Twenty years of research on the relationship between economic and social performance: A meta-analysis approach.

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Abstract

The aim of this paper is to analyze the relationship between economic and social performance in an organizational context. We perform a meta-analysis to test this relationship and to examine the influence of the measurement criteria and organizational characteristics, such as activity, social orientation, technology and cultural environment. We find 591 effect sizes in 67 papers. Our results reveal a positive relationship between economic and social performance, although differences in the sign are detected when moderator variables are introduced.

Keywords: Economic performance, social performance, meta-analysis, measurement criteria, organizational context.

INTRODUCTION

Currently, organizations are developing a growing interest in promoting socially friendly activities. Michellon, Boesso and Kumar (2013) identify advantages of an organization deciding to promote these activities, such as improvement in its legitimation and reputation, a better relationship with its stakeholders and the promotion of skills, processes and systems that increase the organization's competitiveness. These advantages are translated into the ability to generate social and economic performance; hence, this process of performance or value creation is the result of the strategy used by the organization (Baron and Markman, 2000, 2003). As a consequence, one of the most interesting topics studied in the literature is the relationship between an organization's economic and social performance. This question must be addressed taking into account the needs of different organizations that develop socially friendly activities, such as socially responsible companies, social enterprises and other phenomena in the context of nonprofit organizations (López-Arceiz, Bellostas and Rivera, 2016).

The aim of this paper is to determine the existence and nature of the relationship between economic and social performance in the organizational context. Although the concepts of social and economic performance originated in socioeconomic research more than twenty years ago, there are no generally accepted definitions, measurements or descriptions of the interactions between them (Austin, Stevenson, and Wei-Skillern, 2006; Sud, VanSandt, and Baugous, 2009; Felício, Gonçalves, and da Conceição, 2013; Mair and Marti, 2006; Dees and Anderson, 2003; Peredo and Mclean, 2006; Vásquez and Dávila, 2008; Bellostas, López-Arceiz, and Mateos, 2016).

This paper develops a meta-analysis of the relationship between economic and social performance. Meta-analysis is an appropriate statistical approach to use when multiple individual studies have yielded inconclusive or conflicting results (Rosenthal

and DiMatteo, 2002; Orlitzky, Schmidt, and Rynes, 2003). In studying the relationship between economic and social performance, we observe contradictions between authors who have found a dependency relationship and those who have not (Brammer and Millington, 2008; Hahn and Figge, 2011; Lockett, Moon, and Visser, 2006; Orlitzky *et al.*, 2003; Ullmann, 1985; Waddock and Graves, 1997; Wu, 2006). Moreover, we find that studies have used different sample sizes and measurement criteria. Therefore, we propose the treatment of the measurement criteria of economic and social performance and the characteristics of the organization as moderating elements of this relationship. These aspects were analyzed by different authors approximately ten years ago (Orlitzky *et al.*, 2003; Margolis, Elfenbein and Walsh, 2007). However, in the last few years, there has been a strong progress in this research field with the creation of new measurement criteria or indicators of economic and social performance. This paper introduces these new criteria and analyses its influence in the relationship between economic and social performance in different types of organizations. In general terms, our results show a positive relationship between economic and social performance, although differences in the sign can be detected when the moderator variables are introduced. As our main contribution, we statistically aggregate extant evidence concerning the claim that social performance interacts with the economic performance of an organization. Second, we test a central assertion of instrumental stakeholder theory, i.e., that there is a positive interaction between the two types of performance. Moreover, we investigate whether the relationship varies based on the distance between performance measures and characteristics of the organization. Finally, we note that organizations must design and integrate relevant definite indicators in their strategic management practices and that researchers should be careful in drawing conclusions because they could be influenced by the abovementioned moderators.

This paper is organized into five sections: The first section is the introduction. The second section defines the various research questions posed in this paper. The third and fourth sections introduce the methodology and the results, respectively, to answer the proposed research questions. In the fifth section, we discuss the results. The last section provides conclusions based on the results obtained.

THEORETICAL BACKGROUND

Notes on the relationship between economic and social performance

In the economic literature, there is a broad consensus about the necessity to study the relationship between economic and social performance because of the advantages and costs related to this strategy. Since the publication of Bowen and Johnson's study (1953), there has been an increase in scientific interest in the interaction between social and economic activity in organizations (Carroll, 1979). The link between these activities has been a core topic in the management literature for years (Schaltegger and Synnestvedt, 2002). Corporate social responsibility and socially friendly activities have been understood as an alternative way of generating economic and social welfare (Godfrey and Hatch, 2007). These practices imply the creation of social value from different initiatives. Business companies, cooperatives and mutuals create social value through the market, whereas other types of nonprofits, such as foundations or associations, create social value outside the market system (Chaves and Monzón, 2012, Sanzo *et al.*, 2015, Costa and Carini, 2016). Although several empirical papers have assumed that social performance improvements generate new costs, other papers have empirically confirmed that socially friendly activities generally pay off and improve economic performance (Porter and Van der Linde, 1995). This relationship is important in socially friendly initiatives, and it is a key question for some of them (Doherty, Haugh, and Lyon, 2014).

Despite the large number of relevant academic contributions, the links between social performance and economic performance remain unclear (Brammer and Millington, 2008; Hahn and Figge, 2011; Lockett *et al.*, 2006; Orlitzky *et al.*, 2003; Ullman, 1985; Waddock and Graves, 1997; Wu, 2006). Aupperle, Carroll, and Hatfield (1985) and, more recently, McWilliams, Siegel, and Teoh (1999) and McWilliams and Siegel (2001) find no empirical relationship between economic and social performance in companies with a social orientation. By contrast, Waddock and Graves (1997), Kinnell and MacDougall (1997), Blois (1999), and Sargeant (1999) detect a positive relationship between a proxy of social value and accounting measurements of economic value, whereas Abiodun (2012) detects a negative relationship between investment in social activities and economic return. Taking into account the conflicting results reached by previous studies, we propose the following research question:

RQ_1: Is there a significant relationship between economic and social performance?

