

Relationship between Corporate Social Responsibility, Assets and Income of Companies in Ecuador

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Abstract

The relationship between the monetary income reported in financial statements and Corporate Social Responsibility is an open debate worldwide. In the same way, at the Ecuadorian level, the benefits of applying Corporate Social Responsibility and its reports continue to be addressed. The research aims to analyze the impact of CSR on the economic returns and accumulation of assets reported in the financial statements of the control agencies, such as the Superintendency of Companies of Ecuador and the Internal Revenue Service, comparing it with the reports of social responsibility or sustainability. To meet this purpose, logistic regression is used with official data from the regulatory entities, complementing a meaning of significant verification between the monetary income and the application that Corporate Social Responsibility entails.

Keywords

Corporate Social Responsibility, Economic Performance, Sustainable Development

1. Introduction

Business competition has been analyzed more and more, and nowadays, the behavior of companies is observed where they take a deeper responsibility to consolidate and reaffirm higher profits [1, 2]. Gradually, companies are shifting their corporate agendas towards Corporate Social Responsibility (CSR) guidelines and practices, visualizing it in a sustainability report under the Global Reporting Initiative (GRI) that is carried out annually [3, 4].

To the extent that globalization requires companies to contribute to the productive capacity of goods and services jobs, but also goes to the general aspect of all the actors that are influenced by the company's operations [5, 6]. CSR initiatives worldwide contribute to improving the decisions of shareholders, workers, and governments, respecting applicable regulations and national and international agreements [7, 8].

The search for answers by decision makers such as corporate governance, shareholders, managers, administrators, and middle managers in charge of CSR presents several arguments

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that go hand in hand with the impact of CSR in emerging economies. This type of analysis is chosen because it will focus on the Ecuadorian case [9, 10].

This research aims to analyze the impact of CSR on the economic returns and accumulation of assets reported in the financial statements of the control agencies, such as the Superintendence of Companies of Ecuador and the Internal Revenue Service, comparing it with the reports of social responsibility or sustainability.

To fulfill the objective, it is proposed to test the following hypothesis:

- H_1 : Corporate Social Responsibility positively impacts the income of companies that report their responsibility projects in sustainability reports.
- H_2 : Corporate Social Responsibility positively impacts the assets of companies that report their responsibility projects in sustainability reports.

1.1. Corporate Social Responsibility

The debate on CSR has increased on the agenda of multinational corporations and national companies due to the growing global integration, product of trade agreements, globalization of the economy, localization, and international policies [11]. This leads companies and enterprises to implement a social commitment as a pillar of business decisions [12, 13].

The conception of CSR denotes an integration between socioeconomic and environmental aspects in business activities and additionally monitors and takes responsibility for the impact of business activity on society [14, 15]. This raises the question of how companies generate their profits oriented to an "ethics of good corporate practices".

The consultancy Innovation and Management Development (IDD, for its acronym in Spanish) emphasizes:

So that the code of ethics does not become a mere declaration of intent, it is very convenient to monitor its application through an ethics committee. This committee will be in charge of disseminating its content among all members of the organization, guaranteeing compliance, and holding regular meetings to coordinate activities and review and update its content [16].

The breadth of socioeconomic and environmental issues contemplated by CSR covers working conditions, inclusion in the labor market, human rights, ecological deterioration, prevention of corruption, healthy competition, consumer behavior, taxation arguments, and transparency at all levels of society [17, 18].

However, CSR also has a public discourse that contemplates freedom, individual dignity, social justice, solidarity, good collective living, health protection, responsible nutrition, climate protection, and biodiversity, among others [19, 20].

It is important to analyze that the initial discourse was linked to the economic performance of companies. Still, it has evolved in the last two decades, where an influential CSR is shown in positive attitudes and behaviors in active and potential employees [21, 22]. In the business case, interpersonal justice comes into play measured by supervisors or middle managers, where the perception of CSR and the company's reputation is analyzed, and this has a positive effect where job satisfaction increases, organizational commitment, identification with the company and the reduction of the desire to quit or change to another job [23, 24] (see Figure 1).

