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Milena Peršić*
University of Rijeka

Lahorka Halmi**
Karlovac University of Applied Sciences

DISCLOSING NON-FINANCIAL INFORMATION IN COMPANIES' REPORTS IN CROATIA

Keywords: companies' reports, disclosure of non-financial information, Directive 2014/95/EU, GRI, KPIs, sustainability indicators.

J E L Classification: M14, Q56.

Abstract: Subsequent to the provision of the Directive 2014/95/EU requiring disclosure of non-financial and diversity information of all EU Member States companies with 500 and more employees, a research was conducted at the beginning of 2016 on a sample of sustainability reports disclosed by Croatian companies in 2014 that had registered 400 and more employees in that same year, with an assumption of their growth by 2018 in terms of the number of their employees. This research was focused on the structure of the indicators identified in non-financial reports, viewed as content-oriented and entry-oriented measures (attributes). The indicators analyzed were extracted from the original research done on the quality of non-financial reports of the companies in Croatia registering 400 and more employees. The method employed was a con-

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* Contact information: milena.persic@fthm.hr, Accounting Department, Faculty of Tourism and Hospitality Management, University of Rijeka, UniPrimorska 42, p.p. 51410 Opatija, Croatia, phone: +385 51 294 698.

** Contact information: lahorka.halmi@vuka.hr, Business Department, Karlovac University of Applied Sciences, Trg J. J. Strossmayera 9, 47000 Karlovac, Croatia, phone: +385 47 843 546.

tent analysis. The results show that many of the disclosed sustainability indicators are "story-tellers", meaning that they are past-oriented and qualitatively stated, suggesting that activities concerning sustainability in company are present, but no cause-effect relationships are presented therein. The results point to a need for significant improvements in defining a minimum of requirements for the indicators disclosed in non-financial reports. Since very few indicators reflect all of the attributes assessed in this research, there is a need for finding ways to capture relevant data in accounting of enterprises, so as to establish a requirement for comparability of non-financial information disclosed in sustainability reports and thus bring about the requirements of the Directive 2014/95/EU.

Introduction

With European Commission's (EC) issuing of the Directive 2014/95/EU and requiring disclosure of non-financial and diversity information, there is a need to assess the preparedness of companies with 500 and more employees in the EU Member States to successfully put this Directive into practice. The research was conducted at the beginning of 2016 on the sample of sustainability reports disclosed by companies that in 2014 had registered 400 and more employees, with the assumption of their growth by 2018 in terms of the number of their employees. Eventually all these companies will be obliged to disclose non-financial information in sustainability reports. Since the EC has not yet published any guidelines on disclosing non-financial information, the quality of non-financial information disclosed in sustainability reports is assessed according to the GRI G4 framework. The paper examines the structure of the indicators disclosed as non-financial information in sustainability reports of Croatian companies.

Theoretical Background

Today there are almost countless frameworks dealing with sustainability issues in companies, which can be grouped as either only to report on sustainability or to rate and rank the companies according to their sustainability result(s) (Herriott, 2016, p. 25). According to the Directive 2014/95EU, companies may rely on national or EU – based frameworks (e.g. EMAS, ISO 14001, etc.) or any other recognized international frameworks (e.g. GRI, UN Global Compact, OECD Guideline, ISO 26000, ILO Tripartite Declaration) (EC 2014, para 9; GRI 2014a; GRI 2014b). There have been few attempts of classifying these re-

porting frameworks according to any similarity, but these classifications differed (Choi, 2003; GISR, 2015; Perrini, 2005, p. 611).

Herriott (2016, pp. 50–69) states that this number of sustainability frameworks is due to the: "philosophy, or philosophies, of sustainability [that] is (are) implied by the indicators in a standard" (2016, p. 51) or framework, thus reflecting either a worldview or an ethical system (Herriott, 2016, p. 50, 209), this being a root cause of so many frameworks. Windolph (2011, p. 2) recognized the lack of standardization of measures and methodologies among rating frameworks (or systems), which are evident among any of the reporting frameworks as well.

While dealing with the waste measurement, Herriott (2016, pp. 149–168, 203–204) came to the conclusion that not even at the primary category (environmental and social) level of the frameworks are indicators consistently classified, suggesting that these indicators should be consistent in at least primary categories, thus making comparison of sustainability reports and results possible. Herriott also recognized the need of scholarly research in the development of KPIs as subcategories (Herriott, 2016, p. 213).

Only measurable and verifiable sustainability activities ought to be disclosed in sustainability reports, for information that is not measurable and verifiable is not auditable or comparable and does not provide relevant and objective information to any of the stakeholders (Brockett, Rezaee, 2012, p. 45) interested in sustainability information for any given reason. In line with this statement and with the requirements of the Directive 2014/95/EU, the focus of this research will be on the structure of the disclosed indicators (Herriott, 2016, p. 99) as non-financial information disclosed in sustainability reports, that can be found under titles such as annual report, environmental report, social responsibility report, corporate responsibility report, integrated report, segment responsibility report, and alike.

On an assessment scale of sustainability-dimension-inclusion, with an option of being included with a minimum reference (☻), included with some coverage (☻☻), and included with extensive coverage (☻☻☻), the GRI guidelines have been assessed as a sustainability (reporting) framework that includes all three sustainability dimensions (economic, environmental, social) with extensive coverage (Perrini, 2005, p. 614), as shown in table 1.

