

PRO-ENVIRONMENTAL COMMUNICATION ACTIVITIES OF PAPER AND PLASTIC PACKAGING PRODUCERS. EVIDENCE FROM POLAND

Krzysztof RUDZIŃSKI

Krakow University of Economics, PhD School; d2030@student.uek.krakow.pl, ORCID: 0000-0003-1140-9867

Purpose: The aim of this research is to analyze level of pro-environmental communication activities including the aspect of the circular economy concept in non-financial reports of packaging producers required to report environmental issues (group 1) and compare them to packaging producers which do not have to presents environmental aspects (group 2).

Design/methodology/approach: This research uses the text analysis method. Quantitative and qualitative analysis was carried out. The information source in this aspect are non-financial report of paper and plastics producers (30 organizations). All reports were obtained from the National Court Register and cover the years 2019-2021. Statistical analyzes were also performed using the Shapiro – Wilk and U Mann Whitney tests to examine the distribution of variables and the significance of differences between the studied groups.

Findings: The quantitative analysis of reports showed that the most of organizations in first group communicated environmental aspects in their reports. Despite the fact that second group do not have obligation to do it there were still some organizations which include these aspects in reports. Statistical analysis did not show any significant differences between the surveyed groups. Qualitative analysis showed that despite the fact that environmental aspects are taken into account in the reports, are treated superficially, and the level of communication in both groups was low and mostly concerned general statements or individual actions. Specified actions or their effects were rarely shown. Descriptive analysis showed that these organizations particularly do not communicate their commitment to circular economy concept.

Research limitations/implications: Some limitations were identified in this study, i.e., lack of uniform reporting requirements or problems with reports content verification. Producers were presenting environmental aspects in general way. The law requires a minimum scope of data reporting and what elements will be included depends only on the organization.

Originality/value: The article presents the packaging industry in terms of non-financial disclosures communication. No other studies in this field have been identified on such a research group. Also, there no studies have been found include organizations with no obligation to report. Article concentrate on aspects connected with environment but also relatively new circular economy concept.

Keywords: non-financial reporting, quality, environment, circular economy, packaging production.

Category of the paper: research paper.

1. Introduction

Nowadays environmental aspects are becoming one of the most important issues. Humans' activity connected with e.g., overconsumption of products, excessive consumption of resources or production of too much waste is the reasons for environmental degradation. The area of production is one of the greatest threats to environment. All types of business use natural resources. They are a key element of functioning of organizations, because are components of natural circuit of matter using in production and available in the form of products and waste to the natural and social environment (Godlewska, Sidorczuk-Pietraszko, 2015). In order to reduce the negative impact of the organization's activities on the environment, there is a possibility to take some initiatives. One of the most recent solutions for problems in field of environment is the circular economy concept. It concerns on among others energy recovery, closing the loops, increase efficiency, reducing of use natural resources (Morseletto, 2020). However, in addition to taking actions for the environment, it is also, important to inform about it. One of the best ways to presents information about environmental aspects are reports or statements of organizations. This is important because such reports are a form of dialogue with stakeholders and the organization's surrounding. This is confirmed by studies, e.g., which showed that disclosing non-financial information positively affects the organization's relations with its surrounding (Chojnacka, Jadanowska, 2020).

Non-financial reporting is one of communication tool between organization and their stakeholders. Those type of statements that used to be voluntary are becoming mandatory for some organizations (Krawczyk, 2021). Communicating with various groups of stakeholders in terms of social or environmental issues is important because lack of such communication may result in the perception of these activities by stakeholders being negligible or even negative (Pérez, 2015).

In Poland only big organizations (it means employ over 500 employees and achieve over PLN 170 million net turnover exceeding or PLN 85 million balance sheet total) are obligated to prepare non-financial statements (Act of 15 December 2016..., 2016). In this group of organizations can be e.g., banks, insurance companies or organizations listed on The Stock Market. According to Sierra-Garcia et al. (2018) an increasing number of organizations which choose to disclose information about the impact of their activity on aspects of corporate governance, society, environment and human rights. Therefore, it is necessary to conduct the research in terms of non-financial data reporting not only by organizations like banks, insurance companies etc. but also in other groups of organizations that are and are not required to conduct such reports.

