

# **CORPORATE SOCIAL RESPONSIBILITY AND FINANCIAL PERFORMANCE: A META-ANALYSIS**

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## **ABSTRACT**

Many empirical studies conducted to examine the relationship between corporate social responsibility and financial performance failed to reach consistent results on the subject. The purpose of this article is to examine this relationship based on the statistical methodology of meta-analysis, which aggregates the results of 112 recent empirical studies, published in the last ten years, between January 1998 and December 2007, in the international literature on corporate social responsibility and financial performance. This relationship is tested by hypothesis and the results show positive relations between the various measures analyzed of corporate social responsibility and financial performance, many of them ratifying the existing theories.

Key Words: corporate social responsibility; financial performance; meta-analysis.

## **1 Introduction**

There is growing interest in studying the relation between corporate social responsibility and financial performance (McWilliams and Siegel, 2001; Orlitzky, Schmidt and Rynes, 2003; Swanson, 1999; Waddock and Graves, 1997; Wood, 1991). One of the factors behind

this interest is that studies reveal that many companies that have managed to prosper follow a strategy that includes the three principles of sustainable corporate development. These are environmental integrity by means of corporate environmental management, social equity through corporate social responsibility and economic prosperity, by creating value (Bansal, 2005).

The question of social responsibility of multinationals has also been widely discussed, from two opposing angles: in the first social welfare is facilitated through the economic gains generated by free trade, and in the second international diversification can compromise social justice and environmental integrity (Strike, Gao, and Bansal 2006).

The subject has become so important that a series of principles, standards and certifications has been developed to guide firms' corporate social responsibility actions. For example, the International Organization for Standardization (ISO) is developing an international standard to provide orientation on corporate social responsibility. Other efforts to promote socially and environmentally responsible corporate behavior are the Global Reporting Initiative (GRI) and United Nations Global Compact (Clarkson et al., 2008; Cooper and Owen, 2007; Johnson and Greening, 1999; Williams, 2004).

To establish a more precise relation between corporate social and financial performance, Orlitzky, Schmidt and Rynes (2003) conducted a meta-analysis, according to the method developed by Hunter and Schmidt (1990), of 52 articles written over a period of 30 years. They concluded that more responsible social/environmental performance is associated with better financial performance.

Meta-analysis has been used in various branches of knowledge as a way to aggregate the different or inconclusive results obtained in empirical studies, in an attempt to obtain more consistent results. It is based on a systematic statistical review that quantitatively integrates

the results of various independent studies on a particular topic, to establish a single estimate of these results (Combs and Ketchen Jr., 2003; Davar, 2004; Stanley, 2001).

This article reports the results of a meta-analysis of the relation between corporate social responsibility and financial performance, covering 112 studies published in the leading international periodicals over the ten-year period from 1998 through 2007. We aim to verify whether the hypotheses confirmed by Orlitzky, Schmidt and Rynes (2003) are still valid for this new period.

Just as those authors, we also follow the meta-analytic methodology proposed by Hunter and Schmidt (1990). Unlike the previous study, however, ours covers a horizon of ten years and the articles were selected so as to refine the database only to include periodicals included in *Journal Citation Reports* (JCR).

This work contains five chapters besides this introduction. The second contains a review of the literature on the concepts of corporate social responsibility (including environmental) and financial performance. The third chapter details the hypotheses formulated and tested. The fourth presents the methodology used for the meta-analytic study. The fifth presents the results and the sixth presents the final considerations and suggestions for further study.

## **2 Literature Review**

In this chapter we detail the main theoretical concepts involved in the present study, in the following topics: corporate social responsibility, financial performance and the relationship between them.

### **2.1 Corporate Social Responsibility**

The theme of corporate social responsibility has been gaining importance in the past two decades not only in the media and within government and the business world, but also in academic circles. The key area of academic interest has been an attempt to find the main implications of the relationship between corporate social responsibility and financial

performance (Campbell, 2007). The leading concern among researchers is the financial effect on firms caused by their social policies (Russo and Fouts, 1997).

According to Carroll (1979), the concept of corporate social responsibility is not a recent one. Indeed, it dates back to before 1930. However, the watershed in the modern concept can be considered the publication of the book *Social Responsibility of the Businessman*, by Howard R. Bowen, in 1953.

The literature contains various definitions of corporate social responsibility, but the majority view is that it consists of a set of voluntary actions by firms to promote improved social and environmental conditions, as a way for them to respond to questions from an economic and technical standpoint and in line with legal requirements, aiming to produce social and environmental benefits along with financial gains (Aguilera et al., 2007; Campbell, 2007; Carroll, 1979; Mackey, Mackey and Barney, 2007).

Recent studies suggest that corporate social responsibility is an instrument to increase firms' legitimacy in the eyes of their stakeholders and to develop positive social responsibility images to burnish their reputations (Maignan and Ralston, 2002). It is also considered to be a set of actions to respond to the various stakeholders, in order to promote sustainable development, in three aspects: economic, environmental and social (Henderson, 2001).

In this context, corporate social performance can be seen as a measure of corporate social responsibility, which evaluates the impact of a firm's behavior on society by means of a configuration of principles, processes, policies and results attained through socially responsible practices (McWilliams and Siegel, 2000; Schuler and Cording, 2006; Wood, 1991). In this scheme, corporate environmental performance is a sub-category of corporate social performance, focusing on environmental aspects (Schuler and Cording, 2006; Whiteman and Cooper, 2000).

The term sustainability gained notice in the 1980s in the report entitled *World Conservation Strategy*, where it was defined as a strategic way of integrating coherent development by sustainable use of resources (OECD, 2007).

The term sustainable development, in turn, was defined in 1987 by the World Commission on Economic Development (WCED) as being development that “meets the needs of the present without compromising the ability of future generations to meet their own needs” (Bansal, 2005; Bansal and Roth, 2000).

To summarize, there is a tenuous line between the concepts described above, since they are intimately related and even merge regarding the principles of development. But no matter how they are defined, they always involve concern for social and environmental factors.

#### 2.1.1 Stakeholder Theory

Corporate social performance can be analyzed more efficiently and consistently if the relationship between the organization and its stakeholders is considered (Clarkson, 1995). Stakeholder theory is based on the relations of firms with their various interested publics (stakeholders), namely their employees, suppliers, customers, civil society organizations, government and society at large, besides their shareholders (Barnett, 2007; Campbell, 2007; Clarkson, 1995).

This theory examines when and why companies satisfy the interests of their stakeholders even in detriment to their own immediate interests (Campbell, 2007). It shows how corporate social responsibility contributes to establish and strengthen a relationship of trust with the main stakeholders and explains why good stakeholder relations bring financial gains to firms (Barnett, 2007).

## 2.2 Financial Performance

The financial performance of firms is a topic of intense academic study because of its direct relationship with company growth and creation of shareholder value (Barnett and Salomon, 2006).