If there is a significant relationship , the results will be in line with Preston (1978), Freedman and Stagliano (1991), Graves and Waddock (2000), Griffin and Mahon (1997), Berman *et al.* (1999), Van de Velde, Vermeir, and Corten (2005) and Wu (2006). These authors all find a relationship between economic and social performance. The sign of this relationship could be influenced by the measurement criteria and the indicators used by different authors to analyze this relationship. In the context of corporate social responsibility, Orlitzky *et al.* (2003) study the importance of measurement criteria as moderator variables. Bellostas *et al.* (2016) also detect a lack of agreement among academic researchers concerning the composition and measurement of both types of performance. Thus, correlations between the economic and social performance constructs can be influenced by the measurement strategies.

Measurement strategies for economic and social performance

The interaction between economic and social performance can be influenced by the measurement criteria adopted in each research project (Petrella and Richez-Battesti, 2014). The degree of development of each indicator can vary to a considerable extent. Although some authors have developed models to measure economic and social performance in the last few years (Yang, Huang, and Lee, 2014; San-Jose and Retolaza, 2012; Testi and Bellucci, 2011), there is a lack of consensus about the operational level.

In this sense, the measurement of economic performance is not free of challenges. Economic performance supposes that stable and continuous economic activities are being conducted. The question is how to measure an organization's economic activity. Orlitzky *et al.* (2003) proposed three broad subdivisions of economic performance: market-based (investor returns), accounting-based (accounting returns), and perceptual (survey) measurements. Market-based and accounting-based measurements constitute a partial perspective because they recognize only the consumer and the producer or owner of a company as legitimate stakeholders (San-Jose and Retolaza, 2012; Payne, Holt, and Frow, 2000; Johansen and Nielsen, 2011; Nishimura, 2007; Fontaine, Haarman, and Schmid, 2006; Freeman, 1984). In this case, traditionally the most used criterion has been the accounting return, but nowadays sales or asset growth are more important in some entities such as nonprofit organizations (Liu, Takeda, and Ko, 2012; Coombes *et al.*, 2011; Bai, 2013). Something similar happens with perceptual measures. These measures are based on the answers of a person who can give a subjective evaluation (Conine and Madden, 1986; Reimann, 1975; Wartick, 1988). The perceptions of managers are being used as a source in the measurement of economic performance because managers have access to the entity's economic targets (Brouthers, 2002; Hult *et al.*, 2008; Liu, Eng, and Takeda, 2014). Nevertheless, it is

reasonable to assume that the measurement criteria of economic performance chosen by the researcher can influence the relationship between economic and social performance. For instance, Lu et al (2014) evidenced a negative effect of the market measurements. These indicators tend to consider all the available information, while accounting indicators are the result of the organizational accounting policy. Moreover, the new perceptual measurements can be able to influence positively the interaction between economic and social performance according to Santos and Brito (2012) or Peloza (2009) (Table 1). Therefore, we define the following research question:

> **RQ_2:** Is the measurement criterion of economic performance a moderator variable in the relationship between economic and social performance?

The analysis of this question enables us to understand the orientation of each organization. If there is no influence of the measurement criteria of economic performance, we can assume that although there is no consensus in the measurement criteria of economic performance, there is a general agreement about the meaning of economic performance (such as return, growth or perception). Conversely, if we observe an influence of these criteria, economic performance should be considered a multidimensional construct with different dimensions that the researcher must consider (Ortas and Moneva, 2011).

INSERT TABLE 1

This idea is relevant when we analyze the measurement criteria of social performance. In general terms, social performance refers to the generated impact on stakeholders affected by the organization. This impact can be understood through different approaches. Some authors, such as Austin *et al.* (2006), Sud *et al.* (2009), and Felício *et al.* (2013), propose that stakeholders can be defined based on the inputs that

are necessary to achieve levels of collective welfare. Mair and Marti (2006), Dees and Anderson (2003), and Peredo and Mclean (2006) define stakeholders by considering the procedures that are applied within the organization. Meanwhile, Vásquez and Dávila (2008) identify stakeholders based on the outputs achieved or social performance. This last approach enables us to measure the results of socially friendly activities using a concept similar to the one adopted to measure economic performance where the output is the result of the financial management of the organization. As a consequence, higher social performance is a symptom of higher welfare of stakeholders. Lu *et al.* (2014), Orlitzky *et al.* (2003) and Post (1991) identify four strategies for measuring social performance: a) Social performance disclosures; b) Social performance reputation ratings; c) Social audits, social performance processes, and observable outcomes, and d) Managerial social performance principles and values. Social performance disclosure is a criterion based on public information (annual reports, letters to shareholders, etc.). Although this is the most objective criterion, information disclosure by itself is only a proxy of social performance and may be insufficient to study this element in its entirety (Farneti and Guthrie, 2009). The second and third approaches are related to systematic third-party efforts to assess a firm's 'objective' social performance behaviors, such as community service, environmental programs, and corporate philanthropy. For this criterion, the main problem is the comparability of the information. If the initiative does not publish the social audit process, the comparison will not be feasible, and the usefulness of this criterion will be low (Gao and Zhang, 2001, 2006). The fourth criterion assesses the values and principles inherent in an organization's culture (Aupperle, 1984; Carroll, 1979). This criterion is a broad category with a high level of subjectivity because it is based on the perceptions of the individual who evaluates these values and principles.

Although these authors made an important effort when they studied these measurement strategies, additional criteria should be considered at present. For example, service quality can be an indicator of the level of integration of stakeholders' needs into the organization (Mitchell, Agle, and Wood, 1997; Sacchetti, Tortia, and López-Arceiz, 2016). Furthermore, community interests or regional development are proxies of this integration when the entity promotes higher levels of growth in that area (Borzaga and Fazzi, 2000). Other authors have developed indicators, such as social return on investments that offer a specific vision of social performance (Rotheroe and Richards, 2007). Finally, social auditing and social indexing are not available in all cases because some entities are easier to access than others. Table 1 shows negative influences when the measurement criterion uses the third-party assessments. Moreover, the new criteria would be able to change the interaction between economic and social performance. Millar and Hall (2013), in relation to the social return on investment, suggest a tendency to obtain positive relationships. Bai (2013) in relation to social auditing identify negative interactions in the context of nonprofit organization which are not table to participate in social indexing. All these particularities can modify the relationship between economic and social performance. Taking into account the previous research, we propose the following research question:

RQ_3: Is the measurement criterion of social performance a moderator variable of the relationship between economic and social performance?

