Country- specific characteristics influencing Websites based information disclosure practices

Walid Khoufi[a] and Dhouha Khrifech[a,1]

[a] University of Sfax, Tunisia

Abstract: This paper aims to examine and explain the Websites- based financial disclosure practices differences between developed European countries. The development of Internet financial reporting (IFR), as a new corporate reporting practice, was rapidly exploited by large listed companies in the world. A number of accounting research was analyzed the development of online reporting in various countries and they showed that firm specific incentives are the most important factors explaining the IFR practices, however, there was ignored the importance from the politico-socio conditions, as others factors influencing the IFR practices differences (as a accounting practices). As a refinement of Gray (1988)' framework and an extension of Debrency *et al.* (2002) model, this study explore an empirical investigation validating the influence of culture, institutional factors on the financial disclosure level through corporate Websites in France, Germany, Italy, Netherlands, Spain and UK. It reveals the importance of technological and media presentation format as Web- based communication index component. The findings showed that environmental factors were significantly related to Websites technology index and economic development is an important factor determining the Websites financial disclosure practices differences.

Keywords: Financial disclosure practices, corporate Websites, external environment, 2004/109/CE directive.

JEL codes: M41

---

[1] *Corresponding authors*: Governance, Finance and Accounting Laboratory, Faculty of Economic and Management, University of Sfax; Street of the Airport Km 4, 3018, Sfax, Tunisia; tel. (+216) 95 751 111; *email addresses*: walid.khoufi@yahoo.fr; khrifech.dhouha@gmail.com

1. Introduction

Since 1990's years, traded companies in various countries utilize the *World Wide Web* ("*WWW*") as new support of corporate information publication and they adopt the "Internet financial reporting" (IFR) practices, which refers to "the public reporting of operating and financial data by a business enterprise via the World Wide Web or related Internet-based communications medium" (Lymer *et al.*, 1999: 2). In this sense, IFR was reviewed as a type of voluntary disclosure (Ashbaugh *et al.*, 1999; Oyelere *et al.*, 2003; Poon *et al.*, 2003), implying that the Web content is unregulated and largely discretionary.

IFR was been enabled by the eXtensible Business Reporting Language (*XBRL*), which improves the distribution, the revolution and the security of corporate information on the Internet (Schuster & O'Connell, 2006). Compared with traditional printed report, the Internet "offers many more opportunities to communicate financial and its importance in this regard is rapidly increasing" (Pirchegger & Wagenhofer, 1999: 383), specially, companies can communicate information quickly and directly to investors and stakeholders, exposing an important amount of information available through Web over time and at very lower costs (FASB, 2000). Presentation format modes facilitate the navigation on corporate Websites and help investors and stakeholders to acquire corporate information, insuring more interactivity, flexibility and timeliness of corporate information (Khan, 2015).

The widespread adoption of Websites information dissemination practices has captured the attention of the accounting professional bodies and academics in the world (Debrency *et al.*, 2001). Scholars analyze the managers' motivations to distribute business and financial information through Websites in various countries (Kelton & Yang, 2008; Bekiaris *et al.*, 2014; Aboutera & Hussien, 2017; Arrif *et al.*, 2018), which are principally firm specific characteristics. IFR Empirical investigations were been referring to Asbaugh *et al.* (1999) and Debrency *et al.* (2002) studies. Previously, Debrency *et al.* (2002) were developed a theoretical and empirical framework deriving and determining that IFR practices differences in 22 countries and they showed that these practices are a function of firms and country specific characteristics.

According to international comparative accounting literature, Debrency *et al.* (2002) confirmed that country level characteristics explain also the IFR differences, such as country Internet penetration and the national disclosure environment. This literature highlighted that the international difference accounting development in different countries was been a function of external environment circumstances (Mueller, 1987; Radebaugh, 1975; Nair & Frank, 1980; Nobes, 1983; Choi & Mueller, 1984; Nobes & Parker, 1985). Gray (1988) established a theoretical model, explaining "the

importance of Hofstede's dimensions of national culture in accounting is the national culture's influences on the nature of accounting practices" (Kolesnik, 2013: 34), evolving four distinct hypotheses involving the influence of cultural values on accounting values: professionalism, uniformity, conservatism and secrecy.

Numerous comparative accounting studies investigated the influence of culture values and institutional factors on financial transparency, qualifying the national accounting systems (Nobes, 1998) and they were elaborated a cross country analysis, testing the relationship between national culture, institutional factors and financial disclosure (Zarzeski, 1996; Jaggi & Low, 2000; Hopes, 2003, and others). Nevertheless, previous and existing explanatory IFR studies didn't investigate the relationship between countries specific characteristics and IFR practices, as principal explaining factors, simply, it is present some empirical evidence which integrated both firms and countries characteristics in the same empirical model (Debrency *et al.*, 2002; Bollen *et al.*, 2006; Turrent & Ariza, 2012; Zeghal & Moussa, 2015). In their analysis, they haven't valorized the importance of technologies investigating on the Websites, as a principal component of Internet financial disclosure.

Thus, the main objective of this purpose is to examine the impact of environment specific characteristics on online disclosure practices in Europe, appropriated to large companies with a high market capitalization. It aims to explain the web disclosure practices differences between Anglo-Saxon and Continental countries.

Maintaining a high level of investor protection throughout European community, European financial authority harmonizes between national mandatory reporting laws and standards. In 2004, it established 2004/109/EC directive ("Transparency directive"), as a legislative framework which defined and detailed transparency requirements relating the financial publication on European regulated capital market.

This directive was considered that 'electronic mean' (e.g. corporate Website) as a communication support and it authorize traded companies to disseminate periodic and ongoing information electronically to European regulation market.

Therefore, this study wants to contribute in IFR explanatory studies which explore empirical evidence testing the relationship between country characteristics and web financial disclosure. It will demonstrate the importance of Web communication dimensions as a composing the Web disclosure level that dressing empirical models testing the impact of environment specific characteristics on content, timeliness, technology and user support indices.

This paper proceeds as a follows: The second section presents literature review. The third section details main research objectives and hypotheses development. Research methodology is detailed in the fourth section. The fifth section discus and analyzes

the results. The conclusion section reviews main finings, gives limitation, contributions and orientation for futures research.

2. Web disclosure practices differences

Accounting professional and scholars delineate characteristics and motivations of IFR practices in various countries.

2.1. Accounting professional pronouncement

Internet financial reporting is a voluntary disclosure practices and unregulated, in this sense, companies are no under obligation to maintain a Web site (Ettredge *et al.*, 2001) and governing regulation, previously, didn't mandate information disclosure on Website (Prentice *et al.*, 1999). Over time, accounting professional and financial markets authorities orientate the "IFR best practices" and others require the creation and the publication of particular information on the Web.

Accounting professionals delivered several studies and projects improving the distribution of business and financial information through Internet: they analyzed the consequence of this new practice in the accounting profession and proposed set of recommendation and guidance recoding the "best practices" of Web financial publication. In (1999), ISAC investigated a study of Web based business reporting by 660 corporations in 22 countries. It established a set of measures helping companies to ensure production of reliable information through Internet, essentially, the establishment of *code of conduct* detailing the corporate information publication via Internet.

CICA piloted study overviewed the use of internet as a financial reporting medium in North America. This research was done by Trites (1999) who selected 370 from 10000 companies traded in the New York exchange, the NASDAQ and the Toronto stock exchange. It reported that 69% of these companies have Website and 35% have some form of financial information on their Websites. This study discussed the implication of electronic information reporting on accounting standards (e.g. the separation between non-audited and audited information).

FASB (2000) report examined the financial information dissemination on the Web in USA and it contained a descriptive study which determined the types of information were communicated electronically. This report developed a comprehensive list of 325 attributes evaluating the corporate 150 fortune web sites. The following results showed that 99% have a Web site and 93 of the 100 fortune corporation presented financial information on their Web sites. Indeed, it fund a set recommendations which indicated that companies should ensure the accessibility and availability of complete financial reports through their websites and publish

---

timely their interim and annual report and notes to financial statements. This project recommended companies to incorporate "investor relation" on the Web site, separated section and easily accessible from its home page.

IFAC (2000) addressed guidance to companies which choose to use Website, as a supplementary medium of financial report. It encouraged to managers elaborate an Internet reporting policy and developed controls and procedures ensuring the Internet financial reporting process.

Again, securities exchange markets authorities monitor the distribution of financial information through Internet in various countries. Some of them created a set of guidance and others required the publication of specific information. COB (1998) recommended that securities laws related to papers reporting are also applied to electronic reporting, ensuring the reliability, credibility and investors' equivalence principals.

