renew, or*

*update websites mainly depend on whether or not these issues are consistent with the top management's beliefs.”*

#### **8.4.1.3 Cost-Benefit Balance**

The cost-benefit balance reflects management's assessment of the perceived advantages and benefits of internet reporting relative to its potential costs, especially in the presence of printed and third party disclosure services.

In fact, both voluntary disclosure practices and implementing new technologies are subject to balance between the perceived costs and relative benefits and advantages by the top management of the company (Gray et al., 1990; Oliver et al., 2005; Henchiri, 2011). Voluntary disclosure provides additional information disseminated by the company which can serve in bridging the gaps in mandatory disclosure (Omar and Simon, 2011). Nonetheless, information costs theory predicts that the manager's decision, whether to disclose extra information or not, is under the cost and benefit analysis, where the expected benefits of such disclosure must prevail over its cost (Levinsohn, 2001; Ferguson et al., 2002; Henchiri, 2011). In terms of technology, according to innovation of diffusion theory, if the perceived benefits of new technology, such as enhancing the competitive advantages and reducing compliance costs, outweigh its perceived costs, then it is more likely to be adopted (Rogers, 2003; Oliver et al., 2005; Cordery et al., 2011).

In spite of the existence of several advantages of ICR, like accessibility, interactivity and capacity etc, it, however, incurs some additional costs, such as updating and maintenance costs, security programs, licence rights, periodical repair, designing and programming fees, and total staff costs in respect of upgrading, maintaining and monitoring the company's website (Adams and Frost, 2004; Jones and Xiao 2004; Marston and Polei, 2004). In this respect, Al-Hayale (2010: 179) highlights that:

*“Although there may be cost savings, online reporting may cause additional costs resulting from producing both an internet and a paper version of the financial*

*report, the need to provide additional assurance on internet-based data, and additional litigation costs induced by the increased but unaudited disclosure.”*

Moreover, Mohamed et al. (2009) argue that the online reporting creates unnecessary additional costs upon the companies in developing countries, where the online reporting represents a voluntary form of corporate disclosure; additionally it does not officially substitute the mandatory hard copy annual reports. Oyelere and Kuruppu (2012) also argue that perception about cost may be among other issues that limit the wide diffusion of online financial disclosure in the Middle East. They (Oyelere and Kuruppu, 2012: 311) also specifically stated that *“apart from initial set-up costs, which are relatively minor, the ongoing long-term costs of operating and maintaining corporate web sites for IFR purposes are minimal.*

The findings of discriminant analysis locate this factor at the top of the pyramid, indicating high contribution to the discriminating power of the function. Thus, this factor appears as the best predictor that drives companies' decisions whether to adopt ICR or not. Companies in Jordan tend to undertake ICR practices if they are convinced that its advantages outweigh its perceived costs. Otherwise, non-adopters of ICR generally view that ICR may generate additional costs do not qualify the yield benefits. This result is consistent with the findings of Al-Hayale (2010) and AbuGhazaleh et al. (2012b), who concluded that one of the reasons behind not adopting online reporting in Jordan, apart from initial and on-going costs, is the lack of acceptance of its importance to their companies. Al-Hayale (2010) further added that there has been a common perception among companies in Jordan that ICR needs complicated technologies, costing money and time, which perhaps do not justify its use.

AbuGhazaleh et al. (2012b) argue that companies in Jordan are most likely to avoid incurring additional costs by engaging in ICR due to the presence of financial disclosure through websites of ASE, SDC and JSC. They (AbuGhazaleh et al., 2012b: 1) specifically concluded that:

*“There is no demand for investor relations information on corporate websites because the Jordanian Securities Commission publishes all listed companies' annual reports on its own website.”*

## **8.4.2 Technology Domain**

### **8.4.2.1 Internal Technology Readiness**

This represents the management assessment of the extent to which technology pillars inside the organisation, physical-technology infrastructure and human resources are ready for engaging in ICR.

Corporate disclosure via the company website is different from traditional hard copy reporting, where the technology represents the focal point of the company attitude towards internet reporting adoption and utilisation. Companies and even countries differ in their technological readiness to host the new technologies in terms of infrastructure, expert human capital, supported industries and regulations (Molla and Licker, 2005; Doolin and Torshani, 2007; Tan et al., 2007). In this respect, Molla and Licker (2005) and Tan (2011) state that the challenges that face companies in developing countries are different from the challenges in developed countries. They also demonstrate that businesses in developing countries suffer from the lack of availability of expert human capital, well-established, low cost and affordable (ICT) infrastructure in contrast to businesses in developed countries, where such qualities are relatively available. Furthermore, Molla and Licker (2005) highlight that the size of companies in emerging countries is mostly small. This means, these companies have less complex structures, which thus facilitates the adopting and implementing of new IT systems. But on the other hand it means the lack of sufficient resources (financial and human) to do so. To put it differently, the complexity of the firm structure may reflect the level of availability of qualified personnel who possess the expertise and knowledge that enable them to adapt to new changes brought by implemented technologies (Doolin and Troshani, 2007).

DOI theory also suggests that it is highly probable that an organisation will adopt the internet as an extra channel for disseminating corporate information, if it is seen as compatible with its current needs, existing values and experiences. Thus, companies in Jordan are more likely to adopt ICR practices, if they possess sufficient human and technological competences to engage in such disclosure systems. In this respect, many researchers (such as Lodhia, 2004; Aly, 2008; Al

Arussi et al., 2009; and AbuGhazaleh et al., 2012) argue that the availability of an IT department encourages companies to adopt ICR. Al Arussi et al., (2009: 64) further highlight that:

*“The department of technology will help the firms in preparing the information that is going to be displayed on the web site. Besides, the experience in using the internet as a modern technology media for disclosure, the department of technology will also reduce the cost of using the internet such as maintaining, updating, and monitoring a firms’ web site. This will encourage firms to disclosure more information.”*

Other researchers (like Debreceeny et al., 2002; Xiao et al., 2004; Bollon et al., 2006; Al Arussi et al., 2009) tried measuring the impact of the level of inside-firm technology development on the adoption and practices of online disclosure. They have used firms belonging to the one of predetermined IT sectors as a proxy of the firm’s level of technology. Nonetheless, Debreceeny et al. (2002) and Xiao et al. (2004) found a significant positive relationship between the IT industry sector and certain ICR practices.

The internal technology readiness of the firm came as a significant determinant of adopting ICR in Jordan. Nevertheless, regarding its level of importance, it appears the least significant factor, barely exceeding the cut-off point of the test. Jordan has achieved a superior position in technology development. Therefore, companies most probably face fewer problems regarding expertise and technology. However, the result indicates that internal competences of the company, relating to technological preparedness as well as trained labour force, largely contribute to the adoption status of ICR of firms listed on ASE. This finding is supported by the results of Aly (2008) in Egypt, Al-Hayale (2010) and AbuGhazaleh et al. (2012) in Jordan.

#### 8.4.2.2 External Technology Readiness

This factor refers to the management's perception to the extent to which the technological development in the surrounding environment assists in supporting the adoption of ICR. It comprises all the elements necessary to adopt ICR, pertaining to the technology at national level, particularly ICT infrastructure, supported industries and information users' readiness.

The technological preparedness varies among countries and thus their capabilities to host the new technologies will be different as well (Molla and Licker, 2005; Doolin and Torshani, 2007; Tan et al., 2007). Technical abilities like infrastructure and supported industries, in addition to educated information users, may constitute substantial powers encouraging/discouraging the adoption of ICR. Xiao et al. (1997) Debreceny et al. (2002) and Ojah and Mokoaleli-Mokoteli (2012) argue that the level of financial reporting use on the internet is more likely to increase with the increase of internet penetration and IT availability and use in the country. (Debreceny et al., 2002: 376) further explain:

*"..... Where general Internet usage is more prevalent in a country, users will expect more company information to be placed on the Internet. Similarly, firms will likely have higher IFR if they believe that there is a large Internet audience amongst their domestic stakeholders."*

Likewise, a lack of availability and affordability of technical vendors of website technologies is more likely to impede the maintaining of the corporate website and therefore adopting ICR. Also, according to DIO theory the presence of vendors of website technologies aids in reducing the uncertainty surrounding emergent technological innovations. Overall, the level of technology development in the country might assist in mitigating the complexity of new technologies such as ICR and make it easier to be observed and tried.

Despite the fact that technology circumstances at national level are presumably similar for all companies, nonetheless, the assessment of their status may differ from manager to manager. Therefore, if a manager perceives that there is a national preparedness of infrastructure, including internet connectivity and

suppliers of technology, as well as readiness of information users, it is more likely to encourage them to undertake disclosure practices over online media, and vice versa.

Debreceeny et al. (2002) and Ojah and Mokoaleli-Mokoteli (2012) found that, through cross-country comparisons, the technology infrastructure of a country significantly fosters firms' adoption of financial reporting on the internet. In addition, AbuGhazaleh et al. (2012b) highlighted that one of the factors that hinders the adoption website for investor relations practices in Jordan is slow broad band connection, which therefore inhibit utilising some applications.

However, the current study found that managers give a negligible importance to the national technological readiness in their decision to pursue ICR entrepreneurships. It can implicitly be concluded that adopters and non-adopters of ICR equally view Jordan as a highly technological prepared country in terms of infrastructure, vendors and people. This may be attributed to the high level of development and pervasiveness of internet and ICT underpinnings throughout the country (Al-Hayale, 2010). Government initiatives toward developing the ICT sector contribute widely to enhance its effectiveness to the degree that it makes it obvious and visible to all parties in the country. In addition, investors in securities in ASE are mostly institutional investors rather than individuals, who definitely have adequate capabilities to make them ready to deal properly with ICR.

### **8.4.3 Environment Domain**

#### **8.4.3.1 Users' Attention**

Users' Attention can be referred to as the management's perception of the extent of carefulness directed by corporate information users to the ICR, its role in improving the firm's image, and its importance in meeting the different needs of those users.

Organizations in the modern economy, according to the stakeholders' theory, are responsible for discharge of the accountability about their activities to all stakeholders in society (Guthrie et al., 2006; Elsayed, 2010). Nevertheless, the

responsibility of the firm in front of various players in society such as creditors, governmental bodies, employees, suppliers, and others, would constitute impetus power that motivates the managers to engage in different types of corporate disclosure practices, to deliver the accountability and gain legitimate status in society (An et al., 2011).

Furthermore, the institutional change theory suggests that pressures that are exerted upon the company from trading partners, who are in its supply chain such as customers, may influence the adoption of technology (Cordery et al., 2011). In the case of ICR, the players in the supply chain are somewhat different. The users of corporate information - like debt and equity holders - may constitute a pressing power on the company to engage in online reporting. Therefore, consistently with claims of institutional theory, companies are more likely to respond to requirements of capital providers as a coercive power of the change (Xiao et al., 2004).

Building upon this, if the strategic managerial apex in the company feel that undertaking corporate reporting practices will contribute to enhance the image and reputation of the company among corporate information users, it is more likely to adopt it (Al-Hayale, 2010). In other words, if the management believe that users of the firm's information will not give attention to ICR, then they will not bother themselves by engaging in such practices. In this context, Ashbaugh et al. (1999) and AbuGhazaleh et al. (2012b) concluded that improving communications with stakeholders constitutes one of the main motives for companies to undertake online disclosure. AbuGhazaleh et al. (2012b) also pointed out that Jordanian companies are more likely to achieve a web presence for investor relations, in order to enhance corporate image among stakeholders.

In line with these findings, the results of the current study indicated that management views of the extent of users' attention contributed to determining the adoption status of ICR in Jordan. This factor is ranked in the third position, regarding its contribution to differentiate between adopters and non-adopters of ICR in Jordan. Therefore, if the manager perceives that ICR practices will be looked for and in the eye of stakeholders, it is more likely to adopt it and vice versa.

#### **8.4.3.2 Government Regulations**

Government regulations represent management evaluation of the levels of effort spent by government in issuing regulations – like e-crimes prevention laws - that encourage the adoption of technological innovations such as ICR. The presence of such electronic crime laws may assist in protecting the security and integrity of the financial information published on the company's website.

Information disseminated over the company's website is subject to alterations and omissions either internally (e.g. in the case when the manager intentionally wants to omit some facts or/and drew attention to certain information and hide other), or externally through, for example, unauthorised access to the company website by an external person (Xiao and Jensen, 2001; Mohamed et al., 2009). Consequently, the completeness of the financial information might be affected, which hence reduce its integrity and reliability. In this respect, researchers like Jones and Xiao (2004) and Mohamed et al. (2009) argue that security exposure represents one of the most important challenges facing the integrity and reliability of the reported financial information via internet means.

The government is able to play a core role in ameliorating information security claims, and therefore promoting the adoption of technological innovations such as ICR. This can be through elaborating a proper regulatory climate in the country to embark on technologies. This topic indeed can be considered as an extension of the extent of the country's readiness to embrace technology.

Overall, the findings reveal that respondents are satisfied by the level of development of the legal environment in Jordan. This confirms the existence of an effective electronic law to protect the security of published information over the company's website. Nonetheless, this factor contributes minimally in explaining the adoption status of ICR in Jordan. This means that adopters and non-adopters of ICR perceive, approximately at the same level, the development of the legal and regulatory environment in Jordan.

The plausible explanation of this result may be attributed to efforts that have been spent by the government in Jordan, as stated previously in Chapter 1, for the

purpose of regulating, developing and planning the Jordanian ICT sector. These include establishing four ICT bodies in the period between 1994 and 2002, in addition to launching three national plans of action to develop ICT in the country, covering the period from 2000 to 2016.

#### **8.4.3.3 Government Support**

Government support involves the management assessment of the extent of support from the government and its institutions that promote ICR adoption, such as, the extent of encouragement by local controlling and financial bodies to engage in ICR.

The literature of diffusion of innovations has suggested the government support as one of the potential aspects that may highly influence the adoption and prevalence of technological innovation (Xiao et al., 2004; Molla and Licker, 2005; Doolin and Torshani, 2007; Cordery et al., 2011; Tan, 2011). Cordery et al. (2011) stress the role of government policies in making a “push” power towards adopting XBRL for business reporting.

Furthermore, Institutional theory predicates that one form of the institutional change happens due to the “Coercive isomorphism”. In this form of isomorphism, the change results from the pressures that are exercised upon an organisation by dominant parties in society such as the government. This may occur through imposing the change or persuasion. In this context, Xiao et al. (2004) argue that companies might engage in ICR initiatives as a response to the mandates of government regardless of whether it is beneficial to them or not. To apply this kind of isomorphism to the adoption of ICR among listed companies in Jordan, governmental agencies such as ASE and CBJ can mandate the applying of corporate disclosure on the website or at least put considerable efforts into spreading knowledge about it to be adopted voluntarily.

Moreover, DOI theory emphasises the role of “change agents” in adopting technological innovations; through enhancing the awareness about it. Indeed, the government can initiate and hold such a role. It is able, through its responsible agencies, encouraging the adoption of ICR. This is through improving the

knowledge, disclosure and transparency climate, promoting adopting such disclosure means. As possible “change agents”, controlling and governmental bodies in Jordan, such as ASE, can prepare the appropriate atmosphere for ICR through spreading the knowledge, providing incentives and support.

Although ASE guided companies to discretionary use their websites to enhance disclosure and transparency, Al-Hayale (2010) found that the lack of governmental support for ICR is among the important factors that hamper the adoption of ICR by industrial companies in Jordan. This result is in accordance with findings of the current study. Overall, the respondents assess the activities of government agencies toward encouraging the adoption of the ICR practices as minimal. Also, this factor came as the next to last factor, regarding its contributing power to distinguish between adopters and non-adopters of ICR in Jordan.

This result may be logically elucidated based on the fact that there are no regulations in Jordan that require companies to have a website. In the light of this, controlling agencies therefore will not be able to regulate or even put greater pressures on the listed companies to adopt ICR. In addition, Jordan Capital Market agencies, such as ASE, JSC and SDC, engage effectively in disseminating members' information on an online basis. This may hence constitute another reason why they do not encourage website reporting disclosure.

## 8.5 Conclusion

To capture the perceived factors -managerial, technological and environmental- that may contribute significantly to ICR adoption, a questionnaire survey was conducted among CEOs and CFOs of companies listed on ASE. Factors were proposed based on the review of disclosure and innovation of diffusion literature. After the refinement done to the theoretical framework of the study using factor analysis illustrated in Chapter 5, eight predictor factors were generated for further analysis, namely Awareness, Commitment, Cost-Benefit Balance, Internal Technology Readiness, External Technology Readiness, Users' Attention, Government Regulation, and Government Support. To test the hypotheses of this part, discriminant analysis was performed, ensuring that the predicting factors were able to distinguish between the adopters and non-adopters of ICR. The findings suggest that that internal company factors such as the trade-off between costs and benefits, level of management commitment and support, and readiness of technology inside the company are all major contributors towards ICR adoption. In addition, the management view of the importance of ICR for information users and their attention to it is also a crucial external factor that hinders or catalyses ICR adoption.

To rationally explain the findings of this part of study, two innovation diffusion theories (DOI and institutional change) and two disclosure theories (stakeholder and information cost theories) were incorporated. However, DIO was the main contributor to the explanations. DIO is interested in explaining tendency towards an innovation based on its perceived attributes, therefore, compatibility of the ICR with current needs, values and experiences is plausible to interpret the impact of level of commitment and internal technology readiness in encouraging the adoption of ICR. In contrast, the findings do not support assumptions of DIO regarding such impact of awareness and external technology readiness. In addition, management mostly prioritises making a balance between perceived cost and benefit to disclose extra information on the website in line with information cost theory and DIO (relative advantages). Likewise, management often evaluates the levels of attention drawn by stakeholders to decide whether to engage in online reporting to discharge accountability (stakeholder theory) or

respond to coercive pressures in the environment such as capital providers (institutional change theory). However, the role of government, regulation and support, as a coercive source of institutional change was not supported by the findings of the current study.

## **Chapter 9: Summary and Conclusion**

### **9.1 Introduction**

Since the early nineties, enhancing disclosure and transparency have received growing attention by controlling and regulatory agencies in Jordan. All this aims to improve stock market efficiency and attract foreign investors. Alongside this, Jordan has been increasingly utilising Information and Communication Technology (ICT) pillars until it has become one of the most important technology centres in the Middle East (Al-Hayale, 2010). The corporate website provides companies with an extra channel to interact effectively with targeted audiences through disseminating financial and non-financial information, at high speed, in large volume and more frequently. Lately, acknowledging its advantages, the Jordan Securities Commission (JSC) has encouraged listed companies in Jordan to voluntarily use their websites, promoting disclosure and transparency procedures. Nevertheless, in contrast to developed countries and similar to other developing countries, internet corporate reporting is still at its infancy stage in Jordan. For this reason, the study puts an emphasis on field research, investigating the factors that significantly contribute to the adoption and non-adoption of ICR. In addition, levels, forms and the determinants of varying degrees of disclosure practices over the corporate website have been addressed.

