THE QUALITY OF WEB INVESTOR RELATIONS IN LISTED ITALIAN COMPANIES: MEMBERSHIP IN THE STAR SEGMENT – DOES IT MAKE A DIFFERENCE?

Antonio D'Amato*, Claudia Cacia**

Abstract

The Internet has influenced corporate communication practices as concerns providing timely, comprehensive and accurate financial information. The paper investigates the quality of investor relation of listed Italian companies. In line with Borsa Italiana which defines STAR the companies with a strong vocation for communication, we aim to verify that such companies actually do communicate better than the others. In this perspective, we consider that the companies listed on the other MTA - Telematic Stock Market- segments of the Italian Stock Exchange, could align the quality of financial disclosure to that of STAR companies as a result of imitative strategies. Our main findings reveal that in the Italian market herding does not characterize the behavior of companies as regards Web Investor Relations (W.I.R.) practices and quality.

*Department of Management and Information Technology, University of Salerno, via Ponte Don Melillo, 84084 Fisciano (SA)
Tel: +39089963107
Fax: +39089963505
Email: andamato@unisa.it
**Department of Management and Information Technology, University of Salerno

1. Introduction and research objectives

Web communication has taken on a significant role in corporate communication strategies. The technical and functional characteristics of the Internet improve the communication process and increase the quantity and quality of information disclosed. In particular, the web has revolutionized communicating by breaking down the physical and temporal barriers that exist in the relationship between sender and recipient of the message. Therefore, in addition to the significant cost advantages that the web offers to businesses for implementing communication strategies, it radically improves the effectiveness of circulating information to the public: this helps to create a truly transparent and competitive economic environment (Berk, 2001).

In this perspective, the use of the web to disseminate financial information represents one of the most important and interesting areas of web communication (Hindi & Rich, 2010). In particular, the literature has long emphasized that timely, comprehensive and accurate financial communication can bring significant benefits to businesses (Fishman & Hagerty, 1989, Lang & Lundholm, 1993, Schuster & O'Connell, 2006) and more generally to the economic and financial system (Chang et al., 2008). The potential of the web for radically improving the quality and timeliness of dissemination of financial information has also been underlined (Berk, 2001).

The web overcomes the traditional frequency of financial reporting activities, able as it is to transmit continuous information flows that in real time, stimulate investor decision making processes. Consequently, businesses are well aware of the potential of the web for the dissemination of financial information (Ashbaugh et al., 1999).

The characteristics of the web in terms of visibility, low cost, etc.. have increased the focus on the propensity of firms to disclose voluntarily. The Web, in fact, increases the opportunities for companies to voluntarily communicate quantities of information, beyond the legal requirements. In this respects scholars and practitioners have shown dissatisfaction with traditional mandatory communication, deemed incapable of fully satisfying the information needs of investors and stakeholders in general (ACCA, 1999, Bozzolan et al., 2003; Chen & Jaggi, 2000; Eng and Mak, 2003; Ernst & Young et al., 1999; OECD 2001). Such dissatisfaction has led to the need for companies to provide voluntarily clear cut, timely and complete information about all aspects of their business. On the one hand, investors are interested both in financial and non financial information (Eccles, 2011). On the other, not only are

investors interested in the life of the company, but also other stakeholders (suppliers, employees, customers, etc.) express the need for different types of information such as financial or information on Corporate Social Responsibility (CSR) and so on (Hockerts & Moir, 2004). However, if as the literature shows, effective communication produces significant benefits for businesses, then companies should be willing on a voluntary rather than mandatory basis to provide investors and other stakeholders with all the relevant information for an accurate analysis of company dynamics. The willingness of companies to communicate effectively, by providing thorough, complete and accurate information, should also derive from the knowledge that in financial markets in particular, competition is nourished by the information available to the operators. For this reason, companies should be stimulated to provide information that is adequate in quality and in quantity to hold its own against competitors. In practice, it is necessary to overcome the logic of mandatory disclosure and affirm an approach for the adoption of best practices of voluntary disclosure.

Based on these considerations, the paper analyzes the quality of web investor relations (WIR) in listed Italian companies with the aim to highlight whether some companies communicate better than others, or whether there is an alignment of all listed companies to the same level of communication quality.

In this perspective, the literature shows that companies for various reasons tend to apply imitative strategies in voluntary disclosure (Brown et al., 2006; Cerbioni and Menini, 2011). In particular, scholars discussing on informational herding highlight the similarity or convergence in the way such firms communicate. The reasons for herd behavior may be various. First, the literature emphasizes that managers can be induced to disclose on the basis of information from other managers (Banerjee, 1992; Welch, 1992). Secondly, managers are induced to communicate in a similar manner to avoiding appearing different from others and the risk of being negatively evaluated by the public (Scharfstein and Stein, 1990; Trueman, 1994).

The companies listed on the STAR segment are defined by Borsa Italiana as companies with a strong vocation for communicating. Therefore these companies should evidence a significantly higher level of communication quality compared to the others. On the other hand however, if the voluntary approach to financial disclosure is effectively shared and disseminated, no significant difference among all listed companies might be observed. First of all, if NON STAR companies are aware of the benefits and the strategic role of financial communication, they should put in place communication comparable, in quality and efficacy, to that of STAR companies. Consequently, NON STAR companies might present the same communication quality as STAR companies

for example as a means to compete in capital acquisition on the financial market. Therefore, our research has been built on the observation and comparison of communicative practices of companies listed on the STAR segment compared to the remaining companies listed on Italian Stock Market. Expected findings could help to shed light on the ability of listed Italian companies to improve their communicative action. From this point of view, our work could contribute to enriching the empirical literature on the communicative practices of listed Italian companies.

The work also investigates whether the quality of WIR could positively influence market performance. From this point of view scholars have shown that greater disclosure enhances company market performance (Botosan & Plumlee, 2002; Gietzmann & Ireland, 2005; Richardson & Welker, 2001;).

Our study is structured as follows. In the first part we review the literature on WIR. Then we outline our research hypotheses. In the third part we present the model to assess the quality of WIR and illustrate the methodology used to test the hypotheses. Finally, we show the results and discuss implications.

2. Literature Review

This section of the paper reviews the literature on investor relations to delineate a theoretical framework as a foundation for the confirmation or otherwise, of the hypotheses on which this work is built

2.1. Disclosure, Investor Relations and Technological innovation

The main objective of corporate disclosure is to help investors evaluate company performance and make profitable investment decisions (Charlotte, 2006). The aim of Investor Relations (IR) is to manage effectively the communication between a company and its investors. Success in investor relations requires the companies to extend the scope of investor relations from a mere obligatory disclosure towards more frequent, extensive, proactive and diversified two-way interaction (Laskin,2006). The overall goal is to create a mutually beneficial relationship between companies and investors based on a fair valuation of the company stock price. Therefore, to improve communication with investors, the information communicated by companies has to be extended beyond the mandatory financial information towards a broader, transparent, and socially responsible disclosure, which also focuses on non-financial information.

As is well known, disclosure theory differentiates between mandatory and voluntary disclosure. Mandatory disclosure is oriented to protect and guarantee the minimum information requirements for stakeholders as a consequence of the inadequate

production and uneven distribution of corporate financial information. It refers to the information which must be available as an outcome of current statutory provisions, capital markets rules or regulations issued by accounting authorities. Mandatory disclosure is being practised by all listed firms in most countries with the main characteristics defined at national or regional level by organizations or government authorities (Adina & Lon,2008). Through mandatory disclosure it is possible to reduce information abuse by insiders (insider trading) and to achieve greater capital market efficiency through the effective representation of business dynamics (Leftwich, 1980; Watts & Zimmerman, 1990).

From this point of view, Stigler (1961) laid the foundations of modern economics of information theory by studying the activities aimed at reducing the uncertainty of investor decisions and the extent of information present on the market (Akerlof, 1970). To this were added the studies devoted to the efficiency conditions of securities markets (Fama, 1970; Healy & Palepu, 2001) and to moral hazard and adverse selection problems (Akerlof, 1970). Theoretically, agency problems (Jensen & Meckling, 1976) could be solved by offering more information, or stipulating rules that require companies to disclose to the market specific information considered to be of general interest, or particularly relevant for investment decisions (mandatory disclosure).