TSX (2003) prompted listed companies to maintain a corporate Website and investor relations information available in the site. There should establish a Web reporting polices, according to TSX guidance and there guarantee maximum securities of its sites and E-mail. FSA (2000) authorized companies to distribute their annual report electronically which can forward to third parties an electronic version of annual report, financial statements, and management and auditor reports. SEC (2003) mandated companies to communicate beneficial ownership reports in their Website and they will publish reports forms 3, 4 and 5 in their Websites.

Others financial market commissioners were proposed to harmonize between national financial transparency standards and oriented the use the 'electronic mean' as a communication support: that is the European commission was defined in 2004 a list of norms mandated the financial publication on European regulated capital market.

2.2. European standards harmonization: transparency directive

European Commission proposed a set of recommendations oriented the electronic financial reporting practices in European countries. Fixing information transparency requirements, 2004/109/CE European directive authorized the use of "electronic mean", as a tool of information publication to regulated market. Indeed, European companies can utilize their corporate Web sites and they could communicate regulated information through websites. Transparency directive recommended creating a plat form of electronic network across European member states.

Amending this directive, 2013/50/CE directive simplified transparency obligations applicable to listed small and medium-sized firms and improved the effectiveness of

the existing transparency regime and the respect of corporate ownership information disclosure. It indicated that European electronic access point will be established from 1 January 2018 developing by the European Securities and markets Authority (ESMA) and it certified that the preparation of electronic annual financial reports will be mandatory from 1 January 2020.

2.3. Academic research

Producing since (1996), primary studies are descriptive which "give a general overview of the current state of corporate reporting on the Internet" (Marston & Poeli, 2004, p. 287). Some of these studies described Web based reporting in signal country (Gray & Debreceny, 1997; Gowthorpe & Amat, 1999; Turel, 2010; Khan *et al.*, 2013) and others were compared IFR practices in two and more countries (Lymer & Tallberg, 1997; Deller *et al.*, 1999; Allam & Lymer, 2003; Chatterjee & Hawkes, 2008; Al-Sartawi, 2016).

For example, Lymer (1997) described the utilization of the Web as a medium for financial reporting by 50 UK companies. It indicated that 92% have a Website and 52% published financial reports. Gowthorpe & Amat (1999) examined the extent of usage for Internet financial communication by Spanish listed companies. The results showed that 16% have a web site and 34 % presented some kind of financial information on their Web pages. Deller *et al.* (1999) compared the Internet "investor relations" activities on USA, UK and German firms. They found that USA corporations used more Internet "investor relations" activities than UK and German corporations.

Al-Sartawi (2016) illustrated the level of online financial disclosure usage in the Gulf Cooperation Council (GCC) listed companies. They showed that the majority of the GCC companies disclosed a good level of content and format presentation dimension information through their Web site. They indicate that the content dimension differs from one country to other and from industry type to other and that the level of presentation dimension was better in Oman than in Bahrain and on banking companies than insurance and investment companies.

Since (2000), researchers attempted to determined factors explaining IFR practices in various countries. Giving the IFR preliminary empirical evidence, Ashbaugh *et al.* (1999) want to explain "why some firms disseminate financial information on their corporate Websites, while others do not" (Kelton &Yang, 2008: 65). They found that larger and more profitable US firms are more likely to engage on the IFR practices but it did not provide a theoretical rational of IFR determinants.

Extending this paper, Debrency *et al.* (2002) established general model explaining Web financial publication determinants, which are firm and environment specific

characteristics. Conformity to these processors, scholars documented empirical evidence explaining the IFR practices in developed and developing countries. They are cases studies (Abdelsalam *et al.*, 2007; Kelton & Yang, 2008; Hindi & Rich, 2010; Boubaker *et al.*, 2012; Alali & Romero, 2012; Dunne *et al.*, 2013; Momany *et al.*, 2013) and comparative studies (Pervan, 2006; Bonson & Escobar, 2006; Henchiri, 2011; Turrent & Ariza, 2012).

Kelton & Yang (2008) analyzed the impact of corporate governance on Internet financial reporting in USA. They demonstrated that shareholders, blockholder ownership, board independence, audit committee expertise and diligence explain the Internet financial reporting. Aboutera & Hussien (2017) examined the Internet financial reporting practices determinants in Egypt. Empirical result showed that firm size, auditor type and firm age are significantly associated with level of electronic information disclosure.

Henchiri (2011) compared the voluntary information publication through websites' companies listed in Moroccan and Tunisian stock exchanges. They demonstrated that firm size, firm performance and foreign ownership determine the extent of online information. Turrent & Ariza (2012) investigated a comparative study of the E-transparency practices in Mexico and Spain, measuring by a disclosure index. They showed significant differences in the disclosure level between listed companies in two countries. The result indicated that ownership concentration, chairman of the board-Chief executive officer (COB-CEO) duality, economic development and inflation are the important factors explaining the E- disclosure practices differences. Mohamed & Baswory (2014) examined the characteristics of voluntary Internet disclosure in three Gulf cooperation Council countries: Qatar, Oman, and Bahrain. They signaled that firm size is a major factor influencing internet financial reporting practices.

Generally, explanatory studies tested the impact of firm specific characteristics on the level and the quality of IFR in various countries. Empirical investigations were demonstrated that organizational and corporate governance mechanisms are determining factors of financial disclosure through Websites in different countries. Nevertheless, comparative accounting studies reveal that country' macro-economic situation can also influence the IFR, as voluntary disclosure.

3. Conceptual framework

International comparative financial accounting research wants to "identify the accounting differences between various countries and to explain why these differences exist" (Ding, 2001: 156), that was identified previously that national culture as an important environment factor explaining cross- national accounting development differences. In (1986), Harrison and McKinnon have proposed a

methodological framework incorporating national culture as important element analyzing the change and functioning of national accounting, as a social system.

Complementing Harrison and McKinnon study, Gray (1988) established a theoretical model, explaining how national culture values reinforce the development of accounting systems and practices in various countries. His model developed the causal association between Hofstede (1980)' cultural values (Individualism, power distance, uncertainty avoidance, masculinity) and accounting values, deriving the level of a country's accounting subculture: professionalism versus statutory control; uniformity versus flexibility; conservatism versus optimism and secrecy versus transparency.

Several studies were contributed in the existing literature and they attempted to lengthen the Gray (1988) conceptual framework (Perera, 1989; Frechner &Kilgore, 1994; Baydoun & Willet, 1995; Salter & Niswander, 1995; Chanchani & MacGregor, 1999). In 1995, Doupnik and Salter amplified this theoretical framework and they developed a general model determining country' accounting development: cultural dimensions, external environment and institutional structure can explain accounting development differences (Doupnik & Salter, 1995).

"Secrecy versus transparency[i]" was been extensively studied in prior review because disclosure index "*make it the easiest accounting value to operationalize*" (Tsakumis, 2007: 31). Most of international accounting studies were tested empirically the link between culture, institutional factors and information disclosure (Zarzeski, 1996; Wingate, 1997; Jaggi & Low, 2000; Hopes, 2003; Doupnik & Richter, 2004).

In the 21st century, the corporate reporting processes perceive an important evaluation; it will be more digitally. Listed companies utilize more electronic means as a corporate financial reporting support, essentially, corporate websites will be more privileged and popular use as a communication medium. It offers many advantages, serving as a fantastic mean which deliver corporate information "in a timely fashion to foreign and often sophisticated investors" (Ojaha & Mokoteli, 2012: 71).

