Digital Corporate Social Responsibility Reporting in the Water Industry

Rita Almeida[1] · José Ángel Pérez-López[1] · Rute Abreu[2]

Abstract

Companies in the Water Industry present digital Corporate Social Responsibility (CSR) agenda and, also, the social and environmental commitment to their stakeholders through the websites. The purpose of this research is to assess the digital CSR in Portuguese companies of the Water Industry. Furthermore, the research examines factors that impacts on the digital status of the online disclosure. The authors analyze the CSR information published on their websites of the Portuguese companies, operating in bottle water industry using empirical analysis. The data was collected based on the Global Reporting Initiative (GRI 2021a) standards that details the level of disclosure in this industry and highlight areas of underreporting. The results point to factors that need to improve to companies' digital CSR report good practices and weak points based on the companies' size, number of employees and turnover as factors that influence this level of disclosure.

Keywords Digital CSR · Disclosure · Web-report · Bottle water industry · Portugal

1 Introduction

Globalization and the growing competition in international markets have forced organizations to develop their communications in the field of environmental protection. The relationship between companies and the information published in digital technologies is a very important element to achieve sustainable development, to disclosure their commitment with the environmental protection (Guthrie and Farneti 2008) and to improve their relationships with the stakeholders (Michalska-Szajer et al. 2021). In addition, access to digital information allows consumers to access a clearer volume of information and, subsequently, make a better and more suitable decisions in fewer time, giving a competitive benefit to the companies (Kerras et al. 2020).

✉ Rita Almeida
RITMIRALM@alum.us.es

José Ángel Pérez-López
jangel@us.es

Rute Abreu
ra@ipg.pt

1   Universidad de Sevilla, Calle S. Fernando, 4, 41004 Sevilla, Spain

2   Guarda Polytechnic Institute, IPG-UDI, IPCA-CICF, IPV-CISed, Guarda, Portugal

This assumption led the bottle water industry start to intensify the use of the internet as a fundamental tool to disseminate digital information, to promote their products, to manage their online reputation, to rise their transparency, to disclosure non-financial information, and to improve communication with stakeholders (Helbergera et al. 2018; Johnson et al. 2017). The intensification of digital CSR disclosure in current years has formed a new rich information environment, as increasing competitive improvement of companies that offer vital information not only about firms' products, services, but also about financial, social, and environmental performance (Dutot et al. 2016; Okazaki et al. 2020).

Nowadays, companies' websites are one of the most cost-effective resources to communication CSR initiatives, since can be the perfect network to send indicators concerned to the CSR level as they provide quickly updated data allowing companies to link all types of reports and data (Annual Report, Financial Report, Site-specific Reports, and Sustainability Reports) in a updated version, which makes it an attractive instrument for companies and his stakeholders at a low cost (Lakatos et al. 2011; Salvi et al. 2021).

According with the survey developed by KPMG International Cooperative (KPMG 2020), the definition of the 2030 Agenda, consisting of 17 Sustainable Development Goals (SDGs) contributed significantly to an increase in companies disclose between 2017 and 2020. In turn, 80 percent of the companies in worldwide now report on Sustainability and GRI remains the dominant global standard for sustainability reporting (KPMG 2020). But the rate of sustainability reporting in Europe has remained at 77 percent since 2017, while the American continent leads the Sustainability reporting rates with 90% (KPMG 2020).

In Portugal, the sustainability reporting rate are below the global average (less than 77%), and in the past three years decrease of 8% (KPMG 2020), so digital CSR disclosure was reflected as "incipient" according to Neves and Bento (2005) but is recognized an increase on CSR practices in the companies (Branco and Delgado 2011). According with Branco and Delgado (2016), the research about CSR and Social Responsibility Disclosure (SRD) in Portuguese field is not abundant, exceptionally low investigations are known about the drivers of SRD in Europe, particularly in Portugal. As such, this research pretends to address this gap allowing determining the level of CSR practices in Portuguese context and by identifying the factors that influence that disclosure.

The authors chose to investigate the bottle water market in Portugal, for several reasons, such as: The digital corporate social responsibility reporting in bottle water companies is vital and crucial to sustainability development framework since this activity contributes significantly to local societies' economic growth, through the creation of direct and indirect jobs, indirectly downstream and upstream of the activity (suppliers, services, distributors), helping to mitigate Portugal's regional asymmetries, since bottling plants must be in proximity of the springs (PIANSMW 2022).

The bottle water industry is an important sector to Portuguese economy in the beverage market, representing, according to official data for 2019, a turnover of approximately 224 million EUR and a production of over 1,490 million litres (PIANSMW 2022). By on hand, this is a sector under increasing pressure to manage several contemporary CSR factors, such as an exploration of a natural resource, product safety and concerns relating to the environment, including packaging. By other hand, these factors are increasingly becoming of concern in Portugal and Europe, with potentially serious consequences for the bottle Water Industry.