One of the key sectors, which is of great importance both for the functioning of other sector and for the environment, is the production of packaging. Packaging is one of the most important items in the life of every human being. They are also one of the sources of threat to the life of

society and the natural environment. Plastic packaging are the final element of the plastics market and at the same time they are the main source of plastic waste (Allison et al., 2021). According to Geueke et al. (2018) in 2014 the amount of packaging waste from European households together with production industry sectors, was around of 82 million metric tons.

The aim of this research is to analyze level of pro-environmental communication activities including the aspect of the circular economy concept in non-financial reports of packaging producers required to report environmental issues (group 1) and compare them to packaging producers which do not have to presents environmental aspects (group 2). This article is divided into two parts. First part includes literature review connected with non-financial reporting in case of communication and impact of packaging industry on the environment. Second part is empirical and is divided into two parts. In first stage reports were analyzed in case of number of reports communicate environmental aspects. Second stage is connected with qualitative analysis of environmental communication.

2. Literature review

2.1. Non-financial reporting as communication tool

Communication is a process in which groups, institutions and individuals engage in a kind of dialogue. The aim of this process is to exchange ideas, thoughts and to share information or knowledge. It can be operated on different levels by using communication channels (Siemieniak, 2017). In the case of organizations, communication may refer to various aspects of its functioning i.e., dialogue with stakeholders, presenting information about social or environmental activities. In recent years communication of environmental aspects became important issue in organizations functioning. The reason for the increased practices in this area are e.g., social pressure and government actions focused on environmental protection. Environmental aspects communication refers to sharing the information about environmental activities and its effects undertaken by organizations with stakeholders. This allows to create a trust, credibility and partnership (Szkiel, 2018). Communication in the aspect of reporting can take various form depending on individual criteria e.g., communication area, addresses, communication nature or the scope of information provided. Due to the last criteria communication can be divided into mandatory and extended information (Mazurowska, Płoska, 2022). Communication, as was mentioned, is a dialogue. Therefore, in communication process there must be at least two subjects: sender and receiver. In communication model should be included also: announcement, code, channel, noises, feedback, reference frame and information gap (Potocki et al., 2011). In conducting dialogue, extremely important is the way of conveying the announcement – channel. There are a lot of different types of communication channels with

stakeholders including financial, management, non-financial reports, social media, advertisements, packaging, labels, web sides etc. (Mazurowska, Płoska, 2022).

Non-financial reporting was treated as supplementary information to the financial reports. Due to increased demand of information by stakeholders they were became separate part but also separate document as report (Ogrodnik, 2019). According to EU directive 2014/95/UE non-financial information are connected with social, labor, environmental, human rights and corruption issues (Directive 2014/95/EU..., 2014). In Poland non-financial reporting is regulated by Account Act. In 2017 act was changed to implicate new EU directive from 2014. Accounting act include two the most important elements connected with non-financial reporting: reporting obligation criteria and the minimum scope of information disclosed. Organizations should inform about (Act of 15 December 2016..., 2016):

- the description of business model of organization,
- key non-financial indicators of effectiveness,
- a description of the policies applied by the organizations regarding the social, labor, environmental, respect for human rights and counteracting corruption issues,
- a description of the due diligence procedures,
- risk description.

Non-financial reporting can be presented in different types of reports e.g., sustainability reports, CSR reports, environmental reports, integrated reports. Sustainability and CSR aspects can be presented also in form of ESG reports. It refers to discourse the aims of organization in case of sustainability development. This type of reports includes information about environmental, social and government goals and progress in checking these goals. Many countries in Europe reacquires ESG reporting. Another possibility is to presents integrated reports. These reports present the organization's impact on the environment and social issues. GRI requirements are a common presentation of non-financial data in these reports (Bukowski, 2020). In Poland non-financial reporting can be included also in management statements (Act of 15 December 2016..., 2016).

