

The 6th International Conference on Economics and Social Sciences
Geopolitical Perspectives and Technological Challenges
for Sustainable Growth in the 21st Century
June 15-16, 2023
Bucharest University of Economic Studies, Romania

Digitalisation in Sustainability reporting – Electricity Field

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DOI: 10.24789788367405546-032

Abstract

Nowaday, digitalisation is mandatory for companies, and the COVID-19 crisis showed us that businesses could adapt better to changes through digitalisation. Sustainability reports offer a larger picture of businesses. The war between Russia and Ukraine, as well as the energy crisis, have attracted our attention to the field of electricity. This paper's objectives are: 1. to show the percentage of companies in the field of electricity that offer digital training to employees from several countries; 2. to see how digitalisation is used based on the sustainability reports, and 3. to see the distribution of gender in Romanian companies in the field of electricity. For the first objective, we used data from Eurostat for 2022. For the second and third objectives, we analysed the sustainability reports for the year 2021 for five big Romanian companies in the field of electricity. Our findings show that for the training offered, Denmark is in the first place with 88.7 % and Croatia is in the last place with 13.9 %. From the sustainability reports, it is clear that all enterprises analysed use digitalisation to simplify different activities and that 75 % of the employees are men and 25 % are women. Moreover, 3 out of 5 companies offer working from home. This paper is special because it analyses the sustainability reports on digitalisation and gender distribution in Romanian electricity.

Keywords: digitalisation, sustainability reporting, electricity, gender equality.

JEL Classification: M41, K38, L86, P18, Q55.

1. Introduction

We live in an era of changes and we need to adapt to day-to-day challenges. Digitalisation is important for all areas, starting with business, education, medicine, state authorities, etc., but it is also a part of our daily life. We cannot imagine living

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for a long time without the Internet or smartphones. The activity of creating the sustainability reports also uses digitalisation.

The first objective of this paper is to reveal the percentage of companies in the field of electricity that provide training to improve their staff's knowledge in ICT (information and communications technologies) skills from several countries. The second objective is to show how digitalisation is used based on sustainability reports, and the third is to disclose the distribution of gender in Romanian companies in the field of electricity. For the first objective, we used data from Eurostat for 2022 for 22 countries, about the percent of companies that provided training to improve their staff's knowledge of information and communications technologies skills, in the field of "Electricity, gas, steam, and air conditioning supply". For the second and third objectives, we analysed the sustainability reports of the year 2021, for five big Romanian enterprises in the field of electricity. The findings reveal that less Romanian companies offer ICT training, all companies use digitalisation, and men are dominant for the electricity field.

2. Literature Review

2.1 Sustainability Reporting

Enterprises provide information to external users in order to motivate them to invest their money and fund their operations (Alshiban, Al-Adeem, 2022). In a world characterised by climate change, resource scarcity, poverty, and inequality, we argue for the potential of integrated reporting that offers stakeholders with economic, social, and environmental stability (Dragu, Tiron-Tudor, 2013). By making NFR (Non-financial reporting) mandatory for enterprises, the EU is seeking to elevate NFR practices in the eyes of corporations and society - something that enterprises should strongly consider and incorporate into their reporting procedures (La Torre et al., 2020). A rough estimate of 1,400 organisations reported non-financial information in 2009; by 2010, this number had increased by 29 % (Dragu, Tiron-Tudor, 2013). Since 2017, more than 6,000 European enterprises have been required by national and supranational law to provide annual non-financial statements (La Torre et al., 2020). The European Financial Reporting Advisory Group (EFRAG) accepted the modified versions of the European Sustainability Reporting Standards (ESRS) on November 16, 2022 (Fenwick, 2022). Roughly 50,000 EU enterprises will be obliged to give sustainability disclosures under the new ESRS rules in the CSRD, which is more than four times the number of firms (approximately 11,700 organisations) currently needed to have non-financial reporting under the NFRD (Fenwick, 2022). The European Parliament and Council approved the Corporate Sustainability Reporting Directive (CSRD) on November 28 in order to hold enterprises more accountable to the public for their social and environmental implications (Kateifides, 2022). Because the COVID-19 pandemic requires the firm to cover its social indicators and make critical managerial decisions regarding the quarantine measures, non-financial reporting is becoming more pertinent (Filyppova

et al., 2021). The level of expertise of those who prepare CSR reporting has a significant impact on its quality and development (Guşe et al., 2016).