There have been many studies of how corporate social responsibility affects the market value of companies (Mackey, Mackey and Barney, 2007). Corporate financial performance is usually measured by firms' profitability, market value and growth (Schuler and Cording, 2006). There are three indicators most often used by researchers in this effort: accounting indicators, market indicators and perception indicators (Dalton et al., 1999).

### 2.2.1 Slack Resources Theory

Slack resources theory analyzes the use of a firm's excess financial resources, a reserve that can be used to implement new strategies and that gives the company greater flexibility to take advantage of market opportunities. This flexibility directly affects the financial performance, generating greater company value (Bourgeois, 1981). This reserve is nothing more than the difference between the total amount of resources available and the amount needed to pay all a company's obligations (Daniel et al., 2004; Greenley and Oktemgil, 1998).

Slack resources also allow firms to adapt and respond to pressures from their stakeholders, and to invest in activities that will not give immediate return, assuming the firm is committed to socially responsible practices and sustainable development (Bansal, 2005). Some authors, such as Adams and Hardwick (1998), McGuire, Sundgren and Schneeweis (1988) and Ullmann (1985), argue that the better a firm's financial performance is, the greater will be its capacity to invest in socially responsible practices.

### 2.3 Corporate Social Responsibility and Financial Performance

Various studies have been conducted to find a relation between corporate social responsibility and financial performance, but the findings have often been inconsistent or inconclusive (McWilliams and Siegel, 2000; Orlitzky, 2001, 2005; Orlitzky, Schmidt and Rynes, 2003; Wu, 2006).

Schuler and Cording (2006) examined that relationship between corporate social responsibility and financial performance from the standpoint of consumer behavior, by means of a decision model, demonstrating that there is a strong and complex link between these variables.

In a study of environmental and financial performance, Russo and Fouts (1997) found this relation is positive and increases proportionally as corporations grow. In another study, Husted and Salazar (2006) used macroeconomic analysis to verify the conditions where corporate social responsibility is consistent with maximizing value shareholders.

The work of Waddock and Graves (1997) found that an increment in a firm's financial performance is positively associated with an increase in its corporate social responsibility. In another study, Wu (2006) used meta-analysis, with the procedures developed by Rosenthal, trying to find a single result, and found a positive relationship between corporate social responsibility and financial performance.

Because the various studies of the relationship between corporate social responsibility and financial performance present differing conclusions, based on different measures, there is a need to aggregate their conclusions and results, trying to find a single and more consistent result.

## **3 Hypotheses**

This chapter presents the four hypotheses and their respective subdivisions tested in this study. These were originally formulated by Orlitzky, Schmidt and Rynes (2003) and relate

corporate social performance and financial performance. In the survey conducted to select the articles in the periodicals listed in JCR, over the period from 1998 to 2007, we only found one study in the available databases that aggregated the results on the relation between social responsibility and financial performance using meta-analysis. For this reason, we use its hypotheses here.

The first hypothesis is based on stakeholder theory, which suggests that the satisfaction of various stakeholder groups is fundamental for a company's financial performance (Donaldson and Preston, 1995; Harrison and Freeman, 1999).

**H1: Corporate social performance and financial performance are positively related.**

For this first hypothesis, besides the meta-analysis with all the social responsibility and financial performance measures present in all the articles, to analyze the sensitivity of this relation we conducted three other meta-analyses with sub-groups of the measures, in order to verify whether there are significant differences when these measures are altered.

**H1.1:** Corporate social performance and financial performance are positively related (with all the measures of CSR and FP).

**H1.2:** Corporate social performance (without reputation measures) and financial performance (without perception measures) are positively related.

**H1.3:** Corporate social performance (without environmental performance measures) and financial performance are positively related.

**H1.4:** Corporate environmental performance and financial performance are positively related.

For H1.1, we considered all 112 articles selected. For H1.2, we considered all the measures except reputation for CSR and perception for FP. For H1.3, from the correlations we removed all those that related environmental performance and financial performance. Finally, in counterpoint to H1.3, for H1.4 we considered only relations between environmental and financial performance.



Slack resources theory proposes that good financial performance means the firm will have the resources necessary to carry out socially and environmentally responsible practices (Ullmann, 1985). The second hypothesis verifies whether there is a difference between the relations proposed by stakeholder and slack resources theory.

**H2: There is a bidirectional causality relation between corporate social performance and financial performance.**

We divided this hypothesis into three sub-groups, according to the order of influence of social performance and financial performance:

**H2.1:** Corporate social performance and subsequently financial performance are positively related.

**H2.2:** Corporate financial performance and subsequently social performance are positively related.

**H2.3:** Corporate social performance and financial performance have a positive contemporaneous relation.

To separate the articles of the meta-analysis into the subdivisions of hypothesis 2, for hypothesis H2.1 we considered only the articles that used stakeholder theory, for H2.2 only those that used slack resources theory, and the remaining articles for H2.3. As a sensitivity measure, besides testing each of the three hypotheses for all the corporate social performance yardsticks, we also tested them for the set of measures without environmental performance.

The idea behind the third hypothesis is to analyze the various reasons for the relation between social and financial performance. These reasons can be associated with the fact that corporate social responsibility can bring various benefits to the firm, both internal and external (Barney, 1991, 2002; Fombrun and Shanley, 1990; Maignam and Ralston, 2002).

**H3: Corporate social performance is positively related to financial performance, because it generates internal and external benefits for the company.**

The subdivisions of the third hypothesis between internal and external benefits are:

**H3.1:** Corporate social performance is positively related to financial performance, because it generates better efficiency, learning, skills and competencies.

**H3.2:** Corporate social performance is positively related to financial performance, because it helps build a positive reputation for the company.

To separate the articles for calculation of the meta-analysis, we formed sub-groups with the financial performance relations and social responsibility measures related to efficiency, learning, skills and competencies, besides the reputation measures.

To analyze the sensitivity of hypothesis H3.2, besides the overall value of the reputation and financial performance measures, we carried out a division, just as with the second hypothesis, to verify whether reputation affects financial performance more than vice versa.

In the fourth hypothesis, we divided all the individual studies into sub-groups for social performance and financial performance, with the aim of verifying the relation with strategic measures. This hypothesis considers the differences in the correlations, the sampling error and the measurement error found in the various sub-groups.

**H4: Analysis of the strategic measures for social responsibility and financial performance that most affect their relation.**

In the first sub-group we examined the relations between corporate social performance and the three divisions of financial performance measures: accounting, market and perception. To calculate the meta-analysis we divided all the correlations found in the articles according to these types of financial performance measures.

**H4a1:** Corporate social performance and each of the financial performance measures (accounting, market and perception) are positively related.

In the second sub-group we examined the relations of the three types of financial performance measures and the different measures of social performance. In separating the articles we used the various correlations between the measures.

**H4a2:** Each corporate social performance measure (information disclosed, reputation, social auditing and CSR actions observed, and values and attitudes) and each financial performance measure (accounting measures, market measures and perception measures) are positively related.