Along with extensive coverage of sustainability dimensions, the GRI (G4) guidelines recognize a hierarchical order of data disclosed as categories, as-

pects and indicators (GRI, 2014a, p. 9, 2014b, pp. 19–21), hence being a relevant starting point in implementing the provisions of EU the Directive 2014/95/EU. For the purpose of this research, the term aspect was equaled to the term indicator, whereas indicator defined by the GRI G4 was treated as an item or the smallest unit of information (Herriott, 2016, p. 71) that could be reported under standard. Although numerous companies in different countries present non-financial information, this area is still insufficiently imbedded in and coordinated through regulations, meaning that non-financial reports are still mostly voluntary based (SSEI), so these starting points were also recognized in this research.

Research sample, framework, and methodology

The EU Directive 2014/95/EU on disclosing non-financial information is directed at large undertakings, groups and big companies of public interest registering 500 and more employees (EC, 2013, art. 2; EC, 2014). Subsequently to the provisions of the Directive 2014/95/EU, in 2016 a research was conducted on companies registering 400 and more employees in Croatia, which will be required to disclose non-financial information in sustainability reports in 2018 and onwards.

Table 1. Sustainability dimensions covered in sustainability frameworks

	ASPIRATIONAL PRINCIPLES AND CODES OF PRACTICES							MANAGEMENT SYSTEMS AND CERTIFICATION SCHEMES					RATING INDICES				ACCOUNTABILITY AND REPORTING FRAMEWORK	
Standard name	UN Global Compact	Amnesty Int. Guidelin.	ETI	Sullivan Principles	OECD guidelin.	WHO / UNICEF Breast milk	ECCR / ICCR	SA 8000	ISO 9000 / ISO 14001	EMAS	EU Eco-label	FSC	DJGSI	ECPI Ethical Indeks Euro	FTSE4 GOOD	ASPI	GRI	AA 1000S
Dimensions																		
economic	☻				☻								☻	☻	☻	☻	☻☻☻	☻
social	☻	☻☻	☻☻☻	☻☻	☻	☻☻		☻☻			☻	☻	☻☻	☻☻	☻☻	☻☻	☻☻☻	☻☻☻
environmental	☻								☻☻	☻☻☻	☻☻	☻☻	☻☻	☻☻	☻☻	☻☻	☻☻☻	☻
CSR issues																		
financial	☻			☻	☻☻								☻	☻	☻	☻	☻☻	
economic development	☻☻	☻	☻	☻	☻									☻			☻☻☻	☻☻
consumer affairs	☻					☻☻	☻				☻☻☻			☻		☻	☻☻☻	☻☻☻
human rights	☻☻☻	☻☻☻	☻☻	☻☻☻	☻	☻☻	☻	☻☻☻					☻	☻	☻	☻	☻☻☻	☻☻☻
employee relations	☻☻☻	☻☻	☻☻	☻			☻	☻☻☻					☻	☻	☻	☻	☻☻☻	☻☻☻
community investment	☻☻						☻						☻	☻	☻	☻	☻☻☻	☻☻☻
bribery and corruption	☻	☻☻						☻						☻			☻☻☻	☻☻☻
bio diversity	☻☻		☻☻							☻☻☻	☻☻☻	☻☻☻	☻		☻	☻	☻☻☻	☻
air quality and noise pollution	☻									☻☻☻	☻			☻			☻☻☻	☻
energy and water	☻									☻☻☻	☻☻☻			☻			☻☻☻	☻
materials	☻									☻☻☻	☻☻☻	☻☻☻	☻	☻	☻	☻	☻☻☻	☻

Source: Perrini, 2005, p. 614.

The sample companies (with 400 and more employees) were retrieved from Croatian Company Directory (CCD) website provided by Croatian Chamber of Economy (Croatian Chamber of Economy); their websites were searched for available reports disclosing non-financial information, commonly referred to as sustainability, social and/or environmental report, presented either in a form of stand-alone report or annual (financial) reports. If no such reports were found, further research was done by predefined key-word phrases via Google search, and downloaded from the company websites.

Sustainability reports for the reporting year 2014 were collected in December 2015 and analyzed at the beginning of 2016. The list of the retrieved companies was divided into 2 major groups. The first group was composed of large, medium and small companies (CAA, 2015), registering 500 and more employees (500+), and the second composed of companies registering between 400 and 500 employees in 2014. Since many of the Croatian companies were members of a business group appearing in both size-groups, the final number of reports available for research was 38, as shown in the table 2.

Table 2. Croatian companies with 400 and more employees

Description	Big companies	Medium and small companies	TOTAL
Number of employees in retrieved Croatian companies	**500**	**400–499**	**400–500**
Number of Croatian companies retrieved	172	49	**221**
Number of Croatian companies reporting (merged with the group)	142	42	**184**
Number of sustainability reports available for research	37	1	**38**

S o u r c e : results of empirical research.

As shown in table 3, there were 221 companies retrieved from the Croatian Company Directory in January 2016. There were 179 companies with 500 plus employees and 42 companies with 400–499 employees registered in 2014. After coding companies that were members of a group and counting the number of available sustainability reports, there were available only:

- 19 sustainability reports disclosed by companies registering 500 plus employees,

- 18 sustainability reports disclosed by companies that were not members of any group,
- 1 sustainability report disclosed by a company with 400 to 499 employees, not member of any of the groups.

