

The Language of Annual Reports as an Indicator of the Organizations' Financial Situation

Willi Dias* and Raquel Matias-Fonseca**

Annual reports are documents prepared by organizations. These are also one of the most used channels of information disclosure to stakeholders and often used as a promotional tool of the organization itself. This paper presents the study of the language contained in annual reports and their relation with the results, of 14 listed organizations on the PSI20, using two types of data: quantitative data (financial ratios) and qualitative data (linguistic terms). The results proved that organizations are not indifferent to the communication of information through annual reports, and that performance affects the way organizations communicate their results. The results also showed that the textual contents of annual reports, besides primarily reflecting the results of the year, refer the events that led to the obtained results and indicate future changes of the results.

Field of Research: Accounting (Financial Reporting) & Finance (Corporate Finance)

1. Introduction

Nowadays, there's a huge amount of electronic information regarding organizations and their financial performance. This information is potentially very valuable for stakeholders and other concerned groups like organizations' decision makers, competitors, analysts, among others. One of the most used communication vehicles is the annual report. This is one of the most important documents that reflect the organizations' financial performance and strategy.

Annual reports are typically composed by two types of data: quantitative and qualitative. However and even though they're composed by both types of data, most studies and analyses are based only on the financial statements (quantitative data). This is strange, since the textual content of annual reports (qualitative data) discloses useful information that is not expressed through the financial statements. It is well known that while the quantitative data reflects only the past performance of an organization, the qualitative data may hold some information about an organizations' future performance (Kloptchenko, Back, Vanharanta, Eklund, Karlsson, & Visa, 2002; Magnusson, Arppe, Eklund, Back, Vanharanta, & Visa, 2005).

Facing this situation, this study attempts to gain a better understanding of how the language contained in the annual reports reflects the disclosed results, and if it can be a source of information about the organizations' future performance. Taking that into account, our research question is: how's the language contained in annual reports related to the results?

* Mr. Willi Miguel dos Santos Dias, Department of Economics, Management and Industrial Engineering, University of Aveiro, Portugal. Email: miguel_job@hotmail.com

** Dr.^a Raquel Matias-Fonseca, Department of Economics, Management and Industrial Engineering, University of Aveiro, Portugal. Email: rfonseca@ua.pt

In order to answer this question, we analyzed the annual reports of 14 listed organizations in the Portuguese Stock market Index, focusing on the released information between 2005 and 2007.

The remainder of this paper is structured as follows. Section 2 reviews some studies concerning organizational reports. Section 3 describes the research methodology used. Section 4 discusses the results obtained and section 5 summarizes the main conclusions of the study.

2. Literature Review

The communication between organizations and stakeholders occurs continuously and in many ways. A traditional vehicle of communication is the annual report (Courtis, 1998). Annual reports are one of the most important external documents that reflect the organizations' financial performance and strategy. They are an important vehicle for organizations to communicate with their stakeholders (Kloptchenko, Back, Vanharanta, Eklund, Karlsson, & Visa, 2002) whose important thing is to be able to extract information about the organizations they are interested in (Back, Toivonen, Vanharanta, & Visa, 2001; Karlsson, Back, Vanharanta, & Visa, 2001). Annual reports are usually composed by two types of data, quantitative data (accounting and financial data) and qualitative data (narrative texts), where the combination of both types allows the organizations to disclose the necessary information to stakeholders (Subramanian, Insley, & Blackwell, 1993).

One study based on the group of quantitative and qualitative data is that of Hildebrandt & Snyder (1981). They analyzed a set of President's Letter in an attempt to find relations between organizational performance and the message of the President's Letter. The authors found that organizations adopt an optimistic communication of the results, confirming the Pollyanna Hypothesis, which states that regardless of the financial state of the company, the language will be predominantly positive. These results are consistent with that of Thomas (1997), which, apart from confirming the Pollyanna Hypothesis, found that when the news became more negative, more the linguistic structures suggested situations caused by external factors.