The bottle water industry impacts at economic, social, and environmental level are significant since their activity depends on a natural resource vital for Human Life. Water is essential for the correct functioning of our organism. Daily the experts recommend drinking between 1.5 and 3 L of water, the hydration with natural mineral

water or spring water represents the choice of a natural drink, provided by nature, in complement, mineral salts and essential trace elements for our organism (Perrier et al. 2020). With underground origin that protects them from external aggressions, mineral and spring waters are microbiologically safe products that do not suffer any human contamination and chemical treatments (PIANSMW 2022).

Additionally, this type of industry bottle a natural resource whose scarcity is considered one of the greatest challenges for the humanity these days, given that over 2 billion people live with high water shortage (United Nations Water 2019; World Economic Forum 2020). Therefore, it's essential the investigation of a reality of an industry, whose sustainability is mostly dependent on its main raw material (water), a resource subject to various climate changes and which it´s the heart of the sustainable development for the 2030 Agenda. This value-added resource empowers the socio-economic development, is crucial to the production of energy and food, supports healthy ecosystems and for the existence of the human species (Chen et al. 2020).

This research makes significant scientific contributions to the existing literature by the examination the CSR disclosure in a specific type of industry rarely studied, in one of the smallest OECD countries, expand previous research done in this field. The analysis of online reports published by bottle water companies in Portugal will add to the scant research on SRD in Portugal, offering sector-specific detail and considering also geographic and cultural contexts affecting SRD. By on hand, the study reflects the reality of an industry that depends on the proper management of a resource that is an essential element for the life of all living beings, promoting the geographic development of a country and the sustainability of a planet (Seyedeh et al. 2021; Yang et al. 2021).

The purpose of this research is to assess the digital CSR in Portuguese companies of the Water Industry, through a proposed model which measure the degree of disclosure and the company's commitment to CSR and its subsequent disclosure to stakeholders, according to the main global standard for sustainability reporting, GRI standard. The paper determines in a second way the variables or factors that may influence this CSR disclosure in the company's websites. Thus, the proposed evaluation model contributes to the value importance of strategic CSR, since can be used to identify best practices and to reveal which companies are most strongly committed to these matters.

This knowledge has practical implications for the bottle water sector in Portugal, because they will enable to develop rational CSR disclosure policies on their websites, make them more competitive in the beverage market provide a better reputation for the company in the future, contributing to improve the information to all stakeholders and to increase the rate of CSR disclosure in Portugal which is currently below the global average.

The findings could be useful for the bottle water administrators who don't make any type of disclosure of social responsibility practices on their websites highlighting the importance of developing and supporting policies and incentives to promote CSR disclosure (Joseph 2012) and consequently attract new customers and investors contributing to the sustainable development of this companies.

The research is organized as follows. Section 2 examines factors that impacts on the digital status of the online disclosure to understand how they are using that communication channel. Section 3 presents the product and the sector in study and the research design and method applied. Section 4 discusses research results. Finally, Sect. 5 presents conclusions, the research implications, limitations, and future perspectives.

2 Literature Review

The contextual background of this research focuses on digital CSR disclosure, one of the most debated concepts in the business literature (Newman et al. 2020) since his ability to create enterprise value (Dhaliwal et al. 2014), so it could be considered as an important tool to the sustainability of bottle water companies.

Moreover, corporate social responsibility reporting has been increasing over the last decade and become a matter of strategic importance to business enterprises (KPMG 2020; Stolowy and Paugam 2018), concerned significant attention from several stakeholders (Branco and Rodrigues 2008). This trend of modern companies will maximise the value to shareholders and satisfy expectations to stakeholders, behave in a socially responsible way, and adopt the concept of managing resources for the welfare of present and upcoming generations (Lipunga 2014).

Currently, the authors observe an increase availability of CSR reports, but the level and content of SRD are influenced by some factors, so several problems arise with the quality and the quantity of information disclosed. Besides the company size, number of employees, ownership, profitability, and nature of industry, also, the company age and the presence or absence of social responsibility boards (Akin and Yilmaz 2016) determine the level of digital disclosure.

Thus, the following hypothesis are proposed:

H1: CSRD is positively correlated with firms' age.

H2: CSRD is positively correlated with number of employees.

Differences are recognized between the EU countries as evidenced in several investigations by different authors who conclude that CSR reports differs from country to country (Skouloudis et al. 2014; Mio and Venturelli 2013; Sierra et al. 2013; Habek 2014), since the legislation vary widely in several states (Habek and Wolniak 2013a, b).

For this reason, is fundamental to use an internationally recognized tool for the assessment of the information disclosed like the GRI standard used to classify level of disclosure in this research. GRI reporting framework is widely acknowledged as a leader in the international standardization of sustainability reporting (Bebbington et al. 2012; Gray 2010; Mahoney et al. 2013) and it is also considered the primary example of sustainability reporting and have multiple application in firms of several sectors of activity (GRI 2021a; Lipunga 2014).