These reports were analyzed according to the GRI G4 standards' methodological framework and guidelines, which were chosen as globally accepted reporting guidelines. Except for being assessed as a framework including all three sustainability categories (environmental, social, economic) with extensive coverage (Perrini, 2005, p. 614), these guidelines are of particular importance for disclosing non-financial information, because they present reporting principles (GRI, 2014a, pp. 16–18) that are divided into two groups of tasks: first, principles related to the report content (stakeholder inclusiveness, sustainability context, materiality), and second, principles related to the quality of reports (balance, comparability, accuracy, timeliness, clarity, reliability).

Table 3. Processing number of available sustainability reports

total no. of companies	221	no. of reports members of group +500	19
+500 (all)	179	no. of reports not member of a group +500	18
group/& reports	19	**no. of reports +500**	**37**
+500 (not member of a group)	123	**no. Reports 400–499**	**1**
+500 + groups	**142**	TOTAL no. of reports	38
+400–499	**42**		
total no. of companies	184		

S o u r c e : results of empirical research.

The goal of the research was to identify the presence of categories and subcategories' indicators (GRI, 2014a; GRI, 2014b) in the sustainability reports. An indicator found and disclosed in each of the sample's reports was recorded and their frequency calculated (table 4). In this research the most frequent indicators in both environmental and social categories were analyzed from the aspect of their attributes that were measured as lead / lag indicators, process / outcome indicators, absolute / relative indicators, and quantity / quality indicators. This approach to the sustainability indicators emerged from the fact that the root cause of numerous sustainability (reporting) frameworks are and spring form varieties of worldviews and / or ethical systems that result in in-

consistency of classifying indicators even at the primary, category level (Herriott, 2016, p. 99, 50, 203). Indicators presented in table 4 were disclosed in accordance with the GRI G4 guidelines and further analyzed, for they provide information on the status or (occurred) change concerning sustainability (i.e. an impact a company has on environment or society). Based on previous researches (Brockett, Rezaee, 2012, p. 255; Burns, 2000, p. 120; BusinessDictionary.com; Center for Instructional Technolgy; Cokins, 2009, p. 208; Epstein, Buhovac, 2014, pp. 123–130; GEMI, 1998, p. 3; Hair et al., 2009, p. 3; Herriott, 2016, p. 76, 81, 82, 99; Horvat, Mijoč, 2012, p. 22, 26; Kaplan, Norton, 1996, p. 32; Schaltegger, Bennett, Burritt, 2006, p. 91; Šošić, 2006, p. 7), and for the purposes of this research, attributes were grouped as **(a)** *content-oriented attributes, or* ***(b)*** *entry-oriented attributes.*

Table 4. Environmental and social indicators reported by Croatian companies

ENV indicators	EN sum	Percentage of reports with EN indicators	SOC indicators	SOC sum	Percentage of reports with SOC indicators
Energy	**24**	**63,16%**	**LA** – Occupational health and safety	**19**	**50,00%**
Emissions	**21**	**55,26%**	**LA** – Training and education	**18**	**47,37%**
Waste (and effluents)	**20**	**52,63%**	**LA** – Employment	**17**	**44,74%**
Water	**18**	**47,37%**	**PR** – Product and service labeling	**10**	**26,32%**
Materials	**15**	**39,47%**	**HR** – Non-discrimination	**9**	**23,68%**
Biodiversity	**10**	**26,32%**	**LA** – Diversity and equal opportunity	**9**	**23,68%**
Compliance – EN	**9**	**23,68%**	**PR** – Customer health and safety	**9**	**23,68%**
Products and services – EN	**6**	**15,79%**	**SO** – Anti-corruption	**9**	**23,68%**
Transport	**5**	**13,16%**	**SO** – Local communities	**9**	**23,68%**
Environmental grievance mechanisms	**3**	**7,89%**	**HR** – Freedom of association and collective bargaining	**7**	**18,42%**
Overall environment protection expenditure	3	7,89%	HR – Child labor	6	15,79%
Air pollution (and GHG emissions)	2	5,26%	HR – Forced or compulsory labor	6	15,79%
Supplier/vendor environmental assessment	2	5,26%	LA – Equal remuneration for men and women	6	15,79%

Table 4. Environmental and social indicators reported...

ENV indicators	EN sum	Percentage of reports with EN indicators	SOC indicators	SOC sum	Percentage of reports with SOC indicators
Forest area and its utilization	1	2,63%	LA – Labor/management relations	6	15,79%
Ground-level ozone and air quality	1	2,63%	PR – Marketing communication	6	15,79%
Soil	1	2,63%	SO – Public policy	6	15,79%
Z/KPI noise	1	2,63%	SO – Anti-competitive behavior	5	13,16%
			HR – Investment	4	10,53%
			HR – Human rights grievance mechanisms	3	7,89%
			HR – Indigenous rights	3	7,89%
			HR – Security practices	3	7,89%
			LA – Supplier assessment for labor practices	3	7,89%
			PR – Compliance	3	7,89%
			SO – Compliance	3	7,89%
			HR – Assessment	2	5,26%
			HR – Supplier human rights assessment	2	5,26%
			PR – Customer privacy	2	5,26%
			SO – Grievance mechan. for impacts on society	2	5,26%
			PR / SASB – Supply chain standards and selection	1	2,63%
			SO – supplier assessment for impacts on society	1	2,63%
			Z/ GRI – FP – Food Processing sector disclosures	1	2,63%
			Z/KPI Animal husbandry	1	2,63%
			Z/KPI Sourcing aspects	1	2,63%
			Z/KPI Transportation, handling and slaughter	1	2,63%

S o u r c e : results of empirical research.