The existence of regulatory remits however, does not ensure the quality of corporate communication. Although the sanction mechanisms related to mandatory disclosure, acting as a deterrent to inadequate behaviour, render the information disclosed by companies more credible, regulatory requirements allow businesses wide margins of discretion. Thus the thoroughness of the information contained in published documents is strongly influenced by a firm's attitude to transparency. The latter implies the adoption of a voluntary disclosure approach, whose objective is to increase the quantity and quality of information available for the market (Leland & Pyle, 1977, Leuz & Verrecchia, 2000, Welker, 1995). Consequently, voluntary disclosure can be defined as an additional offer of information that is not required by law but which is an effective tool for companies, in order to obtain financial capital as well as to attract outside investors (Adina & Lon, 2008). Various studies suggest that voluntary disclosure reduces information asymmetry among informed and uninformed market participants (Brealey and Myers 2000; Diamond & Verrecchia, 1991; Frankel et al., 1999).

In truth, disclosure whether it is mandatory or voluntary, does in fact diminish information asymmetry between shareholder and management and ensures effective resource allocation. The literature points out, in fact, that a higher level of communication is associated with better performance, both in relation to higher stock returns, and greater

ability to compete on the financial market for fund raising at affordable costs. Less information asymmetries, in fact, moderates the perception of risk by investors: therefore this reduces the cost of capital, and conversely increases the liquidity of shares and their price (Diamond & Verrecchia, 1991, Lang & Lundholm, 1993). Merton (1987) shows, in particular, that risk-adverse investors do not invest in securities the characteristics of which are unknown. Moreover, Harrison & Huang (2005) emphasize that an effective communication policy is a goal sought by insiders to ensure a high degree of liquidity of shares, as a condition to sell their shares easily. This is particularly true for small companies or those in which insiders have invested most of their wealth. Welker (1995) & Leuz, and Verrecchia (2000) highlights that company disclosure is positively linked to the increase of share trading volume and therefore to market liquidity. Glosten and Milgton (1985), Healy et al., (1999) and Froidevaux (2004) also stressed the same findings. Healy et al.(1999), Lang and Lundholm (1993, 1996) showed that wide disclosure can improve stock trading in the capital market. In short, companies should have an attitude oriented to transparency, encompassing the integration of mandatory and voluntary disclosure (Leland & Pyle, 1977).

The cost for corporations of disclosing information to the investor is significant (Gray et al., 1995). IR managers are reluctant to disclose information if the advantages of such disclosure do not outweigh the cost of disclosing information (Kelly,1983; Maingot & Zeghal, 2008). Information has a cost both related to production and use, which impacts in different ways on the basis of different utility functions and diverse levels of risk aversion (Allegrini, 2003; Di Stefano, 1990; Quagli, 2001;). There are direct costs of disclosing, such as the preparation of the information for disclosure which is borne by the corporation and also the analysis of the disclosed information which is borne by the different users of the information (Manigot & Zehal, 2008). Another type of cost related to disclosure is the potential cost of litigation (Froidevaux, 2004) related to companies that prefer not to disclose information (Manigot & Zeghal, 2008). Therefore, a high level of disclosure could also reduce litigation risks.

However the literature clearly shows that the resources investments to improve the quality and quantity of disclosure creates clear benefits for businesses. Several Authors highlight the benefits of transparent communication, in terms of:

- higher level of information intermediation and of analyst coverage (Ashbaugh & Pincus, 1999; Bhushan, 1989; Bowen et al. 2002, Francis et al., 1998; Healy et. al., 1999);
- higher level of investor interest (Dhaliwai, 1979);
- higher level of stock liquidity (Diamond & Varecchia, 1991; Frost et al. 2002; Glosten & Milgrom,1985; Lang & Lundholm, 1996);

- lower cost of capital (Dhaliwai, 1979; Elliot & Jacobson, 1994; Lev, 1992);
- lower agency costs and level of information asymmetry (Chow & Wong-Boren, 1987; Healy et al., 1999; Jensen & Meckling, 1976; Leuz & Verrecchia, 2000; Low, 1996);
- higher level of business value as the cost of capital decreases (Amihud & Mendelson,1986; Botosan, 1997; Demsetz, 1968; Sengupta, 1998; Kothari & Short, 2003);
- opportunities to operate market manipulation (Bushee & Leuz, 2003).

Other empirical evidence shows the existence of a positive relation between communication quality and P/E multiple and a direct relation between IR activity and business credibility and stock price level (Eccles & Mavrinac, 1995). Understandably, for an efficient communication policy, the benefits arising from economic-financial disclosure should outweigh the costs associated with information dissemination. Therefore, economic-financial disclosure is an essential development tool for enterprises which in no circumstances, should renounce professional administration of this kind of communication. Investor relationship department and their investor relations activities have recently captured world-wide interest because of major corporate failings (Laskin, 2006).

The spread of a transparency culture in financial communications has encouraged the trend towards standardization of IR practices. This has been reinforced by technological innovations (Higgins, 2000). The web enables companies to acquire a widespread and more complete range of information regarding the business context; at the same time, it accelerates the disclosure process and attracts a wider audience (Bollen et al. 2006). One of the prerogatives of the web is represented by its ability to overcome the time-space barriers that affect traditional media: therefore the web facilitates the real-time dissemination of information on corporate events (Cacia, 2011). The use of the Internet for the dissemination of economic and financial information has become an indispensable component for business in managing relationships with the market.

The web enables the conveying in a virtual space of traditional financial information (ranging from summary data or balance sheets, to information strictly speaking, outside the spheres of accounting; data on corporate events, corporate governance, rules on insider trading, etc., to which can be added other information, including that deriving from the market (Oyelere et al., 2003). The web, through the elimination of the sluggishness and typical costs of traditional means of communication, enables the replication of the typical conditions of perfectly competitive markets in an online environment. However, in consideration of the persistence in virtual markets of information asymmetries due to the problem of visibility on the web, it follows that the

existence of a website is not equivalent to its visibility on the net (Cacia, 2011).

In the light of such considerations, the choice to disclose information through the web acquires a strong sense of openness, transparency, willingness and commitment by businesses to be known in the market (Giusepponi, 2002). Transparency is a prerequisite for building positive relationships with stakeholders and represents an opportunity for firms to manage trust and consensus with customers and investors (Marcus & Wallace, 1997; Mutti, 1998); this also helps to increase corporate esteem and credibility on the market (Broomley, 2001; Rindova & Fombrun, 1999).

In addition, the *web* facilitates the construction of a fluid and transparent relationship between business and stakeholders, offering the opportunity to communicate with the market community in a uniform way. Several authors in the literature have analyzed the tangible and intangible benefits associated with the transparency and use of new technologies in communication (Debreceny et al., 2002; Ettredge et al., 2001; Khadaroo, 2005; Hodge, 2005; Wickramasinghe & Lichtenstein, 2006).

In addition to the above mentioned benefits related to the improvement of financial disclosure, it should be noted that the literature has highlighted specific benefits from using the Internet in disclosure strategies. In general, through the Internet, businesses are able to increase the information flow in four directions: quantitative, qualitative, spatial and temporal (FASB, 2000; Quagli 2004; Teodori, 2008). The Internet allows a more complete transmission of information to the financial community (quantitative dimension): information relating to previous years, financial performance, the information sources developed by specialized operators (analysts), news about competitors or more general information of the macro-economic framework. In a qualitative perspective multimedia technology enriches the content representation of corporate events in multimedia formats (audio, video, web cast). The web also allows the eliminating of information filters created by intermediaries and operates in favoring the quality of the information disclosed. Interactive relationships between firm and interlocutors allows the eliminating of a uni-directionality flow of communication and promote the selectivity of the information transmitted; the most interesting factor is related to the possibility of customizing the information disclosed.