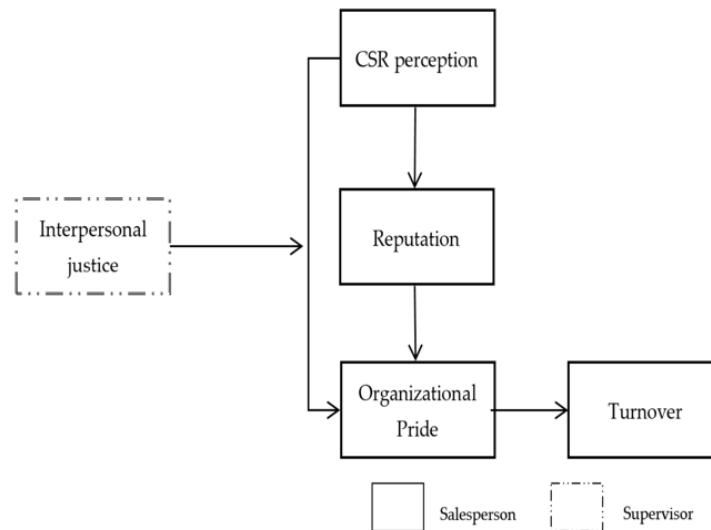


Figure 1: Intervention for interpersonal justice [18].

Today, it is well accepted that companies have an economic responsibility to their shareholders, but they also have social and environmental responsibilities to nearby communities [25, 26]. This leaves aside the ambiguity with what is determined as a corporate charity, leading to a strategic need thinking due to the positive impact on corporate performance, attitudes, and behaviors of the parties involved with the company, including ethics at all levels [27, 28].

1.2. ISO 26000 and Corporate Social Responsibility

ISO 26000 is a decisive factor in business sustainability and Corporate Social Responsibility. Four hundred fifty specialists developed this standard, and 210 observers from 99 member countries of the International Organization for Standardization (ISO) and 42 other organizations link specialized topics to the environments analyzed by this organization [18, 29]. ISO 26000 concentrates and promotes the transmission of tools related to social responsibility worldwide, showing instruments and techniques of significant progress and innovation [30].

The application of ISO 26000 in the Ecuadorian context offers paradigms on how companies can operate in a socially responsible manner, measured by holistic and standardized precision, since it includes the environment, socioeconomic problems, health, safety, emissions, and ethics, among others [31, 32].

This ISO aims to explain the determinants in the social disclosure of the reports contemplated by Corporate Social Responsibility. This theory is based on the economic firm's theory where it is mentioned that the "voluntary" reports of a company are used to mitigate current costs or futures that can be manifested in the control of regulatory entities [33, 34]. Minimizing these costs positively affects the risk profile, profitability of the companies, start-up, sustainability, and performance [35, 36].

Similarly, according to the theory of legitimacy, Corporate Social Responsibility reports transmit information that legitimizes the behavior of a company intending to affect the interested

parties or stakeholders. It carries with it public opinion at the country level and its investment risk. This translates into higher corporate returns and prestige for the country [37, 38].

1.3. Corporate Social Responsibility in Ecuador

According to [39, 40] the debate on the 2030 agenda, the door was opened to accelerate Corporate Social Responsibility since a very close and forced relationship is noted in the Government Plan called "Creation of Opportunities 2021-2025". This plan complies with five axes, 16 objectives, 55 policies, and 130 goals that follow the Political Constitution of Ecuador (see Figure 2).

This way, the relationship between business, society, and government is linked, respecting the factors that affect the environment. A practical example is the food companies that, within their practices, include establishing food programs, sustainable agriculture practices, and combating malnutrition, mentioning the main ones implemented in Ecuadorian companies [41, 42].

It is well defined that these practices are also actions promoted by Sustainable Development Goal 2, which aims to end hunger, achieve food security and improved nutrition, and promote sustainable agriculture. Likewise, the Constitution contemplates it in article 23 as a civil right to have food and nutrition. Finally, article 42 mentions that the State guarantees health through the development of food security [39, 43].

