

NGOs Efficiency and Transparency Policy: The Colombian Case

María del Mar Gálvez Rodríguez

Doctora en Ciencias Económicas

Universidad de Almería

Almería, España

Nuevos Enfoques en Finanzas y Sistemas de Información Empresarial (SEJ385)

Correo electrónico: margalvez@ual.es

Enlace ORCID: <https://orcid.org/0000-0002-3708-6229>

Carmen Caba Pérez

Doctora en Ciencias Económicas

Universidad de Almería

Almería, España

Nuevos Enfoques en Finanzas y Sistemas de Información Empresarial (SEJ385)

Correo electrónico: ccaba@ual.es

Enlace ORCID: <https://orcid.org/0000-0002-8452-5909>

Manuel López Godoy

Doctor en Ciencias Económicas

Universidad de Almería

Almería, España

Nuevos Enfoques en Finanzas y Sistemas de Información Empresarial (SEJ385)

Correo electrónico: malopez@ual.es

Enlace ORCID: <https://orcid.org/0000-0001-6233-1073>

POLÍTICA DE EFICIENCIA Y TRANSPARENCIA EN LAS ONG: EL CASO COLOMBIANO

RESUMEN: En los últimos años se ha evidenciado un incremento de la influencia de las Organizaciones No Gubernamentales (ONG) colombianas en diversos sectores de la sociedad. No obstante, la legitimidad de este tipo de organizaciones se ha visto desdibujada por la corrupción, originando cierta desconfianza en su labor y cuestionamientos sobre su eficiencia como herramienta social. Por su parte, la transparencia es considerada como un mecanismo anti-corrupción y una de las herramientas para el mejoramiento en la gestión de estas organizaciones; no cabe duda de que el Internet es un elemento clave para la disseminación de información a las diferentes partes interesadas. Por tal razón, este artículo se plantea tres objetivos: i) analizar la divulgación de información a través del Internet por parte de las ONG colombianas, ii) analizar la eficiencia de estas entidades en la consecución de sus objetivos sociales y iii) analizar el efecto de la transparencia en línea sobre una mayor eficiencia de las ONG en Colombia.

PALABRAS CLAVE: Transparencia, eficiencia, ONG, Internet.

POLÍTICA DE EFICIÊNCIA E TRANSPARÊNCIA NAS ONG: O CASO COLOMBIANO

RESUMO: Nos últimos anos, evidenciou-se um aumento da influência das Organizações não Governamentais (ONG) colombianas em diversos setores da sociedade. No entanto, a legitimidade desse tipo de organizações foi desconfigurada pela corrupção, o que originou certa desconfiança em seu trabalho e questionamentos sobre sua eficiência como ferramentas sociais. Por sua parte, a transparência é considerada como um mecanismo anticorrupção e uma das ferramentas para o melhoramento na gestão dessas organizações; não há dúvidas de que a internet é um elemento-chave para a disseminação de informação para as diferentes partes interessadas. Por tal razão, este artigo apresenta três objetivos: i) analisar a divulgação de informação por meio da internet por parte das ONG colombianas, ii) analisar a eficiência dessas entidades na realização de seus objetivos sociais e iii) analisar o efeito da transparência on-line sobre uma maior eficiência das ONG na Colômbia.

PALAVRAS-CHAVE: Transparência, eficiência, ONG, internet.

LA POLITIQUE DE L'EFFICACITÉ ET DE LA TRANSPARENCE DANS LES ONG : LE CAS DE LA COLOMBIE

RÉSUMÉ : Au cours des dernières années, il est évident que l'influence des organisations non gouvernementales (ONG) dans les différents secteurs de la société colombienne a augmenté. Cependant, la légitimité de ces organisations a été brouillée par la corruption, ce qui est à l'origine d'une certaine méfiance envers leur travail et la mise en question de leur efficacité en tant qu'outils sociaux. D'autre part, la transparence est considérée comme un mécanisme anti-corrupcion et un outil pour améliorer la gestion de ces organisations. Il n'y a aucun doute que l'Internet est un élément clé pour la diffusion de l'information entre les différentes parties prenantes. Pour cette raison, cet article se propose trois objectifs : i) analyser la diffusion des informations des ONG colombiennes à travers l'Internet ; ii) d'analyser l'efficacité de ces entités dans la réalisation de leurs objectifs sociaux ; et iii) analyser l'effet de la transparence en ligne sur une plus grande efficacité des ONG en Colombie.

MOTS-CLÉ : Transparence, efficacité, ONG, Internet.

ABSTRACT: In recent years the influence of Colombian non-governmental organizations (NGOs) in diverse social sectors of the country has increased. However, the legitimacy of this sector has been undermined by corruption. This distrust has questioned the efficiency of NGOs as social tools. Transparency as a mechanism against corruption and one of the tools that improves the functioning of an organization is considered. There is no doubt that Internet is an essential element in disseminating information to the different stakeholders of the organization.

This paper sets out three main objectives: i) the analysis of information disclosure through the Internet of Colombian NGOs, ii) the analysis of the efficiency of these entities in reaching their social goals and, iii) the analysis of the online transparency effect in a greater efficiency of the Colombian NGOs.

KEYWORDS: Transparency, efficiency, NGOs, Internet.