In polish law the obligation connected with non-financial reporting is a relatively new issue. Before 2017 organizations in Poland may voluntarily disclose or not disclose non-financial data. It was not regulated from the legal point of view (Wójcik-Jurkiewicz, 2020). Despite the fact that it is new issue, interest in this topic among researchers is high, as indicated by a number of studies, e.g. Rubik (2018), Wójcik-Jurkiewicz & Sadowska (2018). In researches, concentrated on non-financial, CSR or sustainability reports analysis, there are published more and more researches connected with aspects of information communication and its usefulness and quality (Ciechan-Kujawa, 2013; Fijałkowska, 2013; Laskowska, Lingo, 2018; Smuła, 2018). In the cited studies the assessment of non-financial reports and the information contained therein is measured using various methods. Some of the researchers evaluated reports in relation to the requirements or principles of reporting standards e.g., GRI, SIN (Bek-Gaik, Surowiec, 2019; Błażyńska, 2019; Garcia- Torea et al., 2020; Skoczylas, 2019; Smuła, 2018). In Poland

there is no obligation to prepare reports using any of these reporting standards. In addition to communication aspect there are researches which are based on the Account Act obligations (Krzysztofek, 2018), but also on the type of report (Michalczyk, Konarzewska, 2018). Some of these researches concentrate on communication but more in a qualitative way e.g., Smuła (2018), Munzarowa et al. (2022). Laskowska and Lingo (2018) propose measurement depending on what is communicated i.e., whether the actions themselves or also their effects. There are also studies using Likert scales to assess what information is presented in reports, e.g., Matuszak and Różańska (2017a). Another possibility to measure environmental communication can be number of indicators according to reporting standards. This method is used by e.g., Skoczylas (2019), Piłacik (2017) to present providing environmental information by GRI standard.

In Poland, researches connected with non-financial reporting mostly concentrate on large public trust entities. In previous years researches has been conducted on different groups of organizations like banks (Wójcik-Jurkiewicz, 2020), insurance companies (Lament, 2017) or food producers (Kafel, Nowicki, 2021), energy companies (Bartoszewicz, Szczepankiewicz, 2022; Woźniak, 2018) or mining (Bogacz, Migza, 2016). There are also some researches that include different sectors e.g., fuels, banks, clothing, IT (Czaja-Cieszyńska, 2022). According to research conducted by Krawczyk (2019) there are three leading sectors, which publicized the largest number of CSR reports from 2005 to 2018: energy sector, banks and food sector. Among the aforementioned studies related to the reporting of non-financial data, organizations that clearly have a reporting obligation, because they are large public interest entities, dominate. However, organizations not always include all aspects which should be presented in reports. According to Manes-Rossi et al. (2018) 94% of researched organizations include environmental aspects, 78% include key performance indicators and only 54% of organizations include due diligence procedures.

As can be seen, only some groups of organizations are research subjects in case of non-financial reports. There are still unexplored sectors in case of non-financial reporting analysis. Due to the fact that organizations with an obligation to report do not always communicate environmental aspects, maybe organizations that do not have such an obligation can inform about environmental aspects. This article focuses on the analysis of reports from organizations in the packaging industry which are and are not obligated to presents environmental aspects.

2.2. Impact of packaging industry on the environment

Currently, the world is facing with problems which are the effects of people and civilization development, including waste, pollution, greenhouse gas emission etc. Those problems are the result of e.g., mass production which was started by The First Industrial Revolution. Nowadays, the world still feels these effects. One of the biggest problems to the environment is packaging waste. According to Ncube et al. (2020) the packaging industry uses the largest number of plastics which is produced all over the world. This is also main source of waste plastics which

are delivered to the environment. The development of packaging materials has become the reason for the emergence of a problem related to the management of packaging waste. The production of packaging is associated with a significant impact on the natural environment through soil, air or water contamination. Therefore, it becomes important to monitor the impact of packaging materials on the environment. Moreover, packaging has become an indispensable part of people's lives and it is impossible to remove them (Varun et al., 2016). Microplastics have also been a significant problem in recent years. Polar waters, marginal and coastal seas are already contaminated with microplastics. It is predicted that by 2060 the amount of microplastic particles in water will increase fourfold. Even stopping the production of plastic will not contribute to reducing the amount of microplastics due to their presence in the environment (Kafel et al., 2021). Packaging industry is main user of raw materials due to the fact that they require appropriate quality materials. Packaging industry in Europe, uses 40% of plastics and 50% of paper to producing packaging (Coelho et al., 2020). Unfortunately, paper is material with low strength, heat sealability and poor barrier properties that is why it is not enough to use in some group of products e.g., food. For such products, paper packaging requires lamination or impregnation. Additives, aluminum or plastics are used for this purpose, which improve the usable properties of the packaging (Deshwal et al., 2019). For this reason, paper packaging is often not recyclable.