Moreover, it appears that the annual reports are used as a communication strategy, based on the organizations' performance and that performance has influence in the way organizations disclose their results (Kohut & Segars, 1992). Conversely, Santema & Rijt (2001) found that, in most analyzed organizations, the structure of the reports didn't change over time, except for the accounting and financial data. Nevertheless, stakeholders continue to choose the annual reports as their decisions major basis, stating their preference for reports that provide clearer perspective of the organizations' potential, most frequently exposed through the qualitative data (Hynes & Bexley, 2004).

To better understand the organizations communication strategies, Back et al. (2001) compared the qualitative and quantitative data and verified the existence of differences between the disclosures of both types. Also based on the quantitative and qualitative data, Kloptchenko et al. (2002) analyzed the quarterly reports of three global organizations, leaders of the telecommunications sector. The results showed

that the quarterly reports, besides giving information about past performance, showed some indications about future performance. The results showed that the changes in the writing style of the reports tended to approach the financial performance for the following period. These results are consistent with that of Magnusson et al. (2005) which examined the same financial data and textual content, but using different data processing methods. Kloptchenko et al. (2002) and Magnusson et al. (2005) justify the obtained results by stating that while the quantitative data only reflects past performance, the qualitative data may contain information about future performance. Ting (2008) instead of confirming these assumptions, decided to investigate whether the quality of disclosure influenced the organizations performance. The results show it doesn't. However, they show that the quality of disclosure is positively correlated with the reputation index.

3. Methodology

3.1. Data Selection and Collection

For this study, we used the organizations listed in the Portuguese stock market index, which includes the 20 largest Portuguese organizations of the capital market. Then, given that some organizations were recent in the stock market, there weren't annual reports prior to 2005, and at the time of this study the annual reports of 2008 hadn't still been published. As such, it was selected the time interval from 2005 to 2007, in order to encompass a greater number of data and organizations. Subsequently, 6 organizations were excluded, due to the impossibility of extraction of qualitative data in some of their annual reports. Therefore, 14 organizations were selected for analysis.

In order to examine the annual reports, through quantitative data, a group of economic and financial ratios was selected. Later, we proceeded with the categorization / division of the 31 chosen ratios into six groups: Profitability, Activity, Debt, Liquidity, Market, and Other Ratios. Finally, the 31 ratios, as their respective annual variations, were calculated based on the consolidated financial statements, included in the annual reports of each organization.

As for the qualitative data, certain linguistic terms (words or group of words) were selected based on the review of the studies of Kendall (1993), Frazier et al. (1984) and Beattie et al. (2004), and through the reading of financial documents (journals, magazines), where the selection criteria was associated with the justifications, given by organizations, of the obtained results and respective variations. Next, and based on the study of Kendall (1993), the qualitative data was categorized / divided as follows: 36 positive terms, and 34 negative terms. Finally, the amount of terms present in the annual reports were counted, using the tracking system of the Adobe Reader software, allowing the calculation of each term's percentage in the total set of each type of terms, as well as their respective annual variation.

3.2. Data Treatment

The data treatment process was performed using the SPSS software (Statistical Package for Social Sciences) and it focused on three groups: quantitative data, positive terms and negative terms. In this process, the possible existence of

multicollinearity was tested and the elimination of this statistical condition was performed.

The treatment process of the quantitative data began with a standardization of the data, followed by a descriptive analysis, in order to obtain information about the existing outliers and eliminate them. Then, a new descriptive analysis was carried out, in order to verify which variables had missing-values and remove them. The exclusion process of these variables was performed by a personal criterion, defined as: [90% - Minimum percentage of data for maintaining the variable]. Finally, a correlation matrix (two-tailed test) was elaborated. In order to determine which method should be used in the correlation matrix (Pearson's R or Spearman's Rho), a normality test was made, using the Kolmogorov-Smirnov test (KS) with Lilliefors correction, and Shapiro-Wilks, assuming a significance level of 0.10 ($p = 0.90$; $\alpha = 0.10$). Based on the correlation matrix, the elimination of the condition of multicollinearity was conducted, by eliminating the highly correlated variables. In this process, only the significant correlations (positive and negative) at 1% were taken into account.