The Internet allows the differentiating of communication flows for different users, by establishing various degrees of intensity depending on the relationship between those who request information and the issuing company. From a viewpoint of space, the web offers the possibility to overcome geographical boundaries that separate the company from its public. Thus communication becomes global (Qualgli, 2001). The web allows a

reduction in time (timing dimension) and in the cost of information production and disclosure (Rowbottom et al., 2005). The possibility to offer any kind of information in "real time" promotes timeliness in the acquisition process of documents, data and news and also guarantees an almost immediate update (AA.VV., 2003). This means that the web satisfies the information needs expressed by many stakeholders and links the benefits of lower costs of disclosure, in-depth knowledge of recipients as well as timeliness and completeness of the information transmitted (Lymer & Debreceny, 2003).

However these benefits are associated with some drawbacks. The first problem is related to security, deriving from hacker socket or potential error in transferring data that could compromise integrity. Notwithstanding, the main source of problems in the communication process through the Internet is information reliability, the credibility of web content (Quagli, 2002). Accordingly, the company should indicate carefully the source of data to facilitate evaluation of information reliability. Another critical aspect is information traceability, namely the ability to trace changes in documents on site or their deletion. Finally, the possibility of manipulating digital information generates the loss of a sense of psychological security that characterizes the print-based document: "*Users may not regard Internet reporting as an acceptable substitute for print-based annual reports*" (Oyelere et al., 2003).

2.2. Web Investor Relations and Communication Quality

The literature has highlighted the central role of IR as a link between a company and the financial community and as a tool to increase corporate visibility and to improve the relationship with management (Bushee & Miller, 2005). Marston (1996 p.) describes IR as the link between a company and the financial community: "*Investor relations is not just a neutral process concerned with the provision of information to assist users. It may also be concerned with managing information flows in the best interests of the organization*". This recent but fast-growing process has led to improved global competition, both on the supply side of goods and services, and demand-side of resources, especially financial resources. Therefore, such fierce competition has encouraged the training of individuals specialized in investments tracking (Higgins, 2000). In this context, the selection of investment opportunities is achieved through detailed economic and financial information. The company must be able to provide this information so that the best investment opportunities can be evaluated. From this perspective, there is a need to build a network with the financial market, based on a continuous and effective communication process, to support the growth and renewal of businesses and the information needs of the market. These relationships

should be activated by proper financial communication policies aimed at effective and timely communication to financial market operators. Through presenting new information, a company can influence market operators and among the various media, the Internet enhances information flows in terms of quantity, quality, space and time.

According to Bollen et al. (2006: 275) "*The main objective of the use of the Internet for IR activities is providing individual investors with comprehensive and timely information that previously was available only to a select group of interested parties, such as institutional investors and analysts*". Thus, the literature debate moves from corporate reporting to web IR. Deller (1999) for instance has analysed the Internet as a tool for IR activities. The Author's analysis had the scope of developing a panel of WIR tools. In the same year, Hedlin identified the development phases of communication via the Internet. Other scholars have attempted to identify the attributes of web financial reporting (Debreceny, et al. 2001; Ettredge et al. 2001) and proposed a description of company financial information and the consequences resulting from their web inclusion. In a subsequent study Ettredge et al. (2002a) analyzed the forces having greater effects on business decisions concerning voluntary communication strategies. Other scholars have analysed the financial communication and IR activities in a different perspective regarding information asymmetries, cost reduction of financial resources, shares liquidity, performance, corporate governance and so on (Bharadwaj, 2000; Botosan, 2006; Bown and Caylor, 2004; Brennan and Tamarowski, 2000; Byrd, 1993; Chang, 2006; Deller, 1999; Diamond and Varecchia, 1991; Geerings et al., 2003; Lang and Lundholm, 2000).

Among the studies aimed at determining the characteristics of IR and the quality of Internet communication, particularly important is that of Geerling, Bollen e Hassink (2003); the Authors inspired by the prior studies of Hedlin (1999), Deller (1999) and Beattie & Pratt (2003), have identified five stages in the development of IR policy on the web. Geerling et al. (2003) identified 29 items – revised subsequently by Bollen (2006) - for the evaluation of web IR quality. The items mark a milestone in the measurement and explanation of IR quality determinants.

Many other studies have contributed to the definition of factors for assessing the quality of IR on the web (Debreceny et al. 1998; Deller et al., 1999; Hedlin, 1999; Rowbottom et al., 2005) through the development of indices and checklists (Barac, 2004; Deller et al., 1999; Ettredge et al., 2001; Geerings et al., 2003; Hedlin, 1999; Pirchegger & Wagenhofer, 1999; Quagli 2002; Strong, 2003; Teodori, 2008; Xiao et al., 2005). Other studies have identified the elements of voluntary disclosure with impact on perceived quality (Avallone & Veneziani, 2002;

Debreceny et al., 2002; Pervan, 2006; Vanstraeven, 2003).

From this point of view the quality of a corporate web site depends on multiple variables; above all the content and the way in which it is presented and managed, also from a technical perspective (Buglione, 2003; Rosenfeld et al., 2002). Several Authors in the literature have analyzed communication quality as a determinant of corporate value and have proposed numerous indices to evaluate communication effectiveness. However this has not yet led to the identification of items unanimously adopted to evaluate corporate website, especially in reference to the IR section. Nevertheless, it is possible to identify a trend shifting towards the goal of transparency and quality of economic and financial communication and WIR activities. The main findings from the studies highlight two main aspects of financial communication via web:

1. the first concerns the definition of the generic features of a website: namely design, structure, functionality, accessibility, usability, interactivity (Borsa Italiana S.p.a, 2010; Boscarol, 2009; Consob, 2001;ISO 9241; Mich and Franch, 2000; Nielsen 2000; Polillo, 2005; Wilkinson et al., 1997);
2. the second refers to financial communication and to its informative content (IR section) (AIRA, 2000; AIAF, 2000; Borsa Italiana, 2002; Consob, 2002; European Commission, 2001; IASC,1999; IFAC, 2002; IOSCO, 2007; Investor Relations Society (IRS), 2006 SEC, 2008;).

Ultimately, the literature while offering specific taxonomies that facilitate the process of understanding the fundamental elements for the construction of a website, tends to create confusion in the identification of the series of characteristics qualifying the quality of websites for IR. In any case the increased importance of the use of the Internet for IR has contributed to a substantial change in the shape and functionality of the sites, and of voluntary and mandatory content, by introducing numerous elements such as information relating to corporate governance, corporate social responsibility or specific characteristics of business and management (Cacia, 2011). In our opinion, to measure the quality of IR on the Internet it should take into account information both about the sites content – to examine the type and amount of information that companies make available to investors (point 1) – and how information is diffused (point 2), which is essential for the realization of an effective and efficient communication able to generate a competitive advantage for firms. Thus, in our view the *concept of "quality" of web investor relations* can be defined by the following characteristics:

1) the presence of information related to: the business, financial reporting, corporate governance and corporate social responsibility;

2) the website should have a set of technical characteristics to make web use effective for stakeholders. Such characteristics are accessibility, usability, good architectures, functionality, setup.
3) the information should be useful for stakeholder in terms of relevance, faithful representation (reliable), adequacy, comprehensiveness, comparability, timeliness and comprehensibility.

To conclude the section, this paper aims to contribute to the existing literature, both by defining the concept of "quality" and explaining its determinants. To this aim, we develop an index for measuring the quality of WIR.