Refereeing to the Gray (1988)' conceptual framework and Debrency *et al.* (2002) model, we can predict that environment factors explicate the Internet financial disclosure differences, as a financial transparency practices. We simplified the study' conceptual model by following figure:
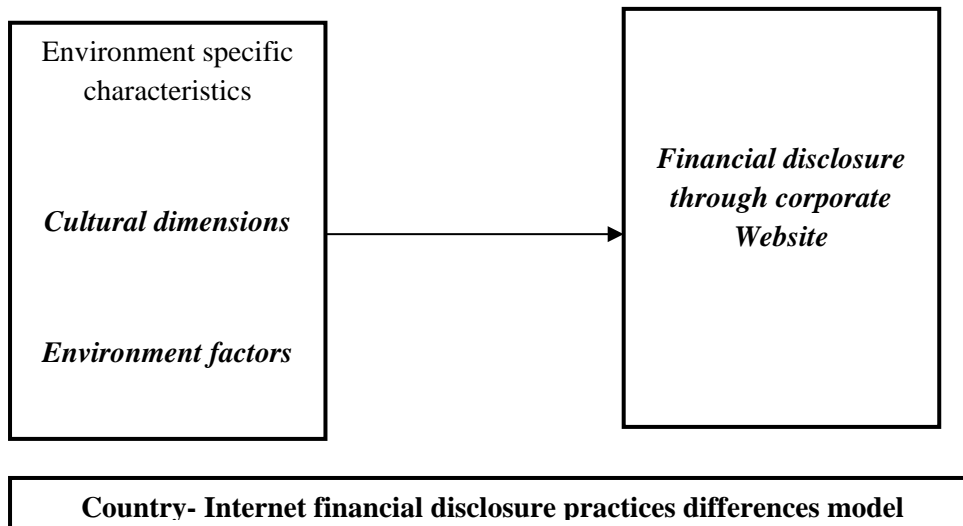
```
┌─────────────────────────┐          ┌──────────────────────────┐
│  Environment specific   │          │                          │
│     characteristics     │          │                          │
│                         │          │   *Financial disclosure  │
│                         │          │    through corporate     │
│   *Cultural dimensions* │─────────▶│        Website*          │
│                         │          │                          │
│                         │          │                          │
│   *Environment factors* │          │                          │
│                         │          │                          │
└─────────────────────────┘          └──────────────────────────┘

        ┌──────────────────────────────────────────────────────┐
        │  **Country- Internet financial disclosure practices   │
        │              differences model**                      │
        └──────────────────────────────────────────────────────┘
```

Figure 1: Proposed conceptual framework

4. Hypotheses development

Following to previous review, we explain in the section the incidence of national culture and institutional factors on the financial disclosure via corporate Websites, as an accounting practice, respectively.

4.1. National culture

Culture refers to "the collective programming of the mind that distinguishes the members of one group or category of people from another" (Hofstede, 2001: 9). Culture presents asset of collective beliefs and values that distinguish individuals in the country vary. Investigating a multinational IMB data, Hofstede (1984) identified four culture values:

- *Individualism versus collectivism*: individualism concerns "a preference for a loosely knit social framework in society wherein individuals are supposed to take care of themselves". It is an opposite; collectivism refers to "a preference for a tightly knit social framework in which individuals can expect their relatives".
- *Large versus small power distance*: power distance illustrates "the extent to which the members of a society accept that the power in institutions and organizations is unequally distributed".
- *Strong versus weak uncertainty avoidance*: Uncertainty avoidance defines "the degree to which the members of a society fell uncomfortable with uncertainty and ambiguity".

– _**Masculinity versus femininity**_: Masculinity refers to the extent of masculine values on a society such as achievement, heroism, assertiveness and material success and femininity completes the relationship, modesty, caring for the weak and the quality of life.

The relationship between culture and financial "secrecy/ transparency" is described in the following table:

Table 1. Gray framework

	Secrecy	Transparency
Individualism	-	+
Power distance	+	-
Uncertainty avoidance	+	-
Masculinity	-	+

Source: Gray (1988: 11)

Following to Bryan _et al._ (2012), Kanagaretnam _et al._ (2014) and Hooghienstra _et al._ (2015), we focused essentially on individualism and uncertainty avoidance, explaining the implication of manager's choices, behaviors and their relationship to shareholders.

4.1.1. Individualism

Individuals in collectivistic cultures focus on the group interests, implying strong relationship between members. In this sense, companies in these societies apply less control and disclose less information in their annual report (Gray, 1988; Zarzeski, 1996; Hopes, 2003).

In individualistic societies, the environment is more competitive and less secretive, involving a high level of information transparency (Gray, 1988; Jaggi & Low, 2000). Companies are more developed and large state-owned through capital markets, in this situation, managers are more likely to publish information in their annual report to shareholders. It is expected a positive relationship between individualism and information disclosure in annual report (Akman, 2011; Hooghemstra _et al._, 2015; Maali, 2016).

Individualism level determinates the information technology (IT) adoption by organizations in different countries. In collectivistic countries, individuals comply with standards of the group, maintain collective decisions process and they are more likely to adopt antique innovation (Lee _et al._, 2007; Ugur, 2017).

In individualistic countries, firms keep personal decisions markers process when employees are more oriented to efficiency, performance, freedom in work and personal achievement (Bagchi _et al._, 2003). They considered IT as the better mean

to acquire available information and to achieve personal goals. Managers in individualistic societies are more likely to utilize the Internet, as a new medium of financial disclosure. We suppose a positive relationship between individualism and Web based disclosure. As extension a Gray (1988)' hypothesis, we hypothesized that:

H_1: Companies in individualistic countries disclose more financial information through their corporate Web sites.

4.1.2. Uncertainty avoidance

In strong uncertainty avoidance cultures, people create laws and rules to avoid ambiguity and uncertain events. Companies attempt the stability and they are less well-off conflict and competition (Bryan *et al.*, 2012), in order to preserve security, managers tend to disclose less information in annual reports, addressing essentially to private users (banks and financial institutions) (Zarzeski, 1996). In weak uncertainty avoidance societies, individuals are more likely to handle ambiguous events and accept competition, conflicts and confrontation, in this situation, corporation are dominated by diffused ownership and complicated business relationship. Market participants need more information to understand the corporate financial situation, thus, managers tend to publish more information in annual report to shareholders and public (Gray, 1988; Zarzeski, 1996). Prior studies was confirmed the negative relationship between uncertainty avoidance and voluntary disclosure (Hopes, 2003; Akram, 2011; Hooghemstra *et al.*, 2015).

Uncertainty avoidance influences the innovation adoption and information technology usage. Companies in strong uncertainty avoidance countries are more resistant to innovations, high formalized management style and constraining of innovations by rules (Hofstede, 2001; Mohammadisadr *et al.*, 2012). Managers create more rigid rules to control the risk and they are less likely to encourage the experimentation and innovation on their firms.

In weak uncertainty avoidance societies, companies have greater tendency to nurture experimentation and they prompt employees to create new ideas and develop emerging innovation, which implicates the rapid development and adoption the new communication technologies in the corporate activities, presuming firm profitability and continuity. Managers, in Weak uncertainty avoidance countries, are more likely to adopt the Web site, as a business financial reporting support.
As an extension to Gray (1988)' hypothesis, we hypothesized that:

H_2: Companies in weak uncertainty avoidance countries disclose more financial information through their corporate Web sites.

4.2. Institutional factors

Comparative studies demonstrated that countries levels institutional factors are important determinants of financial disclosure practices, essentially, legal system[ii], capital market and economic development (Jaggi & Low, 2000; Hopes, 2003).

4.2.1. Capital market size

Larger capital markets present an important number of participants and shareholders, favoring the information demand (Adhikari & Tondkar, 1992). Exercising more pressure, investors require sophisticated information helping to make optimal investment decision (Gray *et al.*, 1984) and order companies to produce more rigorous information and to respect disclosure requirements.
Therefore, companies in countries with larger capital market are more motivated to disclose more regular information in their annual report to public (Adhikari & Tondkar, 1992; Jaggi and Low, 2000; Bushuman *et al.*, 2004).

Larger markets present important activities and voluminous transactions (Salter, 1998), which showed fulfill numerous norms such as reliability, credibility and security. Market participants demand also the quality of financial services and they request the use of new means facilitating the transmission of news and information on the markets. Internet is considered an attractive medium for financial services and transactions at low cost. It "offers unprecedented immediacy, flexibility and interactivity, magnifying the financial services industry's ability to reach into the retail market" (ISOCO, 1998).

Utilizing Internet technologies, investors can access immediately and rapidly to news and actual information available on the market, helping to make optimal choices and conduct investment activity. Consequently, markets participants incite firm to use Internet and create own Web sites, such as a mean corporate information communication.
According to these arguments, we suggest that companies in countries with larger capital markets disclose more electronic financial information. We hypothesized that:

H₃: Companies in countries with larger capital markets disclose more financial information through their corporate Web sites.

4.2.2. National economic development

Developed countries have more resources to devote accounting standard-setting and regulated process (Adhikari & Tondkar, 1992), which involve disclosure

---

requirements. Consequently, companies wanted to communicate more financial information in annual reports (Doupink & Salter, 1995; Salter, 1998; William, 2004).

The level of national income explains the capacity of a country to maintain new innovation (Pohjohe, 2003; Erumbam & Jong, 2005). Countries with high income process more human and technique resources helping individuals to create and adopt new innovations (such as new information technologies).