Introduction

Non-Governmental organizations (NGOs) in Latin America have been growing in importance mainly as they are being considered crucial social agents for the improvement of democracy (Florez, 1999; Friedman, 2000; Valladares & Neira, 2003; Treviño, 2004), as well as for their role in their fight against poverty and social marginalization (Landim & Thompson, 1997; Friedman, Hochstetler & Clark, 2001; Korzeniewicz & Smith, 2000). However, the recent incidents of corruption in Latin-American NGOs, such

CORRESPONDENCIA: Universidad de Almería. Cr. Sacramento s/n. C.P. 04120. La Cañada (Almería), España.

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as misappropriation of funds and suspicious relation to political parties, have motivated a general distrust toward the compliance of their social goals and the impact of their activities (Vázquez, 2011).

In order to battle corruption within organizations it is essential to eliminate information asymmetry, as organizations strongly need to avoid individual interests, whether they be from managers or workers, placing the interests of the organization on the top (Levine, 2005; Lennerfors, 2007; Halter, Coutinho-Arruda & Halter, 2009). Therefore, a greater transparency to strengthen NGOs legitimacy is needed (Gandía, 2011). Turilli and Floridi (2009), and Lindstedt and Naurin (2010) define transparency as the access to the information about the intentions and behaviors of an organization. According to Lee, Chen and Zhang (2001), Kang and Norton (2004) and Ozcelik (2008), this information should be available to all stakeholders, being the Internet one of the most common communication media to disseminate NGOs information.

NGOs efficiency has turned an important issue to Latin-American Governments, funders and citizens (Brinkerhoff, 2002). Ciborra (2005) considered that disclosure of information via the Internet, or online transparency, not only improves the communication of organizational information but also enhances the efficiency of the organizations results, reduces their costs and improve their competitiveness. Berggren and Bernshteyn (2007), added that internal stakeholders will increase their participation and commitment if there is a greater organizational transparency. Thus, disclosure information promotes organizational trust and its better operability (Burger & Owens, 2010; García-Sánchez, Cuadrado-Ballesteros & Frías-Aceituno, 2012).

The studies that analyze the influence of transparency in NGOs efficiency are scarce (De França, De Figueiredo & Lapa, 2010). Considering that previous studies are focused, mainly, on developed countries (Marcuello, 1999; Golden *et al.*, 2010).

In recent years, NGOs from developing countries are making an effort to improve the transparency of the sector drawing up voluntary accountability mechanisms. Within Latin-American NGOs, Colombian initiatives, such as the code of conduct of "ONG por la transparencia", are remarkable.

This research follows three main objectives. First, the analysis of online transparency by the Colombian NGOs; second, an efficiency analysis of these entities in reaching their social goals; and third, the study of the online transparency effect resulting in a greater efficiency of these NGOs. In order to pursue these objectives, this article is built up as

follows: the second section presents an overview of transparency policies carried out by the Latin-American NGOs and previous studies of disclosure of information in NGOs web sites; the third section is focused on the efficiency issue; in the fourth section, the methodologies developed to the objectives of this paper are explained; the fifth, analyzes the results obtained; finally, in the sixth section the main conclusions from this exercise are discussed.

NGOs Transparency Policies and their Disclosure

Vaccaro and Madsen (2009a) pointed out that NGOs should be aware of the importance of transparency policies to guarantee an adequate organizational information access. Likewise, Vaccaro and Madsen (2009b) argued that there are two kinds of transparency: the static and the dynamic. The first one is the most used and is related to unidirectional disclosure of information between the organizations and its stakeholders. The dynamic transparency additionally includes communication among the stakeholders.

In general, in Latin-American countries there is no mandatory legislation that mentions the need for a better transparency in NGOs, as it occurs in other sectors such as listed companies or the public sector. However, there are some exceptions, as shown in Table 1. Additionally, the sector is voluntarily adopting accountability mechanisms drawn up by external agents or by NGOs themselves. Those mechanisms developed by the sector itself are called self-regulation mechanisms and these entities self-regulatory NGOs (Ebrahim, 2003). According to Shea and Sitar (2004), Nelson (2007) and Warren and Lloyd (2009) self-regulation mechanisms can be classified in six categories: certification, rating, award, code of conduct, information service and performance guide (Table 2).

Within the self-regulation mechanisms drawn up by the Latin-American NGOs, it is important to highlight the one developed by the "Centro Virtual para la Transparencia y la Rendición de Cuentas de la Sociedad Civil" (CV *Rendir cuentas*) in 2010. This organization is made up by 25 self-regulatory NGOs from Latin-America and the Caribbean whose main objective is to enhance the accountability and informative visibility of the sector. Consequently, this mechanism could be considered as an information service, as it discloses relevant information obtained from a standardized form that has to be filled in voluntarily by interested NGOs (Table 3).



TABLE 1. Latin-American Legislation Related to Transparency

Country	Regulation	Content
Colombia	<i>Ley Estatutaria 850 de 2003</i>	This regulation recognized the citizens' right to control the activities of the NGOs that work in their country.
Dominican Republic	<i>Ley n° 122-05, para la Regulación y Fomento de las Asociaciones Sin Fines de Lucro de 2005</i>	This regulation encourages NGOs to develop self-regulatory initiatives that enhance the sector's transparency.
Ecuador	<i>Constitución de Montecristi, 2008</i>	This regulation mentions the need of a greater control on those entities that carry out activities of public interest.
Peru	<i>Ley de Cooperación Técnica Internacional de 2009</i>	In collaboration with the <i>Agencia Peruana de Cooperación Internacional (APCI)</i> , this regulation improves the development and availability of information relating to projects with the goal of improving transparency on this sector.