This contribution reflects the commitment that private companies have to the State objectives until 2025. Next to the convergence with the government plan, the economic axis can be analyzed in objective 3: "Promote productivity and competitiveness in the agricultural, industrial, aquaculture and fishing sectors, under the circular economy approach"; and in the social axis in objective 6: "Guarantee the right to comprehensive, free and quality health" [39, 44].

This example shows the consistency and convergence between national regulations and international agreements for society, government, business, and the environment. When developing CSR activities or programs, Ecuadorian companies have shown ethical treatment of

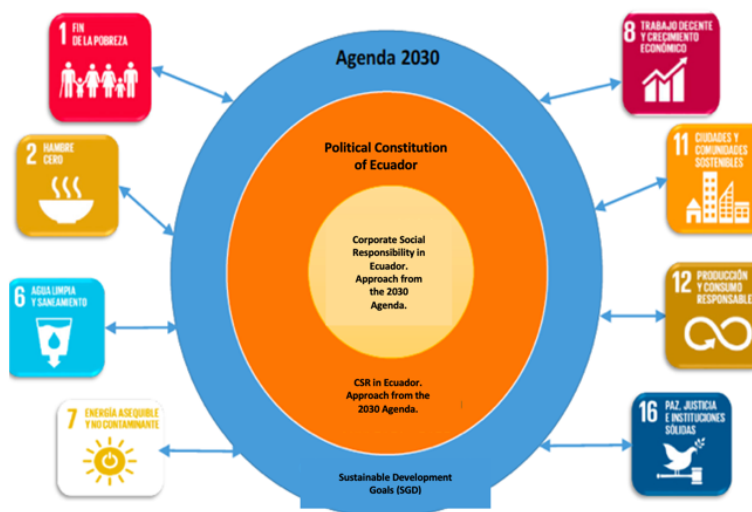


Figure 2: CSR of Ecuador and the 2030 Agenda [39].

customers, improvement of the quality of life of their employees, optimization of energy use, digital evolution, increased productivity, customer loyalty, and competitive advantages [42].

It is essential to highlight that few companies in Ecuador still apply Social Responsibility practices. Still, the pressure of the Sustainable Development Goals makes evident an incentive to participate in the numerous financings of second-tier international organizations and support from governments [39, 42].

2. Methodology

To achieve the research objectives, the documentary review of previous studies and the official pages of the Superintendency of Companies of Ecuador and the Internal Revenue Service was used as a data collection technique. In the case of the Superintendency of Companies, they are the ones found with the issuance of the corporate tax. In the case of the Internal Revenue Service, they are the companies that paid their national taxes.

The data that was examined for the empirical analysis are those presented in the Statements of Financial Position, Income Statements, and fundamental financial ratios corresponding to the fiscal year 2020.

In the same way, the companies that had the socialization of their sustainability reports, those that make up the Ecuadorian Consortium for Social Responsibility (CERES, for its acronym in Spanish), and the official pages of each company were evaluated. The statistical program used is JASP version 0.16 with the logistic and multinomial regression package.

2.1. Analysis techniques

The estimate is made through a bivariate logistic regression analysis since this model guarantees values of the dependent variable between 0 for companies that do not have CSR and 1 for companies that do have and socialize CSR, taking as base the following function.

$$Y_t = \frac{1}{1 + e^{-(\alpha + \beta_1 X_1 + \dots + \beta_n X_n)}} + u_t \quad (1)$$

Where Corporate Social Responsibility is explained in Y_t , It should be interpreted as $P(Y_t = 1)$.

In the analysis of the individual significance of the model, the Wald Test statistic is used. For joint effectiveness, the chi-square distribution is used with the degrees of freedom that the model has as independent variables ($n - 1$). However, joint linear dependence is accepted if the p-value is less than 0,05.

The statistical theory adds the calculation of the marginal effects of the independent variables on the dependent variable, where the values of the variable to calculate the marginal outcome are taken, multiplied by the calculation coefficient, and keeping it constant by calculating the mean.