To evaluate the sensitivity of hypothesis H4a2, to verify differences found in the social auditing measures and CSR actions observed, we conducted a meta-analysis of these measures with those on financial performance.

**H4b:** Each corporate social performance measure (social auditing and observed CSR actions) and financial performance measure are positively related.

## **4 Methodology**

This work follows the methodology applied in the study of Orlitzky, Schmidt and Rynes (2003), who used meta-analysis to aggregate the results of studies on corporate social performance and financial performance. Their study covered a 30-year period, from 1968 to 1997. Here we conduct a similar study to theirs, but covering the subsequent 10-year period, from 1998 to 2007, and use a more refined database.

### **4.1 Mapping of the Articles Utilized in the Study**

Unlike the article selection criteria of Orlitzky, Schmidt and Rynes (2003), we focused on ten international periodicals in the management field, according to Journal Citation Reports, which contains a database published by the Institute for Scientific Information (Dubois and Reeb, 2000; Morrison and Inkpen, 1991), and chose those with a significant Impact Factor in 2006. The periodicals analyzed, classified by JCR in the Business, Management and Business Finance categories, are: Academy of Management Journal,

Academy of Management Review, Accounting, Organizations and Society, Accounting Review, Administrative Science Quarterly, Journal of International Business Studies, Journal of Management Studies, Management Science, Organization Science and Strategic Management Journal.

The process of mapping the articles covered the ten-year period between January 1998 and December 2007, using the Business Source Complete database, supplied by EBSCO Industries, Inc., and the ScienceDirect database. We searched these databases to identify articles by the following key words: sustainability, sustainable development, corporate social responsibility, financial performance, organizational performance, profitability, economic success, corporate social performance and corporate environmental performance.

We identified 7,383 articles published in the ten periodicals, of which we chose 659 by the key word search. Of these, 159 carried out quantitative analyses, of which 112 contained quantification of the relation between the different corporate social responsibility and financial performance measures. All the articles chosen for the meta-analysis and their references are in Appendix A.

#### 4.2 Meta-Analysis

Meta-analysis is a method that combines and integrates the results of the relations between similar variables in empirical studies that are only partly comparable (Capon, Farley and Hoenig, 1990; Hunter and Schmidt, 1990). It is a procedure for systematic analysis of the existing literature, to refine and extend the theory on a determined subject (Damanpour, 1991).

Meta-analysis has proved to be a very useful statistical technique in various areas where individual studies on a subject reach conflicting or inconclusive results. By aggregating the correlation coefficients of these studies and correcting them for statistical artifacts, in order to estimate the relations with biases, meta-analysis permits greater precision than other literature

review techniques (Combs and Ketchen Jr., 2003; Gooding and Wagner III, 1985; Grinstein, 2007; Hunter and Schmidt, 1990; Orlitzky, 2001; Orlitzky, Schmidt and Rynes, 2003; Tosi et al., 2000).

An important element of this procedure is that it can correct the correlations for various statistical artifacts (Daily, Certo and Dalton, 2005; Ketchen et al., 1997; King et al., 2004). Empirical studies are subject to variations, differences in research methods or errors introduced in the results, so it is important to determine how these artifacts influence the results and identify the relations between the variables when these artifacts are removed (Nair, 2006).

According to Hunter and Schmidt (1990), the first artifact to be estimated is the sampling error, and then the measurement error. The first involves the difference between an estimate derived from a small sample and the value for the population at large, and the second the relative lack of reliability of the measures (Hunter and Schmidt, 1990).

The meta-analytic study here used information available in the sample of 112 articles researched and focused on correcting the sampling error and measurement error of the social responsibility and financial performance variables. Information on the sample size, correlations between the social responsibility and financial performance measures and reliability coefficients between these same measures served as input factors and are shown in Appendix A.

The correlations reported in the various articles were simple correlation coefficients, generally Pearson's  $r$  or an equivalent resulting from transformation of  $t$  into  $r$ . Nevertheless, it should be stressed that even though some of the studies did not report values of the relations between the two variables, that is, correlation coefficients and  $t$  tests, we still included them in the meta-analysis because they presented reliability coefficients of the measures of corporate

social responsibility and financial performance, generally Cronbach's alpha, which is a measure of internal consistency (King and He, 2005; Peterson, 1994).

The meta-analytic calculation method employed in this study is the same as that used by Orlitzky, Schmidt and Rynes (2003), who followed the techniques of aggregating correlations in studies in the social sciences developed by Hunter and Schmidt (1990). Thus, our meta-analysis was conducted according to the guidelines suggested by Hunter and Schmidt (1990).

The corporate social responsibility measures found in the articles that were used in the meta-analysis here are the data disclosed in the firms' social balance sheets or reports, such as: headcount, investments related to the company's production and operation, charitable contributions, gas emission indexes and employee benefits, among others.

Some of the studies selected used KLD social indexes, available in the database of Kinder, Lydenberg, Domini and Company. These have five dimensions: employees, products, diversity, environment and society (Agle, Mitchell and Sonnenfeld, 1999). Other measures utilized in the studies were those of the social construct of Aupperle and Carroll, which are legal, ethical and discretionary measures (Agle, Mitchell and Sonnenfeld, 1999; Carroll, 1979). Finally, we also found measures related to reputation in some of the articles (Brammer and Pavelin, 2006; Fombrun and Shanley, 1990).

We found three types of financial performance indicators in the articles. The accounting indicators most often found in the studies were: return on equity, return on assets, return on sales, shareholder return, earnings per share and return on investments. The most common market indicators were: Jensen's alpha, Treynor measures, Sharpe's index and Tobin's Q (King and Lenox, 2002). The perception measures were obtained by surveys containing individual questions, aimed at subjectively estimating financial performance (Ittner, Larcker and Randall, 2003).

#### 4.2.1 File Drawer Analysis

A widely discussed problem of meta-analysis is the question of the bias due to the estimation of the correlation coefficients only from the available (published) studies. Hunter and Schmidt (1990) developed a method to mitigate this bias, called file drawer analysis, which estimates the number of overlooked (unlocated) studies necessary to reduce the correlation coefficient reported to a minimal critical level, generally 0.05 or 0.10 (Dalton and Dalton, 2005; Orlitzky, Schmidt and Rynes, 2003; Wagner III, Stimpert and Fubara, 1998).

#### 4.3 Limitations of the Methodology

There are certain limitations of the methodology employed to map the articles, since there may well be articles covering pertinent matters to this study but that do not use the key search words we employed in their title or body, causing them to be left out.

It is also important to mention that meta-analysis itself has certain inherent limitations. It has been criticized for considering all empirical studies on a determined subject, without considering their quality. There is also some controversy over the variables that are included in a meta-analysis (Capon, Farley and Hoenig, 1990; Stanley, 2001).

We did our best to find reliable articles regarding the validity of their results. For this reason, we only selected articles published in the principal international periodicals, as described in Section 4.1.

Regarding the issue that the published studies only represent part of the research carried out, and for this reason the result can be biased, the file drawer analysis helped mitigate this drawback. This analysis here suggests a reduction of the correlations obtained to 0.05.