2.3 Theoretical framework: Herding theory

Based on a review of the literature, in line with the purpose of the research, the Herding Theory was used to analyze the behavior of listed companies in Italian Stock Market segments. According to the literature, companies tend to align to other companies in voluntary disclosure strategies (Brown et al., 2006). Such phenomena is also termed herding (Chamley 2004, Hirshleifer and Teoh 2003) and is related to voluntary disclosure decisions (Brown et al., 2006). Herding refers to any similarity or convergence in corporate behavior as a result of corporate interaction (Hirshleifer and Teoh 2003). In communication, herding is the influence of one firm's disclosure decisions on the disclosure decisions of other firms (Brown et al., 2006). The reasons for herding may depend on managers being induced to disclose on the basis of information from other managers (Banerjee, 1992; Welch, 1992); or, on managers being induced to communicate in a similar manner to others to avoid appearing different, thus avoiding the risk of being evaluated negatively by the public (Scharfstein & Stein, 1990; Trueman, 1994). Other studies have indicated that many technology markets are subject to positive network feedback rendering leading technology growth more predominant (Brynjolfsson & Kemerer, 1996; Gallaugher & Wang, 2002; Kauffman et al., 2000). Furthermore, empirical evidence of herd behavior and imitative strategies has been recently documented in stock analysts' equity recommendations, television programming (Hong et al., 2000; Kennedy, 2002; Welch, 2000) and IT adoption (Kauffman et al., 2003). Kauffman et al. (2003) suggest "payoff externalities, informational cascades and managers' career concerns as three interrelated explanations for the kinds of imitative decision making behaviors that are observed in IT adoption". They provide a new theoretical framework for understanding observed forms of herding in IT adoption and in the fundamentals of IT investment decisions. Other research has analyzed the role of herding in stock markets; for example, scholars suggest that herding has become the dominating force

of the US stock market since 2000 (Zhou & Sornette, 2006). The literature also stresses the role of competitors in corporate communication strategy (Hirshleifer & Teoh 2003). Sometimes externalities, cultural and social environment or belonging to the same sector can influence corporate behavior, leading to consistent practices amongst companies (Aerts et al., 2006). Many Authors highlight that corporate communication policy is strictly influenced by the level of correlation between the signals that two rival companies send out to the market (Jorgensen & Kirschenheiter, 2005; Varecchia, 1983). Therefore, herding is related to the same decisional problems that companies have to face. As concerns corporate communication, herding makes communication policies analogous among companies (Banerjee, 1992; Bikhchandani et al., 1992; Chamley, 2004). Many empirical studies support this point of view (Firth, 1996; Freeman & Tse, 1992). However studies on herding in communication are limited (Botosan & Harris, 2000; Brown et al., 2006; Pincus & Wasley, 1994). Some recent studies evidence a trend towards sectorial specialization (Quagli, 2005) that also involves information uniformity, especially when regulatory elements are low (Di Piazza & Eccles, 2002). Finally, Cerbioni and Menini (2001), in analyzing the communication policies of Italian companies, showed that variations in communication quality are governed by herding. Consistent with theories of herding, our study attempts to contribute to the literature by focusing on the dynamics of herd behavior in the Italian Stock market. We aim to contribute both to the voluntary disclosure and herding literature by providing previously undocumented evidence of herding in disclosure practices of listed Italian companies.

3. Hypotheses

According to the definition of the Italian Stock Market (see Borsa Italiana web site) companies listed on the STAR segment "voluntarily adhere to and comply with the following strict requirements:
1. High transparency and high disclosure requirements;
2. High liquidity (35% minimum of free float);
3. Corporate Governance in line with international standards."

As regards the first point, it should be noted that Italian Stock Market Rules stipulate specific disclosure requirements on STAR companies. In particular, Article 2.2.3 requires that companies listed on the STAR segment have to make available interim management statements, half-yearly and annual reports together with the information referred to in Articles 114(1), 114(4) and 114(5) of the T.U.F. – Consolidated Law on Finance – (price sensitive information) on their company website. Such information should also be provided in English. In addition, companies listed on the STAR segment are

obliged to post on their website, the documents distributed during meetings with professional investors (Art. IA.2.10.8, Instructions accompanying the Rules).

Despite the specific information requirements imposed on STAR companies by Italian Stock Market Rules, it should be noted that the Consolidated Italian Law on Finance and the regulation issued by CONSOB (Commissione Nazionale per le Società e la Borsa - Italian Securities and Exchange Commission) have set disclosure requirements on listed companies such that there are no appreciable differences between STAR and NON STAR companies regarding the mandatory disclosure that they have to produce.

Of course disclosure requirements are only a minimal part of the wider corporate disclosure that a company should convey to investors. Therefore, assessment of the communication quality of companies must necessarily refer to a comprehensive and systematic series of information that can make clear to a large audience business conditions in terms of:
1. corporate governance;
2. financial performance;
3. sustainability policies and correlative results.

However the search for a high level of transparency in information and a high vocation in communication is a goal all companies should strive for. The literature points out, in fact, that a superior level of communication is associated with better performance, both in relation to higher stock returns, and the ability to compete on the financial market for financing at affordable costs. Therefore, if we consider that IR management has a strategic impact (Rayder & Regester, 1989) because it can improve the value creation of a company, the research question posed concerns whether STAR companies compared to other companies listed on the Italian Stock Market differ as regards the quality of their communication. Taking into account that STAR companies should present a high level of transparency, the research question we pose is: can alignment of disclosure policies, practices and objectives be found in all the companies listed on the Italian Stock Market?

Scholars pinpoint the existence of an imitative process that leads companies to align their disclosure practices (Aerts et al., 2006; Brown et al. 2006; Pincus and Wasley, 1994; Scharfstein and Stein, 1990). The international literature discusses reputational herding and informational herding (Brown et al. 2006) to highlight (as mentioned above) that companies can choose to align communication policies to those of other companies in order to achieve direct benefits or to avoid appearing different from those more attentive to the diffusion of information. Cerbioni and Menini (2011) point out that the more transparent companies serve as example for others.

This research question is interesting: if NON STAR are characterized by similar communication

quality to that of STAR companies, this could confirm the existence of herding behaviour in communication practices of listed Italian companies. Therefore beyond the mandatory disclosure imposed by institutions, companies tend to boost the quality of communication and enhance the role of IR.

Based on these preliminary observations, six hypotheses were tested concerning the quality of IR activities carried out by STAR and NON STAR companies and to particular aspects of the same:

Hp 1: Companies listed on the STAR segment of Borsa Italiana have an overall WIR quality significantly higher than the others listed on the Italian Stock Market.

In addition hypotheses that relate to specific content of the web communication to investors were also tested:

Hp 2a: Companies listed on the STAR segment of Borsa Italiana show significantly higher quality in their corporate website (in terms of web site content, usability, accessibility, etc.) compared to that of the other companies listed on the Italian Stock Market.

Hp 2b: Companies listed on the STAR segment of Borsa Italiana have a significantly higher index of corporate information quality compared to the other companies listed on the Italian Stock Market.

Hp 2c: Companies listed on the STAR segment of Borsa Italiana have a significantly higher quality of voluntary corporate governance disclosure compared to the other companies listed on the Italian Stock Market. As concerns the quality of the mandatory corporate governance disclosure there is no difference between STAR and the other companies listed on the Italian Stock Market.

HP 2d: Companies listed on the STAR segment of Borsa Italiana have a significantly higher quality of voluntary financial disclosure compared to the other companies listed on the Italian Stock Market. As concerns the quality of the mandatory financial disclosure there is no difference between STAR and the other companies listed on the Italian Stock Market.

Hp 2e: Companies listed on the STAR segment of Borsa Italiana have an index of CSR communication quality significantly higher compared to the other companies listed on Italian Stock Market.

The literature shows that businesses characterized by a high quality of financial disclosure

have better market performance. High quality disclosure, in fact, increases share liquidity, reduces the cost of equity and increases the market value of company shares (Byrd & Johnson, 1993; Brennan & Tamarowski, 2000; Botosan, 2006). In this perspective, the hypotheses to be tested is as follows:

Hp 3: A positive relationship exists between the quality of WIR and market performance.

4. The research design: sample, variables and methods of analysis

The empirical research focused on companies listed on the Italian Stock Market to ascertain whether the listing on the STAR segment constitutes a relevant factor in explaining the quality of financial information conveyed via the web. In particular, the research aims to verify whether alignment of WIR quality among companies actually exists. The core item of the study is a Quality Index, designed to measure the quality of disclosure practices of listed Italian companies.