Source: Personal compilation.

TABLE 2. Self-regulation Mechanisms of NGOs

Mechanism	Definition
Certification	Involves a formal verification on the compliance of transparency standards given by a third party NGO.
Rating	Provides a score based on the application of transparency principles.
Award	Recognition of best practices based on compliance of transparency principles.
Code of conduct	Declaration of commitment in the compliance of given principles of best practices.
Information services	Data base with relevant information voluntarily given by the NGO.
Performance guide	Transparency principles drawn up by working groups in order to be adopted by participant NGOs.

Source: Personal compilation from Shea and Sitar (2004), Nelson (2007), and Warren and Lloyd (2009).

TABLE 3. Informative Factors of Online Transparency

Informative factors to information disclosure	ONGxT (2007)	CV Rendir Cuentas (2010)	Taylor et al. (2001)	Kang and Norton (2004)	Waters (2007)	Goatman and Lewis (2007)	Ingenhoff and Koelling (2009)	Greenberg and MacAulay (2009)	Saxton and Guo (2011)	Candia (2011)
1. Online transparency of organization profile										
1.1 Transparency and accountability Policy	x									
1.2 Date of setting up the organization	x						x			
1.3 Motivations to establish the organization	x						x			
1.4 Legal structure	x	x						x		x
1.5 Procedure to affiliate to the organization			x	x			x			
1.6 Procedure to contribute financially			x	x			x			
1.7 Address	x	x		x						x
1.8 Telephone	x	x		x						x
1.9 Email	x	x		x						x
1.10 Agreements with other organizations									x	
1.11 Number of employees		x				x	x			x
1.12 Age of employees		x								
1.13 Sex of employees		x								
1.14 Qualification of employees		x								
1.15 Number of volunteers		x				x	x			x
1.16 Sex of volunteers		x								
1.17 Age of volunteers		x								
1.18 Qualification of volunteers		x								
2. Online transparency of organization performance										
2.1 Mission	x		x	x	x	x	x	x	x	x
2.2 Vision	x		x	x	x	x	x	x	x	x
2.3 Principles	x									x
2.4 Objectives	x									x
2.5 Organizational strategies					x					x
2.6 Annual Plan	x									
2.7 Title of the current projects	x									
2.8 Objectives of the current projects	x									
2.9 Project schedule	x									
2.10 Projects beneficiaries	x									
2.11 Location of the projects	x									
2.12 Person in charge of the projects	x									
2.13 Evaluations of the current projects	x				x		x			x
2.14 Annual activities report	x			x	x		x		x	x
3. Online transparency about organization governance										
3.1 Internal rules	x			x						x
3.2 Charts and/or internal structure	x									x

(Continue)

TABLE 3. Informative Factors of Online Transparency (continued)

Informative factors to disclosure of information	ONGxT (2007)	CV Rendir Cuentas (2010)	Taylor et al. (2001)	Kang and Norton (2004)	Waters (2007)	Goatman and Lewis (2007)	Ingenhoff and Koelling (2009)	Greenberg and MacAulay (2009)	Saxton and Guo (2011)	Gandia (2011)
3.3 Main governing bodies and their members	x									
3.4 Calendar of meetings										x
3.5 Minutes							x			x
3.6 Compensation of Board members										x
3.7 Name of Internal Tax Auditor	x									
3.8 Internal Committee	x						x			x
4. Online transparency of the financial management										
4.1 Audit financial statements	x		x			x			x	x
4.2 Annual budget								x		x
4.3 Funding from international cooperation		x								
4.4 Funding from public funds		x		x						
4.5 Funding from membership quote		x		x						
4.6 Funding from sales of products or services		x		x						
4.7 Funding from financial returns		x							x	x
4.8 Funding from private sector		x		x						
4.9 Other funding resources		x								
4.10 Total income		x		x						x
4.11 Funding from particulars		x		x						
4.12 Operation cost		x							x	x
4.13 Allocation of resources by projects		x								x
4.14 Compliances of tax obligations		x							x	x
4.15 Total expenses		x								x
4.16 Policy of fundraising	x									x
4.17 Name of main source of funding	x				x					x
5. Online transparency of stakeholders participation										
5.1 Name of the person attending complaints and enquires	x									
5.2 Procedure to receiving and handling complaints	x			x	x	x			x	
5.3 Bibliography and video related to organizational mission	x		x				x			x
5.4 Procedure to evaluate NGO projects	x		x	x	x	x		x	x	x

Source: Own elaboration.

Focusing on the Colombian case, there are other self-regulatory mechanisms such as the code of conduct of "ONG por la Transparencia" (ONGxT) drawn up in 2007. The main priority of this organization is to enhance the NGO's transparency, therefore, NGOs interested in being part of this organization need to adopt this code. The compliance of its standards is subject to the disclosure of minimum information provided in the web page of the organization.

The online NGO transparency encompasses the access to information about aspects such as its organizational profile and performance, and its governance and financial management. At the same time, the importance of information inviting stakeholders to participate in the organization of the NGOs is increasing.

According to Greenberg and MacAulay (2009), online transparency of organizational profiles should include the

disclosure of information related to organizational history, contact data, agreements with other organizations and information regarding the legal structure of the organization. Ingenhoff and Koelling (2009) and Goatman and Lewis (2007), argued that the number of people that make up the organization should be disseminated. Taylor, Kent and White (2001) and Kang and Norton (2004) stated the need for information regarding the procedures to become affiliated and contribute financially to the organization in order to enhance the involvement of the stakeholders in the organization.