Through "*content-oriented attributes*" it was determined if the content of a disclosed indicator, was a future- or past-oriented (*lead and lag indicators*). Content-oriented measures are associated with the activity and recording of the process, or oriented towards presenting a final result. *Leading measures* are performance drivers (Kaplan, Norton, 1996, p. 32) and in-process measures (GEMI, 1998, p. 3), tailored to evaluate change during a period of time (Cokins, 2009, p. 208), and can be applied in measuring results of environmental practices (Schaltegger et al., 2006, p. 3). These measures refer to the future and show what the performance was at the time prior to the measurement (Herriott, 2016, p. 76). *Lagging measures* present a mix of outcomes (Kaplan, Norton, 1996, p. 32), offer end-of-process measures (GEMI, 1998, p. 3), present results of implementation of practices and lead to improved performance (Schaltegger et al., 2006, p. 91). Lagging measures report after-the-fact information at the end of a time period (Cokins 2009, p. 100, 208), which means that these are past-oriented measures (Herriott, 2016, p. 76).

Process measures are sequences of independent and linked procedures, which at every stage, consume one or more resources in converting inputs into outputs (BusinessDictionary.com, l. process measure). Process measures are a systematic series of actions designed with a goal as the end-point (EPA, 2011). These measures show how the system operates (Center for Instructional Technolgy), and refer to doing (Herriott, 2016, p. 99). In contrast to these measures, *outcome measures* refer to achieving (Herriott, 2016, p. 99) with determination and evaluation of the results of an activity, plan, process, or program and their comparison with the intended or projected results (BusinessDictionary.com, l. outcome measure) and are associated with final products or results (Center for Instructional Technolgy).

Through *entry-oriented attributes* it was determined whether indicators were *qualitatively or quantitatively* recorded, where quantitatively recorded indicators could be disclosed as an *absolute or a relative measure*.

Absolute measures use numerical variations (Hartman), report a total amount (e.g. pollutant emitted, water/materials used, etc.), and permit meaningful evaluation. These measures are employed in comparison between and within companies, but very often require a statement of the measure relative to the size and type of the company (Herriott, 2016, p. 81). *Relative measures* use statistical variations based on percentages to determine how far from reality a forecast is (Hartman), and are normalized in relationship to the business activity. Relative measures are normalized, i.e. are put in a correlation to the

business activity, meaning that homogeneous products are normalized by total quantity of the products, whereas heterogeneous products are normalized by sales revenue and number of employees (Herriott, 2016, p. 82, 99).

Quantitative (or metric) measures identify or describe subjects (or objects) not only on the possession of an attribute, but also by the amount or degree to which the subject may be characterized by the attribute (Hair et al., 2009, p. 3). These measures are numerical (Herriott, 2016, p. 99) and are measured on an interval or ratio scale (Šošić, 2006, p. 7; Horvat, Mijoč, 2012, p. 22, 26; Burns, 2000, p. 120). On the other hand, *qualitative (or nonmetric) measures* are categorical and ordinal-scales measures (Šošić, 2006, p. 7; Horvat, Mijoč, 2012, p. 23; Herriott, 2016, p. 99). In qualitative measures goals are often soft skill-oriented and are measured by a different kind of observation without using any statistics or metrics to pull from.

Research framework and methodology

Since Herriott (2016, p. 70) defined a measure as a specific way to quantify or evaluate an indicator, the goal was to measure the (quality of) indicators, previously defined and elaborated as the *content-oriented* or *entry-oriented* attributes. The assessment was done by awarding:

- (1) one point for the identified attribute to each of the indicators in individual sustainability reports, and
- (0) zero points for not meeting the criteria.

Analyzed indicators were 10 most frequent environmental and social indicators disclosed in sustainability reports of Croatian companies registering 400 and more employees in 2014 and the results are presented in tables 5 and 6.

Each cell in tables 5 and 6 represents a sum of the attributes of each of the sampled company. Once all attributes were recorded, the average score (column: score) of the indicator was calculated by summing their attributes and dividing them by the number of only those sustainability reports disclosing analyzed indicator, thus capturing these data on an interval scaled and quantitatively measuring the quality of indicators disclosed. Finally, the scale of indicators was calculated by also summing their attributes (column: scale), so it could be captured on an ordinal scale and then compared to a maximum number of possible attributes (column: max scale), which was calculated by multiplying the maximum number of attributes (*8 attributes: lead attributes, lag attributes,*

Table 5. Analysis results of the quality of environment indicators *(authors' processing)*

