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Determinants of online corporate reporting in three Latin American markets

The role of web presence development

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Abstract

Purpose – The purpose of this paper is to explore the determinants of online corporate reporting in three Latin American emerging markets, Argentina, Mexico and Chile, providing further evidence to test the mediation role of web presence development in the relationship between these determinants and e-disclosure. Web presence development measures the firm's efforts to archive web visibility, web usability and convenience.

Design/methodology/approach – Based on a content analysis of corporate web sites, the extent of the information is measured by three internet disclosure indexes. Four constructs which are considered key drivers of a firm's disclosure strategy are identified. Structural equation modelling (SEM) was used to assess the research model. The sample contains publicly available data on listed companies' web sites.

Findings – The results reveal that the development of a firm's presence on the internet is as important as its characteristics in determining corporate transparency and in mediating the relationship between firm size and cross-listing and e-disclosure.

Practical implications – Companies should be aware that investors are attaching increasing importance to corporate transparency. Consequently, managers should put more effort into improving web sites, which would increase corporate visibility and open up a direct communication channel with their stakeholders. They should also take advantage of web sites to provide information, above and beyond that required by local law. Not only do current and potential investors find this useful, it also increases their confidence in the company.

Originality/value – This paper proposes an integrative model of the determinants of the level of online corporate reporting using constructs that reflect their multidimensional nature. A non-financial latent variable for web presence on the internet is proposed as a mediator in the relationship between e-disclosure and traditional determinants. The SEM approach simultaneously examines the direct and indirect relationships between the proposed latent variables and how these relationships influence the level of e-disclosure.

Keywords Disclosure, Web site quality, Corporate web sites, Internet financial reporting
Paper type Research paper

Introduction

The objective of corporate reporting is to provide stakeholders, defined as anyone directly or indirectly involved with the corporation – employees, citizens, shareholders, NGOs, unions and government agencies (Clarkson, 1995) – with a better insight into the enterprise. More transparency and better disclosure of voluntary and compulsory information are common in companies needing to reduce agency costs and information

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asymmetries between managers and stakeholders. One of the stakeholders for which companies issue corporate information is the shareholder. As soon as firms compete with each other for funds in capital markets, information on investor relations becomes essential. Greater corporate transparency improves investor protection rights and enhances the market's valuation of stocks (Klapper and Love, 2004).

The increasing need for companies to send messages to the public has resulted in a sharp rise in the number of business news items and business-related media. New technologies have brought challenges and opportunities to the field of corporate communication enabling more direct, dynamic and interactive contact with stakeholders regardless of their location and without the need for intermediaries (Cormier *et al.*, 2010). Corporate information on the internet provides benefits in cost-cutting, distribution, frequency and speed (Gandía, 2008) thus reaching a larger number of users. This provides a competitive advantage over competitors who do not provide internet disclosures.

The benefits attached to the communication of corporate information over the internet have attracted the attention of academic research. Studies focus on analysing the extent and type of information disclosed (Marston and Polei, 2004; Morhardt, 2010; Hsieh, 2012). Others focus on why companies have different levels of disclosure, analysing corporate characteristics such as size, stock exchange listing or industry (Debreceny *et al.*, 2002; Bonsón and Escobar, 2006; Gallego Álvarez *et al.*, 2008; Cormier *et al.*, 2010; Al-Htaybat, 2011; Boubaker *et al.*, 2012). From an international perspective specific country-level factors are also relevant to explain differences in disclosure practices. The main factors that empirical evidence points out are the economic development of countries, their legal and political systems and their cultural characteristics (Archambault and Archambault, 2003; Chatterjee and Hawkes, 2008; Foster *et al.*, 2012).

In addition to the aforementioned factors, companies also have differing levels of online presence. Debreceny *et al.* (2002), Xiao *et al.* (2004) and De Andres *et al.* (2010) associate the acceptance and use of the internet as a strategic tool in business development with further incentives to disclose corporate information. However, since building and maintaining a company's web presence requires ongoing effort and resources a significant number of companies either do not use the internet or they only use it to a limited extent. Decisions regarding online reporting cannot therefore be treated in isolation from decisions concerning the adoption of the internet as a tool for corporate communication (AbuGhazaleh *et al.*, 2012).

The principal objectives of corporate web presence are to create a strong and positive corporate image on the internet and to convert this into attracting visitors to the web site and encouraging them to return (Auger, 2005). A critical challenge facing businesses is to develop a web presence that is not only compelling for the visitors, but is also able to serve their instrumental goals well (Agarwal and Venkatesh, 2002). García-Borbolla *et al.* (2005) classify three types of strategy that an entity may adopt when it sets up its corporate web site, distinguishing among ornamental, informational and relational web presence. The difference resides in the relative importance that is given to content over format.

Since corporate web presence is a multidimensional concept, a wide ranging set of web metrics has been proposed to assess it. These mainly measure attributes such as web site quality, visibility, usability and convenience (Agarwal and Venkatesh, 2002; Niessink, 2002; Calero *et al.*, 2005; Bonsón *et al.*, 2008). The information systems area of research has put forward more thorough assessment models that integrate the various

web presence dimensions and the metrics that best measure them, such as the web quality models (Aladwani and Palvia, 2002; Calero *et al.*, 2005; Lowry *et al.*, 2008, among others).

Within this context this paper analyses the extent and nature of information disclosed in the investor relations section on the web sites of companies listed in Latin American stock markets in Argentina, Chile and Mexico, and the determinant factors of internet-based corporate disclosure. The investor relations section on corporate web sites discloses both the compulsory financial information companies have to submit periodically to comply with mandatory requirements, and other voluntary information.

Our analysis of the determining factors for internet-based corporate disclosure includes factors proposed by classical disclosure literature, such as size, financial performance and cross-listing. We extend prior research on internet financial reporting by providing insights into the mediation role of a company's web presence development in the relationship between these traditional factors and the level of corporate online disclosure.

A company's efforts to develop and improve its web site are indicative of its interest in gaining an internet presence. Consequently, we expect companies that are willing to invest more resources in their web presence development to be even more motivated to use that web site as a communication vehicle with investors and therefore disclose more information. In addition, the decision to develop web presence is also determined by a company's characteristics, such as size or financial position. This paper analyses both the direct relationship between these company characteristics and e-disclosure, and the indirect relationship through web presence development. For this purpose, we use the structural equation modelling (SEM) approach, a multivariate technique that performs multiple regressions between latent variables.

Our sample of three Latin American countries makes a good setting for analysing online corporate disclosure practices for several reasons. First, recent reports show that Latin America has the fastest-growing internet population of all regions in the world. It is in the top-ranking positions worldwide for annual online retail sales growth (International Telecommunications Union, 2012. Moreover, according to the Global Perspective on Retail report (Cushman and Wakefield, 2013), as a region Latin America ranks second in terms of annual online retail sales growth, averaging 20 per cent in the five-year period from 2007 to 2012, more than double that of North America and only behind Asia Pacific (25 per cent).

