

## Applying Text Mining to Analyze the Performance of PBOs on the Basis of Their Obligatory Annual Activity Statements

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The paper's aim is to investigate if the level of detail and selection of particular performance-related information by public benefit organizations (PBOs) in their obligatory annual activity statements can stimulate individual donations. The research encompassed 177 randomly selected Polish PBOs. It applied text mining methodologies and a laboratory experiment. The results obtained allowed the identification of nine key groups of topics that PBOs focus on the narrative parts of their obligatory annual activity statements. Moreover, it was proven that organizations that potential donors would like to support with their 1% tax write-off discuss their performance in more detail and focus on slightly different issues than other organizations.

**Keywords:** performance, text mining, narrative information, public benefit organizations.

## Analiza dokonań OPP prezentowanych w ich rocznych obowiązkowych sprawozdaniach z działalności z wykorzystaniem metody eksploracji tekstu

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Niniejsze opracowanie ma na celu zbadanie, czy szczegółowość i dobór informacji dotyczących dokonań organizacji pożytku publicznego (OPP) ujawnianych w ich obowiązkowych rocznych sprawozdaniach z działalności może stymulować ofiarność indywidualnych darczyńców. Badanie przeprowadzono na losowej próbie 177 polskich OPP z zastosowaniem metod eksploracji tekstu oraz eksperymentu laboratoryjnego. Uzyskane wyniki pozwoliły na zidentyfikowanie dziewięciu głównych grup zagadnień prezentowanych przez OPP w narratywnej części sprawozdania rocznego z działalności. Wskazały także na większą szczegółowość i przesunięte akcenty w opisach dokonań tych OPP, które w najwyższym stopniu stymulują darczyńców do dokonywania odpisów 1% podatku.

**Słowa kluczowe:** dokonania, eksploracja tekstu, informacje opisowe, organizacje pożytku publicznego.

**JEL:** L31, M41

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## 1. Introduction

The social effectiveness of public benefit organizations (PBOs) – understood both as an ability to influence directly the situation of a certain group of beneficiaries and the exerting of long-term influence on other people’s well-being is conditioned by adequate financing to their statutory activities. Looking at all Polish PBOs, donations, including individuals giving their 1% tax write-offs as well as the contributions of business organizations, account for one-eighth of an average budget (Dyczkowski, 2015b, p. 48). This makes donations the third most important funding source, following public subsidies and commercial activities. In contrast to public collections – including their modern forms, such as sending paid text messages – where donors often act spontaneously and on emotion, donations in the form of money transfers or tax write-offs can or even should be made deliberately. Such decisions may be stimulated by promotional materials uploaded by PBOs to their websites or by obligatory annual activity statements available both on PBO homepages and in the database of the Department of Public Benefit at [www.pozytek.gov.pl](http://www.pozytek.gov.pl).

It should be pointed out that in addition to financial information, which encourages donors’ decisions (Dyczkowski, 2015b, pp. 49–52), nonfinancial signals may play an even greater role. In particular, the narrative parts of annual statements related to such topics as people, services, and social work are most welcome by individual benefactors (Palmer, 2013, p. 225). This opinion is consistent with the understanding of nonprofit organizations’ performance, where performance is not limited exclusively to financial results, let alone to examining where funds come from, how they are spent, and whether expenditures are consistent with the budget. The intension is to match social results with resources used in order to demonstrate operational efficiency (Henke, 1972, p. 53). Moreover, a correct perception of nonprofit performance requires an integrated evaluation of the perspectives taken by governments, regulators, funding organizations, and the nonprofits themselves. The first see NPO performance as meeting goals set by policymakers – e.g., reducing the number of starving children, unemployed people, drug addicts, etc. by  $x\%$ . Regulators require detailed accounts on beneficiaries – numbers of people entering social programs. Funders seek information on the number of services and activities provided matching funds spent, while NPOs tend to focus on their impact on social well-being, which is qualitative in nature (Moxham, 2009, pp. 749–751). Consequently, this paper looks at performance as a merger of social and economic effectiveness.