In regards to online disclosure of information about organizational performance, many authors pointed out the relevance of the NGO's mission and vision (Kang & Norton, 2004; Goatman & Lewis, 2007; Waters, 2007). Besides, Waters (2007) and Ingenhoff and Koelling (2009), consider that it is also important to disclose the information related to the organizational strategy, current project and the annual report of activities carried out by an NGO.

In relation to the online dissemination of the NGO governance, Gandía (2011) states that stakeholders should have access to the information about internal rules, minutes, and meetings, as well as the information related to the internal structure and compensations of NGOs Board members.

In keeping with the online dissemination of the organizational financial management, Saxton and Guo (2011) support the publication of audit reports, financial statements, and other data that shows the compliance of the NGOs tax duties. Gandía (2011) also includes the need for publishing NGOs budget, allocation of resources and sources of funding.

Likewise, the online information that promotes the participation of internal and external stakeholders in the organization is increasingly considered; specially the aspects related to receiving and handling complaints and enquires (Goatman & Lewis, 2007), the disclosure of documentation (bibliography and video) that let stakeholders learn more about the organization's mission (Taylor, Kent & White, 2001), and the information about the procedures to evaluate NGOs projects (Waters, 2007).

NGOs Efficiency

Efficiency is defined as the rational use of resources in order to maximize benefits (García-Sánchez, 2010). Due to the non-profit-making characteristic of the NGOs sector, efficiency should not be perceived as the maximization of benefits but as the achievement of social goals (Marcuello, 1999). At this point, Epstein and McFarlan (2011) claim

that NGOs efficiency must be based on the improvement of the society welfare.

Transparency is increasingly considered a mechanism to improve organizations efficiency, therefore, it promotes the organization trust and its competitiveness since it enables better governance and reduces agency costs (Boot & Thakor, 2001; Xuegang, 2004; Chen & Hasan, 2006; Pasiouras, 2008; Zhongsheng & Hanwen, 2008; Wu & Zang, 2009; Refait-Alexandre, Farvaque & Weill, 2011).

Despite the fact that most of the studies analyzing the influence of transparency in a greater efficiency are focused on lucrative entities, De Castro (2005) considers that the disclosure of information promotes the NGOs fundraising, which is crucial for the running of the organization and the fulfillment of its social goals. In addition, De França *et al.* (2010) argued that transparency reduces the information asymmetry caused by conflicts of interests between NGOs managers and their main stakeholders (beneficiaries and benefactors). In this line, Burger and Owens (2010) noted that the disclosure of information is very important to control the performance of these entities.

In order to calculate efficiency, Golden *et al.* (2012) manifest that the use of financial ratios could yield subjective and tampering results. Epstein and McFarlan (2011), add that an adequate assessment of NGOs efficiency involves obtaining financial and non-financial information about the resources (input) and the results (output) of the organization.

The literature about NGOs efficiency consider as inputs those operational cost (Harrison & Sexton, 2006; Alexander, Haug & Jaforullah, 2010) the contributions received by the organization (Golden *et al.*, 2012) and the number of employees (Alexander *et al.*, 2010). Among the analyzed outputs the following are to be included: Total income, total number of projects carried out (García & Marcuello, 2002), and total investment in projects (Golden *et al.*, 2012).

Alexander *et al.* (2010), pointed out that not only is important to analyze organizational efficiency, but also to study those factors affecting it. According to this, diverse factors such as organizational age (Marudas & Jacobs, 2007), size (Marcuello, 1999; Alexander, Haug & Jaforullah, 2010), and legal structure (García & Marcuello, 2002) must be considered. Additionally, Gutiérrez-Nieto, Serrano-Cinca and Mar-Molinero (2009), noted that transparency is a factor that improves efficiency in getting the social objectives of some non-profit entities.

Methodology

Analysis of Online Transparency: Disclosure Index

To fulfill the first objective of this study an online transparency index (TI) has been developed, following previous works by Verbruggen, Christiaens and Millis (2011), and Saxton and Guo (2011).

Items selections of TI are based on the 61 items indicated in Table 3. This general index has been made up by the following five partial indexes: i) online transparency of organizational profile (TI_{Pf}); ii) online transparency of organizational performance (TI_{Pe}); iii) online transparency of organizational governance (TI_{Gov}); iv) online transparency of financial management (TI_F); and v) online transparency on stakeholder's participation (TI_{Par}).

Each partial index (TI_j) is determined by the relation of total sum of items identified in the web page (ti_i) and the total number of items that form part of the partial index. In order to express this in percentage it was multiplied by 100.

$$TI_j = \frac{\sum_{i=1}^m ti_i}{m} \times 100 \quad (1)$$

Due to the lack of clear empirical evidence on the importance of the items and sections that compose our online transparency index, we decided to assess them with an identical weight in line with the methodology proposed by Rodríguez (2004), Verbrugen *et al.* (2011), and Saxton and Guo (2011). In the same way, in order to assign a score to the items, if the item appears in the web page it is assigned a score of 1, if it does not it is assigned a score of 0; therefore, the TI index would be calculated under the following expression:

$$TI = [TI_{Pf} + TI_{Pe} + TI_{Gov} + TI_F + TI_{Par}] \times \frac{1}{5} \quad (2)$$