EN sum	percentage of reports with EN indicators	INDICATORS	sum LEAD	sum LAGG	sum PROCESS	sum OUTCOME	sum QUANTITATIVE	sum QUALITATIVE	sum ABSOLUTE	sum RELATIVE	SCORE (=sum of attributes / number of reports)	SCALE (sum of all attributes)	max scale (number of attributes * number of reports)
24	63,16%	Energy	5	21	6	21	17	9	15	8	4,43	102	184
21	55,26%	Emissions	5	19	5	19	18	8	15	9	4,90	98	160
20	52,63%	Waste (and effluents)	5	18	11	16	14	14	13	1	4,84	92	152
18	47,37%	Water	4	15	8	15	10	10	10	4	4,47	76	136
15	39,47%	Materials	1	12	1	12	11	7	11	1	4,00	56	112
10	26,32%	Biodiversity	1	6	3	4	1	9	1	0	2,50	25	80
9	23,68%	Compliance – EN	0	6	0	6	1	5	1	0	2,11	19	72
6	15,79%	Products and services – EN	0	2	1	2	0	2	2	0	1,50	9	48
5	13,16%	Transport	0	4	0	3	3	2	3	1	3,20	16	40
3	7,89%	Environmental grievance mechanisms	1	4	1	4	1	4	1	0	4,00	16	32
3	7,89%	Overall environment protection expenditure	0	2	0	2	2	1	2	0	3,00	9	24
		SUM	**22**	**109**	**36**	**104**	**78**	**71**	**74**	**24**			

S o u r c e : results of empirical research.

Table 6. Analysis results of the quality of social indicators *(authors' processing)*

SOC sum	percentage of reports with SOC indicators	INDICATORS	sum LEAD	sum LAGG	sum PROCESS	sum OUTCOME	sum QUANTITATIVE	sum QUALITATIVE	sum ABSOLUTE	sum RELATIVE	SCORE (=sum of attributes / number of reports)	SCALE (sum of all attributes)	max scale (number of attributes * number of reports)
19	50,00%	**LA** – Occupational health and safety	4	16	7	14	9	15	9	2	4,28	77	144
18	47,37%	**LA** – Training and education	5	14	9	11	8	16	9	2	3,89	74	152
17	44,74%	**LA** – Employment	2	14	1	12	11	12	12	1	4,06	65	128
10	26,32%	**PR** – Product and service labelling	2	8	1	7	2	10	2	0	3,20	32	80
9	23,68%	**HR** – Non-discrimination	4	7	4	6	5	7	3	0	4,50	36	64
9	23,68%	**LA** – Diversity and equal opportunity	1	6	2	6	2	6	2	0	2,78	25	72
9	23,68%	**PR** – Customer health and safety	2	10	9	6	10	10	1	1	3,11	28	72
9	23,68%	**SO** – Anti-corruption	3	5	4	2	0	8	2	0	2,67	24	72
9	23,68%	**SO** – Local communities	1	2	2	1	1	2	1	0	5,00	10	16
7	18,42%	**HR** – Freedom of association and collective bargaining	0	5	3	3	0	7	0	0	2,57	18	56
		SUM	**24**	**87**	**42**	**68**	**48**	**93**	**41**	**6**			

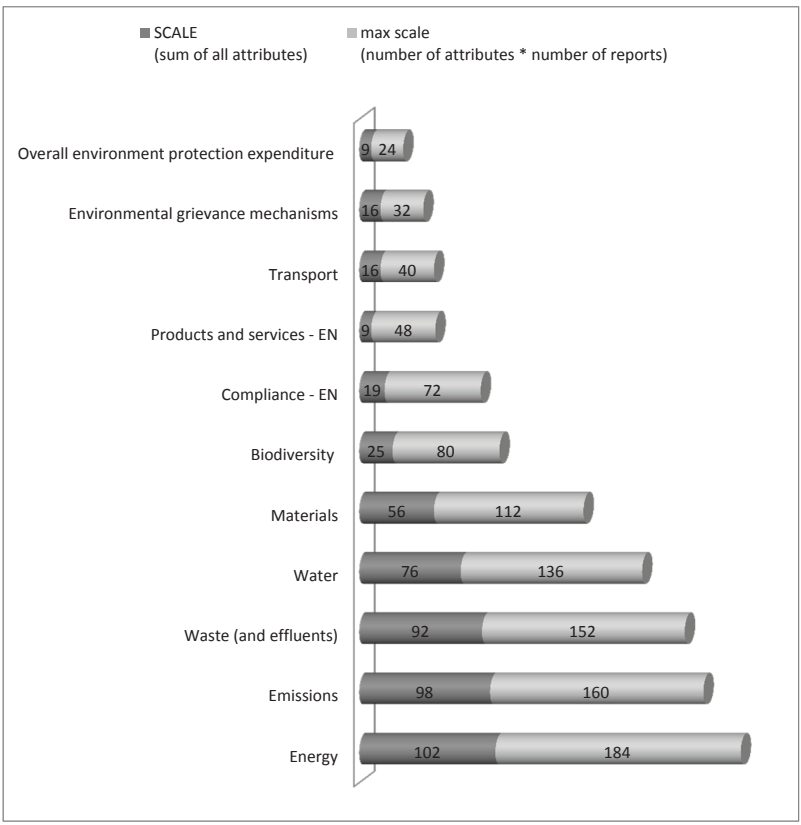
S o u r c e : results of empirical research.

process attributes, outcome attributes, absolute attributes, relative attributes, quantitative attributes, qualitative attributes) with the number of reports disclosing analyzed indicator (dependent on the number of reports in which each of the indicators was identified).

Research results

When analyzing content-oriented attributes in the **environment category**, lag (109 out of total 131) and outcome (104 out of total 140) indicators seem to be prevalent, meaning that a significant number of the information disclosed in the analyzed sustainability reports is past- and outcome-oriented.