2.2 Digitalisation

In the business world, digitalisation frequently informs what and where to purchase and sell, how to promote, how to manufacture and distribute goods efficiently, and how to maintain contact with customers, and in the production mode, digitalisation also means designing products in a digitally, virtually assembling and testing components prior to production, and maintaining the relationship between a sold or rented product, its users, and the producing company (Gray, Rumpe, 2015). Even though complete automation of accounting is unlikely in the upcoming years due to the lack of fully conscious artificial intelligence technologies, accounting professionals will need to conform, perfect the changes and understand how to work with the new technologies that have been implemented in the field of accounting (Codreanu et al., 2021). Respect and care for the environment should be a priority for all businesses as they operate as responsible corporate organisations in accordance with the principles of sustainable development based on environmental protection, mutual respect, and the desire for future generations to be able to benefit equally from the planet's natural reserves that are kept in good condition (Artene et al., 2020). More efficient manufacturing processes and improved environmental management systems can substantially reduce pollution and waste, as well as save water and other resources, which is advantageous to businesses because it can reduce operating costs and reliance on raw materials (Frone, Frone, 2015). The following are some pertinent consequences of digitalisation and sustainability that managers should be aware of: i) digitalisation is a tool for sustainability; ii) digitalisation grows transparency, preventing environmental issues from escalating; iii) green technology plays a role in the optimisation of environmental impacts; and iv) digitalisation improves cost rationalisation and impacts corporate efficiency (Broccardo et al., 2023). New innovative technologies could be viewed as an answer to minimising the negative effects of climate change, and investments in renewable energy sources and their use are also a valid option for dealing with the global energy crisis (Dragomir et al., 2022). The crucial importance accorded to the problem of the security of accounting and financial information in the digital age, where the danger of cybercrime continually weighs on the digital world, requires not only highlighting the significant role performed by the digitalisation of accounting operations but also shedding light on future research around this topic (Feghali et al., 2022). In the near future, cyber accounting will make statistical systems able to adapt and react to the introduction of new and evolving disruptive concepts like Cloud, Edge Computing, and 5G Technology and it will also increase the worldwide compatibility of present performance indicators (Bilcan et al., 2019).

2.3 Electricity

Population health will benefit significantly from improved electricity accessibility and, where possible, a shift away from fossil fuels and toward renewable sources of power generation (Wilkinson, Markandya, 2007). Despite the fact that investors may play a critical role in mobilising finance to fund renewable energy technologies, data suggests that they are frequently hesitant to do so (Masini, Menichetti, 2013). Reduced carbon emissions contribute to protecting the earth's depleting supplies of natural resources, and, as a consequence, reserves of fossil fuels such as coal, oil, and natural gas will last much longer (Clean energy ideas, 2021). By absorbing heat and trapping it in the atmosphere, greenhouse gases produce warming (Gates, 2021).

2.4 Gender Equity

The UN General Assembly enacted the Universal Declaration of Human Rights on December 10, 1948, incorporating gender equality into international human rights law (Australian Human Rights Commission, 2023). The General Assembly named 1975 as the International Women's Year and planned the first World Conference on Women, which was held in Mexico City during the 1970s when the global feminist movement started to gain ground (United Nations, n.d.). The progressive movement, which calls for gender equality for women and girls and gender norms that support everyone's health and well-being, including gender minorities, is very evident today (Gupta et al., 2019). Three things happen more quickly toward gender equality at work when men genuinely practice equal collaboration at home: 1. Women who live with equal partners succeed at work more than those who do not; 2. Fathers who are equal domestic partners serve as role models for equity, influencing the expectations of the future workforce. 3. Men who share unpaid work at home equally aren't ashamed to ask for and explain why they require scheduling flexibility (Smith, Johnson, 2020).