Finally, some organizational characteristics, which can act as control variables, influence the relationship between economic and social performance. Deegan and Gordon (1996) and García-Ayuso and Larrinaga (2003) identify a strong influence of the type of developed activity on the relationship between economic and social performance. The social orientation of the organization is also a variable that can

modify this relationship. According to Borzaga *et al.* (2015), entities that adopt a legal form closer to nonprofit organizations will have a stronger social orientation and will be able to create a more intense relationship. However, other authors, such as Bai (2013), Bouckaert and Vandenhove (1998) and Weisbrod (2009), propose that although nonprofit organizations have an explicit social aim, self-dealing and market competition can prevent these entities from reaching an optimal level of social performance. The level of technology required by the organization also determines this relationship. In this sense, Prado *et al.* (2009), Guadamillas-Gómez et al. (2010), Morfit (2014) and Bernal-Conesa *et al.* (2016) state that entities belonging to technological sectors are the ones that provide more information to their stakeholders and, as a consequence, are able to create a more intensive relationship between economic and social performance. Other characteristics that can influence this relationship are the cultural environment of the organization. Defourny and Nyssens (2008), Kerlin (2006), Quintão (2007), Hulgård (2010) and Fayolle and Matlay (2010) show that the impact of socially friendly activities varies based on the diversity of experiences at a regional level and is affected by the prevailing cultural backgrounds. As a consequence, the prevalent sphere of values will promote the development of a more intense relationship between economic and social performance (López-Arceiz *et al.*, 2016; Wang, Dou and Jia, 2016).

> **RQ_4:** Organizational characteristics are a moderator variable of the relationship between economic and social performance.

The previous three research questions allow the relationship between economic and social performance to be tested from different perspectives to determine the extent to which economic and social measurements and the characteristics of the entity influence the behavior of organizations that decide to develop a “double bottom” strategy.

METHODOLOGY

Sample and indicators used

Searches of the Web of Science, Scopus, and ABI/Inform, databases were conducted using the keyword 'organizational performance'. Synonyms, which were searched separately, were 'organizational performance', 'profitability', 'economic performance', 'financial performance', and 'economic value'. The keyword 'social performance' was alternately substituted with '(corporate) social responsibility' and 'social value'. Web of Science gives access to the full text and images of more than four million business and trade journal articles, with a coverage period of one hundred years. Scopus indexes abstracts of journal articles (approximately 57 million references) and books (approximately 100,000 references). To increase the scope of our search, cross-citations from previous reviews (for example, Orlitzky *et al.*, 2003; Margolis *et al.*, 2007) were also explored.

The relevant studies selected for the meta-analysis had the following characteristics, and these were the selection criteria:

- The studies referred to concepts associated with socially responsible businesses, social enterprises and nonprofit organizations.
- The analyzed studies quantitatively examined the relationship between economic and social performance. The reported effect size could be Pearson's correlation r, a t-test statistic or an effect size (Hunter and Schmidt, 1990).
- The studies were concerned with at least one aspect of a firm's economic performance. To study the different aspects, we distinguished between five possible criteria based on the theoretical framework (Moneva and Ortas, 2010): a) Accounting measurements, b) Market criteria, c) Economic aim management or perceptual indicators, d) Size or growth criteria, and e) Other measurements. We

identified indicators that had a frequency of one in our database search as 'other' (for instance, the level of intangible assets).

- The same procedure was used for social performance[1].According to the previous economic literature, we considered seven possible indicators: a) Professional integral audit based on social performance disclosure (e.g., KLD), b) Stakeholder integration (e.g., managerial social performance), c) Service quality, d) Social auditing/indexing (e.g., reputational measurements), e) Regional development criteria, f) Created social value criteria (e.g., social return on investments), and g) Other criteria (Wood 1991, Moneva and Ortas 2010). In the 'other' category, we included indicators that had a frequency lower than one (for instance, volunteering or networking).
- Finally, we considered organizational characteristics such as the organization's activity (raw materials, production of goods or service delivery), its social orientation (based on its legal form), the intensity of its use of technology, and the cultural environment (Anglo-Saxon or continental) in which the organization was framed.

As consequence, we had access to 591 effect sizes from 67 papers[2]. The Appendix lists the most important study characteristics, such as author(s), date of study, study sample size Ni, observed r (or transformed and/or partially corrected r), number of correlations

[1] We included studies of environmental management and financial performance in the meta-analysis. First, some studies, especially earlier ones, use environmental management as a proxy for social performance. Second, we found stakeholders related to environmental aims (Starik, 1995). Finally, the business community tends to regard social responsibility as including both social and environmental performance (for example, BusinessWeek, 1999).

2 We started the research process using this sequence of Boolean operators: (Social performance OR Corporate social responsibility OR Social value) AND (Economic performance OR Profitability OR Financial performance OR Economic value). We obtained 51095 papers in SCOPUS and 23601 in Web of Science. After this process, we added three elements: type of organization (socially responsible business, social enterprise and nonprofit), relationship and correlation. Web of Science offered 7 articles, and SCOPUS offered 67 papers. Those papers from Web of Science were included in SCOPUS.

per study, organizational characteristics and the measurement criteria of economic and social performance.

Methodology

A meta-analysis integrates the quantitative findings of separate but similar studies and provides a numerical estimate of the overall effect of interest (Petrie, Bulman, and Osborn, 2003). This meta-analysis uses Hunter and Schmidt's (1990) statistical aggregation techniques for cumulative correlations and to correct for various study artefacts to estimate the true score correlation (ρ) between economic and social performance. The meta-analysis arrives at a mean true-score correlation by correcting observed correlations for sampling error[3]. Because sampling error varies directly with sample size, all studies are weighted by sample size N_i (Schmidt and Hunter, 1977). Studies with a smaller standard error and larger sample size are given more weight in the calculation of the pooled effect size[4].