Second, the transparency and disclosure scores of companies from Latin American markets are among the lowest in the world, even lower than the emerging market average (Patel *et al.*, 2002; Dong and Stettler, 2011). In general, firm disclosures are higher in developed than in emerging markets, since the development of accounting and information systems usually goes hand in hand with the country's economic development (Samaha and Abdallah, 2012). This is also closely linked to the state of information and telecommunications technologies (ComScore, 2013). Nevertheless, there are also differences across developing markets, as demonstrated in the work by Patel *et al.* (2002) and Askary and Jackling (2005) focusing on Asian and Middle Eastern countries, Chand *et al.* (2008) on the South Pacific region and the analyses of Othman and Zeghal (2010) and Akrout and Othman (2013) on Middle Eastern and North African countries, among others.

Cultural characteristics could explain these differences in disclosure trends. In Gray's (1988) model of accounting values linked to Hofstede's (1980) cultural

dimensions, companies in countries with high power distance and uncertainty avoidance are expected to be more secretive, while companies in individualistic and high masculinity societies are likely to be more transparent (Dong and Stettler, 2011). Based on Hofstede's cultural dimensions Latin American countries are characterised in general by high levels of power distance and uncertainty avoidance and low levels of individualism. The origin of the legal system is another country-specific factor. Leuz (2010) demonstrates that countries with a French legal origin tend to have lower disclosure requirements, weaker private and public enforcement of securities laws, weaker investors' rights protection and less strict private and public protection against insider trading, compared with countries with an English, German or Scandinavian legal origin.

Authors such as Durnev and Han Kim (2007) show that countries with low investor protection tend to make firms implement governance and disclosure rules that exceed those established by national laws and regulations in order to meet national and foreign shareholders' requirements for information. As Garay and Gonzalez (2008) explain, the weak protection of investors inherent in many Latin American countries gives firms an opportunity to stand out from others and send credible signals to capture investors' attention by more transparency. As a means that facilitates firms' transparency, the internet may be useful for that purpose.

The remainder of this paper is organised as follows. First we describe the legal framework of corporate disclosure in the three Latin American countries analysed. The next section contains a review of prior literature in this field of analysis and our hypotheses. We then describe the sample and empirical design, followed by the results of the different analyses. The final section draws the main conclusions, outlines the study's implications and suggests future research directions.

The regulatory environment of corporate reporting in the stock markets of Argentina, Mexico and Chile

Any analysis of the factors influencing a company's level of transparency and disclosure cannot omit the regulatory framework of its country of origin. The largest stock exchanges in the world and the main international accounting bodies – the International Accounting Standards Board (IASB) and the Financial Accounting Standards Board (FASB) – require companies to disclose annual and interim financial reports, as well as information on their social, environmental and corporate governance practices.

Domestic legal disclosure requirements can determine the level of information on corporate web sites. The stricter the requirements, the higher the online corporate reporting levels. As Leuz and Verrechia (2000) state, for listed companies reported information is influenced by stock exchange requirements. Consequently, before analysing the disclosure practices of the companies we are studying, we should first review corporate information requirements in the stock markets of Argentina, Mexico and Chile.

In Argentina the state's Executive Branch issued a decree covering transparency and best practices in capital markets (Argentine Government, 2001, Decree 677/2001) on 22 May 2001. The securities market is regulated by the Argentine Securities and Exchange Commission (Comisión Nacional de Valores – CNV). The CNV requires public companies to submit financial information in an electronic format, which it then posts on the CNV web site (www.cnv.gob.ar/).

Specifically, the CNV publishes the following information on each of its issuing entities: latest information received, significant economic events, restated and effective

bylaws, person in charge of relations with the market, registered office, quarterly and annual financial statements, securities prospectus, corporate bonds, minutes and lists (including lists of the managers and members of the company's bodies, independent audit report and assessment of compliance with corporate governance code, among others) and credit ratings.

In Mexico there has been an increase in public interest in corporate transparency fuelled by the transparency principles issued by the OECD, the Securities Market Act Law (Ley del Mercado de Valores, Mexican Government, 2006) of July 2006 and the Issuer Circular of the Banking and Securities Commission (Comisión Nacional Bancaria y de Valores (CNBV), 2003 and 2011). At the same time, Mexico's adoption of the International Financial Reporting Standards (IFRS) issued by the IASB places the financial disclosures of companies listed in Mexico on a par with the international requirements for disclosure and transparency of financial information.

The Issuer Circular advises that there should be an obligation for securities issuers to send relevant financial information and events electronically to both stock markets and the regulator. As a result, the National Banking and Securities Commission publishes the following information on its web site (www.cnbv.gob.mx) for each issuing entity: outstanding events, general and corporate information (including board of directors, ratings and certified articles of association), corporate events (annual and extraordinary general meetings, notices and minutes of meetings), financial information (including quarterly and annual reports, audits and best corporate code practices), information to stakeholders, notices and market information.

Last, the information that companies listed in Chilean stock markets must present is mainly regulated by the 1981 Limited Liability Companies Act (Ley de Sociedades Anónimas) No. 18.046 (Chilean Government, 1981) (and its later amendments, of which the most recent is Law no. 20720, of 30 December 2013) and the regulations of the Superintendency of Securities and Insurance (Superintendencia de Valores y Seguros – SVS), NCG (General Rule) No. 346, of 6 May 2013, referring to the registration procedures of issuers and publicly traded securities in the Securities Registry, dissemination, placement and provision of continuous information and NCG No. 341, which establishes a mechanism for disseminating information on the corporate governance standards that listed companies adopt. There are also a number of circulars stipulating the form and content of the financial reports the companies in the SVS Securities Registry produce, as well as how to recognise certain entries in accounts.

For the purposes of disseminating information the SVS allows the public to consult its web site (www.svs.cl) where they can find the following information on each of the securities entities: economic and financial background, including annual and quarterly financial statements with their explanatory notes; changes in capital; essential events and other information on the issuer and their securities, such as a copy of the minutes of general meetings; bylaw amendments; changes in governing bodies; suspension of payments or bankruptcy, etc.; and information on corporate governance practices.

It is worth highlighting the effort made by the SVS by implementing in 2011 the XBRL project. XBRL (eXtensible Business Reporting Language) is a commercial branded language, based on XML, designed to establish standardised protocols for the electronic communication of accounting information. XBRL International is the consortium of organisations that develops and maintains the XBRL Specification (www.xbrl.org/). For further information see Bonsón *et al.* (2009) and Baldwin *et al.* (2006). Chilean companies that produce financial information in accordance with the IFRS must send their financial statement information in an XBRL file which

is published on the SVS web site (www.svs.cl/sitio/xbrl/html/index.php). This transmission of data is a potential tool for companies given that it automates data collection, thus making it easy for investors and the general public alike to use software to check whether the data is correct. This increases the quality and comparability of the financial information companies disseminate, and ensures financial statements are standardised in line with the IFRS.