Then, a consistency analysis of the index and partial indexes was carried out based on Cronbach's alpha coefficient, in line with Gandía (2011), and Saxton and Guo (2011). Taken into consideration the minimum levels of reliability indicated by Nunnally (1978), the consistency index TI was especially good (0.81), as shown in Table 4. However, consistency levels of the partial indexes were heterogeneous; specially, the consistency level of TI_{Pf} which was low, acceptable to TI_{Pe} , moderate to TI_{Gov} and very good to TI_F . TI_{Par} had an inconsistent reliability. Besides, TI_{Par} was rejected and some items of the other partial indexes were also deleted in order to increase their consistency. Therefore, the TI index was drawn up by 39 items and divided into 4 partial indexes (Appendix) following this expression:

$$TI = [TI_{Pf} + TI_{Pe} + TI_{Gov} + TI_F] \times \frac{1}{4} \quad (3)$$

Efficiency Analysis: DEA

Regarding the second objective of this paper, the analysis of NGO efficiency, Data Envelopment Analysis (DEA) has been used. This methodology is the most suitable to analyze non-profit organizations (De França *et al.*, 2010). Particularly, it is used by the sector to analyze NGOs efficiency in achieving their social objectives (Marcuello, 1999; Golden *et al.*, 2012), and NGOs efficiency in fundraising capacity (García & Marcuello, 2003; Marudas & Jacobs, 2010). Moreover, DEA is also used to analyze the efficiency of good governance practices of listed companies (García-Sánchez, 2010) and banks (Refait-Alexandre *et al.*, 2011).

In this study the efficiency of Colombian NGOs to reach their social goals is analyzed. A selection of variable inputs and outputs has been taken based on the literature previously reviewed and, taken into consideration the kind of efficiency that we are analyzing (Table 5).

TABLE 4. Results of Consistency of Online Transparency Indexes by Cronbach's Alpha

Transparency Indexes	Nº Items 1º analysis	Cronbach's alpha 1º analysis	Nº Items 2º analysis	Cronbach's alpha 2º analysis
Profile TI_{Pf}	18	0.53	10	0.59
Performance TI_{Pe}	14	0.71	12	0.72
Governance TI_{Gov}	8	0.64	5	0.69
Financial management TI_F	17	0.91	13	0.93
Stakeholders participation TI_{Par}	4	0.30	0	deleted
Total TI	61	0.81		0.83

Source: Own elaboration.

TABLE 5. Variable Inputs and Outputs to the Efficiency Analysis

Inputs	Measurement of Variables
Operative cost	Administration and managements expenses
Employees	Number of contracted employees and volunteers
Donations	Funding from public funds, private entities and particulars
Outputs	Measurement of Variables
Project investment	Amount of money invested in projects
Number of projects executed	Total number of projects carried out
Number of beneficiaries	Total number of people assisted in social programs

Source: Own elaboration.

Regarding the characteristics of DEA, it is a non-parametric method developed by Farrel (1957). It mainly consists on linear programming techniques to empirically obtain a best practice production frontier and evaluate efficiencies of a set of similar organizations or Decision Making Units (DMUs). Thus, the most efficient DMUs are those that produce with a minimum of inputs obtained the desired outputs (input-oriented) or those that maximize outputs with the available inputs (output-oriented). Considering any of these methodologies (input orientated or output orientated), an organization would be technically efficient when it obtains a score of 1.

An extension to Farrell's work (1957) is a model assuming the constant return to a scale that was developed by Charnes, Cooper and Rhodes (1978). Later on, Banker, Charnes and Cooper (1984), developed a model that added a restriction on the convexity assumption ($N1' \lambda = 1$) to the former model, indicating the variable return to the scale (RVS). This restriction avoids the comparison between DMUs with any different size. Additionally, Simar and Wilson (2002a) suggested the use of bootstrapping techniques in order to consider the sampling noise in the resulting efficiency estimators, maintaining the statistical properties of DEA estimators. According to this, current studies recommend the analysis of efficiency with RVS and bootstrapping techniques (García-Sánchez, 2010). Therefore, in this work we have calculated efficiency by VRS together with bootstrapping techniques and with output orientation as it is showed in the following expression:

$$\begin{aligned} \partial_i &= \text{Max} \theta_i \\ \text{s.t.} & Y\lambda - \theta y_i \geq 0 \\ x_i - X\lambda &\geq 0 \end{aligned}$$

$$N1' \lambda = 1$$

$$\lambda \geq 0$$

Where:

Y: matrix output $m \times n$

X: matrix input $k \times n$

θ_i : is scalar score and multiple output vector

λ : is a $N \times 1$ vector constant. This multiples inputs matrix and outputs matrix.

N: number of DMU

N1: $N \times 1$ vector of ones

In order to estimate efficiency we have used Wilson's software package for Frontier Efficiency Analysis with R (FEAR).

Transparency Analysis versus Efficiency: Empirical Analysis

In this section a close analysis of the online transparency influence in Colombian NGOs efficiency will be estimated by the so-called truncated regression method. This methodology is appropriate for data analysis ranging from 0 to 1 distribution (Jacobs, Smith & Street, 2006). Results by Simar and Wilson (2007), showed that it provides a better statistical inference than Tobit regression does. Nevertheless, this approach may be inconsistent unless the estimates DEA efficiency scores are corrected by a bootstrapping procedure. Bearing this in mind, our procedure applied in the present study follows the bootstrap approach developed by Simar and Wilson (1998, 2000b).