Agreement or disagreement between the studies can be examined using a heterogeneity test. In this study, we use Cochran's Q. This statistic is the weighted sum of squares on a standardized scale. It is reported with a p-value, where low p-values indicate the presence of heterogeneity (Higgins *et al.,* 2003). To test the relationship between economic and social performance, we specify a meta-regression model to study the role of the measurement criteria of economic and social performance. In this model, we have added the moderator variables, such as dummy variables, following this expression [1]:

[3] According to Horfmann (2005), there are three advantages related to the use of the correlation coefficient. First, the accumulation of findings across studies allows for a proper estimation of the mean population correlation being controlled variability. Second, the variance of population can be estimated. Finally, we can model the variability among population through the effect of potential moderators.

[4] To evaluate the publication bias, we use Egger's test for small-study effects. The obtained results do not enable us to reject the null hypothesis (p-value>0.10). Thus, there is a little evidence of this type of bias in the studied sample.

$$y_{ij} = \alpha_i + \beta_i D_{ij} + \varphi_{ij} \qquad [1]$$

where y_{ij} is the effect size, D_{ij} represents each moderator variable, and φ_{ij} is the random error. Parameter β measures the effect of the moderator elements on the effect size. We use the software SPSS 22.0 and Stata 14.0 to estimate the different models.

RESULTS

As shown in the first line of Table 2, the mean observed correlation for the total set of 591 correlations (k) and the total sample size (N) of 1,294,011 observations is 0.189, with an observed standard deviation of 0.289.

INSERT TABLE 2

As Table 2 shows, Cochran's Q coefficient has a p-value lower than 5 percent, which indicates the presence of heterogeneity in the studied sample. Therefore, we decide to use a random effects meta-regression model. Thus, the true (corrected) correlation score is 0.203, which is higher than the observed correlation with a confidence interval at 95 percent of [0.166—0.239]. Therefore, there is positive and significant relationship between economic and social performance among the papers that discuss this relationship. However, this result could be affected by the measurement criteria employed for social and economic performance. Moreover, the control variables related to the characteristics of the studied entities could affect this relationship. For this reason, taking into account the presence of heterogeneity, we decide to include these elements as moderator variables.

In Table 3, we show the impact of the measurement criteria of economic performance on the relationship between economic and social performance. Taking into account the previous literature, we create five measurement sets to examine the moderator effects based on the measurement criteria of economic performance: a)

Accounting criteria, b) Market criteria, c) Perceptual criteria, d) Size criteria, and e) Other[5].

INSERT TABLE 3

Table 3 indicates that the association between economic and social performance depends on the type of measurement used by the researcher to measure economic performance. The size criteria reveals the highest positive correlation between economic and social performance (r = 0.842, CI= [0.708─0.917]), whereas other (related to subjective organizational aspects, such as self-values and utilitarian identity) presents the lowest correlation (r = 0.019, CI= [-0.159─0.196]). Accounting measures are more highly correlated with social performance than market-based measures (r= 0.175; CI= [0.153─0.196] vs. r=0.068; CI= [0.055─0.081]). Finally, perceptual criteria, related to management by targets, show an intermediate behavior (r=0.104; CI= [0.086─0.122]). Therefore, the relationship between economic and social performance changes when we consider the measurement criteria of the economic dimension.

We also test whether the measurement criteria of social performance may affect the relationship between economic and social performance. The results are shown in Table 4.

INSERT TABLE 4

To study the measurement of social performance, we distinguish between the following categories: a) Professional integral audit criteria (e.g., KLD); b) Stakeholder criteria; c) Quality criteria; d) Social auditing/indexing criteria; e) Regional development criteria; f) Created social value criteria; and g) Other criteria[6]. The results

[5] We include in this category indicators with a frequency lower than one: financial sustainability, economic efficiency, economic efficacy, self-values, utilitarian identity, quality of service, organizational satisfaction, organizational success, and volunteer-worker relationship.

[6] We include in this category indicators with a frequency lower than one: promotion of cultural development, existence of pension plans, promotion of research and development, definition of

show that the highest correlation occurs when the measurement criteria include the degree of satisfaction among stakeholders (r = 0.261, CI= [0.193─0.326]). By contrast, the lowest value is observed when the researcher decides to entrust in the measurement of a third party (r= 0.069; CI= [0.059─0.077]). In all cases, the correlations are positive, except when the created social value criteria are used (r= 0.217, CI= [-0.039─0.447]). Therefore, the measurement criteria of social performance moderate the relationship between economic and social performance.

The obtained results are robust according to the meta-regression model (Table 5). In all cases, the indicators of each dimension determine the correlation between economic and social performance (p-value<0.05). However, the interpretation of each parameter is different because the β parameter is a measurement of the intensity of the change.

INSERT TABLE 5

For example, in economic performance, when the paper uses a size criterion, the relationship between economic and social performance is higher (β = 0.177), whereas when the author uses the market criterion, the result is inverse (β = -0.079). Although we are not able to determine the correlation using this methodology, we can approximate the change in magnitude. Thus, this method is complementary to the traditional meta-analysis. This methodology enables us to add the effect of different moderator variables. As we can observe, entities whose activity is related to service delivery are able to intensify the interaction between economic and social performance (β = 0.277, β = 0.309). This same pattern is revealed in high-technology organizations (β = 0.225, β = 0.249) in an Anglo-Saxon cultural environment (β = 0.069, β = 0.132).

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organization values, normative identity, knowledge update, creation of shared value, commitment to stakeholders, community development, and promotion of trust.

In contrast, socially oriented organizations are not able to promote a more intense relationship between economic and social performance because of the negative parameter achieved in the meta-regression (β =-0.020, β =-0.063). Taking into account this result, a positive correlation between economic and social performance is detected, although this result is affected by the measurement criteria of economic and social performance and organizational characteristics.