Packaging plays an important role in human life because it protects products during their distribution, storage, sale or use. However, the excessive amount of packaging waste continues to deteriorate environment. It is therefore necessary to design, produce and use packaging in a sustainable way (Zhu et al., 2022). This makes it possibly by applying the circular economy concept. According to Hobson (2016) circular economy is an industrial system. Circular economy has been defined as an industrial system with a regenerative character that displaces the concept of end-of-life in favor of renovation, the use of renewable energy sources, the rejection of harmful substances, and its goal is to eliminate waste as a result of appropriate design, products, material systems and business models. According to Ghisellini et al., (2016) circular economy concept can be realized by actions connected with 3R principles: reduce, reuse and recycle. Reduce principle is connected with minimalization of material, energy use but also with minimalization of waste generation by increasing efficiency of production and consumption. Second principle is connected with using again products and its components. Finally, recycle refers to any activity including reprocessing of products, material or substances (Ranta et al., 2018).

As a circular economy is a suitable concept for elimination of environmental impact, e.g., of packaging, it was decided to check which elements of this concept are include in non-financial statements of packaging producers as well.

3. Methodology

3.1. The aim

The aim of this research is to analyze level of pro-environmental communication activities including the aspect of the circular economy concept in non-financial reports of packaging producers required to report environmental issues (group 1) and compare them to packaging producers which do not have to presents environmental aspects (group 2).

3.2. Hypothesis

In this research one hypothesis was put forward:

H₁: There are no differences in level of environmental aspects communication between organizations obligated and not obligated to inform about these aspects.

3.3. Methods and characteristics of the research sample

The conducted research included two groups of organizations that deal with production of plastic and paper packaging's. According to EMIS data base in Poland operates 1129 plastic packaging producers and 843 paper packaging producers. Based on this database, two lists were developed: one for paper packaging producers and second for plastics packaging producers. In this study non-financial reports were the subject. Due to the fact that not all organizations in Poland are required to report non-financial data, organizations in both lists were divided into organizations that did and did not meet the conditions determined by Accounting Act.

First, it was checked whether the data on revenues, total assets and the number of employees contained in the EMIS database are up to date. In the absence of data or outdated data (it was assumed that current data relate to the financial year beginning on January 1, 2021 and ending on December 31, 2021), a search for such data was undertaken in the National Court Register. After checking the data for both types of organizations, organizations for which these values could not be determined or no reports were found in the National Court Register were rejected. The remaining organizations were divided according to the requirements regarding the reporting obligation (table 1). It was checked whether organizations had revenues higher than PLN 170 million or total assets higher than PLN 85 million, and whether the number of employees was higher than 500. In addition, organizations with a different financial year, i.e., other than January 1 to December 31, 2021, were also rejected. to maintain homogeneity. The year 2021 was the reference point against which compliance with the requirements set out in the Accounting Act was checked. The analysis covered reports from 2019-2021.

Table 1.
Characteristics of analyzed groups

Group number	Characteristics
1	Organizations that in 2019-2021 had more than 500 employees and met one of the following conditions: <ul style="list-style-type: none"> • revenues higher than PLN 170 million, • total assets higher than PLN 85 million.
2	Organizations that in 2019-2021 had not more than 500 employees and not met one of the following conditions: <ul style="list-style-type: none"> • revenues higher than PLN 170 million, • total assets higher than PLN 85 million.

Source: own elaboration.

Finally, based on the collected data, it was determined that only 15 organizations were included in the first group of organizations (7 paper packaging producers and 8 plastic packaging producers). Therefore, in order to maintain the appropriate proportions, it was decided to randomly select 15 organizations from the second group (equally: 7 paper packaging producers and 8 plastics packaging producers). In all years, first group of companies complied with the requirements regarding the disclosure of non-financial data. No one organization in this group all over the years had separate report to present non-financial data. Only 4 packaging producers (2 for paper and 2 for plastics) in all years presents management statements in which was separate section called statement about non-financial information. One organization in paper packaging producers called all document as management and non-financial information statement. One organization from plastic packaging producers presented the biggest report from all organizations. The descriptions of non-financial data was extensive compared to others. The rest organizations prepared statements with mixed information. There were parts called, e.g., environmental protection. Most of the organizations in the second group, in addition to the financial report, also submitted a report of activity in all years 2019-2021 (11 organizations). Four of the randomly selected organizations did not have activity reports. In total, 78 reports were analyzed. However, in the research it was assumed that the lack of a report is associated with a lack of communication of the organization with the use of this tool.

