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The Determinants of Internet Financial Reporting: A Study of 80 Companies listed on the JSE

A research report submitted by

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ABSTRACT

The World Wide Web has developed rapidly over the past few years. It has provided a user-friendly platform for companies to disclose their financial information. However, as this disclosure is largely voluntary, the question arises as to what drives companies to disclose their information on their websites voluntarily. Prior research in developed countries tests the influence of certain company characteristics on internet financial reporting. This research report tries to shed light on the determinants of internet financial reporting in the South African context.

80 companies which are listed on the JSE were selected, and the characteristics of each company's website was thoroughly inspected against an internet financial reporting checklist. Based on the results of the checklist, each company`s website was given a score. This internet financial reporting score was considered as the dependent variable. Six company characteristics were used as independent variables to explain the internet financial reporting score. These were: company size, profitability, block ownership, systematic risk, dual-listing and SRI rating.

It was found that company size, dual-listing and SRI rating has a correlation with a company's likelihood of reporting their financial results online. On the other hand, no correlation was found between profitability, block ownership or systematic risk and a company's internet financial reporting score.

This research was limited to 80 companies listed on the JSE, and was based as a point in time study. Future research can be extended to a larger sample over various stock exchanges, and also over a period of time to consider the trends in disclosure.

This study contributes to international literature on the topic and also initiates this field of research in South Africa. This research is intended to assist companies in their voluntary disclosure practices and at the same time assists regulators in considering the need for regulating internet reporting practices.

Keywords: Corporate website, Internet financial reporting, South Africa, Voluntary disclosure

DECLARATION

I hereby declare that this research report is my own unaided work. It is submitted in partial fulfilment of the degree of Master of Commerce by Coursework and Research Report at the University of the Witwatersrand, Johannesburg. It has not been submitted elsewhere for the purpose of being awarded another degree or for examination purposes at any other university.

Signature:

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Yogesh Brahmbhatt

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II. List of abbreviations and acronyms

Abbreviations/ Acronyms	Description
AFS	Annual Financial Statements
JSE	Johannesburg Stock Exchange
IFR	Internet Financial Reporting
NASDAQ	National Association of Securities Dealers Automated Quotations
CEO	Chief Executive Officer
BRICS	Brazil, Russia, India, China and South Africa
US	United States of America
IRRC	Investor Responsibility Research Center
SENS	Stock Exchange News Service

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1. Introduction

1.1 Purpose and context of this study

In recent times, there has been a rapid development of the World Wide Web which has provided a user-friendly platform for companies to communicate with a fast growing financial information consumer base (Ettredge, Richardson, & Scholz, 2001). The internet has created a virtual community which allows for quick and efficient generation and dissemination of information (Buhrmann, 2003). This avenue, which is still in its infancy, has now opened doors to communicate more effectively with current and potential investors (Ettredge et al., 2001). The internet, with its vast benefits, is a unique information disclosure tool that encourages flexible forms of presentations and allows immediate, broad, and inexpensive communication to investors (Kelton & Yang, 2008).

The benefits of the internet and the changing needs of investors and other users of financial information, has led to a widespread adoption of the internet as a method of communication. Companies around the world are using the internet as a vehicle to disseminate financial information to capital markets (Debreceny, Gray, & Rahman, 2002; Desoky, 2009; Mendes-Da-Silva & Christensen, 2004; Naudé & Toit, 2003). By using the internet, information can be made available to all stakeholders in a timely fashion and in a single place: a Corporate Website (Barac, 2004; Ettredge et al., 2001). Internet financial reporting does not only allow for the dissemination of Annual Financial Statements (AFS) through a technological platform but also allows the company to use the technology to produce dynamic presentations that are not available in the paper paradigm (Debreceny et al., 2002; Oyelere, Laswad, & Fisher, 2003). Reporting on the internet allows direct user interaction with the data through analytical tools and catalogues of audio and video media to keep the investor abreast with the day-to-day happenings of the company (Barac, 2004; Debreceny et al., 2002).

The majority of internet financial reporting practices are voluntary and is unregulated by professional bodies and institutions in many countries, particularly developing countries (Ismail, 2002). However as there has been a widespread increase in the use of the internet as a medium of disseminating financial information, major regulators in developed countries have established systems for

filing information such as EDGAR (Electronic Data Gathering, Analysis, and Retrieval) by the U.S Securities and exchange Commission and SEDAR (System for Electronic Document Analysis and Retrieval) by the Ontario Securities Commission (Ismail, 2002). Similarly, there are certain JSE listing requirements in which certain SENS reports are required to be posted on the company website after approval by the JSE (Johannesburg Stock Exchange, 2014). However these requirement do not include the entire range of internet financial reporting and therefore many companies choose whether or not to disseminate information on their corporate websites, they are also able to choose what information to publish (Ismail, 2002; Kelton & Yang, 2008). Debreceny et al. (2002) and Pirchegger and Wagenhofer (1999) agree that despite its vast benefits, internet reporting varies across companies and across countries. Therefore, the issue at hand is; why is there this difference? The frequency, quantity, quality, format and content of information published online varies greatly from company to company. This study attempts to investigate the determinants of internet financial reporting among 80 companies listed on the JSE.

1.2 Research statement

The internet is becoming a part of people's daily lives and as a result, companies are using corporate websites to pass vital financial and other business information to their current and potential investors (Debreceny et al., 2002; Kelton & Yang, 2008). Corporate websites are occasionally used to voluntarily supply additional information to capital markets (Esterhuyse & Wingard, 2016). As Nielsen (2009) describes, "In the modern world, investors assume that they can go to www.company.com to research a current or potential investment." This is very important; especially for private investors; as they might not have the same access to resources as institutional investors (Esterhuyse & Wingard, 2016).

From the above, one can note that the disclosure of financial information on the internet and company websites, can be used to the benefit of companies. The question that this research will try to answer is: Why are there differences in the extent of reporting on the internet amongst companies? We assume that there are reasons or determinants which can explain these differences. This study has attempted to empirically identify whether certain organisational factors have an

impact on the amount and presentation of information for investors, as disclosed on a company's website (Ashbaugh, Johnstone, & Warfield, 1999; Barac, 2004; Craven & Marston, 1999; Debreceny et al., 2002; Desoky, 2009; Esterhuyse & Wingard, 2016; Ismail, 2002; Oyelere et al., 2003; Xiao, Yang, & Chow, 2004). This study will provide evidence of what organisational factors explain the differences in the extent of internet reporting among companies listed on the JSE. The research statement of this study is thus defined as, 'The determinants of internet financial reporting: a study of 80 companies listed on the JSE.'

1.3 Contribution and significance of the research

Internet-based reporting is growing to further heights, however various studies have shown how this medium is rapidly being used by companies in different countries (Barac, 2004; El-Masry., 2008; Kelton & Yang, 2008; Oyelere et al., 2003; Uyar, 2011). This practice is expected to grow to such an extent that in the near future, no company will be printing hard copies of their annual financial statements but rather all information will be found primarily on the internet through corporate websites (Lymer, 1999).

This study will contribute to the existing literature on internet financial reporting in several ways. No recent studies have been done in a South African context, that look at the determinants of the amount and presentation of information for investors, as disclosed on a company's website. Prior studies done by Barac (2004), Stainbank (2000) and Venter (2002), have all looked at the websites of South African companies to understand the type of information that is presented (i.e. full printed annual financial statements in html or Adobe protected document format-PDF, or summarised financial information) and presentation tools that are available on the selected platform (Barac, 2004; Stainbank, 2000; Venter, 2002). This study will contribute to previous research by first looking at the amount and presentation of information on the corporate websites and then using certain organisational factors as independent variables to gather information on whether these organisational factors have any impact on the disclosure of information on the individual websites. Thus, this research will try to achieve an understanding of the determinants of internet financial reporting in a South African context

according to similar research done in Germany, China and New Zealand (Marston & Polei, 2004; Oyelere et al., 2003; Xiao et al., 2004).

Secondly, as firms' internet usage is constantly evolving, changes in the internet financial reporting environment warrant continual examination (Kelton & Yang, 2008). This information is exemplified by the prior research done in South Africa. Stainbank (2000) found that thirty-eight percent of Johannesburg Stock Exchange (JSE) listed companies had no corporate websites[1]. Later, Venter (2002) showed eighty-five percent of the top 100 companies had websites. This then went up to eighty-seven percent in the Barac (2004). Over the years, many companies would have delisted, merged or would have changed their use of the internet platform and therefore it is important to conduct a study at present in order to investigate the current state of internet financial reporting in South Africa. The usage of the internet in South Africa is rapidly increasing[2], and this would trigger companies to start disclosing more information on their websites (World Wide Worx, 2012). This can also be seen through the research performed by the World Economic Forum over the years which showcases the increase in the users of the internet in South Africa from a mere 7,8 per cent in 2008 (World Economic Forum, 2009) to 21 per cent in 2012 (World Economic Forum, 2012) and to 51,9 per cent in 2016 (World Economic Forum, 2016).

Since South Africa is a member of the BRICS development group it is open to a wider investor base from around the world. South Africa benefits from being a member of BRICS through the flow of direct foreign investment, increased trade among the member countries and allowing foreign multinationals to invest directly in South Africa, while at the same time allowing South African companies to tap into the markets of the other member countries (Provincial Treasury, 2013). South Africa has already benefitted, through the BRICS, by increasing the trade balance between the countries and also acting as the gateway to Africa by increasing the BRICS-Africa trade network (Nkoana-Mashabane, 2013). These international investors would look at the websites of companies to consider their investing options around the world. It is thus of utmost importance to look into the status of

[1] This study was based on the top 100 companies listed on the JSE.

[2] In a study done in 2012 in South Africa it was found that internet broadband subscriptions grew by 128% to 8.2 million and 3G subscriptions grew by 140% to 6.7 million

internet reporting in South Africa to ensure that it is up to international standards and will attract international investors. From the 2016 Global competiveness report, it was noted that out of 138 countries, South Africa was ranked first for strength of auditing and reporting standards, protection of minority shareholders' interests and also financing through local equity market. (World Economic Forum, 2016) It was also ranked third for regulation of securities exchanges (World Economic Forum, 2016).

As we can see from the above report, South African accounting and auditing standards are at a world class level, and this would create a good setting for this study to investigate whether our reporting on the internet is of an equally high standard. If not, then we need to consider whether some standards or regulations for reporting on the internet need to be implemented in order to improve the quality of internet reporting. Therefore, it is a key moment in time to conduct such a study in South Africa to shed light on the determinants of internet financial reporting. The purpose of this study is to investigate what organisational factors impact a company's willingness to voluntarily disclose their information to the general public via the internet platform. This shall be achieved by investigating the corporate websites of 80 companies listed on the JSE to find evidence of the determinants of internet reporting.

1.4 Limitations and delimitations of the study

This research study uses a sample of 80 companies and will not try to infer the results upon all the companies listed on the JSE but will attempt to evaluate the determinants of internet reporting in the sample space. A key limitation of this study is that the checklist will be scoring the website for quantity of information. Meaning that if the individual item is present it will be given a score of one, and if not present; a zero score. Therefore, this research will in no way measure the quality of information presented on the website. This approach is justified by the aim of this research, to find correlations between the amount of disclosure and company characteristics. The quality of the disclosed information could be considered for future research.

Another limitation of this research is that the checklists for the various websites were only completed once and were not verified by a second person. No secondary review has been done on the evaluation of the websites. The reason for this is that websites are dynamic in nature and the content displayed can change almost instantly, thus potentially altering the results obtained in a second assessment. The limitation is further justified as the study is intended to give results for a point in time rather than over a period of time.

1.5 Chapter layout

This research study is set out as follows. Chapter two will begin by explaining voluntary disclosure and, through an analysis of prior literature, the chapter will introduce the various hypotheses to be tested in this research. Chapter three will describe the research method employed in conducting the research including the techniques used to analyse the correlations of the various variables. Chapter four will analyse the results of the research conducted. Chapter five will conclude the study and include areas for future research.

2. Literature Review

This section is subdivided into three parts. Firstly, the report will provide a brief discussion on the need for voluntary disclosure and how company websites can assist with those disclosures. Secondly, a brief overview of the academic literature on internet financial reporting will be presented. Finally, by overview of the previous research on the topic, the individual hypotheses for the research at hand will be presented and discussed.

2.1 Disclosure

As per the Oxford dictionary, the definition of the word 'disclosure' is 'the action of making new or secret information known' (Oxford, 2017). If we consider this from a financial perspective, then as per the Investopedia, 'disclosure is the act of releasing all relevant information pertaining to a company that may influence an investment decision' (Investopedia, 2017). Corporate reporting disclosure requirements have increased significantly since the 1970's (Craven & Marston, 1999). Disclosure can be divided into two broad categories: mandatory disclosure and voluntary disclosure (Craven & Marston, 1999). Mandatory disclosure is that which has been defined above and voluntary disclosure is "information primarily outside of the financial statements that are not explicitly required by accounting rules or standards" (FASB, 2000b).

The main reason for financial reporting is to provide relevant information to the users of financial statements to enable them to make informed investment and credit decisions (Ernst & Young LLP, 2014). However, in the past few years there has been a general dissatisfaction with mandatory financial reporting which has led investors, financial markets and other key stakeholders to demand that companies voluntarily provide more comprehensive information about their long-term strategies and performance (Boesso & Kumar, 2007; Oyelere et al., 2003). The research carried out by one of the big four auditors; Ernst & Young LLP (2014) in the United Kingdom, came to a conclusion that there is indeed a disclosure problem which all stakeholders; including but not limited to investors, regulators and companies; need to address together in order to promote the

communication of material information more effectively. There is an argument which suggests that traditional financial reporting is now inadequate to meet the information needs of stakeholders (Bozzolan, Favotto, & Ricceri, 2003). One means by which this may be remedied is by the use of technology. Technology can be used to deliver information more efficiently through the use of company websites (Ernst & Young LLP, 2014).

From the above, we can deduce that there is a need for voluntary disclosure and that a company website might be the ideal platform for these disclosures. The benefits of voluntary disclosure include a lower cost of capital, enhanced credibility and improved investor relations, access to more liquid markets and less danger of litigation alleging inadequate informative disclosure (FASB, 2000b). At the same time, the larger economy benefits from more effective allocation of capital, the investment effect of lower cost of capitals in the market and more liquid capital markets (FASB, 2000b). The usage of company websites also introduces benefits such as: distribution of information to a large audience at a fairly low cost and in a short time span and fewer restriction on the size and form of the disclosures by making use of audio and video content (Matherly & Burton, 2005).

2.2 Internet Financial Reporting

Internet financial reporting may be viewed as a component of company voluntary disclosure practices (Oyelere et al., 2003). Over the past few years there has been a considerable amount of research done in the fields of web reporting and financial reporting on a company's corporate website (El-Masry., 2008; Kelton & Yang, 2008; Lymer, 1999; Marston & Polei, 2004; Pirchegger & Wagenhofer, 1999; Xiao et al., 2004).