Internet will generate new opportunities which will translate voluminous national economic activities and domicile managerial companies. Managers will incorporate Web technologies in corporate activities and they develop news activities such as E-Business and E- Voting. However, managers have more incentives to construct their corporate Websites, as a new and important medium of business financial publication and increase the amount of information disclosure. In this study, we predicate a positive relationship between economic growth and Web based financial information. We hypothesized that:

H₄: Companies in developed countries disclose more financial information through their corporate Web sites.

5. Methodology design

5.1. Sample description

The initial sample was included 271 largest groups of companies traded on European securities exchange, in July 2013. The selection criterion of this sample was presumed, as following:
− Internet financial disclosure practices is appropriated to listed firms on international exchanges markets (Ashbaugh *et al.*, 1999; Debrency *et al.*, 2002);
− Firms, with highest market capitalization, are more likely to adopt the Internet financial disclosure practice (Ducassy, 2008);
− European commission fixed appropriated legal framework, identifying transparency norms in the case where listed firms use "electronic mean" as information publication medium.

We eliminated financial sector firms (banks, insurances and others financial services firms) because they have specific and different disclosure requirements (Gul & Leung, 2004), three groups which did not have a Web site or downloadable site (Ezat & El-Masry, 2008) and eight groups which are listed on two or more securities exchanges. The final sample is composed by 205 groups, observed in 2011-2012 accounting exercise.

Table 2. Sample composition

Countries	Accounting systems	Total traded Companies	Financial sector companies	Web inaccessibility	Double listing	Final sample
France	Continental	40	04	0	03	33
Germany	Continental	30	05	0	0	25
Italy	Continental	40	13	01	01	25
Netherlands	Anglo-Saxon	25	03	0	03	19
Spain	Continental	35	08	0	03	24
UK	Anglo-Saxon	101	17	02	03	79
Total		271	50	03	13	205

5.2. Web based disclosure extent

Pirchegger & Wagenhofer (1999) identified four dimensions, evaluating the Web diffusion:
- _**Content**_: encompasses financial and corporate information available on the site;
- _**Timeliness**_: Web can provide companies and users the possibility to acquire rapid and updating information in real time;
- _**Technology**_: it is "the extent to which the companies under investigation make use of some of the more advanced features" (Pirchegger & Wagenhofer, 1999: 365);
- _**User support**_: measures the design and layout of the Website.

This framework was reviewed as a "very comprehensive checklist for the evaluation of Web site", Marston & Poeli (2004: 296) and it was been utilized by a great number of IFR studies (Purba *et al.*, 2013; Bekiaris *et al.*, 2014; Pascareno & Hermana, 2015). Consequently, we employed Pirchegger & Wagentofer' instrument and we defined a Web disclosure index measuring the extent of information communicated through corporate European Web site.

In order to develop this index, we were achieved the next steps:

- _**Checklist instrument construction**_:
We chose to adopt transparency directive requirements as a "standard", which fixed "regulated information" and we considered others information which communicated through European Web sites, exceeded directive requirements, as "voluntary disclosure". Regulated information includes periodic and ongoing information. Voluntary information, incorporates others financial and non-financial information, concerning business, governance, segment and responsibility information. Completing the voluntary information, timeliness, technology and user support items, we were referred to checklist instruments developed by previous studies dealing the Web based financial disclosure on the European countries (Larran & Giner, 2002; Geernigs & Sinchez, 2008; Boubaker *et al.*, 2012; Sanchez Canadas & Caba perrez, 2013).

The list of items composes 133 items: Web content items (104 items), timeliness items (9 items), technology items (11 items) and user support items (9 items) (Appendix A).

    −   *Web sites consultation and analysis*:

We consulted and analyzed financial reports, others documents and pages available and downloadable via sites Web during a short period of three months (as a court period) from 1st July to 31 September 2013.

    −   *Web reporting index calculation:*

We performed unweighted dichotomous disclosure index: we noted a score of 1 if a company reported an item figured from the checklist and a score of 0 if the company did not disclose an item. Unweighted scoring procedure reduces the subjectivity and accords equal important to an each disclosure item (Cooke, 1989; Hossain *et al.*, 1995). The Web reporting index of each company is calculated to dividing the total score disclosed by total number of items (n =133), as following:

$$\textbf{Web reporting index (WRI)} = \frac{total\ Score\ obtained\ by\ firm}{Number\ total\ of\ items} \quad \textbf{(1)}$$

In addition, the total Web reporting index (TWDI) corresponds to the sum of four indices: content (CONI), timeliness (TIMI), technology (TEHI) and user support (SUPI) indices.

$$TWDI = CONI + TIMI + TEHI + SUPI \qquad (2)$$

5.3. Explanatory variables measurement

We defined measurement of culture dimensions and institutional factors (Appendix B), as a following:

5.3.1. Culture

Following to prior studies (Jaggi & Low, 2000; Williams, 2004; Hooghiemstra *et al.*, 2015), we use the Hofstede's (1984) score represented countries cultural values levels. In this analysis, we focused essentially to individualism (INDV) and avoidance uncertainty (UCER) scores.

5.3.2. Institutional factors

Measurements test and control variable are consistent with the international accounting research, as a following:
- **Stock market size (MCAP)**: measured by the market capitalization, equal to the market capitalization of domestic companies dividing by Gross

Domestic Product (GDP) (Adhikari & Tondher, 1992; Larson & Kenny, 1995).

- **Economic growth (ECGW)**: correspond to the natural logarithm of GDP per capita (Williams, 2004; Turrent & Ariza, 2012; Zeghal & Moussa, 2015).

We identified two control variables can explain the Web based disclosure:

- **National inflation level (INFL)**: Archambault & Archambault (1999) showed that companies operating in countries with high inflation are more likely to use price level accounting and they increase the information publication level, made available to investors. We suggested a positive relationship between inflation and Internet financial reporting and we measured countries inflation level (INFL) by 2012 inflation rate.
- **National education level (EDUC)**: increasing the level of national education involves the importance of financial statements users' numbers (Doupnik & Salter, 1995).

  They acquire more competences, expertise, permitting more capacities to understand and interpret corporate information and helping to make optimal investment decisions, consequently, they will demand a high quality and important amount of financial information (Archambault & Archambault, 2003).

  We suggested that countries- education level (EDUC) affect positively the Web based financial disclosure, measuring by the tertiary education ratios in 2012.

5.4. Research models

We developed a general model testing the influence of country specific characteristics and Web based financial disclosure:

$$WRI = \beta_0 + \beta_1 \, INDV + \beta_2 \, UCER + \beta_3 \, MACP + \beta_4 \, ECGW + \beta_5 \, INFL + \beta_6 \, EDUC + \varepsilon$$
(3)

We elaborated five distinct models, detailing the influence of culture, institutional factors on Web reporting dimensions: Web content index, Web timeliness index, Web technology index and Web user support index, respectively:

- Web content index model (WCONI)
$$WCONI = \beta_0 + \beta_1 \, INDV + \beta_2 \, UCER + \beta_3 \, MACP + \beta_4 \, ECGW + \beta_5 \, INFL + \beta_6 \, EDUC + \varepsilon$$ (4)
-Web timeliness index model (WTMI)
$$WTMI = \beta_0 + \beta_1 \, INDV + \beta_2 \, UCER + \beta_3 \, MACP + \beta_4 \, ECGW + \beta_5 \, INFL + \beta_6 \, EDUC + \varepsilon$$ (5)

- Web technology index model (WTEI)

$$WTEI = \beta_0 + \beta_1\,INDV + \beta_2\,UCER + \beta_3\,MACP + \beta_4\,ECGW + \beta_5\,INFL + \beta_6\,EDUC + \varepsilon \qquad (6)$$

- Web user support index Model (WUSI)

$$WSUPI = \beta_0 + \beta_1\,INDV + \beta_2\,UCER + \beta_3\,MACP + \beta_4\,ECGW + \beta_5\,INFL + \beta_6\,EDUC + \varepsilon \qquad (7)$$

- Total Web disclosure index model (TWDI):

$$TWDI = \beta_0 + \beta_1\,INDV + \beta_2\,UCER + \beta_3\,MACP + \beta_4\,ECGW + \beta_5\,INFL + \beta_6\,EDUC + \varepsilon \qquad (8)$$

Were:

WRI= Web reporting index
WCONI= Web content index
WTIMI= Web timeliness index
WTEHI= Web technology index
WSUPI= Web user support index
TWDI= Total Web disclosure index
INDV= Country individual level
UCER= Country avoidance uncertainty level
MACP= Country stock market capitalization
ECGW= Country economic growth
INFL= Country inflation level
EDUC= Country education level
β_i = coefficients
ε = error

6. Empirical findings

This study aims to explore an appropriated empirical investigation testing the macroeconomics conditions that have a direct and significant impact on web disclosure differences in Europe, as corporate transparency practicing in the 21st century. European countries present a specific characteristics on this issue with imposing listed companies on regulated European market to respect, apply financial transparency standards (transparency directive) and encourage utilizing the 'electronic mean' as a communication support. This section presents the characterization of web disclosure on European context and the linear regression analysis determining the influence of environment specific characteristics on Web disclosure extent.