Communication of pro-environmental activities was analyzed in quantitative and qualitative terms. As part of quantitative analysis, it was checked which organizations in both groups communicate pro-environmental activities in their reports, and then number of reports all over the years was counted. Statistical analysis was performed by subjecting the data to the analysis of the normality test. Due to small research sample, the Shapiro-Wilk test was used. Significance of differences between these two groups was also analyzed using U Mann-Whitney test.

In the case of qualitative analysis of reports, it was decided to use method used by Laskowska and Lindo (2018). However, it was decided to modify the description of individual categories:

Table 2.*Categories of communication level*

Level	Points	Description	Summary of points (all over the years)
Low	1	organization declare to take actions connected with environment but did not present specific examples and effects or declare single activities	1-3
Medium	2	organization declare to take actions connected with environment and present specific examples of activities	4-6
High	3	organization declare to take actions connected with environment and presents specific examples effects of these actions	7-9
If organization did not declare any environmental activities or there were no reports 0 was entered			

Source: own elaboration.

In case of circular economy concept the analysis took on a descriptive character.

4. Results

4.1. Quantitative analysis

This part of analysis focused on environmental issues. Table 3. presents number of reports in all years which presents environmental aspects divided into two groups of organizations.

Table 3.*Amount of environmental information*

Type of producer	Number of reports presented environmental information (2019-2021)	Organizations numbers
group 1	0	4, 6, 8, 14
	2	1
	3	2, 3, 5, 7, 9, 10, 11, 12, 13, 15
group 2	0	16, 18, 19, 20, 23, 26, 29
	1	17, 27
	3	21, 22, 24, 25, 28, 30

Source: own elaboration.

According to table 3. In first group almost all organizations reported environmental aspects in reports from all years (10 organizations). There were still some organizations which did not include these aspects in their reports (4 organizations). In second group there were some organizations which include in their statement's environmental aspects in all years, even though they were under no obligation to do it (6 organizations). There were organizations which presents environmental aspects in one report. The rest do not present these aspects or do not have statements. To compare the approach to communicate environmental aspects in reports in both groups statistical analysis was performed. First of all, it was checked whether the data had a normal distribution. For this purpose, due to the small research sample, the Shapiro-Wilk test was used. In table 4 there are presented results.

Table 4.
Results of Shapiro-Wilk test

Variable	N	W	p
Number of reports presented environmental information (2019-2021)	30	0,684665	0,000001

Source: own elaboration.

According to the analysis, the significance level is lower than $p = 0,05$. Therefore, the distribution of the variable is not similar to the normal distribution. For this reason, the non-parametric U Mann-Whitney test was used to assess differences between two groups. The analysis is presented in table 5.

Table 5.
Results of U Mann Whitney test

Variable	1 group rang sum (N = 15)	2 group rang sum (N = 15)	U	Z	p	Z corr.	p corr.
Number of reports presented environmental information (2019-2021)	263,0000	202,0000	82,00000	1,244342	0,213375	1,391604	0,164043

Source: own elaboration.

According to the analysis, at the significance level p equal to 0,05, the differences between these groups are not statistically significant. Therefore, the assumed hypothesis was confirmed.

4.2. Qualitative analysis

In this part of the research reports were analyzed in case of information connected with environment but in qualitative way. All reports were assessed on a numerical scale (0-3) in accordance with the methodical assumptions. The results are presented in tables 6 and 7.

Table 6.
Qualitative analysis of organizations from group 1

Year	Communication of environmental aspects in group 1			Sum
	Year			
	2019	2020	2021	
1	1	1	1	3
2	2	2	2	6
3	2	2	2	6
4	0	0	0	0
5	1	1	1	3
6	0	0	0	0
7	2	3	3	8
8	0	0	0	0
9	1	1	1	3
10	3	3	3	9
11	1	1	1	3
12	1	1	2	4
13	1	1	1	3
14	0	0	0	0
15	2	2	2	6

Source: own elaboration.