Moreover, truncated regression methodology is used in recent works related to non-profit organizations (Biener & Martin, 2011) and those which analyze the transparency as an explicative factor of organization efficiency (Refait-Alexandre *et al.*, 2011).

Then, assuming that θ_i has a being distributed based upon a set of $m \geq n$ normally distributed random variables $\partial_j, j = 1, \dots, m$ and z_i , each corresponding vector of the global transparency index and the partial indexed that compose it. The truncated regression will be calculated following this expression:

$$\partial_i = \bar{Z}_j \beta + \varepsilon_j \tag{4}$$

Where \bar{Z}_j refers to a vector of covariates, β represent the parameter vector and ε_j is a normally distributed error term. On this basis $\theta_1, \dots, \theta_n$ is defined as a truncated set of $\partial_1, \dots, \partial_n$, with $\partial_j \leq 1$ and $Z_i = \bar{Z}_j$, for $\theta_i = \partial_j$.

The analysis of associations through independent variables was done using Pearson Correlation Coefficient, in line with Pasiouras (2008). We used Wilson's software package for Frontier Efficiency Analysis with R (FEAR) to bootstrapping procedure and, Stata program version 11.1 to estimate truncated regression and correlation analysis.

Sphere of Study

In order to perform the research objectives of this paper, the 400 Latin American NGOs that appear on the on-line platform "*Centro Virtual para la Transparencia y la Rendición de Cuentas de la Sociedad Civil*" (CV *Rendir cuentas*) were analyzed. However, some of the population selected could not be examined either because their web pages were under construction, not available, did not have a website or were nonexistent. Therefore, the final sample was 196 organizations. The analysis period was April to May 2013.

Regarding the characteristics of the final sample, it is worth mentioning that it was mainly made up by entities from Bogota, the most populous city in the country, and the most populous cities of Antioquia, followed by cities from the Caribbean Coast, Caldas and, to a lesser extent, Santander and Quindio. With the exception of Quindio, the workforce of the organizations sampled were mainly made up of salaried staff. In addition, the sample performs from four to twelve projects per year with a social impact between 1,866 and 16,928 beneficiaries. Likewise, the entities selected converged in having greater financial

support from public funding than other agencies of international cooperation.

Focusing on the above characteristics by city, it is observed that Bogota and the total for Antioquia exhibited the largest number of salaried staff, while the NGOs from Quindio and Santander had a greater number of volunteers. In addition, Bogota and Antioquia also lead the group, based on the total number of projects and the number of beneficiaries. In addition, entities from Santander enjoyed the greatest support from agencies of international cooperation, whereas those from Quindio were principally funded by public entities (Table 6).

Results

Results of the Online Transparency Index

The results show that in general terms, the level of online information disclosure among the Colombian NGOs is low. In particular, less than 31% of the total items that compose the Transparency Index (TI) are published in the websites of these entities. Therefore, it seems that Colombian entities are in line with the scarce importance that NGOs from other countries, such as Switzerland (Ingenhoff & Koelling, 2007) and the United States (Kang & Norton, 2004) give to online transparency. The information most disseminated is that related to the organizational profile and performance. There is significantly less information published regarding their governance, with the information regarding financial management being very limited (Table 7).

TABLE 6. Characteristics of the Sample in Average Terms

	Bogota	Antioquia	Caribbean Coast	Caldas	Santander	Quindio
Regional population	7,467,804	6,143,709	10,750,364	982,207	2,030,775	552,703
Total with website	56	66	48	14	6	6
Mean salaried staff	60	60	17	29	26	12
Mean volunteers	9	5	5	3	10	34
Mean projects	11	12	4	7	6	6
Mean beneficiaries	16,036	16,928	2,716	4,252	1,866	3,083
% International cooperation over total income	17.87	17.06	6.73	21.38	33.09	0.79
% Public funding over total income	23.87	33.25	22.7	36.39	36.95	48.15

Source: Own elaboration.

TABLE 7. Online Transparency Results of Colombian NGOs

	Bogota	Antioquia	Caribbean Coast	Caldas	Santander	Quindio	Total sample
Tl_{Pf}	60.54	55.76	52.08	55	51.67	61.67	56.22
Tl_{Pe}	46.59	47.05	43.15	48.96	43.94	43.94	45.91
Tl_{Gov}	22.5	13.03	15.42	10	20	28.33	16.79
Tl_f	6.71	4.66	3.21	4.95	0	0	4.62
Tl	34.08	30.13	28.46	29.73	29.73	28.9	30.89

Source: Own elaboration.

Delving further in each of the partial indexes it is observed that, with regards to online information about their profile, all the organizations supplied their address, telephone number and email address. Likewise, Colombian NGOs are quite prone to justifying the motivations for creating their organization. On the contrary, few entities present online visibility with regards to information about how to affiliate to the organization or the legal structure. Additionally, in none of the cases analyzed was found information concerning the volunteers of the organization (Appendix).

In relation to online information access of the organizational performance, the online visibility regarding the title and objectives of current projects is noteworthy. Moreover, it is quite common to disclose the mission and information related to the beneficiaries of the projects. Nevertheless, the online dissemination of the annual report is surprisingly low. Likewise, in very few of the cases analyzed information about the person in charge of the projects was published.

Related to the online transparency of the organizations' performance, almost 40% of the NGOs analyzed published an organizational chart on their web pages. To a lesser extent, main governing bodies and their members is disseminated. Moreover, the dissemination of the internal rules and name of Internal Tax Auditor is very limited and online disclosure of meetings was nonexistent.