DISCUSSION

The results of this meta-analysis demonstrate a positive association between social and economic performance across the studied papers. This result contradicts conclusions of McWilliams *et al.* (1999) and McWilliams and Siegel (2000), who state that economic and social performance are independent spheres in the organizational context. By contrast, our results support the conclusions of Waddock and Graves (1997), Kinnell and MacDougall (1997), Blois (1999), and Sargeant (1999), who detected a positive relationship between economic and social performance. Thus, the creation of social performance can interact with the economic performance of these entities (Freeman, 1984; Porter and Van der Linde, 1995; Waddock and Graves, 1997; Freeman and Evan, 1991; Hill and Jones, 1992; Jones, 1995; and, more recently, Di Domenico, Haugh, and Tracey, 2010).

However, this relationship may be influenced by the criteria used in the measurement of economic and social performance and by organizational characteristics. The measurement criteria for economic and social performance have been discussed in previous papers. Brown and Perry (1994, 1995) and Wood and Jones (1995) found that positive correlations may be artefactual functions of the measurement elements. Therefore, we distinguish different measurement indicators in the definition of both types of performance in our meta-analysis. Economic performance can be measured

from several perspectives. In the analysis of the previous literature, we identified five measurement criteria. Differences in the correlation between economic and social performance are observed in the subjective criteria (other criteria), when the measurement adds elements such as self-behavior or a utilitarian identity. In this case, the results change, and the relationship becomes zero. This measurement can weaken the relationship between economic and social performance. As a consequence, when the relationship between economic and social performance is measured using subjective criteria, the results may be illogical because the relationship is based on the opinion of the manager who evaluates the level of economic performance in the entity. This result is also found by Ortliztky *et al.* (2003), who observe that when the economic performance measurement is based on a survey, the cross-study variation in correlation is removed, and the correlation becomes positive. In contrast, measurements based on perceptual criteria are associated with a stronger relationship between economic and social performance according to Santos and Brito (2012) or Peloza (2009). Thus, according Ortliztky *et al*. (2003), many of the negative findings in individual studies are artefactual, and if the researcher or the company uses a different criterion, positive relationships will appear (Jones and Wicks, 1999; Pava and Krausz, 1995; Ullmann, 1985; Wood and Jones, 1995). The meta-regression shows that changes in the measurement criteria used tend to strengthen or weaken this relationship. Measurements that are not associated with efficiency, such as size measurements (sales or asset growth), are able to favor the relationship. However, market criteria introduce a penalization in this relationship. This same result had been obtained by Goyal, Rahman and Kazmi (2013). Therefore, the use of a criterion implies a specific correlation in the relationship between economic and social performance. Moreover, the adoption of a measurement strategy can encourage or discourage this relationship. As a consequence,

we must be careful in analyzing economic performance because the results obtained may be artefactual in the sense of Abbott and Monsen (1979), Ingram and Frazier (1980) and Wiseman (1982).

The definition of the social performance of an organization has also been debated. At the theoretical level, different proposals have been made. One of the most accepted theories proposes that social performance can be evaluated using two indicators: a) The integration of stakeholders' needs and b) The definition of limits in the distribution of profits (Defourny and Nyssens, 2008). However, these proposals are difficult to measure. In this study, we have grouped the indicators into seven categories and obtained different intensities in the function of each indicator. The weakest relationship is obtained when the created social value criteria are used. In the meta-regression, we observe that if the researcher decides to change the measurement strategy of social performance, it can influence the interaction between economic and social performance. In this sense, the indicators based on professional integral auditing and social auditing/indexing can decrease the strength of the relationship between economic and social performance. This result diverges from Chen, Feldmann and Tang (2015), who obtain a positive interaction in the context of manufacture sector when these criteria are used. In contrast, taking into account the local impact and the regional development may improve this relationship. In any case, similar to the measurement of economic performance, some studies use one measurement and have small sample sizes; therefore, the conclusions in some papers may be biased (Ortliztky *et al*., 2003).

Finally, the control variables play an important role. The activity of the organization determines the relationship between economic and social performance. Those activities related to the services sector are able to promote a more intense interaction between the two types of performance. This result is obtained by Miles,

Verreynne and Luke (2014), who demonstrate a stronger relationship in the case of organizations in the sphere of social services. Other control variables also show a positive effect of this relationship. Then, when the entity develops high-technology activities, it is able to create a better interaction, according to Prado *et al*. (2009), Guadamillas-Gómez *et al*. (2010), Morfit (2014) and Bernal-Conesa *et al*. (2016). The Anglo-Saxon environment also tends to promote greater interaction (Jackson and Apostolakou, 2010). According to these authors, the differences in the institutional context and the level of involvement of stakeholders are the explanations for this behavior. In contrast, the social orientation of the organization does not influence this relationship. Costa *et al*. (2012) or Bellostas *et al*. (2016) detect a strong relationship between social and economic performance in Italian social cooperatives and Spanish sheltered workshops, respectively. This result can be explained based on the legal form of the organization, which drives this positive correlation. However, the meta-regression evidences that the social orientation does not impact the relationship between economic and social performance, especially in the case of the measurement of economic performance. According to Chaves and Monzón (2012), social performance can be created by hybrid organizations in the market or in the nonmarket, independently of their legal form.

CONCLUSIONS

The objective of this paper has been to analyze the relationship between economic and social performance in the organizational context. The results show how those entities that develop socially friendly activities experience positive synergies between their social and economic performance. However, some singularities appear when we take into account the measurement criteria of economic and social performance and some

characteristics of the organization, such as its activity, its technology and the cultural environment in which it operates.

This paper contributes to the academic debate about the relationship between economic and social performance and shows how it is possible to foster social and economic performance from different strategic organizational models. In fact, a gradual process of convergence occurs in which some non-profit entities tend to develop the economic side in their management model. Similarly, some for-profit entities tend to develop their social side. Currently, there are emerging new models of hybrid organizations that pose a challenge for researchers and managers who need new theoretical frameworks that can explain these models. In any case, it is not possible to provide a universal set of indicators for the measurement of both types of performance due to the observed diversity among the different entities. Therefore, this paper also issues a warning about the use and design of different indicators. In this sense, managers of organizations must design specific indicators that take into account the singularities of the entity. Otherwise, if they follow general indicators, the measurement will be imprecise, and conclusions about the efficiency of the activity will be measured incorrectly.