## 5 Results

This chapter presents the results obtained after the meta-analysis of the 112 articles selected, according to the methodology explained in Chapter 4, and compares them with the results of Orlitzky, Schmidt and Rynes (2003).

## 5.1 Results Obtained

The results of the meta-analysis here confirm all the hypotheses described in Chapter 3 and are set out in summary form below. The tables with the detailed results of all the hypotheses are in Appendix B.

For Hypothesis 1, for the set of all 112 articles available to calculate the meta-analysis – a total of 455 correlation coefficients making a total sample of 170,737 observations – we obtained a mean observed correlation of 0.0826, with variance of 0.0288. The statistical artifacts from sampling error and measurement error explain 14.37% of the variance in the mean correlation observed, and after correcting for these artifacts, the mean correlation becomes 0.1797, which is about twice the value of the observed correlation, and new variance of 0.1166, approximately four times the observed variance.

The result of the file drawer analysis demonstrates that 297 new studies are necessary for the result to be reduced from 0.0826 to 0.05. Thus, with this analysis, Hypothesis 1 was confirmed.

Hypothesis 1 Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
1. CSR and CFP (entire set)	455	170.737	0,0826	0,0288	14,37%	0,1797	0,1166	297

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring  $\rho_{xy}$  down to 0,05.

**Table 1 – Summary of the results obtained for Hypothesis 1**



The results after applying the meta-analysis to Hypothesis 2 indicate its ratification. The mean corrected correlations are positive in all three subdivisions of this hypothesis, showing there is a positive relation between socially responsible practices and enhanced financial performance, vice versa, and when the two occur at the same time. Besides this, the first two divisions of this hypothesis indicate that stakeholder theory and slack resources theory produce similar results, with mean corrected correlations of 0.2568 and 0.2711, respectively, which reaffirms the second hypothesis.

Hypothesis 2 Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
2.1. CSR and subsequent CFP	71	41.055	0,1080	0,0313	13,12%	0,2568	0,1539	82
2.2. CFP and subsequent CSR	56	20.714	0,1158	0,0536	10,21%	0,2711	0,2638	74
2.3. CSR and concurrent CFP	328	108.968	0,0667	0,0224	17,69%	0,1412	0,0825	110

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring  $\rho_{xy}$  down to 0,05.

**Table 2 – Summary of the results obtained for 2**

To investigate the factors behind the positive relation between social responsibility and financial performance, we divided the studies into those containing internal and external measures of corporate social responsibility, set against those examining financial performance. For the measures considered internal, such as efficiency, learning, skills and competencies, the mean corrected correlation was 0.1762, while for the external measures, given by reputation, the result was 0.5702. This indicates that financial performance is more strongly related to external social responsibility measures, meaning that it is more affected by external questions, including those related to outside stakeholders, such as suppliers, government entities and society at large.

Hypothesis 3 Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
3.1. Efficiency, skills, learning and competency	106	30.082	0,0806	0,0279	18,29%	0,1762	0,1087	65
3.2. Reputation e CFP	19	7.766	0,2425	0,0224	67,01%	0,5702	0,0408	73

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 3 – Summary of the results obtained for 3**

The fourth hypothesis involves the operationalization of corporate social responsibility and financial performance. To evaluate social responsibility and the three different measures of financial performance (market, accounting and perception), we divided the set of correlations into these three categories. The fourth hypothesis was also confirmed after calculating the meta-analysis.

The accounting and perception measures, with respective correlations of 0.2428 and 0.1914, indicated a relatively strong relation with CSR, in comparison with the market measures, where the correlation was very low, at 0.0182.

Hypothesis 4 Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
4.1. CSR and market-based measures of CFP	44	31.638	0,0069	0,0078	34,42%	0,0182	0,0352	ND
4.2. CSR and accounting measures of CFP	289	108.299	0,1034	0,0285	17,01%	0,2428	0,1304	309
4.3. CSR and perceptual measures of CFP	122	36.301	0,1044	0,0462	10,64%	0,1914	0,1388	133

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 4 – Summary of the results obtained for 4**

## 5.2 Comparison of the Results

Orlitzky, Schmidt and Rynes (2003) used 52 articles published over a period of 30 years, while in this study we chose 112 articles published in the past ten years. The table below presents the main differences in the two studies.

	Orlitzky, Schmidt e Rynes (2003)	Present study
Research peorid	1968-1997	1998-2007
Data bases	<i>ABI/Inform Global</i> and <i>PsycINFO</i>	<i>EBSCO</i> and <i>ScienceDirect</i>
Number of studies	52	112
Number of correlations coefficients	388	455
Sample size	33.878	170.737

**Table 5 – Differences between the studies**

In the new period there was a significant increase in the number of articles published reporting quantitative studies of the relation between social responsibility and financial performance, but the number of correlations presented did not grow in the same proportion. Also, the sample size was five times greater in the new period.

Table 6 shows that the relation between social responsibility and financial performance is positive in both studies, but in the first two cases our correlations are smaller than in the previous study. The opposite occurred, however, in the relation between environmental performance and financial performance: in the previous study the correlation is smaller. Despite the differences in the correlations, both studies confirm Hypothesis 1: There is a positive correlation between corporate social responsibility and financial performance.

<b>Hypothesis 1</b>	<b>1968-1997</b>				<b>1998-2007</b>			
Relationship between	k <sup>1</sup>	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )	k	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )
CSR and CFP (entire set)	388	33.878	0,3648	0,1896	455	170.737	0,1797	0,1166
CSP without corporate environmental performance and CFP	249	24.055	0,4671	0,1891	352	117.940	0,1659	0,1170
Corporate environmental performance and CFP	139	9.823	0,1246	0,1097	103	52.797	0,2093	0,1139

<sup>1</sup> k: number of correlation coefficients.

**Table 6 – Comparison of Hypothesis 1**

Table 7 shows that both studies support Hypothesis 2, where the relation between social responsibility and financial performance tends to be bidirectional and simultaneous. The difference between them is in the degree of positivity and the variances. Although the correlations in our study are lower than in the previous one, its variances are smaller, showing a smaller dispersion of values.

<b>Hypothesis 2</b>	<b>1968-1997</b>				<b>1998-2007</b>			
Relationship between	k <sup>1</sup>	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )	k	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )
CSR and CFP (entire set)	209	16.983	0,4375	0,1919	328	108.968	0,1412	0,0825
CSP without corporate environmental performance and CFP	31	4.189	0,4005	0,2306	59	8.979	0,0764	0,1056
CSP without corporate environmental performance and CFP	158	12.764	0,5027	0,2151	241	88.427	0,1529	0,0866

<sup>1</sup> k: number of correlation coefficients.