The analysis of existing legislation and information requirements for listed companies indicate the significant effort the three countries have made to increase transparency and thus comply with the requirements of major international accounting organisations. Moreover, the decisions that companies have taken to include financial information on their web sites at no cost might be influenced by the fact that the regulating bodies of the main stock markets in the three countries we analysed require companies to submit this financial information in an electronic format. Companies then have the alternative of extending the level of reporting by including additional information that investors find useful. This is voluntary and only available online (Alali and Romero, 2012).

Literature review and hypotheses

In this section we first review the relation between corporate disclosure and company characteristics, and the relation between these characteristics and web presence development. We then go on to argue that web presence development has a mediation role in the relationship between a company's characteristics and e-disclosure. Our hypotheses are based on this discussion.

Company characteristics and disclosure

Numerous theories have been put forward to explain how companies disclose corporate information and the determinants for their behaviour. The agency theory and the information asymmetry theory have supported the majority of empirical research (Healy and Palepu, 2001). Reducing agency costs and information asymmetries, as well as complying with investor and analyst requirements, are the main factors explaining why companies provide information. Other theories, such as signalling theory, legitimacy theory, stakeholder theory, political cost theory and contingency theory, have been put forward and linked with the first two to a greater or lesser extent. See Sharma (2013) for a complete review of these theories and previous literature on them. More recently Koonce *et al.* (2011) have proposed using key theories from psychology in research on financial reporting and voluntary disclosure.

The relationship between the size of a company and the information provided to external agents is a factor that has been widely analysed in disclosure studies. Two economics-based theories are commonly used to analyse the relationship between the two variables: agency theory and political cost theory. According to agency theory, larger companies suffer more information asymmetry problems and, consequently, agency costs. This furthers their interest in disclosing more information to reduce them. Healy and Palepu (2001) and Ball (2006) are of the opinion that increasing transparency contributes to a greater convergence of manager and shareholder interests by providing shareholders with an effective monitoring tool. According to political cost theory, the largest companies find themselves subject to high political costs. They could use disclosure of corporate information, especially disclosure concerning social responsibility, to reflect a positive response to social pressure.

Evidence in prior research generally shows a positive relationship between firm size and online disclosure (Marston and Polei, 2004; Serrano-Cinca *et al.*, 2007; Cormier *et al.*, 2010).

Another commonly analysed factor is the firm's financial position. Signalling theory predicts that healthy firms will choose accounting policies that allow them to demonstrate their superior performance, while companies with poorer financial positions will select less transparent disclosure strategies. However, research reveals conflicting results. Some studies find a positive relationship while others find a negative one, and some find no relationship at all (Oyeler *et al.*, 2003; Debreceny *et al.*, 2005). This disparate evidence could indicate that it is not only profitable firms that disclose more, since less profitable firms may also be interested in voluntarily explaining their poor financial position in an attempt to avoid the devaluation of their capital and loss of reputation (Skinner, 1994).

The information a company discloses is influenced by stock exchange requirements (Leuz and Verrechia, 2000). Agency theory holds that companies with foreign listings will be willing to disclose more information voluntarily so as to attract foreign investment. At the same time companies listed in international markets must comply with the domestic regulations for each of their capital markets. Given that this additional information must be presented in hard copy, the marginal cost of making it public over the internet should be minimal. It also gives an image of greater transparency, which is necessary for foreign investors (Xiao *et al.*, 2004). Empirical evidence shows that listing on certain stock exchanges influences the level of disclosure, so a US listing is meant to capture pressures for quality disclosure (Leuz and Verrechia, 2000). Debreceny *et al.* (2002) and Cormier *et al.* (2010) found that being listed on the US stock exchange positively influences internet financial reporting.

In this context we expect a firm's characteristics to be key drivers in web-based disclosure. We therefore hypothesise:

H1. Company characteristics positively influence the level of corporate e-disclosure.

Specifically:

H1a. Firm size positively influences the level of corporate e-disclosure.

H1b. Financial position positively influences the level of corporate e-disclosure.

H1c. Listing on a foreign stock exchange positively influences the level of corporate e-disclosure.

Company characteristics and web presence development

The principal objectives of corporate web presence are to create a strong and positive corporate image on the internet and to translate this into attracting visitors to the web site and encouraging them to return. Currently even though most companies recognise the usefulness of an internet presence not all of them dedicate the same effort to building one. A number of authors have analysed the stages of corporate web site development (Young and Benamati, 2000) and found that they differ between the initial state of the web sites, where only basic company information is provided, and a next stage including more information on products and services, so that subsequent purchase orders and payments may be made online. Teo *et al.* (2003) summarise the

process in four generic steps: e-mail adoption and web presence, prospecting, business integration and business transformation.

Higher web site quality brings repeat users to web sites (Offutt, 2002). Although quality is objective, it is difficult to define and measure. Literature on the subject has proposed a large number of web metrics for quantifying web quality attributes (Agarwal and Venkatesh, 2002; Niessink, 2002; Calero *et al.*, 2005; Bonsón *et al.*, 2008), and multidimensional web quality models. Aladwani and Palvia (2002) assessed web quality based on a four dimension model: technical adequacy, specific content, content quality and web appearance. The web quality model of Lowry *et al.* (2008) presented six dimensions: responsiveness, competence, quality of information, empathy, web assistance and callback systems.

Calero *et al.* (2005) classified a broad range of web metrics for web information systems by using their web quality model based on three dimensions: features, life cycle process and quality aspects. The web features dimension includes content, presentation and navigation. The life cycle processes dimension takes into account the web site life cycle from the first development phase to later maintenance phases. Based on the Quint2 model (Niessink, 2002), the quality characteristics dimension includes functionality, reliability, usability, efficiency, portability and maintainability. This classification proves that the majority of the web metrics used in prior studies are usability measurements (how easy user interfaces are to use) and presentation measurements (how content is present on the web).

Improving the quality of a corporate web site therefore requires information to be updated continually, content adapted to different users, expansion of the type of information provided, different means of communicating the information to users (e.g. e-mail, mailing lists, navigation and search aids) and information portability and interoperability (e.g. XBRL language). Disseminating information on the web is not enough. It also has to be easy for users to find and use.