For the calculation of the ODDS ratio, it is calculated using the following equation:

$$\text{vent}(y = 0) = \ln \frac{\hat{y}}{1 - \hat{y}} = \beta_0 + \beta_1 X_1 + \dots + \beta_n X_n + u_t \quad (2)$$

$$\frac{\partial \text{vent}(y = 1|y = 0)}{\partial x_j} = \beta_j = \frac{\partial}{\partial x_j} \ln \frac{\hat{y}}{1 - \hat{y}} \quad (3)$$

In short, for a unit increase in the independent variable, it approaches:

$$\Delta \ln \frac{\hat{y}}{1 - \hat{y}} \approx \beta_j \quad (4)$$

Where $e^{\beta_{ji}}$, is equal to the quotient between the advantage after increasing concerning the previous value.

2.2. Selected variables

To contrast the objectives of this research, an analysis is carried out that evaluates the impact of Corporate Social Responsibility on the returns of the companies with the highest monetary income in the Ecuadorian territory.

A binary variable was used as a dependent variable that identifies whether a company has Corporate Social Responsibility, including a value of 1 and, if not, 0. According to the GRI and ISO 26000 structure, sustainability reports were used for this.

The income of the companies that lead the database of the Superintendency of Companies and, in turn, the value of the assets accumulated in the financial statements presented for the year 2020 were used as independent variables since the financial year 2021 still lacks many companies. For submitting their reports. The lack of information is due to the extension granted by the regulatory entity to reconcile accounts caused by the COVID-2019 pandemic.

$$CRS = \frac{1}{1 + e^{-(\alpha + \beta_1 ASSETS + \beta_2 INCOME)}} + u_t \quad (5)$$

The sample comprises 1,000 companies within the ranking issued by the Superintendency of Companies of Ecuador, ordered from highest to lowest by reported monetary income.

3. Results

With a sample of 1,000 companies representing 54% of the Ecuadorian economy, it was analyzed that 926 companies in the ranking do not have Corporate Social Responsibility, and 74 report their CSR in their sustainability reports.

The descriptive values for the income are: the average income is 1,087 million US dollars, with a minimum of 3,74 and a maximum of 2,170. Descriptive values for assets are: Average reported assets is 1,070 million US dollars, with a minimum of 18,09 and a maximum of 2,122.

According to the registration and Constitution of the company, 51% of the companies reside in the provinces of the coast, 47% in the provinces of the mountains, and 2% in the provinces of the eastern region and the province of Galapagos.

The classification of the companies according to their size shows that 83% of the companies have the category of "large", 12% are categorized as "medium", and 5% of the companies are considered "micro and small". This last classification is based on the level of employment generated.

Table 1 shows the statistical information criteria for the studied model. A null hypothesis is displayed, the hedonic model, and the alternative, the one specified in materials and methods.

The Akaike, Bayesian, and Deviance indicators that best fit are for the alternative model. Likewise, the chi-square of the alternative model is significantly measured by its p-value.

The Pseudo- R^2 is addressed to have a mean of 0.45. The Nagelkerke adjustment is the maximum allowed, and Cox & Snell is the lowest (see Table 2). These indicators show that income and assets have an incidence of 45% in decision-making to implement Corporate Social Responsibility practices.

Table 3 shows the coefficients of the model for the two variables studied, and in turn, it can be seen that the standard error is consistent according to its estimate. Additionally, the ODDS ratio is shown, with ASSETS being the variable with the highest probability in the CSR (1%). At the same time, the INCOME variable has a possibility of 0,6%.

Table 1

Model Summary - CSR.

Model	Deviance	AIC	BIC
M_0	527.73	529.73	534.64
M_1	257.34	263.34	278.07

Model	df	X^2	p
M_0	999		
M_1	997	270.38	<.001

Table 2

Model fit indices

Model	McFadden R^2	Nagelkerke R^2
M_1	0.512	0.578

Model	Tjur R^2	Cox & Snell R^2
M_1	0.499	0.237

Table 3

Coefficients

	Estimate	Standard Error
Intercept	-4.905	309
ASSETS	14	2
INCOME	6	2

	ODDS Ratio	z
Intercept	7	-15.850
ASSETS	1.014	8.607
INCOME	1.006	3.670

Table 4 shows the Wald Test with one degree of freedom, having significance through its p-value for the intercept and the two model variables. This sign indicates that the estimates and the ODDS ratio represent the model.