Among the best practice recommendations, checklists and guidelines issued by various organizations, institutions and academic contributions, to gauge the quality of web disclosure, we decided to base our research on the Web Investor Relations Index (WIRI) (Cacia, 2011). Compared to current disclosure evaluation tools literature, the WIRI has the advantage of providing a quantitative measure of investor relations quality. Furthermore, the WIRI contributes to reducing the subjectivity of the assessment, because it measures investor relations quality in terms of presence/absence (1/0) of defined characteristics.

Our research is based on a sample of 134 listed companies on the Italian Stock Exchange. In the sample we included two different groups of listed companies: STAR and NON-STAR. Of these two groups of companies we measured through the WIRI, the quality of voluntary and mandatory disclosure, in order to verify whether STAR companies compared to others actually present a higher level of disclosure quality. The distinction between mandatory and voluntary disclosure was made on the basis of regulations and laws that regulate corporate information requirements.

To test the research hypothesis a multivariate analysis was conducted. The first six hypotheses (HP. 1-2) were tested with the dependent variable represented by the quality index of web company information. The seventh hypothesis (Hp. 3) instead, was tested with the dependent variable represented by Tobin's Q. Membership of the STAR segment constituted the independent variable used in testing our hypotheses. In the various models estimated we included several control variables to avoid spurious effects in the relationship between the dependent and independent variable. Moreover, to further strengthen

the reliability (Denzin & Lincoln, 1994; Gibbert & Ruigrok, 2010) of the research, data collection and data analysis were explained in full. In particular, both the development and the operationalization of the WIRI index were discussed to strengthen the validity of the methodological approach adopted (Gibbert et al., 2008). Furthermore, to maintain a consistent approach (Steier & Miller, 2010), data collection was conducted by one of the authors and then crosschecked by another.

4.1. The sample

In our sample we included all companies listed on the STAR segment and a corresponding number of companies listed on the other segments of the Italian Stock Market (MTA). We excluded those belonging to the financial industry because of the particular regulations to which such companies are subject. At present 74 are the STAR enterprises, 7 of which operate in the financial industry. Thus 67 companies were suitable for our analysis. Similarly, 67 firms were drawn randomly from the set of those listed on the other segment of the ordinary market, with the constraint that they did not operate in the financial sector. The total number of firms under investigation amounted to 134. For each company selected we collected the necessary data by analyzing their corporate website. Other useful information for our analysis was obtained from the Italian Stock Exchange and CONSOB website.

4.2. Dependent variables

To measure the quality of a corporate IR website, and even IR activities, we used the research tool devised and developed by Cacia (2011) known as Web Investor Relations Index (WIRI). The WIRI assesses the quality of WEB investor relation through the analysis of three main areas:
1. Area I - Company information;
2. Area II – The use of the Internet for financial communication: a) Corporate Social

Responsibility; b) Financial Information; c) Corporate Governance;
3. Area III - Features and functionality of the website: Web site Content, Usability, Accessibility, Architecture, Maintenance and Reliability (Frequency), Functionality, Characterization.

The first area – *Company Information* – refers to the analysis of a corporate website concerning the general information relative to the company and its business area.

The second area - *Internet use for financial communication* - relates to typical information addressed to investors (financial information, corporate governance information, etc.) and information relating to Corporate Social Responsibility (CSR);

The third area - *Features and functionality of the website* - refers to the technical and functional evaluation of the website, in line with the definitions of the literature and international best practices.

The WIRI measures the quality of Web Investor Relations in terms of presence or absence of defined characteristics that the literature recognizes as important for high quality communication. In this respect the model is composed of 280 items, distributed within the above mentioned areas. The items were derived from the systematic consultation of both the literature dealing with investor relations and the main international guidelines setting out the characteristics and standards that companies should observe in financial communication (Hooks et al., 2002). The studies from which the items included in the WIRI derive, number 20.

Each item is measured on a binary scale (absence/presence - 0/1) and a weight is assigned to each item. The weight is based on the representativeness (in terms of citations) that each item has in the studies taken as reference. Therefore, for example, if an item has been cited by three studies, then the weight assigned corresponds to 3/20.

Thus, the WIRI, representative of the overall quality of online information, corresponds to the sum of the weighted values of each item (Tab.1).

Table 1. Areas, sub-areas and number of items listed in the WIRI

Area	*Sub-area*	*No of Items*
Company Information	Company information	15
Typical information aimed at investors and analysts	Corporate governance	50
	Financial reporting and other financial communications to investor and analysts	156
	Corporate Social Responsibility Information	9
Features and functionality of the website	Website Content, Usability, Accessibility, Architecture, Maintenance and Reliability (Frequency), Functionality, Characterization.	50
Total items		280

In our study we decided to use WIRI as a measure of the overall quality of web investor communications. However, to highlight the contribution of each of the five sub-areas (Tab. 1) to the quality of WIR we calculate separate sub indices. The decision to defining sub indices for each sub-area, was related to the need to make a clear distinction between the assessment of financial and non-financial information and between mandatory and voluntary disclosure or to evaluate Website design. For example, Website design is a critical aspect to take into account because website information organized in a logical and easy-to-navigate layout is essential for providing general access to information content and offers the opportunity of evaluating the weak and strong areas of web communication.

As concerns the distinction between voluntary and mandatory disclosure, the main disclosure requirements established by law and Market Authorities relative to financial information and to corporate governance information were taken into account. Therefore, for these two sub-areas of disclosure we separated the items related to the mandatory from those related to voluntary disclosure. By consulting the T.U.F., the regulations issued by the Italian Stock Exchange and the CONSOB, the disclosure requirements of listed Italian companies were identified and the corresponding items of our model that measure the quality of mandatory disclosure (Tab. 1) were matched.

Consequently, the following partial indices are compiled:

1. Company Information Quality Index (CIQI) measuring the quality of company information section;
2. Corporate Social Responsibility Information Quality Index (CSRIQI) measuring the quality of Corporate Social Responsibility information.
3. Two indices were compiled to measure Financial Information Quality; the first, referred to mandatory disclosure (FIQI$_{\text{Mandatory}}$) and the other relative to voluntary disclosure (FIQI$_{\text{Voluntary}}$). The indices measure the quality of mandatory and voluntary financial reporting and other financial communications to investors and analysts (annual report, stock information, press area, analyst area, etc.).
4. Corporate Governance Information Quality. As for financial information, likewise for the evaluation of corporate governance information two indices were identified to measure the quality of mandatory corporate governance (CGIQI$_{\text{Mandatory}}$) and voluntary disclosure (CGIQI$_{\text{Voluntary}}$). .
5. Website Quality Index (WQI) which measures the quality of the website in terms of features and functionality (web site content, usability, accessibility, etc.).

6. Each sub index was calculated as the sum of the weighted scores of each item included in each sub-area. Expressed in formulae, we have:

$$SI = \sum_{i=1}^{n} Item_i \times p_i \qquad (i = 1, 2, 3....n)$$

where:
SI = Sub Index of a specific sub-area
$Item_i$ = score of item i of a specific sub-area
p_i = weight of item i of a given sub-area
Thus, the WIRI is equal to the sum of the quality score awarded in the five sub-areas.

$$WIRI = CIQI + CRSIQI + FIQI_{(\text{Mandatory and Voluntary})} + CGIQI_{(\text{Mandatory and Voluntary})} + WQI$$

As regards hypothesis 3, corporate performance was measured in terms of Tobin's Q (Chen and Lee, 1995). Tobin's q ratio defined as the capital market value of the firm divided by the replacement value of its assets, incorporates a market measure of firm value which is forward-looking, risk-adjusted, and less susceptible to change in accounting practices (Montgomery & Wernerfelt 1988). According to Bharadwaj et al (1999), Tobin's q ratio was chosen as a measure of firm performance as it is more adequate for examining IT related benefits. In this work we calculated Tobin's Q following the approach of Chung and Pruitt (1994). The two Authors calculate Tobin's Q as the ratio of Equity Market Value plus Net Debt on Total Assets.

4.3. Independent and control variables

The independent variable was represented by company membership in the STAR segment of the Italian Stock Exchange. The variable was expressed by a dummy variable.