6.1. Descriptive analysis

We presented a summary statistics, describing the level of information communicated through European corporate Websites and country specific characteristics.

6.1.1. IFR practices tendencies

Appendix C presents descriptive statistics for content, timeliness, technology, user support and total Web disclosure indices, in terms minimum, maximum, means and standards' derivation respectively. The highest mean value of content index in France (58%), Germany (56%), Italy (58%), Netherlands (52%), Spain (53%) and UK (50%) indicated that institutional websites as an important medium of corporate information. European group communicated enormously their annual report, financial accounts and financial information through their sites which facilities the relationship between company and investors. Analyzing the information publication via companies' Websites listed in Eastern Europe countries, Bonson and Escobar (2006) showed that 34.5% of companies published their annual reports, 18.6% communicated their income statements via Internet.

These statistics reveal the importance the Web technology which helps information users' navigation. Timeliness, technologies and user support index values didn't different between companies in European countries. Total Web disclosure indices mean values are ranked in 0.64 to 0.72 which involved that European groups adopt Web sites, new support communication. This result is consistent with results of different studies conducted in European context such as Pirchegger & Wagenhofer (1999), Geerings *et al.* (2003), Marston and Polei (2004), Bonson and Escobar (2006). Geerings *et al.* (2003)'study showed that Euronext listed companies noted a high degree of Web' use as a vehicle for improving investors relations: France (94%), Netherlands (92%) use more Internet' investor relations activities than in Belgium (70%).

Table 3: Web content index mean variation

Country	N	Regulated	%	Voluntary	%	content	%
France	33	0.300	50.37%	0.259	46.3%	0.559	100
Germany	25	0.289	52%	0.267	48%	0.556	100
Italy	24	0.290	52%	0.268	48%	0.558	100
Netherlands	19	0.265	50.5%	0.260	49.5%	0.525	100
Spain	24	0.276	51.8%	0.257	48.2%	0.533	100
UK	79	0.261	51.6%	0.245	48.4%	0.506	100

Table 3 indicated that regulated information constitutes the principal component of informational content of corporate Websites (more of 50 % of content items). Periodic information is the major regulated information categories, composing the Websites content (Appendix D).

European groups developed storage systems through their own Websites cumulating the annual reports, financial statements, and others obligatory information during five years, conformity to the transparency directive requirements. This archive allows investors and websites' visitors the possibility to acquire more regulated

information helping to realizing the comparison and more understanding the evolution of corporate financial situation, which favorites the optimal investment decision.

6.1.2. External environment characteristics

Table 4 indicated that Anglo-Saxon countries present a high level of market capitalization, economic development and education then continental countries.

Table 4. Explanatory variables descriptive statistics

	Continental countries		Anglo-Saxon countries	
	Mean	St. derivation	Mean	St. derivation
Individualism	66.74	9.05	87.25	3.75
Uncertainty avoidance	78.52	8.724	38.48	7.15
Capital market capitalization	0.55	0.137	1.14	0.14
Economic growth	9.98	0.89	10.66	0.07
Inflation	0.023	0.004	0.027	0.001
Education	0.644	0.104	0.639	0.596
N	107		98	

6.2. Multicollinearity problem analysis

We will realize a linear regression testing the influence of environment factors on web based financial disclosure, as an accounting practice. Before running regression model, we should verify the empirical correlation between different explanatory variables variable and detect the multicollinearity problem between (Field, 2009). Multicollinearity, testing was based on the correlation matrix, which will be detected when the correlation coefficients exceeded 0.6 (Hooghiemstra *et al.*, 2015).

Table 5. Pearson matrix

	INDV	UCER	MCAP	ECGW	INFL	EDUC
INDV	1					
UCER	-0.863**	1				
MCAP	0.658**	-0.797**	1			
ECGW	0.419**	-0.201**	0.515**	1		
INFL	0.597**	-0.586**	0.410**	0.516**	1	
EDUC	-0.501**	0.248**	-0.040	0.221**	0.132	1

Note: INDV: individualism level; UCER: avoidance uncertainty level; MCAP: capital market capitalization; ECGW: economic growth; INFL: inflation rate; EDUC: territory education level.

Pearson matrix indicated that multicollinearity problem exists between three explanatory variables, describing by a high correlation coefficient: individualism and uncertainty avoidance; individualism and capital market size.

Therefore, individualism was not included on the regression model.

6.3. Linear regression method: Ordinary Least Squares (OLS) transformation

Appling the Ordinary least squares (OLS) regression on financial disclosure studies involves many problems, dealing with disclosure index use (Cooke, 1998). As a solution, major of accounting disclosure studies (Lang & Lundholm, 1993, 1996; Wallace *et al.*, 1994; Wallace & Naser, 1995; Cooke, 1998) legitimated the transformation of both dependent and independents variables before the application of OLS regression, such as full rank transformation and normal scores transformation.

Rank transformation consists to adjust continuous variables with n observations, ranked from the smallest to the highest values. This method is advantageous when the dependent variable is a monotonic and non linear function of the independent variables. Normal scores transformation was obtained by dividing the distribution into the number of observation plus one regression on the basis that each region has equal probability (Cooke, 1998). This method is considered more advantageous than rank scores (Camfferman & Cooke, 2002), that it contributes to exact statistical properties (adjusted R^2 significance levels, meaningful F and t tests).

The OLS regression method application depends to the verification of several assumptions, principally multicollinearity, homoscedasticity, linearity and normality (Cooke & Hannifa, 2002). We performed Q-Q plot testing the linearity of the variable distribution, histograms examining the homoscedasticity residuals analysis and Kolmogorov-Smirnov (K-S Lilliefors) test, capturing the normality problem. The results indicated that OLS assumptions are violated, en consequence, we ruined normal scores regression model, testing the link between institutional factors and Web disclosure index.

6.4. OLS regression findings

In order to validate the research hypotheses and the study' conceptual framework, we performed normal scores OLS regression related to five distinct linear models, programming with SPPS 20. These models predicted respectively the incidence of culture and institutional factors on content, timeliness, technology, user support and total web disclosure indices. OLS regression models results (appendix E) showed that four models are significant at p<0.001, except to timeliness model. Content, technology and total disclosure models explain respectively 29.5%, 14.8% and 29.4% of the endogenous variable variation.

In this section, we interpreted and analyzed empirical findings from five models, investigating the incidence of environment specific characteristics on Web disclosure dimensions (content, timeliness, technology and user support indices) and total web disclosure index.

6.4.1. Web disclosure dimensions

Normal scores OLS regression showed that institutional factors are significantly appropriated to content and technology models. Uncertainly avoidance, market capitalization and education level are significantly related to the corporate site content.

Contrary to our expectation, uncertainly avoidance is significantly and positively related to the Web content index, which involved that these companies with high uncertainly avoidance culture have more likely to increase the level of online information. This result can possibly be explained by the composition of sample including in majority continental countries, noted high uncertainly avoidance level. Our findings confirm that companies in countries with high tertiary education have more incentives to use the Web such communication tool and increase the on line information quantity. These countries are dominated by developed accounting profession which demand the respect of auditing and accounting norms favoring the relevance and the comprehensively of information, consequently, companies will communicate more audited annual reports and statements via Internet.

Linear regression demonstrates that uncertainly avoidance, market capital size, economic growth and education are associated significantly with technology index. Conformity to our prevision, findings indicated that uncertainly avoidance affects significantly and negatively the Website technology index, as a communication support. In countries with weak uncertainly avoidance, managers are more likely to incorporate new Internet technology in their corporations facilitating the communication with investors, stakeholders and public. That also, managers encourage the communication responsible to create and diffuse new and sophisticated IT means and applications favoring the Websites pages and assuring the financial information quality.

Websites are important mean on larger capital markets, facilitating financial and listing activities and services: incorporating a higher level and sophisticated technologies improve the transmission of information and news. Companies in countries with larger capital market are more likely to integrate new technologies in their Websites. In these countries, corporate Websites pages constitute a creative privileged support allowing companies to respond to information demand on larger and developed markets. Developing news IT applications, companies can supply more financial information, news and press releases in the time to privileged, foreign

investors and others markets' participants. Managers, in developed countries, have more resources to adopt new technologies and they are more likely to incorporate more technologies instruments in corporate Web site.