Furthermore, it should be emphasized that this paper derives its information from the literature stream, which notes the limitations of financial and the quantitative disclosures of nonprofit organizations in demonstrating their actual performance (Adams and Simnett, 2011) and draws attention to the

potential of content analysis in this respect (Cummings, Dyball, and Chen, 2010). It is in this context that this paper strives to investigate whether the level of detail and the selection of particular performance-related information provided by PBOs in their obligatory annual activity statements may encourage individual donations. This aim is achieved by codifying narrative disclosures included in the obligatory annual activity statements of PBOs, identifying keywords in 177 randomly selected obligatory annual activity statements of PBOs, and defining relations between those words using text mining methods. The results of text mining combined with an experiment encompassing fifty-nine participants and conducted at the turn of 2014 and 2015 should add to the limited body of knowledge on narrative disclosures in the statements of nongovernmental or nonprofit organizations. In particular, they will cast light on the unexplored narrative parts of obligatory annual activity statements prepared by Polish PBOs.

## 2. Theoretical Background

Reporting in the case of nonprofit organization has two important roles to play. The first is to guarantee accountability and the other is to promote effectiveness and efficiency. Firstly, the reporting is meant to inform various stakeholders – i.e. individuals or groups who support organizations, in expectation, but with no guarantee, of the satisfaction of their own, sometimes latent, needs (Young 2011, p. 574) – on the following three issues (Mitchell, 2014, p. 24):

- social effects generated by the organization with the resources at its disposal,
- the general efficacy of solutions stimulating social initiatives, such as subsidies, tax allowances, and tax write-offs, and
- the validity of mechanisms that prevent the unlawful distribution of funds to individuals.

It is essential to consider both internal stakeholders (the board, employees, volunteers, and members) and external ones (including donors, corporate partners, regulators, and the whole of society) as the addressees of nonprofit reporting. The first may have a better view regarding the organization and its performance, but their opinion can be biased. For its part, the view of external stakeholders on an organization's performance not only validates internal opinions, but also helps to determine the future effectiveness of fundraising efforts, the scope of voluntary involvement, and even the general level of support to the organization's activities on the part of the population (Willems, Boenigk, and Jegers, 2014, pp. 1660–1661). This, in fact, leads to the second role of reporting, the promotion of effectiveness and efficiency. In this respect, reporting should enable the comparison of the performance of various organizations and identify best practices or even a model of excellence for the sector. Moreover, non-

profit reporting itself should remain inexpensive and time-efficient (Breen, 2013, p. 854).

When the question of reporting in nonprofit organizations is addressed, it is the social dimension of this activity that should be the starting point. Day-to-day operations in these organizations should either lead to the fulfillment of their social mission or to increasing their potential impact on beneficiaries in the future. Consequently, an organization needs to capture its primary effects – related directly to the target group – as well as those of supplementary or internal character (Dyczkowski 2014, pp. 25–26). Those effects should be communicated to the stakeholders of the organization. The problem is, however, that the majority of social activities conducted by nonprofit organizations are organized in the form of projects. As a result, those organizations tend to disclose partial effects generated in particular projects, since that is what is required if a project is funded with a subsidy or a grant. Unfortunately, the sum of partial effects may not suffice to assess the total effectiveness of an organization in fulfilling its mission, both in a social and an economic dimension (Raynard, 1998, p. 1472).