Several control variables were included in the analysis and sum up those used in the literature for the analysis of the quality of financial communication and company performance (Bollen et al. 2006). In particular we considered:

- firm size expressed using the natural logarithm of market capitalization;
- industry. The industry was identified as the most-relevant macro-industry used by the Italian Stock Market to rank companies. In particular, firms were classified within the following broad sectors: technology, consumer goods and consumer services, and, finally, industrial;
- leverage expressed as the ratio between debt and equity (D/E);
- ownership concentration measured by the level of free float (floating);
- independent directors (%), as the percentage of independent directors seated on the board;
- degree of internationalization measured as the percentage of revenue from foreign markets;

- firm performance measured as stock return (calculated as the variation in price plus any dividends paid, divided by the original price of the stock - for the previous year);
- the status of holding companies. When companies move from simple ownership structures to complicated ownership structures such as holdings, agency costs emerge (Holderness, 2007). Consequently, such status affects market valuation.

4.4. Methodology

The underlying rationale of our research was to contribute to developing the field of web investor relations. At the same time, we aimed to provide guidance to other researchers framing research questions.

A content analysis (Weber, 1985) was carried out to evaluate the WIR of the companies surveyed. The link to each corporate website was found on the site of the Stock Exchange - Borsa Italiana S.p.a. (aggregator) where the company stock was listed. In particular, company website analysis was conducted in two distinct phases: during the first stage, we identified and saved company web pages. The pages were memorized in the Multipurpose Internet Mail Extension HTML (MHTML) format with the .mht extension, which facilitates storage and data analysis. In the second the corporate websites were mapped and then evaluated using the research tool presented. The survey was conducted using all the technical measures necessary to ensure identical assessment processes of the corporate websites surveyed. In particular, analyses were all conducted on the same days of the week and during the same time slots, using the same computer work station. The analyses were carried out from March to May 2012.

Data on control variables of the models were derived from Company Annual Reports and from information on the websites of the Italian Stock Exchange and CONSOB.

Available data were processed using multivariate techniques. The model used for testing the first six hypotheses had the following specification:

Quality = $\beta_0 + \beta_1$ (Dummy-STAR) + β_2 (Control Variables) + $\beta_{Industry}$(Industry Dummy Variables) + ε

The dependent variable "Quality" indicates, respectively, in each of the eight models WIRI, CIQI, CSRIQI, FIQI(Mandatory/Voluntary), CGIQI(Mandatory/Voluntary) and WQI. The control variables considered in the models include the following: company size, leverage, degree of internationalization, the degree of the ownership diffusion, percentage of independent directors, firm performance.

To test the seventh hypothesis (HP. 3) the following model was estimated:

Q-Tobin = $\beta_0 + \beta_1$ (WIRI) + β_2 (Control Variables) + $\beta_{Industry}$(Industry Dummy Variables) + ε

The control variables considered in the models are the following: dummy variable for the companies belonging to the STAR segment of Borsa Italiana, company size, leverage, degree of internationalization, the degree of ownership diffusion, percentage of independent directors and status of holding company. The estimation of the models was preceded by verification of the assumptions underlying the multiple regression model, taking all appropriate measures to ensure the accuracy and consistency of results. In particular, the estimation of the models was not subject to heteroscedasticity and multicollinearity. The results of the analysis are presented and discussed in the following section.

5. Research Findings and Discussion

The following tables contain the main results obtained from the analysis. Table 2 shows the most relevant descriptive statistics of the sample. However Table 3 shows the results of t tests on the main variables measured on the sample. As is easy to verify, on the basis of univariate analysis, the companies listed on the STAR segment differ in many respects from the others listed on the ordinary market.

Table 2. Descriptive statistics of the main variables measured on the sample

	Mean	Median	S.D.	Min.	Max.
WIRI	42,4295	41,4500	10,55091	19,70	70,90
CIQI	9,007	9,05	1,99612	3,30	14,95
CGIQI$_{Mandatory}$	1,9142	1,9	,32696	0,7	2,55
FIQI$_{Mandatory}$	5,8724	6,05	,33021	4	6,05
CGIQI$_{Voluntary}$	3,9870	3,75	1,84238	,10	9,80
FIQI$_{Voluntary}$	12,5980	12,25	5,18109	3,30	24,75
CSRIQI	,4516	,0000	,71397	,00	2,15
WQI	2,7776	2,6	1,0539	0,8	4,90
Indipendent directors (%)	,3944	,3750	,15522	,00	,90
Free float(%)	,3616	,3310	,14956	,09	,79
Foreign revenue (%)	,4217	,4935	,35947	,00	1,00
Performance	,0028	-,0309	,33341	-,69	1,24
Firm size (ln)	5,1543	4,9568	1,78167	1,22	9,82
Q-Tobin	,1769	,1402	,57557	-1,13	1,96
Financial leverage (D/E)	,9379	,5521	1,45865	,00	9,35

In particular, companies listed on the STAR segment, on average, differ from the second group in terms of size, financial leverage and projection on foreign markets. Furthermore, significant differences also exist with regard to the proportion of independent directors on the board. In particular, STAR companies compared with the other group are smaller in terms of capitalization (t = -2,397, p<5%), are less indebted (t = -2,142, p<5%), have a higher projection on the foreign markets (t = 2,641, p<1%), and, finally, show an unexpected factor, a minor proportion of independent directors on the board (t = -2,459, p<5%).

Table 3. Results of the t test for difference in mean between the two groups of companies (STAR – NON STAR)

	STAR	NON STAR	T Stat.
Number of companies	65	63	
WIRI	47,1700	37,4619	5,868***
CIQI	9,8423	8,1331	5,321***
CGIQI$_{Mandatory}$	1,9115	1,9169	,092
FIQI$_{Mandatory}$	5,86	5,8855	,433
CGIQI$_{Voluntary}$	6,3238	5,3929	2,639**
FIQI$_{Voluntary}$	9,8846	8,8500	3,708***
CSRIQI	,4654	,4302	,279
WQI	3,3654	2,1613	7,902***
Indipendent directors (%)	,3613	,4276	-2,459*
Free float(%)	,3524	,3683	-,602
Foreign revenue (%)	,5061	,3425	2,641**
Performance	,0226	-,0092	,536
Firm size (ln)	4,7757	5,5164	-2,397*
Q-Tobin	,2115	,1405	,694
Financial leverage (D/E)	,6499	1,2000	-2,142*
* p< 5% **p< 1% ***p< 0,1%			

From the standpoint of communication quality, the comparison between average values, evidences a significant difference between the two groups of companies. In particular, STAR companies are characterized by a significantly better quality of communication conveyed through the web. This was

observed both with reference to the index of overall quality of communication –WIRI– (t = 5,868, p<1%), and with respect to the sub indices that investigate the quality of the structure and functionality of the corporate web site –WQI– (t = 7,902, p<0,1%) and of company information –CIQI– (t = 5,321, p<0,1%). There is no evidence, however, of a significant difference as regards the quality of communication relating to the CSR –CSRIQI– (t = 0,279, p<39%).

As concerns the quality of corporate governance communication and financial communication, a more complex situation emerges, since the superiority of STAR compared to NON STAR companies is related to voluntary corporate governance disclosure (t = 2.639, p <1%) and to voluntary financial disclosure (t = 3.708, p <0.1%). On the contrary, no significant difference is evident with regard to mandatory disclosure (see Table 3). In fact, both STAR and NON STAR companies are aligned within the same quality standards that approximate the maximum level. The

maximum score attributed to mandatory corporate governance disclosure is equal to 2,55 and that related to mandatory financial reporting equal to 6,05 (Table 2). If we compare the average values of the quality of mandatory disclosure for STAR and NON STAR companies with the maximun level it emerges that the two groups of companies have a comparable quality of mandatory disclosure (Table 2 and 3). Moreover this quality is relatively high. In sum, these initial findings highlight that listed Italian companies are in alignment as regards the quality of the mandatory disclosure conveyed to investors. However Star companies show evident superiority in terms of voluntary disclosure. In this perspective, the behavior of listed Italian companies varies greatly so it would seem that the context in which companies operate is not able to create alignment or stimulate imitative strategies between STAR and NON STAR companies as concerns voluntary communication practices.