In addition to developing their web sites, companies deciding to establish an internet presence need to attract attention to that web site, i.e. increase their web visibility. Visibility, defined as the extent to which a user is likely to come across an online reference to a company's web site (Drèze and Zufryden, 2004), makes it easier to attract users to the web site and to assess its degree of online presence. A more accessible web site will also be easier to find and thus more visible (De Andres *et al.*, 2010). Web traffic metrics, such as unique visitors, pages visited and incoming links, are the most used indicators for measuring web site visibility. Trueman *et al.* (2003) find a significant relationship between income growth and web metrics growth. Companies need strong internet visibility to attract visitors who will then become customers. Drèze and Zufryden (2004) show that web visibility has a higher and more significant financial impact than either brand awareness or advertising.

Prior research documented that certain company characteristics, such as size, profitability, leverage and stock exchange listing are determinants of its visibility (Baker *et al.*, 2002; Serrano-Cinca *et al.*, 2007). These studies assume that the actions large profitable firms take are more visible to society. Companies listed in foreign markets or companies planning to issue capital or debt need to strengthen and develop their web sites to be more visible and to enable current and potential investors to monitor their activities closely.

Building web presence is not free. Companies need to be a certain size to be able to adapt their information systems. Business size and good financial health are associated with advantages involving capacity to absorb risks related to technology

development, economies of scale, preferential access to capital markets, etc. As Bonsón and Escobar (2006) state, the bigger the entity, the more resources it should be able to deploy to develop and operate a high quality web site. Other factors also determine web site development. Kowtha and Choon (2001) show that competitive intensity, prior competencies and strategic commitment influence a firm's web site development and effectiveness.

Based on the above evidence we hypothesise that:

H2. Company characteristics positively influence the development of a firm's web presence.

Specifically:

H2a. Firm size positively influences the development of a firm's web presence.

H2b. Financial position positively influences the development of a firm's web presence.

H2c. Listing on a foreign stock exchange positively influences the development of a firm's web presence.

Web presence development, company characteristics and e-disclosure

Decisions about internet reporting should be considered together with the decision to adopt the internet as a strategic tool in the business. A commitment to being online is usually associated with more organisational innovation and a level of technological development (AbuGhazaleh *et al.*, 2012). Furthermore, authors such as Debreceny *et al.* (2002) and Xiao *et al.* (2004) show that the more internet knowledge a company possesses, as in the cases of companies using the internet as a strategic tool to reach customers, the more incentives there are to disclose corporate information.

As mentioned above, a strong internet presence of firms is also related to company visibility. The online visibility of a company also seems to be a driver that influences disclosure of corporate information (Serrano-Cinca *et al.*, 2007; De Andres *et al.*, 2010). Agency theory, political cost theory and signalling theory justify this relationship. The most visible companies are more exposed to the public media, which means there is even more political and social pressure on them to disclose information (Patten, 2002; Cormier *et al.*, 2010; Heinze and Hu, 2006). In addition, as Skinner (1994) points out, managers of more visible firms are more sensitive to disclosing information to heighten their professional reputations.

Within this context we expect that companies making a significant effort to develop their internet presence and to acquire high media visibility will improve their internet corporate reporting. In addition as hypothesised in *H2*, company characteristics have a positive influence on online presence. Therefore the development of a firm's presence on the internet may have a positive influence on the relationship between company characteristics and internet financial reporting. We hypothesise that:

H3. Web presence development has (a) a positive influence on e-disclosure and (b) a mediation role for a positive indirect effect of company characteristics on e-disclosure.

Figure 1 summarises the proposed relationships between e-disclosure and its hypothesised drivers.

Research method

SEM was used to assess the research model. This approach makes it possible to analyse the relationship between drivers and how they influence the degree of corporate e-disclosure. The partial least squares (PLS) technique (Chin, 1998) is used to estimate this model. The intangible and multidimensional character of e-disclosure drivers makes this technique appropriate.

The data were analysed in two steps. First, the validity of the research constructs was assessed from a separate estimate of the measurement model by confirmatory factor analyses. Second, the research model was tested using the simultaneous estimate of the measurement and structural models. The software used was SmartPLS 2.0 (Ringle *et al.*, 2007).

The research hypotheses have been checked by assessing the direction, strength and level of significance of the path coefficients estimated by PLS. To assess the significance of parameter estimates a bootstrap resampling procedure with 5,000 iterations was requested in this analysis. Since SmartPLS does not generate significance tests for the variance explained in the dependent latent variables, the effect size (f^2) of R^2 values was calculated by Cohen's (1988) formula: $f^2 = R^2/(1-R^2)$ f^2 values <0.15 indicate a small effect, values <0.35 a medium effect and f^2 values >0.35 a large effect.

We tested the mediation effect of web presence development (intervening variable) on the relationship between company characteristics (independent) and e-disclosure (dependent) using Baron and Kenney's (1986) causal step approach: first, the independent variables must have an effect on the dependent variable, second, the independent variables must have an effect on the intervening variable and third, the intervening variable must affect the outcome, after controlling for independent variables. To establish full mediation, the total effect of the independent variables on the outcome must become non-significant in the presence of the intervening variable, while the indirect effect is significant. Partial mediation is established when the paths of the independent variables to the dependent variable remain significant but substantially reduced, and the indirect effect is significant.

In addition given that the cited steps do not estimate indirect effects, or permit testing if the indirect effects are different from zero, we used the product of coefficients strategy (Sobel, 1982; Preacher and Hayes, 2004). These comparisons were made with

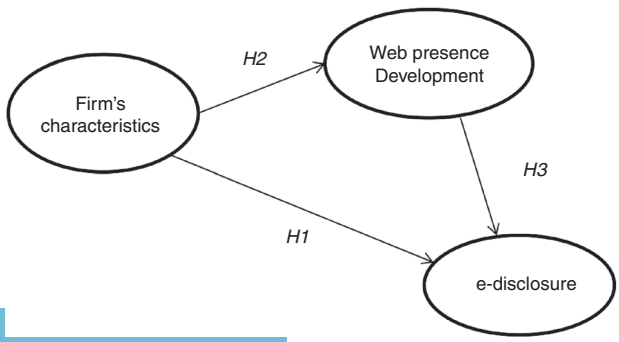

Figure 1.
Network of hypotheses

latent variable scores obtained through PLS analysis which were then used as an input for the SPSS macro provided by Preacher and Hayes (2004).

Sample definition

The sample was composed of companies listed on stock exchanges in Argentina, Chile and Mexico. The choice of the sample of companies from these three countries was based on the availability of financial information on their webpages and that they were listed firms. Listed companies were chosen on the premise that being more dependent on capital markets, they would be subject to greater regulation regarding disclosure, and as such, would be more likely to present at least the minimum information required. Companies were chosen that form part of the stock market index best representing each country: the Merval Index (Argentine stock market) in Argentina, the IPSA Index (Selective Stock Price Index) in Chile and the IPC Index (Consumer Price Index) in Mexico. After eliminating financial companies and those that did not have a webpage, the final sample consisted of 18 Argentine, 28 Chilean and 30 Mexican firms.