The holistic purpose of the current study is two-fold. Firstly, the research aims to develop a generic framework for adoption and practices of internet corporate reporting (ICR) in developing countries. This framework will integrate technological, managerial, organisational and environmental aspects that are the main determinants of disclosure practices as well as adopting any technological innovation such as ICR, especially in developing countries. Secondly, the research aims to test the applicability of this framework by undertaking an empirical study in a developing country, namely Jordan.

To break this down, the study aims specifically to achieve three objectives: (1) To explore levels of ICR that Jordanian companies listed on ASE have reached in general, and in terms of content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability; (2) To identify the determinants

that influence levels of ICR practices of the companies listed on ASE; (3) To examine the determinants and perceived factors that significantly contribute to the adoption of ICR, which distinguish the adopters from non-adopters of ICR in Jordan.

After the preface in Section 9.1, the rest of this chapter will be organised as follows: a general overview on the study is presented in Section 9.2; Section 9.3 briefly shows the research methodology; Section 9.4 provides a summary of the main findings generated by the study; Section 9.5 illustrates the contribution to knowledge; Section 9.6 clarifies the limitations faced by the research; and finally suggestions for future research are outlined in Section 9.7.

## **9.2 Overview on the research**

Many researchers and experts argue that technology represents the focal factor, which affects companies' decisions for adopting ICR (for example, Xiao et al., 1996; Xiao et al., 1997; Debreceeny et al., 2002; Cordery et al., 2011). In this context, Xiao et al. (1997) emphasise the existence of an interdependent relationship between information technology (IT) and changes in disclosure practices, in which IT is likely to serve as either a cause or a facilitator of ICR practices changes depending on the source of change. While the increase in IT use probably results in an increase of ICR changes on one hand, the changes in ICR practices may lead to an increase in the use of IT, on the other. Therefore, investigating the factors affecting the adoption of ICR should be grounded in the fact that internet reporting has emerged as a result of the advancements in technological innovations.

Nowadays, disseminating corporate information via companies' websites has become established and common practice in developed countries; while developing countries are still lagging behind (Al-Hayale, 2010; Oyelere and Kuruppu, 2012). Prior studies, that have been recently conducted in developing countries, have indicated low percentages of ICR adoption [(for example, 22% in Oman (Mohamed et al., 2009); 16% in Turkey (Bozcuk et al., 2011); 38% in Morocco and 28% in Tunisia (Henchiri, 2011); 38% in Jordan (AbuGhazaleh et al., 2012a; and 26% in Bahrain (Desoky and Mousa, 2013)]. However, levels of adoption of ICR vary based on time and sample size included in these studies.

A review of relevant ICR research, as indicated in Chapter 3, reveals that relevant prior studies have engaged in either describing the status of corporate online disclosure – such as Bozcuk et al. (2011) and Oyelere and Kuruppu (2012) - or explaining the fluctuations on the levels of internet disclosure among companies. Building mainly upon premises of economics-based theories (agency, signalling, capital need and legitimacy theories), the latter group has attempted to identify explanatory factors that interpret the variation in levels of website disclosure adoption and practices, for instance, company's characteristics such as the size, profitability, industry type etc. (Craven and Marston, 2003; Barako et al., 2008; Henchiri, 2011) and corporate governance such as board and ownership structure (Abdel-Salam et al., 2007; Elsayed, 2010). However, a few studies (Aly, 2008, Al-Hayale, 2010; AbuGhazaleh et al., 2012b) have attempted to capture an overlooked phenomenon by addressing behavioural factors, beyond merely the static company's characteristics, that might promote or hinder ICR adoption.

In this respect, Xiao et al. (2004) argue that the unique attributes of ICR, such as dynamicity, spread reach and information overload and others, should draw attention to different factors and determinants, other than those factors addressed to explain the disclosure practices over traditional paper based research. They (Xiao et al., 2004: 197) also further state that these attributes *“Suggest that adoption of this technological-based innovation may involve complex tradeoffs beyond the typical factors considered by agency and signalling theories”*. This emphasises the importance of addressing new factors to thoroughly explain the voluntary adoption of disclosure on internet technology for many reasons. Corporate disclosure via the company website is different from traditional hard copy reporting, where the technology represents the focal point of a company's attitude towards internet reporting adoption and practices. Companies and even countries differ in their technological readiness to host the new technologies in terms of infrastructure, human capital, supported industries and regulations (Molla and Licker, 2005; Doolin and Troshani, 2007; Tan et al., 2007).

Yet, few attempts have been undertaken to understand catalysts and obstacles of ICR adoption in developing countries. For instance, Aly (2008) and AbuGhazaleh et al., (2012b) have undertaken qualitative studies, identifying the factors that

might inhibit the adoption of ICR. However, these studies suffer from a lack of a solid theoretical framework, identifying the factors that might affect adoption of ICR. Thus, there was a great chance for overlooking some common pull and push factors that usually influence diffusion and adoption of innovations. In addition, as they conducted a qualitative research, this therefore limits the ability to generalise the findings as well as the quality of analyses used. Nonetheless, Al-Hayale (2010) conducted a quantitative study using a questionnaire survey, seeking the reasons for not adopting website reporting. However, the proposed factors were partially representative, less theory-guided and superficially analysed.

The literature on diffusion of technological innovations has largely proposed the potential factors that may influence the adoption and prevalence of technological innovation (Xiao et al., 2004; Cordery et al., 2011). Some of these aspects are technology readiness, organizational aspects, management championship, government support and cost benefits analysis (Molla and Licker, 2005; Doolin and Troshani, 2007; Cordery et al., 2011; Tan, 2011). Consequently, the current study has incorporated some aspects of frameworks of those studies with the PERM model (Molla and Licker, 2005) from the IS literature, in order to create a holistic view, obtaining a fuller picture about influences of ICR adoption. As it is a suitable method in achieving the study purposes, the study also distinguishes itself from other research in the ICR field by using a questionnaire method as a tool of data collection, which facilitates gathering a large amount of data from targeted participants. Therefore, in contrast to the interview method, it opens the way to utilise more sophisticated statistical techniques and obtain more generalizable findings.

It can be concluded that a number of issues exist that have a bearing on investigating the determinants of ICR adoption and practices. Firstly, contingent company factors play an important role when it comes to corporate reporting in general and Internet corporate reporting in particular. Included in these factors, are new technological developments that theoretically support the adoption of internet corporate reporting, but which nonetheless, are dependent upon the readiness of organisations and indeed countries generally, for online corporate reporting. Secondly, a generic quantitative study in ICR adoption is overdue,

because to the best of the researcher's knowledge, to date no publication has empirically addressed the factors affecting ICR adoption, including technological, managerial, organisational and environmental dimensions. Out of these dimensions, the impact of static organisation attributes, such as the firms' general and corporate governance characteristics, on different ICR practices will be explored. A brief overview on the way how the research has been conducted, research methodology, will be illustrated in the subsequent Section (9.3).

### **9.3 Research methodology**

In summary, identifying determinants of fluctuations of adoption and levels of ICR practices is the focal point of this study. The study is applied over listed companies in ASE, Jordan. The current theoretical framework is a result of the integration of various theoretical premises (e.g. agency, signalling, cost-benefit, stakeholders etc. and several innovation diffusion theories). Thus, the current study follows the positivism paradigm, employing deduction, which relies on testing out existing theories. Within the deductive approach, the hypotheses of the study shall be developed based on an established theoretical framework that indicates the causality of the relationships between factors and dependant variables. This opens the way to employ the quantitative methods in data collection and analysis. Three types of survey instruments were used, namely secondary data, disclosure index and questionnaire. Samples frames and sizes were determined in accordance with population characteristics in each conducted research task.

Once the quantifiable and measurable data have been collected from primary and secondary sources, quantitative statistical analyses were implemented (OLS and logistic regression, and discriminant analysis). This was to empirically examine the relationships between independent variables (that belong organisational, managerial, technological and environmental dimensions) and dependent variables (ICR adoption and practices). As a result, hypotheses were tested, research questions answered, and the findings were plausibly explained in the light of the available literature. The entire process of research methodology is depicted in Figure 4.3 below.

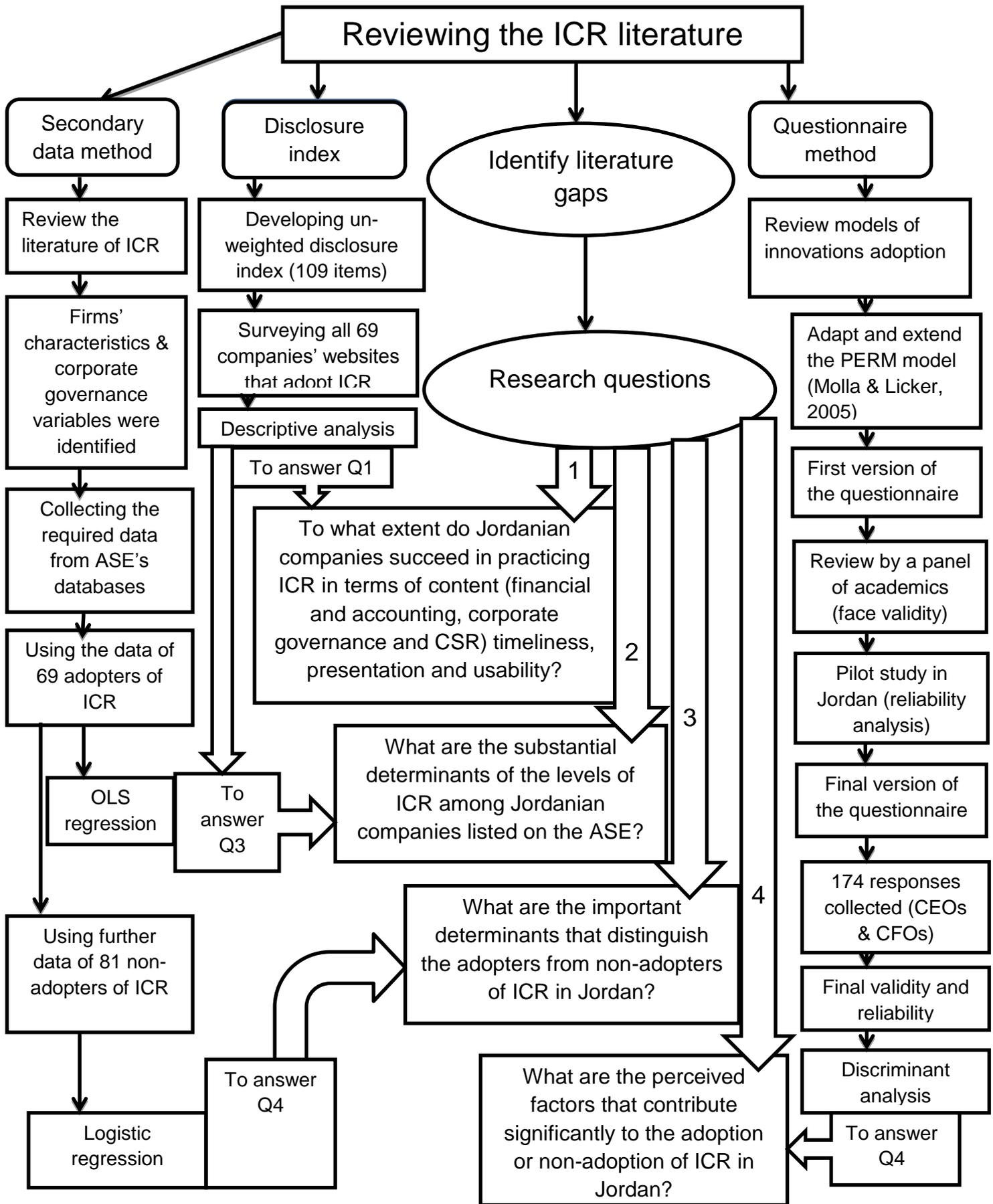


Figure 4.3 Research process  
 Source: developed by the current researcher

As stated earlier, generally speaking, the crucial purpose of this study is to develop an overarching assessment framework measuring the determinants of ICR adoption and practices in one developing country, namely Jordan. In order to achieve this, several steps have been followed. First, a review of research and theory of addressing adoption of innovations was undertaken, as well as thoroughly reviewing related ICR frameworks. This is to determine the important factors to be considered in the proposed framework. Second, the proposed framework was developed by integrating the organisational, managerial, technological and environmental factors that may have an impact on ICR adoption in developing countries as outlined in figure 9.2 below.

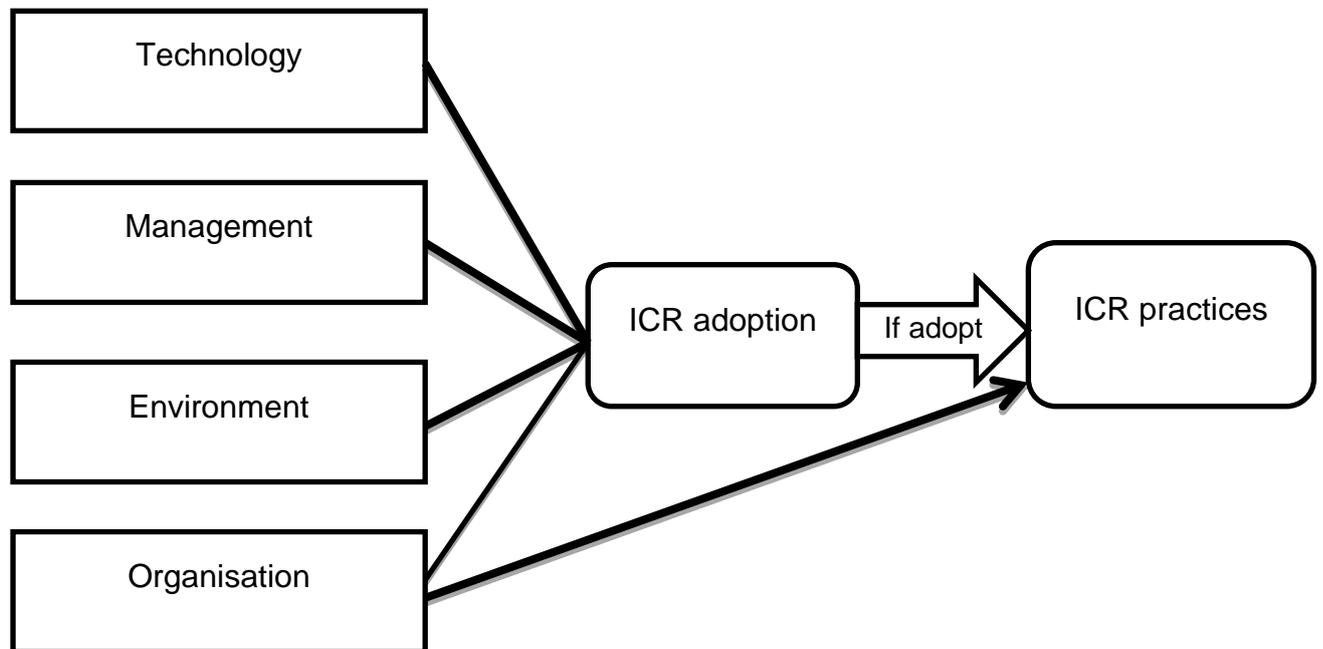


Figure 9.2 simplified theoretical framework  
Developed by the current researcher

In the course of testing the applicability of the created framework, two basic separate tasks were carried out. The first, the researcher built a disclosure checklist based on a comprehensive review of the wide range of checklists that have been employed by prior studies (see Appendices 1, 2 and 3). This checklist serves as an ICR index to measure the level of Jordanian listed companies' practices that adopt ICR. This is to explain the varying levels of adoption and practices of ICR among the listed companies on ASE. This depends on the static company characteristics (such as size and profitability) and corporate governance (board structure and ownership structure). The second, the research instrument, the questionnaire, is prepared by initially adapting the instrument used by Molla and Licker (2005) to study e-business adoption. This instrument has been extended to be applicable to the context of investigating ICR adoption in Jordan. This is to reveal more potential influences on ICR adoption.

In conclusion, in the course of answering the research questions, the study relied on the positivism paradigm, used the deductive approach, and implemented quantitative techniques in data collection and analysis. The study reached many interesting findings that will be presented in the next section (9.4).

## 9.4 Findings and conclusions

In this part, conclusions are made based on the outcomes of the research objectives.

**First objective: exploring levels of ICR that Jordanian companies listed on ASE reach in general, and in terms of content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability.**

In order to explore the levels of website presence as well as the patterns of internet corporate disclosure practices, a survey has been conducted, involving all 262 listed companies listed on ASE in the period between 5<sup>th</sup> and 25<sup>th</sup> July 2012. Survey results indicate that 57% (150 companies) of Jordanian listed companies had usable websites falling into four sectors as follows: 15 banks (100%), 21 insurance companies (78%), 45 industrial companies (59%), 69 service companies (48%). The results also reveal that only 26% (69) out of the total number of listed companies on ASE have engaged in reporting the investor relations information on their websites. The highest percentage of ICR adoption was in the banking sector (100%) followed by the insurance sector (48%), the service sector (20%) and the industry sector (17%) respectively.

The banking sector has achieved the full percentage in both website presence and ICR adoption. In addition to its compliance with the supervision of the agencies of the Jordan's financial market, banks in Jordan are under the oversight of the Central Bank of Jordan (CBJ)<sup>27</sup>. This might explain the quick response of these banks to requirements and initiatives in online reporting by utilising their websites, enhancing levels of transparency and disclosure. Also, it is known that banking is the largest sector in ASE, and one of the key contributors to the

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<sup>27</sup> In this respect, Oxford business group reported that *"a more stringent regulatory regime for the industry is also on the horizon. In May, 2014, the CBJ released an updated version of its 2007 corporate governance instructions for the banking sector, seeking input from the Association of Banks and its members. Key issues under scrutiny include making banks' board members more accountable, reinforcing the rights of shareholders, improving transparency over remuneration and reaffirming the role and independence of internal and external auditors.....The CBJ now plans to introduce reinforced corporate governance regulations, which will make banks more transparent and accountable, while rising confidence among lenders is expected to drive up credit growth."* Available online accessed at: [http://www.oxfordbusinessgroup.com/economic\\_updates/jordan%E2%80%99s-banking-industry-firm-footing](http://www.oxfordbusinessgroup.com/economic_updates/jordan%E2%80%99s-banking-industry-firm-footing)

national economy<sup>28</sup>. Therefore, it is not surprising that banks being in the eye of government, lead the change process.