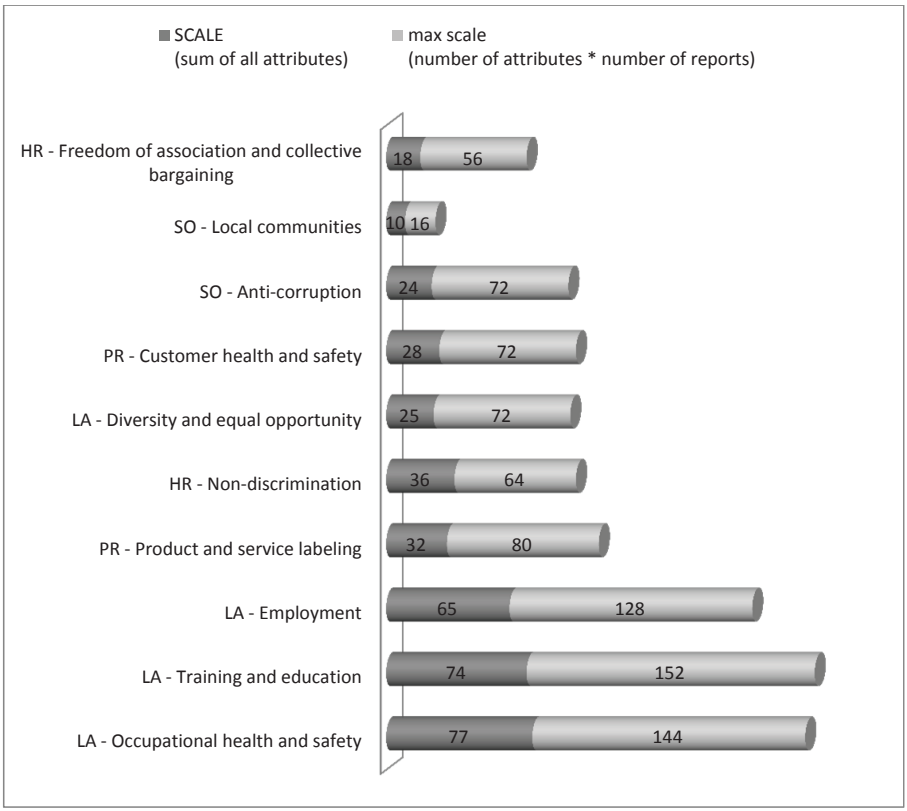
Figure 1. Scaling environmental indicators *(authors' processing)*



S o u r c e : results of empirical research.

Content-oriented attributes in **social category**, lag (87 out of 111) and outcome (68 out of total 110) indicators are also prevalent, also suggesting that indicators reporting on social issues are past- and outcome-oriented.

Figure 2. Scaling social indicators *(authors' processing)*



S o u r c e : results of empirical research.

Substance of indicators

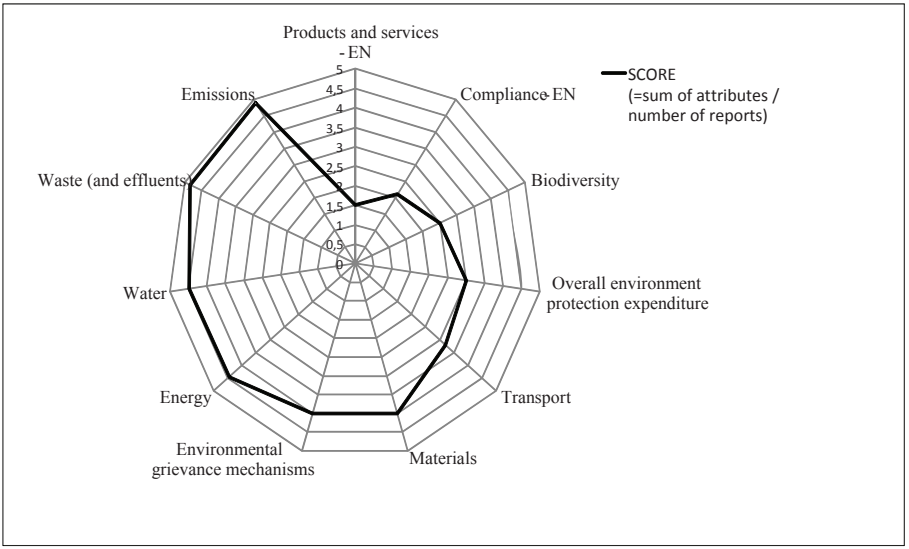
As to the entry-oriented attributes, **environmental indicators** indicated that quantitative and qualitative indicators are almost equally present (quantitative: 78, qualitative: 71). Quantitative indicators are mostly disclosed in absolute measures (74 out of total 98), as opposed to relative measures (24 out of total 98), where a relative measure was an indicator that was measured against

certain business activity. Information provided only in a form of proportion was treated as a qualitative indicator. In **social category** there are also more qualitative (93 out of total 141) than quantitative (48 out of total 141) indicators, as well as indicators expressed in absolute measures (41 out of total 47) as opposed to relative measures (6 out of total 47). Here too information provided only in a form of proportion was treated as a qualitative indicator.