The investor relations sections of corporate web sites were used to measure the disclosure index variables and some aspects of companies' web presence structure. The investor relations section on corporate web sites discloses both the compulsory financial information companies have to submit periodically to comply with mandatory requirements and other voluntary information that the company discloses voluntarily. The financial data came from the Economatica database. Data on company visibility were obtained from several internet search engines. The data are for 2008.

Measuring latent variables

Many concepts used in disclosure studies have a multivariate intangible nature that cannot be measured directly, for example, transparency, visibility and usability, which is why latent variables or constructs have to be used. We comment on the variables used in the study below.

Measures for e-disclosure. The methodology used in most disclosure studies involves the use of transparency or information indexes in order that the amount of data provided by the firms can be quantified. It includes the identification of variables forming the index, i.e. the information content to be analysed.

To measure the type and amount of investor-related information disclosed on a company's web site, three internet disclosure indexes were developed: financial and accounting information (ED1), corporate governance, social responsibility and human resource information (ED2) and other information of interest to investors (ED3). These indexes are not weighted, since we assume that each item of disclosure is equally important (Gray *et al.*, 1995). Their composition is shown in Table I. The classification and composition of the IDI is based on review of the extensive body of literature regarding disclosure (e.g. Marston and Polei, 2004; Xiao *et al.*, 2004; Bonsón and Escobar, 2006).

The first indicator measures accounting and financial information disclosure (ED1). It includes the presentation of information on basic current and historical financial statements (balance sheet, income statement, cash flow statement), current and historical interim financial information and share information (current stock prices and their historical series, averages, high and low values and dividend payments). The maximum indicator value is 12 points: one for each item displayed in Table I.

	Argentina	Chile	Mexico	Total mean
Accounting and finance information (ED1)				
Balance sheet and income statement of current year	100.0	100.0	100.0	100
Interim information (quarterly and half-year) of current year	100.0	75.0	100.0	91.6
Cash flow statement of current year	100.0	100.0	97.0	99
Annual report of current year (full text)	100.0	100.0	100.0	100
Balance sheet and income statement of past years	100.0	100.0	100.0	100
Interim information (quarterly and half-year) of past years	79.0	75.0	100.0	84.7
Cash flow statement of past years	100.0	100.0	97.0	99
Annual report of past years (full text)	100.0	100.0	100.0	100
Current share price	47.0	71.0	93.0	70.3
Historical share prices	42.0	57.0	87.0	62
Dividend payment	37.0	64.0	40.0	47
Historical dividend payment	37.0	54.0	37.0	42.7
Corporate governance, social responsibility and human resources (ED2)				
Ownership structure	58.0	89.0	23.0	56.7
Organisational structure charts (organograms)	21.0	50.0	17.0	29.3
Board of Directors (Cvs)	89.0	100.0	80.0	90
Audit committee	79.0	61.0	93.0	77.7
Remuneration of the Board of Directors	11.0	50.0	7.0	22.7
Resolutions of shareholders' meeting	26.0	57.0	10.0	31
Disclosure of risk or risk management	5.0	32.0	13.0	16.7
Corporate social responsibility section	47.0	46.0	53.0	48.7
Annual corporate social responsibility report	32.0	36.0	53.0	40.3
Environmental policy	63.0	50.0	20.0	44.3
Employee profile	0.0	4.0	0.0	1.3
Employee training programmes	47.0	43.0	7.0	32.3
Donations and sponsorships	53.0	57.0	53.0	54.3
Quality and safety of services or products provided	11.0	4.0	10.0	8.3
Investors tools (ED3)				
Press releases section	74.0	82.0	100.0	85.3
Financial analyst reports	5.0	0.0	0.0	1.7
Analyst details	32.0	39.0	53.0	41.3
Frequently asked questions (FAQ)	32.0	29.0	30.0	30.3
Financial calendar	47.0	21.0	97.0	55

Table I.
Items of internet disclosure indexes

The second indicator (ED2) measures the disclosure of information on corporate governance, such as corporate independence guidelines, board and committee mandates, the corporate code of conduct/ethics, a record of board compliance, etc. It also measures information on the company's concern for environmental and social issues and its human resources policy. The maximum value of this indicator is 14 points.

The third indicator (ED3) deals with other issues of interest to investors, such as the availability of financial analyst reports, press releases, calendar of investor relations events for the year and a FAQ section. The maximum value of this indicator is five points.

In addition to the description of each indicator Table I also shows the percentage of firms in the sample that have each type of item, grouped by country, as well as a portion of the total sample. The data shows that the majority of the companies present obligatory accounting information, both current and historical. Fewer publish the remaining information, around 40-50 per cent. Breaking down the results by item, hardly any companies publish information from external analysts, nor do they provide

information on product quality or employee profiles. There are differences between countries: Argentine companies reveal the least information, while Chilean and Mexican companies show similar percentages. Chile is the country in which the most information on corporate governance is disclosed, since its regulations on this subject are more developed.

Measurements for determinants of corporate e-disclosure. The latent variables considered in our model as determinants of corporate e-disclosure are: firm size, financial position (profitability and leverage), cross-listing and web presence development. Table II shows the composition of each construct.

Two indicators are used to measure the construct size: total assets (Sz1) and total sales (Sz2). These variables were transformed to logarithms to minimise normality problems and to avoid heteroscedasticity. The profitability construct includes three measurements: ROA (PRF1), ROE (PRF2) and profit margin (PRF3), while the leverage construct is measured using total debt ratio (LV1) and long-term debt ratio (LV2).

Factor	Indicators	Definition
Size(Sz)	Sz1	ln (total assets)
	Sz2	ln (total sales)
Cross-listing(CL)	CL1	Listing in US stock markets
	CL2	Number of countries which firm is listed
Profitability(PRF)	PRF1	ROA
	PRF2	ROE
	PRF3	Profit margin
Leverage(LV)	LV1	Total debt to total assets ratio
	LV2	Long term debt to total assets ratio
Convenience and usability	Navigation support	Result from adding the two points on ease and consistency of web corporate navigability: Internal search engine Table of contents/Site map
	Contact and information supply services	Result from adding the two points on support services to users: Contact and information services Mailing list
	Structure	Result from adding the seven points on presentation formats and useful services to users: Annual report in HTML, PDF or Excel Audio-visual access English version of investor relations section English version of annual report E-mail news alert One click to get to investor relations information Useful links to investors
Web visibility	Links Yahoo	ln (number of incoming links according to Yahoo)
	Links Alexa	ln (number of incoming links according to Alexa)
	Links Google	ln (number of incoming links according to Google)
	Google Page Rank	Page Rank according to Google
e-disclosure(ED)	ED1	Disclosure of accounting and finance information
	ED2	Disclosure of corporate governance, social responsibility and human resources
	ED3	Disclosure of investor tools

Table II.
Indicators and their definitions

The cross-listing construct uses two indicators. The first is a dummy variable that indicates whether the company is listed on the NYSE (value 1) or not (value 0) (CL1). The second is the number of foreign stock exchanges on which the firm is listed (CL2).