3. Research Questions / Aims of the Research

The purpose of this paper is to see the percentage of companies that offer training in ICT and how digitalisation is used. Based on the debate about how males dominate the field of "science, technology, engineering, and mathematics" (STEM), we intended to look at the gender distribution in Romanian electrical enterprises.

The main research questions are:

1. What is the percentage of companies in the field of "Electricity, gas, steam, and air conditioning supply" (according to the Statistical Classification of Economic Activities developed in the European Community) that provide training to improve their staff's knowledge of ICT skills?
2. Based on sustainability reports, for what activities is digitalisation used by the Romanian companies in the field of electricity?
3. How is the distribution of gender in Romanian companies in the electricity field in Romania?

4. Research Methods

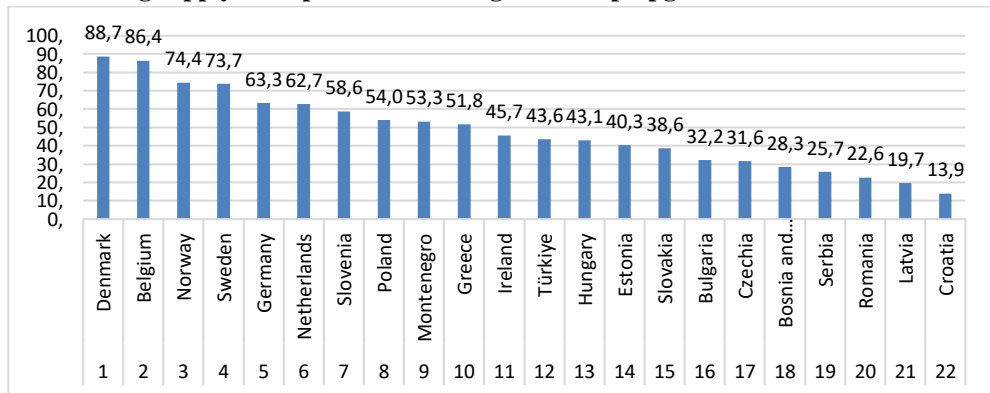
The information came from the Eurostat database and a content analysis of yearly sustainability reports of firms. Secondary Data Analysis was employed. Descriptive research was employed. For the percentage of companies that offer training for ITC, we used data for the year 2022, for 22 countries. For five important Romanian companies in the field of electricity, we analysed the sustainability reports for the year 2021. We used percentages, ratios, averages, median, min, and max, to analyse the research questions. Our research's primary inquiries are: What is the percentage of companies that provide training to improve their staff's knowledge of ICT skills, from the field of "Electricity, gas, steam, and air conditioning supply" (according to the Statistical Classification of Economic Activities developed in the European Community). For what activities is digitalisation used by the Romanian companies in the field of electricity, based on the sustainability reports? We selected significant words to reveal how often they are used. How is the distribution of gender in Romanian companies in the field of electricity in Romania? Here, we extracted the number of employees by gender. The study's findings may be helpful in developing training in companies and increasing the usage of digitalisation for adapting to the market. The study could contribute to improving the sustainability reports and could highlight gender issues, and maybe education issues.

5. Findings

5.1 Training

From data extracted from Eurostat, for the training in ICT for the field of "Electricity, gas, steam, and air conditioning supply" we can see that the companies from Denmark are in first place with 88.7 % of the total companies, in the second place is Belgium with 86.4 %, followed by Norway with 74.4 %, and in the last place is Croatia with 13.9 %. Romania is in the 20th place with 22.6 %.

Figure 1. Percent of companies in the field of 'Electricity, gas, steam, and air conditioning supply' that provided training to develop/upgrade ICT skills – Year 2022



Source: Author's research (EUROSTAT, 2023).