The multitude of beneficiary needs coupled with the diversity of forms and methods for conducting social activities mean that applying quantitative measures, and in particular financial ones, may not be the most adequate approach to evaluate the performance of nonprofit organizations. It seems that qualitative disclosures and narrative information may serve this purpose much better (Adams and Simnett, 2011, p. 298). The qualitative approach may also help in solving a fundamental dilemma of accounting in the nonprofit sector: Should uniform standards for commercial and noncommercial organizations be preferred or is it better to develop separate solutions for the nonprofit sector (Mautz, 1989)? The first option encounters an obstacle in the form of substantial differences in relations between nonprofit organizations and their stakeholders. This is because when compared to the business environment, there is no profit or stakeholder value orientation and a substantial share of transfers between stakeholders is non-monetary. The other solution may lead to developing statements that are either overly simplified or too different for their users to receive unambiguous information on performance (Aranoff, 2003, pp. 15–16). A focus on narrative disclosures makes accounting and reporting by NPOs much more flexible and adaptable to needs of specific organizations and their stakeholders. In fact, what a nonprofit organization should aim for is the gaining of multiple stakeholder trust in its operations. That requires demonstrating of both an organization's competences in performing its tasks effectively and integrity, understood as the match between promises included in its mission and actions actually taken (Garcia, Gonzalez, and Acebron, 2013, p. 95). These goals may be achieved much more easily by combining quantitative information with narrative disclosures (Newcomer, El Baradei, and Garcia, 2013, p.76).

The usefulness of systematized content analysis has been noted by researchers from the accounting domain and applied to the narrative parts of annual statements, mostly in reference to social responsibility and environmental disclosure (Milne and Adler, 1999) or those related to the business environment, strategies, and customer relations (Robb, Single, and Zarzeski, 2001). Several methods of content analysis were applied, including subjective ratings of disclosure informativeness, predefined disclosure indices, thematic content analyses, readability studies, and linguistic analyses (Beattie, McInnes, and Fearnley, 2004, pp. 208–213). The content analysis was also used for the annual statements of nonprofit organizations. The statements were scrutinized in search of references to the definition of the nonprofit sector, including such characteristics as organized activity, private initiative, nonprofit distribution, autonomy, and voluntary involvement (Cummings, Dyball, and Chen, 2010).

The major challenge of the content analysis was, however, to capture the multidimensional character of communication. New opportunities emerged when computer aided text mining algorithms were developed. Text mining, in this respect, can be understood as the process of extracting knowledge from coded messages included in documents by processing text, analyzing it, and visualizing the results. Text processing covers text categorization, information extraction, and term extraction, whereas the text analysis covers distribution analysis, clustering, and formulating association rules (Feldman and Sanger, 2007, p. 1).

Computer aided text mining methods were already applied to the nonprofit sector by Palmer (2013). He aimed at identifying major areas of interest in nonprofit reporting as expressed by regulators, researchers, and individual stakeholders, including donors. Nevertheless, there still exists a niche relating to the interpretation of accounting narratives and conclusions based on narrative disclosures as included in the annual statements of nonprofit organizations. It remains unclear what effect they may have on stakeholders. In this respect, the following part of the paper will attempt to combine content analysis supported by text mining software with the results of an experiment intended to detect the potential impact of narrative disclosures included in the obligatory annual activity statements of Polish PBOs on donors and their decisions to financially support particular organizations.

### **3. Research Methodology**

A decision to combine content analysis using text mining software with an experiment was taken in order to achieve the objective of this paper. The research was conducted at the turn of the years 2014 and 2015. In case of both research methods, it was applied to the obligatory annual activity statements for the year 2013 of 177 randomly selected PBOs. The content

analysis covered narrative disclosures relating to the performance of PBOs and, in particular, to the description of major activities undertaken by the organization presented in Section II, item 1.1. of their obligatory annual activity statement. The same disclosures, as well as other quantitative and qualitative ones included in financial and activity statements, were analyzed and assessed by a group of fifty-nine master level students in accounting and financial majors. The students were charged with assessing three PBOs with the help of a research form developed by the author and subsequently to select the one that they would like to support with their 1% tax write-off (Dyczkowski, 2015a, pp. 137–140). This way, it was possible to systematize the narrative disclosures of Polish PBOs and examine whether there are ways in which those organizations could disclose their performance to the public that might potentially encourage support on the part of donors. It should be added that an experimental investigation on the influence of voluntary disclosures on a willingness to support a nonprofit organization, including students with accounting literacy acting as donors, was presented in the paper of Buchheit and Parsons (2006).