Previous research suggests that the level CSR policies on large companies are higher than in small ones (Font et al. 2012), in line Branco and Rodrigues (2006) also conclude banks with higher visibility show more concern for corporate social disclosure to improve their images than banks with lower visibility. Similarly, Cuganesana et al. (2010) studied the Australian food and beverage industry and find that firms from industry sub-sectors with innovative CSR profiles comprise a better disclosure. Thus, the following hypothesis are proposed:

H3: CSRD is positively correlated with firm´s size.

H4: CSRD is positively correlated with the turnover.

In addition, previous research has also reported that companies with larger ownership have the highest disclosure levels and respond proactively to stakeholder concerns (e.g., Burritt et al. 2016; Paek et al. 2013; Scholtens and Kang 2013; Barnea and Rubin 2010).

By other hand, Shnayder et al. (2016) show that motivations of CSR disclosure in packaged food industry depends on intrinsic factors and can be explained by external pressures, regulation, normative obligations, and social pressure (Shnayder el al. 2016).

Other previous studies focus on the relation between CSRD and accounting or finance variables, most of them determine that CSR disclosure improves financial performance of the companies (Kartasasmita 2020; Nair et al. 2019).

Thus, the following hypothesis are proposed:

H5: CSRD is positively correlated with the ROE.

H6: CSRD is positively correlated with the ROA.

However, the new trends of the companies in disseminate online information change the line of the research in this field, previously studies were focused on the annual reporting. Currently, studies are also based on company's online reporting (e.g. Esrock and Leichty 2000; Campbell and Beck 2004; Capriotti and Moreno 2007).

For this reason, the companies' websites have a significant role in CSRD through the easy access of CSR agenda, circulation of updated data about social and environmental management performance to a varied group of internal and external stakeholders accessible twenty-four hours a day, seven days a week (Gautam and Shagun 2018; Hinson 2011).

For this reason, the online channels are an important tool for the bottle water companies, since researchers have suggested that companies' websites could provide organizations with numerous opportunities to present and explain their CSR identity, product sales and management subjects to their stakeholders (Campbell et al. 2011; Rolland and Bazzoni 2009).

Its unquestionable, that communication through the websites is crucial in today´s globalisation and liberalisation (Lipunga 2014; Dehkordi et al. 2012) an extremely powerful tool to influence the success of companies increasing their visibility and disclose information in a cost-efficient way to a target audience that are more aware with CSR and to potential financial investors that pretend to capitalise companies with better environmental and social performance (Penczar 2003; O 'Rourke 2004). It is clear, the company's website image has a considerable influence on stakeholder's behaviour (Chen and Lee 2005).

Effectively, the research of digital information is of particular interest since web offers several benefits for communication purposes which can increase the information that is communicated to the customers and other stakeholders (Amran 2012). The internet and its channels have opened the track for personalization of messages and real interaction with both existing and potential customers could lead to a better fit between customers' expectations and firms' growth (Dutot et al. 2016). However, contents of websites are not standardized, and companies have voluntary determination to provide information that desires to disclose (Amran 2012). This provides opportunity from the academic point of view to research the CSR online disclosure phenomenon particularly from bottle Water Company's context. For that reason, bottle water industry must develop high quality websites that provide a better online experience to attract all stakeholders, which explain the identity of the brand and simplify the access to the information in a perceivable, operable, comprehensible, and robust way (Chen and Lee 2005).

On the wider society, digital SR disclosure is on the rise, and Portugal is no exception (Branco 2015). While in a few years ago, Branco and Rodrigues (2006) found that most Portuguese companies did not disclosure social responsibility information in their websites, small to medium-sized business enterprises are now considered active to CSR agenda (Branco 2015; Coupland 2006). Portugal, similarly, to other EU countries such as: Italy

and Spain, has adopted CSR policies that most of the time depend on the promotion of government initiatives (Maon et al. 2017; Knudsen et al. 2015), few Portuguese companies are included in sustainability internationally indexes (e.g., Dow Jones Sustainability Index (DJSI) or the FTSE4Good Index) and most of them have low classification in terms of CSR reporting and in the inclusion of voluntary CSR standards in his business (Branco 2015; Moon et al. 2012; Branco and Delgado 2011).

Therefore, it is important to know the Portuguese reality. The data presented below pretend to evaluating the recent level of CSR reporting in Portuguese field in the context online disclosure of bottle water companies and identify the aspects that influence this disclosure in a sector of extreme economic importance for the country and in the worldwide consider a global industry (Carlucci et al. 2016), but due the recently pressures of the market and their stakeholders, the fulfilment with the environmental laws, needs to demonstrate its commitment to the environment, the preservation of a pure and natural resource bottle in 100% recyclable packaging with the incorporation of recyclable materials, factors that are under CSR agenda nowadays.