As stated earlier, an un-weighted disclosure index has been adopted to gauge the levels of ICR practices of the public shareholding companies in Jordan (69 companies). The final checklist contains 109 items spread over 4 main sub-indices; content (61 items) (includes financial and accounting, corporate governance and CSR indices), timeliness (12 items), presentation (15 items) and usability index (19 items).

In terms of financial and accounting information (31 items), results showed that the financial statements (balance sheet, income statement and cash flow statement) and previous annual reports are the most disclosed items. In contrast, items include links to financial analysts, earnings estimates, industry statistics and interim reporting are the least online information published in Jordan. The study index comprises 19 items of corporate governance information. The disclosure of these items ranged between 94% (65 companies) for the list of board of directors, and 14% (10 companies) for the link to corporate governance information. Hence, this means that listed companies in Jordan do not pay attention to creating a special section to report corporate governance information. Regarding online CSR disclosure, the gross percentage, on average, are relatively low for all sectors, accounting for 46% of the total index. The proportion of disclosure fluctuated among the items; the company history was the greater at 90% (62 companies) while the sustainability report came last at 13% (9 companies).

The total items of three former indices form the overall level of content index (63 items) of internet reporting for companies listed on ASE. The overall level of content information disclosure reached 49%. It was 74% for banking and 45% and 44% for industry and service sectors respectively, and lastly the insurance sector at 34%. The total percentage of internet disclosure for three indices that constitute the content index were largely close. Disclosure of CG information came top, reaching 51%; followed by financial and accounting at 49% and CSR at 46%.

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<sup>28</sup> Total assets of banks operating in the country reached around \$61 billion at the end of 2013, and in conjunction with insurance sector they contributed by approximately 11.5% to the Gross Domestic Product (GDP) at the same period (the Central Bank of Jordan, [www.cbj.gov.jo](http://www.cbj.gov.jo)).

Timeliness checklist of ICR consists of 12 items. The total score of timeliness of reported corporate information was very low for all sectors at 26%. Likewise, it was also low for each individual sector, which ranged from 39% for banking to 13% for insurance, while service and industry sectors were located in between, achieving percentages of 27% and 21% respectively. These results reveal that the Jordanian companies listed on ASE are disseminating out of date information on their websites.

In terms of presentation formats of financial information, 80% of companies publish their information using a PDF-format, 36% use HTML-format, while only 3% utilise Word-format. The findings also reveal that only one company presents financial information in Excel format, while no company presents it in Power Point or XBRL-format. Surprisingly, 91% of companies had an English version of the website versus only 67% with an Arabic version. As such, the proportion of companies that published annual reports in English (71%) is higher than those that disclose it in Arabic (62%). This indicates that international audiences are the main target of companies engaged in ICR practices in Jordan. Furthermore, findings showed that ICR practices characterised by less dynamicity and interactivity with corporate information users, where utilising audio files, video files and animation techniques were minimal.

Results also reveal relatively low levels of usability of websites of companies listed in ASE, whereas the overall score of usability index (19 items) was 43%. The highest level of presence was attained by the 'contact us' option at 94% (65 companies) followed by the 'next-previous' option at 86%, while currency converter came lastly and was used only by 6 companies (9% of the sample). Similarly, features like webmail, help site and online investor order were also utilised minimally and ranked next to the lowest level of presence, below 20%. This indicates that companies in Jordan do not pay sufficient attention to making effective interaction with stakeholders over the company website. In addition, while 57% of companies' websites need one click to get into investor relations section, only 14% and 10% of them possess this option to get into CSR and corporate governance sections respectively.

In total, the overall score for ICR index was under the average at 45%. This score ranged between 65% for banking, which was the only sector located above the average, and 33% for insurance, which achieved the lowest score. However, this percentage was very close for industry and service sectors at 43% and 41% respectively. Accordingly, the average percentages of content, presentation and usability index was very close, with 49%, 47% and 43% respectively. In contrast, the timeliness index achieved the lowest average score of 26%.

Overall, the banking sector on average reached the highest scores of the four ICR indices, which were exclusively above the average except the timeliness score, while the insurance sector had the lowest scores. The ICR levels were very close between the industry and service sectors. The timeliness index achieved the worst scores among all ICR indices for all sectors.

**Second objective: To identify the determinants that influence the amount of ICR of the companies listed on ASE.**

After identifying the amount of corporate disclosure of those 69 Jordanian companies that engaged in ICR practices, the study sought to explain variations in levels of overall ICR and its components (content (financial and accounting, corporate governance and CSR) timeliness, presentation and usability). Based on the literature review, the relationship between hypothesised explanatory variables has been built upon several theories such as agency theory, signalling theory, stakeholder theory, information cost theory and diffusion of innovation theory. Two main groups of explanatory variables, including 15 variables, were identified to interpret the variance in disclosure levels on the website, which are:

5. Firm's characteristics variables: these variables are:

- Size: actual total assets at the end of the financial year ;
- ROA: return on the total assets at the end of the financial year, and it reflects firm's profitability;
- Leverage: it represents the corporate needs for credits, counted by dividing the total debts by total assets at the end of the financial year;

- Listing status: knowing if the company is listed on the first or second market;
  - Audit type: to ascertain whether the company is being assured by a big four or non-big four auditor;
  - Industry sector: identify which sector that a company belongs to: banking, insurance, service and manufacturing.
6. Corporate governance variables: this group is divided into two sub-groups as well: board of director structure and ownership structure.
- board of directors structure: this contains the following variables:
    - role duality: to acknowledge if the CEO in the company holds the position of chairman or not;
    - board independence: it is measured by percentage of non-executive directors on the board;
    - board size: represents number of directors on the board;
    - audit committee: to establish whether there is an audit committee in the company or not;
    - Corporate governance and nominating committee: does the company have company a corporate governance and nominating committee or not?
  - Ownership structure: it comprises of four variables, representing four forms of corporate ownership
    - Institutional Ownership: it represents that percentage of company's shares owned by institutions;
    - Management Ownership: percentage of CEO ownership from company's stocks
    - Foreign Ownership: the percentage of shares controlled by non-Jordanian shareholders;
    - Family Ownership: the percentage of company's capital owned by one family or group of relatives.

OLS multiple regression was conducted to test whether any of the 15 predictor variables significantly predict the levels of components of corporate disclosure on the internet of those 69 ICR adopters in Jordan. As mentioned above, eight ICR components have been used to predict their values by the independent variables. Therefore, the analysis comprises eight models and has been run eight separate times.

Results can be summarised as follows:

1. The size of the firm is a positive significant contributor ( $p < 0.05$ ) in all models, which predicts variations in the percentages of all components of corporate disclosure over the company website;
2. The high levels of all components of information content disclosure, except CSR, can be significantly predicted by the increase of percentage of non-executive directors and the presence of corporate governance and nominating committee as well as, conversely, the decrease of leverage levels;
3. Institutional and family ownership negatively affect the levels of financial and total content of online disclosed information;
4. In addition to size, two independent variables were found uniquely to have a positive significant effect on the amount of CSR disclosure, namely, foreign ownership and audit committee;
5. A lesser amount of company's leverage and percentage of institutional ownership, and the greater number of non-executive directors in the Board leads to publishing more timely information and enhancing the overall level of ICR;
6. Family ownership negatively influences the overall level of ICR;
7. Both, Institutional and Family ownership -in addition to the size- significantly contribute in predicting how well companies present online disclosure, explaining the variations in levels of presentation scores in a negative direction;
8. Board size and industry sector were only found with a significant impact on one occasion in the analysis. This impact is represented by, the less number of directors on the board, the more timeliness of published information. Similarly, the level of usability of the companies' websites is significantly improved with affiliation to the banking sector;

9. The presence of the corporate governance and nominating committee is reflected in improvements in the total ICR levels.

**Third objective: investigating the determinants and perceived factors that influence ICR adoption among listed companies on ASE.**

This objective consists of two tasks: firstly, identifying the determinants, among organisational characteristics of the firm, that might affect companies' decisions to adopt ICR, such as the size, profitability, corporate governance, etc.; the second task cannot be accomplished using the data available in the secondary databases. Thus, a survey fieldwork has been undertaken. It involves perspectives of companies' CEOs and CFOs about the perceived factors that might significantly contribute to the adoption of ICR, which distinguish the adopters from non-adopters of ICR in Jordan, such as management support, and preparedness of technology and environment etc.

**In order to achieve the first task**, the same variables as presented in the previous section - that have been identified to explain levels of disclosure practices on the internet - were utilised to determine their relationship with the ICR adoption status of companies. The data of 150 companies (69 adopters of ICR and 81 non-adopters) that had usable websites were targeted.

Direct logistic regression was conducted to evaluate the effect of these predicting variables on the likelihood that companies would adopt/not adopt internet disclosure. The industry sector was dropped from the analysis due to not meeting conditions of inclusion in the logistic regression. Nonetheless, univariate analyses indicate that the adoption of ICR is more related to affiliation to the banking sector. The fourteen remaining independent variables have been assigned to three main regression models, seeking robustness. Each model contains a set of variables belonging to the main independent variables' groups of the study: general firm's characteristics, board structure and ownership structure.

Based on the logistic regression, the following findings can also be concluded:

**In the first model**, only market listing and audit type were found to significantly and positively add to the predictive power of the model. Findings indicate that companies that are listed in the first market and/or audited by one of the big-four firms are more likely to adopt ICR practices. **In the second model**, three corporate governance variables made a significant contribution to the predictive ability of the model, namely: role duality, board independence and corporate governance and nominating committee. The strongest predictor of ICR adoption in the model is the corporate governance and nominating committee, demonstrating that the presence of a corporate governance and nominating committee increases the probability of adopting ICR. Likewise, the possibility of ICR adoption is enlarged with the increase in the number of non-executive directors on the board. In contrast; the presence of a dual role of CEOs will decrease the likelihood of ICR adoption. Finally, only one variable from the ownership structure model (**the third model**) significantly impacts the probability of ICR adoption in the Jordanian context, which is institutional ownership, illustrating that the greater the percentage of institutional ownership, the higher likelihood for a specific firm to adopt ICR.

**For the sake of accomplishing the second task**, a questionnaire survey was conducted in early 2013, exploring the perceived factors that might affect the adoption of website corporate reporting. After testing organisational factors as highlighted previously, managerial, environmental and technological factors have been incorporated in the questionnaire. In order to obtain a valid and reliable instrument, multi-step procedures have been implemented such as face validity, construct reliability and validity.

Both the executive and financial managers (CEOs and CFOs) of 150 companies listed in ASE (that have an active website) have been involved in this study, in order to identify their perceptions regarding ICR. The selection of these two groups of respondents is based on their fundamental role that is normally undertaken regarding disclosure decisions in the company (Al-Hayale, 2010). The final sample that participated in completing the questionnaire was 174 respondents, 36.8% (64 respondents) of the sample were CEOs versus 63.2% (110 respondents) for CFOs. The percentage of responses collected from

adopters was 44.8% (78 respondents), relatively less than the percentage of non-adopters' responses 55.12 % (96 responses).

After the validation process of the study dataset using factor analysis, 8 variables have been generated belonging to the three previously stated constructs as follows:

Management domain:

This reflects the extent to which, top management is aware and committed in implementing ICR, with attention to the managers' balance between ICR costs and benefits. This domain consists of the following factors:

- Awareness: the extent of management knowledge of different issues relating to website reporting, particularly requirements, technologies, forms, costs and benefits.
- Commitment: it reflects the top management vision and support that is given to internet financial reporting initiatives. It also refers to the strategy adopted by the company leadership to deal with new technological changes, in order to improve disclosure approaches.
- Cost benefits balance: it reflects management perspectives of the benefits of internet reporting versus its costs.

Technology domain:

It represents the management assessment of the extent to which pillars of technology, inside and outside the organisation, are ready for engaging in ICR. This domain implies basic underpinnings of technology that represent the Technology Readiness factor. External technology readiness includes supported industries and information users' readiness. Internal technology readiness consists of technology resources and human resources.

Environment domain:

This domain reflects the effect of factors outside the company, other than external pillars of technology, on the management decision towards adoption of ICR, such as government and Users' Attention factors.

4. Users' Attention: the management's perception of the importance of internet reporting to meet the different needs of the corporate information users. In addition, their evaluation of the level of concern directed to the ICR by those users.
5. Government Regulations: management evaluation of the presence of electronic crime laws that maintain the security and integrity of the financial information to be published on the company's website.
6. Government support: it involves management assessment of the extent of support from the government and its institutions that promote ICR adoption, such as, the extent of encouragement by local controlling and financial bodies to engage in ICR.

In order to test the hypotheses regarding the factors that might contribute to the adoption or non-adoption of ICR, the study selected discriminant analysis (DA) to differentiate between the perceptions of managers of the previously determined factors that might serve as motivators or obstacles to the implementation of ICR.

The findings of the study reveal that only 4 factors were found significantly and positively distinguishing between adopters and non-adopters of ICR, relating to three identified dimensions, which are management (cost-benefit balance and commitment), technology (internal technology readiness) and environment (users' attention). Surprisingly, all these factors relate to the internal company conditions except Users' Attention. In terms of relative importance of these factors, Cost-Benefit Balance is ranked as the best contributor determining the status of ICR adoption, followed closely by management commitment, while, on the other hand, Users' Attention and Internal Technology Readiness were classified sequentially at lower degrees.

#### **9.4.1 Findings and the theoretical framework**

ICR is a voluntary channel of corporate disclosure (Oyelere and Kuruppu, 2012). Disclosure targets many information user groups (e.g. investors, creditors and regulators), with different needs and interests (Solmons, 1986). Thus, a potential conflict among users about the relevance and materiality of information is substantial (Omar and Simon, 2011). Consequently, disclosure as a multifaceted phenomenon is not easy to be exclusively explained using a single theory (Hope, 2003). Aly and Simon (2008) advocate that three main theoretical frameworks can be specified as motivations toward voluntary corporate disclosure. These are economics-based, institutional change and innovation diffusion theories. However, in the context of ICR, the economics-based theories, namely agency, capital need, signaling and legitimacy theories have been the most cited theories (Debreceeny et al., 2002; Oyelere and Kuruppu, 2012).

However, to get the main assumption of economic approach, information asymmetry, as a valid justification for voluntary disclosure, efficiency of the financial market is essential. This might be not often achievable in the context developing countries (Keane, 1993). Furthermore, the concerns of in the contemporary financial markets exceed the traditional relationship between the manager and owner to reach all stakeholders in society (Guthrie et al., 2006; An et al., 2011), legitimising companies' actions and reducing political costs. Consequently, findings of studies conducted, based on economic approach, especially in developing countries were not fully integrated with theories used (Aly et al., 2010), and in turn current ICR literature is described as less theory-guided (Oyelere and Kuruppu, 2012). Therefore, Xiao et al. (2002), since early stages, emphasised that future ICR research has to be more theory-oriented, to obtain more convergence between the utilised theory premises and their findings, considering the fact that ICR is a coercive of emergence of new technology. In responding to that, in addition to these three frameworks, new theoretical approaches were involved in the current theoretical framework, political economic approach (political cost theory), cost benefit approach (information cost theory) socio economic approach (stakeholder theory).

In line with ontological position of the study, the findings presented in the previous section can be plausibly explained and verified based on the provision of the established theories included in the theoretical framework of the study (chapter 3). This section provides an overview on how the current findings can be linked to the theoretical framework utilised and how to link findings obtained from secondary data and questionnaire analyses.

That triangulation in theory is beneficial to evidently explain the research findings, where shortcomings of a single theory approach can be compromised, especially where economics-based theories might not be applicable in Jordan. In this case, although these theories were still used in findings interpretations, political cost theory was largely utilised in explaining the findings regarding the relationship between firm's characteristics (namely size, listing status, ROA, audit type and industry sector) and various disclosure practices on internet. In addition, it was useful in explaining some contradictory findings, for instance, signalling theory has no logic to explain the findings of effects of ROA and audit type on ICR patterns in Jordan, political cost theory has such logic to do so. In contrast, capital need theory was found not to fit in justifying the negative relationship between leverage and levels of online disclosure; however, signalling theory was able to compromise. However, agency theory, with its main prediction of reducing information asymmetry, was the only theory can be employed to explain the relationship between corporate governance (board and ownership structure) and different practices of ICR.

The DIO theory was the main theory contribute to the findings explanation of the perceived factors affecting ICR adoption; although some support from coercive institutional change and information cost theory. However, findings obtained from secondary data and perceptions-based data can be linked in such a way to fit and extend the current theory as follows. Size was found as is a very important factor determinant of variations among companies regarding ICR adoption and in all aspects of quantity and quality of ICR. This variable can be linked to cost-benefit balance, internal company readiness and users attention. These variables can be attached to the many theories information cost, DIO, political cost theories. Larger firms usually possess the well-established technology infrastructure this enhance

the technology preparedness, and therefore improve their position when exercising cost and benefit balance as well as enhance the compatibility of ICR. Larger firms also are more in the eye of public, and hence they more likely to have more interest of users' attention. Furthermore, if a manager of low-leveraged firms perceives that users might be concerned by information disclosed online, it is more likely to adopt and enhance it to signal the market by good performance. Moreover, information cost and political cost theories can be linked ROA with cost-benefit balance, where non-profitable firms are more likely to disclose more information to alleviate potential costs resulting from political attacks.

## **9.5 Contribution to knowledge**

The current research makes a fundamental contribution to knowledge of the topic of internet corporate reporting in several aspects. In presenting these contributions, they can be broken down into four aspects: theoretical, methodological, empirical and practical contributions.

### **9.5.1 Theoretical Contribution**

A review of the foundation of investigating the determinants of internet disclosure literature indicates that the ICR studies relied heavily on conventional (printed) disclosure literature in identifying the influences of internet reporting adoption and practices. In addition, it lies mainly with two economics-based theories as the theoretical base, agency theory and signalling theory, in addressing the ICR phenomenon. Based on these two theories, previous studies have identified two main groups of factors. These two groups are firm characteristics factors and corporate governance factors (board structure and ownership structure). This raises the limitation of the current literature, which has overlooked the fact that the nature of internet reporting is different from the nature of printed reporting, where the internet reporting emerged as a result of development and diffusion of technological innovations. So, all obstacles that hinder the diffusion and adoption of those innovations, such as, technological readiness, management willingness, environment readiness and etc., should be considered in investigating internet disclosure, especially in developing countries.

There are a few studies in developing countries (e.g. Aly, 2008; AbuGhazaleh et al., 2012b) that have tried to build frameworks for examining the factors affecting the adoption and practices of ICR in developing countries, relying on innovation diffusion theories (e.g. DIO and institutional theory). However, generated frameworks can be characterised as less comprehensive, where they neglect some significant aspects necessary for studying ICR adoption as an emergent innovation.