Web presence development was conceived as a second-order construct with two first-order constructs. They measure two characteristics of the firms' efforts to achieve an internet presence: web visibility and convenience and usability.

The web visibility construct attempts to capture the importance of a web site on the internet. Since visibility cannot be measured accurately, we use proxies: the number of incoming links to the firm's web site and its search engine positioning. A firm must be highly ranked on search engines to achieve high internet visibility. At the same time, the higher the number of incoming links, the more visible a web site is.

Discovering the exact number of links is impossible, but an approximation can be made using a special query. This number is obtained from three search engines: Yahoo, Alexa and Google. The Google Page Rank (PR) tool was used to measure search engine ranking. PR is an objective measure of a webpage. It matches people's subjective ideas of importance and justifies the position of webpages in Google's search results (Brin and Page, 1998). PR assigns a number ranging from 0 to 10 to each webpage.

As Chen *et al.* (2009) posit, since a corporate web site represents a company's online presence, low web site quality reflects poorly on the company. Increasing the quality of web site design through usability and convenience may help firms sustain a competitive web presence, since previous evidence shows that web site quality improves user satisfaction and acceptance, and engages users (Hsiu-Fen, 2007).

For Nielsen (1994) web site usability involves the ease with which the user can learn to manage the system and memorise the basic functions, the efficiency of a site's design, the degree of error avoidance and general user satisfaction. According to the three dimensions proposed by the web quality model (Calero *et al.*, 2005) usability is included in the quality characteristics dimension, associated with attributes such as understandability, attractiveness, clarity, helpfulness and user-friendliness, among others. Based on these definitions and the work by Marston and Polei (2004), we constructed the convenience and usability construct formed by three indicators: navigation support, contact and information supply services and structure, measured with a score obtained by analysing the web sites.

Navigation support requires an internal search engine and a site map. The maximum score for this is 2. Contact and information supply services include a mailing list and contact and information services. The maximum score for this is 2. The structure indicator consists of the number of clicks to arrive at investor relations information or press releases, presentation formats (PDF, HTML, Excel), audio-visual access, investor relations site in different languages, translated financial reports, an e-mail news alert and useful links for investors. The maximum number of points is seven.

Industry. Alongside the above variables we consider the industry as a control variable. Industry has been traditionally used to explain differences in company disclosure levels in both traditional channels and the internet (see, among others, Debreceny *et al.*, 2002; Bonsón and Escobar, 2006). Signalling theory explains that firms belonging to the same industry tend to adopt similar guidelines for providing voluntary information. This may be to present a good corporate image or to prevent users from interpreting a lack of information as a sign of bad news. We used the FTSE Global Classification System to group companies in the sample by industry.

Industry is also an ordinal variable with 1 for Manufacturers, 2 for Commerce, and 3 for Services.

Results

The measurement model: assessment of internal consistency

First the paper tests that the indicators comprising each construct fulfil the unidimensionality, reliability, convergent validity and discriminant validity attributes.

Unidimensionality was assessed by examining the strength of the loadings. Carmines and Zeller (1979) recommend factor loadings of 0.70 or above. All values meet the requirements, as shown in the first column of Table III. Reliability is tested by Cronbach's α and the index of composite reliability. A reliable data set is normally required to contain α values in excess of 0.6, and 0.7 for composite reliability. As shown in Table III the lowest α (0.680) and composite reliability (0.775) are for convenience and usability, i.e. all those values exceed the recommend values. Convergent validity is confirmed by looking at the average variance extracted (AVE). In all cases the values exceed the minimum recommended for acceptance (0.6-0.5).

Constructs and indicators	Loadings	Cronbach's α	Composite reliability	AVE
Size(Sz)		0.824	0.919	0.85
Sz1	0.930			
Sz2	0.914			
Cross-listing(CL)		0.794	0.906	0.828
CL1	0.927			
CL2	0.893			
Profitability(PRF)		0.956	0.971	0.919
PRF1	0.961			
PRF2	0.941			
PRF3	0.973			
Leverage(LV)		0.701	0.859	0.754
LV1	0.968			
LV2	0.716			
Convenience and usability		0.680	0.775	0.735
Structure	0.788			
Contact and inform supply serv.	0.878			
Navigation support	0.866			
Web visibility		0.881	0.944	0.893
Links Yahoo	0.876			
Links Alexa	0.911			
Links Google	0.843			
Google Page Rank	0.807			
Second-order construct Web presence development	Path coefficient (t bootstrapping)	R^2		
Convenience and usability	0.682 ($t = 10.73$)	0.465		
Web visibility	0.852 ($t = 33.99$)	0.726		
E-disclosure (ED)		0.767	0.865	0.681
ED1	0.829			
ED2	0.853			
ED3	0.793			

Note: t-Statistic values significant at $p < 0.001$ are in italics

Table III.
Results for the measurement model

Chin's discriminant validity criterion says that the square root of AVE should be greater than the correlation between this construct and all others. Table IV shows all the correlation coefficients between constructs. The main diagonal of the table contains the square roots of AVE instead of unity. Bagozzi's criterion requires that the correlation between the constructs included in the model should not be higher than 0.8 (Bagozzi, 1994). All of the chosen indicators fulfil the criteria.

To ensure discriminant validity we obtained a loadings and cross-loadings matrix. Loadings are Pearson's correlation coefficients of indicators to their own construct. Cross-loadings are Pearson's correlation coefficients of indicators to other constructs. Loadings should be higher than cross-loadings. All the results meet the requirement. They are not shown for the purposes of brevity.

As discussed earlier, this study specifies web presence development as a second-order, hierarchical reflective construct, which comprises two first-order reflective constructs: web visibility and convenience and usability. The degree of explained variance of this construct is reflected in its components, i.e. web visibility (72.6 per cent) and convenience and usability (46.5 per cent) (see Table III). All the path coefficients from web presence development to its components are significant at $p < 0.001$. This leads to the conclusion that the two latent variables represent two aspects of web presence development, and should therefore be measured as a multidimensional whole through a second-order construct.

Assessment of the structural model

The second stage of the model analysis consists of characterising the structural model. Figure 2 shows the significant bootstrapped parameter estimates for the structural paths in the full model and the variance accounted for in the dependent variables (R^2). The effect size calculated from R^2 values to evaluate the predictive power of the model are large for the constructs, with values of $f^2 = 0.479$ for web presence and $f^2 = 0.661$ for e-disclosure.