Finally, this paper has some limitations that should be noted. The aggrupation in different categories of the indicators of economic and social performance is based on previous studies, and it could be different if we analyzed other papers. Moreover, in some selected studies, we have detected small sample sizes, which could influence the extracted conclusions. This fact and the lack of specific indicators are limitations that future research must address.

Ethical approval:

This article does not contain any studies with human participants or animals performed by any of the authors.

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Table 1. Expected signs related to the moderator variables

Moderator	Measurement criterion	Expected Sign	Main references
Economic	Accounting criteria	+	Preston and O'bannon (1997), Tang et al (2012)
	Market criteria	-	Lu et al (2014)
	Perceptual criteria	+	Santos and Brito (2012), Peloza (2009)
	Size criteria	+	Wu (2006), Bai (2013), Liu et al (2012)
Social	Professional integral audit criteria	+	Miras et al (2014), Rhodes et al (2008)
	Stakeholders criteria	-	Orliztky et al (2003)
	Quality criteria	+	Felicio et al (2013), Leipniztz (2014), Bellostas et al (2016)
	Social auditing/indexing criteria	+	Wu and Shen (2013), Mallin et al (2014)
	Regional development criteria	+	Ramayah et al (2011)
	Created social value criteria	+	Rahim et al (2015), Lebovics et al (2015)

Table 2. Metanalysis with sample error correction.

Observed effect	0.189	**Observed standard deviation**	0.289
Size effect	0.203	**Confidence Interval 95%**	0.166-0.239
Total size (N)	1,294,011.000	**Number of correlations (k)**	591.000
Q-Cochram (pvalue)	0.000		

Table 3. Meta-analysis with sample error correction. Moderator: Economic performance.

	NA	N	Size effect	C's Q (pvalue)	CI 95%	
					L	U
Accounting criteria	50	558,442	0.175	0.000	0.153	0.196
Market criteria	16	400,077	0.068	0.000	0.055	0.081
Perceptual criteria	14	1,100,472	0.104	0.000	0.086	0.122
Size criteria	10	1,072,173	0.842	0.000	0.708	0.917
Others	5	62,578	0.019	0.000	-0.159	0.196

Table 4. Metanalysis with sample error correction. Social performance.

	NA	N	Size effect	C's Q (pvalue)	CI 95%	
					L	U
Professional integral audit criteria	30	840,625	0.087	0.000	0.075	0.099
Stakeholders criteria	34	800,727	0.261	0.000	0.193	0.326
Quality criteria	24	1,161,012	0.136	0.000	0.118	0.153
Social auditing/indexing criteria	13	1,021,913	0.069	0.000	0.059	0.077
Regional development criteria	6	1,191,064	0.089	0.000	0.076	0.103
Created social value criteria	8	1,209,505	0.217	0.000	-0.039	0.447
Other criteria	4	1,063,559	0.200	0.000	0.046	0.345

Table 5. Meta-regression. Moderator variables.

	Economic dimension				Social dimension			
			CI 95%				CI 95%	
	β	pvalue	L	U	β	pvalue	L	U
Intercept	-0.631	0.000	-0.725	-0.536	-0.604	0.000	-0.682	-0.527
Economic dimension								
Accounting criteria	0.025	0.277	-0.019	0.069				
Market criteria	-0.079	0.000	-0.122	-0.037				
Perceptual criteria	0.024	0.269	-0.019	0.069				
Size criteria	0.177	0.000	0.096	0.259				
Others	-0.008	0.894	-0.134	0.117				
Social dimension								
Professional integral audit criteria					-0.116	0.000	-0.146	-0.084
Stakeholders criteria					0.018	0.208	-0.010	0.047
Quality criteria					-0.025	0.105	-0.055	0.005
Social auditing/indexing criteria					-0.279	0.000	-0.312	-0.246
Regional development criteria					0.246	0.000	0.187	0.305
Created social value criteria					-0.007	0.826	-0.077	0.062
Other criteria					-0.044	0.338	-0.136	0.047
Control variables								
Activity	0.277	0.000	0.238	0.317	0.309	0.000	0.281	0.337
Social orientation	-0.020	0.413	-0.068	0.028	-0.063	0.002	-0.103	-0.023
Technology	0.225	0.000	0.185	0.265	0.249	0.000	0.217	0.281
Cultural context	0.069	0.000	-0.036	0.104	0.132	0.000	0.103	0.162
R2		59.97%				80.66%		
pvalue (F test)		0.000				0.000		

Appendix. Meta-analysis references.

Author(s) (year)	Ni	Observed r	Number of r reported	Characteristics of the organizations (*)	Measurements of social performance	Measurements of economic performance
Kristoffersen, I., Gerrans, P., and Clark-Murphy, M. (2008).	1,398	0.259	24	Service and manufacture industries, low social orientation, high technology, Anglo-saxon environment	Philanthropy, employment, weapons, drugs, human rights, ethnics.	ROE, Sharpe ratio, Alfa Jensen, Benchmark, Market beta
Preston, L.E., and O'bannon, D.P. (1997)	6,231	0.419	93	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Philanthropy, employment, service quality.	ROA
Saeidi, S.P., Sofian, S., Saeidi, P., Saeidi, S.P., and Saaeidi, S.A. (2015)	2,460	0.173	12	Service and manufacture industry, low social orientation, high technology, continental environment	Philanthropy, employment, weapons, drugs, human rights, ethnics, service quality.	ROA, ROE, Sales margin
Oh, W., and Park, S. (2015)	2,475	0.382	9	Manufacture industry, low social orientation, high technology, continental environment.	Social index	ROA, Sales, Capital cost
Škare, M., and Golja, T. (2012)	45	0.164	1	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Social index	ROA, ROE
Tang, Z., Hull, C. E., and Rothenberg, S. (2012)	10,400	0.103	8	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Philanthropy, employment, human rights, service quality, corporate governance, gender.	ROA
Barnett, M.L., and Salomon, R.M. (2012)	4,856	0.048	4	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Philanthropy, employment, human rights, service quality, corporate governance, gender.	ROA, Net Profit
Van der Laan, G., Van Ees, H., and Van Witteloostuijn, A. (2008)	12,000	-0.0175	4	Service, manufacture and raw material industries, low social orientation, low technology, Anglo-saxon environment	Philanthropy, employment, human rights, service quality, corporate governance, gender.	ROA, ROE, Net Profit