Scaling and scoring reported indicators

Although individualized by the number of reports disclosing each indicator, both scale for environmental indicators and scale for social indicators show that very few indicators reflect the all of the attributes assessed in the research (Figure 1, figure 2) and that there is a need for finding ways to capture data in such a way that indicators (or aspects according to GRI) disclosed would contain all eight attributes. Since not all data can and should be quantified, it is expected that different items (indicators according to GRI) would be recorded in such a way that the higher level of information (indicators according to this research; aspects according to GRI) would reflect all of the attributes assessed in this research.

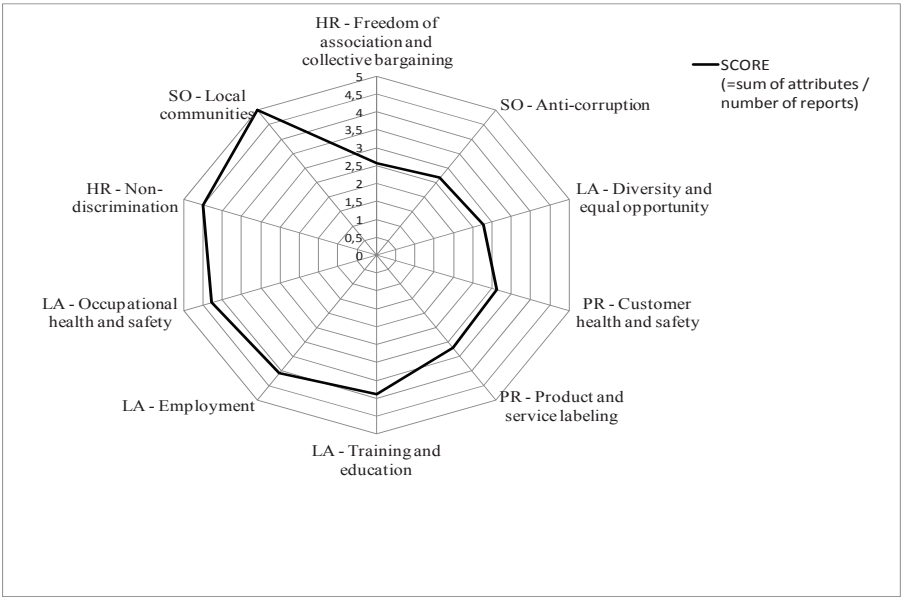
Figure 3. Environmental indicators score results *(authors' processing)*



S o u r c e : results of empirical research.

Environmental indicator with the highest score are items referring to the emissions (4,90), whereas the indicators with the lowest scores were items referring to products and services indicating their environmental impacts (1,50). Other indicators with high scores are waste and effluents (4,84), water (4,47), energy (4,43), environmental grievance mechanisms (4,00) and materials (4,00). Indicators with the lowest scores refer to transport (3,20), overall environment protection expenditure (3,00), biodiversity (2,50), environmental compliance (in terms of monetary value of significant fines, number of non-monetary sanctions for non-compliance with environmental laws and regulations; 2,11), and products and services with environmental impacts (1,50). These results imply that environmental indicators recognized by social sciences as having an impact on an environment are not as sophisticated as indicators recognized and developed over the years by environmental sciences.

Figure 4. Social indicators score results *(authors' processing)*



S o u r c e : results of empirical research.

Social indicator with the highest scores are items referring to local communities (5,00), human rights non-discrimination (4,50), occupational health and safety (4,28), and employment (4,06). Social indicators with the lowest

scores are indicators referring to human resources freedom of association and collective bargaining (2,57), social anti-corruption (2,67), and labor diversity and equal opportunity (2,78). As already mentioned (Herriott, 2016, p. 52), sustainability standards and indicators found therein reflect certain values and worldviews, which is particularly noticeable in social category.

Conclusion, limitations and further research

The research results show that many of the indicators disclosed are mere "story-tellers", meaning that those indicators are mostly past-oriented and qualitatively stated, leaving the stakeholder (for whom these non-financial reports are made in the first place), in wonderment if the information presented is true and reliable.

In this research indicators were captured on ordinal and interval scales, each scale appertaining to its individual category and are not comparable.

Due to the diversity of and voluntary approaches to the form of reporting on sustainability issues, the number of indicators analyzed for their quantitative attributes do not necessarily reflect the sum of absolute and relative attributes, for the focus of the research was to simply identify any of the indicators (aspects according to GRI) and how they were measured and reported. For that reason, authors suggest that the future researches first identify and segregate items as termed in this research (or indicators according to GRI) as qualitative and quantitative, and then those quantitative items analyze as absolute or relative items (indicators according to GRI).

The criterion for the research was a mere mention of an indicator in the report regardless of the items reported therein and not the extent of the information presented, meaning that not specific items of an indicator were individually analyzed. For further research it is suggested to first, group presented information into indicators; second, to determine which items are to form an indicator and then; third, to analyze individual items of indicators. This will form a plateau for improving the quality of non-financial information in a way that it will make clearer what items should form an indicator, both in an environmental and social category, as well as point to the means that will enable comparability of non-financial reports.

Some of the frameworks used for creating sustainability reports require certain items to be disclosed as a proportion, which was recognized as qualitative data in this research. Therefore, one of the suggestions for future research

as to classifying indicators within a primary category would be to consider segregating quantitative indicators from qualitative indicators.

Another suggestion for further research would be developing an assessment matrix where items according to this research (or indicators according to GRI G4) will be analyzed according to these attributes, thus providing a more comprehensive study on the structure of the indicators disclosed in the sustainability reports.