The values of path coefficients shown in Table V provide partial statistical support for *H1*. We can accept *H1a* and *H1c* and reject *H1b*. They reveal a direct and significant relationship between two of the proposed company characteristics, size and cross-listing, and e-disclosure. The size variable has a path coefficient of 0.228, significant at <1 per cent (t-value $= 2.02$). The cross-listing path coefficient is 0.458 and its t-value is 4.39 ($p < 0.001$). Nevertheless, the profitability and leverage characteristics show no significant correlation to e-disclosure (correlation coefficients of -0.011 and -0.209, respectively, in Table IV) while the path coefficients in the structural model have near zero values.

	Size	Cross-listing	Profitab.	Leverage	Convenience and usability	Web visibility
Size	*0.922*					
Cross-listing	0.321	*0.910*				
Profitability	0.633	0.168	*0.959*			
Leverage	0.033	−0.319	−0.379	*0.868*		
Convenience and usability	0.108	0.525	0.151	−0.106	*0.857*	
Web visibility	0.713	0.235	0.533	−0.109	0.450	*0.944*
e-disclosure	0.217	0.728	−0.011	−0.209	0.657	0.415

Note: Numbers in the main diagonal indicate the square root of the AVE (average variance extracted)

Table IV.
Correlation between latent constructs

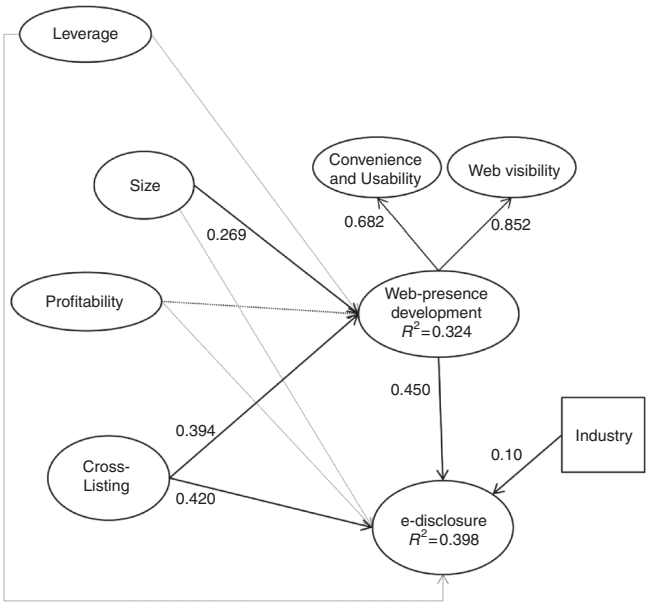

Figure 2.
Structural equation full model

From	To	*H1*: Firm's features → e-disclosure (direct effect) Loadings	Bootstrap *t*-statistic	*H2*: Firm's features → Web presence development *H3*: Firm's features → Web presence development → e-disclosure (full model) Loadings	Bootstrap *t*-statistic
Leverage	→ E-disclosure	0.098	1.18	0.031	0.29
Size	→ E-disclosure	0.228	*2.02*	−0.028	−0.25
Profitability	→ E-disclosure	0.063	0.54	−0.041	−0.40
Cross-listing	→ E-disclosure	0.458	*4.39*	0.287	*2.67*
Leverage	→ Web presence development			0.149	1.08
Size	→ Web presence development			0.269	*2.38*
Profitability	→ Web presence development			0.064	0.68
Cross-listing	→ Web presence development			0.394	*3.95*
Web presence development	→ E-disclosure			0.450	*3.96*
Industry	→ E-disclosure			0.100	1.09

Note: *t*-Statistic values significant at $p < 0.001$ are in italics

Table V.
Structural equation estimations

With respect to the second hypothesis, the same variables have a positive and significant relationship with the company's web presence development. The path coefficient of cross-listing (0.394) and size (0.269) are statistically significant. In a previous (not presented) univariate analysis, the profitability variable showed a statistically significant relationship with web presence development, but this

empirical evidence does not persist in the multivariate analysis. Therefore, *H2a* and *H2c* are accepted, and *H2b* rejected.

To check the third hypothesis we applied the three formal steps proposed by Baron and Kenney (1986) and obtained the following results: first, size and cross-listing have a direct effect on e-disclosure (*H1b*); second, size and cross-listing have a direct effect on web presence development (*H2*) and third, web presence development has a significant effect on e-disclosure (path = 0.45, $t = 3.96$). As such, in the case of cross-listing and size characteristics, our results achieve the three steps necessary for mediation. The results also enable us to affirm that the mediation effect is total for size and partial for cross-listing. When the intervening variable is introduced in the model, the effect of size on e-disclosure is no longer significant (path of −0.028) and the effect of cross-listing is lower (path of 0.287).

Table VI shows the results of the test of indirect effects. The indirect effects of size and cross-listing through web presence development in e-disclosure are 0.12 and 0.18, respectively. The Sobel test and Preacher's reliable intervals make it possible to affirm that the size of these effects is statistically significant. *H3* is thus confirmed.

Finally, the control variable *Industry* has a path coefficient of 0.10 (*t*-value of 1.09). The results show that differences in sector do not influence the level of disclosure.

Cross-country analysis

Despite the fact that we chose the analysed countries because they are close to each other geographically and have similar cultural dimensions, the differences which, although minor, still persist and could influence the relationships observed between company characteristics, web presence development and e-disclosure.

To check this, we have conducted a multi-group analysis differentiating between three sub-samples, one per country. We have analysed whether there are differences in the magnitude and strengths of the estimated coefficients using the Smith-Satterthwaite parametric tests to this end. We also used the non-parametric comparison methodology proposed by Henseler *et al.* (2009). It is a technique based on conditional probabilities that does not require any distributional assumptions about the sampled populations, any concern about measurement invariance, or any assumptions about equality of the estimated parameter's variance.

Table VII shows the results we obtained. The first columns show the path coefficients by country while the final three contain the values of the comparison test. First, we can see that the factors explaining e-disclosure per country are cross-listing and web presence development, similar results to those obtained for the pool sample. The results of the parametric and non-parametric tests also show that there are no significant differences in the magnitude of these coefficients.