According to table 6 nine organizations were characterized by a low level of environmental aspects communication or did not communicate them at all. Four organizations include aspects qualified as medium level of communication and only two organizations present high level. It means that only two organizations include activities and also effects of it.

Table 7.
Qualitative analysis of organizations from group 2

Communication of environmental aspects in group 2				
Year	Year			Sum
	2019	2020	2021	
16	0	0	0	0
17	0	0	1	1
18	0	0	0	0
19	0	0	0	0
20	0	0	0	0
21	2	2	2	6
22	1	1	1	3
23	0	0	0	0
24	2	2	2	6
25	2	2	2	6
26	0	0	0	0
27	0	0	1	1
28	1	1	1	3
29	0	0	0	0
30	1	3	2	6

Source: own elaboration.

In table 7 there are presented level of communication in second group of organizations. Most of organizations do not communicate environmental aspects (7 organizations) and four organizations presents it in low level. Four organizations qualified in medium. Despite the lack of reporting obligation, some of surveyed organizations communicate pro-environmental activities.

4.3. Circular economy concept in non-financial report

After a preliminary analysis of the reports, it was found that organizations almost did not communicate aspects connected with circular economy concept. It was therefore decided to carry out a descriptive analysis in this aspect. The concept of circular economy in reports of these organizations was mostly not presented. In the first group of organizations there was only mentioned in general that organizations are taking actions connected with sustainability development (organization number 2 and 7), prevention of pollution and recycling and minimalization of greenhouses gases emission and use of energy (organization number 3), using biodegradable solutions (organization number 11) and biodiversity support (organization number 7). Some organizations realize aspects of environmentally friendly projects, saving of water, energy, zero waste, CO₂ emission reduction (organization number 12), reducing of use polystyrene materials in favor of more ecologically material (organization number 11). There was also aspect of sustainability development (organization number 9). In all of these

organizations only one organization (number 10) describe in report circular economy concept. It was presented as possibility of reducing impact of plastics on the environment. This organization also presents in numbers using of resources and materials, consumption of fossils, energy, water, CO₂ emission and waste. There where information about recycling like: limitations and increasing actions of recycling, increasing of use by organization recycled materials but also using monomaterial packaging which are fully recyclable. Also, organization showed aspects of reducing unit packaging and using renewable materials (from biodegradable resources). Organization number 15 also include aspects connected with using recyclable materials, reducing the polyethylene use, using organic materials.

Second group of organizations also presents small amount of information connected with circular economy. Some organizations mentioned about reducing of energy use (organization number 24). There is also information about minimalization of waste (organization number 22, 28 and 30). Also, aspects of optimalization are included (organization 24). As in the first group, organizations inform about acting in a sustainable and responsible manner (organization number 27 and 30). Some organizations also include information connected with using recyclable materials (organizations number 25 and 30). In this group also are references to circular economy concept by mentioning it in reports (organizations number 25 and 30). Organizations from this group also declare to taking actions which raising ecological awareness (organization number 21).

Organizations in both groups presents some aspects of circular economy concept but it is treated only in general. There were some examples of activities connected with circular economy but mostly only mentioned. Organizations did not describe in particular it. Only three organizations presented this concept in all their report. But according to types of activities mostly is concerning on recycling.

5. Discussion

Non-financial reporting is relatively new and popular aspect in the researches. Nowadays a lot of organizations prepare those type of statements as a tool for communication with stakeholders. There are a lot of possibilities to present non-financial data, e.g., ESG report, integrated report or as a part of management statements. Polish law leaves organizations free to choose the method of reporting it. Also, according to the Account Act (Act of 15 December 2016..., 2016) organizations have to report non-financial information to the extent that it is necessary to assess the development, results and position of the entity and the impact of its activities on issues connected with e.g., social, environmental, labor aspects. In this research organizations from packaging industry were analyzed. This study includes organizations which were obligated to prepare statements in all years which should include non-financial data and

organizations which were not obligated to do this in all years. Not all organizations from first group include aspects connected with environment in their reports. Interestingly, organizations which do not have such an obligation also communicate environmental aspects, but not all. According to Matuszak and Róžańska (2017b) more extensive in terms of categories like environment, labor, human rights, social and anticorruption are CSR reports than the management annual reports.