3 Research Methodology and Hypothesis

3.1 Study Product and Sector

In recent decades, water has turned from an essential good, unbranded commodity to being considered a premium, gourmet product with commercial value. Bottled water consumption in Portugal, gaining a prominent place in the beverage sector, considered the fourth country in the European Union where the most bottled water is consumed per habitant. Exports from this sector represent 3% of the total Portuguese production (PIANSMW 2022).

However, environmental impact is the biggest enemy of this industry, coming from the manufacturing process, transport, and the water packages, which requires more 2000 times the energy cost that tap water (Grebitus et al. 2020). Sill, packaging from this type of industry is the most recycled plastic packaging in the EU, achieving recycling rates above the average. In turn, the sector is determined to give a second life to every bottle through the circular economy project. In 2018, the bottled water industry committed to achieving a packaging take-back rate of 90% and using at least 25% recycled PET in its packaging by 2025. Additionally, the reduction in packaging weight in recent years has provided relevant environmental advantages in the production and transport using smaller quantity raw materials looking for new packaging solutions through the design and innovation (PIANSMW 2022).

The sustainable water resource management is the priority of this industry through the protection of the water source areas avoiding contaminations, preserve and improve the biodiversity in the areas where our sector operates and use efficiently the water in all the operations to ensure its natural renewal, in quantity and in quality (NMWE 2022). Considered the heart of the bottle water industry, this scarce resource, vital for the human being, must be used without compromising the future needs, the ecosystems and the continuity of water courses (Barnes and Alatout 2012).

For these reasons, bottled water is an important topic for research on CSR disclosure, since the environmental, economic, and social consequences of this sector have an increasing attention from the society, governments, policymakers, and stakeholders. Concerns about waste discharge,

proper use of groundwater, hydrologic effects on local surface and groundwater, economic costs, energy used in production and transport can influence the sustainability of this business (Gleick and Cooley 2009). These factors bring hard goals on packaging, carbon-neutrality, resource-efficiency, and biodiversity commitment to the bottle water sector (NMWE 2022). To overcome these challenges the sector must develop their activity including CSR practices in this business strategy, focus on the innovation of their products, efficiency of their process and investing in new technology to guarantee their sustainability.

In view with the above considerations, the next research's questions arise:

R1: What is the current state of digital CSR report in bottle water companies in Portugal?

R2: What are the factors that influence the level of CSR disclosure in bottle water companies in Portugal?

To answer these questions, the following approach was adopted.

3.2 Sample and Data Collection

This section aims to detail the research methodology develop to get answers to this research focus about all companies of the water industry that operate in Portugal in 2021. The population has a total of 20 companies, but only 15 had accessible websites. The data of the research was based on the digital CSR information provided in each company websites.

The analysis of the web pages was done in the most objective and rigorous way possible, and all web pages were analysed in a similar way to avoid subjective analysis (Hackson et al. 1996). The content analysis of the companies' websites was performed from March 8th to 12th, 2021.

For the construction of our CSR disclosure index, the authors used data hand-collected from firms' voluntary CSR information provided within the firms' web pages of bottle water companies, which published annual reports, follow-ups documents of standards certification, news, brochures, prints, bulletins, and others) available on webpages, as well as evidence contained in other related pages whose access link is expressly mentioned in the companies' pages.

After collecting the digital data of the bottle water companies based on Hinson et al. (2010) has been built a scoring method to assess the measure with quantitative index level of CSR disclosure. The scoring system involved assigning a point for each corporate social responsibility disclosure theme connect to any of the categories based on a list of 20 items, divided into 4 categories or blocks of information: general information, economic, environmental, and social information, in accordance with the GRI food sector guidelines (GRI, 2021b) presented in Table 1.

This research employs a model adopted from by the Hossain and Reaz (2007) and Lipunga (2014) based on the dichotomous procedure: a score of ——1 was awarded if an item was reported; if not, a score of zero was awarded as the model presented above in Figs. 1.

Hypothesis The authors test statistically the relationship between CSRD (score of disclosure per company) as the dependent variable with the following independent variables: firm age, number of employees, turnover, return on equity (ROE), return on assets (ROA) and size of the company. The information on the independent variables was collected from the base Balance Sheet Analysis System Iberians (SABI). The Statistical Package for

Table 1 Categories of GRI food sector guidelines

CATEGORY	ITEM
1: General Information	Organizational Profile
	Strategy and Analysis
	Stakeholder Engagement
	Ethics, Integrity, and Transparency
2: Economic Information	Economic Performance
	Market Presence
3: Environmental Information	Energy
	Water
	Emissions
	Effluents and Waste
	Compliance
	Transport
	Overall
	Supplier Environmental Assessment
	Environmental Grievance Mechanisms
4: Social Information	Labour Practices and Decent Work
	Human Rights
	Society
	Local Communities
	Product Responsibility

Social Sciences (SPSS: version 23) was used to analyse the collected data and to examine the variables in research. All statistical and econometric analysis developed has been based on Greene (2018) and Hair et al. (2018).