**Table 7 – Comparison of Hypothesis 2**

Just as for the first two hypotheses, Hypothesis 3 is also confirmed in this study. The correlations between efficiency, learning, skills and competencies on the one hand and financial performance on the other were greater in the study by Orlitzky, Schmidt and Rynes (2003), and more correlation coefficients were used in the meta-analysis. It can also be noted that the number of correlation coefficients related to reputation fell significantly in the more recent period. The explanation for this might be the smaller number of articles published on this subject, and consequently the smaller number of correlations reported.

<b>Hypothesis 3</b>	<b>1968-1997</b>				<b>1998-2007</b>			
Relationship between	k <sup>1</sup>	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )	k	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )
Efficiency, skills, learning and competency and CFP	130	12.957	0,3324	0,0572	106	30.082	0,1762	0,1087
Reputation and CFP	177	14.274	0,4942	0,3187	19	7.766	0,5702	0,0408

<sup>1</sup> k: number of correlation coefficients.

**Table 8 – Comparison of Hypothesis 3**

For the fourth hypothesis, we analyzed the relation between the social responsibility and financial performance measures separately. The comparison between the studies showed some changes in this relation. First, that between information disclosed on social

responsibility and financial performance increased, and its variability also changed. Second, the relation between the information disclosed and the accounting measures of financial performance, which in the earlier study were negatively correlated, are positively correlated in our study. Third, the study of Orlitzky, Schmidt and Rynes (2003) did not present any correlation between the information disclosed and the perception of financial performance.

Regarding the social responsibility measures linked to social auditing, corporate behavior, processes and results on the one hand and financial performance on the other, the correlation declined, but when the market and perception measures were separated, the correlations went from positive to negative. Finally, the correlation between charitable donations rose significantly in our study, demonstrating that this action of firms is playing an increasing role in boosting their financial performance.

<b>Hypothesis 4</b>	<b>1968-1997</b>				<b>1998-2007</b>			
Relationship between	k <sup>1</sup>	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )	k	Total sample size	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2\rho$ )
Disclosure and CFP	97	5.360	0,0871	0,0011	264	117.942	0,1856	0,1276
Accounting-based measures	18	934	-0,0168	0,0000	147	70.012	0,2623	0,1408
Perceptual measures					57	22.484	0,1488	0,1504
Social audits, corporation behaviours, processes, and outcomes and CFP	145	14.200	0,1803	0,0844	55	24.713	0,0906	0,0641
Market-based measures	60	4.858	0,0411	0,1661	24	6.192	-0,0125	0,0267
Perceptual measures	3	690	0,1524	0,0000	3	1.734	-0,0235	0,0000
Philanthropic donations and CFP	17	1.283	0,2907	0,1867	7	1.648	0,4563	0,4092

<sup>1</sup> k: number of correlation coefficients.

**Table 9 – Comparison of Hypothesis 4**

As can be seen from comparing the results, all the hypotheses were confirmed in the two studies, even with the differences in the time horizon and database for selection of the articles.

The aim of this study was to investigate the relation between corporate social responsibility and financial performance in the past ten years as depicted in articles on the theme, using the meta-analytic method developed by Hunter and Schmidt (1990). In this effort we borrowed the hypotheses formulated by Orlitzky, Schmidt and Rynes (2003), who used 52 articles published between 1968 and 1997, to see if they are still valid for the period from 1998 to 2007. Besides the different period studied, we refined the database, including only the main international periodicals in the management area, drawn from *Journal Citation Reports*.

Our search for articles in the ten leading management periodicals identified 112 containing quantification of the relation between corporate social responsibility and financial performance. After analyzing the four hypotheses and their subdivisions, we compared the results of the two studies to note any changes in the behavior of variables because of the difference in time horizons.

The results of this work show that even with a different and more refined database, covering a later and shorter period, the results of the meta-analysis carried out by Orlitzky, Schmidt and Rynes (2003) and those of this study are similar, and the four hypotheses presented were confirmed. Our conclusion is that there is a positive correlation between corporate social performance and financial performance; that this relation tends to be bidirectional and simultaneous; that firms' reputation is an important moderator of this relation; and that the various measures of financial performance and social performance are behind this relation.

The results presented in this study contain implications for the strategic management area and contribute to an expanded and more refined development of the theory of social responsibility. In the first place, our results show that the results of many studies point in a

coherent and consistent direction. Second, the results presented here can help answer the question of why companies invest in social responsibility as a way to gain competitive advantage, shedding light on some contradictions and ambiguities reported in past works. Third, the results reveal a positive correlation between the two variables in the various sub-groups presented in the hypotheses, arguing in favor of social responsibility efforts in organizations. Finally, it clarifies the relations between these two themes and supplies motivation for future studies on the subject.

As a suggestion for future research based on these results, we propose examination of new hypotheses in light of other theories, with the use of reliable data. New meta-analyses of the subject can help managers in various industries make strategic decisions to obtain competitive advantages and financial gains.

Future meta-analyses on the relation between corporate social responsibility and financial performance can include factors related to the context of companies, subdividing firms according to country of origin, type of industry and/or financial and market environments.

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Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>2</sup>	Measure of CFP	Reliability of CSP	CFP
ADAMS and HARDWICK	1998	100	-0,36 to 0,81	4	Charitable contributions, donations	Net income		
AGLE, MITCHELL and SONNENFELD	1999	80	-0,23 to 0,45	24	KLD scores (4 dimensions), Carroll and Aupperle's Concern for Society	Return on equity, return on assets	0,38	0,35
AGLE et al.	2006	128	-0,12 to 0,29	11	CSR (1 dimension - personal)	Return on equity, return on assets, return on sales, sales, return per share		0,16; 0,56; 0,63
AL-TUWAJRI, CHRISTENSEN and HUGHES II	2004	198	0,01 to 0,39	11	Environmental practices	Return per share, income margin, valor de mercado/valor accounting	0,33; 0,39; 0,49	0,25; 0,34
ANDERSON and REEB	2004	403	-0,22 to 0,01	4	CSR (1 dimension - personal)	Assets, Tobin's Q		
ARTHUR and HUNTLEY	2005	41	-0,09 and 0,18	2	CSR (1 dimension - personal)	Costs		
BAE and GARGIULO	2004	276	-0,05 to 0,05	4	CSR (1 dimension - product)	Return on assets, return on investments	0,01	
BAINES and LANGFIELD-SMITH	2003	141	0,22 and 0,28	2	CSR (1 dimension - environment)	Advanced management accounting practice - AMAP		
BANSAL	2005	45	-0,13 to 0,30	4	Organization's capacity, CSR (1 dimension - environmental)	Return on equity		
BARNETT and SALOMON	2006	61	-0,21 to 0,10	9	CSR (2 dimensions - personal and community)	Assets, shares, bonds		
BARRETO and BADEN-FULLER	2006	305	-0,41 to 0,28	4	Organizacional learning, CSR (1 dimension - firm)	Return on assets, growth		
BART and BAETZ	1998	113	-0,09 to 0,10 (t)	4	CSR (1 dimension - personal)	Return on assets, return on sales		
BATT	2002	260	0,18	1	HR index	Sales	0,60; 0,79	
BAYUS, ERICKSON and JACOBSON	2003	109	0,23 to 0,49 (t)	6	CSR (1 dimension - product)	Return on assets		

Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>a</sup>	Measure of CFP	Reliability of CSP	CFP
BERMAN et al.	1999	486	0,01 to 0,22	5	KLD scores (5 dimensions)	Return on assets		
BLOOM	1999					Total revenue		0,23
BLOOM and MILKOVICH	1998	2513	0,04	1	CSR (1 dimension - firm)	Return of shareholders	0,14; 0,21; 0,22; 0,39; 0,60	0,82
BOONE, VAN OLFEN and VAN WITTELOOSTUIN	2005	44	0,29	1	CSR (1 dimension - personal)	Return on equity		
BOONE et al.	2004	40 e 361	0,27 and 0,46	2	CSR (1 dimension - firm)	Return on sales		
BRAMMER and MILLINGTON	2004	416	-0,04 to 0,51	3	Charitable contributions, CSR (2 dimensions - environmental and community)	Return on investments		
BRAMMER and PAVELIN	2006	210	0,01 to 0,30	3	Corporate reputation, CSR (2 dimensions - personal and environmental)	Price per share		
BRANZEI et al.	2004	360	-0,08 to 0,11	3	CSR (1 dimension - environmental)	Perceptual measures of financial performance (survey)		
BROWN, STURMAN and SIMMERING	2003	333	0,04 and 0,06	2	CSR (1 dimension - firm)	Return on assets	0,99	
BUYSE and VERBEKE	2002	99	0,46 and 0,72 (t)	2	Perceptual measures of organizational capacities	Perceptual measures of financial performance (survey)	0,46	0,72
CARNEY and GEDAJLOVIC	2002					Return on investments		0,37
CERTO et al.	2006	87	-0,03 to 0,17	4	CSR (1 dimension - personal)	Return on equity, return on assets, sales		
CHAN	2005	332	-0,27 to 0,24	3	CSR (1 dimension - environmental)	Perceptual measures of financial performance (survey)		
CHANG et al.	2006	578	-0,06 to 0,03	3	Social audit	Revenue		
CHATTERJEE and HAMBRICK	2007	105	0,05 and 0,17	2	CSR (1 dimension - personal)	Return on assets, Revenues		

Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>a</sup>	Measure of CFP	Reliability of CSP	CFP
CHRISTMANN	2004				CSR (2 dimensions - personal and environment)		0,13; 0,20; 0,21; 0,22; 0,27; 0,31; 0,32; 0,36; 0,41	
CLARKSON, LI and RICHARDSON	2004	29	-0,25 to -0,04	7	Toxics Release Inventory - TRI, Biological oxygen demand - BOD	Market value/accounting value, abnormal returns	0,2	
DALTON et al.	2003	229	-0,11 to 0,16	20	CSR (2 dimensions - firm and personal)	Return on equity, return on assets, return on sales, return on investments, return on shareholders, abnormal returns, Tobin's Q, earn per share, alpha, valor de mercado/valor accounting	0,8	
DALTON et al.	1998	69 e 159	-0,03 and 0,02	2	CSR (1 dimension - personal)	Market measures		
DALTON et al.	1999	131	0,16	1	CSR (1 dimension - personal)	Return on equity, return on assets, return on sales, Jensen's alpha, Treynor measures, Sharpe index	0,12; 0,15; 0,17; 0,21	0,10; 0,17
DAMANPOUR and GOPALAKRISHNAN	2001	101	-0,07 to 0,18	11	CSR (2 dimensions - personal and product)	Return on equity, return on assets		
DAS, SEM and SENGUPTA	1998	119	-0,28 to 0,96	3	CSR (1 dimension - personal)	Return on equity, sales, total assets		
DAVIDSON III et al.	2004	285	0,01 and 0,02	2	CSR (1 dimension - firm)	Abnormal returns		
DE JONG, RUYTER and WETZELS	2005				CSR (1 dimension - personal)		0,66; 0,90	
DEEPPHOUSE and CARTER	2005	265 e 553	0,15 and 0,55	2	Financial reputation and public reputation indexes	Return on assets		
DELIOS and BEAMISH	2001	1656	-0,06 to 0,21	3	CSR (1 dimension - firm)	Profit		
DRAKE, HAKA and RAVENSCROFT	1999	100	-0,35	1	CSR (1 dimension - product)	Profit		
EVANS and MAYONDO	2002	204	-0,28 to 0,47	6	KLD scores, CSR (1 dimension - personal)	Return on assets		
FIRTH, FUNG and RUI	2006	2343, 2345 e 2276	0,00 to 0,11 (t)	4	Stakeholder's orientation (government)	Return on equity, return on sales, Profit/share, operational net loss		

Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>2</sup>	Measure of CFP	Reliability of CSP	CFP
GEDAJLOVIC and SHAPIRO	2002	334	-0,03 to 0,07	5	CSR (1 dimension - firm)	Return on assets, sales		0,17
GEORGE	2005	900	-0,12 to 0,39	8	CSR (2 dimensions - firm and personal)	Profit		
GREENLEY and OKTEMGIL	1998					Return on equity, return on assets liquidos, return on sales		0,42; 0,74; 0,78
GREENWOOD et al.	2005	160	0,06 and 0,23	2	CSR (2 dimensions - firm and personal)	Revenue		
GREVE	1999	2490	-0,04 and 0,03	2	CSR (2 dimensions - product and firm)	Profit/share		
HARRIS	2001	241	0,18 to 0,26	2	CSR (1 dimension - personal)	Sales, return on investments		
HAVEMAN, RUSSO and IVIEYER	2001	335	0,00	1	CSR (1 dimension - personal)	Earnings		
HENDERSON	1999	649	0,02	1	CSR (1 dimension - personal)	Sales		
HENRI	2006	383	0,17	1	Organizational learning	Profit, return on investments		
HILLMAN and KEIM	2001	308	-0,30 to 0,24	9	KLD scores (2 dimensions: Social Issue Participation e Stakeholder Management)	Return on equity, return on assets, return on sales, sales, market value/accounting value, Net income		
HUSTED and ALLEN	2006				CSR (2 dimensions - environment and community)		0,07; 0,17	
INGRAM and SIMONS	2002	220	0,68	1	Organizational learning	Profit		
ITTNER, LARCKER and MEYER	2003	77	0,11	1	CSR (1 dimension - personal)	Revenues, margin, costs		
ITTNER, LARCKER and RANDALL	2003	276	-0,12 to 0,09	6	CSR (5 dimensions)	Return on assets, sales, return on shares		
JOHNSON et al.	2005	38, 39, 41, 42 e 44	0,10 to 0,62	6	CSR (1 dimension - personal)	Abnormal returns		
JOHNSON and GREENING	1999	252	-0,3 to 0,22	18	KLD scores (5 dimensions)	Return on equity, return on assets, return on sales, total assets, sales	0,44	
KASSINIS and VAPEAS	2006	5033	-0,17 to 0,21	6	Toxics Release Inventory - TRI	Revenue		
KILDUFF, ANGELMAR and MEHRA	2000	35	-0,12	1	CSR (1 dimension - product)	Market contribution		
KING and LENOX	2002	614	-0,13 to 0,08	14	Environment practices disclosure	Return on assets, Q de Tobin, sales liquidas		



Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>a</sup>	Measure of CFP	Reliability of CSP	CFP
KYRIAKOPOULOS and RUYTER	2004	136	0,38	1	CSR (1 dimension - product)	Financial performance in short term from new products	0,82	0,88
LARCKER, RICHARDSON and TUNA	2007	2106	0,10 to 0,15	2	CSR (1 dimension - personal)	Return on assets		
LEWIS and HARVEY	2001				CSR (1 dimension - environmental)		0,80; 0,81; 0,85	0,79
LOK et al.	2005	141	0,23 to 0,39	3	Organizational learning, CSR (1 dimension - personal)	Perceptual measures of financial performance (survey)	0,75; 0,83; 0,84	0,82
LU and BEAMISH	2004	601	-0,09 to 0,18	7	CSR (1 dimension - product)	Return on assets, Tobin's Q, sales		0,05
LUO and CHUNG	2005	906	-0,02 to 0,34	4	Organizational learning, CSR (1 dimension - personal)	Return on assets, sales		
LUO	2006	126	0,09 to 0,22	3	CSR (1 dimension - firm)	Sales		
LUO	2005	124	0,14 to 0,28	6	CSR (1 dimension - firm)	Return on investments		0,17
LUO	1999	96	0,01 to 0,61	9	Organizational learning, CSR (1 dimension - product)	Assets, return on equity, sales		
MAIGNAN and RALSTON	2002				CSR (1 dimension - personal)		0,20; 0,46	
MAGNAN and ST-ONGE	2005					Profit		0,73
MARCUS and ANDERSON	2006	77	-0,16 to 0,36	10	Organizational learning, CSR (2 dimensions - firm and personal)	Sales, costs reduction		
MATSUMURA and SHIN	2006	214	-0,51 to 0,67 (t)	3	CSR (1 dimension - personal)	Profit		
MAYER and NICKERSON	2005	190	0,02 to 0,22	4	Stakeholder's orientation (government)	Margem, Revenue		
MCDONALD and WESTPHAL	2003	241	-0,23 to 0,21	11	CSR (2 dimensions - personal and product)	Market value/accounting value, sales		
MCGAHAN and PORTER	2002					Profit		0,35
MCNABB and WHITFIELD	2001	697 e 703	0,03 to 0,08 (t)	4	CSR (1 dimension - personal)	Perceptual measures of financial performance (survey)		
MCWILLIAMS and SIEGEL	2000	524	0,04 and 0,36	2	KLD scores	Perceptual measures of financial performance (survey)		
MOERS	2006	105	-0,03 to 0,17	7	CSR (1 dimension - environment)	Perceptual measures of financial performance (survey)	0,62	0,70; 0,81; 0,83; 0,92
NAGAR and RAJAN	2005	87	0,03 and 0,05	2	CSR (1 dimension - personal)	Financial earnings		

Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>2</sup>	Measure of CFP	Reliability of CSP	CFP
OGDEN and WATSON	1999	60	0,34 (t)		CSR (1 dimension - firm)	Profit/equity		
PATTEN	2005	119	0,06 and 0,07 (t)	2	CSR (1 dimension - environment)	Revenues, return on assets		
PAYNE	2006	1105	0,07 to 0,10	4	CSR (1 dimension - product)	Return on equity, return on assets, return on sales, Profit		
PENG and LUO	2000	127	0,32	1	Stakeholder's orientation (government)	Return on assets		
PERRY-SMITH and BLUM	2000	527	0,02 and 0,09	2	CSR (1 dimension - personal)	Profit das sales		0,85; 0,87
PIZZINI	2006					Margin per share, discount cash flow		0,63
POWNALL and SIMKO	2005					Earnings/price, market value/accounting value		0,03
RAMUS and STEGER	2000				CSR (1 dimension - environment)		0,53	
RANDALL, NETESSINE and RUDI	2006	53	-0,17 to 0,30	6	CSR (1 dimension - product)	Sales, capital cost		
RAO, GREVE and DAVIS	2001	2020	-0,01 to 0,07	4	CSR (1 dimension - personal)	Market value, market return		
RAZ and GLOOR	2007	100	-0,11 to 0,23	3	Organizational learning, Stakeholder's orientation (government)	Financial earnings	0,58; 0,64	
REED, LUBATKIN and SRINIVASAN	2006	123 e 169	-0,09 to 0,26	12	Social capital measures	Profit, cost	0,62; 0,81; 0,88	
RICHARD	2000	63	0,03 and 0,12	2	CSR (1 dimension - personal)	Return on equity		0,4
RICHARDSON and WELKER	2001	324	-0,02 and 0,70	2	Social performance index	Return on equity, return on shares, dividends, market value/accounting value		
ROBERTS and AMIT	2003	149	-0,01 to 0,34	4	CSR (2 dimensions - personal and product)	Return on assets		
ROBERTS and DOWLING	2002	540	0,00 to 0,48	11	Reputation indexes, financial reputation, residual reputation	Return on assets, market value/accounting value		
SELS et al.	2006	416	-0,44 to 0,13	6	HR management	Profitability		
SHARMA	2000	99	0,3 to 0,45	7	Coalition of Environmentally Responsible Economies (CERES) principles	Valuation	0,69; 0,73; 0,79	
SHAW, GUPTA and DELERY	2005	299	0,08	1	HR index	Return on assets	0,13	
STRIKE, GAO and BANSAL	2006	222	-0,05 to 0,38	3	KLD scores, CSR (1 dimension - product)	Return on sales		

Author (s)	Year	N <sub>i</sub>	r <sup>1</sup> <sub>observed</sub>	N° of r's reported	Measure of CSP <sup>2</sup>	Measure of CFP	Reliability of CSP	Reliability of CFP
STUART, HOANG and HYBELS	1999	301	0,06 and 0,15	2	CSR (1 dimension - product)	Equity		
SUN, ARYEE and LAW	2007	78	0,33	1	HR practices	Sales	0,7	
VOSS; CABLE and VOSS	2006	113	-0,28 to 0,02	4	Social capital measures	Revenue, Net income	0,78; 0,82	
WAGNER III, STIMPET and FUBARA	1998	63	0,06	1	CSR (1 dimension - personal)	Return on equity, return on assets liquidos, Profit, earnings per share		
WALDMAN et al.	2001	210	-0,01 to 0,22	9	CSR (2 dimensions - personal and environment)	Total assets, net income		
WALDMAN, SIEGEL and JAVIDAN	2006	56	0,18 to 0,35	4	CSR (2 dimensions - firm and personal)	Profit		
WEAVER, KLEBE and COCHRAN	1999	128	-0,1 to 0,04	8	Carroll's construct (ethic)	Return on assets		
WIGGINS and RUEFLI	2002					Return on assets, Tobin's Q		0,92
YIU, BRUTON and LU	2005	224	-0,30 to 0,32	8	Stakeholder's orientation (government)	Return on assets		
ZAHRA, IRELAND and HITT	2000					Return on equity, sales		0,36

<sup>1</sup> correlations coefficients: Pearson r or (t), refers to transformation procedure, usually t-test statistic converted to r.