The research in this field can be divided into two main categories (Desoky, 2009). This first includes studies which are mainly descriptive. These studies give a general overview of the current state of corporate reporting on the internet (Marston & Polei, 2004). These studies may focus on one country or may compare reporting across different countries through analysing the corporate websites of the firms. The second category is more explanatory as it tries to explain and identify factors which are correlated with the differences in voluntary reporting between individual corporate websites (Marston & Polei, 2004). The latter tries to

recognise factors, such as company characteristics, which might drive the evident differences amongst companies (Desoky, 2009).

2.2.1 Descriptive Research

This type of research was done in the years of the advent of internet reporting. These types of studies looked at a sample of companies and surveyed or studied their websites. They concluded descriptively on how many companies had corporate websites, what type of reporting was present and which technological tools available at the time, had been used on the website. This would allow users to analyse the financial data more easily as compared to the printed financial information.

One of the earliest studies, conducted by Petravick and Gillett (1996), looked at 150 Fortune 500 companies and found that 69 percent had a website and 81 percent had a home page with some sort of financial information available. Lymer (1999) surveyed the top UK companies by market capitalisation and found that 92% had websites. The study noted that banking/financial services and insurance companies generally gave very limited accounting information while retail and pharmaceutical companies gave relatively better financial reporting information. Another early study was carried out in Spain, by Gowthorpe and Amat (1999), where it was found that sixteen percent of the 379 companies listed on the Madrid Stock Exchange had websites, of which only nine percent disclosed certain financial information.

Pirchegger and Wagenhofer (1999) were amongst the first to perform a comprehensive study. They performed a survey of the homepages of Austrian companies with a detailed checklist. The criteria in the checklist covered four main areas, i.e. content, timeliness, technology and user support. Using these criteria as a yardstick, they gave the website a score and performed this study over the years for the same companies to get an indication of the development of internet financial reporting (Pirchegger & Wagenhofer, 1999). Through this study, it was found that the scores differed greatly for the different companies as well as over the monitored time period. Overall, their research showed that most companies improved their scores over the two years. Using the same criteria, they tried to

score the websites of 30 German DAX (Deutscher Aktienindex - German stock index) companies. The mean score for the German companies was 68.4 compared to 64.8 for the Austrian Companies, thus showing that on average the usage of internet in the two countries was similar. Contrastingly, in comparing the variances of the scores between the two countries, the Austrian variance was 200 compared to the German being only 83.2, showcasing that the first one had a wide variation and the latter had more homogenous scores (Pirchegger & Wagenhofer, 1999). Ettredge et al. (2001) performed a similar study and looked at firms across different industries and quantified the financial information presented on the websites. They looked into the frequency of data items, they found that for financial data, the most common accounting items were quarterly reports (54%) and the least common item was recent accounting data such as monthly sales (3%). In non-accounting items, the most frequent finding on the websites was financial news.

Focusing on South Africa, Venter (2002) conducted similar research and found that the JSE listed companies were not lagging behind on internet reporting when compared with their international counterparts. Barac (2004) concluded in her research however, that South Africa had not reached the stage where users can download information and mould it into different forms for useful decision making. She found that the companies were not taking full advantage of the latest technological possibilities.

2.2.2 Correlational research

The studies described previously provided mainly an overview of the current use of the internet for online reporting, however they did not provide reasons for the differences in the quantity of information presented on the websites. There is another field of research in the area which looks at the causal effect of the reporting and what the reasons are for companies to disclose the information voluntarily on their websites.

These studies took the website scores achieved by each company as the dependent variable and selected certain organisational factors as the independent variable to test if they do in fact correlate; and whether a change in the

independent variable had an effect on the dependent variable (Internet Financial reporting score).

Ashbaugh et al. (1999) used a sample of 290 firms and found that 87% had websites. The study tested four independent variables to see whether there was any correlation with the website disclosure. The study tested the company size, profitability, percentage of shares held by individual investors and the Association for Investment Management and Research assessment of the traditional reporting practices of the firms. A regression analysis revealed that only firm size had a significant effect on corporate internet reporting.

Xiao et al. (2004) performed a similar study in a Chinese context. Here, independent variables such as proportion of government agency ownership and state-owned company ownership were tested. Other investigated variables were: independent directors on the board, type of Auditor ('big 4' or not); and proportion of foreign ownership. The study also tested the hypothesis that companies in the IT (information technology) industry were more likely to make voluntary disclosures. From the results, they found a number of significant correlations between the dependent (internet reporting score) and independent variables. The univariate analysis showed that the size of the firm, proportion of independent directors, use of services of a big four auditor and the company being in the IT industry had a positive correlation with the reporting on the corporate website. They also found a high negative correlation between the internet reporting and the proportion of the company owned by a state-owned company (Xiao et al., 2004).

A similar study was performed by Debreceny et al. (2002) on a larger scale of 660 large companies across 22 countries. This study looked at the company and environmental characteristics which can explain the internet financial reporting of the company focussing on presentation and content. The results revealed that firm size, listing on the US stock exchange and level of technology were company-specific determinants of internet financial reporting. The overall disclosure environment of a country was found to be an important environmental driver for the presentation of internet financial reporting but did not display as strong a correlation for the content of internet financial reporting (Debreceny et al., 2002).

A more recent study done by Kelton and Yang (2008), for companies on the NASDAQ (American Stock Exchange), extended the prior research by considering corporate governance as a determinant of internet financial reporting. This was done by testing certain independent variables which are factors of sound corporate governance. Hypotheses such as block ownership, proportion of independent directors, CEO duality (one individual being both the chairman and CEO), audit committee financial expertise and audit committee meeting frequency were tested as independent variables against an internet reporting score. The results proved that firms with weak shareholder rights; high percentages of independent directors and diligent audit committees had a positive correlation with internet disclosures. Audit committee frequency was shown to be important, but was found to relate to firm size rather than internet disclosures.

From the above review of existing literature, one can see that the use of the internet as a platform for financial disclosure has been increasing. Although as deduced from various studies, this type of disclosure varies between countries. However, from the correlational research results, certain company specific factors appear to be positively related to the level of online reporting of a company. The results of this prior research provide a motivation for this study as such correlational research on companies listed on the JSE in South Africa seems rather limited. To the researcher's knowledge, no such research has been conducted in a South African context. Therefore, this study will investigate the determinants of internet financial reporting considering a wider range of possible explanatory variables for JSE listed companies.

The next section will cover the hypotheses to be proven in the study, as well as the related literature.

2.3. Hypotheses and theoretical background

Internet financial reporting is, in essence, an aspect of voluntary disclosure. There are two theories which fundamentally describe voluntary disclosure. The first being agency theory and the latter being signalling theory. Agency theory is concerned with the fact that ownership of the firm lies with a certain party (shareholders) while a different party (management) has control over the firm and its day-to-day

operations. If managers do not act in the benefit of their shareholders and rather consider their own interests, then agency costs arise. These costs might drop the value of the firm and increase monitoring costs to supervise the management (Marston & Polei, 2004). Therefore, it is suggested that in order to minimise those costs, firms will seek to rather increase their voluntary disclosure and communicate the results of their stewardship actions to the shareholders (Esterhuyse & Wingard, 2016). As listed companies these days are fairly large, it is hard for shareholders to track the day-to-day management of the company. As a result, these shareholders lack detailed knowledge of the company's operations, strategies, markets and finances. This leads to information asymmetry, where one party has access to more or better information than the other party (Esterhuyse & Wingard, 2016). The cost of information asymmetry is explained very well by Akerlof (1970), where it is said that in the securities market, the under-informed party (prospective investor) would only be willing to pay a lower price for security purposes, to ensure that they minimise potential losses in the future when they dispose of their share. This discount between the optimal price (the price that could be achieved in the capital market between two fully-informed parties) and what the under-informed investor is willing to pay is referred to as the cost of information asymmetry (Akerlof, 1970; Esterhuyse & Wingard, 2016).

To decrease the cost of information asymmetry, Spence (1973) suggests that if the better-informed party (management) incurs signalling costs by voluntarily communicating more information to the under-informed parties (current and prospective investors), the increased signalling will allow the under-informed parties to make better informed decisions. They are willing to pay a higher price for the security as they have more information at their disposal for making decisions. This brings forward the theory of signalling. This theory suggests that higher quality firms would always try to distinguish themselves from lower quality firms which might have experienced poor performance (Morris, 1987). Therefore, voluntary disclosure is one way for such a firm to stand out. This is intended to send a positive signal to investors in the capital market. This signal suggests that the firm has a good future, it is not hiding anything and hence the perceived benefit might lead to higher share prices. The reason being that by decreasing

investor uncertainty, the company can reduce their cost of capital (Esterhuyse & Wingard, 2016).

These theories explain voluntary disclosure, and Esterhuyse and Wingard (2016) believe that a company's website could be used to signal additional voluntary information to the capital markets. In line with the above, this research suggests that reporting on the internet is an aspect of voluntary disclosure and, therefore, these theories will be used to underlie the following hypotheses to be tested.

2.3.1 Firm Size:

Generally, it is assumed that large firms disclose more information than small ones. Agency theory also suggests that large firms have higher agency costs; large companies tend to have more managers which increases the costs related to monitoring the management team (Watts & Zimmerman, 1978). Singhvi and Desai (1971) and Buzby (1975) suggests three factors that indicate that a company's size is positively correlated to its disclosures. Firstly, the larger the company, the greater the expected range of products and the more complex the distribution networks, resulting in a need for complex information management systems. Consequently, disclosure costs are generally higher for larger firms. Secondly, large firms are more reliant on capital markets for external financing relative to small firms. Thus, large firms can increase the marketability of their securities and obtain cheap capital through the capital market by use of extensive disclosure. Thirdly, small companies are more likely to not disclose extensively as compared to large companies as they are more likely to consider the idea that extensive disclosure might endanger their company's competitive position in the market.

Large firms are generally believed to be more complex to understand. It would, therefore, be more meaningful for them to disclose more voluntarily than their smaller counterparts. Further, Ashbaugh et al. (1999) and Oyelere et al. (2003) suggest that as information production and dissemination on the internet is likely to be related to firm size. As a result, we would expect the benefits of disclosing financial information online to increase with as a function of firm size. Therefore, from the above, the first hypothesis is stated as:

H1: The amount and presentation of information for investors disclosed on a company's website is positively related to its size.

Prior studies have proved this hypothesis to be true. However, the researcher finds it imperative to test this at a South African level and thereby determine any deviations from the results of other foreign studies.

2.3.2 Profitability:

The signalling theory suggests that more profitable firms are incentivised to disclose more information, so as to distinguish themselves from less successful firms or firms in difficulty. This allows them to raise capital at the lowest possible price (Desoky, 2009). The more the information available to investors to make their investment decisions, the greater their expected satisfaction with the company would be, since non-disclosure is perceived to be related to bad news. Additional disclosure is used by managers of profitable firms to signal the firm's profitability to investors, and at the same time to ensure that investors are aware that management is doing a good job, to promote external support of the management team and to improve their compensation (Singhvi & Desai, 1971). Connelly, Certo, Ireland, and Reutzel (2011) put it very directly by saying that "CEOs signal the unobservable quality of their firms to potential investors via the observable quality of their financial statements." Hence, non-disclosure of information has become synonymous with "bad news" by investors and in contrast "good news" firms are encouraged to set themselves apart from other firms by publishing their financial results (Lev & Penman, 1990)

Lang and Lundholm (1993) also suggest that there is a general perception that a company's willingness to disclose information is related to their performance. They state that management will be more forthcoming when the company is performing well, as compared to when it is performing poorly. From the above, it can be noted that as profitability increases, management is more likely to disclose information voluntarily, and disclosing on the web through a website can be a way to achieve voluntary disclosure (Desoky, 2009; Marston & Polei, 2004). This provides the basis for the second hypothesis.

H2: The amount and presentation of information for investors disclosed on a company's website is positively related to its profitability.

The literature provides mixed evidence regarding the association between profitability and internet financial reporting. Certain studies provided a slight negative correlation (Ashbaugh et al., 1999; Ettredge et al., 2001; Marston & Polei, 2004; Oyelere et al., 2003) while other studies provided a positive correlation (Ismail, 2002; Pirchegger & Wagenhofer, 1999). Due to the mixed results from prior literature, the researcher finds it an important characteristic to be tested in a South African context.

2.3.3 Ownership Structure:

Investors who own a small amount of shares in a company are more likely to have less access to information about the firm (Marston & Polei, 2004). Desoky (2009) found that large corporate investors would have some sort of internal methods to extract company profitability information, and hence do not rely solely on published information. Therefore, it can be assumed that smaller investors would place greater reliance on information published on the internet to answer their firm-related questions. Agency theory suggests that potential interest conflicts between management and shareholders are larger in companies with widely held shares. The reason being that investors with small percentages of shares have less power to influence the decisions of management (Marston & Polei, 2004).

Agency theory predicts that managers of companies whose shares are held by a larger amount of shareholders (for example, where the shareholding of the company is diffused and there is less block shareholding) have an incentive to disclose more information to assist shareholders in monitoring their behaviour (Raffournier, 1995). Therefore, voluntary disclosure is more likely in firms with more shareholders. Kelton and Yang (2008) use the term block holder[3]. They make use of a similar notion that when share ownership is less diffused, less monitoring is required. This would mean that the more block holders in a firm there

[3] Block holder refers to entities holding more than 5% of a firm's outstanding shares.

are, the less the voluntary reporting required of the firm. Thus, it is reasonable to expect that companies with a more dispersed ownership of shares will disclose more information on the internet to provide their large pool of shareholders with the necessary information, and companies with more concentrated/block ownership will disclose less information (Desoky, 2009). The third hypothesis is derived as follows:

H3: The amount and presentation of information for investors disclosed on a company's website is negatively related to its percentage of block ownership.
Prior research has shown a significant relationship between internet financial reporting and block ownership (Marston & Polei, 2004; Oyelere et al., 2003; Pirchegger & Wagenhofer, 1999), while some other research claims no significant relationship between them (Ashbaugh et al., 1999).

2.3.4 Systematic Risk:

This is the Beta[4] of a company. It is believed that companies with more risk would be more hesitant to disclose information voluntarily to their investors. On the other hand it could be believed that by increasing information disclosure, investor uncertainty can be reduced, which might lead to a better evaluation of the risk of the company by the market (Marston & Polei, 2004). Here again, agency theory can be applied. As soon as the company issues any form of capital to outsiders, an agency relationship exists, where the holders are the principals and the managers are the agents (Leftwich, Watts, & Zimmerman, 1981). Agency theory details that the agency costs of loan capital depends on the nature of the claims held by the outside party (Ismail, 2002). Leftwich et al. (1981) suggest that if the outside capital has a fixed claim against the company's cash flow (i.e. debt), then larger agency costs would be incurred, since the outsider would be concerned about the return of their fixed claim. In contrast, the agency costs are less when the outsider has a residual claim (i.e. equity). Therefore, the costs will be higher for companies with proportionally more debt in the capital structure (Ismail, 2002; Leftwich et al., 1981). On the contrary it can be brought forward that on the topic of discretionary disclosure, managers tend to act in a self-serving manner

[4] The Beta of a company can be obtained from McGregor.

(Lewellen, Park, & Ro, 1996). Consequently, it is then more likely that risky firms have less incentives to voluntary disclose information on their websites (Marston & Polei, 2004). Hence, it is hypothesised that:

H4: The amount and presentation of information for investors disclosed on a company's website is negatively related to its systematic risk (Beta).