Pearson correlation was done to find the association between variables in each case before determining the regression model. The research only considered independent variables that showed a significant correlation ($p > 0,05$) with the dependent variable CSRD. In Table 2 are presented the correlation test (Greene 2018). According with Table 2 the variables that presents significant correlations are: company size (COMPS), employees and turnover. Company Size (COMPS): The National Statistics

Fig. 1 CSR Disclosure Model

$$CSR\ Score = \sum_{j=1} \frac{dj}{n}$$

Where:

dj= 1 if item j is disclosed; 0 if item j is not disclosed

n = number of items

Table 2 Pearson correlation test

		FIRMAGE	EMPLOYEES	COMPD	TURNOVER	ROE	ROA	CSRD
FIRMAGE	Pearson Correlation	1						
	Sig. (bilateral)							
	N	20						
EMPLOYEES	Pearson Correlation	,064	1					
	Sig. (bilateral)	,789						
	N	20	20					
COMPD	Pearson Correlation	,304	,678[**]	1				
	Sig. (bilateral)	,192	,001					
	N	20	20	20				
TURNOVER	Pearson Correlation	-,051	,965[**]	,591[**]	1			
	Sig. (bilateral)	,830	,000	,006				
	N	20	20	20	20			
ROE	Pearson Correlation	-,097	-,104	-,193	-,083	1		
	Sig. (bilateral)	,683	,663	,414	,729			
	N	20	20	20	20	20		
ROA	Pearson Correlation	-,044	,102	,259	,152	,018	1	
	Sig. (bilateral)	,854	,669	,269	,522	,941		
	N	20	20	20	20	20	20	
CSRD	Pearson Correlation	,127	,466[*]	,545[*]	,550[*]	-,257	,045	1
	Sig. (bilateral)	,595	,039	,013	,012	,273	,849	
	N	20	20	20	20	20	20	20

*Sig correlation at 0,05 level; **Sig correlation at 0,01 level

Institute (NSI 2021), defined the size of the companies in accordance with Decree-Law Nº 372/2007 (2021). Thus, a large company is defined as a company that employs more than 250; a medium company is defined as a company that employs more than 50; small company is defined as a company that employs less than 50; and a micro company is defined as a company that employs less than 10 people. The number of employees is characterized by the number of persons employed at full time in one year (Baehr and Renck 1958). The turnover is the measure for business's performance and reflects the total sales made by a business in a certain period (Burja and Burja 2009).

A regression model was developed to measure the factors that influence the CSRD in bottle water companies. The multiple linear regression analysis is a technique for modelling the linear relationship between a dependent and one or more independent variables, which is one of the most widely used of all statistical methods (Ongore and Kusa 2013; Sharifi and Akhter 2016; Nataraja 2018). The following research model (Fig. 2) was utilized to test the causal hypotheses of the research which is presented in an econometric form showed above.

Fig. 2 Regression Model of the CSR Disclosure

$$CSRD = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \cdots + \beta_k X_k + \varepsilon$$

Where:

Y = dependent (explained variable)

Xi = ith independent (explanatory variable), i = 1, 2…k

β_0, β_1, β_2, β_3…β_k are the partial regression coefficients of independent variables. The coefficient of independent variable reflects how dependent variable Y changes when the independent variable, Xi (i = 1, 2…k), changes by one unit, while the other independent variables continue constant (Nataraja 2018).

4 Results

4.1 Exploratory Analysis

The variables distribution of the CSR Disclosure Model is presented in Table 3. The most relevant are summarized: 15 companies of bottle water industry, in a total of 20 have an accessible website, 25% of bottle water companies are not emphasizing their websites as a tool for improving this communication with their stakeholders.

The authors find that, in terms of space devoted to topics, organization profile (85,71%), market presence (71,43%), effluents and waste (71,43%), environmental information overall (78,57%) and society information (71,43%), as opposed to Environmental Grievance Mechanisms (0,00%), Ethics, Integrity and Transparency (7,14%) Stakeholder Engagement, Labour Practices and Decent Work, Human Rights and Product Responsibility (14,29%) are the most prominent.

Finally, the research finds a lack of CSR reporting since the total of the information disclosed is 27% mainly in aspects related to Stakeholder Engagement, Labour Practices and Decent Work, Human Rights and Product Responsibility. It´s clear the sector in research is very related with environmental aspects and in the last years the companies of bottle water have developed several activity's is this field. By other hand it´s clear the last EU legislation about the plastic packaging and the led companies to disclose more information related to environmental aspects.

4.2 Confirmatory Analysis

The confirmatory analysis has been supported on the methods propose by Greene (2018) and Hair et al. (2018). From Table 4, it is evident that CSRD has positive correlation with all other explanatory variables. This indicates that CSRD increases when the variables company size (COMPS), employees and turnover increases.