5.2 Digitalisation in Sustainability Reporting

For finding how digitalisation is used, we selected 5 companies from the electricity area: E-Distributie, E.ON Romania, Electrica Furnizare, Engie Romania, and Transelectrica. From their Sustainability reports results, that all use digitalisation in daily activity, starting with communication, online invoicing, client portals where the clients could record the index, could see the balance or could pay the invoices or complaints, etc. The words digitalisation and online are found in all 5 sustainability reports analysed. Three companies out of 5 offer working from home, more precisely: E-Distributie, E.ON Romania, and Engie Romania. This does not mean that the others do not offer this, but they did not mention it in their sustainability reports for 2021. The word “digitalisation” is the most used, with an average of 32 (Min 6, Max 53), followed by “online” or “Internet”, with an average of 10 (Min 4, Max 22). The expressions “software” (Average 1, Min 0, Max 4) and “working from home” or “teleworking” (Average 2, Min 0, Max 5) are less used.

Table 1. Digitalisation – number of words used in Sustainability reports

Company Name	Number of pages of Sustainability Reports	Digitalisation	Online, Internet	software	Working from home, teleworking
E-Distributie	110	46	22	3	1
E.ON Romania	96	53	13	4	5
Electrica	90	6	6	0	0
Engie Romania	78	11	4	0	4
Transelectrica	85	44	6	0	0
Total	459	160	51	7	10
Average	92	32	10	1	2
Min	78	6	4	0	0
Max	110	53	22	4	5

Source: Author’s research (E-Distributie, 2021) (E.ON Romania, 2021) (Electrica Furnizare, 2021) (Engie Romania, 2021) (Transelectrica, 2021).

5.3 Gender Distribution

Table 2. Gender Distribution by number of employees and percent

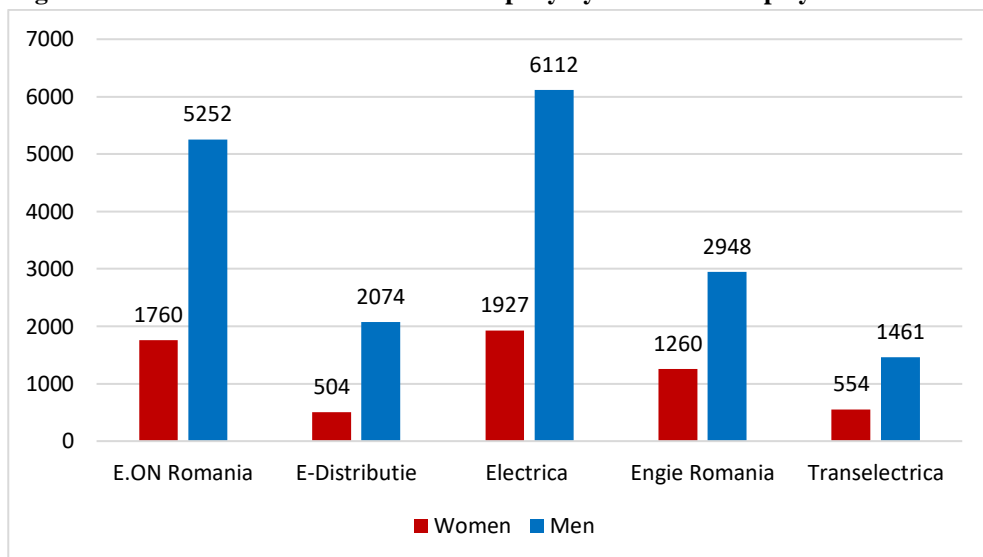
Company Name	Women		Men		Total Number of employees	%
	Number	Percent (%)	Number	Percent (%)		
E-Distributie	504	19.55%	2,074	80.45%	2,578	100%
E.ON Romania	1,760	25.10%	5,252	74.90%	7,012	100%
Electrica	1,927	23.97%	6,112	76.03%	8,039	100%
Engie Romania	1,260	29.94%	2,948	70.06%	4,208	100%
Transelectrica	554	27.49%	1,461	72.51%	2,015	100%
Total	5,451	24.96%	16,386	75.04%	21,837	100%

Company Name	Women		Men		Total Number of employees	%
	Number	Percent (%)	Number	Percent (%)		
Average	-	25.21%	-	74.79%	-	
Min	-	19.55%	-	70.06%	-	
Max	-	29.94%	-	80.45%	-	

Source: Author’s research (E-Distributie, 2021) (E.ON Romania, 2021) (Electrica Furnizare, 2021) (Engie Romania, 2021) (Transelectrica, 2021).