The research of the described design should enable the validation of two research hypotheses.

- $H_1$ : Donors' preferences for financially supporting particular PBOs depend on how detailed the narrative information in the obligatory annual activity statements of those organizations actually is.
- $H_2$ : Donors' preferences for financially supporting particular PBOs depend on what issues those organizations prioritize in their obligatory annual activity statements.

The research hypotheses may be indirectly derived from literature findings on expectations relating to the quality of not-for-profit reporting. It was found that the statements should be characterized by full disclosure, transparency, and relevance. Full disclosure means that a reader is able to understand the performance of an organization correctly since no positive or negative information affecting perception of results is omitted. Transparency indicates that there is no doubt as to what an organization is reporting (Gordon, Khumawala, Kraut, and Neely, 2010, pp. 215–220). In this respect, it is reasonable to believe that more detailed statements help to meet the requirements of full disclosure and transparency. Thus, they stimulate the support of donors, as propounded in hypothesis  $H_1$ . Relevance entails an ability to assess the performance of an organization, which requires disclosure of information on goals, ways to achieve them, and on effects (Gordon, Khumawala, Kraut, and Neely, 2010, pp. 220–223). Information on goals and effects enables an assessment of effectiveness, whereas effects and ways in which they were achieved sheds light on operational efficiency. It is vital for an organization to demonstrate integrity in its statements, which is understood as a match between its mission and operational activities (Garcia, Gonzalez, and Acebron, 2013, p. 95). It is,

therefore, reasonable to believe that if the narrative parts of a statement include these three elements, a PBO should be more attractive to sensible donors, as propounded in hypothesis  $H_2$ . Moreover, the complete and purposeful performance-related information included in the reports of PBOs may prove their advantage over public institutions and companies offering similar services (Cordery, Baskerville, and Porter, 2011, p. 365), which should have a long-term impact on the attitude of society towards PBOs.

Moreover, hypothesis  $H_1$  can be seen as an augmentation of the research conducted by Trussel and Parsons (2007, p. 271), which aimed at demonstrating that the value of donations was linked to potential donors' access to information on the organizations they wanted to support. However, this link was validated using expenses on fundraising campaigns as a proxy for the scope of information flow between an organization and its stakeholders, whereas the research found in this paper refers directly to the content and level of detail of performance-related information included in the activity statements of PBOs. One may consider that employing fundraising expenses as a proxy for the information flow between an organization and its stakeholders addresses the intensity of communication rather than the level of detail of the message sent to stakeholders as is the case in the research found in this paper.

Finally, in case of hypothesis  $H_2$  it should be noted that an attempt to bind narrative disclosures with economic effects was made by Kirk and Nolan (2010, pp. 485–486). They proved the existence of relations between the precise formulation of an activity scope as well as a non-exclusive definition of the target audience and fundraising effectiveness. However, there was no evidence provided that the formulation of a mission could, by itself, attract donors. Additionally, Sargeant, Hudson, and West (2008, pp. 628–629) hypothesized that what stimulated good relations between an organization and its stakeholders was not only performance-related factual communication, but also its emotional load. Therefore, it may be interesting to examine whether performance-related information triggers donor generosity as declared in hypothesis  $H_2$ .

Hypothesis  $H_1$  was examined using the Mann–Whitney U test comparing lengths (word counts) of performance-related descriptions in the statements of PBOs that attracted the 1% tax write-off of the participants of the experiment versus all the other. The non-parametric test was selected due to the asymmetric distribution of text lengths in the research sample, where two-thirds of observations belonged to short descriptions, not exceeding 250 words (a half of a standard page of the activity statement).

Hypothesis  $H_2$  was tested in three ways. Firstly, Jaccard's, Tanimoto's and cosine similarity coefficients were computed for arrays of all words included in the performance-related descriptions of PBOs selected or not selected by the participants of the experiment. Secondly, a similar calculation was made for arrays of the sixty most frequently used words included

in those descriptions for the two PBO groups. Differences between the two arrays are presented, as well. Using *KH Coder* software, three word co-occurrence networks for all organizations in the sample as well as for “selected” and “not selected” ones were generated and compared in search for differences in word relations and word clusters.