For this reason, the main theoretical contribution of this study stems from its holistic purpose to create a more inclusive theoretical framework of ICR adoption and practices. This framework takes into consideration the innovative nature of internet disclosure in addition to the fact that it is one kind of corporate voluntary disclosure. Thus, the current theoretical framework of the study has combined innovation diffusion theories and models (DIO theory and institutional theory) with internet disclosure theories (agency, signalling, information costs, stakeholders etc.). This is to bridge the identified limitations and gaps of the internet disclosure research, involving technology, managerial, organisational and environmental aspects. To achieve this purpose and due to the lack of a holistic framework in ICR literature, the study has had recourse to information systems (IS) research and adapting the Perceived eReadiness Model (PERM) (Molla and Licker, 2005). The basic constructs of this model were combined with the main dimensions of frameworks specified in the internet disclosure literature.

The proposed theoretical framework has been utilised in two different ways. First, it suggests explanatory factors that might affect the adoption and patterns of corporate disclosure on the internet in Jordan. These factors were theoretically linked to ICR practices based on involving additional explained theories of the causality relationship. Second, it proposes further variables which might affect the adoption of ICR as an innovation, which could be explored and measured based on the perceptions of top management of companies. Thus, another significant contribution to theory involves using the innovation diffusion literature to propose a theoretical base, including the main dimensions (technology, management and

environment) that are more likely to inhibit or/and be a catalyst for the adoption of disclosure practices on the website.

### **9.5.2 Methodological Contribution**

The thesis provides several methodological contributions that can be summarised as follows:

1. The study provides researchers with a validated research instrument, a questionnaire, measuring technological, managerial and environmental factors that might substantially contribute to ICR adoption in developing countries.
2. This thesis provides literature, in the Arab region and developing countries, by a validated tool (disclosure index) to capture, in a relatively comprehensive way, the main components of ICR. Based on an extensive review of previous studies, the checklist of disclosure contained four basic components: content, timeliness, presentation and usability. The content dimension was split off into three components, namely financial, corporate governance and CSR. Limited prior studies have considered these components of ICR in this way and inclusiveness that has been handled. Equally important, in contrast to the vast majority of ICR literature - by adding timeliness and usability - the current index shifts the focus more to assessing the quality enablers of ICR alongside the quantity evaluation.
3. One of the substantial contributions of the current thesis is that it involved two different techniques to collect the data - questionnaire and historical data survey - within the same research approach, quantitative methods. All this is to specify, more in depth, the factors that influence companies' decisions towards adopting ICR. The questionnaire was utilised to capture the aspects that cannot be measured depending only on historical data. This triangulation in data collection methods is considered pioneering in ICR literature. Involving perceptions of the strategic managerial apex in the company assists in providing a fuller and more generic view pertaining to the determinants of ICR adoption in developing countries. Also, employing a questionnaire method in data collection permits involving advanced statistical techniques and surveying an unrestricted number of respondents and therefore generating more generalizable findings.

4. This study represents an analysis with multi-dimensional style, including factors that determine the drivers of practices and adoption of online disclosure in Jordan. This can also be added as a strong methodological contribution to current literature.

### **9.5.3 Empirical Contribution**

The study includes many empirical contributions, which can be highlighted in the following points:

1. All the components of ICR are simultaneously considered in the current study. Importantly, alongside the fact that timeliness and usability of ICR have not been addressed widely in the developing countries, they have never been investigated in Jordan. This study contributes to the literature by demonstrating the extent to which listed companies in Jordan engage in providing timely information and usable websites. In addition, another local contribution, this study provides a more detailed picture about the content of disclosed information on the website, dividing it into three separate components as well: financial, corporate governance and CSR information.

2. This study has empirically demonstrated that the specified explanatory variables have varying effects on the ICR components in Jordan. The explanatory power of explanatory variables differs from one to another. However, some of these variables were found to be significantly associated with all components of ICR, others with some, while the rest not at all.

3. Internationally, the current study has introduced new explanatory determinants that have never been tested before in an ICR context. Particularly, these variables are: family ownership, audit committee, and corporate governance and nominating committee. The results presented empirical evidence that demonstrate a significant impact of these three variables on levels of some ICR practices in Jordan. Furthermore, the current study is the first study that provides empirical evidence of the relationship between the explanatory determinants of ICR with such a detailed form of components of information content disclosed online (financial, corporate governance and CSR)

4. Locally, explanatory variables such as market listing and corporate governance variables (role duality, board size and independence) have never been examined as determinants of ICR practices by previous studies in Jordan. The study is the first in Jordan that has provided empirical evidence, which supports the effects of these factors on levels of certain ICR components.

5. In terms of the theoretical framework of the questionnaire, the study has empirically tested its applicability using a dataset gathered from managers working in different industrial sectors in Jordan. Following multi-steps refinement and validation procedures, eight factors has been extracted, which might contribute to the adoption of ICR. These are: awareness, commitment, cost-benefit balance, internal technology readiness, external technology readiness, users' attention, government support, and government regulations. These factors contain the managerial, technological and environmental aspects identified in the current theoretical framework. Findings of discriminant analysis reveal that four of them are found to be significant in discriminating adopters from non-adopters of ICR. This initiates strong empirical evidence that the perception-based model created based on the suggested framework is a reliable and valid foundation for investigating factors influencing the decision of ICR adoption, specifically in developing countries.

#### **9.5.4 Contribution to practice**

This thesis contributes to the practical knowledge about internet disclosure as follows:

1. The study provides individual profiles with detailed presentation for the main industry sectors of listed companies in Jordan regarding disclosure practices on the websites. This represents a diagnostic tool, assessing the status quo of this voluntary disclosure practice in the country in each sector and collectively. This will be vital in two distinct ways. First, companies will be able to evaluate and compare their current position of ICR practices with the industry average. Therefore, they can enhance the levels of their performance. Second, this measurement tool can be utilised by controlling bodies and government agencies in Jordan to improve the environment of disclosure and transparency in the

country. This might be done through initially putting the findings of this study as a benchmark for disclosure practices over the internet, and then in the subsequent stage launching plans and policies, enhancing the extent of their practices.

2. The developed framework of ICR adoption as an assessment exercise will provide companies in Jordan, and even in developing countries, with a valuable tool determining strengths and weaknesses regarding adoption and practices of ICR, at national and a firm level. This assessment framework for ICR adoption is expected to enable managers to assess the current status of the company regarding multiple aspects of readiness for engaging in ICR: organisational, managerial, technological and environmental factors, in order to set up prospective strategies, to make better use and best practices of ICR. Therefore, the companies will be capable of drawing action plans, improving the quality and quantity of ICR to meet the diversified needs of the corporate information users.

## 9.6 Limitations

There is no study with unlimited resources: time, money and effort. Thus, any research has limitations and this study is not an exception. Several shortcomings of the study can be identified as follows:

Firstly, the study has relied only on quantitative methods – questionnaire and secondary data – in data collection and analysis. These methods, indeed, are appropriate to the nature of the research as well as in accomplishing the study objectives. However, utilising mixed-methodological design, through incorporating quantitative techniques, is useful to obtain more in-depth understanding of determinants of the ICR adoption and practices in Jordan. In addition, the interview method provides a frame of flexibility, which facilitates revealing un-predetermined factors that might affect this phenomenon. Therefore, it has been intended to follow up the quantitative work by a qualitative study through arranging for semi-structured interviews with CEOs and CFOs of listed companies in Jordan. However, due to their job nature and national culture, only one interview with a CEO has been possible over a considerable period of time. Thus, the study was just limited to the analysis of findings of quantitative techniques.

Secondly, the current study has attempted to capture disclosure and reporting practices over the website of listed companies in Jordan for a specific period of time, particularly in mid-2012. Thus, it is considered a cross-sectional study. Since disclosure practices change over time, there is a need to conduct surveys in Jordan for more than one point in time, in order to make comparisons. However, this study will stand as a cross-sectional snapshot of ICR status in Jordan for following longitudinal studies.

Thirdly, in terms of study sampling, although this study has surveyed all 262 companies listed on ASE, it was only interested in those with an active website. Thus, only 150 companies represented the valid sample to explore the determinants of adopting ICR. Therefore, this restricts the amount of collected data, especially which based on the questionnaire, which limit the ability to generalise the results. In addition, only 69 companies were found engaging in website disclosure practices. Once again, due to the small sample size, it is

difficult to generalise the findings, about the determinants of levels of ICR, outside the Jordanian context. However, Cooke (1998) demonstrates that an inherent attribute of several disclosure studies, is a small sample size (e.g. Wallace et al., 1994; Leventis and Weetman, 2004).

Fourthly, the current disclosure index has been created based on the critical review of previous studies parallel with checking out the common disclosure practices of companies in Jordan. As shown previously in the methodology chapter, multiple procedures have been undertaken, in order to enhance the index validity. However, disclosure is an elastic concept that cannot be gauged easily (Cooke, 1989). Therefore, the inclusion process can never be claimed as being free of subjectivity. Further refinements might be useful by future research.

Finally, this study represents an investigation of ICR adoption and practices among the listed companies in Jordan. The ability to generalise the results may be limited to this context. Therefore, this might inhibit the opportunity of making comparisons of ICR practices across countries. Furthermore, some variables may serve as determinants that explain disclosure practices that could not be tested in the single context. For example, Hofstede (1980) argues that the impact of culture differences are difficult to be extracted, unless it is done throughout multiple countries studies. In future, more concentration on comparative studies, especially in developing countries, would be valuable.

## 9.6 Future research

Several insights can be identified for future research as follows:

1. Addressing the extent of the financial market's reaction to disclosure practices over the company website might be interesting for future research. This may be conducted through, on the one hand, developing a checklist of key disclosure practices and specifying the date of their online publishing for each company, and then, on the other hand, observing the movements in stocks prices, identifying changes that happened pre and post online disclosure of those practices. In this way, it can explore the information content of online disclosure and how timely and value relevant the published information is;
2. Since ICR is a voluntary channel for disclosure practices, the current disclosure checklist does not differentiate between the voluntary and mandatory items, indicating their levels of importance. Further research should consider modifying and introducing new items for the checklist, distinguishing between voluntary and mandatory disclosure. In addition, it can make comparisons between the contents of published information in printed and online media. Hence, this will open the way for studying the effect of the incremental information content of online voluntary disclosure on many aspects such as firm value, share prices and cost of capital;
3. The current study has utilised an un-weighted disclosure index approach. In contrast to a weighted index, this approach assumes equal importance of each item included in the index. However, considering that the magnitude of importance of each disclosed item differs with different users, firms, industries and over time (Cooke and Wallace, 1994), it might be useful if future researchers convert the current disclosure index into a weighted index to compare the findings;
4. New aspects of disclosure can be included in the future indices such as forward looking and intellectual capital disclosure. Recently, they have emerged as new trends of disclosure research. Measuring levels of disclosure of management future forecasts and/or intangible assets portfolio have assumed growing importance. Therefore, it is worthwhile elaborating a list of criteria, which might be

comprised items reflecting these two disclosure concepts. This would represent a good contribution to the current disclosure literature, both printed and internet - based. This paves the way to identifying the determinants of their presence and levels of practice;

5. Many variables could be introduced, which represent potential explanatory determinants of adoption and practices of online disclosure. At least in Jordan, the effect of these variables has never been tested in the context of websites or even paper-based reporting. For example, there are some proxies relating to corporate governance such as cross-directorship, and characteristics of audit as well as corporate governance committees. Such characteristics are: frequency of meetings, independence of members and their qualifications, which may serve as indicators of efficiency of these committees. In addition, this study considers the impact of the percentage of CEO's ownership on ICR practices. Previous research proves the impact of other characteristics of CEO on other aspects of conventional disclosure. For instance, age, gender, compensation, founder and reputation. Therefore, such characteristics might be present with a possible effect, determining disclosure practices over the internet;

6. It can be argued that corporate governance and internal control mechanisms are a focal point in contemporary business settings (Samaha et al., 2012b). This study has attempted to capture the effect of some common proxies of corporate governance such as board size, independence and role duality etc. However, the corporate governance code in Jordan includes a lot of criteria representing a sound structure of internal control procedures. Nevertheless, these criteria cannot be measured through historical data available from the company. Therefore, empirically, relying on the national code and/or principles of corporate governance issued by OCED (1994), a questionnaire can be developed either perception-based or facts-based. This might be directed to the CEO, CFO or chief internal auditor. The questionnaire might include a list of criteria to measure how well the procedures of corporate governance are applied. Then, the scores will be counted, analysed and assigned to each firm. Eventually, the impact of varying levels of corporate governance on disclosure practices can be extracted;

7. As discussed in Chapter 2, among problems that ICR currently suffers from are: lack of security, assurance and standardisation. Addressing these issues might result in discovering solutions, increasing the orientation towards adopting ICR. In addition, it enhances the magnitude of users' trust of electronic corporate information. This is possibly carried out through conducting an investigation of a qualitative nature, finding out proper treatments of such problems. It would be worth investigating how companies might be able to reduce concerns about the integrity of financial information disseminated online. Furthermore, there is a need to address the potential role of the internal auditor in assuring the credibility and authenticity of that information. Finally, and most importantly, there is a need to undertake an exploratory work to identify factors that contribute to the non-adoption of XBRL in Jordan, suggesting possible solutions. XBRL assists in uniting and standardising formats of business reporting, which facilitates making comparisons. In addition, it aids in mitigating the problems of information security and assurance;

8. The disclosure process consists basically of three parts, the sender, the message and the receiver. This study focuses mainly on examining the disclosed information as a message as well as from the point of view of managers as senders of this message. However, although Al-Htaybat et al. (2011) addressed the perspectives of information users in regards to their needs, problems and preferences in ICR, more qualitative and quantitative studies are needed in Jordan to explore more their points of view about this channel of disclosure;

9. The questionnaire method was implemented to determine the perceptions of the companies' management about the factors contributing to the adoption and/or non-adoption of ICR. Therefore, the common limitations of this method will apply to this study (Dillman, 2000; Sekaran, 2003; Saunders, 2009). For example, personal contact is absent, and hence participants put their answers without having any ability to ask for help, seek clarification, and/or explanation. However, generating a relatively perfect questionnaire is usually difficult (Dillman, 2000). Researchers in future might, instead, evaluate conducting structured interviews to alleviate the pitfalls of a questionnaire survey. A future qualitative work in Jordan, through conducting semi-structured interviews, may also be worthwhile in digging

deeper about undisclosed determinants of ICR adoption and practices, In addition, this would add comprehension to the drivers of this phenomenon;

10. Regarding the theoretical framework, in practice, models will never include all factors that affect a particular phenomenon. The study builds upon integration of many theories such as information cost, legitimacy, stockholders and diffusion innovation theories etc. This has initiated a theoretical baseline to find out more explanations, interpreting companies' decisions toward adoption or non-adoption of ICR. This is reflected later in a perception-based measure. The data obtained from this measure were tested separately from secondary characteristics of the companies. Statistically, this leads to a failure in capturing the combined effect of all variables in the model. This was due to divergence between the units of samples of the two sets of data. Future research might collect primary and secondary data using the same units of sample, in order to overcome this statistical limitation, and for the sake of finding out theoretical linkage between these variables to justify their relationship with levels of disclosure practices on corporate websites. As a result, empirical tests will be possible. Finally, the model based on the questionnaire data was tested once in Jordan. More replica studies in other developing countries will aid in verifying the validity of the current model, enhancing its robustness.

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# Appendices

## Appendix (1) Studies that describe ICR practices

Appendix 1: Studies that describe ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
Lymer (1997)	UK	A survey of the extent of the ICR practices, especially financial and non-financial information, amongst 50 companies listed on London Stock Exchange (LSE) in 1997.	The study concluded that 92% of study sample had active websites. 60% of these companies disclosed their reports and accounts on their websites, and 32% out of these firms published full accounts.
Lymer and Tallberg (1997)	UK and Finland	A survey of the website reporting practices in 1997, over 50 top UK and 72 Finland companies listed on Helsinki Stock Exchange (HSE).	The results indicated that possession of active websites was 92 and 90.2 per cent for the UK and Finnish companies respectively. Out of these 7 and 5 companies provided full accounts from each country respectively.
Deller et al. (1999)	USA, UK and Germany	A comparative study using a checklist consisting of 19 items to measure the extent of financial reporting for investor relations on the internet over 300 companies selected from three countries, USA, UK and Germany, 100 largest companies from each country.	The results showed that the percentage of the web presence of the companies in the three countries was 95% in USA, 85% in UK, and 76% in Germany. The results also indicated that for these companies the percentage of web site usage for investor relations reporting was 91% of the US companies compared to 72% for UK and 71% for Germany.
Gowthorpe and Amat (1999)	Spain	A survey across 379 companies listed on Madrid Stock (MSE) Exchange to identify the extent of financial reporting on the internet in 1998	The study found that only 61 out of 379 (16%) companies had active websites, which were divided as follows: 27 companies did not provide any type of financial information, and 34 companies disclosed various forms of financial information and annual reports.
Heldin (1999)	Sweden	A survey to explore the position of 60 Swedish companies from three identified generations of websites reporting development in 1998.	The results indicated that 99% of the companies had a usable website. 83% of the companies published full financial statements. It also concluded that the Swedish companies located in the second generation of the internet reporting development.
ISAC (1999)	International	The study included 660	Findings show that 86% of

Appendix 1: Studies that describe ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
	(22 countries)	largest companies in 22 countries around the world, comprising both developed and developing countries. This was to identify their status regarding web penetration and their levels of development in financial reporting.	companies had a usable website. Also, 62% of total sample engaged in some patterns of financial reporting. Developed countries were more online exposed as well as more advanced in their web financial communication.
FASB (2000)	USA	A survey of 100 US companies listed in Fortune 500 in 1998 on checklist contains 325 characteristics of the company website, separated into two main categories: general characteristics of the website and investor relations characteristics.	The survey results show that the entire sample had websites with graphics animations such as maps, 88 % enclosed table of contents, 64% with search boxes. In respect to investor relations information, the study found that 93% of the sample publishes such information on their websites.
Ponte et al. (2000)	Europe	The study aims to identify the extent of financial information disseminated on the websites of the 50 companies listed on the Dow Jones Eurostoxx50 index in 1999.	The results showed that all the 50 companies had a website. 45 companies of which disclosed unaudited semi-annual financial statements, 31 companies published financial summaries for five periods, and 19 companies provide financial ratios.
Lybaert (2002)	Netherlands	The study was applied to the 180 companies listed on Amsterdam Stock Exchange (AmSE) in 2000. The disclosure index includes 44 items was developed, to survey 4 aspects of financial information reported on the companies' websites, which were the content, timeliness, technology features and user support.	The results showed in the final sample of the study 156 companies, 53 of which provided full annual reports in addition to extra information, compared to 66 companies which provided only annual reports and 37 just published separate financial items. In respect to timeliness the study revealed that there is a lack of up-to-date information and interim reports as well. The study also concluded that the Netherlands companies employed poor quality of web technologies.
Fisher et al. (2004)	New - Zealand	A survey of 210 listed New Zealand companies in 2001, to recognise the main audit implications (omission, format and content of audit report)	The results showed that a considerable portion of New Zealand companies electronically disseminated audit related information,

Appendix 1: Studies that describe ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
		over the websites reporting.	where out of 131 companies which published financial statements on their websites, 98 % (128) of which supplied audit related information.
Lodhia et al. (2004)	Australia	A survey across 50 largest Australian companies in 2001, to identify the extent of internet reporting using the disclosure checklist that was previously employed by Allam and Lymer (2002).	The study concluded that the Australian companies mainly used the internet to communicate electronic copies of annual reports in addition to some extra discretionary information.
Mohamed et al. (2009)	Oman	A survey of the extent of financial reporting on the internet by 142 listed Omani companies in 2006.	The result indicated that 84 (59%) of Omani companies had accessible websites. Only 31 companies were found to provide financial information on their websites.
Salehi et al. (2010)	Iran	The study basically aims to investigate the quality of internet financial reporting of firms listed on the Tehran Stock Exchange (TSE). In doing so, a checklist of 34 properties was formed. Further, the study finally compares the research results with ISAC, (1999), Allam and Lymer (2003); Marston and Polei (2004) and Khadore, (2005).	Findings show that among 406 firms listed in TSE, 303 (74.60%) had accessible websites. compared to similar studies in other countries; the amount of online published financial information is relatively low. Also, compared to archives available in the TSE, there is a noticeable lack of integrity of financial information disclosed in the website was highlighted.
Buzcuk et al. (2011)	Turkey	A survey amongst top 500 listed Turkish companies in years 2003 and 2010; to ascertain whether the new regulations introduced in the former year affected the IFR practices in the latter year.	The study concluded that although the number doubled of companies that published financial information on their websites; only 6% of the sample provided voluntary financial information such as management reports and stock prices.
Khan and Ismail (2011)	Malaysia	The study aims to analyse IFR levels of 182 listed companies traded on the main board of the bursa. Items were considered in the disclosure checklist (87 items) were linked to the dimensions, content (67 items) and presentation (20 items).	The study revealed that all companies had active websites, undertaking IFR practices in varying degrees, ranging from 48.27% to 78.16% with overall average of 65.10%. The findings indicate that companies' scores are better in the content index than presentation index.