Literature provides contrasting opinions on the correlation of systematic risk and internet reporting. Debreceny et al. (2002) found no support for the above hypothesis, just as Oyelere et al. (2003) and Marston and Polei (2004) did in their respective studies. Ismail (2002), however, did find a correlation between the two variables. From the above we can deduce that the results of previous research are inconclusive. Therefore, the relationship between risk and internet financial reporting will be tested in this study.

2.3.5 Foreign listing Status:

Companies which are dual-listed would need to abide by the rules of both listing exchanges. This would mean more onerous disclosures and hence it is more likely that such companies would be willing to voluntarily disclose more information to their investors (Marston & Polei, 2004). At the same time, such a firm would need to provide vital investing information to the investors in both the markets, who might have differing needs. Dual-listing has its benefits as the firm can raise capital in the market with the lowest costs, sell products and services in the foreign market, and simultaneously, many firms are finding advantages in political, marketing and employee relations (Biddle & Saudagaran, 1991). At the same time, these companies will need to bear the burden of information asymmetries within the two markets (Kang, 1997). Debreceny et al. (2002) state that listing in a foreign exchange market gives rise to geographic and temporal information asymmetry across both markets. To counteract these asymmetries, higher disclosure levels are needed and the internet would provide the best medium to do this as it is a world-wide tool which can be accessed and utilised from any part of the globe (Marston & Polei, 2004). This discussion leads to the following hypothesis:

H5: A company which is listed on an international stock exchange disseminates more and better presented information for investors on its website than a firm only listed on the JSE.

The literature provides varying opinions around this hypothesis. Certain studies found a positive relation between companies with a foreign listing and internet financial reporting (Xiao et al., 2004). Whilst certain studies found a negative correlation amongst the two (Marston & Polei, 2004). Debreceny et al. (2002) found that US listing is positively correlated with internet financial reporting and foreign listing is negatively correlated. In contrast Oyelere et al. (2003) found no association between the two variables for 229 companies in New Zealand. Due to the mixed results, the researcher finds it relevant that this hypothesis is tested at a local South African level in order to understand whether foreign listing has any impact on the internet disclosure of South African Companies listed on the JSE.

2.3.6 Socially Responsible Investment Index (SRI):

Kelton and Yang (2008) considered the impact of corporate governance on the extent of internet financial reporting. They concluded in their study that governance, to a certain extent, can explain the extent of internet reporting. However, they were aided by the fact that they had a corporate governance index in the United States from the IRRC dataset. The closest index we can get in South Africa is the JSE Socially Responsible Investment index which covers governance principles amongst other factors (JSE Limited, 2014b). The principles of this index are founded in the triple bottom line which consists of environmental, social and economic sustainability (JSE Limited, 2014b). The SRI index is evaluated by assessing entities listed on the JSE against the measurement criteria of environmental, social, governmental and related sustainability concerns and finally considers certain climate change related factors (JSE Limited, 2014a, 2014b). Once evaluated, companies are rated as being either a non-member, a normal member or a best performer of the SRI (JSE Limited, 2014a). The researcher is of the view that a company's best performance SRI rating would imply that the company is committed to making relevant voluntary disclosures in addition to standard financial reports, which cater not only for the investor market, but to the

greater general public. In this case the researcher has the view that there should be a positive correlation between voluntary disclosure and the SRI index[5]. From the above it can be suggested that as a company moves from a non-member to a member and then to a best performer across the SRI index, one would expect higher levels of voluntary disclosure through the internet. A correlation of this sort would be expected since companies that are rated highly on the SRI index are expected to pay more attention to their triple bottom line and to the market's perception of the company. Therefore, the following hypothesis will be tested by the researcher:

H6: The amount and presentation of information for investors disclosed on a company's website is related to its SRI rating.

Using statistical means, the researcher investigates these six hypotheses to investigate whether any of them are determinants of internet financial reporting for the 80 listed companies on the JSE. This chapter detailed prior research in the area and introduced the six independent variables. The chapter began by looking at the initial research in the field, which began with descriptive research and then moved towards the more recent research in the field, which investigated the correlations between internet financial reporting and certain company specific variables. The literature is founded around the agency and signalling theory.

Using these theories, the six hypotheses were formulated. Prior research indicates that the size of the company does have a correlation to internet financial reporting. Whilst the results for the other hypotheses are found to be inconclusive amongst the various research. Prior research has found profitability to have a correlation ranging from positive to negative. Ownership structure was found to have a significant or to a no correlation at all. Systematic risk had a slight to a no correlation and dual listing was found to have a correlation ranging from a negative to a no to a positive correlation amongst the different research. The SRI hypothesis is being tested for the first time, but using a similar index, the prior

[5] While other studies have made use of similar indices, no research has been done to test this particular hypothesis. The researcher is aware that the SRI is not the same as other international governance indicators but would, in an exploratory manner, want to understand if there is a correlation between the SRI Index and internet reporting.

literature has found a positive correlation. Due to the wide-ranging results from previous research each of the above variables have been tested. These independent variables will be used to determine whether they have any impact on the dependent variable, which will be the company's website score. The next chapter details the method used to test the above six hypotheses.

3. Methodology

Having identified the hypotheses to be tested in the previous chapter, this chapter details the methods to be used to test each of the hypotheses. Initially, an overview of the method will be given after which the population and study sample will be discussed. Thereafter the sources of the data will be detailed. This will be followed by the statistical methods to be used to analyse the data. The chapter ends with a discussion around the validity and reliability of the research.

The purpose of this study is to empirically evaluate the determinants of internet financial reporting by testing each hypothesis. This study makes use of a quantitative method under the heading of correlational research. A correlational study examines the extent to which differences in one characteristic or variable are related to differences in one or more other characteristics or variables (Leedy & Ormrod, 2013). A correlation exists if, when one variable increases, another variable either increases or decreases in a somewhat predictable fashion (Leedy & Ormrod, 2013). The six hypotheses stated above have been tested by the researcher to understand whether there is a correlation between a company's internet financial reporting score and that company`s related characteristics in a South African context. This has been achieved through the use of statistical methods such as regression analysis through univariate and multi-variate analysis.

This section outlines the method that was used to test the six hypotheses, beginning with an overview of the method and then discussing the selected sample. We will thereafter look at the different sources of the data collected and then detail the statistical means used to analyse the data.

3.1 Overview of method:

Initially the researcher collected the relevant data to test each of the independent variables (i.e. the firm's size, profitability, ownership structure, systematic risk, foreign listing status and SRI). Once the explanatory variables were captured, the dependent variable were calculated using a detailed checklist by analysing the websites of each of the firms in the study. Using the checklist each website was given a score for its internet financial reporting. For each item on the checklist, the

website received a one score if the item was present and a zero if it was not present. Thereafter, statistical tools were used to measure whether changes in each independent variable could explain the changes in the dependent variable.

3.2 Population and study sample

Initially, in their study, Marston and Polei (2004) considered the DAX 100 companies listed on the Frankfurt stock exchange. Their study was designed to investigate whether each firm had a corporate website or not and whether or not they disclosed financial information. Thereafter, the initial sample was reduced by them choosing to only consider the top 25 and bottom 25 companies by market capitalisation. Similarly Desoky (2009) sampled 88 companies from the Egyptian Exchange. On average there are around 400 companies listed on the JSE, with the top 40 counting for eighty percent of the total market capitalisation of the exchange (Courtney Capital, 2013). The researcher is of the view that in order to perform a study of JSE Listed companies, 80 companies will give a reasonable indication of the entire sphere of companies listed on the exchange since this number of companies covers 20 percent of the companies listed on the JSE. It is expected of companies listed on the JSE to have corporate websites, thus making them an appropriate sample to survey.

However, it would be inappropriate to select the top 80 companies on the JSE as a sample of only the large and top performing firms would not provide a full view of the South African environment. As the hypotheses in this study are focused on investigating variables such as company size and profitability, it would be more appropriate to include a diverse range of JSE listed companies. The reason being that the researcher would like to get an idea of internet financial reporting in South Africa as a whole, and therefore surveying only the largest listed companies would skew the results. Therefore, in order to obtain an overview of the entire market, 80 companies were selected across the JSE. Thus the total sample in this study is 80 companies which comprises of the top 20 companies per market capitalisation in each hundred intervals for the companies on the JSE (i.e. companies in positions 1-20, 101-120, 201-220 and 301-320 on the JSE per market capitalisation). Esterhuyse and Wingard (2016) also selected a sample by making use of a list of

companies on the JSE, ranked in terms of market capitalisation. Appendix A details the companies surveyed in this study.

3.3 Sources of data

A comprehensive list was developed by Pirchegger and Wagenhofer (1999) to evaluate the corporate websites of firms. This checklist was adjusted per need and used by (Debreceny et al., 2002; Kelton & Yang, 2008; Marston & Polei, 2004; Xiao et al., 2004). The disclosure checklist was carefully made considering the two principles of content and presentation as per FASB (2000a). The researcher then adjusted the checklist used by Marston and Polei (2004) for use in the South African context. Their study had 71 items on the checklist but the researcher excluded the item that was looking for an English homepage. This was excluded as the researcher is of the opinion that all of the websites in South Africa would have, at least, an option to display the text in English. The reason being that English is generally understood across the country and is the language of business, politics and the media (Brand South Africa, 2015). It is regarded as the country's *lingua franca* (Brand South Africa, 2015).

To keep up with current times, the researcher has also adapted the checklist by adding in two new items. The items are to consider if the company has any presence on a social networking website and if they have an investor application for smart phones. Appendix B provides the comprehensive checklist that was used by the researcher which consists of 72 items by which to evaluate each website. Therefore, a company website could receive a maximum of 72 points. Refer to table one below which outlines how the points were allocated on the checklist.

TABLE 1 BREAKDOWN OF CHECKLIST PER ALLOCATED POINTS FOR EACH SECTION

Criteria	Allocated points
Content	**44**
Investor-related information: accounting and financial information	16
Investor-related information: Corporate governance information	14
Timeliness of information	5
Social responsibility disclosures	5
Contact details and other information	4
Presentation	**28**
Technological features	10
Convenience and usability of web site: Navigation support	6
Convenience and usability of web site: Contact and information supply services	5
Convenience and usability of web site: Structure	7
Total Internet financial reporting score	**72**

For each item on the checklist, a score of one was given if it is present and a score of zero was given if it was not present. After thoroughly investigating each website, the scores were summed up for all the items on the checklist to get a final internet financial reporting score for the company which was used as the dependant variable in this study. To complete the checklist, the websites for each company were visited and examined in detail. As company websites are dynamic, the objective was to collect all data required from all the websites within a short time period (November 2014). A standard web browser, Google chrome, was used for the purpose of data collection. Companies were searched for by name through either the popular search browser 'Google' or through the JSE website[6]

As discussed earlier, six independent variables were considered in this study. The values for these were collected and captured. Market capitalisation for each

[6] https://www.jse.co.za/current-companies/companies-and-financial-instruments

company was captured from 'Sharenet'[7] while other indicators such as return on equity, Percentage block ownership and BETA were collected from 'MeGregor BFA'[8]. Dual listing status was collected from the company`s general information on each respective website and the SRI ratings were collected from the JSE 2013 ratings as were available at the time on the JSE`s website[9]. Please refer to table 2 below which showcases the measurement basis for each of the six independent variables.

TABLE 2: MEASUREMENT BASIS OF INDEPENDENT VARIABLES

Independent Variable	Measurement Basis
Firm size	Based on market capitalisation
Profitability	Based on return on equity (as a percentage)
Percentage of block holding	Percentage of company shares held by investors with greater than 5% individual holding
Systematic risk (BETA)	Beta of company as found on McGregor. A 5-year BETA was used.
Foreign Listing Status	Based on a dummy variable – Boolean indicator. One if company is dual-listed and zero if only JSE listed
Socially Responsible Investment Index	Based on SRI given by JSE (in the categories of non-member, normal member and best performer)

Initially all data capturing was done using Microsoft Excel 2013 and thereafter, in the analyses stage, the data was imported into a statistical program with the help of a statistician. Statistical Package for the Social Sciences (SPSS), as explained in Appendix B of Leedy and Ormrod (2013), was used to perform the required statistical analyses.

[7] sharenet.co.za
[8] research.mcgregorbfa.com
[9] www.jse.co.za

3.4 Data Analysis:

Once all the data had been captured, a scanning analytic was done to the internet reporting scores of each website to investigate any trends or abnormalities across the different firms and the disclosures on their websites. This is similar to the earlier descriptive research done by Venter (2002) and (Barac, 2004). This was done so as to obtain a high-level understanding of the data and a feel of the current internet financial reporting circumstances in South Africa.

Thereafter, descriptive statistics was carried out for the independent variables. This inherently includes the mean, median and standard deviation. This was done for the continuous variables. One of the hypotheses is a categorical variable (foreign listing status), so the Boolean indicator of one or zero will be used. For this variable, we can further split the data into companies which are dual-listed and those that are not. In the same way, for SRI rating, the variable was split into the three categories of non-member, member and best performer.

3.4.1 Univariate Analysis:

To first understand whether there are any correlations between the variables or not, a Pearson correlation was calculated for each of the continuous independent variables. Marston and Polei (2004) also considered the Spearman's rho in order to consider the correlation at both a parametric and non-parametric level. A Pearson correlation or Spearman correlation is used when one wants to explore the strength of the relationship between two continuous variables (Pallant, 2013), making it ideal in this situation. A positive correlation indicates that as one variable increases, so does the other, and a negative correlation indicates that as one variable increases, the other decreases (Pallant, 2013). This indicates the direction and strength of the relationship. For the nominal data, the researcher used the Kruskal Willis test which is an extension of the Mann-Whitney U used by Marston and Polei (2004) to ascertain any correlation amongst the nominal variables (i.e. foreign listing and SRI rating). Once the initial univariate analysis is

done, a further multivariate analysis will be done to verify the results of the former analysis.

3.4.2 Multivariate Analysis:

The next step was to investigate if there are any multiple correlations between the independent variables and the dependent variable. This was done by testing a multiple regression analysis equation as follows:

$$Y = \beta_0 + X_1\beta_1 + X_2\beta_2 + X_3\beta_3 + X_4\beta_4 + X_5\beta_5 + X_6\beta_6$$

Where Y is the total score received by the firm's website. X_1 represented the firm size, X_2 the profitability, X_3 the percentage of block holders, X_4 the systematic risk of the firm, X_5 the foreign listing status and X_6 the SRI index score for the firm. This equation was adapted from the equation used in the study by Marston and Polei (2004). This regression analysis was adjusted once the initial results for the univariate analysis had been found.

3.5 Validity and Reliability:

Any research study that makes use of statistical means needs to consider the effects of validity and reliability on the correlations calculated (Leedy & Ormrod, 2013). The checklist had been used repeatedly in different studies which indicates that the checklist has been tried and tested and is a suitable method of surveying the data and actually measures the standard of internet reporting of a company. This research has been performed previously in other countries and is therefore a replicated study. This study replicates a method employed by Marston and Polei (2004) in a similar study which focused on German listed companies. This assists with the fact that the research method has been tried and tested. Replication of a study improves the reliability of a study (Neuman, 2002). At the same time this research is still unique in the sense that it is being carried out for the first time in a South African context.