People in countries with higher education rate were been incited to create new innovation and they accord more attention to new technologies and communication innovations, which have a positive impact to innovations organizational and markers' decisions process. Thus, companies are more likely to integrate and develop new Web technologies though their sites, helping Web navigators.

6.4.2. Total Web disclosure index

Normal scores OLS regression signed that uncertainty avoidance, capital market size, economic growth and level of education are significant related to total IFR index. Our results highlight a significant relationship and to the expectation between uncertainty avoidance and total Web disclosure. Thus, we not support the H2 hypothesis. This result is consistent with Archambault & Archambault (2003) and opposite to Zarzeski (1996), Hope (2003) and Dejong *et al.* (2006)' studies results which analyzing the financial information published on the annual reports.

Maali (2016)' study analysis was demonstrated the similar result which indicated that uncertainty avoidance was positively related to multinational corporation transparency index. Analyzing the multinational governance disclosure policies through websites, Zeghal & Moussa (2015) were demonstrated that uncertainty avoidance is negatively associated to governance disclosure index. They explained this result by the nature of multinational firms which are dominated by "global market culture than a specific country culture".

Linear regression found that capital market size is significantly and negatively (opposite direction to prediction) to the level of online information, therefore we cannot verify our expectation and support H3 hypothesis. Examining the annual reports content, Jaggi & Low (2000), Archambault & Archambault (2003) demonstrated a significant and positive relationship between capital market size and financial disclosure. Zeghal & Moussa (2015) haven't confirmed a significant association related the "capital development" variable and corporate governance disclosure policies through multinational Websites.

In addition, the normal score regression highlight a significant and positive coefficient appropriated to "economic growth" variable, thus, we confirm our expectation, we accept that country's economic development affects significantly and positively the total disclosure index and supported (H4) hypothesis. Companies in developed countries disclose more regulated and voluntary information through their own websites than listed companies in developing countries which they are

more likely to adopt this medium. They have more resources to acquire more technologies developing corporate activities, such as financial reporting strategic. Possessing various resources, communication responsible desires to maintain an "efficient communication process", achieving by the exploitation of news Internet technologies such as corporate websites and social media. Turrent & Aziza (2012) study were confirmed this result, which examine the factors determining the E-transparency in Spain and Mexico and they considered that companies with developed countries disclose more information than companies from others countries.

7. Conclusion

This study analyzes the relationship between environment specific characteristics Websites based disclosure in six developed European countries (France, Germany, Italy, Netherlands, Spain and UK). Our sample was composed in 205 groups of companies traded in selected countries capital markets.

Referring to 2004/109/CE requirements, we defined web content items and we considered that content included regulated and voluntary information. Descriptive analysis underlined the web disclosure practices similarly between European countries.

We performed a normal scores OLS regression testing the incidence of environmental factors on Web based disclosure. Market size, economic growth and education level determinate technologies investigating on corporate Websites. Appropriated regression showed that country economic development (significant and positive) is the determining factor of IFR practices.

Our study contributes to the comparative accounting review through its originality in attempting to examine the influence of external environment to the Web based corporate disclosure, nevertheless, it involves certain limitations related essentially to the sample selection. It was a limited sample, which didn't present equilibrium between Anglo-Saxon and continental selected countries. This choice is principally justified by a legal/regulatory raison: examining financial disclosure practices differences necessitates the corporate transparency requirements understanding (as a well 2004/109/CE directive). Cross country Web disclosure analysis depends to disclosure requirements and standards. Thus, the accounting professional and regulatory bodies' position in this subject will help, in future, scholars to explain the influence of external environment to Websites based corporate and financial disclosure internationally.

References

Abdelsalam, O., Bryant, S. & Street, D. (2007) "An examination of comprehensiveness of corporate internet reporting provided by London listed companies", *Journal of International Accounting Research*, 6(2): 1-33

Aboutera, L. & Hussien, A. (2017) "Determining of internet financial reporting in Egyptian companies", *Research Journal of Finance and Accounting*, 8(10): 28-39

Akman, N. (2011) "The effect of IFRS adoption on financial disclosure: does culture still play a role?", *American International Journal of Contemporary Research*, 1(1): 6-17

Alali, F. & Romero, S. (2012) "The use of the internet for corporate reporting in the Mercosur (Southern common market): the case Argentina case", *Advance in Accounting*, 28: 157-167

Allam, A. & Lymer, A. (2003) "Development in internet financial reporting: review and analysis across five developed countries", *The International Journal of Digital Accounting Research*, 3(6): 165-199

Al-Sartawi, A. (2016) "Measuring the level of online financial disclosure in the Gulf cooperation council countries", *Corporate Ownership and Control*, 14: 547-558

Ariff, A.M., Bin-Ghanem, H.O. & Hashim, H.A. (2018) "Corporate ownership, internet penetration and Internet Financial reporting: evidence from the Gulf Cooperation Council countries", *Asian Journal of Business and Accounting*, 11(1):185-227

Ashbaugh, H., Johnstone, K. & Warfield, T. (1999) "Corporate reporting on the Internet", *Accounting Horizons*, 13(3): 241-257

Archanbault, J. & Archambault, M. (1990) "Across national test of determinants of inflation accounting practices", *International Journal of Accounting*, 34(2): 189-207

Bagchi, K., Cerveny, R., Hart, P. & Peterson, M. (2003) "The influence of national culture in information technology product adoption", AMCIS 2003 proceeding 119, https://aisel.aisnet.org/amics2003/119.

Bekiaris, M., Psimada, C. & Sergios, T. (2014), "Internet financial reporting quality and corporate characteristics: the case of construction companies listed in Greek and Cypriot stock exchange", *European Research Studies*, 17(2): 41-57

COB. (1998) "Recommandation n°98-05 relative à la diffusion sur Internet d'informations financières par les sociétés dont les titres sont admis aux négociations sur un marché réglementé ", Bulletin mensuel n°334, avril 1999

Bollen, L., Hassink, H. & Bozic, C. (2006) "Measuring and explaining the quality of internet investor relations activities: a multinational empirical analysis", *International Journal of Accounting Information Systems*, 7(4): 273-298

Bonson, E. & Escobar, T. (2006) "Digital reporting in Eastern European: an empirical study", *International Journal of Accounting Information System,* 7: 299-318

Boubaker, S., Lakhal, F. & Nekhili, M. (2012) "The determinants of Web based corporate reporting in France", *Managerial Auditing Journal*, 27(2): 126-155

Bryan, S., Nash, R. & Patel, A. (2012) "Culture and CEO compensation", Working paper, Http://ssrn.com/absract=2023530.

Bushuman, R., Chan, Q., Engel, E. & Smith, A. (2004) "Financial accounting information, organizational complexity and corporate governance systems", *Journal of Accounting and Economics*, 37: 167-210

Camfferman, K. & Cooke, T. (2002) "An analysis of disclosure in the annual reports of UK and Dutch companies, *Journal of International Accounting Research*, 1(1): 3-30

Chatterjee, B. & Haukes, L. (2008) "Does internet reporting improve the accessibility of financial information in a global world? A comparative study of New Zealand and Indian companies", *Australasian, Accounting, Business and Finance journal*, 2(4): 33-55

Cooke, T. (1989) "Voluntary corporate disclosure by Swedish companies", *Journal of International Financial Management and Accounting*, 1(2): 171-195

Cooke, T. (1998) "Regression analysis in accounting disclosure studies", *Accounting and Business Research*, 28(3): 209-224

Craven, B. & Marston, C. (1999) "Financial reporting on Internet by leading UK companies", *European Accounting Review*, 8(2): 321-333

Deller, D., Stubenrath, M. & Weber, C. (1999) "A survey of the Internet for investor relations in USA, the UK and Germany", *European Accounting Review*, 8(2): 351-364

Doupnik, T. & Salter, S. (1995) "External environment of accounting practice: An preliminary test of a general model of international accounting development", *International Journal of Accounting Education of Research*, 30(2): 189-207

Dunne, T., Helliar, C., Lymer, A. & Moussa, R. (2013) "Stakeholder engagement in internet financial reporting: the diffusion of XBRL in the UK", *British Accounting Review*, 45: 167-182

Ettredge, M., Richardson, V. & Scholz, S. (2001) "The presentation of financial information at corporate web sites", *International Journal of Accounting Information Systems*, 2: 149-168

European Union (EU) (2004), "Directive 2004/109/EC of the European parliament and the council of 15 December 2004 on the harmonization of transparency requirements in relation to information about issuers whose securities are admitted to trading on a regulated market and amending directive 2001/34/EC", Official journal of the European Union, L390/38.