Appendix 1: Studies that describe ICR practices

Author(s)/year	Context(s)	Core issue	Key findings
Oyelere and Kuruppu (2012)	United Arab Emirates (UAE)	The purpose of this study is to examine the use of the internet as a way to communicating voluntary financial information by 132 firms listed on two stock exchanges in (UAE), Abu Dhabi Securities Exchange (67) and the Dubai Financial Market (65).	Findings demonstrate that the majority (115) of UAE-listed companies operated websites. However, only 67% of these companies (88 companies) utilise their websites to disseminate financial information. Also, results illustrate that the majority of companies present financial information in PDF format, while the minority disclose it in other formats, including Word and html.

**Appendix (2) Studies that explain ICR practices**

Appendix 2: Studies that explain ICR practices

Author(s)/year	Context(s)	Core issue	Key findings
Pirchegger and Wagenhofer (1999)	Austria and Germany	A comparative study between 32 Austrian companies and 30 German companies in 1998, to examine the effect of the company size and the free float ratio on the four criteria of website reporting, namely: the content, technology, timeliness and user support criteria.	The study found that percentage of web presence is close between Austrian and German companies in 1998, which were 81% and 80% respectively. The results also showed the there is significant effect from the company size and percentage of free float on the levels of four criteria of internet reporting over the Austrian companies, while the results were entirely different from the German sample.
Bonson and Escobar (2002)	Europe	The study investigated the effect of the firm size, industry type and national culture on the level of internet reporting represented by adopting an un-weighted disclosure index which contains 23 voluntary items. The study sample included 300 companies selected from 15 European countries in 2001, 20 companies from each.	The results of descriptive analyses of the internet disclosure level were as follows: 86% of companies provided income statements and balance sheets, 73% of companies disseminated cash flow statements, 71% of companies published interim reports, 77% of companies disclosed audited reports. The statistical tests also revealed a significant association between industry type, firm size, national culture and the extent of internet reporting.

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
Debreceeny et al. (2002)	international	Using the data of ISAC (1999), the study strived to explore the impact of some company characteristics as determinants of the extent of presentation and content of financial reporting amongst 660 large companies spread over 22 countries in 1999.	Regression results supported the importance of company size, technology industry and US listing on the level of internet financial reporting. Foreign listing, market risk and growth prospects were not found to influence the scores of IFR.
Larran and Giner (2002)	Spain	Across a sample comprising 144 Spanish companies listed on the Madrid Stock Exchange (MSE) in 2001. The study examined the impact of the six company characteristics, on quantity and quality of financial disclosure on the internet using a weighted disclosure index consisting of six items.	The descriptive analysis showed that 74% of companies had an active website but only 58% provide financial information on their websites. The regression results indicated that the company size had positive significant effect on the quantity and quality of disseminated financial information. Conversely, it did not find such effect due to industry type, profitability, overseas listing, leverage and firm growth
Allam and Lymer (2003)	USA, UK, Canada, Australia and Hong Kong	A study examined the impact of the company size on the level of internet disclosure, which was measured by using an un-weighted disclosure index of the presentation format and content of annual reports. The study applied to 250 companies sampled from 5 countries, 50 companies from each, namely: the USA, the UK, Canada, Australia and Hong Kong.	The findings revealed that 99% of the sample had accessible websites. The study ranked the companies from US, the UK and Canada as prominent in internet reporting practices. The differences in the extent of internet reporting among countries were significant except the differences between the US and the UK. The results did not indicate significant association between the company's size and the extent of website disclosure.
Marston (2003)	Japan	The study was applied to 99 Japanese leading companies in 1998, to investigate the association between 3 company characteristics (size, profitability and industry type) on the level of internet disclosure, which was measured using the checklist consisting of 10 items. The data was later updated in 2001.	The descriptive results showed that 92% of the sample had a usable website and around 79% of the sample had a website with an English version. The results also revealed the there is no relationship between the three company's characteristics and the presence of the English version website. Furthermore, a significant relationship was found between the industry type and company size, with the level of internet disclosure, while such a relationship did not exist with the company profitability.

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
Marston and Polei (2004)	Germany	The study examined the effect of some company attributes (percentage of free float, profitability, firm size, systematic beta risk and foreign listing) on the presentation and content of internet corporate disclosure. The sample of the study included the top 50 German companies, and the data was collected in 2000 and 2003.	They found that the total level of website reporting, content and presentation, increased from 55% in 2000 to 68% in 2003, with advantage to the quantity of content items in both years. The results of regression analysis revealed the presence of a significant impact of the percentage of free float ratio and firm size on the level of internet reporting in 2000, while the foreign listing and firm size had that impact in 2003.
Xiao et al. (2004)	China	The study aims to explore the levels of website reporting among the largest 300 Chinese companies in 2001, in order to determine its relationship with some company attributes, namely: industry type, company size, ownership structure, foreign listing, auditor type, independent directors. The study adopted an un-weighted disclosure index contained 82 items to measure the level of internet reporting for these companies.	The results revealed that 68% (203 companies) of the sample had active websites, out of these 144 (71%) companies published financial information on their websites. The results of regression analysis indicated that there is positive significant impact of the ownership structure (foreign ownership, person ownership), industry type (IT sector), audit type (big-five firms) and percentage of independent directors on the level of corporate disclosure on the internet. The results also indicated a negative effect of governmental ownership on the level of website reporting.
Al-Htaybat (2005)	Jordan	Over 190 Jordanian companies listed on ASE in 2004; the study aimed to explore the extent of internet reporting by using an un-weighted disclosure index contains 28 items (10 for general information and 18 for financial information).	The descriptive analysis showed that only 55 (29%) Jordanian companies had active websites, and a small number of which engaged in IFR. Multivariate analyses indicated that there is positive association between the levels of printed and internet reporting. In addition, the firm size is the main predictor of ICR practices.
Bollen et al. (2006)	UK, Australia, France, Belgium, Netherlands and South Africa	The study was conducted amongst 270 companies selected from six countries; to examine the impact of particular firm characteristics on the quality of investor relations information published on the company's website by using weighted and un-weighted disclosure indices	Regression results showed that the level of investor relations information disseminated on the internet is positively affected by: company size, percentage of shares available to individual investors, internationalization (foreign listing and foreign revenue) and disclosure environment, whilst it is negatively

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
		containing 29 items.	affected by growth ratio and industry type (technology or not). However, there is no significant effect of firm performance and leverage on level of investor relations reporting.
Bonson and Escobar (2006)	13 Eastern European countries	Over 266 companies from 13 countries, the objective of this study is to analyse the gaps existing between the information disseminated by the companies based in Eastern Europe that have in that time joined the EU or were in the process of entering it. In addition, it aimed empirically to identify determinants of differences of the amount of disclosed information.	Findings reveal that variations in levels of online information published can be statistically explained using company size, affiliation to the financial sector and being audited by one of the big four firms. Country of origin was not found a significant criterion to identify differences in ICR percentages among companies.
Abdel-Salam and Street (2007)	UK	The study investigated the impact of and corporate governance (consists of four dimensions and proxy by nine experiment variables) on the timeliness of ICR, controlling of six firm-specific variables. The study sample consists of the top 115 UK companies listed on LSE in 2006. To measure the ICR timeliness, an un-weighted disclosure index containing 11 items was applied.	Evidence was found that indicates that providing more timely online reporting was associated with more experience in terms of the directors' age, lower tenure for directors on the boards and less cross directorships. However, board independence had a negative impact on the timeliness of ICR. Follow-up analysis indicates that role duality and block-holder ownership negatively affected timeliness of digital disclosure.
Abdel-Salam et al. (2007)	UK	The study sampled 110 UK companies listed on London Stock exchange (LSE) in 2005 to examine the effects of corporate governance variables on content (general content and credibility) and usability of internet disclosure, which was represented by an un-weighted disclosure index consisting of 143 items.	The OLS regression results showed that there are significant effects of the analysts following the firm, CEO duality, directors holding and directors' independence on the credibility and usability content of ICR. In contrast, none of the variables that were used as a proxy of ownership structure indicated significant effect on the ICR. All the control variables (industry type, firm size and growth rate) except profitability had significant effect on ICR.
Abdel-Salam and El-Masry(2008)	Ireland	The study addressed the effect of ownership structure and corporate governance on the timeliness of ICR of 44 listed Irish companies in 2006.	OLS regression results indicated that there is positive impact only of COE ownership and percentage of independent directors on the timeliness of ICR.

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
			Furthermore, the company size as a control variable also reported positive effect on timeliness of ICR.
Al-Motrafi (2008)	Saudi Arabia	The study examined the impact of eight explanatory firm factors on the level of internet reporting over 113 Saudi companies. The level of ICR was gauged through adopting an un-weighted disclosure index including 167 items, which represent two ICR components: usability and content (divided into general and creditability content)	The results of OLS regression indicated that the level of internet reporting was positively affected by stock market listing and company size, while it was negatively influenced by the percentage of institutional ownership. The study also did not find evidence which supports any significant effect of the industry type, profitability, auditor type, free float ratio, role duality, board size, governmental ownership and individual ownership.
Ezat and El-Masry (2008)	Egypt	This study uses firm characteristics and corporate governance variables to examine the significant factors that influence the timeliness of corporate internet reporting (CIR) by listed companies on the Cairo and Alexandria Stock Exchange.	Findings reveal that large companies which usually operate in the service sector, with more liquidity, a high percentage of independent directors, a larger size of board directors and a high ratio of free float, are more likely to disclose more timely online information.
Kelton and Yang (2008)	USA	The study investigated the effect of the corporate governance on the format (12 items) and content (24 items) of the internet reporting of 284 firms trading on NAZDAQ National Market in 2004.	The results of Poisson regression showed that firms with more likelihood to undertake ICR practices were characterised by lower rights of shareholders, higher independent directors, less block-holder ownership, and more meetings and a higher financial expertise percentage of the audit committee. The size of the company also was found a major determinant of the relationship between ICR and corporate governance variables.
Al Arussi et al. (2009)	Malaysia	The study examines the impact of six different variables, specifically the size, CEO ethnicity, level of technology, profitability, leverage and dominant personality (role duality), on level of financial and environmental disclosure by 201 listed Malaysian companies in 2005.	The multi regression analysis revealed a positive effect of the firm size, technology level and ethnicity of CEO on both environmental and financial reporting, while dominant personality had a negative impact only on the level of financial reporting.
Aly et al. (2010)	Egypt	The study adopted an un-weighted disclosure index	Multiple regression tests indicated that only 3 variables out of 7

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
		comprising 90 items, to explore the level of content and presentation of ICR and its potential determinants amongst 100 listed Egyptian companies in 2005.	predetermined variables had significant impact on the level of ICR, specifically industry sector, foreign listing and profitability. In contrast, other company characteristics, namely firm size, auditor size, leverage and liquidity did not affect ICR practices.
Elsayed (2010)	Egypt	An investigation into the impact of corporate governance and ownership structure on the extent of ICR by 343 listed Egyptian companies. Also, the study aims to explore the ICR consequences on the firm's value. The researcher constructed an un-weighted disclosure checklist containing 100 items, to measure four dimensions of ICR, namely presentation, content, timeliness and usability.	The results of the study revealed that the four ICR dimensions were affected, in varying degrees, by the company size, assets in place, leverage, legal form, industry type, audit type, foreign listing, shares activity, shares volatility, shares issuance, board size, family members on the board, and ownership structure (block-holder, managerial, governmental and institutional). The study concluded that there is a positive significant impact of the internet reporting on the firm's value.
Al-Htaybat (2011)	Jordan	The study strives to identify the status of ICR applications of all (272) companies listed on the ASE in 2010. Therefore, an un-weighted disclosure checklist containing 70 items was developed, comprising 20 general items, and 50 financial and non-financial items. It also aims to explain the potential variations in ICR practices among companies based on several companies' characteristics.	The study concluded that 64% (175) of Jordanian companies had active websites. The overall level of ICR was 70% on average. The OLS regression results indicated that the level of ICR was positively influenced by the company size, performance (ROA), familiarity (online age of the company), and foreign ownership. Only industry affiliation did not appear significant in explaining any of the internet reporting practices.
Henchiri (2011)	Tunisia and Morocco	The study surveyed the quality of website disclosure over the top 91 listed Tunisian (50) and Moroccan (41) companies in 2007 -using an un-weighted disclosure index containing 123 items. The study also identified some companies attributes as determinants of the level of ICR, namely industry sector, size, country, and stock and accounting performance, and foreign ownership.	The results showed that 67% (61) of the total of companies had websites; 32 Tunisian and 29 Moroccan companies. The level of internet reporting was 38% of Moroccan companies versus 28 % of Tunisian companies. The OLS regression results revealed that only percentage of foreign ownership and accounting performance impact on the level of ICR.
AbuGhazaleh et al. (2012a)	Jordan	A study was conducted to investigate the website	The results explanatory analyses reveal that the presence of a

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
		presence and its use as an investor relations tool of listed companies on ASE. In doing so, ten explanatory variables were identified, specifically size, profitability, industry type, auditor type, institutional ownership, government ownership, number of shareholders, growth prospects, age, and equity need.	corporate website is positively influenced by the firm size and affiliation to the financial sector. In addition to these two variables, the level of online disclosure is positively significantly affected by governmental ownership, institutional ownership, and number of shareholders; nonetheless, company age negatively impacted it.
Boubaker et al (2012)	France	The study examines the determinants of web-based disclosure by 529 French-listed firms in 2005. The disclosure index includes general information (8 items) and investor-related information (17 items); financial information (25 items); and corporate governance (9 items), corporate social responsibility (6 items), user friendly and technology (26 items) and timeliness (9 items)	Descriptive analysis highlights that French-listed firms disseminate available rather than timely information. Inferential analyses shows that the tendency towards web-based reporting increases with larger size, dispersed ownership structure, larger audit firm, greater bonds issuance, and IT industry affiliation. The findings show that, for the website practice, voluntary disclosures are more appropriate than mandatory disclosures.
Nurunnabi and Hossain (2012)	Bangladesh	The study seeks to highlight the current status of IFR in Bangladesh using a disclosure index approach (56 items). Also, it provides empirical evidence from an emerging economy about the impact of some company characteristics on IFR practices. The survey includes 285 listed companies in Bangladesh in 2009.	Descriptive results show that only 83 (29.1%) companies had web sites out of the 285 listed companies. In addition, only 28 (9.8%) companies' provided financial information, indicating a major fall of ICR utilisation. Empirical analyses indicate that, out of seven variables, only non-family ownership and having big audit firms variables significantly affected the levels of online disclosure.
Samaha et al. (2012)	Egypt	The study examines the impact of corporate governance underpinnings on adoption and comprehensiveness of corporate internet reporting practices (CIR) (content, presentation, and overall) of the largest 100 listed Egyptian companies. Corporate governance is reflected by ownership structure (free float, managerial and government ownership) and board of directors' structure (board	Results reveal a significant effect of governance on the tendency to adopt CIR and its levels. Findings suggest that CIR adoption can be highly predicted by percentages of ownership diffusion; managerial and governmental ownership, in addition to board independence. On the other hand, amounts of CIR can be explained based on ownership dispersion, governmental ownership, board size and independence.

Appendix 2: Studies that explain ICR practices			
Author(s)/year	Context(s)	Core issue	Key findings
		independence and size, and role duality).	
Uyar (2012)	Turkey	Over the sample of 43 listed Turkish companies in 2009, which were divided into two groups: 14 companies were listed on the Istanbul Stock Exchange (ISE) corporate governance index (XCORP) and 30 companies were non-listed in that index, in order to compare the level of internet disclosure practices between these two groups. In addition, three explanatory factors were used to predict ICR levels, specifically, size, industry type and profitability.	The Mann-Whitney results revealed that there are significant differences in level of internet disclosure between the XCORP companies and non-XCORP companies. Such differences were not attributed to the industry sector as indicated by correlation and regression analysis. However, the regression analysis indicated that there is a significant effect of the firm size on level of ICR score, whilst such an effect was not to be found in respect to profitability.
Desoky and Mousa (2013)		The research aims to address the relationship between levels of investors' relations practices on the website by companies listed on the Bahrain Stock Exchange (BSE) and firm attributes and corporate governance. Thus, a disclosure index consisting of 31 items of reflecting internet disclosure was prepared.	Out of 40 companies surveyed, 34 (85%) had to maintain websites and, only 9 (26.47%) companies had an independent section for investor relations. Findings shows levels of online disclosure positively influenced by firm size, board size and composition, while it is negatively affected by firm performance and firm type.
Sharma (2013)	Nepal	The study aims to identify the extent of web-based disclosure by commercial banks (23) listed on the Nepal Stock Exchange (NSE). Further, the study investigated determinants of variations in levels of web-based disclosure by those banks. To do so, two steps were undertaken: a 50 items disclosure index was designed as well as a model with six explanatory variables was considered.	All Nepalese commercial listed banks were found to have maintained corporate websites with varying degrees of disclosure practices. Overall, commercial banks disclosed 49.58 % of items included in the index. Findings also indicate that levels of website practices are significantly impacted by bank size, foreign ownership and board independence. However, no effects were found regarding profitability, leverage and public ownership.