Table 4. Correlation matrix of the main variables of the analysis

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
WIRI	1															
WQI	,672***	1														
CGIQI$_{Voluntary}$	,783***	,476***	1													
FIQI$_{Voluntary}$	,932***	,595***	,666***	1												
CGIQI$_{Mandatory}$	,446***	,194*	,386***	,321***	1											
FIQI$_{Mandatory}$	,133	,099	,223*	,049	,193*	1										
CSRIQI	,513***	,331***	,378***	,393***	,44***	,132	1									
CIQI	,849***	,560***	,611***	,714***	,41***	,057	,513***	1								
Star	,462***	,573***	,250**	,443***	-,008	-,039	,020	,43***	1							
Indipendent Dir. (%)	,045	-,113	,033	,065	,111	-,099	,204*	,069	-,219*	1						
Free Float (%)	,112	-,002	,040	,106	,029	-,114	,178*	,164	-,063	,104	1					
Foreign Revenue (%)	,293**	,362***	,059	,350***	,067	-,072	,171	,214*	,239**	-,019	,052	1				
Performance	-,010	-,007	-,100	-,037	,086	,155	,010	,039	,060	-,014	-,108	,206*	1			
Firm size (ln)	,407***	,087	,273**	,445***	,27**	,147	,452***	,271**	-,217*	,33***	-,030	,226*	,289**	1		
Q-Tobin	,210*	,161	,096	,214*	,061	-,093	,054	,141	,062	,153	,038	,25**	,37***	,335***	1	
Leverage (D/E)	-,174	-,105	-,154	-,205*	-,143	,064	-,047	-,103	-,195*	,124	,023	-,080	-,01	-,156	,069	1

* p <5% ** p<1% *** p<0,1%

The correlation matrix shows the indices of correlations (Table 4). They are consistent with the signs that have already emerged from previous tests, showing on one hand, the positive and significant correlation between the dummy STAR and the quality indices of Web communication. On the other hand, firm size and the quality of communication are positively correlated.

Table 5 shows the results of the OLS (Ordinary Least Square) regression models with dependent variable being the quality of WEB communication to investors. The results of the analysis are robust. The estimation of the models has not suffered from multicollinearity. The VIF never exceeded the critical threshold of 2. Even heteroscedasticity was not a

problem. The White's test has always excluded such cases. The values of the statistics of White are shown in Table 5. These values should be compared with the threshold value of χ^2 with 50 df. Therefore given a probability level of 5%, such threshold value corresponds to 67,50481. All models are significant and the adjusted R^2 shows the amount of variance explained by each model. The adjusted R^2 of the various models estimated are very different from each other. In particular, the low adjusted R^2 of the models with the quality of mandatory corporate governance disclosure and the quality of mandatory financial disclosure as the dependent variables can be explained because mandatory disclosure is usually independent from other variables, being a duty expected by law

and regulations. The other models, however, have consistent values of adjusted R^2. In particular, the model with the quality of voluntary financial disclosure as the dependent variable shows the higher

adjusted R^2 compared to the other models, corresponding to 49,8%. The model with CGIQI$_{Voluntary}$ as the dependent variable presents the smallest adjusted R^2 corresponding to 16%.

Table 5. Results of the OLS models (all models include industry dummies)

Dependent	WIRI	CIQI	CGIQI$_{Mand.}$	FIQI$_{Mand.}$	CGIQI$_{Vol.}$	FIQI$_{Vol.}$	CSRIQI	WQI
Star dummy	12,221***	2,120***	,016	,019	1,31**	5,470***	,187[†]	1,201***
	(8,105)	(6,468)	(,258)	(,296)	(3,879)	(7,448)	(1,492)	(7,162)
Firm size (ln)	3,421***	,460***	,042*	,051*	,4038***	1,616***	,190***	,124**
	(7,432)	(4,738)	(2,224)	(2,613)	(4,037)	(7,427)	(4,981)	(2,50)
Financial leverage	,279	,079	-,027	,028	-,057	-,012	,016	,045
	(,543)	(,742)	(-1,294)	(1,336)	(-,522)	(-,051)	(,387)	(,832)
Performance	,02	-,001	-,0005	,003	,018	-,005	,003	-,003
	(,25)	(-,03)	(-,15)	(,845)	(1,020)	(-,131)	(,478)	(-,369)
Independent directors (%)	-2,001	,326	,08	-,412	-,423	-,401	,322	-,43
	(-,396)	(,313)	(,39)	(-,979)	(-,394)	(-,172)	(,768)	(-,805)
Free float (%)	8,781[†]	2,307*	,222	-,197	1,057	4,108*	,864*	,069
	(1,681)	(2,121)	(1,041)	(-,907)	(,943)	(2,13)	(1,993)	(,124)
Foreign revenue (%)	,896	-,06	-,013	-,123	-,572	1,435	,032	,549*
	(,423)	(-,132)	(-,1521)	(-1,358)	(-1,225)	(1,413)	(,185)	(2,368)
Const.	16,321**	4,894***	1,552***	5,845***	1,569*	,584	-1,43**	1,480***
	(2,896)	(6,007)	(9,719)	(35,92)	(2,053)	(,320)	(-3,058)	(3,552)
Adjusted R^2	,4684	,3226	,0251	,0233	,1591	,4989	,2093	,3675
Obs	125	125	125	125	125	125	125	125
White test − $\chi^2_{(50)}$	50,95	64,96	28,66	60,37	48,95	52,45	45,52	48,05

†p<10% * p< 5% **p< 1% ***p<0,1%

As regards the research hypotheses, the coefficient of interest is that of the dummy STAR. The significance of the coefficient was determined on the basis of a one-tailed t test. The results show a positive sign of the coefficient of the dummy STAR in all models estimated. However the significance of the estimate has high values in five models, while it is marginal for one model and a null significance appears in the models with the quality of mandatory disclosure (corporate governance and financial disclosure) as dependent variable. Therefore, it can be concluded that, controlling for some variables that affect communication quality, membership in the STAR segment increases the level of quality of WIR of the company, with particular reference to: the overall index of web investor communication quality –WIRI– ($\beta = 12,22$, p<0,1%), the characteristics of the web-site –WQI– ($\beta = 1,20$, p<0,1%), the quality of company information –CIQI– ($\beta = 2,12$, p<0,1%), the quality of corporate governance voluntary information –CGIQI$_{Voluntary}$– ($\beta = 1,31$, p<1%) and the quality of voluntary financial information –

FIQI$_{Voluntary}$– ($\beta = 5,47$, p<0,1%). On the contrary it would appear that STAR companies do not differ significantly from other companies as regards the quality of the communications relative to CSR – CSRIQI– ($\beta = 0,18$, p<10%). Finally, as mentioned previously, no significant difference was detected between STAR and NON STAR companies with regard to the quality of mandatory disclosure. Therefore, Hypotheses 1, 2a, 2b, 2c and 2d are supported, while hypothesis 2e was not significantly confirmed.

Table 6 shows the test results of the relationship between market performance and WIRI. Also in this case, the results of the analysis are robust with respect to both multicollinearity and heteroscedasticity. The sign and the significance of the coefficient of the variable WIRI, determined on the basis of a one tailed t-test, confirm the research hypothesis to a 5% level. Therefore, an increase in the quality of Web Investor Relations have a significantly positive impact on Tobin's Q ($\beta = 0,055$, p<5%).