In this research environmental aspects were communicated in both groups of organizations. In both groups there were organizations that did not communicate such elements at all. According to Manes-Rossi et al. (2018) research environmental aspects were also one of the most presented aspects. There were 94% organizations which included environmental aspects in their reports. Also, Guşe et al. research (2016) showed that environmental aspects are one of the most presented issues in reports. However, no significant differences in the level of communication of environmental aspects were detected between these groups. It can therefore be concluded that the level of communication is similar in both groups. Quantitative analysis showed that environmental aspects are communicated in almost all reports prepared by organizations which are obligated to reporting non-financial data. However, when performing a qualitative analysis of what elements are communicated in the reports, it turns out that this level of communication is low in this group of organizations. Such a large discrepancy can be associated with first of all freedom provided by law. This is related to an important feature of this type of reports, i.e., the lack of common guidelines regarding their form, structure or content. There are guidelines that are used by more and more organizations, such as GRI or IIRC, however are voluntary (Matuszyk, 2018). The second problem connected with non-financial reporting is that organizations are not obligated to verify including this information. According to Bońkowski (2021) verifying reports is a good practice that depends only on the decision of the organization. The aspect of introduction the verification of reports was discussed on the amendment to the Accounting Act in 2017. Finally, it was decided that the verification of non-financial information will be voluntary. This was the reason for opposition from representatives of enterprises. In their opinion, such a verification would lead, among others, to limit the length of the reports (Krasodomska, 2017). The lack of verification of reports is somehow related to the voluntary provision of information despite such an obligation. This is evident from the conducted research. Moreover, the Polish law gives the possibility of not informing about individual elements if the organization indicates the reason for such action. On the other hand, some organizations which do not have this obligation prepared statements by using environmental aspects in it. Similar to first group of organizations, here also dominate low or medium communication level. But it is necessary to be remembered that this organizations were not obligated to presents environmental aspects in their reports. The differences in the communication of pro-environmental activities between these groups were not statistically significant.

In this research is included also descriptive analysis of circular economy aspects. In both groups organizations refers to aspects of sustainable development which is the basis of circular economy concept. Also, some organizations declare about some initiatives that are including in this concept like: using renewable materials, saving energy or resources and minimalizing the pollution and waste, but they did not call them circular economy concept. Only three organization describe CE concept in their statements.

Based on the conducted research, several directions of research development were established:

- comparing the results of the conducted research with the analysis of parent companies' reports,
- comparing the communication of pro-environmental activities in other groups of organizations, i.e., food producers,
- aggregate comparison of communicating environmental aspects in other industries for reporting and non-reporting organizations.

An interesting aspect, not entirely related to environmental disclosures, may be an analysis of other requirements of the Accounting Act, e.g., a description of the business model or employee issues. While reading the reports of packaging producers, without the obligation to report, information about employee aspects was found. The same comparison could be prepared as in this research.

Conclusions

Packaging is an indispensable element of people' functioning. Nevertheless, both packaging and organizations which produces them have a negative impact on the environment. Organizations undertake many activities to demonstrate their environmental impact. One of the most popular ways is to disclose non-financial data in the reports of organizations. The transmission of this information is an important element of the dialogue between the organization and stakeholders. However, the degree to which organizations report non-financial data varies greatly, and therefore it is necessary to conduct research in this area.

This article concentrated on packaging producers and their non-financial statements. Researched organizations were characterized by a varied state of disclosed information all over the years. Despite the obligation to report the aspects contained in the Accounting Act, not all organizations in first group presents aspects connected with environment. What is interesting among organizations that do not have such an obligation, there are those that inform about environmental aspects. According to quantitative analysis the level of communication environmental aspects in first group was high and second low. There were no significant differences in both groups. However, qualitative analysis, based on what is

communicated in reports, showed that the level of communication in the most of organizations in both groups is low. Environmental aspects were be presented in general way by only declaration of what they are doing in these issues or presents only individual activities. In case of circular economy concept analysis showed that there are some activities which are presented but only few organizations from both groups mention circular economy concept.

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