European Union (2013), "directive2013/50/EU of the European parliament and of the council of 22 October 2013 amending directive 2004/109/EC of the European parliament and of the council on the harmonization of transparency requirements in relation to information about issuers whose securities are

admitted to trading and commission directive 2007/14/EC laying down detailed rules for the implementation of certain provisions of directive 2004/109/EC", official journal of the European union, L294/13.

FASB (2000) "Business reporting research project: electronic distribution of business reporting information", steering committee report series, Financial Accounting Standards Board

FSA. (2000) "The companies act 1985 (electronic communication) order 2000", Financial Service Autority, London.

Geerings, F., Bolen, L.H.H. & Hessink, H.F.D. (2003) "Investor relations on the Internet: A survey of the Euronext Zone", *The European Accounting Review*, 12(3): 567-579

Gray, S. (1988) "Towards a theory of cultural influence on the development of accounting systems internationally", *Abacus*, 24(1)1: 1-15

Gray, G. & Debrency, R. (1997) "Corporate reporting on the Internet: Opportunities and Challenges", Paper presented at the seventh Asian- Pacific conference

Gowthorpe, C. & Amat, O. (1999) "External reporting of accounting and financial information via the internet in Spain", *European Accounting Review*, 8(2): 365-371

Gul, F. & Leung, S. (2004) "Board leadership, outside directors' expertise and voluntary corporate disclosure", *Journal of Accounting and Public Policy*, 22: 351-379

Henchiri, J. (2011) "Voluntary Web based disclosures by Moroccan and Tunisian companies", *EuroMed Journal of Business*, 6: 55-173

Hindi, N. & Rich, J. (2010) "Financial reporting on the Internet: Evidence from the fortune 100", *Management Accounting Quarterly*, 11(2): 11-21

Hofstede, G. (1984) "Cultural dimensions in management and planning", *Asia Pacific Journal of Management*, 1: 81-99.

Hofstede, G. (2001) "Culture's consequence: comparing values, Behaviors, institutions and organizations across nations", *Sage publications*

Hooghienstra, R., Hermes, N. & Emanuels, J. (2015) "National culture and internal control disclosure: a cross-country analysis", *Corporate Governance: an International Review*, 23(4): 357-377

Hope, O. (2003) "Firm-level disclosures and the relative roles of culture and legal origin", *Journal of International Financial Management of Accounting*, 14: 218-248.

IFAC (2002) "Financial reporting on the Internet", August 2002, New York.

ISOCO (1998) "Report on securities activity on the Internet I", September 1998, www.isoco.org.

Jaggi, B. & Low, P. (2000) "Impact of culture, market forces and legal system on financial disclosure", *the International Journal of Accounting*, 35: 495-519

Kanagaretnam, K. Lim, C. & Lobo, G. (2014) "Influence of national culture on accounting conservatism and risk-taking in the banking industry", *The Accounting Review*, 89: 1115-1149

Kelton, A. & Yang, Y. (2008) "The impact of corporate governance on Internet financial reporting", *Journal of Accounting and Public Policy*, 27(1): 62-87

Kolesnik, K. (2013) "The role of culture in accounting in the light of hofstede's, Gray's and Schwartz's cultural dimensions theories- A literature review", *Financial Internet Quartely, e-finanse*, 9(3): 33-41

Lang, M. & Lundholm, R. (1993) "Cross sectional determinants of analyst ratings of corporate disclosure", *Journal of Accounting Research*, 31(2): 246-671

Lang, M. & Lundholm, R. (1996) "Corporate disclosure policy and analyst behavior", *The Accounting Review*, 7 (4): 467-492

Larran, M. & Giner, B. (2002) "The use of the Internet for corporate reporting by Spanish companies", *The International Journal of Digital Accounting Research*, 2(3): 53-82

Larson, R. & Kenny, S. (1995) "An empirical analysis of international accounting standards equity markets and economic growth in developing countries", *Journal of International Financial Management and Accounting*, 6: 130-157

Lymer, A. (1997) "The use of the Internet in company reporting: A survey and commentary on the use www in corporate reporting in UK", Paper presented at the British accounting association annual conference

Lymer, A., Debrecency, R., Gray, G.L. & Rahman, A. (1999) "Business reporting on the Internet", IASC research report.

Lymer, A. & Tallberg, A. (1997) "Corporate reporting and the Internet – a survey and commentary on the use of the www in corporate reporting in the UK and Finland", Paper presented at the annual congress of the European accounting congress, Graz, Austria

Maali, B. (2016) "Transparency disclosure and cultural values: A test for multinational corporation", *Proceedings of the Academy of Accounting and Financial Studies*, 21(2): 12-16

Marston, C. & Polei, A. (2004) "Corporate reporting on the Internet by German companies", *International Journal of Accounting Information Systems*, 5: 285-311

Mohamed, E.K.A. & Basuony, E.K.A. (2014) "Determinants and characteristics of voluntary Internet disclosure in GCC countries", *International Journal of digital Accounting Research*, 14: 57-91

Mohammadisadr, M., Seyyedali, S. & Azizolloh, A. (2012) "Relationship between managers performance and organizarional health", *International Education Studies*, 5(3): 228-234

Momany, M. & Pillai, R. (2013) "Internet financial reporting in UAE- Analysis and implications", *Global Review of Accounting and Finance,* 4(2): 142-160

Nobes, N. (1998) "Towards a general model of the reasons for international differences in financial reporting", *Abacus*, 34: 162-187

Nurunnabi, M. & Hossain, M. (2012), "The voluntary disclosure of internet financial reporting (IFR) in an emerging economy: a case of digital Bangladesh", *Journal of Asia Business Studies*, 6(1): 17-42

Ojah, K. & Mokoaleli- Mokoteli, T. (2012) "Internet financial reporting, infrastructures and corporate governance: an international analysis", *Review of development finance*, 2(2): 69-83

Oyelere, P., Laswad, F., & Fisher, R. (2003) "Determinants of Internet financial reporting by New Zealand companies", *Journal of International financial Management and Accounting*, 14(1): 26-61

Pascareno, B. & Hermana, B. (2015) "Evaluation internet financial reporting on the website of Indonesian insurance company", *Journal of Internet Banking and Commerce*, 20(1): 1-14

Pirchegger, B. & Wagenhofer, A. (1999) "Financial information on the internet: a survey of the homepage of Austrian companies", *The European Accounting Review*, 8(2): 383-395

Prabowo, R. & Tambotoh, J. (2005) "Internet financial reporting as a voluntary disclosure practice: an empirical analysis on Indonesian manufacturing firms using order Logit regression", *Jurnal Akuntansi and Bismis*, 5(2): 149-160

SEC (2003), "Mandated electronic filing and Website posting for forms 3, 4 and 5", final rule: release n°33-823, http://www.sec.gov/rules/final/33-8230

Schuster, P. & O'Connell, V. (2006) "The trend toward voluntary corporate disclosure", *Management Accounting Quarterly*, 7(2): 1-9

Trites, G.D. (1999) "The impact technology of financial and Business reporting", *Canadian Institute of Chartered Accountants, CICC*.

TSE (2003) "Electronic communications- Disclosure Guidelines", Toronto stock exchange, https://www.tsx.com,

Turel, A. (2010) "The expectation gap in Internet financial reporting evidence from an emerging capital market", *Middle Eastern Finance and Economics*, 8: 94-107

Turrent, G. & Ariza, L. (2012) "Corporate information transparency on the Internet by listed companies in Spain (IBEX 35) and Mexico (IPYC)", *International Journal of Digital Accounting Research*, 12: 1-37

Ugur, N. (2017) "Cultural differences and technology acceptance: a comparative study", *Journal of Media Critiques*, 3(1)1: 123-132

William, S. (2004) "An international investigation of association between societal variables and the amount of disclosure on information technology and communication problems: the case of Y2K", *The International Journal of Accounting*, 39: 71-92

Xiao, J., Yang, H. & Chow, C. (2004) "The determinants and characteristics of voluntary Internet based disclosure by listed Chinese companies", *Journal of Accounting and Public Policy*, 23: 191-225

Zarzeski, M.T (1996) "Spontaneous harmonization effects of culture and market forces on accounting disclosure practices accounting disclosure", *Accounting Horizons*, 10: 18-37

Zeghal, D. & Moussa, M (2015) "An analysis of the determinants of corporate governance disclosure policies in multinational enterprises: a multi-medium study", *Corporate Ownership and Control*, 12(4): 671-694