As for the qualitative data, we began with the division of the process itself, for each type of terms (positive and negative). Then, we proceeded with the replacement of the null values (zeros) for "non-answers", so that it wouldn't be any "interference" of those values. Subsequently, the same steps as for the quantitative data were carried out, namely: standardization; descriptive analysis in order to find outliers and eliminate them; descriptive analysis in order to find variables with missing-values and remove them; normality test; correlation matrix and posterior elimination of the condition of multicollinearity.

3.3. Data Analysis

In this section, four different analyses were performed, using the SPSS software.

3.3.1. Quantitative Data (N) vs. Qualitative Data (N)

This analysis aims to verify the existence of relations between the two types of data (quantitative and qualitative), present in the same annual reports, i.e., it attempts to verify whether the quantitative data present in an annual report has any relation with the qualitative data present in the same annual report.

3.3.2. Variation of Quantitative Data (N / N+1) vs. Variation of Qualitative Data (N / N+1)

This analysis aims to verify the existence of relations between the variations of both types of data. Putting it simple, this analysis seeks to determine whether the variations of the quantitative data have any relation with the variations of the qualitative data.

3.3.3. Variation of Quantitative Data (N / N+1) vs. Qualitative Data (N+1)

This analysis seeks to verify the existence of relations between the variations of quantitative data and the qualitative data subsequently used, i.e., it seeks to

determine whether in a variation of quantitative data there's an implicit future use, or has any influence on the (posterior used) qualitative data.

3.3.4. Variation of Quantitative Data (N / N+1) vs. Qualitative Data (N)

Unlike the previous analysis, this correlation analysis attempts to verify the existence of relations between the variations of quantitative data and the qualitative data previously used, i.e., it seeks to determine if information about future variations of the results are implied in the (previous) use of the qualitative data.

4. Discussion of Findings

Table 1 presents the results of the 1st analysis, where 23 significant correlations were identified. The results demonstrate that the qualitative data reflects the quantitative data, both present in the same annual reports, mainly due to the fact that the analysed organizations are obliged to provide certain information concerning the results. We also conclude, based on the high number of relations, the existence of an overload of "explanations" of the results, due to the fact that some organizations believe that it will bring more investment and greater reputation (Campbell, Shrives, & Bohmbach-Saager, 2001).

Table 1 – Correlations between the Quantitative Data (N) and the Qualitative Data (N)

	Return On Equity Ratio	Fixed-Asset Turnover Ratio	Shareholder Equity Ratio	Long-term Debt / Total Debt	Quick Ratio (Acid-test ratio)	EPR (Earnings Price Ratio)
Increase	,333(*)	0,094	-0,042	-0,042	-0,264	-0,192
Growth	0,089	-0,214	-,450(**)	-0,167	0,011	0,295
Performance	-0,102	,478(**)	,341(*)	-0,062	-0,207	-0,254
Disclosure	0,273	,339(*)	0,279	0,053	-,352(*)	-0,294
Strategy / Strategies	-0,145	0,171	-0,106	-,596(**)	0,212	-,379(*)
Improvement	-0,257	-0,075	0,167	0,121	,403(*)	0,046
Objective / Objectives	-0,142	0,042	0,239	-0,035	-0,045	-,342(*)
Organization	0,105	0,172	0,098	-0,297	-0,183	-0,123
Policy / Policies	,335(*)	0,103	0,302	0,078	-0,118	-0,113
Potential	0,094	-0,098	-0,191	-0,141	0,283	0,321
Responsibility / Responsibilities	-0,270	0,121	0,080	,307(*)	,585(**)	0,257
Technology / Technologies	-0,044	0,140	0,284	0,054	-0,150	-,339(*)
Advantage (s)	-0,146	-0,063	0,005	-0,179	-,331(*)	-0,189
Contingency / Contingencies	0,178	,411(*)	0,123	0,060	0,239	0,249
Costs	0,298	-0,043	0,216	0,008	-,471(**)	-0,238
Decrease	-0,029	-0,159	0,153	0,174	-0,160	0,178
Debt / Debts / Indebtedness	0,087	0,273	0,238	,560(**)	-0,098	0,295
Evidence	-0,117	-,420(*)	-0,130	0,062	,443(**)	,320(*)
Interest	-0,299	-,413(*)	-,565(**)	-0,189	0,011	0,165