The relationship between size and web presence development and the relationship between leverage and web presence does show differing country patterns. Despite the

H3: Firms features → Web presence development → e-disclosure (indirect effects)

From → To	Indirect effects	SE	Sobel Z	LL 95 CI	UL 95 CI
Size → e-disclosure (by Web presence development)	0.1234	0.0664	3.081 ($p = 0.002$)	0.018	0.2828
Cross Listing → e-disclosure (by Web presence development)	0.1816	0.0798	3.055 ($p = 0.002$)	0.0581	0.3766

Source: Procedure according to Preacher and Hayes, 2008

Table VI.
Specific indirect effects

Table VII.
Cross country analysis

From		To	Argentina Path loadings	Chile Path loadings	Mexico Path loadings	P12/S-S *test*	P13/S-S *test*	P23/S-S *test*
Leverage	→	e-disclosure	−0.043	−0.152	0.053	0.372	0.596	0.745
						0.414	*0.327*	*0.638*
Size	→	e-disclosure	−0.032	−0.259	−0.064	0.278	0.450	0.682
						0.207	*0.078*	*0.507*
Profitability	→	e-disclosure	−0.277	0.001	−0.133	0.735	0.612	0.330
						0.775	*0.439*	*0.350*
Cross-listing	→	e-disclosure	0.621***	0.361**	0.219**	0.206	0.119	0.214
						0.933	*1.648*	*0.725*
Leverage	→	Web presence development	−0.082	0.017	0.361*	0.632	0.908	0.844
						0.308	*1.573*	*1.027*
Size	→	Web presence development	0.431***	0.070	−0.056	0.102	0.079	0.646
						1.433	*1.736**	*0.435*
Profitability	→	Web presence development	0.156	−0.249	0.134	0.148	0.477	0.916
						1.314	*0.139*	*1.459*
Cross-listing	→	Web presence development	0.289**	0.409***	0.425**	0.655	0.690	0.508
						0.475	*0.498*	*0.051*
Web presence development	→	e-disclosure	0.325**	0.434**	0.517***	0.639	0.682	0.383
						0.289	*0.505*	*0.222*
Industry	→	e-disclosure	0.052	0.104	0.244	0.574	0.724	0.719
						0.207	*0.646*	*0.525*
R^2 (e-disclosure)			0.612	0.417	0.403			
R^2 (Web presence development)			0.495	0.378	0.328			

Notes: P_{ij}, *p* value of non parametric test proposed by Henseler (2009) to test if estimated coefficient in country i is different of estimated coefficient in country j; 1 = Argentina, 2 = Chile and 3 = Mexico. S-S test: The values of Smith-Satterthwait parametric test. *p-value <0.1; **p-value <0.05; ***p-value <0.01

fact that only 10 per cent was significant in the complete model, on breaking it down we observed that size has a significant influence on web presence in Argentina – not the case in the others – with a statistically different magnitude to that estimated for other countries. Furthermore, leverage is only significant in Mexico, and at significance levels of 10 per cent. There are no differences in the other relationships concerning those observed in the pool sample or between countries.

To sum up, the results we obtained in the estimation by country show that there are no statistically significant differences between coefficients, confirming the results we obtained in the previous section. Any differences between these three countries are not influential in the e-disclosure relationship with the proposed determinant factors.

Discussion and concluding remarks

The rise of the internet and online technology has provided a new way for companies to communicate corporate information. Its advantages over more traditional channels, such as continuous updating, easy access, the possibility of interacting with users and the absence of barriers, justify its rapid adoption by firms.

This paper analyses the use of corporate web sites by listed firms in Latin American markets to identify determinants influencing their levels of corporate e-disclosure and to analyse the mediation role web presence development plays. To do this we constructed a SEM approach. We identified constructs which are considered key drivers of a firm's disclosure strategy: financial position, cross-listing, size and the effort the firm makes to establish an online web presence. E-disclosure was measured using three internet disclosure indexes, which include three fundamental aspects of information transparency: corporate financial reporting, investor relations, and corporate social responsibility and governance.

This paper makes several contributions, in particular the proposal of an integrative model of the determinants of the level of e-disclosure using constructs that reflect their multidimensional nature. The model includes a non-financial latent variable for web site presence on the internet. This variable attempts to include the difference between firms that are on the internet simply because they have a web site, and those that make an effort to have an online web presence. We propose two key characteristics for that purpose: web visibility, and convenience and usability. These indicators measure companies' efforts to improve their web presence by increasing their visibility on the internet, on the one hand, and ensuring user satisfaction with their web site, on the other, by improving functionality, accessibility and ease of navigation. Finally, the SEM approach simultaneously examines the relationship between the proposed latent variables as determinants and how these relationships influence the level of e-disclosure. It enables us to establish direct and indirect relationships with the endogenous variable (e-disclosure) through intermediary variables (web presence development).

In line with studies conducted in other geographical areas, our results show that firm size and foreign listing have a significant impact on the corporate disclosure level of listed Latin American companies. The study reveals that the development of a firm's presence on the internet is as important as company characteristics in determining corporate transparency, mediating the relationship between firm size and cross-listing and e-disclosure. Those companies committed to the development of their web sites to increase their visibility and as a direct communication channel with their stakeholders, show increased incentive to disclose corporate information through this channel. The results do not show any significant differences in the factors which determine e-disclosure in the three countries we analysed.

When a company decides to seek financing outside its own country's borders it has to comply with the foreign stock market's reporting requirements. For companies from developing countries, this often involves providing additional information and being more transparent than before. The internet is an accessible and effective tool that companies interested in capturing foreign funds can use to provide information useful to potential foreign investors.

The legal protection of investors is weakest in these countries, so many of their most important companies focus on developing their web sites as a communication channel with their current and potential investors. It gives firms the opportunity to differentiate themselves from others and to send credible signals to capture investors' attention. Moreover, higher transparency and better disclosure could reduce the information asymmetry between a firm's management and financial stakeholders. Voluntary and unregulated web-based corporate disclosure could be a useful tool for Latin American companies to meet shareholders' needs for information and promote the confidence of national and foreign investors. Their example should be an incentive to other smaller companies to use the internet to increase their visibility and possibilities of development.

Although Latin American companies have positively embraced the internet, and its use has grown among the general population, there are still major disparities between countries. Therefore, future research should consider corporate disclosure practices in less-developed Latin American countries to analyse the relationship between economic development, the use of ICTs and internet disclosure. Extending the study's timeframe will also make it possible to observe any development.

Given that corporate web presence development plays such a significant role, we intend to study it in more detail in future research. We are aware that the quality of a web site is a multidimensional concept and that one of the limitations of our study is that we have only included some of the web metrics that measure it. Expanding on this latent variable to include other dimensions, such as the web site life cycle, would be of interest in future research. The same can be said of the visibility construct. We would have to include new indicators to broaden its explanatory purposes, e.g. those measuring the company's visibility beyond efforts made by companies on their webpages, such as social media indicators which collect the firm's visibility on blogs, Twitter, wikis and social bookmarks.

Further research is needed to analyse the possibility of extrapolating the study results to other emerging countries in which cultural and legal factors also go hand in hand with low levels of corporate transparency, but whose development of new communication technologies provide their companies with an opportunity for more flexible and dynamic communication with their stakeholders.

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