Table 6. Results of the OLS model to test the relation between membership in the STAR segment and market performance (the model includes industry dummies)

Dependent	Q-Tobin
WIRI	,055*
	(2,105)
Star dummy	,181*
	(2,085)
Firm size (ln)	,132***
	(4,091)
Financial leverage	,065*
	(2,081)
Foreign revenue (%)	,184*
	(2,126)
Holding dummy	-,245*
	(-2,009)
Free float (%)	-,1002
	(-,281)
Independent directors (%)	,079
	(,236)
Const.	-,698***
	(-2,643)
Adjusted R^2	0,1572
Obs	118
White test – $\chi^2(38)$	34,91
†p<10% * p< 5% **p< 1% ***p<0,1%	

The results obtained show several interesting aspects. From a general perspective, it should be noted that with respect to a maximum score for overall communication quality (WIRI) equal to 80,65, the average of the two groups of companies analyzed is well below the maximum level. STAR companies recorded a value of 47,17, the remaining, however, 37,46. Such a gap emphasizes that, in general, Italian listed companies on average do not attribute an extremely high value to investors disclosure. The reasons for this are various and can probably be traced, first of all, to the underestimation of competition and the market as mechanisms for resource allocation. It is well known in fact, that the market culture, in Italy, has a limited appeal. The allocation mechanisms of resources are still largely dominated by personal relations. In fact many Authors as regards the Italian industrial structure speak of personal capitalism (Bonomi & Rullani, 2005) to indicate that the personalization of economic relations is more prevalent than the depersonalization that the mechanisms of financial capitalism favor. In this context, the disclosure of corporate events to the public takes on secondary importance, in favor of an opacity of information. This situation is also the legacy of a strongly closed ownership structure that characterizes Italian firms.

The ownership structure of Italian firms is undoubtedly a central aspect in examining the quality of investor communication. It is obvious that the more the business property is widespread among a large number of investors, the greater the need for companies to convey adequate and detailed information in order to preserve the relationship with investors. Where shares are publicly owned, in fact, firms are contestable, and therefore the market becomes the control mechanism of enterprises. In this perspective, corporate communication becomes the primary means to guide investor decisions.

In this sense it is significant to note that our findings show that the quality of web-communication is positively influenced by the degree of corporate ownership diffusion (Table 5). Although the significance is small, the sign of the relationship between the free float and quality of communication is positive.

From this point of view, listed Italian companies have remarkably low share dispersion. Companies listed on the STAR have a minimum free float requirement of 35%, those listed on the ordinary segment, as low as 25%. This helps to explain, on the one hand, the fact that on average, the quality of communication of listed Italian companies does not achieve high levels, on the other, it clarifies the difference in levels of communication quality between STAR and NON STAR companies. The higher the free float of the former, the more there is a stimulus for companies to provide detailed and comprehensive information. At any rate STAR and NON STAR companies differ in the quality of communication on the WEB (Table 5). Where compared to the latter, the former tends to produce extensive, high-quality information. It follows that, apart from mandatory disclosure (financial reporting and some corporate governance information) now widely conveyed through the corporate website, there is still a degree of reluctance on the part of NON STAR companies to provide voluntarily clear cut, complete and transparent information on the various aspects of corporate life. Furthermore, STAR companies tend to communicate better than other companies relative to the various aspects of financial

communication. However as regards CSR communication, a marked difference does not emerge between the two groups of firms. First of all, compared to a maximum value of 2,15 attributable to the quality of CSR communication, the two groups have a very similar, quite low average value which is around 0,45 (Table 3). Moreover, even after controlling for relevant variables, the model with CSRIQI as a dependent variable (Table 5), does not suggest any appreciable difference between STAR and NON STAR companies. This finding suggests several considerations.

The first involves stakeholders who are a key priority for companies. However, by privileging the disclosure of financial and corporate governance information, a central role is assigned to investors, shareholders and lenders and as a consequence, companies neglect the other stakeholders who are equally crucial for business, interested as they are in various ways, in company dynamics and performance.

Secondly it emerges that there is no difference between the quality of CSR communication between NON STAR and STAR companies, but the latter are even aligned with the low levels of information quality. This result raises some questions about the real propensity of STAR companies to privilege a wide, in the sense of communication areas, complete and transparent voluntary disclosure. This aspect, as well as conflicting with the high corporate governance standards that should characterize STAR companies, confirms that, on average, the communication policies of listed Italian companies are less focused on the involvement of all stakeholders, privileging only a few of them.

In conclusion, it seems that in Italy, corporate communication is probably still far from being truly perceived as central for the sustainable development of a company and its value creation process. Although, the strategic role of IR activities is recognized, it seems that full awareness of the extent to which they are significant, is not yet sufficiently widespread among listed Italian companies.

In any event, the positive contribution of corporate communication to company performance is confirmed; when controlling for relevant variables it was found that the STAR companies did have higher market performance. Therefore, the findings from our paper could be considered a stimulus for greater efforts to improve IR policy.

6. Conclusion

Based on a previous work, this study proposes a comprehensive model to measure and assess the quality of disclosure of listed Italian companies. The index is composed of 280 items classified into five categories: Company information; Corporate Social Responsability; IR; Corporate Governance; Features and functionality of the website. The website of each company was analyzed to ascertain the relationship between IR quality and membership in the various Stock Exchange segments. Preliminary findings reveal that listed Italian companies on average do not attrbute an excessively high value to investor disclosure; there is still a degree of reluctance on the part of companies to provide clear, complete and transparent information on the different aspects of corporate life. Findings in addition, reveal that there is a positive and significant relation between STAR companies and the quality of web-communication that is positively influenced by the degree of diffusion of corporate ownership. Specifically, STAR produce a wide range of high-quality voluntary information compared to NON STAR companies. This consequently, should be interpreted as the non-existence of herding behaviour in the Italian Stock market. We also found in comparison, that STAR have a higher market performance than NON STAR companies. The final part of our study, through the analysis of CSRIQI, reveals which companies tend to be more transparent and disclose more information on a voluntary basis. Interestingly, we found that STAR companies tend to be no more transparent than NON STAR. The difference is that STAR companies are committed not so much to complying with CSR disclosure but rather, to complying with financial disclosure. This is in contrast with the nature of STAR companies that should in theory, be highly oriented towards communication with the market.

The empirical findings of our study show the predominant role of regulation in the web communication development process. However, this should be accompanied by attention and sensitivity on the part of companies in order to increase the quantity and quality of the communication flows towards the outside. Evidently, the high level of dynamism that characterizes technological innovations, creates the need for companies to continuously upgrade their skills and knowledge relative to the tools at their disposal, by means of which in fact, corporate management can fully exploit the potential that technological innovation creates to successfully manage their relationship with the financial market and stakeholders. Finally, in light of the recent success obtained by social media it is likely that many companies will soon enter a more advanced stage of WIR practices, characterized by personalized and interactive communications, new channels and more accessible and innovative content. This could mean factors of differentiation and a strategic tool for business visibility, making survival a more achievable goal and the link with value creation processes more immediate.

In conclusion, our study has four main policy implications. First, we benchmark the disclosure practices of listed Italian companies in the STAR segment against those of the other segment of the MTA. This has important implications for corporate management wanting to raise funds in the capital market. Second, the study evidences the link between

disclosure practices and company performance. In this respect, our findings would be useful for management in designing their company disclosure policy. Third, our findings could also act as a stimulus for stricter efforts to improve company IR policy and WIR. Infact, findings show the absence of herding behavior and that probably could represent an opportunity to boost the quality of communication. Last but not least, our findings would assist Italian policy makers in formulating disclosure requirements for listed companies.

Despite these interesting findings, the research is subject to a number of limitations; although the study is based on an elaborate research tool for measuring the extent of use of IR website, our approach neglects certain potentially important elements of IR websites, such as Social Media. Secondly, the relatively small size of the sample and the short period considered for analysis may also partially explain our results. The time frame to assess analysis is quite limited; a broader time frame, for example involving several years would have allowed us to provide more robust conclusions relative to corporate communications values and how these affect the strategic more broader governance of firms. As scholars such as Zaheer, Albert and Zaheer (1999) point out, the time scale can significantly affect the development and confirmation of a theory. Therefore, conducting a longitudinal analysis (Zahra & Sharma, 2004) would be of the essence. In short, future studies are needed to expand both the scope of the research (also taking into account the role of social media in WIR activities) as well as the timescale of the analysis.

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