As discussed earlier, one of the limitations of this study would be that only one individual assessed all the websites and no secondary review was done. In this context it is important for objectivity and integrity to be maintained throughout the

data capturing period. In a quantitative study like this objectivity and integrity are achieved by minimising the researcher's subjectivity in the study (Neuman, 2002). In this study this was achieved by using a clear checklist which allowed for minimal subjectivity. For example, if the item was present a one score would be given and if not a zero was awarded, no subjectivity was required by the researcher. At the same time the use of only one person to capture the data was ideal for reliability purposes as the data set was maintained by only one person. Therefore, ruling out variations in the assessment of the corporate website on contentious considerations.

4. Results and Discussion

This section outlines the results of the statistical tests performed. First a look at the descriptive statistics and then detailed analyses of the univariate and multi-variate tests have been discussed thereafter.

4.1 Descriptive statistics

4.1.1 The sample

The sample consisted of 80 companies listed on the JSE of which the researcher considered the top 20 at intervals of a hundred. Data collection took place over October and November 2014. Of the 80 companies in the sample, one was suspended from the JSE and another company's website was under construction at the time of capturing the data. As a result, a total of 78 companies were studied as can be seen in table 3 below. Per the table it can be seen that the two companies excluded, both came from the last interval.

TABLE 3: SAMPLE STATISTICS

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	COMPANIES 1 to 20	20	25.6	25.6	25.6
	COMPANIES 101 to120	20	25.6	25.6	51.3
	COMPANIES 201 to 220	20	25.6	25.6	76.9
	COMPANIES 301 to 320	18	23.1	23.1	100.0
	Total	78	100.0	100.0	

4.1.2 Independent Variables

In this study, there are six hypotheses being tested. Each of the hypotheses has a variable which we consider as an independent variable for this study. Table 4 below, shows the descriptive statistics for the continuous variables. The standard deviation for the market capitalisation was large; this shows that the sample has a wide range of small and large companies which is beneficial for the study as one of the factors under consideration is the size of the company. The profitability of 76 companies was sampled due to two companies not providing a return on equity at the time of capturing the data. The ownership structure shows a considerable

range of block holders, from 0% to 91% block ownership within the companies. This shows that the sample is broad and representative of the diverse population.

TABLE 4: INDEPENDENT VARIABLES DESCRIPTIVE STATISTICS

	N	Minimum	Maximum	Mean	Std. Deviation
Market Capitalisation	78	68373542	1305628768798	102506107418.40	238088391143.047
Profitability_ROE_Percent	76	-451.640	1050.790	15.67592	133.486926
Ownership Structure	78	.00	91.30	35.7758	25.96003
Systematic Risk	78	-1.0985	3.5514	.498428	.7247909
Valid N (listwise)	76				

When we consider the dichotomous variable of whether the company is foreign listed or not, we gather from the sample that 20 companies (26%) are dual listed and 58 companies (74%) are listed solely on the JSE as can be seen in figure one below. It is also interesting to gather that of these 20 dual listed companies in the sample, 50% are from the top 20 companies on the JSE.

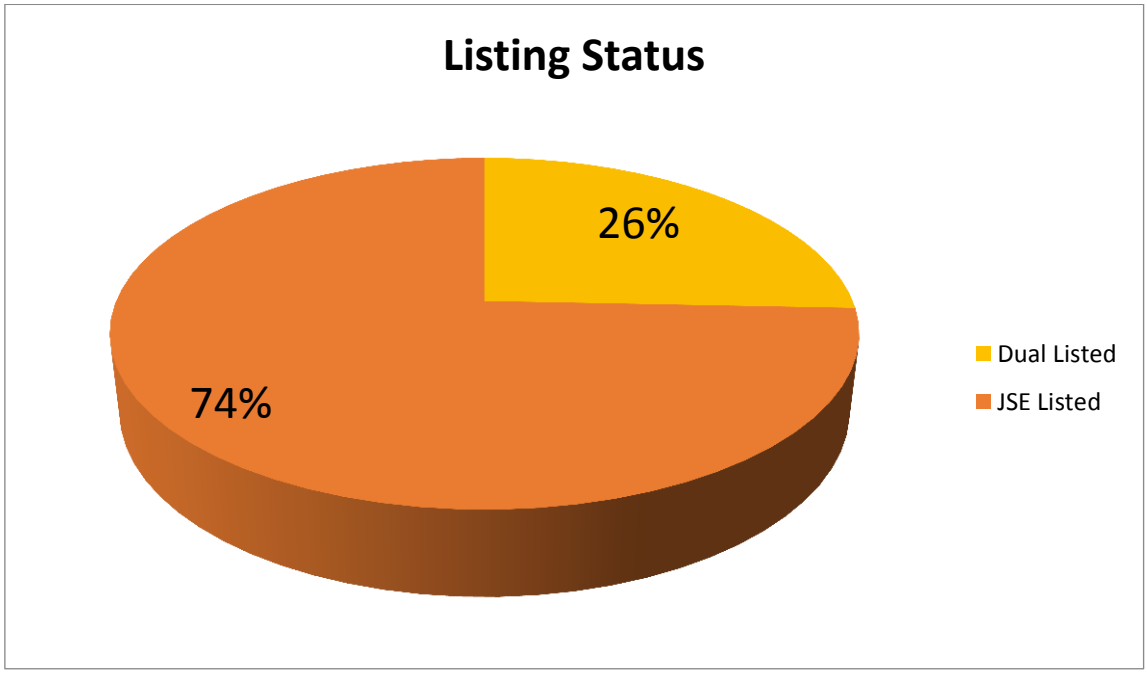

FIGURE 1: GRAPH DEPICTING THE LISTING STATUS OF THE SAMPLE

The graph below (Figure 2) shows that of the 20 dual listed companies, 10 are from the top 20 companies and 4 from companies 101-120, with the remaining 6 split 3 each between companies 201-220 and 301-320 respectively. Of the 58 companies which are only JSE listed, the majority come from companies 201-220. The companies 1-20 are equally distributed between dual listed and JSE listed.

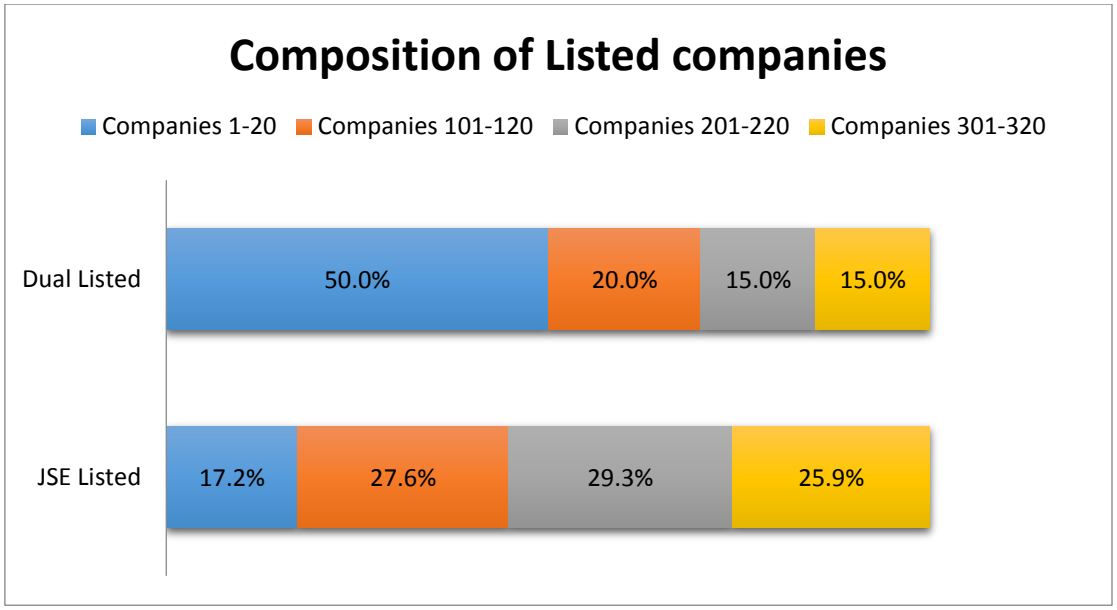

FIGURE 2: GRAPH DEPICTING THE COMPOSITION OF THE LISTED COMPANIES

The last independent variable was the SRI Index of which companies could either be a non-member, normal member or a best performer. A non-member is a company which does not meet the measurement criteria of the JSE for the index and is therefore not included in the SRI. Per figure 3 below, almost three-quarters of the companies in the sample are non-members. Of the 78 companies surveyed, only 4 (5.1%) are best performers and 16 (20.5%) others are normal members.

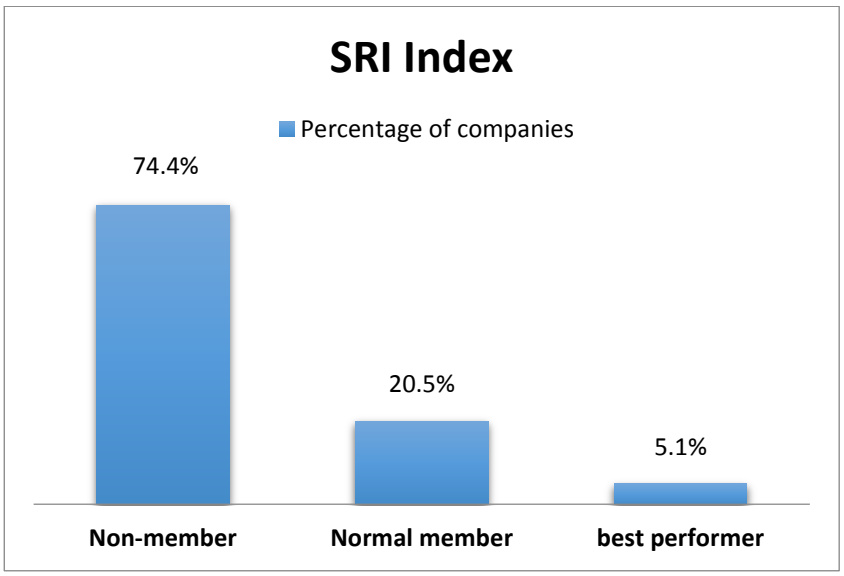

FIGURE 3: GRAPH DEPICTING THE SPREAD OF THE SAMPLE ACROSS THE SRI INDICES

As per figure 4 below, we can see that all the best performers come from companies 1-20 and as the market capitalisation ranking drops, the number of normal members' decreases and the number of non-members increases. All the companies in the range 301-320 are non-members and for companies 201-220, only one (5%) company is a member with the remaining 19 (95%) being non-members.

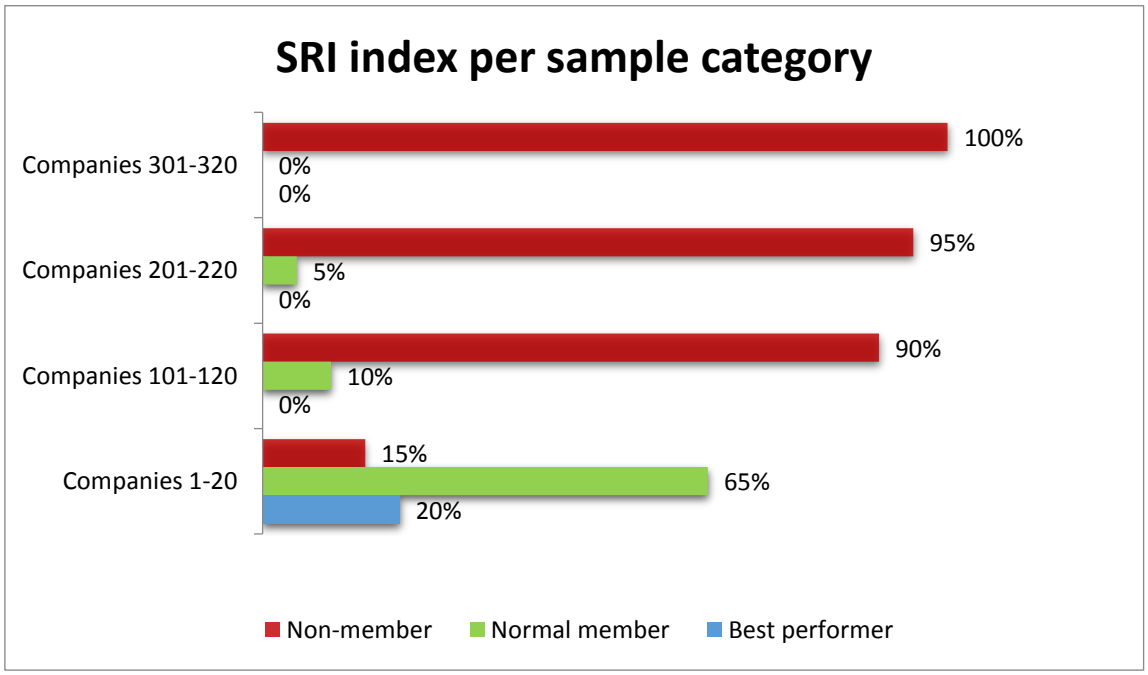

FIGURE 4: GRAPH DEPICTING THE SRI INDICES PER EACH CATEGORY OF THE SAMPLE

4.1.3. Dependent Variables

The dependent variable in this study is the website score for each company. The total website score was out of 72, which comprised 44 points given for content and 28 points for presentation. As per table 5 below, we can see that the average total website score was 39, with the highest score being 58 and the lowest score being 21. The average content score was 26.5 and the average presentation score was 12.5.

TABLE 5: DESCRIPTIVE STATISTICS FOR INDEPENDENT VARIABLE

	N	Minimum	Maximum	Mean	Std. Deviation
Content_Score_44	78	15.0	39.0	26.551	6.3790
Presentation_Score_28	78	4.0	21.0	12.513	4.2111
Total_Website_Score_72	78	21.0	58.0	39.064	9.8222
Valid N (listwise)	78				

To consider what type of statistical tests could be performed on the data; tests of normality were conducted to understand whether the data was normally distributed. The Kolmogorov-Smirnov and the Shapiro-Wilk tests were applied. It was found that the content score and the total score deviated from normality (see table 6 below). However, the deviation is not too severe as can be seen in figure 5 below and therefore the data could be applicable for robust parametric testing. Figure 5 showcases histograms and normal plots for the dependent variable. The dependent variable is split into three smaller variables such as content score, presentation score and total website score. The histograms show that the data aligns slightly with a normal distribution, however it is more evident with the normal plots where it can be seen that the data aligns closely with a straight line.