Table 5 shows different performance metrics with acceptable values in their goodness of fit. It is important to note that the values are more significant than 0.5 in sensitivity and specificity. Likewise, the Area Under the Curve (AUC) has a good fit since it allows companies without CSR (0) and with CSR (1) to be predicted at 94%. The closer the AUC to 1, the better the classifier’s discriminating ability.

Figure 3 shows that a company is likely to apply Corporate Social Responsibility when its assets exceed 378 million US dollars, with a 95% confidence interval. The figure clearly shows that its margin of error is very narrow, thus defining the behavior of companies with CSRs and

Table 4
Wald Test of Coefficients

	Wald Statistic	df	p
Intercept	251.232	1	<.001
ASSETS	74.077	1	<.001
INCOME	13.466	1	<.001

Table 5
Performances metrics

	Value
AUC	0.940
Sensitivity	0.500
Specificity	0.985
Precision	0.725
F-measure	0.592
Brier score	0.37

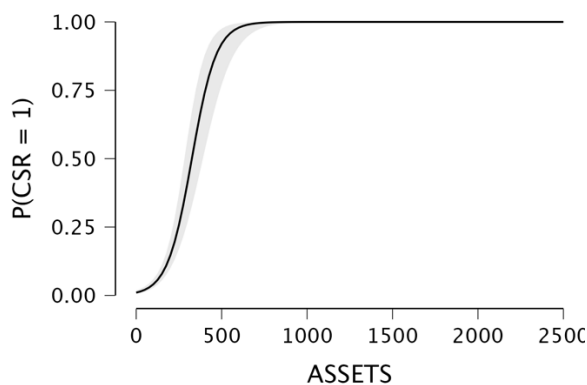


Figure 3: Estimates plots Assets.

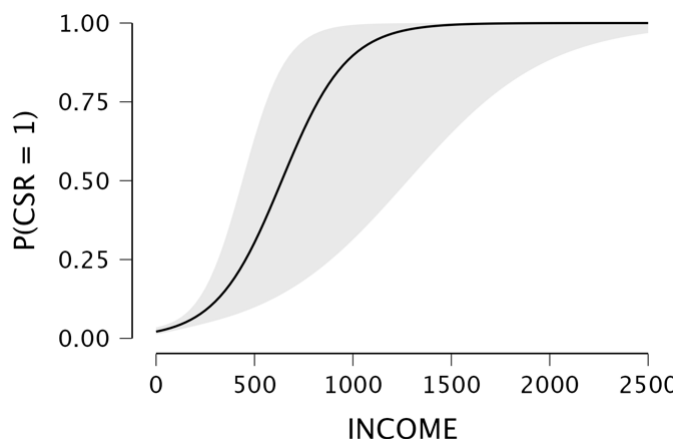


Figure 4: Estimates plots Income.

those without. Therefore, as companies accumulate or increase their assets, the greater the marginal effect concerning compliance with their organizational structure.

Figure 4 shows that a company is likely to apply Corporate Social Responsibility when its revenues are more significant than 622 million US dollars, with a 95% confidence interval.

Consequently, as companies increase their revenues, they have more of a marginal effect concerning compliance with their organizational structure.

Figure 4 also shows that the margin of error is much wider on the right side than on the left side. This is due to companies that can generate income but do not decide to apply Corporate Social Responsibility practices.