### Appendix (3) Studies that explain ICR adoption

Appendix 3: Studies that explain ICR adoption			
Author(s)/year	Context(s)	Core issue	Key findings
Marston and Leow (1998)	UK	The study examined the association between firm size and industry type, with two internet disclosure variables namely, publishing financial information and whether this information is full or summarised. The sample of the study involved 100 companies listed on FTSE 100 in 1997.	The results indicated that the size is the only factor associated with publishing financial information, where the larger companies tend to provide financial information more than small companies. On the other hand, the study did not find a significant relationship between the industry type and any underlying internet reporting variables.
Ashbaugh et al. (1999)	USA	The study was conducted on 290 American companies over the period between 1997 and 1998. It investigated the effect of three companies' characteristics specifically, company size, industry type and profitability, on using financial reporting on the internet.	The study indicated that 87% of the sample had an active website. Although 70% of it used online reporting, considerable variation in timeliness as proxy of quality occurred. The regression results revealed that only the company size factor had significant effect on the companies' financial reporting practices on the internet.
Bernnan and Hourigan (1999)	Ireland	The study investigated the relationship between four companies' characteristics (the size, industry type, leverage and demand for corporate information represented by annual report print runs and number of shareholders, on financial reporting practices of 109 Irish companies in 1998.	The results showed that 50 (46%) companies possessed a website. These companies are characterised by the larger size and larger annual report print runs. Most companies that engaged in internet reporting were from the services and financial sectors. Leverage and number of shareholder were not associated with website financial reporting.
Craven and Marston (1999)	UK	The study examined the association between the size and industry type of the company on the propensity of ICR, over UK sample consisting of 206 1998.	The study indicated that there is a positive relationship between several proxies of size and the adoption of internet reporting. In contrast, it was found to have no relation with the industry type.
Hassan et al. (1999)	Malaysia	The study was conducted on 247 listed and unlisted Malaysian companies in 1998, to explore the relationship of the company characteristics, particularly the size,	The results of t-test revealed that the presence of a company's website was significantly associated with the three study factors (the size, profitability and industry sector), while publishing financial information variable was only associated with

Appendix 3: Studies that explain ICR adoption

Author(s)/year	Context(s)	Core issue	Key findings
		profitability and industry type, with the presence of companies' websites and disseminating the financial information via those websites.	profitability and company size, where they found that the larger and more profitable companies are more motivated to disclose financial information on their websites.
Ettredge et al. (2002)	USA	The study aimed initially to explore the level of mandatory (4 items) and voluntary (12 items) financial disclosure on the internet of 220 US companies, and identify to what extent it is influenced by five different factors, namely: firm size, equity financing needs, performance, information asymmetry, and disclosure quality as scored by the Association for Investment Management and Research (AIMR) in 1997.	The results showed the presence of underlying disclosure items -both mandatory and voluntary- published on companies' websites associated with large size, high needs for equity capital and less information asymmetry.
Haasbroek (2002)	South Africa	The study examined the impact of industry type and profitability of the firm on the level of internet reporting over the 300 largest South African companies in 2001.	The results showed that 227 out of 300 companies had active websites, and around 60% of which provided their financial statements. The findings also revealed there is a significant effect of the profitability on the presence of online annual reports in South Africa.
Ismail (2002)	Gulf co-operation council countries (GCC)	The study was conducted over 128 companies selected from three GCC countries (Qatar, Saudi Arabia and Bahrain) to examine the effect of the company characteristics specifically, the size, leverage and profitability on the voluntary tendency towards communicating financial information over web broadcasts disclosure, controlling to the country of origin and industry type variables.	The descriptive analysis showed that only 39.07% of the companies had accessible websites. The results of logistic regression indicated that the likelihood of disseminating the financial information on the companies' websites is not merely influenced by firm characteristics (the size, leverage and profitability), but also affected by the combination of these characteristics with industry type and country of origin.
Joshi and Al-Modhahki (2003)	Bahrain and Kuwait	An investigation of the factors that probably explain the voluntary adoption of IFR over 75 companies, 33 from	The data of two countries was dealt with totally as one sample. The descriptive results showed that the percentage of web presence was 48.5% and 47.6% for Bahrain and

### Appendix 3: Studies that explain ICR adoption

Author(s)/year	Context(s)	Core issue	Key findings
		Bahrain and 42 from Kuwait, in the 2002. The explanatory factors that were identified were: the size, industry type, audit type, profitability and debt ratio and country's effect.	Kuwait samples respectively. The discriminant analysis indicated that the company size and industry type were the only factors that distinguished the adopters from non-adopters of IFR companies.
Oyelere et al. (2003)	New Zealand	The study investigates the impact of some company characteristics, particularly: firm size, liquidity, industry type, profitability, leverage, globalisation, and ownership spread, on the use of website reporting of the 229 listed companies on the New Zealand stock Exchange (NZSE) in 1998.	The results of univariate analysis (t-test) indicated that there is a significant impact of all identified variables on the utilising of website disclosure, whilst the results of Logistic regression supported only the effect of the ownership spread, liquidity and company size.
Rodrigues and Menezes (2003)	Portugal	The study was conducted on 123 listed Portuguese companies, investigating the relationship of certain company determinants on the presence and extent of online reporting.	The correlation results showed that the presence and level of online financial reporting is positively associated with company size. Also it concluded that the industry sector positively related with the presence of a website only in 2000, while the foreign listing was insignificantly associated with both ICR variables.
Momany and Al-Shorman (2006)	Jordan	A survey of ICR reporting practices among 60 Jordanian companies listed on the ASE in 2004, to describe the main characteristics of the companies engaged in ICR.	Descriptive statistics showed that 27 companies had a website, 70% of which reported financial information. The descriptive statistics also indicated that the companies that undertake ICR are characterised by: high leverage ratio, larger size, more concentrated ownership, newer age, more international investors.
Trabelsi and Labelle (2006)	Canada	The study examined the determinants of managers' decisions to deliver incremental information content by IFR over traditional financial reporting by 118 listed Canadian firms in 2000.	The content analysis showed that there is incremental financial information content of internet reporting over traditional reporting. It also indicated only litigation risk and investors' demand associated with the existence of additional IFR.

### Appendix 3: Studies that explain ICR adoption

Author(s)/year	Context(s)	Core issue	Key findings
Al-Shammari (2007)	Kuwait	The study examined the probable effect of nine company attributes on internet financial reporting practices among 143 companies listed on Kuwait Stock Exchange (KSE) in 2005.	The Logit regression reported that large size firms, with low liquidity firms, companies audited by big 4 international firms and insurance sector firms, were more likely to engage in IFR. Conversely, the study did not find significant impact of the profitability, ownership structure, leverage, internationalization and company age on IFR.
Aly (2008)	Egypt	An investigation of factors that leads to non-adoption of online disclosure; using semi-structured interviews with 17 stakeholders in Egypt (Investor relations officers, fund managers, financial analysts, audit partners, and managers from the Egyptian Stock Exchange).	Among important points that interviewees made were: that the propensity towards ICR is highly influenced by management style, culture, organisational culture, resistance to change, technical abilities, imitation rivals and rules and regulations.
Barako et al. (2008)	Indonesia	The study surveys 343 Indonesian companies listed on the Jakarta Stock Exchange (JSE) in 2007 to explore the factors which influence the adoption of web financial communication.	The logistic regression results indicated that the presence and utilisation of the web in corporate communication is most probably linked with large size and older companies. No significant results were found in respect to leverage, industry type, profitability, ownership structure, independent directors and audit committee independence.
Bonson and Escobar (2010)	United Arab Emirates (UAE)	An investigation into the determinants of the use of the corporate website as a channel for disclosing financial information by 132 firms listed on two stock exchanges in (UAE) (Dubai Financial Market and Abu Dhabi Securities Exchange).	Survey reveals that approximately 67% were found to utilise their websites for financial reporting. Results show that the voluntary adoption of online reporting can be determined only by firm size and leverage. However, profitability, liquidity, and industry sector were not found significantly to explain such a phenomenon.
Al-Hayale (2010)	Jordan	The study draws on the perspectives of investors and financial managers, in order to examine advantages and obstacles of implementing online reporting among industrial companies listed on ASE, Jordan. The study uses structured interviews, and	Findings show that 55% of surveyed companies maintain accessible websites, and only 30% use them in corporate financial reporting. In addition, respondents emphasised common benefits of website disclosure. Moreover, the study revealed that among the main obstacles of maintaining online financial disclosure are: a lack of

Appendix 3: Studies that explain ICR adoption

Author(s)/year	Context(s)	Core issue	Key findings
		focuses on several factors that might impede adopting online reporting.	expertise, regulation, management and government support and high initial setup cost.
AbuGhazaleh et al. (2012b)	Jordan	A qualitative investigation into the factors affecting the propensity towards having a corporate website and its use for general purposes and specifically for reporting investor relation information. In doing so, semi-structured interviews have been conducted with 12 interviewees with different managerial positions in Jordan.	Findings show that triggering website adoption was usually motivated by enhancing the company's image and reputation, a need to re-brand the company, and international influences. Interviewees indicated that top management support plays a core role in influencing the ways in which companies use their website both in general and for investor relations activities in particular. The lack of a corporate online disclosure is highly related to the management belief that stakeholders are not yet ready or willing to use it.
Ojah and Mokoaleli-Mokoteli (2012)	International	Involving a panel of 44 developed and developing countries, the study examines the impact of the macro and micro environment on the propensity towards Internet financial reporting (IFR) adoption. Macro-environment variables include technology infrastructure, financial market structure, political legal and legal institutions, while micro-environment represents firms' specific attributes, namely size, profitability, financing needs and ownership diffusion.	In convergence with models that were designed, the following results were highlighted: firstly, all macro-environment factors positively effect IFR adoption except legal environment, which came with a negative sign. More profitably with less need to fund reduces the tendency towards IFR; secondly, when controlling the corporate governance structure applied (as a proxy of ownership structure), its effect appeared significant with varying degrees; and finally it was evident that IFR significantly contributes to cost of debt reduction.

## Appendix (4) The preliminary disclosure index

1. Content	
1.1 Contact details information	
1.1.1 Contact us option	Alhtaybat (2011); Nurunnbi and Hossain (2011)
1.1.2 The existence of investor relations section	FASB (2000); Larrian and Giner (2002); Marston and Polei (2004); Bonson and Escobar (2006); Al-Motrafi (2008); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.1.3 Name of investor relations officer	Elsayed (2010); Turel (2010); Uyar (2012)
1.1.4 E-mail to investor relations	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Bonson and Escobar (2006); Kelton and Yang (2008); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.1.5 Phone number to investor relations	FASB (2000); Marston and Polei (2004); Xiao et al. (2004); Al-Motrafi (2008); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.4.6 Postal address to investor relations	FASB (2000); Marston and Polei (2004); Xiao et al. (2004); Al-Motrafi (2008); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2 Financial and accounting information	
1.2.1 Balance sheet	Brennan and Hourigan (1999); Deller et al. (1999); FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bollen et al. (2006); Bonson and Escobar (2006); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.2 Income statement	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Xiao et al. (2004) Al-Htaybat (2005); Bollen et al. (2006); Bonson and Escobar (2006); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.3 Cash flow statement	Deller et al. (1999); FASB (2000); Brennan and Hourigan (1999); Lybaert (2002); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.4 Statement of changes in shareholders' equity	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Al-Htaybat (2005);

	Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.5 Notes to financial statements	Deller et al. (1999); Brennan and Hourigan (1999); FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bollen et al. (2006); Bonson and Escobar (2006); Al Arussi et al. (2009); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.6 Financial ratios	Brennan and Hourigan (1999); FASB (2000); Lybaert (2002); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011)
1.1.7 Previous annual reports	Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Turel (2010); Henchiri (2011); Uyar (2012)
1.2.8 Current annual report	Etterdge et al. (2002); Larrian and Giner (2002); Lybaert (2002); Xiao et al. (2004); Kelton and Yang (2008); Al Arussi et al. (2009); Elsayed (2010); Uyar (2012)
1.2.9 Management or directors' report	Brennan and Hourigan (1999); Lybaert (2002); Allam and Lymer (2003); (Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011)
1.2.10 Audit committee report/ Auditor report	FASB (2000); Lybaert (2002); Allam and Lymer (2003); Fisher et al. (2004); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bonson and Escobar (2006); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.11 Previous interim financial reporting: monthly, quarterly, semi-annually or other	Deller et al. (1999); FASB (2000); Etterdge et al. (2002); Lybaert (2002); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Bollen et al. (2006); Al-Motrafi (2008); Kelton and Yang (2008); Al Arussi et al. (2009); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.12 Financial statements according to IFRS	Al-Motrafi (2008); Elsayed (2010); Nurunnbi and Hossain (2011)
1.2.13 Consolidated financial statement	FASB (2000); Lybaert (2002); Allam and Lymer (2003); Lodhia et al. (2004);
1.2.14 Financial statements in multiple currency	Brennan and Hourigan (1999); Al-Motrafi (2008);
1.2.15 Financial statements time series	Deller et al. (1999); Brennan and Hourigan (1999); Larrian and Giner (2002); Marston and Polei (2004); Bollen et al. (2006); Elsayed (2010); Turel (2010); Al-

	Htaybat (2011); Henchiri (2011)
1.2.16 Audited financial statements	Fisher et al. (2004); Al-Motrafi (2008); Salehi et al. (2010)
1.2.17 Segmental reporting	Brennan and Hourigan (1999); FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011)
1.2.18 Historical dividends figures	Bonson and Escobar (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Turel (2010); Nurunnbi and Hossain (2011); Uyar (2012)
1.2.19 Selective accounting data	Deller et al. (1999); Bollen et al. (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Henchiri (2011)
1.2.20 Special conditions disclosure	Uyar (2012)
1.2.21 Earning releases	Elsayed (2010);
1.2.22 Sales of key products	Xiao et al. (2004);
1.2.23 Previous press releases/ news summaries	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Bollen et al. (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Al Arussi et al. (2009); Salehi et al. (2010)
1.2.24 Overview on the past financial performance (e.g. highlights, fact-sheet, summaries)	FASB (2000); Etterdge et al. (2002); Lodhia et al. (2004); Kelton and Yang (2008); Allam and Lymer (2003); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011) ; Nurunnbi and Hossain (2011)
1.2.25 Performance review and analysis	FASB (2000) ; Al-Htaybat (2005); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011)
1.2.26 Earnings estimates or sales forecasts	Xiao et al. (2004); Kelton and Yang (2008) Elsayed (2010);
1.2.27 Industry statistics or data	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Elsayed (2010); Al-Htaybat (2011);
1.2.28 Market share of key products/ domestic and foreign	Xiao et al. (2004); Elsayed (2010).
1.2.29 Historical stock prices	FASB (2000); Larrian and Giner (2002); Lybaert (2002); Etterdge et al. (2002); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Kelton and Yang (2008); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011) ; Nurunnbi and Hossain (2011)
1.2.30 Share price performance In relation to stock market index	Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Al-Motrafi (2008); Elsayed (2010); Turel (2010)
1.2.31 Link to Amman Stock Exchange	Etterdge et al. (2002); Xiao et al. (2004); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010);
1.2.32 Links to financial analysts	Deller et al. (1999); Bollen et al. (2006); Bonson and Escobar (2006); Kelton and Yang (2008); Elsayed (2010);
1.2.33 Significant company events during the year	Al-Htaybat (2011); Nurunnbi and Hossain (2011)