TABLE 6: TEST OF NORMALITY FOR DEPENDENT VARIABLES

Tests of Normality

	Kolmogorov-Smirnov[a]			Shapiro-Wilk		
	Statistic	df	Sig.	Statistic	df	Sig.
Content_Score_44	.130	78	.002	.953	78	.006
Presentation_Score_28	.089	78	.200*	.976	78	.151
Total_Website_Score_72	.103	78	.039	.964	78	.025

*. This is a lower bound of the true significance.

a. Lilliefors Significance Correction

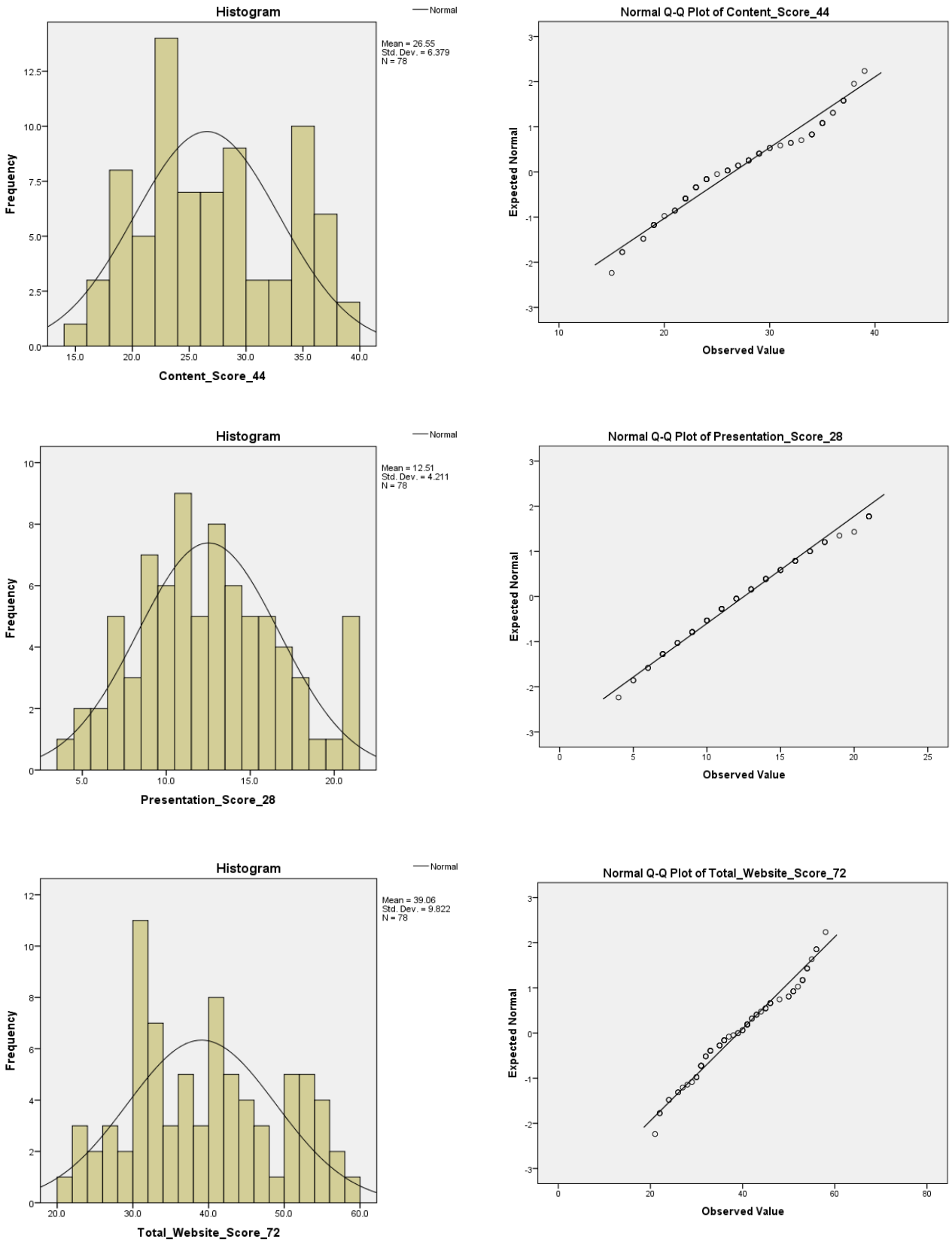

FIGURE 5: GRAPHS DEPICTING THE NORMALITY OF THE DEPENDENT VARIABLES

The average total website score is 39, however, when we delve deeper and consider the average score in each category of the sample, a trend seems to form as can be seen in figure 6 below. Companies 1-20 have the highest average with a score of 50.5 and companies 301-320 have the lowest average score of 30. Thus it is interesting to note the tendency (on average) of a company to consistently disclose less as its position decreases.

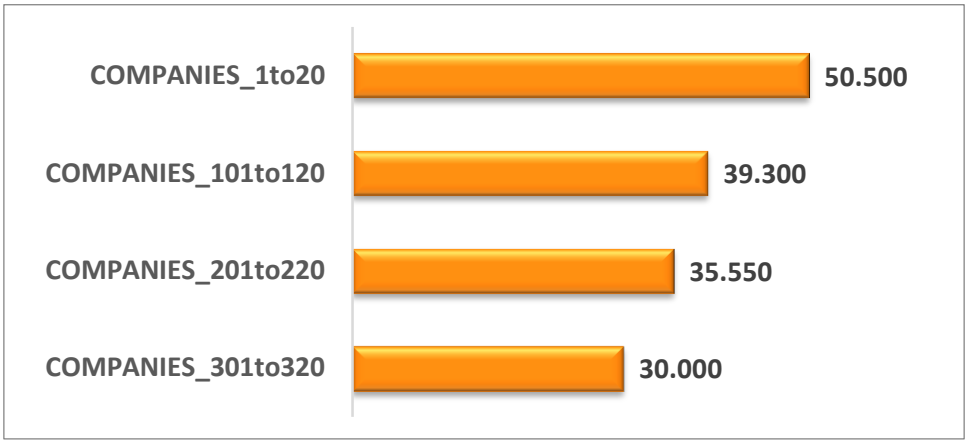

FIGURE 6: AVERAGE TOTAL WEBSITE SCORE

4.2 Analyses

4.2.1 Univariate analysis

Initially, to calculate the correlation amongst the independent variables and the dependent variable, the Pearson correlation test was carried out. This was done for all the continuous independent variables as can be seen below.

TABLE 7: THE CORRELATION AMONG THE CONTINUOUS INDEPENDENT VARIABLES AND THE DEPENDENT VARIABLE USING THE PEARSON CORRELATION

Correlations

		Content_Score_44	Presentation_Score_28	Total_Website_Score_72
H1_Market_Capitalisation	Pearson Correlation	.546**	.516**	.576**
	Sig. (2-tailed)	.000	.000	.000
	N	78	78	78
H2_Profitability_ROE_Percent	Pearson Correlation	.029	.048	.039
	Sig. (2-tailed)	.804	.681	.736
	N	76	76	76
H3_Ownership_Structure	Pearson Correlation	-.239*	-.272*	-.271*
	Sig. (2-tailed)	.035	.016	.016
	N	78	78	78
H4_Systematic_Risk	Pearson Correlation	.215	.141	.200
	Sig. (2-tailed)	.059	.218	.080
	N	78	78	78
H5_Foreign_Listing	Pearson Correlation	.310**	.349**	.351**
	Sig. (2-tailed)	.006	.002	.002
	N	78	78	78

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

However, as seen earlier, due to the non-normality of the distributions of the independent variables, the significance of the Pearson Correlation was not investigated further. The most significant correlation that needs to be interpreted in the Pearson's table is the point-biserial correlation between the dependent variable and the dichotomous variable Foreign Listing. As can be seen foreign listing has a minor correlation with the website scores. The non-parametric Spearman's rho results below were preferred for the other Independent variables.

TABLE 8: THE CORRELATION AMONG THE CONTINUOUS INDEPENDENT VARIABLES AND THE DEPENDENT VARIABLE USING THE SPEARMAN'S RHO

Correlations

Spearman's rho		Content_Score_44	Presentation_Score_28	Total_Website_Score_72
H1_Market_Capitalisation	Correlation Coefficient	.724**	.569**	.719**
	Sig. (2-tailed)	.000	.000	.000
	N	78	78	78
H2_Profitability_ROE_Percent	Correlation Coefficient	.229*	.083	.170
	Sig. (2-tailed)	.046	.478	.141
	N	76	76	76
H3_Ownership_Structure	Correlation Coefficient	-.228*	-.226*	-.269*
	Sig. (2-tailed)	.045	.047	.017
	N	78	78	78
H4_Systematic_Risk	Correlation Coefficient	.493**	.264*	.443**
	Sig. (2-tailed)	.000	.019	.000
	N	78	78	78

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

Market Capitalisation has the highest Correlation with the dependent variables (with the total website score, it has a correlation coefficient r=0.719 and p=.000). Systematic risk has a positive relationship with the content score (p=.493) but not with the presentation score (p=.264) and consequently a weaker relationship with the total score (p=.443). Interesting to notice is that, although the correlation coefficients are too small to interpret, the relationship with ownership structure is negative across all dependent variables.

4.2.2 Hypotheses Testing

H1: The amount and presentation of information for investors disclosed on a company's website is positively related to its size.

This hypothesis holds, as there are medium to large correlations. This can be seen in figure 7 where, as the market capitalisation increases the total website score also increases. There is an evident positive linear correlation.

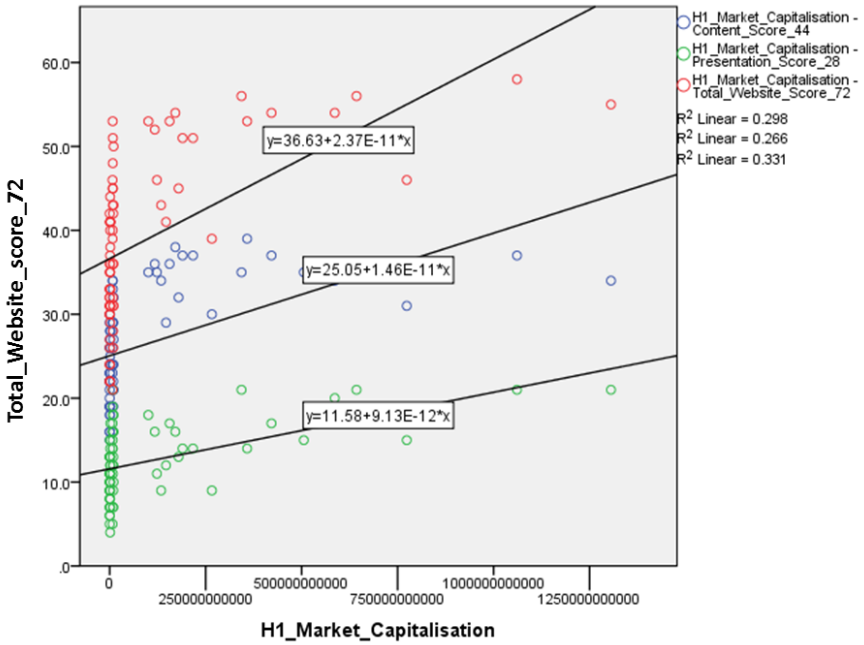

FIGURE 7: MARKET CAPITALISATION CORRELATION TO TOTAL WEBSITE SCORE

H2: The amount and presentation of information for investors disclosed on a company's website is positively related to its profitability.

This hypothesis does not hold, as all the correlations are below 0.3. From figure 8 below, we can see that there is a positive relationship, but an insignificant one.

One can see a small upward relation with content score but a minimal relation with presentation score.

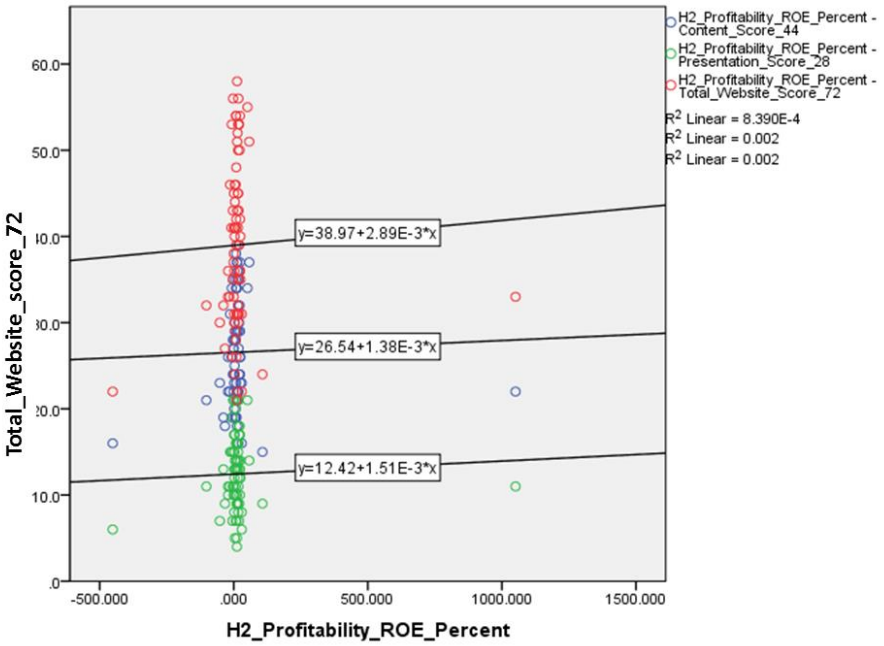

FIGURE 8: PROFITABILITY CORRELATION TO TOTAL WEBSITE SCORE

H3: The amount and presentation of information for investors disclosed on a company's website is negatively related to its percentage of block ownership.

There is a negative 0.269 correlation with total website score, however this correlation is not significant and therefore this hypothesis does not hold as all the correlations are below 0,3. The hypothesis does hold partially in the sense that there is a negative correlation, but is not sufficiently significant to suggest that the dependent variable is correlated with the block holders.

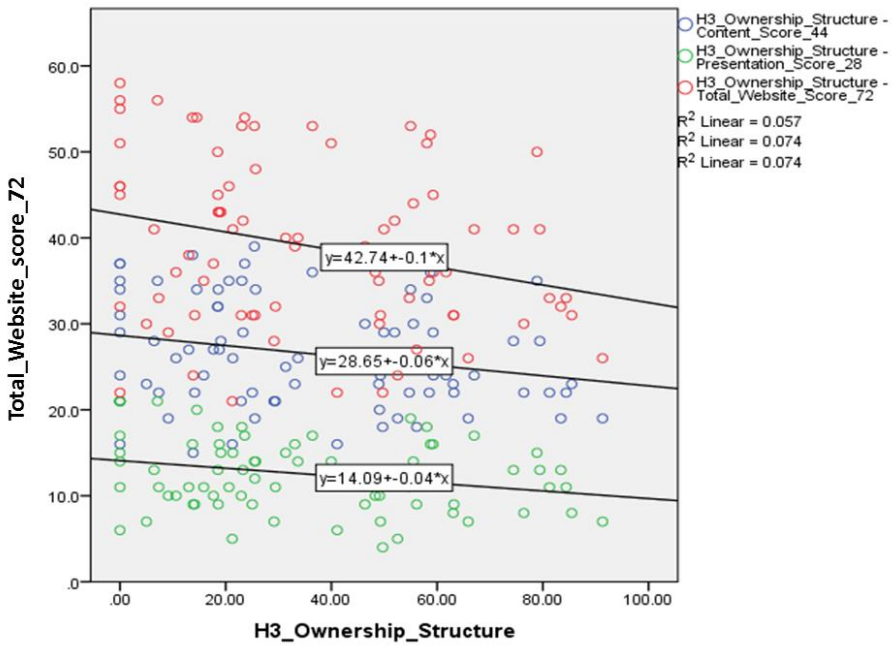

FIGURE 9: OWNERSHIP STRUCTURE CORRELATION TO TOTAL WEBSITE SCORE

H4: The amount and presentation of information for investors disclosed on a company's website is negatively related to its systematic risk (Beta).