#### 4. Results of the Content Analysis

In order to test the  $H_1$  hypothesis, descriptions of major activities (presented in Section II, item 1.1 of the obligatory annual activity statements) as undertaken by the PBOs that participants in the experiment decided to support (fifty-nine objects) versus all the others (118 objects) were compared with respect to their lengths. The total length of the descriptions for the whole sample of 177 PBOs equaled 67,647 words, where 31,384 came from statements of the “selected” organizations and 36,263 from those that the participants in the experiment did not choose to support. The result of Mann–Whitney U test ( $U = 2536$ ,  $Z = 2.939$ ,  $p = 0.003$ ) confirmed the significant difference in lengths of performance-related disclosures in the two analyzed subsets of PBOs. The mean length of performance-related descriptions for “selected” PBOs equaled 532 words (average) or 180 words (median), where for the rest of the sample the figures were 307 and 90 words, respectively. Taking the median value as the reference basis, it can be noted that the descriptions of major actions undertaken by “selected” PBOs were twice as long as in case of the “not selected” ones. This proves that more detailed performance-related disclosures were preferred by potential donors. Consequently, hypothesis  $H_1$  was confirmed.

A content analysis covering performance-related disclosures included in the statements of 123 PBOs (from the whole sample consisting of 177 objects) was conducted in order to examine hypothesis  $H_2$ . The subsample covered 69.5% of the objects from the initial sample – forty-one “selected” and eighty-two “not selected” PBOs. The reason for narrowing the scope of the content analysis was that the length of descriptions in case of particular PBOs differed substantially, covering a range of from seven to over 5,000 words. The decision to include the longest description in the content analysis would have distorted its results. This is because the word frequency lists would have been dominated by terms used in the longest twelve descriptions, covering 50.7% of the total word count of the entire sample. Thus, the author decided to exclude eighteen “selected” PBOs from the analysis, where the description of major actions exceeded one standard page (approximately 500 words), and a proportional share of “not selected” PBOs (thirty-six objects) with the longest descriptions. Consequently, the content analysis covered 14,568 words (6,812 words in “selected” and 7,756 in “not selected” PBOs), which amounted to 21.5% of the total words count in the entire sample.



Figure No. 1 presents a word co-occurrence network developed with the support of *KH Coder* text mining software for the performance-related description of the 123 PBOs. It should be pointed out that the application of this system required prior edition of the Polish text in order to enable its further analysis, including elimination of diacritics and the defining of Polish “stop words.” The presented network visualizes 120 of the most important co-occurrence relations among the sixty most frequent words included in the analyzed descriptions. It does not cover, however, those elocutions that carry no semantic loads (“stop words”) such as pronouns, prepositions, conjunctions, particles as well as modal verbs. The “size” of each vertex reflects the frequency of a word occurrence, whereas the edges of the graph indicate word co-occurrences, taking paragraphs as the analyzed units. Overlapping vertices or thick, dark edges reflect the closest links between words (the minimum spanning tree), whereas lighter or dotted edges indicate less important relations of co-occurrence.