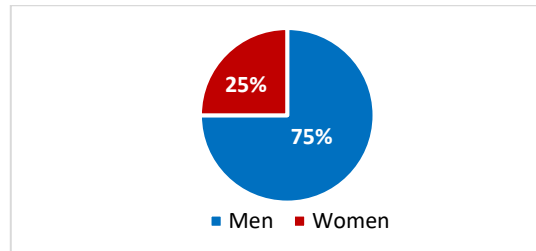
Based on the discussion about the fact that the area of “science, technology, engineering and mathematics” (STEM) is dominated by men, we wanted to see the distribution of gender in Romanian electrical companies. From the sustainability reports of the 5 companies analysed, we found that 75 % (Min 70.06 %, Max 80.45 %) of the employees are men and 25 % (Min 19.55 %, Max 29.94 %) are women. The minimum percentage for women is for the company E-Distributie, with 19.55 %, and the maximum is in Engie Romania with 29.94 %. For all the companies, the average percentage of women is 25 % and of men is 75 %. In Table 1 we can see that for the year 2021, Electrica had 8,039 employees, which is the higher number of employees from the companies from this research. Electrica is followed by E.ON Romania with 7012 employees, and then by Engie Romania with 4208 employees. The smaller number of employees is for Transelectrica, which had 2015 employees in 2021.

Figure 2. Gender Distribution for each company by number of employees – Year 2021



Source: Author’s research (E-Distributie, 2021) (E.ON Romania, 2021) (Electrica Furnizare, 2021) (Engie Romania, 2021) (Transelectrica, 2021).

Figure 3. Gender distribution all companies



Source: Author's analysis.

6. Conclusions

According to data taken from Eurostat for the training in ICT for companies from the field of "Electricity, gas, steam, and air conditioning supply" for year 2022, the companies from Denmark are on top with 88.7 %, in the second place is Belgium with 86.4 %, followed by Norway with 74.4 %, and in the last place is Croatia with 13.9 %. At 22.6 %, Romania is in 20th place out of 22, so ICT training is offered in a low percentage by Romanian companies from the fields of Electricity, gas, steam, and air conditioning supply, compared to other countries. The five companies mentioned training offered to their employees for different skills, such as digitalisation, learning new languages, etc. The word "digitalisation" is used, an average of 32 times, and online or Internet an average of 10 times. By calculating the total number of employees by gender for all companies analysed, we found that the average percentage of women is 25 %, while the average percentage of men is 75 %, so the theory that the STEM field is dominated by men is proved. Our recommendation is to increase training in ICT for all companies in the field of electricity, gas, steam, and air conditioning supply, and also to mention in sustainability reports everything that could increase their reputation and the trust of the public. The study's conclusions may be useful in helping businesses create training for their employees and increase their use of digitalisation for market adaptation. The study may help improve sustainability reporting by drawing attention to gender and perhaps educational difficulties. Also, it could help to establish policies regarding increasing the number of employees' training hours and for the state to improve the education in schools. The limitation of the study is that, based on five Romanian companies from the electricity field, we could not generalise and we could not exclude the human mistakes that could have occurred because of manual work. Future research could include a larger number of companies or could include other fields.

Acknowledgments

We would like to thank Professor Nadia Albu, Professor Mădălina Dumitru, Associate Professor Raluca Gina Gușe, Associate Professor Mirela Elena Nichita, as well as the anonymous reviewers of this paper. This paper was co-financed by The Bucharest University of Economic Studies during the PhD program.

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