The adjusted R2 value in the above Table 4 clearly tells us that 57,50% of variation in the dependent variable (CSRD) is explained by the explanatory variables. This indicates a reasonably good power of the regression model (Greene 2018; Hair et al. 2018). The value obtained in Durbin-Watson test (1,5 < 2,150 < 2,5) also indicates the independence of the residuals, that is, the differences between the predicted value and the observed value. Table 5 gives the results of the ANOVA technique applied to test our hypothesis against the null hypothesis.

Table 3 Variables distribution by the CSR Disclosure Model

CATEGORY	ITEM	CSR DISCLOSURE (%)
1: General Information	Organizational Profile	85,71
	Strategy and Analysis	57,14
	Stakeholder Engagement	14,29
	Ethics, Integrity and Transparency	7,14
2: Economic Information	Economic Performance	21,43
	Market Presence	71,43
3: Environmental Information	Energy	57,14
	Water	35,71
	Emissions	28,57
	Effluents and Waste	71,43
	Compliance	42,86
	Transport	21,43
	Overall	78,57
	Supplier Environmental Assessment	21,43
	Environmental Grievance Mechanisms	0,00
4: Social Information	Labour Practices and Decent Work	14,29
	Human Rights	14,29
	Society	71,43
	Local Communities	42,86
	Product Responsibility	14,29

Table 4 Summary of the CSR Disclosure Model

Model	R	R square	Adjusted square R	Standard error of estimate	Durbin-Watson
1	,758[a]	,575	,495	19,81,448	2,150

[a]Predictors: (Constant), TURNOVER, COMPD, EMPLOYEES

Table 5 ANOVA results of the CSR Disclosure Model

Model[a]		Total Squares	gl	Medium Square	F	Sig
1	Regression	8488,183	3	2829,394	7,207	,003[b]
	Residual	6281,817	16	392,614		
	Total	14,770,000	19			

[a]Dependent Variable: CSRD

[b]Predictors: (Constant), TURNOVER, COMPD, EMPLOYEES

Table 6 Coefficient test of the CSR Disclosure Model

Model[a]	Nonstandard coefficients		Standardized coefficients	t	Sig	Correlations		Collinearity Statistics	
	B	Standard Error	Beta			Zero order	Partial	Tolerance	VIF
(Constant)	-29,709	21,182	-1,959	-1,403	,180				
EMPLOYEES	-,287	,105		-2,730	,015	,466	-,564	,052	19,369
COMPS	26,885	9,521	,662	2,824	,012	,545	,460	,484	2,067
TURNOVER	1,106E-6	,000	2,049	3,133	,006	,550	,617	,062	16,091

[a]Dependent Variable: CSRD

The sig. value clearly indicates that model is significant at 5% chosen level of significant (0,003 < 0,05).

Thus, the hypothesis number 2, 3 and 4 are accepted which states that turnover, company size and the number of employees have significant impact on CSRD of bottle water
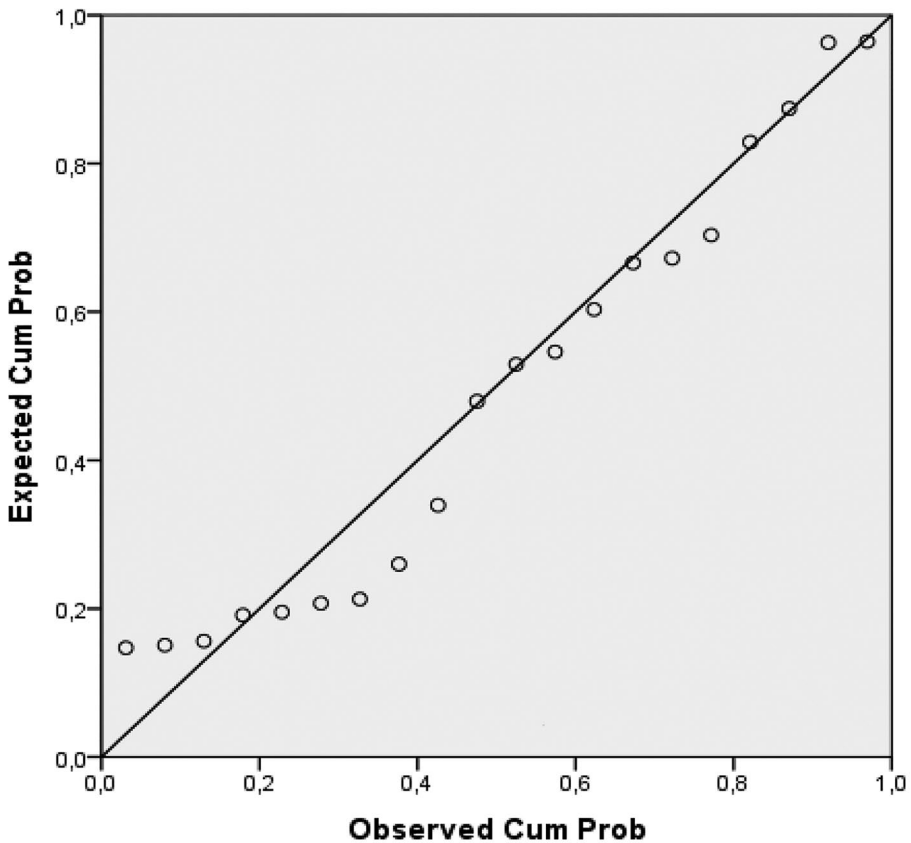
Fig. 3 Histogram of the CSR Disclosure model

companies. Further, the significance of each explanatory variable on CSRD can be also assessed through t sig value provided in the Table 6. Table 6 tells us that the explanatory variables turnover, company size and the number of employees have significant impact on CSRD (t sig values < 0,05).