Appendix A. *Website based disclosure items categorization*

Information Items categories	Number of items	%
Websites content items	**104**	**0.782**
I- Regulated information items	*56*	0.421
A- Periodic information items	*40*	0.3
1- Annual information items	22	0.165
2- Interim information items	*18*	0.135
B- Ongoing information	*14*	0.106
1- Information about major holding	6	0.045
2- Obligatory information for holders of securities admitted to trading on a regulated market	8	0.06
C- Storage system	*2*	0.015
II- Voluntary information items	*48*	0.361
A- Financial information	*9*	0.067
1- Investor relation information items	6	0.045
2- Others financial information items	3	0.0225
B- Non-financial information items	*39*	0.293
1- General corporate information items	5	0.037
2- Corporate governance information items	13	0.097
3- Environmental and social information items	10	0.075
4- segment information items	10	0.075
Websites timeliness items	**9**	**0.068**
Websites technology items	**9**	**0.068**
Websites user support items	**11**	**0.082**
Total items	**133**	**1**

Appendix B. **Variables Measurements**

Variable	Definition	Measurement	sources data
		Endogenous variable	
WCONI	Web Content Index	$\dfrac{content\ score\ obainted\ by\ firm}{n}$	
WTIMI	Web Timeliness Index	$\dfrac{Timeliness\ score\ obainted\ by\ firm}{n}$	Corporate Web sites
WTEHI	Web Technology Index	$\dfrac{Technology\ score\ obainted\ by\ firm}{n}$	
WSUPI	Web User Support Index	$\dfrac{User\ support\ score\ obainted\ by\ firm}{n}$	
WTWDI	Web Total Web Disclosure Index	$\dfrac{total\ score\ obainted\ by\ firm}{n}$	
		Explanatory variables	
		Test variables	
INDV	National individualism level	Hofstede scores	Hofstede (1984)

Country- specific characteristics influencing
Websites based information disclosure practices

Variable	Definition	Measurement	sources data
UCER	National avoidance uncertainly level		
MCAP	Market capitalization	$\dfrac{Domestic\ companies\ capitalization}{GDP}$	
ECGW	Economic growth	$LN\left[\dfrac{GDP}{Habitant}\right]$	World bank indicators
		Control variables	
INFL	Inflation	Annual inflation rate	World bank indicators
EDUC	Education	Tertiary education rate	human development report

Appendix C. Web disclosure descriptive statistics

Financial reporting component	Min	Max	Mean	St derivation
France (n=33)				
Content index	0.4511	0.6842	0.588517	0.0443734
Timeliness index	0.0301	0.0677	0.047163	0.0084034
Technology index	0.0301	0.0602	0.043974	0.0068089
User support index	0.0301	0.0752	0.048530	0.0097836
Total web disclosure index	0.6090	0.8195	0.727956	0.0461754
Germany (n=25)				
Content index	0.4662	0.6903	0.564152	0.0537036
Timeliness index	0.0376	0.0708	0.050050	0.0089346
Technology index	0.0376	0.0619	0.044583	0.0070145
User support index	0.0226	0.0677	0.04484	0.0089478
Total web disclosure index	0.5789	0.8850	0.703669	0.0642297
Italy (n =25)				
Content index	0.3684	0.6466	0.558195	0.0521044
Timeliness index	0.0301	0.0602	0.047519	0.0086057
Technology index	0.0376	0.0602	0.047519	0.0064094
User support index	0.0226	0.0677	0.004211	0.0715506
Total web disclosure index	0.4737	0.8120	0.697444	0.0642875
Netherlands (n=19)				
Content index	0.4436	0.6090	0.525524	0.0512343
Timeliness index	0.0301	0.0677	0.043926	0.0118255
Technology index	0.0376	0.0602	0.052236	0.0068516
User support index	0.0301	0.0602	0.049861	0.0083915
Total web disclosure index	0.5714	0.7594	0.671547	0.0554815
Spain (n=24)				
Content index	0.4586	0.6316	0.533521	0.0426181
Timeliness index	0.0301	0.0602	0.045739	0.0091192

Financial reporting component	Min	Max	Mean	St derivation
Technology index	0.0376	0.0526	0.044486	0.0053931
User support index	0.0301	0.0602	0.046053	0.0083880
Total web disclosure index	0.6015	0.7669	0.669799	0.0415992
UK (n=79)				
Content index	0.4060	0.5865	0.506424	0.0429910
Timeliness index	0.0026	0.0677	0.046540	0.0088536
Technology index	0.0026	0.0602	0.041972	0.0067688
User support index	0.0376	0.0677	0.049300	0.0077791
Total web disclosure index	0.5489	0.7293	0.644237	0.045870

Appendix D: Regulated information categories

	France	Germany	Italy	Netherland	Spain	UK
Regulated information categories						
Periodic information						
Annual information						
Min	0.1203	0.1053	0.0451	0.0827	0.0602	0.0977
Max	0.1654	0.1579	0.1654	0.1504	0.1579	0.1654
Mean	0.151287	0.136842	0.131529	0.125049	0.132206	0.130294
St derivation	0.124341	0.0165300	0.0287227	0.019608	0.0242729	0.0152635
Interim information						
Min	0	0	0.015	0	0.0451	0
Max	0.1053	0.1128	0.1053	0.0827	0.0902	0.0977
Mean	0.063796	0.066466	0.073684	0.057380	0.062030	0.054725
St derivation	0.0262567	0.0235456	0.178983	0.020238	0.0127284	0.293170
Ongoing information						
Important participation						
Min	0.0226	0.015	0.0226	0.0226	0.0226	0.0226
Max	0.0451	0.0451	0.0376	0.0376	0.0376	0.0376
Mean	0.039872	0.01579	0.030075	0.028097	0.029449	0.028601
St derivation	0.0064454	0.0068637	0.0057426	0.005150	0.0049166	0.0050683
Others obligatory information						
Min	0.0226	0.0226	0.0226	0.0301	0.0226	0.0226
Max	0.0326	0.0526	0.0451	0.0451	0.0526	0.0526
Mean	0.039872	0.039398	0.040000	0.040364	0.0379707	0.034047

	France	Germany	Italy	Netherland	Spain	UK
St derivation	0.0078599	0.0076060	0.0077411	0.005720	0.007177	0.0058780
Storage system						
Min	0.015	0.015	0.015	0	0.015	0.015
Max	0.015	0.015	0.015	0.015	0.015	0.015
Mean	0.015038	0.015038	0.01538	0.014246	0.015038	0.015038
St derivation	0	0	0	0.003449	0	0
N	**33**	**24**	**25**	**19**	**25**	**79**

Appendix E. OLS regression models

	Content model		Timeliness model		Technology model		User support model		Total index model	
	B	**T**	**B**	**T**	**B**	**T**	**β**	**t**	**B**	**t**
C	-0.008	-0.13	-2.55	0.00	-5.35**	-0.001	0.009	0.14	-0.009	-0.148
UNCER	0.33***	2.68	-0.08	-0.6	-0.28***	-2.09	0.05	0.35	0.30**	2.439
MCAP	-0.26**	-2.26	-0.05	-0.42	0.65***	-5.12	0.13	1.01	-0.30**	-2.576
ECGW	0.10	1.22	-0.12	-1.26	0.37***	3.98	0.14	1.49	0.16**	1.915
INFL	-0.02	-0.91	-0.002	-0.01	-0.34***	-3.01	-0.02	-0.21	-0.04	-0.442
EDUC	0.25***	-3.14	-0.07	0.78	0.31***	3.51	-0.05	-0.61	-0.24***	-2.888
R^2	*0.312*		*0.029*		*0.169*		*0.051*		*0.294*	
Adj. R^2	*0.295*		*0.005*		*0.148*		*0.027*		*0.276*	
Sig. F	*0.000*		*0.318*		*0.000*		*0.000*		*0.000*	

Note: UNCER: uncertainty avoidance, MCAP: capital market capitalization, ECGW: economic growth, INFL: inflation, EDUC: education, * sig<0.1, ** sig<0.05, *** sig<0.01.

---

[i] Secrecy versus transparency is " a preference for confidentiality and the restriction of disclosure of information about the business only to those who are closely involved with its management and financing as opposed to a more transparent, open and publicly accountable approach" (Gray, 1988, p. 8).

[ii] Gray (1998) was noted that countries legal systems can influence indirectly accounting values in determining the financial disclosure practices. He indicated that "*it is curious to note here that the language variable, as a proxy for culture, was perceived to be a mean of capturing similarities in legal systems which were thought to be particularly important in the determination of disclosure patterns* (Gray, 1988, p. 4). For this reason, we excluded "legal system" variable, as an institutional factor, in this analysis.