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

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

Table 2 presents the results of the 2nd analysis, where 3 significant correlations were identified. The results are somewhat confusing. On one hand, the reduced number of correlations is insufficient for stating a relation between the two types of data. On the other hand, when coupled with the 1st analysis, we conclude that the disclosed information, during the time interval, is contradictory. One reason for this to happen may be the fact that many organizations choose to maintain the text of previous reports, while the quantitative data (results) vary through time (Santema & Rijt, 2001).

Table 2 – Correlations between the Variations of Quantitative Data (N / N+1) and the Variations of Qualitative Data (N / N+1)

	Return On Equity Ratio	Fixed-Asset Turnover Ratio	Shareholder Equity Ratio	Long-term Debt / Total Debt	Quick Ratio (Acid-test ratio)	EPR (Earnings Price Ratio)
Increase	0,114	0,089	-,448(*)	-0,427	-0,127	0,036
Growth	0,224	0,286	-0,111	0,113	-0,013	0,150
Performance	-0,229	0,381	-0,129	-0,262	0,248	-0,094
Disclosure	-0,370	0,203	-0,197	-0,022	-0,084	-0,189
Strategy / Strategies	-0,047	0,218	-0,339	-0,240	-0,175	0,340
Improvement	0,179	-0,188	-0,396	0,046	-0,212	0,143
Objective / Objectives	0,304	,446(*)	-0,235	-0,067	-0,216	0,253
Organization	0,151	0,420	-0,408	-0,233	-0,047	0,209
Policy / Policies	0,051	0,248	-0,274	-0,151	0,005	0,127
Potential	0,227	0,210	-0,289	0,286	0,178	0,327
Responsibility / Responsibilities	0,101	0,235	0,214	0,196	0,018	0,261
Technology / Technologies	0,148	-0,061	-0,191	-0,271	-0,257	-0,114
Advantage (s)	-0,235	-0,422	-0,449	0,229	-0,059	-0,260
Contingency / Contingencies	-0,340	-0,340	0,328	0,238	-0,020	-0,401
Costs	0,320	-0,066	-0,416	0,090	-0,062	0,174
Decrease	-0,208	-0,089	-0,434	-0,320	-0,276	0,002
Debt / Debts / Indebtedness	-0,092	-0,245	-0,013	-0,200	-0,344	-0,041
Evidence	0,029	-0,020	0,152	0,038	-0,182	0,173
Interest	0,304	,466(*)	-0,309	-0,332	-0,319	0,347

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

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

Table 3 presents the results of the 3rd analysis, where 6 significant correlations were identified. The results illustrate that there is information in the annual reports related to past variations of the results, reflecting the events and / or the actions that led to the obtained / published results (Hynes & Bexley, 2004). However, based on the reduced number of identified relations, we can also conclude that some organizations do not reflect the totality and / or in the best way, the events and / or the actions that led to the obtained results, published in their reports.

Table 4 presents the results of the 4th analysis, where 7 significant correlations were identified. The results show that certain linguistic terms reflect future changes of the results, confirming that the annual reports, in addition to the results and past events / actions disclosure, also contain indications of future variations of the results (Kloptchenko, Back, Vanharanta, Eklund, Karlsson, & Visa, 2002; Staw, McKechnie, & Puffer, 1983).

Based on the group of analyses, it is also possible to verify that there's a tendency for the qualitative data to reflect, mainly, the results of the year, followed by statements about future variations of the results and, finally, past variations of the results.