Figure 5 shows the ROC curve of the data evaluated, and a close relationship between the rate of true positives (sensitivity) and the rate of false positives (specificity) is analyzed. The relationship shows the points that connect the AUC, and it can be seen that the curve has a

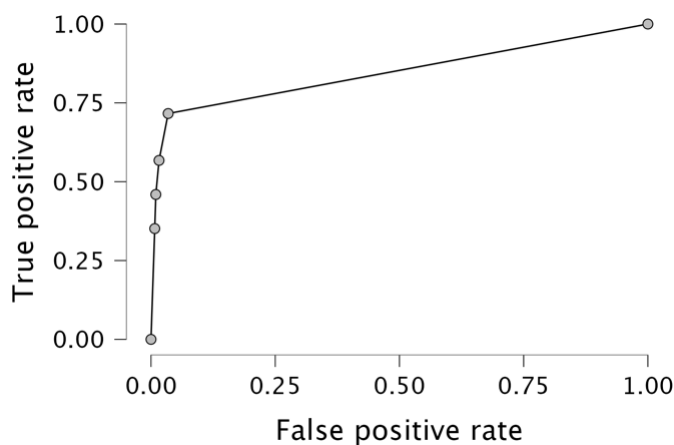


Figure 5: ROC plot.

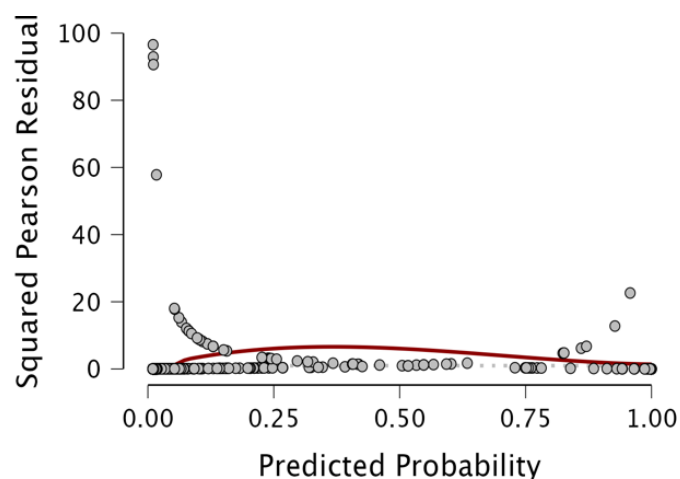


Figure 6: Squared Pearson residuals plot.

good prediction for the approached model.

The Squared Pearson residuals show that the model's residuals are typically distributed and contain only four data above the mean, determining a good fit for the proposed model (see Figure 6).

In summary, the marginal effects can be shown, and the ODDS calculated in the proposed model with the explained variables lead to summarize that the model is more helpful in explaining the intrinsic observations than a model without predictors. Therefore, the two hypotheses proposed to satisfy the objective of the investigation are accepted.

4. Conclusions

Through the selected empirical support, the following findings are evidenced in the present investigation:

The statistical technique of logistic regression supports the hypothesis, showing a good fit in the multiple specifications of the model and its relationship with the exposed theory.

Corporate Social Responsibility directly and positively impacts the income of Ecuadorian companies that report their responsibility projects in sustainability reports.

Additionally, Corporate Social Responsibility has a direct and positive impact on the assets of Ecuadorian companies that report their responsibility projects in sustainability reports.

The model explains these two pieces of evidence with a bias in the tests of success: two figures valued in millions of dollars, with the capital accumulation figure being less than income. In the same way, the accumulation of assets has a greater incidence when carrying out Corporate Social Responsibility than the monetary income of the companies.

Therefore, the relationship is concluded that Corporate Social Responsibility positively affects increasing income, and part of this income accumulates in assets.

Likewise, there were limitations when evaluating the model. The main one was the expense allocated to these practices among the different sizes of the companies. These expenses can

be the corporate image, staff turnover, recruitment of new staff, agreements that strengthen company-society commitments, and brand loyalty, among others.

Concerning the perspective of the research, it is recommended to evaluate the relationship between the costs of implementing the best CSR practices and the income of the companies analyzed, in addition to the sustainability of the practices over time, for example, how many projects that were started were they are maintained or updated under the same format and expense. Finally, carry out this analysis with the annual difference in income to carry out an impact evaluation with a factual and a counterfactual.

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