This hypothesis does not hold, as seen in figure 10 below, since there is a positive relation: as the risk increases, the website score increases. However, there seems to be a positive correlation coefficient of 0.443 and a significant correlation at the 0.05 level.

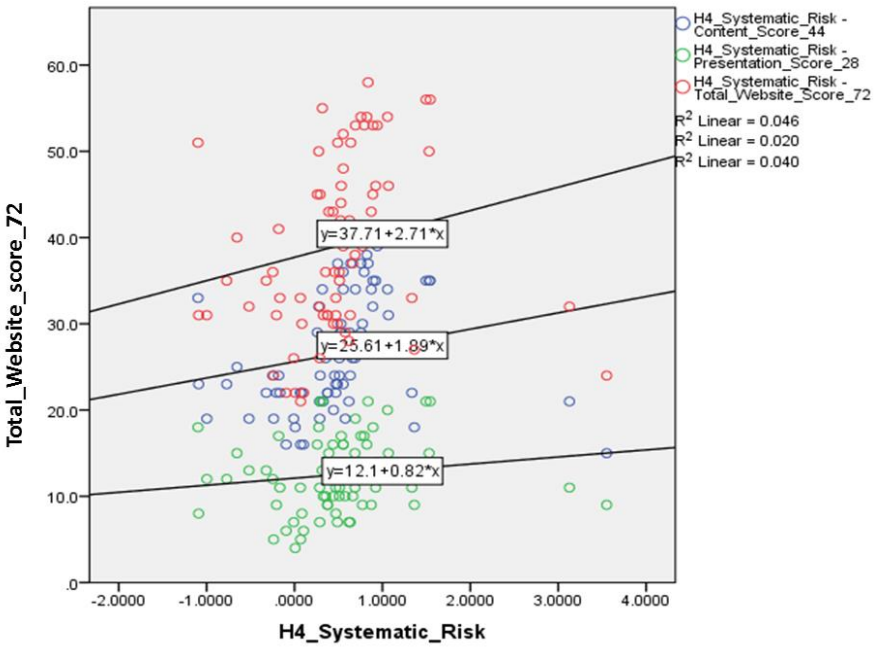

FIGURE 10: SYSTEMATIC RISK CORRELATION TO TOTAL WEBSITE SCORE

H5: A company which is listed on an international stock exchange disseminates more and better presented information for investors on its website than a firm only listed on the JSE.

To formally test whether there is a relationship between Foreign Listing and the dependent variables, an independent samples t-test was conducted. For all dependent variables, the Levene's test for equality of variances found that equal variances can be assumed (p>.05). The t-test results (table 9 below) indicate that, at the 1% level of significance, there is a statistically significant effect of Foreign Listing on the content score (t(76)=-2.845, p<.01), presentation score (t(76)=-3.247, p<.01) and the total website score (t(76)=-3.270, p<.01). The Sig. (2-tailed) value for all three types of dependent variables is below 0,05. This means that there is, statistically, a significant difference between the two conditions of JSE listed and dual listed.

TABLE 9: RESULTS OF T-TEST

			Content score	Presentation score	Total website score
			Equal variances assumed	Equal variances assumed	Equal variances assumed
Levene's Test for Equality of Variances	F		.853	1.187	.643
	Sig.		.359	.279	.425
t-test for Equality of Means	T		-2.845	-3.247	-3.270
	Df		76	76	76
	Sig. (2-tailed)		.006	.002	.002
	Mean Difference		-4.5034	-3.3448	-7.8483
	Std. Error Difference		1.5828	1.0300	2.4004
	95% Confidence Interval of the Difference	Lower	-7.6559	-5.3963	-12.6292
		Upper	-1.3510	-1.2934	-3.0674

More specifically (as demonstrated in the figure 11 below), companies which are dual listed consistently demonstrate a higher score on each of the dependent variables on average. In this sense, there is a significant correlation as a dual listed entity tends to have a higher website score than an entity which is only listed on the JSE, thus this hypothesis holds.

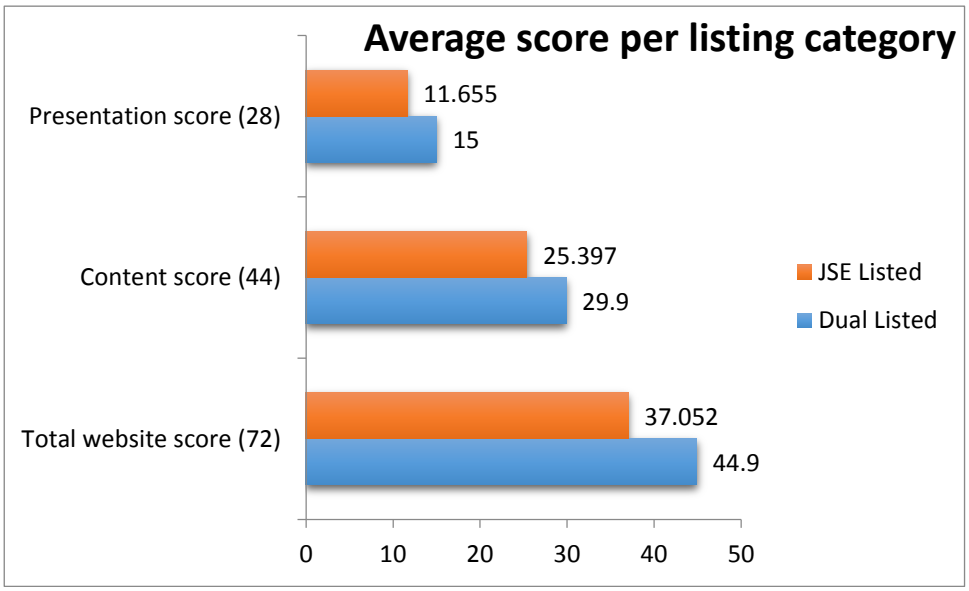

FIGURE 11: GRAPH DEPICTING THE AVERAGE WEBSITE SCORE PER LISTING CATEOGRY

H6: The amount and presentation of information for investors disclosed on a company's website is related to its SRI rating.

It has been shown that the SRI data does display the characteristics of a normal distribution, thus it was decided to use the non-parametric Kruskal-Wallis test to investigate the effect of the SRI on the dependent variables instead of the parametric Shapiro-Wilk test. Please see table 10 and 11 below for the mean rank and results per the Kruskal-Wallis test.

TABLE 10: MEAN RANK PER KRUSKAL-WALLIS TEST

Ranks

	H6_SRI	N	Mean Rank
Content_Score_44	best performer	4	70.88
	non-member	58	30.18
	normal member	16	65.44
	Total	78	
Presentation_Score_28	best performer	4	45.50
	non-member	58	34.14
	normal member	16	57.44
	Total	78	
Total_Website_Score_72	best performer	4	62.25
	non-member	58	31.01
	normal member	16	64.59
	Total	78	

TABLE 11: RESULTS PER KRUSKAL-WALLIS TEST

Test Statistics[a,b]

	Chi-Square	df	Asymp. Sig.
Content_Score_44	38.596	2	.000
Presentation_Score_28	13.631	2	.001
Total_Website_Score_72	31.874	2	.000

a. Kruskal Wallis Test
b. Grouping Variable: H6_SRI

The Kruskal-Wallis test indicates that, at the 1% level of significance, the SRI significantly affects the presentation score of companies ($\chi2(2)=13.631$, $p<.01$). At the .1% level of significance, the SRI significantly affects the content score ($\chi2(2)=38.596$, $p<.001$) and the total score ($\chi2(2)=31.874$, $p<.001$). Thus, in each of the individual cases of the dependent variables, there is at least one pair of means that differ significantly.

Using pairwise comparisons of the means and applying Bonferroni corrections, the following table indicates which pairs of means differ significantly. These results are depicted in the graph below (non-overlapping confidence intervals indicate significant difference).

TABLE 12: PAIRWISE COMPARISONS OF THE MEANS

	H6_SRI		
	best performer	non-member	normal member
	Mean	Mean	Mean
Content_Score_44	36.0_{a}	23.8_{b}	34.1_{a}
Presentation_Score_28	$13.3_{a,b}$	11.5_{a}	16.1_{b}
Total_Website_Score_72	49.3_{a}	35.3_{b}	50.1_{a}

Note: Values in the same row and sub table not sharing the same subscript are significantly different at p< .05 in the two-sided test of equality for column means. Cells with no subscript are not included in the test. Tests assume equal variances.[1]

1. Tests are adjusted for all pairwise comparisons within a row of each innermost sub table using the Bonferroni correction.

From table 12 we can see that, based on the content score, the non-members differ significantly from both best performers and normal members, whilst best performers do not differ significantly from normal members. Based on the presentation score, Normal members differ significantly from non-members while the difference between best performers and both non-members and normal members is not significant. Non-members differ significantly from both best performers and normal members on the total score while best performers do not differ significantly from normal members. This can also be better understood by looking at figure 12 where non-members tend, on average, to have a lower score on all dependent variables. Best performers scored the highest on average content disclosure and the total scores of best performers and normal members are very similar, with normal members having a marginally higher mean. However, for all dependent variables, best performers and normal members have a higher mean than non-members.

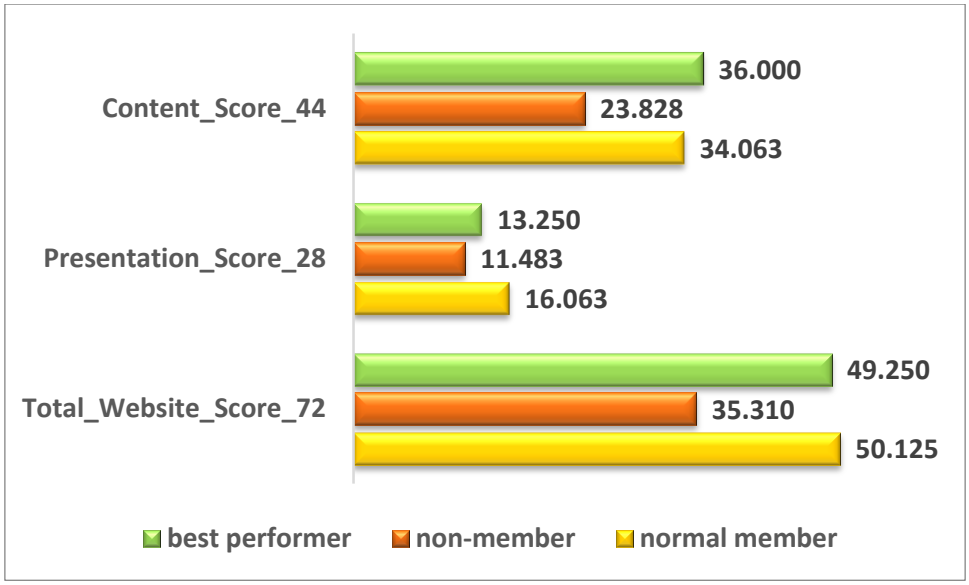

FIGURE 12: GRAPH DEPICTING THE MEAN SCORE PER SRI CATEGORY

The same results are echoed when using a One-way analysis of variance (ANOVA) to compare group means. Thus it can be concluded that H6 holds since there is a significant relationship between the dependent variables and the SRI.

4.2.3. Multivariate Analysis - Regression

The results of the univariate tests provide strong support for three of the six hypotheses namely size of the company, dual listing and SRI rating. A multivariate analysis was then carried out to verify the results of the prior tests. The regression equation discussed in chapter 3.4.2 was adjusted to exclude the independent variable SRI as it is not a continuous variable but rather a categorical variable. Initially, to assess the extent to which the independent variables correlate, the Pearson correlations among the independent variables were calculated and it was found that there were no large correlations between any of the independent variables. Thereafter, three separate linear regressions were carried out individually. In each of them, the dependent variable was the content score, presentation score and the total website score respectively. The independent variables for each were market capitalisation, return on equity, percentage block holding, systematic risk and foreign listing status. While the tests were being carried out, a problem relating to foreign listing was encountered. Including this variable in the model resulted in a change in direction for the other variables

observed in the earlier correlations; therefore, it was decided to exclude this variable from the model to investigate if results similar to those produced using the univariate analyses would be produced.

4.2.3.1. Content Score

From figure 13 below, we can see that the residuals appear to be normally distributed, thus allowing for a regression analysis to be carried out.

TABLE 13: RESIDUAL STATISTICS FOR THE DEPENDENT VARIABLE: CONTENT SCORE

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	22.988	45.183	26.221	3.6811	77
Residual	-23.5196	10.7550	.0000	5.9620	77
Std. Predicted Value	-.878	5.151	.000	1.000	77
Std. Residual	-3.840	1.756	.000	.973	77

a. Dependent Variable: Content_Score_44

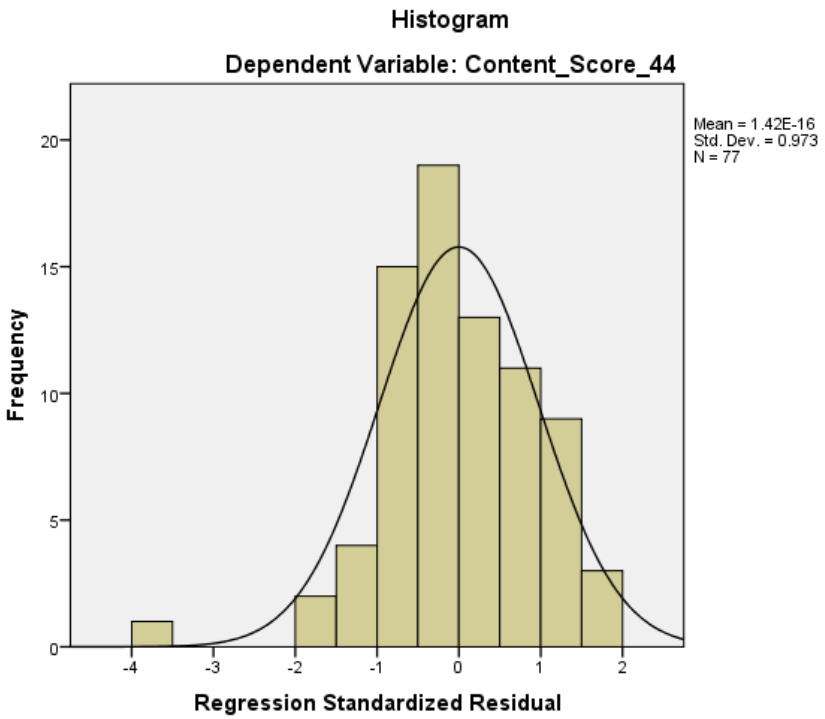

FIGURE 13: COMPARISON OF THE RESIDUALS FOR CONTENT SCORE TO A NORMAL DISTRIBUTION

From the summary table below, we can see that the proportion of variance in the dependent variable that can be accounted for by the independent variables is 23.6%. (The R square value is adjusted downward based on the number of observations (78) and the number of predictor variables (4) to prevent over fitting). In simple terms, this means that 27.6% of the change in the dependent variable of content score can be explained by the change in the independent variables. When using the ANOVA statistical model, we get a similar result suggesting that there is a significant relation between the independent variables and the dependent variable as seen in table 14.