<sup>2</sup> CSR are measures of corporate social responsibility.

## APPENDIX B – TABLES OF RESULTS

**Table 1 - Hypothesis 1: Overall Meta-Analysis**

Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
1. CSR and CFP (entire set)	455	170.737	0,0826	0,0288	14,37%	0,1797	0,1166	297
2. CSP and CFP without CSP reputation and CFP survey measures	436	162.971	0,0750	0,0277	14,04%	0,1632	0,1127	218
3. CSP without corporate environmental performance and CFP	352	117.940	0,0760	0,0289	15,05%	0,1659	0,1170	183
4. Corporate environmental performance and CFP	103	52.797	0,0973	0,0282	12,80%	0,2093	0,1139	97

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer Analysis* from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 2 - Hypothesis 2: All measures of CSP**

Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_\rho$ )	File Drawer Analysis <sup>3</sup>
2.a.1. CSP and subsequent CFP	71	41.055	0,1080	0,0313	13,12%	0,2568	0,1539	82
2.a.2. CSP and prior CFP	56	20.714	0,1158	0,0536	10,21%	0,2711	0,2638	74
2.a.3. CSP and concurrent CFP	328	108.968	0,0667	0,0224	17,69%	0,1412	0,0825	110

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 3 - Hypothesis 2: CSP measures only, excl. Environmental Performance**

Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_\rho$ )	File Drawer Analysis <sup>3</sup>
2.b.1. CSP and subsequent CFP	59	8.979	0,0337	0,0274	24,86%	0,0764	0,1056	ND
2.b.2. CSP and prior CFP	52	20.534	0,1165	0,0537	9,95%	0,2729	0,2652	69
2.b.3. CSP and concurrent CFP	241	88.427	0,0709	0,0226	17,62%	0,1529	0,0866	101

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 4 - Hypothesis 3: Internal Skills and Reputation**

Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_\rho$ )	File Drawer Analysis <sup>3</sup>
1. Efficiency, skills, learning and competency	106	30.082	0,0806	0,0279	18,29%	0,1762	0,1087	65
2. Reputation indexes	19	7.766	0,2425	0,0224	67,01%	0,5702	0,0408	73
2.a. Subsequent CFP	3	630	0,1233	0,0160	49,65%	0,2900	0,0446	4
2.b. Prior CFP	11	5.940	0,2355	0,0165	83,02%	0,5537	0,0155	41
2.c. Concurrent CFP	5	1.196	0,3402	0,0389	73,36%	0,8000	0,0572	29

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 5 - Hypothesis 4a1: Subset Meta-Analysis of Operationalization Moderator Effects**

Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_\rho$ )	File Drawer Analysis <sup>3</sup>
1. CFP operationalizations								
1.a. Market-based	44	31.638	0,0069	0,0078	34,42%	0,0182	0,0352	ND
1.b. Accounting-based	289	108.299	0,1034	0,0285	17,01%	0,2428	0,1304	309
1.c. Perceptual measures	122	36.301	0,1044	0,0462	10,64%	0,1914	0,1388	133

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 6 - Hypothesis 4a2: Subset Meta-Analysis of Operationalization Moderator Effects**

Relationship between	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
<b>2. CSP operationalizations</b>								
2.a. Disclosure	264	117.942	0,0819	0,0287	13,40%	0,1856	0,1276	168
2.a.1. Market-based CFP	60	25.446	0,0099	0,0074	32,31%	0,0269	0,0368	ND
2.a.2. Accounting-based CFP	147	70.012	0,1101	0,0297	16,40%	0,2623	0,1408	177
2.a.3. Perceptual CFP	57	22.484	0,0753	0,0420	8,28%	0,1488	0,1504	29
2.b. Reputation indexes	19	7.766	0,2425	0,0224	67,01%	0,5702	0,0408	73
2.b.1. Market-based CFP	3	630	0,1233	0,0160	49,65%	0,2900	0,0446	4
2.b.2. Accounting-based CFP	14	6.318	0,2313	0,0162	84,42%	0,5440	0,0139	51
2.b.3. Perceptual CFP	2	818	0,4204	0,0350	100,00%	0,9886	0,0000	15
2.c. Social audits, corporation behaviours, processes, and outcomes	55	24.713	0,0392	0,0146	17,46%	0,0906	0,0641	ND
2.c.1. Market-based CFP	24	6.192	-0,0054	0,0090	43,54%	-0,0125	0,0267	ND
2.c.2. Accounting-based CFP	28	16.787	0,0608	0,0162	14,95%	0,1432	0,0764	6
2.c.3. Perceptual CFP	3	1.734	-0,0100	0,0014	100,00%	-0,0235	0,0000	ND
2.d. Values and attitudes of CSR	125	24.844	0,0817	0,0339	18,55%	0,1780	0,1308	79
2.d.1. Market-based CFP	0	0						
2.d.2. Accounting-based CFP	106	19.379	0,0716	0,0289	22,43%	0,1677	0,1232	46
2.d.3. Perceptual CFP	19	5.465	0,1178	0,0497	12,38%	0,2505	0,1973	26

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer* Analysis from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.

**Table 7 - Hypothesis 4b: Subset Meta-Analysis of Operationalization Moderator Effects**

Type of CSP	k <sup>1</sup>	Total sample size	Mean observed correlation ( $\rho_{xy}$ )	Observed variance	% variance explained <sup>2</sup>	Mean corrected correlation ( $\rho$ )	Variance of $\rho$ ( $\sigma^2_{\rho}$ )	File Drawer Analysis <sup>3</sup>
1. Social audits	3	1.734	-0,0100	0,0014	100,00%	-0,0235	0,0000	ND
2. CSP behaviours								
2.a. Philanthropic donations	7	1.648	0,1941	0,0862	14,11%	0,4563	0,4092	20
2.b. Environmental forecasting	28	10.465	0,0127	0,0181	15,02%	0,0284	0,0764	ND
2.c. Issues management	26	9.397	0,0263	0,0024	100,00%	0,0608	0,0000	ND
2.d. Stakeholder management	33	16.319	0,0244	0,0129	16,73%	0,0573	0,0593	ND
2.e. Environmental management	37	34.835	0,1322	0,0300	14,80%	0,3049	0,1360	61

<sup>1</sup> k: number of correlation coefficients.

<sup>2</sup> percentage of observed variance explained by three study artefacts: sampling error, measurement error in CSP, measurement error in CFP.

<sup>3</sup> *File Drawer Analysis* from Hunter and Schmidt (1990): number of missing studies averaging null findings needed to bring pxy down to 0,05.



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