Callan, S.J., and Thomas, J.M. (2009)	7,056	-0.045	16	Service, manufacture and raw material industries, low social orientation, low technology, Anglo-saxon environment	Philanthropy, employment, weapons, drugs, human rights, service quality, corporate governance, gender.	ROA, ROE, ROS, Tobin's Q
Inoue, Y., and Lee, S. (2011)	2,936	-0.003	32	Service and manufacture industry, low social orientation, low technology, Anglo-saxon environment	Philanthropy, employment, service quality, gender.	ROA, Tobin's Q
García-Castro, R., Ariño, M.A., and Canela, M.A. (2010).	2,632	-0.0578	4	Service, manufacture and raw material industries, low social orientation, low technology, Anglo-saxon environment	Philanthropy, employment, human rights, service quality, corporate governance, gender.	ROA, ROE, Book to market, Tobin's Q
Makni, R., Francoeur, C., and Bellavance, F. (2009)	3,222	0.006	18	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Philanthropy, employment, human rights, service quality, corporate governance, gender.	ROA; ROE, Market beta
Lee, D.D., Faff, R. W., and Langfield, K. (2009).	366,858	0.015	72	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Social Index	ROA; ROE, ROS, Sharpe ratio, Jensen's alfa, market beta, book to market, market value, liquidity, absolute return, working capital, treasury
Lioui, A., and Sharma, Z. (2012).	69,032	-0.030	4	Service, manufacture and raw material industries, low social orientation, low technology, Anglo-saxon environment	Philanthropy, weapons, drugs, human rights, service quality.	ROA, ROE, Tobin's Q
Soana, M.G. (2011).	432	0.027	27	Service and manufacture industry, low social orientation, low technology, continental environment	Philanthropy, ethnics, employment, service quality, corporate governance, regional development, transparency, social balance, internationalization,	ROA, ROE, Cost-benefit relation
Wang, H., and Choi, J. (2013).	2,365	0.14	1	Service, manufacture and raw material industries,	Social Index	Tobin's Q

				low social orientation, high technology, Anglo-saxon environment		
Yang, F.J., Lin, C.W., and Chang, Y. N. (2010).	900	0.077	6	Service, manufacture and raw material industries, low social orientation, high technology, continental environment	Philanthropy, employment, service quality, shareholders/funders.	ROA, ROE,ROS
Mallin, C., Farag, H., and Ow-Yong, K. (2014).	180	0.044	2	Service industry, low social orientation, high technology, continental environment	Social Index	ROA, ROE
Waddock, S.A., and Graves, S.B. (1997).	2,916	0.123	6	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Social Index	ROA, ROE,ROS
McWilliams, A., and Siegel, D. (2000).	524	0.356	1	Service, manufacture and raw material industries, low social orientation, high technology, Anglo-saxon environment	Social Index	ROA
Moore, G. (2001).	32	-0.002	4	Service and manufacture industry, medium social orientation, low technology, Anglo-saxon environment	Philanthropy, human rights, employment, service quality, corporate governance, gender.	ROA, ROE, Sales
Simpson, W.G., and Kohers, T. (2002).	770	0.358	2	Manufacture industry, low social orientation, high technology, Anglo-saxon environment	Social Index	ROA, Working capital
Choi, J.S., Kwak, Y.M., and Choe, C. (2010).	7,332	0.177	6	Service, manufacture and raw material industries, low social orientation, high technology, continental environment	Philanthropy, human rights, employment, service quality, corporate governance, gender, stakeholders.	ROA, ROE, Tobin's Q
Wu, M.W., and Shen, C.H. (2013).	1,296	0.165	8	Service and manufacture industries, low social orientation, high technology, continental environment	Social Index	ROA; ROE; ROS, Debt
Sahin, K., Basfirinci, C.S., and Ozsalih, A. (2011).	825	-0.009	5	Service, manufacture and raw material industries, low social orientation, low technology,	Corporate Governance	ROA; ROE; ROS, Tobin's Q, Debt

				continental environment		
Boesso, G., Kumar, K., and Michelon, G. (2013).	752	0.330	4	Service, manufacture and raw material industries, low social orientation, high technology, continental enviroment	Social Index	Market value, EBITDA, Intagible assets, financial expenses
Auamnoy, T., and Areepium, N. (2011).	129	0.703	3	Manufacture and raw material industries, low social orientation, high technology, continental enviroment	Philanthropy, human rights, drugs, service quality,	ROA, ROE; ROS
Hamid, K., Akash, R. S.I., Asghar, M., and Ahmad, S. (2011).	332	-0.022	2	Service industry, low social orientation, low technology, continental environment	Philanthropy, human rights, ethnics, service quality, corporate governance, transparency, social balanced, stakeholders.	ROA, ROE
Valenzuela, L., Jara, M., and Villegas, F. (2015).	5,814	0.015	18	Service, manufacture and raw material industries, low social orientation, high technology, continental environment	Transparency	ROE, ROS, Book to market
Miras, M.D.M., Carrasco, A., and Escobar, B. (2014).	482,511	0.068	54	Service, manufacture and raw material industries, low social orientation, high technology, continental environment	Philanthropy,human rights, ethnics, weapons, drugs, employment, service quality, social index, corporate governance, gender, regional development, transparency, social balanced, internationalization, shareholder, stakeholder.	ROA, ROE, ROS, Jensen's alfa, book to market, market beta, benchmark return, sales, sales margin, market value, capital cost, net profit, Tobins's Q, liquidity, absolute return, working capital, treasury, cost-benefit relation, debt, EBITDA, intangible assets, financial expenses
Miles, M.P., Verreynne, M.L., and Luke, B. (2014).	85	0.181	1	Service, manufacture and raw material industries, medium social orientation, high technology, Anglo-saxon environment	Philanthropy,human rights, service quality, corporate governance, social balance, shareholder/funder,	Benchmark return, assets, financial sostenibility, economic efficiency,