According with the results in Fig. 3, the histogram for the residues has a normal distribution.

According with the results in Fig. 4 presents the residues have proximity to the normal distribution.

According with the results in Fig. 5 reveals the existence of homoscedasticity, so the statistical inference is valid.

As per the results obtained, the model can be fit as:

$CSRD = \beta\_0 + \beta\_1 \, EMPLOYEES + \beta\_2 \, COMPD + \beta\_3 \, TURNOVER + \varepsilon.$

The analysis developed allows to summarize results of all hypotheses expressed in Table 7.
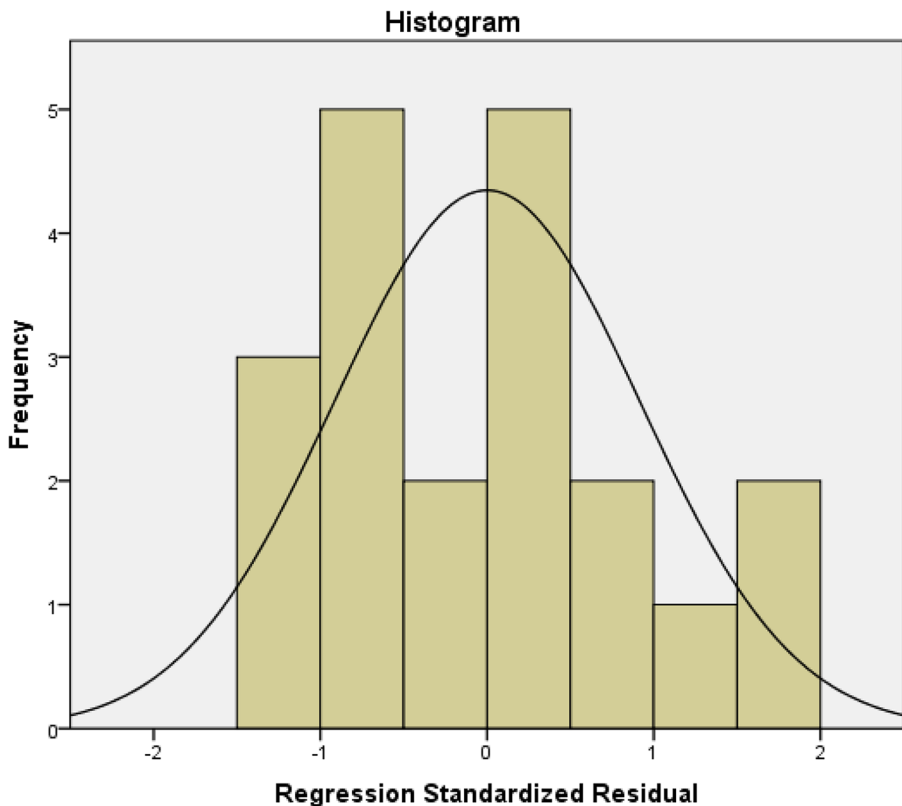
Fig. 4 P-PPlot Regression of the CSR Disclosure model
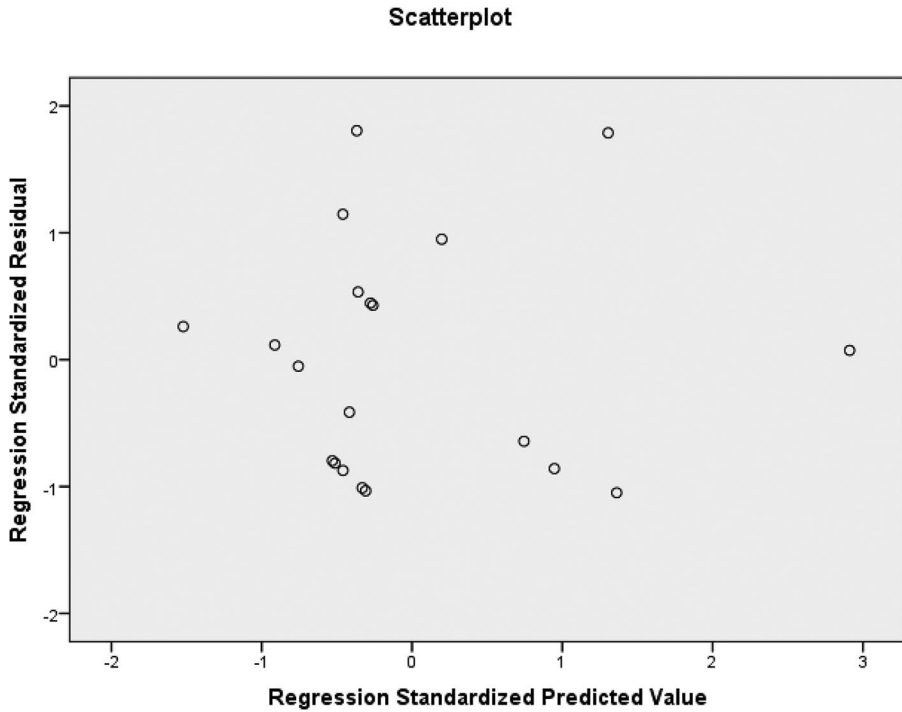
Scatterplot