Despite the fact that the online transparency of the financial management is quite low, it is worth noting that the documents that serve to prove compliance with the tax obligations is the information most disclosed in this manner, reaching near 16% of the cases analyzed. The next information most available in their web pages is the audited financial statements and the allocation of resources by project, albeit with a 7.65% and 6.12% respectively. The remaining items do not surpass 4%, indicating the clear lack of transparency regarding the financial issues of the organization.

Looking at Table 7, the NGOs of all regions converge in the greater dissemination of two of the transparency dimensions related to the profile and the performance of the organization. However, regarding the level of online transparency, NGOs located in Bogota show the highest level of online transparency, while the NGOs from the Caribbean Coast are those that make the least use of the web pages as a strategic communication channel.

Finally, the top 10 transparent NGOs are from Bogota, Antioquia and the Caribbean Coast with levels of up to 65%. If we compare these results with the transparency index (TI) by regions, we can observe a moderate difference. In the case of Bogota, the most transparent NGOs surpassed the TI of their region in 39.76%. There is a difference of 36.99% and 35.47% in the case of Antioquia and Caldas (Table 8).

TABLE 8. Results of the Most Transparent Colombian NGOs

Region	Nº NGO	TI of most transparent NGO	TI overall NGO of the region
Bogota	5	69.55	34.08
Antioquia	4	69.89	30.13
Caribbean Coast	1	65.45	28.46

Source: Own elaboration.

Results of the Efficiency Analysis

The Colombian NGOs reach, in general terms, a level of efficiency of 0.56 points as it is indicated in Table 9. From the 196 NGOs analyzed just 33 are efficient representing a 16.83% of the sample.

TABLE 9. Summary Results of Efficiency Analysis of Colombian NGOs

Total DMU	Mean	Deviation	Min.	Max.
225	0.56	0.33	0.1	1

Source: Own elaboration.

In average terms, there are six volunteers working with each of the efficient NGOs. Their percentage of public funding is lower compared to the mean of all NGOs analyzed. In contrast to this, efficient NGOs receive a higher percentage of international cooperation funding (Table 10).

The efficient NGOs come mainly from the region of Bogota with a 33.33%, followed by the Caribbean Coast NGOs and Antioquia with 30.30% and 24.24%, respectively. In the same way, results indicate one efficient NGO from Caldas and two efficient NGOs from Santander.

By analyzing the characteristics of efficient NGOs it is observed that most of them work with less salaried staff than the other NGOs analyzed for their region. It is also worth noting that most of efficient NGOs work with less volunteers than the mean of the NGOs of its region, except in the case of Antioquia and the Caribbean Coast. Efficient NGOs from Bogota and Antioquia are the only ones that indicate a number of projects that is above the average for its region, showing a higher volume of beneficiaries than the rest of its region partners.

With the exception of NGOs from the department of Antioquia, all the efficient organizations studied show a higher

percentage of funding provided by international cooperation than the rest of the organizations in their region. NGOs from the Caribbean Coast are the only ones that receive a higher public funding than the average of its region (Table 10).

Results of Empirical Analysis

Following the methodology above mentioned, Table 11 presents the Pearson Correlation Coefficient for all the independent variables included in the model. Results indicate that TI has a correlation with almost all of the other variables. In order to avoid multi-collinearity problems, we decided not to consider the global transparency index and maintain all the partial indexes that compose it.

Following the results in Table 12, the expected influence of the online transparency of performance (TI_{pe}) in a greater efficiency is confirmed ($p < 0.1$). Besides, there is a strong relation between the online transparency of financial aspects (TI_f) and its efficiency ($p < 0.01$). This result is similar to the research by Chen and Hasan (2006) in banks.

TABLE 10. Characteristics of Efficient NGOs in Average Terms

	Bogota	Antioquia	Caribbean Coast	Caldas	Quindio
Nº NGO	7	10	12	2	2
% NGO	21.21	30.3	36.36	6.06	6.06
Mean salaried staff	35	25	29	20	26
Mean volunteers	3	8	7	0	1
Mean projects	20	35	4	4	5
Mean beneficiaries	78,392	46,005	2,991	4,263	2,307
% International cooperation over total income	22.3	16.58	11.35	24.48	0.69
% Public funding over total income	14.53	9.18	39.12	26.63	14.54

Source: Own elaboration.

TABLE 11. Pearson Correlation Analysis

	1	2	3	4	5
1. TI_{pf}	1				
2. TI_{pe}	0.46***	1			
3. TI_{Gov}	0.18	0.27***	1		
4. TI_f	0.10	0.246***	0.31***	1	
5. TI	-0.625***	0.73***	0.68***	0.58	1

Note: $p < 0.01$ ***

Source: Own elaboration.

The effect of governance over online transparency (TI_{Gov}) in Colombian NGOs efficiency was neutral, not coinciding with the positive evidence showed by Refait-Alexandre *et al.* (2011) in the bank sector. Likewise, we cannot confirm that there is statistical significant relation between online transparency of organization's profile and its efficiency.

A comparative analysis of the level of the online transparency between the efficient of NGOs and the rest of the sample is shown in Table 13. In general, it is highlighted that efficient entities present better results than the other NGOs, both in general terms and almost all of the partial indexes.