TABLE 14: SUMMARY OF THE REGRESSION MODEL FOR CONTENT SCORE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.525[a]	.276	.236	6.1254

a. Predictors: (Constant), H4_Systematic_Risk, H2_Profitability_ROE_Percent, H1_Market_Capitalisation, H3_Ownership_Structure

b. Dependent Variable: Content_Score_44

However, the regression and the ANOVA is limited in the sense that it can only provide evidence that there is a correlation (see table 15 below). However, in order to understand the individual strengths of the correlations between each variable, the coefficients need to be analysed.

TABLE 15: ANOVA RESULTS

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	1029.811	4	257.453	6.862	.000[b]
	Residual	2701.436	72	37.520		
	Total	3731.247	76			

a. Dependent Variable: Content_Score_44

b. Predictors: (Constant), H4_Systematic_Risk, H2_Profitability_ROE_Percent, H1_Market_Capitalisation, H3_Ownership_Structure

The coefficients for the best fitting straight line are listed in the Coefficients table below (Table 16). The unstandardized coefficients indicate the average change in the dependent variable corresponding with a one-unit change in the relevant independent variable. The Beta coefficients are the partial regression coefficients obtained if all variables are standardised and can be used to judge the relative importance among several predictor variables. As seen in table 16, the only independent variable that contributes significantly to the regression model is Market Capitalisation and among the Betas one can see that it is the most important independent variable. The B-coefficient for market capitalisation is very small because of the large numbers in the variable.

TABLE 16: COEFFICIENTS TABLE FOR THE INDEPENDENT VARIABLES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	25.252	1.604		15.747	.000
	H1_Market_Capitalisation	1.533E-11	.000	.524	4.924	.000
	H2_Profitability_ROE_Percent	.002	.006	.044	.419	.676
	H3_Ownership_Structure	-.008	.030	-.031	-.272	.786
	H4_Systematic_Risk	-.649	1.052	-.067	-.617	.539

a. Dependent Variable: Content_Score_44

The above statistical process used for content score was also used for presentation score and total website score, the results of which can be seen below:

4.2.3.2. Presentation Score

Table 17 below shows the residual statistics when presentation score is taken as the dependent variable. Also as seen in figure 14 below, the residuals for presentation score appear to be normally distributed, thus fulfilling one of the requirements for a regression to be carried out.

TABLE 17: RESIDUAL STATISTICS FOR THE DEPENDENT VARIABLE: PRESENTATION SCORE

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	10.071	24.196	12.286	2.3425	77
Residual	-10.8946	8.8727	.0000	3.7534	77
Std. Predicted Value	-.945	5.085	.000	1.000	77
Std. Residual	-2.825	2.301	.000	.973	77

a. Dependent Variable: Presentation_Score_28

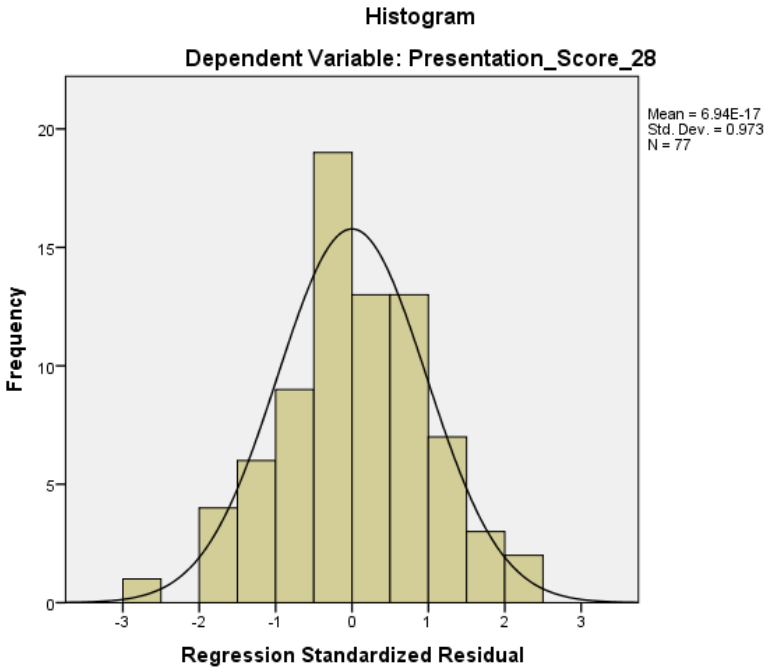

FIGURE 14: COMPARISON OF THE RESIDUALS FOR PRESENTATION SCORE TO A NORMAL DISTRIBUTION

From table 18 below, we can see that the proportion of variance in the dependent variable (presentation score) that can be accounted for by the independent variables is 24.0%.

TABLE 18: SUMMARY OF THE REGRESSION MODEL FOR PRESENTATION SCORE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.529[a]	.280	.240	3.8563

a. Predictors: (Constant), H4_Systematic_Risk, H2_Profitability_ROE_Percent, H1_Market_Capitalisation, H3_Ownership_Structure

b. Dependent Variable: Presentation_Score_28

The ANOVA results indicate that there is a significant relation between the independent variables and the dependent variable.

TABLE 19: ANOVA RESULTS FOR PRESENTATION SCORE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	417.026	4	104.256	7.011	.000[b]
	Residual	1070.688	72	14.871		
	Total	1487.714	76			

a. Dependent Variable: Presentation_Score_28

b. Predictors: (Constant), H4_Systematic_Risk, H2_Profitability_ROE_Percent, H1_Market_Capitalisation, H3_Ownership_Structure

To understand more we look at the coefficients. Here, once again, the only independent variable that contributes significantly to the regression model is Market Capitalisation and among the Betas one can see that it is the independent variable with the most significant influence over the presentation score.

TABLE 20: COEFFICIENTS TABLE FOR THE INDEPENDENT VARIABLES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	12.196	1.010		12.080	.000
	H1_Market_Capitalisation	9.209E-12	.000	.498	4.698	.000
	H2_Profitability_ROE_Percent	.003	.003	.077	.736	.464
	H3_Ownership_Structure	-.018	.019	-.106	-.940	.350
	H4_Systematic_Risk	-.486	.662	-.080	-.733	.466

a. Dependent Variable: Presentation_Score_28

The same process is then carried out again for total website score.

4.2.3.3. Total Website Score

The residuals are appearing to be normally distributed as can be seen below, therefore the key assumption of regression has been satisfied.

TABLE 21: RESIDUAL STATISTICS FOR THE DEPENDENT VARIABLE: TOTAL WEBSITE SCORE

Residuals Statistics[a]

	Minimum	Maximum	Mean	Std. Deviation	N
Predicted Value	33.405	69.379	38.506	6.0110	77
Residual	-34.4142	17.6221	.0000	8.8683	77
Std. Predicted Value	-.849	5.136	.000	1.000	77
Std. Residual	-3.777	1.934	.000	.973	77

a. Dependent Variable: Total_Website_Score_72

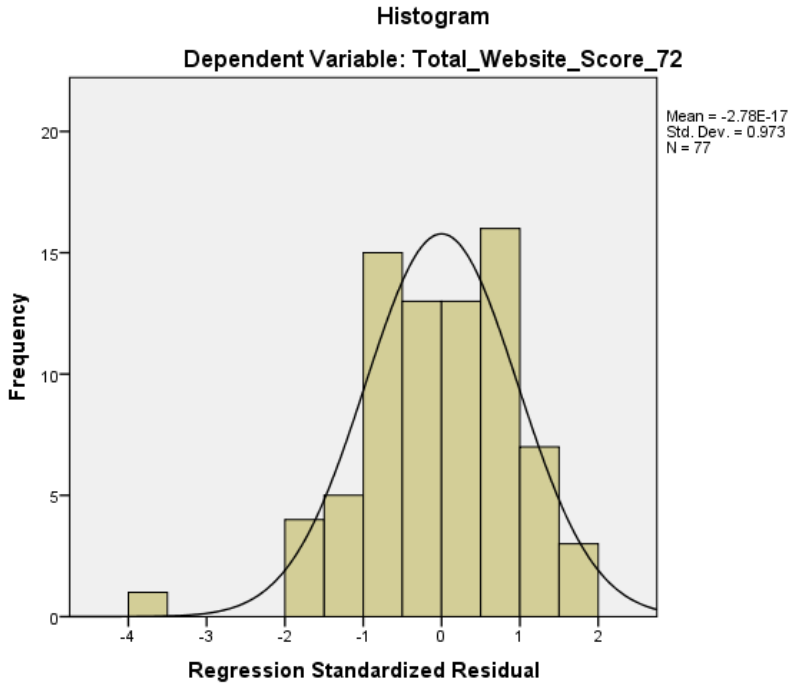

FIGURE 15: COMPARISON OF THE RESIDUALS FOR TOTAL WEBSITE SCORE TO A NORMAL DISTRIBUTION

The proportion of variance in the dependent variable that can be accounted for by the independent variables is 27.7% per table 22 below. Therefore 27.7% of the movement in the total website score can be attributed to the movements in the independent variables.

TABLE 22: SUMMARY OF THE REGRESSION MODEL FOR TOTAL WEBSITE SCORE

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.561[a]	.315	.277	9.1113

a. Predictors: (Constant), H4_Systematic_Risk, H2_Profitability_ROE_Percent, H1_Market_Capitalisation, H3_Ownership_Structure

b. Dependent Variable: Total_Website_Score_72

Once again, the ANOVA results (table 23 below) indicate that there is a significant relation between the independent variables and the dependent variable. When the coefficients table 24 below is analysed, the independent variable with the most influence over the dependant variable can be found.

TABLE 23: ANOVA RESULTS FOR TOTAL WEBSITE SCORE

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2746.078	4	686.520	8.270	.000[b]
	Residual	5977.168	72	83.016		
	Total	8723.247	76			

a. Dependent Variable: Total_Website_Score_72

b. Predictors: (Constant), H4_Systematic_Risk, H2_Profitability_ROE_Percent, H1_Market_Capitalisation, H3_Ownership_Structure

The only independent variable that contributes significantly to the regression model is Market Capitalisation. Among the Betas, one can see that it is the most influential independent variable in the regression. The standardised beta coefficient is used to compare the strength of the effect of each independent variable on the dependent variable; the independent variable with the largest standardised beta (irrespective of the sign) has the strongest effect. From table 24, we can see that market capitalisation is the highest with 0,548 while the remaining variables have beta values that are less than a fifth of that value.

TABLE 24: COEFFICIENTS TABLE FOR THE INDEPENDENT VARIABLES

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	37.448	2.385		15.699	.000
	H1_Market_Capitalisation	2.454E-11	.000	.548	5.299	.000
	H2_Profitability_ROE_Percent	.005	.008	.060	.593	.555
	H3_Ownership_Structure	-.026	.045	-.064	-.581	.563
	H4_Systematic_Risk	-1.135	1.565	-.077	-.725	.471

a. Dependent Variable: Total_Website_Score_72

At the end of the multivariate analysis, it can be seen in all three regression analyses that the most significant independent variable, with regard to the dependant variable, is the market capitalisation. These results are, to an extent, in line with the initial univariate analysis carried out earlier. The combined results show that there are significant correlations amongst three independent variables, namely market capitalisation, foreign listing status and the SRI.

5. Discussion

5.1. Interpretation of results

This research was carried out in order to investigate whether certain organisational factors had an effect on the voluntary disclosures made by companies on their websites. The researcher sampled 80 companies listed on the JSE and surveyed each company's website. Whilst analysing and inspecting each website, the researcher analysed the website and reviewed it according to a pre-determined checklist. Each website was given a total website score out of 72. The website score in this study was the dependent variable which the researcher attempted to explain by using relevant organisational factors as independent variables. These independent variables were firm size, profitability, percentage block holding, systematic risk, foreign listing status and the JSE socially responsible index. In chapter 4, certain statistical models were used to find correlations between the dependent variable (website score) and the independent variables.

This research attempted to test the six hypotheses presented in chapter 2. First, a univariate analysis was carried out in order to compare each of the six independent variables and the dependent variable. Market capitalization, from both the correlation and the regression models, was found to have a strong correlation with the total website score. This was highly evident in the regression model and the coefficients table which showed that due to this variable alone, there was a correlation of up to 28% between the independent variables and the total website score. The Spearman's rho also indicated a strong positive linear correlation between the size of the company and the total website score. Meaning that the larger the company, the more likely that they are to voluntarily disclose information on their website.

Regarding profitability, it was found that there was a slight positive correlation with the return on equity of a company and its website score. However, this was not a sufficiently significant correlation to prove that the hypothesis holds. The regression model also showed a minimal link between this variable and the website score.

Block ownership had a minor correlation with the total website score. The correlation coefficient was 0,269 which was too small to suggest a significant correlation, however both the Spearman's rho and the regression model agreed to the fact that there was a negative correlation. Therefore, it can be inferred that, as the percentage of block holder ownership in a company increases, the voluntary disclosure would decrease slightly but not significantly enough to suggest that the hypothesis holds.

For the last of the continuous independent variables, systematic risk, at the normal correlation level; the researcher found that there was a 0,44 correlation, however, contrary to what was expected, this was a positive correlation. As the risk of a company's increases there is a slight increase in the amount of voluntary disclosure. However, only a partial correlation existed, which was also displayed by the regression model which exhibited a very small standardized beta coefficient despite it being the second highest coefficient amongst the four continuous independent variables.

The last two independent variables which were tested were categorical values. As such, the correlations were the only tests performed on them. As foreign listing status was categorical in the sense either that the company was JSE listed or dual listed, further statistical tests, such as Levene's test, were carried out. From these tests, it was noted that when equal variances were assumed, a significant difference was noted between the scores of the two conditions. In addition, it was noted that for each type of dependent variable, (such as content score, presentation score and total score) the dual listed companies on average always had a higher website score.

The last hypothesis tested was that of the JSE SRI having an impact on the website score. This variable had three categories within which a company could be placed, i.e. non-member, normal member and best performer. This variable was different to the others in the sense that the data was not in line with the qualities of a normal distribution. The non-parametric Kruskal-Wallis test was carried out. This test confirmed that at the 1% significance level, there was a significant statistical effect of the SRI on the website score. Using pairwise comparisons, it was also found that on a total website score basis, the scores of a

non-member differed significantly from both normal members and best performers, while on average, the scores of normal members and best performers were found to be quite similar.

5.2 Discussion – results tied back to literature review

This research was carried out in order to gather more information about South African companies listed on the JSE and the amount of voluntary disclosure they disseminate on their corporate websites. The findings of this research has allowed the researcher to suggest that three of the six hypotheses tested in this study were found not to be false and the remaining three were found to be false.