Fig. 5 Scatterplot of the CSR Disclosure model

Table 7 Summary of hypotheses results of the CSR Disclosure Model

Hypotheses	Related variables	Expected sign	Actual sign	Supported or not
1	CSRD Firm's Age	Positive (+)	Negative (-)	Akin and Yilmaz 2016
2	CSRD Employees	Positive (+)	Positive (+)	Akin and Yilmaz 2016
3	CSRD Firm´s Size	Positive (+)	Positive (+)	Font et al. 2012
4	CSRD Turnover	Positive (+)	Positive (+)	Font et al. 2012
5	CSRD ROE	Positive (+)	Negative (-)	Not
6	CSRD ROA	Positive (+)	Negative (-)	Not

5 Conclusions

The results indicate low level of disclosure on websites of the Portuguese bottle water companies. Thus, these companies are not emphasizing their websites as a tool for improving CSR practices, as well as, managers of bottle water companies do not see the dissemination of social responsibility information on their companies' websites as a competitive advantage and an important tool to demonstrate to their stakeholders their commitment with the social, environmental and financial aspects.

The authors suggested Portuguese Bottle Water Companies should adapt to the modern market requirements, and improve their websites, introducing CSR elements into their vision, mission, values, objective statements, and provide CSR reports with, social, environmental, and economic aspects. Consider that 25% of companies do not have website, the first step is to introduce it and to follow recommendations provided in this paper. The companies would increase their visibility and therefore more business opportunities and new clients.

This paper contributes to the literature by researching about the relevance of strategic CSR disclosures in the websites of bottle water companies under the background of GRI standard in the context of an important market for the Portuguese economy. Our findings have practical implications for Portuguese regulators of bottle water companies, since the research presents important conclusions to understand their influence on the level of digital CSR disclosure in their companies and underreporting areas that they need to be improved.

In line, this paper has an important scientific contribution to stakeholder theory by proposing a model to assess the CSR disclosure in the websites of companies, based on needs to meet stakeholders' expectations, which can be used by the scientific community to other research, and empower CSR policies in the academic field to achieving a more sustainable business.

Our results suggest that the Portuguese government needs to provide more detailed guidance regarding CSR activities and disclosures to firms to proactively integrate CSR into business, since the importance for CSR disclosure for the sustainability of a business, mainly for the bottle water sector whose activity is dependent on environmental protection and from a resource fundamental to life, currently subject to the various climate changes on the planet.

Stakeholders of the Water Bottled Companies benefit from the results of this paper because the findings show the companies with more commitment with CSR practices in a sector frequently related to the impact on the environment, issue with current attention since the launch of 2030 Agenda in the European Union.

This paper is also relevant for entities that promote social responsibility in Portugal (such as APEE—Portuguese Association for Business Ethics, Global Compact Network Portugal, and CEEP Portugal – Services General Interest), which defend the extension of the social responsibility and sustainability practices to small and medium-sized companies, contrary to the existing trend of being applied to large companies, as this paper has shown. Through this investigation, these entities can help their associates to improve the social responsibility practices disclosed on their websites.

However, the conclusions of this paper must be interpreted regarding the following limitations. First, this research has a sample of 15 companies, but this is the total number of Portuguese companies with accessible websites. Indeed, may limit the generalisation of findings to companies outside the Portuguese bottle water market. Furthermore,

it is a first study to research in the sector. Second, the variables used on this research are the same used to analyse the social responsibility disclosure on the companies' websites based on the GRI standards.

As future researches, the authors will suggest to develop the same model applied to the water industry from another country of the world and, also, consider to extend this research to other beverages.

Declarations

Consent to Participate The authors have participated to the preparation and submission of this paper for a publication in Water Resources Management.

Consent for Publication This paper has neither been published nor been under review for publication elsewhere.

Consent to Publish The authors consent to publish their paper in Water Resources Management.

Competing Interests The authors have no relevant financial or non-financial interests to disclose, and they have no conflicts of interest to declare that are relevant to the content of this paper and its publication.

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