1.2.34 Non-financial performance review	Brennan and Hourigan (1999); Al Arussi et al. (2009)
1.2.35 Future expansions	Al-Htaybat (2011); Nurunnbi and Hossain (2011)
1.3 Corporate governance information	
1.3.1 Notice to annual shareholders' meeting: the place, the date, the agenda and participants	Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Al-Motrafi (2008); Elsayed (2010); Salehi et al. (2010); Nurunnbi and Hossain (2011); Uyar (2012)
1.3.2 Voting results of AGM/ proxy voting form	Marston and Polei (2004); Al-Motrafi (2008); Uyar (2012)
1.3.3 Text or record of speeches and presentations of the management board during the AGM	Etterdge et al. (2002); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Kelton and Yang (2008); Elsayed (2010); Uyar (2012)
1.3.4 List of the Board of Directors members indicating executives/non executives directors	Brennan and Hourigan (1999); FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Xiao et al. (2004); Al-Htaybat (2005); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Salehi et al. (2010); Al-Htaybat (2011); Uyar (2012)
1.3.5 Board of Directors profiles	Brennan and Hourigan (1999); FASB (2000); Bollen et al. (2006); Allam and Lymer (2003); Marston and Polei (2004); Al-Htaybat (2005); Bonson and Escobar (2006); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011); Henchiri (2011); Nurunnbi and Hossain (2011)
1.3.6 Management Team profiles	Al-Htaybat (2005); Bonson and Escobar (2006); Al-Motrafi (2008); Elsayed (2010); Salehi et al. (2010); Al-Htaybat (2011)
1.3.7 compensation of Board of directors and management team	Marston and Polei (2004); Al-Motrafi (2008); Elsayed (2010); Turel (2010); Nurunnbi and Hossain (2011)
1.3.8 Chairman's message to shareholders	Brennan and Hourigan (1999); FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Al-Htaybat (2005); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011); ; Uyar (2012)
1.3.9 Ownership structure	FASB (2000); Lybaert (2002); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Al-Mmotrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Turel (2010); Al-Htaybat (2011); ; Nurunnbi and Hossain (2011); Uyar (2012)
1.3.10 Ownership percentage of the Board and management members	
1.3.11 Corporate citizenship	FASB (2000); Xiao et al. (2004); Bonson and Escobar (2006); Al-Mmotrafi (2008)
1.3.12 Company's key shareholders	Al-Mmotrafi (2008); Al Arussi et al. (2009); Turel (2010); Al-Htaybat (2011); ; Nurunnbi and Hossain (2011)
1.3.13 Corporate governance guidelines	Kelton and Yang (2008); Elsayed (2010); Nurunnbi and Hossain (2011)
1.3.14 Articles of Association	Marston and Polei (2004); Elsayed (2010); Uyar (2012)
1.3.15 Code of conduct for	Marston and Polei (2004); Al-Motrafi (2008); Kelton

directors, officers and employees	and Yang (2008); Elsayed (2010); Uyar (2012)
1.3.16 Organisational Structure	Al-Htaybat (2005); Bollen et al. (2006); Elsayed (2010); Al-Htaybat (2011); HENCHIRI (2011)
1.3.17 Management's plans to meet objectives and strategies	Al-Htaybat (2005); Bonson and Escobar (2006); Bonson and Escobar (2006); Elsayed (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011)
1.3.18 Charters of audit committees	Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Nurunnbi and Hossain (2011); Uyar (2012)
1.3.19 Charters of other committees	Al-Motrafi (2008); Elsayed (2010); Kelton and Yang (2008)
1.3.20 Listing of analysts following the firm	FASB (2000); Etterdge et al. (2002); Larrian and Giner (2002); Marston and Polei (2004); Al-Motrafi (2008); Kelton and Yang (2008); Turel (2010); Uyar (2012)
1.3.21 Analysts ratings/assessment of analysts	Marston and Polei (2004); Al-Motrafi (2008); Kelton and Yang (2008)
1.3.22 Analysts forecasts such as future turnover/ Analysis report	Marston and Polei (2004); Salehi et al. (2010)
1.3.23 Information about the firm's stock transfer agent	FASB (2000); Etterdge et al. (2002); Al-Motrafi (2008); Kelton and Yang (2008)
1.3.24 The advantages of holding the firm's stock	Etterdge et al. (2002); Kelton and Yang (2008); Al-Motrafi (2008);
1.3.25 Information regarding a dividend reinvestment plan	Etterdge et al. (2002); Kelton and Yang (2008)
1.3.26 Information about directors dealing of the company stocks	Marston and Polei (2004); Nurunnbi and Hossain (2011)
1.3.27 Company optioning policy	Marston and Polei (2004); ; Al-Htaybat (2011);
1.3.28 Shares information: Number of shares; Securities markets on which it is traded, issuance, wrights, split and etc.	Bonson and Escobar (2006); ( Larrian and Giner (2002); Al-Mmotrafi (2008); Al-Htaybat (2011); Nurunnbi and Hossain (2011)
1.3.29 Links to supervisory bodies such as Central Bank of Jordan	Bonson and Escobar (2006); Kelton and Yang (2008)
1.3.30 Dividends policy: distribution and reinvestment	Kelton and Yang (2008); Turel (2010); Nurunnbi and Hossain (2011); Uyar (2012)
1.3.31 Side-line activities of the member of the management such as mandates	Marston and Polei (2004);
1.3.32 Documentation of press and analysts conferences (video, sound, pdf. etc.)	Marston and Polei (2004)
1.3.33 Disclosure policy	Uyar (2012)
1.3.34 Disclosure of insiders	Uyar (2012)
1.3.35 Corporate governance rating report	Uyar (2012)
1.3.36 Corporate governance compliance report	Uyar (2012)
1.4 Social responsibility Information	Bollen et al. (2006); Bonson and Escobar (2006)
1.4.1 Company history	Al-Htaybat (2005); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011);
1.4.2 Company profile	FASB (2000); Lodhia et al. (2004)Al-Htaybat (2005); Al-Motrafi (2008); Elsayed (2010); Uyar (2012)

1.4.3 Trade registry information	Uyar (2012)
1.4.4 Customer profile	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Elsayed (2010); Salehi et al. (2010); Al-Htaybat (2011);
1.4.5 Employee profile/ number training, qualifications and turnover ratio	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011);
1.4.6 Information on intellectual capital	Al-Htaybat (2005); Elsayed (2010); Bonson and Escobar (2006)
1.4.7 Environmental Report	Marston and Polei (2004); Bollen et al. (2006); Bonson and Escobar (2006); Elsayed (2010); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
1.4.8 Safety or health report	Marston and Polei (2004); Elsayed (2010); Henchiri (2011)
1.4.9 Corporate/management responsibility report	FASB (2000); Bollen et al. (2006); Bonson and Escobar (2006); Elsayed (2010); Nurunnbi and Hossain (2011)
1.4.10 Stand –alone CSR report	Turel (2010)
1.4.11 Sustainability report	Turel (2010)
1.4.12 Mission/Vision statement	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Elsayed (2010); Al-Htaybat (2011)
1.4.13 Donations/grants to community groups	Marston and Polei (2004); Elsayed (2010)
1.4.14 Links to products, services and sales information	FASB (2000); Al-Htaybat (2005); Elsayed (2010); Al-Motrafi (2008);
1.4.15 Product quality and safety	Elsayed (2010)
1.4.16 Link to CSR page	Al-Motrafi (2008); Turel (2010)
1.4.17 Other Information on CSR: education, culture, art and sport	Uyar (2012)
(2) Timeliness of information	
2.1 Latest press releases or news	Deller et al. (1999); Lybaert (2002); Allam and Lymer (2003); Marston and Polei (2004); Xiao et al. (2004); Abdel-Salam and Street 2007; Abdel-Salam and El-Masry 2008; Bollen et al. (2006); ; Bonson and Escobar (2006); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010) Al-Htaybat (2011) ; Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
2.2 Latest stock prices	Deller et al. (1999); FASB (2000); Etterdge et al. (2002); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
2.3 Calendar of events of interest to investors	Deller et al. (1999); Lybaert (2002); Etterdge et al. (2002); Larrian and Giner (2002); Marston and Polei (2004); Abdel-Salam and Street 2007; Abdel-Salam and El-Masry 2008; Davey and Homkajohn 2004; Xiao et al. (2004); Bollen et al. (2006); Bonson and Escobar (2006); Al-Motrafi (2008); Al Arussi et al. (2009); Elsayed (2010); Salehi et al. (2010); Henchiri (2011) ; Uyar (2012)

2.4 Date of last webpages update	Pircheggar and Wagenhofer (1999); Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Abdel-Salam and Street 2007; Abdel-Salam and El-Masry 2008; Bollen et al. (2006); Bonson and Escobar; (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Salehi et al. (2010); Turel (2010); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
2.5 Statement indicating frequency of updates to financial information provided	Pircheggar and Wagenhofer (1999); Abdel-Salam and Street 2007; Al-Motrafi (2008); Abdel-Salam and El-Masry 2008
2.6 Hints for finding current information directly	Lybaert (2002); Elsayed (2010)
2.7 Latest financial ratios	Bonson and Escobar (2006); Elsayed (2010)
2.8 Latest financial highlights/ summaries	Etterdge et al. (2002); Abdel-Salam and Street 2007; Elsayed (2010)
2.9 Option to register for future e-mail alerts regarding press releases, newsletters, etc.	Allam and Lymer (2003); Davey and Homkajohn 2004; Lodhia et al. (2004) Marston and Polei (2004); Bollen et al. (2006); Abdel-Salam and Street 2007; Abdel-Salam and El-Masry 2008; Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010)
2.10 Latest interim reports provided	Allam and Lymer (2003); Abdel-Salam and Street 2007; Al-Motrafi (2008); Abdel-Salam and El-Masry 2008; Elsayed (2010); Kelton and Yang (2008)
2.11 Latest dividends announcements	Elsayed (2010)
2.12 Monthly or weekly sales or operating data	Marston and Polei (2004); Elsayed (2010); Salehi et al. (2010); Nurunnbi and Hossain (2011)
2.13 Response provided to request email and online requests indicating when a response will be provided	Pircheggar and Wagenhofer (1999); Lybaert (2002); Bollen et al. (2006); Abdel-Salam and Street 2007; Abdel-Salam and El-Masry 2008; Al-Motrafi (2008)
(3) Presentation	
3.1 Financial data in Excel-format	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Allam and Lymer (2003); Fisher et al. (2004); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Kelton and Yang (2008); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Henchiri (2011); Nurunnbi and Hossain (2011)
3.2 Financial data in Word-format	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Allam and Lymer (2003); Fisher et al. (2004); Lodhia et al. (2004) Bozcuk et al. (2011); Henchiri (2011) ; Nurunnbi and Hossain (2011)
3.3 Financial data in PowerPoint-format	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Allam and Lymer (2003); Fisher et al. (2004); Lodhia et al. (2004) Bozcuk et al. (2011) ; Henchiri (2011); Nurunnbi and Hossain (2011)
3.4 Financial data in PDF-format	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Allam and Lymer (2003); Fisher et al. (2004); Lodhia et al. (2004); Marston and

	Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Kelton and Yang (2008); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Henchiri (2011); Nurunnbi and Hossain (2011)
3.5 Financial data in HTML-format	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Al-Htaybat (2005); Bollen et al. (2006); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Nurunnbi and Hossain (2011)
3.6 Financial data in XBRL-format	Bollen et al. (2006); Henchiri (2011)
3.7 Financial data in multiple file format	Deller et al. (1999); FASB (2000); Larrian and Giner (2002); Lybaert (2002); Al-Htaybat (2005); Bollen et al. (2006); Marston and Polei (2004); Xiao et al. (2004); Bonson and Escobar (2006); Al-Motrafi (2008); Kelton and Yang (2008); Turel (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Nurunnbi and Hossain (2011)
3.8 Graphic images	FASB (2000); Marston and Polei (2004); Xiao et al. (2004); Kelton and Yang (2008); Elsayed (2010); Turel (2010); Henchiri (2011); Uyar (2012)
3.9 Chart of stock price movement	Lybaert (2002); Al Arussi et al. (2009); Al-Motrafi (2008)
3.10 Sound files	FASB (2000); Marston and Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
3.11 Video files	FASB (2000); Marston and Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Bozcuk et al. (2011); Henchiri (2011); Nurunnbi and Hossain (2011); Uyar (2012)
3.12 Clear boundaries between the financial and other information	Marston and Polei (2004); Xiao et al. (2004); Elsayed (2010)
3.13 Clear boundaries between the audited and un-audited accounting information	Fisher et al. (2004); Al-Motrafi (2008); Nurunnbi and Hossain (2011)
3.14 Change In printing friendly format	Marston and Polei (2004); Elsayed (2010)
3.15 Downloadable financial files	FASB (2000); Lybaert (2002); Allam and Lymer (2003); Lodhia et al. (2004); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011); Bozcuk et al. (2011); Nurunnbi and Hossain (2011)
3.16 Multi languages of home page	FASB (2000); Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bollen et al. (2006); Al-Motrafi (2008); Elsayed (2010); Salehi et al. (2010); Turel (2010); Al-Htaybat (2011); Henchiri (2011); Bozcuk et al. (2011)
3.17 English version of the financial and accounting information	Al-Motrafi (2008); Turel (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011); Uyar (2012)
3.18 English version of investor	Uyar (2012)

relation page	
3.19 Online participating in meetings	Bollen et al. (2006); Elsayed (2010); HENCHIRI (2011)
(4) Usability	
4.1 Help site	Marston and Polei (2004); Elsayed (2010); Xiao et al. (2004)
4.2 Site Map	FASB (2000); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bonson and Escobar (2006); Al-Motrafi (2008); Elsayed (2010); Salehi et al. (2010); Al-Htaybat (2011); Nurunnbi and Hossain (2011); Uyar (2012)
4.3 Search engine	Deller et al. (1999); FASB (2000); Lybaert (2002); Allam and Lymer (2003); Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bollen et al. (2006); ; Bonson and Escobar (2006); Al-Motrafi (2008); Kelton and Yang (2008); Elsayed (2010); Salehi et al. (2010); Al-Htaybat (2011); ; HENCHIRI (2011); Nurunnbi and Hossain (2011); Uyar (2012) ; Uyar (2012)
4.4 Pull-down menu	Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Kelton and Yang (2008); Elsayed (2010)
4.5 Mailing list	Deller et al. (1999); Larrian and Giner (2002); Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2005); Bollen et al. (2006); Bonson and Escobar (2006); Kelton and Yang (2008); Elsayed (2010); HENCHIRI (2011)
4.6 text -only alternative available	FASB (2000); Xiao et al. (2004)
4.7 Frequently asked questions box (FAQ)	Deller et al. (1999); Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Bollen et al. (2006); Bonson and Escobar (2006); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011); HENCHIRI (2011); Nurunnbi and Hossain (2011); Uyar (2012)
4.8 Table of contents	FASB (2000); Lybaert (2002); Al-Motrafi (2008); Elsayed (2010)
4.9 One click to get to investor relations information	Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Elsayed (2010); Turel (2010) ; Bozcuk et al. (2011)
4.10 One click to get to CSR information	Uyar (2012)
4.11 One click to get to Corporate Governance information	Uyar (2012)
4.12 Link to annual report on home page	FASB (2000); Lodhia et al. (2004); Bollen et al. (2006); Al-Motrafi (2008); Elsayed (2010); Al-Htaybat (2011); Bozcuk et al. (2011); HENCHIRI (2011); Nurunnbi and Hossain (2011)
4.13 Home page button	Uyar (2012)
4.14 Link to home page from annual reports	Lodhia et al. (2004); Marston and Polei (2004); Xiao et al. (2004); Al-Htaybat (2011); Bozcuk et al. (2011); Nurunnbi and Hossain (2011)
4.15 Inside annual report techniques (to know if they are inside annual report or not)	FASB (2000); Lodhia et al. (2004)

4.16 Multiple links other than stated such as link to parent or subsidiary	FASB (2000); Lybaert (2002); Allam and Lymer (2003); Elsayed (2010); Salehi et al. (2010); Al-Htaybat (2011); Bozcuk et al. (2011)
4.17 Next/previous/top buttons to navigate sequentially	FASB (2000); Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004)
4.18 Privacy statement/ security of information	Al-Motrafi (2008); Elsayed (2010); Nurunnbi and Hossain (2011); Uyar (2012)
4.19 Legal statement/ Terms and conditions	Elsayed (2010); Nurunnbi and Hossain (2011)
4.20 Financial glossary	Al-Motrafi (2008); Elsayed (2010);
4.21 Online investor information order services	Deller et al. (1999); Lybaert (2002); Marston and Polei (2004); Xiao et al. (2004); Al-Motrafi (2008); Elsayed (2010); Turel (2010); Henchiri (2011)
4.22 Cookies	Deller et al. (1999); Bollen et al. (2006); Henchiri (2011)
4.23 Link to currency converter site	Al-Motrafi (2008);
4.24 Webmail	Nurunnbi and Hossain (2011)
4.25 Click over menu	Marston and Polei (2004); Xiao et al. (2004);
4.26 Feedback option	Elsayed (2010),

## Appendix (5) The final disclosure index

1. Content		
1.1 Financial and accounting information		
1.1.1 Investor relations section: the existence of an independent part on the company's website for the information that is of interest of the different corporate information users	1	0
1.1.2 Balance sheet: providing the current balance sheet either independently or inside the annual report irrespective if it audited or not.	1	0
1.1.3 Income statement: providing the current income statement either independently or inside the annual report irrespective if it audited or not.	1	0
1.1.4 Cash flow statement: providing the current cash flow statement sheet either independently or inside the annual report irrespective audited or not.	1	0
1.1.5 Statement of changes in shareholders' equity: providing the current statement of changes in shareholders' equity sheet either independently or inside the annual report irrespective if it audited or not.	1	0
1.1.6 Statement of comprehensive income: providing the current statement of comprehensive income either independently or inside the annual report irrespective if it audited or not.	1	0
1.1.7 Notes to financial statements: including some explanations to the current accounts within annual report such as the risks, change in accounting policies and alignment with international accounting standards etc.	1	0
1.1.8 Summary of Financial ratios: presenting the current key financial ratios separately or within annual reports.	1	0
1.1.9 Previous Annual reports: the presence of last year's annual reports for one period or more.	1	0
1.1.10 Current annual report: the presence of latest annual report.	1	0
1.1.11 Board of Directors' report: including the current annual report of the Board of directors' report.	1	0
1.1.12 Auditor's report: including the current annual report of the auditor's report.	1	0
1.1.13 Previous interim financial reporting: monthly, quarterly, semi-annually or other: providing interim reports for the one last period or more.	1	0
1.1.14 Financial statements time series: disseminating at least balance sheet and income statement for three years or more.	1	0
1.1.15 Audited financial statements: providing current financial statements approved by an external auditor within annual report or separately.	1	0
1.1.16 Historical dividends figures: publishing information about dividends details for more than one period irrespective	1	0

the company has made dividends or not.		
1.1.17 Selective accounting data: disclosing some accounting numbers selectively on the company's website such as total assets or net profit and etc.	1	0
1.1.18 Earning releases: announcing the interim or yearly earnings figures one the company's website.	1	0
1.1.19 Sales of key products: providing summaries on the sales numbers of main products of the company.	1	0
1.1.20 Previous press releases/ news summaries: presence of historical news about the different company activities on the company's website.	1	0
1.1.21 Overview on the past financial performance (e.g. highlights, fact-sheet, summary): briefly analysing the company's financial performance over the past period.	1	0
1.1.22 Earnings estimates or sales forecasts: giving some estimates over websites either on earnings, sales or both.	1	0
1.1.23 Industry statistics or data: providing diversified financial information about the industry that companies belong to such as achievements, standards and etc.	1	0
1.1.24 Market share of the company, domestic and foreign: giving information about market share of the company or its key products inside or outside the original country.	1	0
1.1.25 Historical stock prices: publishing the closing share prices of the company at the end of more than one year.	1	0
1.1.26 Share price performance in relation to stock market index: providing a tab on daily stock market index on the company's website.	1	0
1.1.27 Link to Amman Stock Exchange	1	0
1.1.28 Links to financial analysts that follow the firm activities and usually make forecasts on its performances.	1	0
1.1.29 significant company events during the year: announcing the important and big events on the companies' websites.	1	0
1.1.30 Non-financial performance review: providing a snapshot of the main non-financial achievements during the year such as products development.	1	0
1.1.31 Future expansions: shedding light about the expected developments of the diverse company's activities during the next periods.	1	0
1.2 Corporate governance information		
1.2.1 Section for corporate governance information: presence of separate section for corporate governance information within or outside investor relation section.	1	0
1.2.2 Notice to annual shareholders' meeting: the place, the date, the agenda and participants	1	0
1.2.3 List of the Board of Directors: including the names of boards of directors separately or within the latest annual report.	1	0
1.2.4 List of the executive managers: including the names of		