Table 3 – Correlations between the Variations of Quantitative Data (N / N+1) and the Qualitative Data (N+1)

	Return On Equity Ratio	Fixed-Asset Turnover Ratio	Shareholder Equity Ratio	Long-term Debt / Total Debt	Quick Ratio (Acid-test ratio)	EPR (Earnings Price Ratio)
Increase	-0,040	-0,302	-,484(*)	-0,157	-0,140	-0,063
Growth	0,310	0,097	0,078	0,386	0,337	0,187
Performance	-0,046	0,090	0,271	-0,222	-0,335	-0,057
Disclosure	-0,200	0,218	0,059	-0,154	-0,160	-0,181
Strategy / Strategies	-0,190	-,513(*)	-0,158	0,156	-0,281	-0,117
Improvement	-0,054	0,189	0,130	0,142	0,236	0,015
Objective / Objectives	0,132	-0,310	0,089	0,199	-0,044	0,078
Organization	-0,301	-0,169	0,158	-0,051	-0,383	-0,255
Policy / Policies	-0,113	-0,025	-0,003	-0,123	0,195	-0,099
Potential	0,286	0,249	-0,091	,459(*)	0,209	,493(*)
Responsibility / Responsibilities	0,276	0,234	0,166	-0,060	0,098	0,317
Technology / Technologies	-0,210	-0,247	-0,061	-0,144	-0,368	-0,222
Advantage (s)	-0,058	-0,025	-0,130	0,045	0,209	-0,074
Contingency / Contingencies	0,058	0,259	0,163	-0,021	0,210	-0,090
Costs	-0,251	-0,012	-0,063	-0,281	-0,168	-0,207
Decrease	-,428(*)	0,275	-0,110	-0,263	-0,116	-0,147
Debt / Debts / Indebtedness	0,234	-0,037	0,006	-0,185	-0,120	0,075
Evidence	0,026	0,038	-0,061	,424(*)	0,335	0,127
Interest	0,268	-0,023	-0,111	0,326	0,129	0,238

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

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

Table 4 – Correlations between the Variations of Quantitative Data (N / N+1) and the Qualitative Data (N)

	Return On Equity Ratio	Fixed-Asset Turnover Ratio	Shareholder Equity Ratio	Long-term Debt / Total Debt	Quick Ratio (Acid-test ratio)	EPR (Earnings Price Ratio)
Increase	-0,201	0,014	-0,131	-0,246	-0,147	-0,053
Growth	0,037	-0,040	0,005	0,137	0,381	-0,148
Performance	0,066	0,200	0,027	-0,151	-,460(*)	-0,039
Disclosure	0,263	0,014	-0,153	-0,027	-0,148	0,208
Strategy / Strategies	-0,157	-,477(*)	0,074	0,108	-0,268	-0,247
Improvement	-0,035	,436(*)	0,215	-0,016	0,265	0,087
Objective / Objectives	-0,107	-0,171	0,234	-0,145	-0,343	0,198
Organization	-,530(**)	-0,106	0,259	0,047	-0,217	-0,384
Policy / Policies	-0,141	0,059	-0,065	-0,158	0,164	-0,043
Potential	-0,086	0,062	0,096	0,190	0,117	-0,119
Responsibility / Responsibilities	0,397	0,179	0,039	-0,054	0,078	0,401
Technology / Technologies	-0,139	-0,192	-0,054	-0,081	-,407(*)	-0,091
Advantage (s)	-0,061	0,134	0,208	-0,189	0,079	-0,055
Contingency / Contingencies	0,089	0,280	-0,147	-0,317	-0,005	0,211
Costs	-0,190	0,109	-0,357	-0,229	-0,249	-0,131
Decrease	-0,383	-0,079	-0,029	0,259	-0,160	-0,290
Debt / Debts / Indebtedness	0,263	0,250	-0,035	-0,271	0,092	0,117
Evidence	0,083	0,119	-0,087	,417(*)	0,333	0,127
Interest	0,055	-0,262	-0,032	,418(*)	0,057	0,012