The first hypothesis was proven to hold true. This result was in line with prior research done by Marston and Polei (2004), Ettredge et al. (2001), Ismail (2002) and Xiao et al. (2004). This suggests that the larger the company the more likely will it be that they provide additional information than is the norm on their website. This is in line with the agency theory that suggests that bigger companies would have higher agency costs (they would have more managers and hence higher costs of monitoring them) Therefore, it would be more meaningful for those large companies to disclose more information on their website.

This research could not prove that profitability, ownership structure and risk had an impact on the website score. Even though the signalling theory suggests that more profitable companies tend to disclose more voluntarily in an attempt to distinguish themselves from the less successful companies. This theory might be true for larger, more well established, companies who are more conscious about their public image as compared to newly established companies who might have high profits but have not yet found their feet on the global stage. These companies have not reached the global standards which the large firms are already at. Agency theory also suggests that a company which is owned by fewer shareholders would present less information on their websites as they have a smaller stakeholder contingency to appease, whereas a company which has many stakeholders would need a medium to convey relevant information across to the larger audience – and this requirement is fulfilled by a website, However, this theory could not be proven in this study. There may be various reasons for this, but the researcher is of the opinion that due to the majority of the larger company's

investors being institutional investors, the data may have been skewed away from a well distributed sample. For instance, many investors would give their money to large institutional investors, who would invest that money over a broad spectrum of companies. These institutional investments may make up a large portion of the investor base of a company but would not have a major influence over what the company discloses to them despite relying on published information to make their investing decisions. These institutional investors rely mainly on what is presented by the company to analyse and therefore may not need to assess the company's website.

The result for the hypothesis testing systematic risk is quite fascinating. The hypothesis suggested that a company with more risk would be more hesitant to disclose information on a voluntary basis and would prefer to conceal the information they are not required to disclose. With this in mind, the researcher was expecting a negative correlation, however the results suggested that there was a strong positive correlation. This is rather interesting as this means that a company with more risk appears to be more likely to make voluntary disclosures on its website. This was the second chain of thought discussed in chapter 2, whereby a risky company increases its voluntary disclosure so that this would result in a decrease in investor uncertainty and might lead to better evaluation of the company risk. On the other hand, this tactic could also be used to deceive investors in the sense that even though they may be risky they are trying to show that they are disclosing everything and therefore there is nothing to worry about. This is an interesting scenario which may warrant further research in the future.

The last two hypotheses were proven to hold. These were with regard to the foreign listing status and the SRI. For foreign listing, it was found that on average, the dual listed companies presented more information on their websites than companies which were only listed on the JSE. Dual listed companies normally have more onerous disclosure requirements and need to reach a larger and more diverse audience, therefore their website would be the most important mode of communicating company information across to their larger investor base. The dual listed companies would have international exposure and for a potential investor, the first point of call for gathering information on the company would be the

company's website. It seems plausible that companies who have such a global reach would be the ones who disclose information voluntarily.

The last hypothesis was that of the JSE SRI. This was a new variable included by the researcher which was not tested in prior research. Interestingly, a significant statistical correlation was found between the SRI and the website score. Although there was not much of a difference between a best performer and a normal member, there was definitely a difference in website scores amongst the non-member and the normal member. Companies who are part of the Socially Responsible Index (SRI) are those companies that are committed to environmental, social, governmental and related sustainability concerns and reporting. This was confirmed in the results of this study. The reason being that if a company had the above qualities they would be a part of the index, and those companies which were a part of this index showed these underlying characteristics by achieving higher website scores compared to that of the other companies.

6. Conclusion and recommendations

This chapter summarises the findings of the study. Thereafter, the contribution of this study in terms of the larger academic literature in the field, is discussed. The chapter ends with inherent limitations and areas for additional research in the future.

6.1. Summarising comments

The World Wide Web has developed rapidly over the past few years. It has provided a user-friendly platform for companies to disclose their financial information. Certain companies make use of this transformational platform whilst others are gradually getting acquainted with the new methods of presenting financial information. Upon further investigation, it was found that certain organisational factors had an impact on whether a company was publishing information voluntarily. This research has proven that certain factors such as firm size, listing status and SRI rating had an impact on the voluntary disclosure by companies. On the other hand, factors such as risk, ownership and profitability did not appear to have any influence over the amount of disclosure by a company. This research provides more evidence and support for prior research and at the same time gives a new look to this type of research given the South African context.

6.2. Contribution of the research

The aim of this research was to extend prior research done in the area of internet financial reporting. However, the main aim of this research was to obtain an insight into the internet financial reporting practices in a South African context by investigating companies listed on the JSE. The results of this research may provide benefits for regulators and investors, particularly potential investors, who are interested in investing in South Africa. This is important as South Africa is part of the BRICS nations and is considered to be the gateway to the rest of Africa. Additionally, this research may help regulators in understanding some of the determinants of internet financial reporting and might assist them in identifying methods to enhance disclosure and transparency in companies listed on the JSE.

This is also important because South Africa is rated the highest for strength of auditing and reporting standards. Therefore, to keep up to date with the rest of the world, local regulators can use this study as a base to consider standards for internet financial reporting. To the best knowledge of the researcher, there has been no prior research in South Africa which considers the determinants of internet financial reporting. Thus, this research can initiate further, more detailed research in this field.

6.3. Limitations and areas of future research

A key limitation of this study was that it was carried out over a single period, in which the researcher was trying to get a static view of the state of internet reporting in South Africa. To increase the understanding of internet financial reporting practices in South Africa, it would be worthwhile for future researchers to perform a second iteration of this research and carry it out over multiple time periods. A similar study could be carried out in a few years to gain further understanding of internet reporting in South Africa and how it evolves and changes over time.

As noted earlier in the results, it was found that companies with higher systematic risk tend to disclose more voluntarily. Therefore, it would be interesting to carry out further research in understanding why companies who are at greater risk, disclose more information on their websites. Furthermore, it would also be beneficial to increase the number of independent variables in the study by adding more organisational factors such as corporate governance factors, industries of the various companies and the type of auditors they have. Also, it would be worthwhile to increase the sample to more than 80 companies to get a better understanding and a higher coverage over the companies listed on the JSE.

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Appendix A: Company by Market Capitalisation

Listed below are the companies selected as the research sample sorted by market capitalisation as at the 6th of November 2014.

	Company Name:	Market capitalisation
1	British American Tob plc	1 305 628 768 798
2	SABMiller plc	1 060 924 862 599
3	Glencore plc	773 599 902 449
4	BHP Billiton plc	642 885 012 381
5	Naspers Ltd -N-	586 280 571 154
6	Compagnie Fin Richemont	505 557 000 000
7	MTN Group Ltd	421 425 142 692
8	Sasol Limited	357 929 778 800
9	Anglo American plc	343 299 574 598
10	Firstrand Ltd	266 110 847 721
11	Standard Bank Group Ltd	216 895 386 417
12	Vodacom Group Ltd	189 714 135 000
13	Aspen Pharmacare Hldgs Ltd	179 344 975 041
14	Old Mutual plc	170 901 736 230
15	Sanlam Limited	155 942 640 596
16	Barclays Africa Grp Ltd	146 745 642 535
17	Steinhoff Int Hldgs Ltd	133 965 102 486
18	Remgro Ltd	123 067 009 446
19	Nedbank Group Ltd	117 325 584 645
20	Bidvest Ltd	100 611 611 808
101	Murray & Roberts Hldgs	9 939 852 237
102	Super Group Ltd	9 933 023 552
103	Vukile Property Fund Ltd	9 818 854 790
104	Italtile Ltd	9 609 995 245
105	SA Corp Real Estate Fund	9 188 016 627
106	Fountainhead Prop Trust	9 115 644 424
107	JSE Ltd	8 989 225 272
108	Zeder Inv Ltd	8 793 009 869
109	Adcock Ingram Hldgs Ltd	8 517 013 831
110	PSG Konsult Limited	8 206 148 750
111	Emira Property Fund	8 204 539 850
112	Curro Holdings Limited	8 139 912 225
113	Invicta Holdings Ltd	8 083 243 537
114	Wilson Bayly Hlm-Ovc Ltd	8 058 600 000
115	Aveng Group Limited	7 891 747 433
116	Oando plc	7 729 733 812
117	Harmony GM Co Ltd	7 692 620 955
118	Capevin Holdings Ltd	7 480 877 753

119	Metair Investments Ltd	7 442 072 136
120	Net 1 UEPS Tech Inc	7 276 584 590
201	Wesizwe Platinum Ltd	1 481 322 623
202	Phumelela Game Leisure	1 476 501 098
203	Litha Healthcare Grp Ltd	1 455 049 705
204	Safari Investments RSA Ltd	1 385 500 000
205	Equites Prop Fund Ltd	1 372 924 260
206	Stefanuti Stck Hldgs Ltd	1 344 777 334
207	Seardel Inv Corp Ltd	1 338 254 188
208	Bell Equipment Ltd	1 332 056 390
209	Tower Property Fund Ltd	1 291 343 466
210	Sephaku Holdings Ltd	1 266 689 639
211	Calgro M3 Hldgs Ltd	1 182 030 000
212	Sacoil Holdings Ltd	1 177 141 035
213	Combined Motor Hldgs Ltd	1 170 918 725
214	Atlatsa Resources Corp	1 164 005 791
215	Torre Industries Limited	1 153 555 089
216	DRD Gold Ltd	1 086 782 223
217	Onelogix Group Ltd	1 065 251 761
218	Ingenuity Property Inv	1 029 749 112
219	Petmin Ltd	1 015 358 411
220	Iliad Africa Ltd	995 168 117
301	Randgold & Expl Co Ltd	175 274 903
302	Rockwell Diamonds Inc	174 586 381
303	Insimbi Ref & Alloy Sup	174 200 000
304	Delta EMD Ltd	167 162 880
305	Buildmax Ltd	163 170 755
306	Ferrum Crescent Limited	158 584 491
307	Jasco Electron Hldgs Ltd	157 247 446
308	London Fin Inv Group plc	156 000 000
309	Mazor Group Ltd	155 521 988
310	Goliath Gold Mining Ltd	150 302 003
311	Sentula Mining Ltd	140 774 203
312	Andulela Inv Hldgs Ltd	131 467 253
313	African & Over Ent Ltd -N	121 041 046
314	Esor Limited	102 748 212
315	Sanyati Holdings Ltd	94 668 573
316	Delrand Resources Ltd	85 125 988
317	South African Coal Mining	81 441 757
318	Bauba Platinum Limited	74 966 237
319	Verimark Holdings Ltd	73 134 290
320	Sable Metals and Min Ltd	68 373 542

Appendix B: Internet Financial Reporting Checklist

For each item on the checklist, the website will receive a one if it is present or a zero if it is not present. The internet financial reporting score will be calculated as the number of items present on the checklist.

	Items	Comments
	1. Content	
A	**Investor-related information: Accounting and financial information**	
A1	Statement of financial position	
A2	Statement of total comprehensive income	
A3	statement of cashflows	
A4	Statement of changes in equity	
A5	Notes to the financial statements	
A6	Management report/analysis	
A7	Auditor report	
A8	Interim statements	
A9	Annual financial statements for prior years	At least 3 years in total
A10	Share price history	Charts of latest month or year
A11	Share price performance in relation to stock index	
A12	Summary of key ratios over a period of at least 5 years	inside or outside AFS; at least 3 financial ratios
A13	Summary of financial data over a period of at least 5 years	for example, data from SOFP,SOCI, sales or net assets
A14	Segmental reporting by line of business	only accepted if numeric; analysed by at least 2 criteria, like turnover, assets or profit
A15	Segmental reporting by region	only accepted if numeric; analysed by at least 2 criteria, like turnover, assets or profit
A16	Shareholder structure	
B	Investor-related information: Corporate governance information	
B1	Notice of meetings and agenda of annual shareholders' meeting	
B2	Voting results of AGM	
B3	Speeches of the management board during the AGM	Manuscript or video/sound files
B4	Articles of association	
B5	Code of ethics	
B6	CV of members of the management or supervisory board	

B7	Assessments of analysts	Buy, hold or sell recommendations and the name of the analysing institution. Not older than 3 months and at least 2 opinions
B8	Analyst forecasts	Quantitative estimates (e.g. future turnover)
B9	Compensation of the members of the management board	individualised, subdivided according to fixed and performance-related components
B10	Compensation of the members of the supervisory board	individualised, subdivided according to fixed and performance-related components
B11	Information about directors dealings	only accepted if displayed on a special page, not as part of the AFS
B12	Information about share option programs	only accepted if displayed on a special page, not as part of the AFS
B13	Side-line activities of the members of the management board	for example, supervisory board mandates
B14	Documentation of press and analysts' conferences	video/sound files or PDF files
C	Timeliness of information	
C1	Current press releases	Latest release not older than 1 month
C2	Current share price	internal or external link (at least daily updated)
C3	Financial Calendar	For example, annual meeting, next quarterly results, etc.)
C4	Pages indicate the latest update	
C5	Monthly or weekly sales or operating data	
D	**Social responsibility disclosures**	
D1	Environmental report or special page	Not accepted when it is only a general remark about environment; special policies must be specified
D2	Employee/social/safety or health report	
D3	Commercial sponsoring	For example, sport or events
D4	Non-commercial community involvement	For example, support for cultural projects or local organizations; special foundation

D5	Sustainability report	
E	**Contact details and other information**	
E1	E-mail to investor relations	
E2	Phone number to investor relations	
E3	Postal address to investor relations	
E4	Frequently asked questions	On the main page or the investor relations page
	2. Presentation	
F	Technological features	
F1	Loading time of the web site b10 seconds	
F2	Text only alternative available	
F3	Hyperlinks inside the annual report	For example, from the SOFP to the notes
F4	Financial data in process able format	For example, doc, xls or asc for offline analysis
F5	Annual report in pdf-format	
F6	Annual report in html-format	
F7	Graphic images	
F8	Flashes	
F9	Sound files	
F10	Video files	
G	**Convenience and usability of web site: Navigation support**	
G1	Help site	With technical support, e.g., browser requirements
G2	Table of content/site map	
G3	Pull-down menu	
G4	Click over menu	More advanced than F3; the menu opens if the mouse arrow moves over the heading
G5	Internal search engine	
G6	Next/previous buttons to navigate sequentially	
H	**Convenience and usability of web site: Contact and information supply services**	
H1	Direct e-mail hyperlink to investor relations	
H2	Online investor information order service	For example, to request hardcopy of annual report
H3	Mailing list	To get news with relevance to investors
	Mobile Investor Application	
	Presence on Social Networking website	

I	**Convenience and usability of web site: Structure**	
I1	Page divided into frames	
I2	Number of clicks to get to investor relation information	1 click (encoded 1) or more (encoded 0)
I3	Number of clicks to get to press releases or news	1 click (encoded 1) or more (encoded 0)
I4	Clear boundaries between the annual report (audited) and other information	For example, special icon on audited pages of the Web site
I5	Change to printing friendly format possible	For example for SOFP,SOCI
I6	Function to recommend the page	
I7	Service to change data in the Share register online	For shareholders