Since very few indicators reflect all of the attributes assessed in this research, there is a need for finding ways to capture relevant data in accounting of enterprises so as to establish prerequisites for comparability of non-financial information disclosed in sustainability reports. Apparently there is also a need for significant improvement in defining a minimum of requirements for the disclosed non-financial information in the sustainability reports, in order to comply with the requirements of the Directive 2014/95/EU.

References

Burns, R. B. (2000.) Introduction to research methods. London, UK: SAGE Publications.

Brockett, A., & Rezaee, Z. (Ed.) (2012). Corporate Sustainability: Integrating Performance and Reporting. Google Books. Hoboken, New Jersey: John Wiley & Sons, Inc., https://books.google.hr/books?id=mnEE0XQrWKUC&printsec=frontcover&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false. doi: http://dx.doi.org/10.1002/9781119202899 (accessed: 22. 07. 2016).

BusinessDictionary.com. BusinessDictionary.com – Online Business Dictionary, http://www.businessdictionary.com/ (accessed: 16.10.2015).

Center for Instructional Technolgy. What is Quality Improvement? http://patientsafetyed.duhs.duke.edu/module_a/measurement/measurement.html (accessed: 28.11.2016).

Choi, F.D.S. (2003). International Finance and Accounting Handbook. John Wiley & Sons, https://books.google.com/books?id=5z2pGMGE8mYC&pgis=1 (accessed: 16.10.2015).

Cokins, G. (2009). Performance management. Integrating Strategy Execution, Methodologies, Risk and Analytics. New Jersey: John Wiley&Sons, Inc.

Croatian Chamber of Economy. Croatian Company Directory, http://www1.biznet.hr/HgkWeb/do/language?lang=en_GB (accessed: 10. 12. 2015).

EC. (2013). Directive 2013/34/EU amending Directive 2006/43/EC and repealing Council Directives 78/660/EEC and 83/349/EEC on the annual financial statements, consolidated financial statements and related reports of certain types of undertakings. Official Journal of the European Union, 2013(June), L 182/19-75.

EC. Directive 2014/95/EU, Official Journal of the European Union 1–9 (2014). http://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32014L0095&from=HR (accessed: 28.12.2016).

EPA. (2011). Sustainability Assessment and Management: Process, Tools, and Indicators. National Academy of Sciences. doi: http://doi.org/10.17226/13152.

Epstein, M.J., & Buhovac, A.R. (2014). Making Sustainability Work: Best Practices in Managing and Measuring Corporate Social, Environmental, and Economic Impacts. Berrett-Koehler Publishers, https://books.google.com/books?id=RfvxAAAAQBAJ&pgis=1 (accessed: 28.12.2016).

GEMI. (1998). Measuring Environmental Performance: A primer and Survey of Metric In Use. Global Environmental Management Initiative, http://gemi.org/Resources/MET_101.pdf (accessed: 28.12.2016).

GISR. (2015). GISR | Global Initiative for Sustainability Ratings, http://ratesustainability.org/about/why-gisr/ (accessed: 28.12.2016).

GRI. (2014a). G4 Sustainability Reporting Guidelines, 1–97. https://www.globalreporting.org/standards/g4/Pages/default.aspx (accessed: 28.12.2016).

GRI. (2014b). GRI G4 Implementation Manual. Global Reporting Initiative, 1–112, https://www.globalreporting.org/resourcelibrary/GRIG4-Part1-Reporting-Principles-and-Standard-Disclosures.pdf (accessed: 28.12.2016).

Hair, J.F.J., Black, W.C., Babin, B.J., & Anderson, R.E. (2009). Multivariate Data Analysis.

Hartman, D. What Is the Difference Between an Absolute & a Relative Measure of Forecasting Error? The Finance Base, http://thefinancebase.com/difference-between-absolute-relative-measure-forecasting-error-2177.html (accessed: 01.12.2016).

Herriott, S.R. (2016). Metrics for Sustainable Business, New York, US: Routledge.

Horvat, J., & Mijoč, J. (2012). Osnove statistike, Naklada ljevak, Zagreb, Croatia.

Kaplan, R.S., & Norton, D. P. (1996). The Balanced Scorecard: Translating Strategy Into Action. Harvard Business School Press. Boston, Massachusetts: Harvard Business School Press. http://doi.org/10.1109/JPROC.1997.628729.

Perrini, F. (2005). Building a European portrait of corporate social responsibility reporting. European Management Journal, 23(6), 611–627. http://doi.org/10.1016/j.emj.2005.10.008.

Schaltegger, S., Bennett, M., & Burritt, R. (Eds.) (2006). Sustainability Accounting and Reporting – FAQ. Delft: Springer. http://doi.org/10.1007/978-1-4020-4974-3.

Sustainable Stock Exchange Inititive. Sustainability Reporting Policies, Sustainable Stock Exchanges, http://www.sseinitiative.org/sustainabilityreporting/ (accessed: 01.01.2015).

Šošić, I. (2006). Primijenjena statistika, Školska knjiga, Zagreb, Croatia.

Windolph, S. E. (2011). Assessing Corporate Sustainability Through Ratings: Challenges and Their Causes. Journal of Environmental Sustainability, 1(1), 61–80. http://doi.org/10.14448/jes.01.0005.