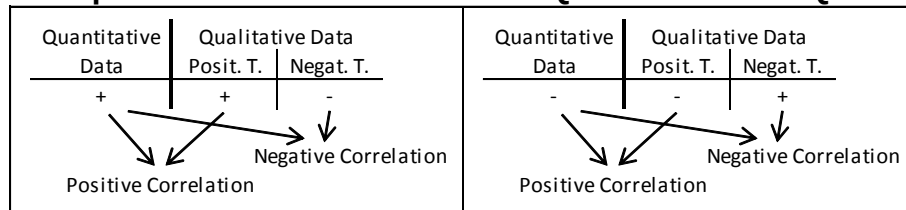
(*) Correlation is significant at the 0.05 level (2-tailed)

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

As for the obtained correlations in the 4 performed analyses, three distinct groups were identified: "expected" correlations, "not expected" correlations, and unidentified correlations.

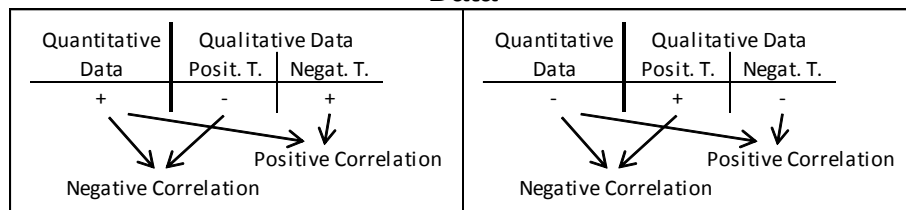
The "expected" correlations, expressed in Figure 1, confirm that the textual content of the organizational reports is expressed in positive terms when the organization seeks to disclose good performance, or through negative terms, when the organization wants to explain poor performance (Kohut & Segars, 1992), concluding that the positive terms are associated with positive relations and the negative terms are associated with negative relations (Kendall, 1993).

Figure 1 – "Expected" correlations between Quantitative and Qualitative Data



The "not expected" correlations, expressed in Figure 2, are based on two situations. The first proves that an increase in results is related to the disclosure of poor performance. This trend may be related to various factors such as: organizations intent in "keeping" information in order to maintain a competitive advantage over its competitors, speculative strategies about stock market, or the fact that organizations lack efficient communication strategies. The second situation shows that a decrease in results is related to the spread of good news, concluding that the organizations present themselves through a positive image, whatever the results, confirming the presence of the Pollyanna hypothesis (Thomas, 1997; Hildebrandt & Snyder, 1981).

Figure 2 – "Not expected" correlations between Quantitative and Qualitative Data



As for the unidentified correlations, the results are rather inconclusive, due to the fact that the use of the data set (14 chosen organizations) may have "influenced" the results. As such, it is expected that the realization of an additional number of analyses, for each organization individually, may point out "new" relations, unable to identify through the performed analyses.

5. Conclusion

In order to understand how the language contained in the annual reports may reflect changes in the results, the annual reports of 14 listed organizations on the PSI20 were analyzed, for the years 2005 to 2007, based on two types of data: quantitative and qualitative data. The results of the analyses highlight the existence of relations between the quantitative and qualitative data. By comparing the two types of data, we verified the existence of certain trends, concluding that organizations are not indifferent to the communication of information through annual reports, and that performance affects the way organizations communicate their results. The results also showed that the textual contents of annual reports, besides primarily reflecting the results of the year, refer the events that led to the obtained results and reveal future changes of the results.

The results and their interpretation can be useful for a better understanding of the organizations communication strategy and they're also a good sign that the knowledge regarding organizational reports is still very limited.

Several limitations to the present study should be noted. First, the reduced number of organizations in this study (14 organizations). Second, the organizations were selected without regard to past performance. The form and content of the annual reports may be conditioned by operating results in previous years. Third, the organizations were selected without any consideration to the type of industry. Confounding variables may be controlled by performing similar analyses within a single industry or by examining organizations individually over several consecutive years.

As a complement to this study, other quantitative and qualitative data could be analyzed. It would also be interesting to perform these analyses based on organizations listed in other stock markets, in order to check whether the content has some influence on the information disclosed and what's the impact on the organizations share prices.

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