executives officers separately or within the latest annual report.		
1.2.5 Board of Directors' profiles: providing a biography of the Board of Directors such as their names, photos, experiences, qualifications and etc., either within the latest annual report or in an independent section on the website.	1	0
1.2.6 Management Team profiles: providing a biography of the executive directors such as their names, photos, experiences, qualifications and etc., either within the latest annual report or in an independent section on the website.	1	0
1.2.7 Remuneration of Board of Directors and management team: disclosing detailed information about remunerations specified for executives and directors during the last period.	1	0
1.2.8 Message to shareholders: providing chairman or COE message to shareholders independently or within the latest annual reports.	1	0
1.2.9 Company's key shareholders: giving information on the main company shareholders and the percentages of their ownership.	1	0
1.2.10 Corporate governance guidelines: including a guide for corporate governance principles that apply in the company.	1	0
1.2.11 Code of conduct/ code of ethics: including instructions of work manners and comportment of directors, officers and employees.	1	0
1.2.12 Organisational Structure: providing a chart of responsibility flow within the company.	1	0
1.2.13 Management's plans to meet objectives and strategies	1	0
1.2.14 Charters of audit committees: including information about audit committees such as members and meetings etc.	1	0
1.2.15 Charters of other committees: including details about the other committees in the company such as corporate governance committee.	1	0
1.2.16 Shares information: number of shares, securities markets on which it is traded, options, issuance, wrights, split and etc.	1	0
1.2.17 Links to supervisory bodies such as Central Bank of Jordan	1	0
1.2.18 Disclosure of insiders: ownership percentage of the Board and management members and their relatives.	1	0
1.2.19 Corporate governance compliance report: providing a report which indicates the level of compliance with corporate governance principles, nationally or internationally.	1	0
1.3 Social responsibility Information		
1.3.1 Section for corporate social responsibility information		
1.3.2 Company history: giving a preface on the historical biography of the company such as establishment and stages of development etc.	1	0
1.3.3 Company profile: providing a curriculum vitae of the	1	0

company such as industry type, age, main products, trade registry information and etc.		
1.3.4 Key customers profiles	1	0
1.3.5 Information on intellectual capital: employee profile/ number training, qualifications and turnover ratio	1	0
1.3.6 Environmental report: including a report about the extent of company contributions to protect the surrounding environment.	1	0
1.3.7 Health and safety report: providing a report which indicates the company's efforts to maintain the general safety and security of the employee and the society in general from different hazards/risks.	1	0
1.3.8 Corporate social responsibility report: giving a report which summarises the whole company activities regarding its responsibility toward society such as environment protection, health and safety, donations and grants and etc.	1	0
1.3.9 Stand-alone CSR report: to indicate whether the CSR report is located separately on company's website or included with other information such as annual reports.	1	0
1.3.10 Sustainability report: providing a report which shows the assigned efforts to maintain company's survival.	1	0
1.3.11 Mission/vision statement: disclosing the main plan and task of the company separately or together.	1	0
1.3.12 Donations/grants to community groups	1	0
1.3.13 Other Information on CSR: education, culture, art and sport	1	0
(2) Timeliness of information		
2.1 Latest press releases or news: providing up to date news and events about the company and/or even about the industry as a whole.	1	0
2.2 Latest stock prices: disseminating up to date (hourly) prices of the company's shares.	1	0
2.3 Calendar of events of interest to investors: giving a schedule indicates the dates of important events to shareholders on the company agenda such as date of AGM.	1	0
2.4 Date of last webpages update	1	0
2.5 Statement indicating frequency of updates to financial information provided	1	0
2.6 Latest financial ratios: publishing the financial ratios for at least for the closest previous quarter.	1	0
2.7 Latest financial highlights/ summaries: providing financial summaries at least two months before.	1	0
2.8 Mailing list/ option to register for future e-mail alerts regarding press releases, newsletters, etc.	1	0
2.9 Latest interim reports provided: disclosing interim reports for at least the closest previous quarter.	1	0

2.10 latest dividends announcements: announcing the shareholders of the dividends that the company intends to distribute.	1	0
2.11 Monthly or weekly sales data: announcing the amounts of sales or even operating information on weekly or monthly bases.	1	0
2.12 Inquiries: Response provided to request email and online requests indicating when a response will be provided	1	0
(3) Presentation		
3.1 Financial data in Word-format	1	0
3.2 Financial data in PDF-format	1	0
3.3 Financial data in HTML-format	1	0
3.4 Graphic images	1	0
3.5 Chart of stock price movement	1	0
3.6 Sound files	1	0
3.7 Video files	1	0
3.8 Clear boundaries between the financial and other information	1	0
3.9 Clear boundaries between the audited and un-audited accounting information	1	0
3.10 Change In printing friendly format: the ability to make print out of the company webpage.	1	0
3.11 Downloadable financial files	1	0
3.12 English version of home page	1	0
3.13 Arabic version of home page	1	0
3.14 English version of annual report	1	0
3.15 Arabic version of annual report	1	0
(4) Usability		
4.1 Contact us option	1	0
4.2 Help site	1	0
4.3 Site Map	1	0
4.4 Search engine	1	0

4.5 Pull-down menu	1	0
4.6 Frequently asked questions box (FAQ)	1	0
4.7 one click to get to investor relations information	1	0
4.8 One click to get to CSR information	1	0
4.9 One click to get to Corporate Governance information	1	0
4.10 Link to annual report on home page	1	0
4.11 Home page button	1	0
4.12 Multiple links other than stated such as link to the parent or subsidiary company	1	0
4.13 Next/previous/top buttons to navigate sequentially	1	0
4.14 Privacy statement/ security of information	1	0
4.15 Legal statement/ Terms and conditions	1	0
4.16 Online investor information order services: the ability to request some investor related information electronically.	1	0
4.17 Link to currency converter site	1	0
4.18 Webmail	1	0
4.19 Feedback/ suggestion option	1	0

## Appendix (6) Survey of secondary data

item	description	Score/value
Firm's characteristics		
Company sector	Industrial=1                      service= 2 Banking=3                      insurance= 4	
Company size	Actual value of total assets at the year end	
Listing status	First market = 1 Second market = 2	
Audit type	Big 4 audit firm= 1 Other audit firm= 2	
Return on assets at the end of year (ROA)	Net income/total assets	
Leverage	Total debts/total assets	
Board structure		
Board size	Number of Board of directors	
Role duality	The CEO hold the chairman position= 1 If not= 0	
Non-executive directors	Number of non-executive directors	
	The percentage of non-executive directors on the board	
Audit committee	The value 1 if present and 0 if absent	
Corporate governance and nominating committee	The value 1 if present and 0 if absent	
Ownership structure		
Institutional ownership	The percentage=	
Management ownership	The percentage=	
Family ownership	The percentage=	
Foreign ownership	The percentage:	

## Appendix (7) The questionnaire of the study



### Cover Sheet

Dear manager

I am currently undertaking a research as a part of my PhD at Liverpool Business School, UK. I am particularly interested in investigating the factors affecting the adoption of internet reporting in Jordan: technology, management and environment. So, this survey aims to seek your views and opinions about this issue.

I would like to invite you to participate in this research by completing this questionnaire, which should take no longer than 15 minutes to complete.

This study is conducted for academic purposes only. All your answers will be anonymous, confidential, and will not be passed on to a third party. Your participation is voluntary and you have the right to withdraw at any time. Eventually, a summary of research results will be sent to you.

Thank you very much for your support.

Yours sincerely

Krayyem Al-Hajaya

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1. The company's name: .....

2. Does the company undertake disclosing investor relations information via the company's website?  Yes  No

**Please tick ( ✓ ) one box for each statement, to indicate your level of agreement/disagreement on the scale provided regarding to the following statements:**

Awareness (A):	strongly disagree	disagree	neutral	agree	strongly agree
<b>A1.</b> Our company is aware of internet reporting applications that are common in our industry sector.					
<b>A2.</b> Our company recognises the costs and benefits of internet reporting.					
<b>A3.</b> Our company recognises the opportunities and threats of internet reporting.					
<b>A4.</b> Internet reporting is well known in our company at different levels.					
<b>A5.</b> Financial department is aware of all requirements of internet reporting.					
<b>A6.</b> Our company has a good understanding of most of the common presentation technologies of internet reporting such as PDF, EXCEL, XML and HTML.					
<b>A7.</b> Our company perceives the advantages and disadvantages of internet reporting in comparison with printed reporting.					
<b>A8.</b> We believe that a company in our industry that is engaging in internet reporting would gain a competitive advantage.					
<b>A9.</b> Our company is familiar with different types of internet reporting.					
Commitment (C):					
<b>C1.</b> Our company has a clear vision on internet reporting.					
<b>C2.</b> Top management is committed in communicating disclosure culture throughout the company.					
<b>C3.</b> Our disclosure culture supports different forms of voluntary disclosure.					
<b>C4.</b> Our company encourages internet reporting practices.					
<b>C5.</b> Our company draws plans to improve disclosure quality.					
<b>C6.</b> Our company supports any new technological development that improves disclosure practices.					
<b>C7.</b> Internet reporting has great concerns at apex managerial level in the company.					
<b>C8.</b> Our company perceives the importance of the internet reporting to satisfy multiple needs of all company's stakeholders.					
<b>C9.</b> Our company promotes of the internet reporting as a voluntary disclosure practice to discharge the accountability to company's stakeholders.					

Cost-Benefit Balance ( CBB):	Strongly disagree	disagree	neutral	agree	Strongly agree
<b>CBB1.</b> We believe that the benefits of internet financial reporting are greater than printed financial reporting in comparison with their costs.					
<b>CBB2.</b> Our company believes that the benefits of internet reporting outweigh its costs.					
<b>CBB3.</b> We believe that internet reporting creates additional costs that can be avoided in the presence of other disclosure sources such as printed and third parties reporting services.					
Human Resources (HR):					
<b>HR1.</b> Staff in the financial department have appropriate IT skills.					
<b>HR2.</b> Staff in the financial department have sufficient knowledge that enable them to engage successfully in internet financial reporting					
<b>HR3.</b> Staff in the IT department are capable of dealing with most IT problems.					
<b>HR4.</b> Staff in IT department have a good knowledge to implement and maintain online application systems.					
<b>HR5.</b> In general skills of our staff assist in engaging successfully in internet reporting.					
Technology Resources (TR):					
<b>TR1.</b> Our company is well computerised.					
<b>TR2.</b> We have a computerised accounting information system.					
<b>TR3.</b> Our company is well linked with a computerised network such as Local Area Network (LAN)					
<b>TR4.</b> We have reliable, speed and high internet connectivity.					
Supported Industries Readiness (SIR):					
<b>SIR1.</b> We believe in the availability of IT services' providers in the country who are specialists at installation, maintaining and updating website systems.					
<b>SIR2.</b> We believe in the availability of institutions in the country that provide IT training services.					
<b>SIR3.</b> Our country possesses an efficient and reliable telecommunication infrastructure.					
<b>SIR4.</b> Internet services in our country are affordable to all parties.					

	Strongly disagree	disagree	neutral	agree	Strongly agree
<b>Users' readiness (UR):</b>					
<b>UR1.</b> We believe that the users of the company information are computer literate.					
<b>UR2.</b> We believe that the users of the company's information are connected to the internet.					
<b>UR3.</b> We believe that the users of the company information are familiar with internet navigation.					
<b>UR4.</b> We believe that the users of the company information have the necessary skills to engage in financial analyses' techniques using the figures available on the company's website.					
<b>UR5.</b> In general the users of the company information are e-ready to deal successfully with internet financial reporting outputs.					
<b>Users' attention (UA):</b>					
<b>UA1.</b> We believe that a company that does not undertake internet reporting practices will be evaluated negatively by corporate information users.					
<b>UA2.</b> We feel the pressures that are applied by corporate information users to disclose financial information via the company's website.					
<b>UA3.</b> Internet financial reporting improves the company's image throughout corporate information users.					
<b>UA4.</b> We believe that the company's website represents one of the main information sources for the corporate information users.					
<b>UA5.</b> We believe that corporate information users are concerned with getting the necessary information from the company's website.					
<b>Government (G):</b>					
<b>G1.</b> We believe that there are effective laws to prevent internet crimes.					
<b>G2.</b> We believe that there are effective laws to protect financial information published on the internet from improper manipulation.					
<b>G3.</b> We believe that the legal environment is appropriate to engage in internet reporting.					
<b>G4.</b> The government demonstrates strong commitment to promote internet corporate reporting.					
<b>G5.</b> Financial and controlling bodies in the country encourage the internet corporate reporting practices.					
<b>G6.</b> Governmental bodies devote a lot of efforts to enhance the awareness of internet reporting practices among companies in the country.					

Thank you for taking the time to fill in this questionnaire

**Appendix (8) Correlation matrix**

Correlation Matrix

	A1	A2	A3	A4	A5	A6	A7	A9	C1	C2	C3	C4	C5	C6	C7	C8	CBB1	CBB2	CBB3
A1	1.00																		
A2	0.81	1.00																	
A3	0.90	0.89	1.00																
A5	0.52	0.70	0.66	0.65	1.00														
A6	0.81	0.88	0.83	0.62	0.73	1.00													
A7	0.86	0.83	0.86	0.29	0.39	0.75	1.00												
A9	0.60	0.61	0.63	0.47	0.41	0.55	0.66	1.00											
C1	0.64	0.61	0.63	0.28	0.39	0.61	0.60	0.79	1.00										
C2	0.44	0.32	0.38	0.33	0.31	0.36	0.24	0.35	0.45	1.00									
C3	0.28	0.31	0.39	0.31	0.31	0.31	0.19	0.37	0.24	0.57	1.00								
C4	0.20	0.26	0.09	0.03	0.09	0.34	0.13	0.30	0.38	0.51	0.55	1.00							
C5	0.29	0.26	0.18	0.17	0.16	0.38	0.14	0.31	0.32	0.47	0.50	0.57	1.00						
C6	0.30	0.27	0.21	0.08	0.25	0.38	0.40	0.38	0.38	0.45	0.72	0.70	0.59	1.00					
C7	0.25	0.24	0.33	-0.01	0.27	0.35	0.21	0.37	0.39	0.50	0.53	0.39	0.44	0.58	1.00				
C8	0.26	0.22	0.11	-0.18	-0.05	0.19	0.15	0.39	0.29	0.50	0.32	0.23	0.07	0.26	0.28	1.00			
CBB1	0.33	0.34	0.26	0.13	0.24	0.21	0.32	0.02	0.13	0.16	0.19	0.21	0.15	0.35	0.30	-0.06	1.00		
CBB2	0.33	0.35	0.24	0.11	0.32	0.23	0.13	0.04	0.19	0.20	0.08	-0.04	0.11	0.14	0.33	-0.05	0.47	1.00	
CBB3	0.20	0.17	0.33	0.09	0.37	0.30	0.36	0.06	0.24	0.16	-0.10	0.01	0.11	0.12	0.28	-0.05	0.45	0.78	1.00

Correlation Matrix (continued)

	HR1	HR2	HR3	HR4	HR5	TR1	TR2	TR3	TR4	SIR1	SIR2	SIR3	SIR4	UR1	UR2	UR3	UR4	UR5	
HR1	<b>1.00</b>																		
HR2	<b>0.13</b>	1.00																	
HR3	<b>0.12</b>	<b>0.11</b>	<b>1.00</b>																
HR4	<b>0.14</b>	0.40	<b>0.19</b>	1.00															
HR5	<b>0.16</b>	<b>0.15</b>	<b>0.10</b>	<b>0.13</b>	1.00														
TR1	<b>0.12</b>	0.30	<b>0.32</b>	0.58	0.28	1.00													
TR2	<b>0.16</b>	0.33	<b>0.11</b>	0.44	0.25	0.77	1.00												
TR3	<b>0.11</b>	<b>0.15</b>	<b>0.17</b>	<b>0.23</b>	<b>0.24</b>	<b>0.14</b>	<b>0.63</b>	<b>1.00</b>											
TR4	<b>0.10</b>	0.25	<b>0.16</b>	0.28	0.23	0.37	0.50	0.63	1.00										
SIR1	<b>0.34</b>	0.34	<b>0.18</b>	0.13	0.12	0.44	0.50	0.34	0.41	1.00									
SIR2	<b>0.15</b>	0.36	<b>0.16</b>	0.16	0.17	0.31	0.45	0.31	0.39	0.79	1.00								
SIR3	<b>0.19</b>	0.22	<b>0.19</b>	0.20	0.11	0.31	0.45	0.46	0.23	0.73	0.86	1.00							
SIR4	<b>0.23</b>	0.15	<b>0.20</b>	0.15	0.15	0.30	0.47	0.43	0.30	0.66	0.66	0.83	1.00						
UR1	<b>0.11</b>	0.24	<b>0.15</b>	0.14	0.12	0.40	0.56	0.56	0.43	0.47	0.66	0.57	0.68	1.00					
UR2	<b>0.19</b>	0.20	<b>0.15</b>	0.19	0.16	0.45	0.59	0.54	0.43	0.45	0.62	0.57	0.54	0.88	1.00				
UR3	<b>0.13</b>	0.25	<b>0.05</b>	0.12	0.18	0.44	0.36	0.52	0.45	0.20	0.48	0.32	0.26	0.71	0.78	1.00			
UR4	<b>0.04</b>	<b>0.19</b>	<b>0.12</b>	<b>0.10</b>	<b>0.21</b>	<b>0.11</b>	<b>0.14</b>	<b>0.20</b>	<b>0.12</b>	<b>0.19</b>	<b>0.12</b>	<b>0.15</b>	<b>0.13</b>	<b>0.14</b>	<b>0.19</b>	<b>0.21</b>	<b>1.00</b>		
UR5	<b>0.20</b>	0.17	<b>0.18</b>	0.19	0.17	0.45	0.37	0.39	0.41	0.33	0.39	0.27	0.39	0.31	0.36	0.59	0.19	1.00	

Correlation Matrix (continued)

	<b>UA1</b>	<b>UA2</b>	<b>UA3</b>	<b>UA4</b>	<b>UA5</b>	<b>G1</b>	<b>G2</b>	<b>G3</b>	<b>G4</b>	<b>G5</b>	<b>G6</b>
<b>UA1</b>	1.00										
<b>UA2</b>	0.09	1.00									
<b>UA3</b>	<b>0.68</b>	0.01	<b>1.00</b>								
<b>UA4</b>	<b>0.33</b>	0.14	<b>0.70</b>	<b>1.00</b>							
<b>UA5</b>	<b>0.39</b>	0.18	<b>0.63</b>	<b>0.70</b>	<b>1.00</b>						
<b>G1</b>	0.06	-0.08	0.22	0.08	0.24	<b>1.00</b>					
<b>G2</b>	-0.12	0.24	0.03	-0.20	0.17	<b>0.48</b>	<b>1.00</b>				
<b>G3</b>	-0.14	0.12	-0.05	-0.23	0.16	<b>0.30</b>	<b>0.37</b>	<b>1.00</b>			
<b>G4</b>	0.19	-0.01	-0.18	-0.35	-0.01	0.15	0.27	0.19	<b>1.00</b>		
<b>G5</b>	0.22	0.12	0.01	-0.04	0.05	0.15	0.06	0.20	<b>0.66</b>	<b>1.00</b>	
<b>G6</b>	0.21	0.11	0.01	-0.12	0.08	0.16	0.35	0.17	<b>0.60</b>	<b>0.48</b>	<b>1.00</b>