Conclusions

In recent years, activities of Latin-American NGOs have increased considerably. However, the high level of corruption in those countries has undermined the legitimacy of the sector. As a consequence Latin-American society distrusts the efficiency of these entities in complying with its social commitments. As it is mentioned above, informative transparency is one of the main mechanisms that prevents corruption and enhances a better way of working by

organizations. Nowadays, Internet could be considered a strategic tool to disseminate information.

The self-regulation mechanisms of Latin-American NGOs and specially those from Colombia, are part of the initiatives that the sector is carrying out to improve the information access of the organization. This paper pursued the analysis of the online transparency of Colombian NGOs, as well as the analysis of the efficiency of these entities in order to reach their social goals and of the online transparency influence resulting in a better efficiency of Colombian NGOs.

Less than half of the studied NGOs had a web page available, indicating that the awareness of the Internet as a useful communication element is scarce. Furthermore, there is a low level of online transparency comparing to the results of such organizations from other geographical areas.

The information disclose is mainly focused on the organization profile followed by their performance. Online access to information related to the mechanism of the organization and the financial management is very limited.

TABLE 12. Results of Empirical Analysis

Independent variables	Expected sign	Coefficient
Online transparency of organizational profile TI_{pf}	+	-0.2695932 (0.4444025)
Online transparency of organizational performance TI_{pe}	+	0.745845 (0.386889)*
Online transparency of organizational governance TI_{Gov}	+	-0.3972575(0.3825873)
Online transparency of financial management TI_f	+	0.5598066 (0.2035996)***

Note: p < 0.1*; p < 0.01***; Log likelihood: -287.99332; Standard error in brackets.

Source: Own elaboration.

TABLE 13. Comparative Analysis of Online Transparency (%)

NGO	TI_{pf}		TI_{pe}		TI_{Gov}		TI_f		TI	
	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No
Bogota	60.00	60.54	46.75	46.59	24.00	22.50	9.89	6.71	36.30	34.08
Antioquia	55.00	55.76	50.00	47.05	10.00	13.03	14.62	4.66	35.90	30.13
Caribbean Coast	52.50	52.08	37.12	43.15	28.57	15.42	8.30	3.21	26.99	28.46
Caldas	55.00	55.00	59.09	48.96	40.00	10.00	0.00	4.95	38.52	29.73
Quindio	55.00	61.67	54.55	43.94	20.00	28.33	0.00	0.00	32.39	28.90
Total	55.15	56.22	45.45	45.91	20.60	16.79	9.56	4.62	32.69	30.89

Source: Own elaboration.

Colombian NGOs reach slightly more than half of the social objectives that they should execute. This efficiency could be considered as moderate in contrast to the results of previous studies in other European countries (García & Marcuello, 2003; Golden *et al.*, 2012). In this regard, more effort is needed in the management of the organization in order to obtain a stronger impact of their activities. Coming back to the general characteristics of efficient NGOs, these organizations mainly work with salaried staff and low levels of public funding. However, they receive a higher level of international cooperation funding compared to the other Colombian NGOs studied.

Our findings about transparency effects in NGOs efficiency showed that online disclosure of performance and financial management information contributes to a greater efficiency of the organizations. According to Agency Theory, this result could be due to the use of Internet as an accountability mechanism of the activities that NGOs carry out, reducing stakeholders distrust in the development of their projects and, therefore, in the final accomplishment of their social objectives. In the same way, the disclosure of financial data may avoid corruption in the organization, ensuring a better management of the resources.

Finally, this paper not only contributes to enhance the use of websites to communicate information, but also to a better understanding of the contents that embrace an adequate online transparency. NGOs could then respond better to the information needs of their stakeholders. Furthermore, this paper demonstrates the usefulness of disclosing information on the Internet as a mechanism for optimizing the resources of the organization and thus strengthening their legitimacy as agents that serve society.

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Appendix

Results of Online Transparency

		Mean %
Tl_{pf}	Online transparency of organization profile	56.22
	Date of setting up the organization	74.49
	Motivations to establish the organization	80.61
	Legal structure	19.39
	Procedure to affiliate to the organization	32.14
	Procedure to contribute financially	45.41
	Address	93.88
	Telephone	93.37
	Email	81.63
	Number of volunteers	0.00
	Agreements with other organizations	41.33
Tl_{pe}	Online transparency of organization performance	45.91
	Mission	76.53
	Principles	46.94
	Organizational objectives	46.67
	Title of current projects	91.84
	Objectives of current projects	90.82
	Projects schedule	19.39
	Projects beneficiaries	65.82
	Location of the projects	23.59
	Person in charge of the projects	9.18
	Evaluations of current projects	18.46
	Annual activity report	11.22
Tl_{gov}	Online transparency about organization governance	16.79
	Internal rules	5.64
	Organization charts and/or internal structure	37.76
	Main governing bodies and their members	35.71
	Meetings	0.00
	Name of Internal Tax Auditor	4.59

(Continue)

Results of Online Transparency (*continued*)

Tl_F	Online transparency of the financial management	4.62
	Audited financial statements	7.65
	Funding from international cooperation	3.06
	Funding from public funds	3.57
	Funding from membership	3.57
	Funding from sales of products or services	3.57
	Funding from financial returns	2.55
	Funding from private sector	2.55
	Funding from particulars	3.57
	Operation cost	3.08
	Allocation of resources by projects	6.12
	Compliance of tax obligations	15.82
	Total expenses	2.04
	Policy of fundraising	2.56
Tl	Total transparency Index	30.89

Source: Own elaboration.