					stakeholder,	economic eficacy
Stevens, R., Moray, N., Bruneel, J., and Clarysse, B. (2014).	148	-0.090	1	Service industry, medium social orientation, low technology, continental environment	Philanthropy,human rights, weapons, drugs,employment, service quality, corporate governance, shareholder/funder, stakeholder,	ROA
Liu, G., Eng, T.Y., and Takeda, S. (2013).	2,136	0.535	8	Service, manufacture and raw material industries, medium social orientation, high technology, Anglo-saxon environment	Social aims, created social value	Economic aims, created economic Value
Sanchís, J.R., Campos, V., and Mohedano, A. (2013).	129	-0.145	1	Service industry, medium social orientation, low technology, continental environment	Employment	ROA, ROE
Stevens, R., Moray, N., and Bruneel, J. (2014).	5,346	-0.222	9	Manufacture industry, medium social orientation, low technology, continental environment	Social aim, other values, normative identity.	Economic aim, self values, utilitarian identity
Liu, G., Takeda, S., and Ko, W.W. (2012).	534	0.480	2	Service, manufacture and raw material industries, medium social orientation, high technology, Anglo-saxon environment	Service quality, stakeholders	Sales, assets
Siciliano, J.I. (1996).	240	0.157	1	Service industry, high social orientation, high technology, Anglo-saxon environment	Social Index	Economic efficiency
Coombes, S.M., Morris, M.H., Allen, J.A., and Webb, J.W. (2011).	420	-0.107	3	Service industry, high social orientation, low technology, Anglo-saxon environment	Social Index	Sales,assets, financial expenses
Bai, G. (2013).	1,939	0.200	1	Service industry, medium social orientation, high technology, Anglo-saxon environment	Philanthropy	Sales
Rhodes, J., Lok, P., Yu-Yuan Hung, R., and Fang, S.C. (2008).	555	0.186	5	Service and manufacture industries, medium social orientation, high technology, continental environment	Service quality, normative identity, knowledge, network, shared value,	ROA

Felício, J.A., Gonçalves, H.M., and da Conceição, V. (2013).	119	0.540	1	Manufacture industry, medium social orientation, high technology, continental environment	Philanthropy, human rights, employment, service quality, corporate governance, social balance, stakeholders	Service quality,satisfaction, success
Matei, L., and Matei, A. (2012).	8512	0.997	4	Raw material industry, medium social orientation, high technology, continental environment	Employment	Number of social enterprises depend on a mother entity
Mendoza, K.I., Anokhin, S., and Zamudio, C. (2015).	88	-0.180	1	Service industry, medium social orientation, low technology, Anglo-saxon environment	Social aim	Economic aim
Jung, K., Jang, H.S., and Seo, I. (2016).	166	-0.100	1	Service industry, medium social orientation, low technology, continental environment.	Social aim	Economic aim
Rahim, H. L., Mohtar, S., and Ramli, A. (2015).	384	0.544	1	Manufacture industry, medium social orientation, high technology, continental environment	Created social value	ROA, ROE, ROS, sales, net profit
Bellostas, A.J., López-Arceiz, F.J., and Mateos, L. (2016).	354	0.325	3	Manufacture industry, medium social orientation, high technology, continental environment	Service quality	Sales, net profit, sales cost
Mano, R (2015).	1,344	0.078	12	Service and manufacture industries, high social orientation, low technology, continental environment	Employment, users, volunteers	Sales, sales cost
Shiva, M.M., and Suar, D. (2012).	1,248	0.198	4	Service and manufacture industries, medium social orientation, high technology, Anglo-saxon environment	Employment	Sales
Leipnitz, S. (2014).	2,599	0.810	1	Raw material industry, high social orientation, high technology, continental environment	Service quality	Equity
Mano, R.S. (2014).	255	-0.140	1	Service industry, high social orientation, low technology, continental environment	Volunteers	Sales, equity, Number of social enterprises depend on a mother entity, sale cost,volunteer-workers

						relationship
Lebovics, M., Hermes, N., and Hudon, M. (2015).	28	0.384	1	Manufacture industry, medium social orientation, , high technology, continental environment	Created social value	Created economic value
Mickiewicz, T., Sauka, A., and Stephan, U. (2014).	270	0.300	1	Manufacture industry, medium social orientation, high technology, continental environment	Philanthropy	Sales
McKay, S., Moro, D., Teasdale, S., and Clifford, D. (2011).	232,872	0.416	3	Service and manufacture industry, high social orientation, high technology, Anglo-saxon environment	Funds	Sales
Suárez, D.F., and Hwang, H. (2013).	2,400	0.124	12	Service, manufacture and raw material industries, high social orientation, high technology, Anglo-saxon environment	Funds, networks	Sales, equity
Guo, C., and Brown, W. A. (2006).	234	0.020	2	Service industry, high social orientation, low technology, Anglo-saxon environment	Corporate governance	Net profit, equity
Costa, E., Andreaus, M., Carini, C., and Carpita, M. (2012).	27,876	0.969	2	Raw material industry, medium social orientation, high technology, continental environment	Employment	Total income, assets
Ramayah, T., Lee, J.W.C., and In, J.B.C. (2011).	360	0.115	4	Service and manufacture industries, medium social orientation, high technology, continental environment	Network, community service, trust, commitment	ROA
Tan, W.L., and Yoo, S.J. (2015).	184	0.108	2	Service and manufacture industries, high social orientation, low technology, continental environment	Social aim, created social value	ROA
Di Zhang, D., and Swanson, L.A. (2013).	606	0.075	3	Service, manufacture and raw material industries, high social orientation, low technology, Anglo-saxon environment	Social balance, social aim, created social value	Sales

(*) Order: Main activity, social orientation, level of technology and cultural context.