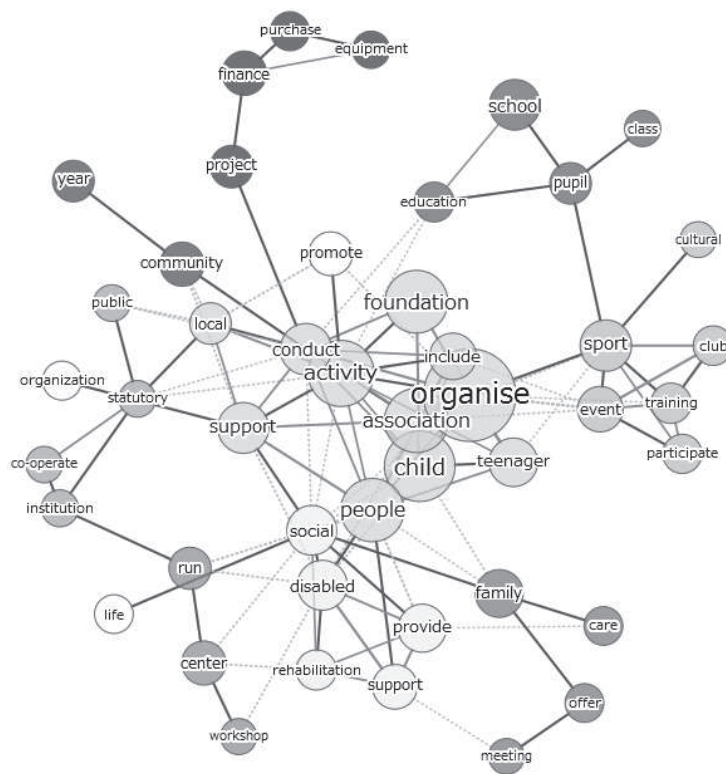


Fig. 1. The co-occurrence network for performance-related words in all examined PBOs. Source: Generated using *KH Coder* software.

For the presented network, Jaccard's similarity coefficient was higher than 20.6%. This means that the linked words appeared simultaneously in a paragraph at least once per five times they occurred in the text. It should be added that not all of the sixty words used most frequently in the analyzed descriptions appeared on the graph. Some did not enter any of the 120 most frequent relations of co-occurrence. Those words (sorted according to their counts), included "a program," "educational," "a group," "a member," "an animal," "a fund," "PLN" (replacing all amounts), "a seminar," "a day," "to aim," "a holiday," "various," "a form," and "a woman," and represent frequent aspects of PBO statutory activities, more detached from core programs, however.

The content analysis made it possible to distinguish nine major clusters (visualized using different shades) representing important dimensions of public benefit activities and their results. Those clusters include "social activities and its beneficiaries," "support for the disabled," "sport," "education," "support for families," "finance," "statutory activities," "social centers," and "co-operation with the local community." It should be noted that four of the five major clusters represent the most frequent forms of public benefit activities in Poland, including "support for the disabled (and ill)," "sport (and leisure)," "education," and "support for families (and in particular for children)." In addition to the nine clusters, three individual words appeared: "to promote," linked with "social activities and its beneficiaries," "an organization," linked with "statutory activities," and "life" bound with "support for the disabled," which represent three important PBO goals – to promote and encourage civil initiative, to organize and formalized those initiatives, and to change the lives of beneficiaries for the better.

The following conclusions can be made when comparing the presented co-occurrence network with the two lists of the sixty most frequently used words for the "selected" and "not selected" PBOs. Among the "selected" PBOs, there was a frequent reference to "statutory" activities. Those organizations wanted to demonstrate a clear link between performance and objectives set by their founders in its mission and included in the organization's charter. A focus on "care" could also be observed, as more activities were directed at supporting families and children. In the case of the "not selected" PBOs, words related to sport, including "a club" or "training" were much higher in the frequency rankings. It can be concluded, therefore, that donors are less willing to support sport organizations, which sometimes indicate a stronger link to professional sport rather than to promotion of a healthy life style. Thus, this may not be seen as contributing to the public benefit. "Not selected" organizations referred more often to "cooperation" with the public sector in performing tasks ordered and subsidized by that sector. It appears that stable public financing of a PBO may redirect donors' attention toward other organizations, which do not benefit from public

subsidies. The final substantial difference observed was that of the form of organizing social activities. For “selected” PBOs, the frequent reference to “a workshop” activating its participants was observed. In the case of “not selected” PBOs, “class” presentations were often stressed, showing school children as an important target audience.

Conclusions stemming from the different word frequency lists in groups of “selected” and “not selected” PBOs may be supplemented by examining whether or not relations between keywords in both groups were similar. The word co-occurrence networks for both groups are presented in Figures No. 2 and No. 3.

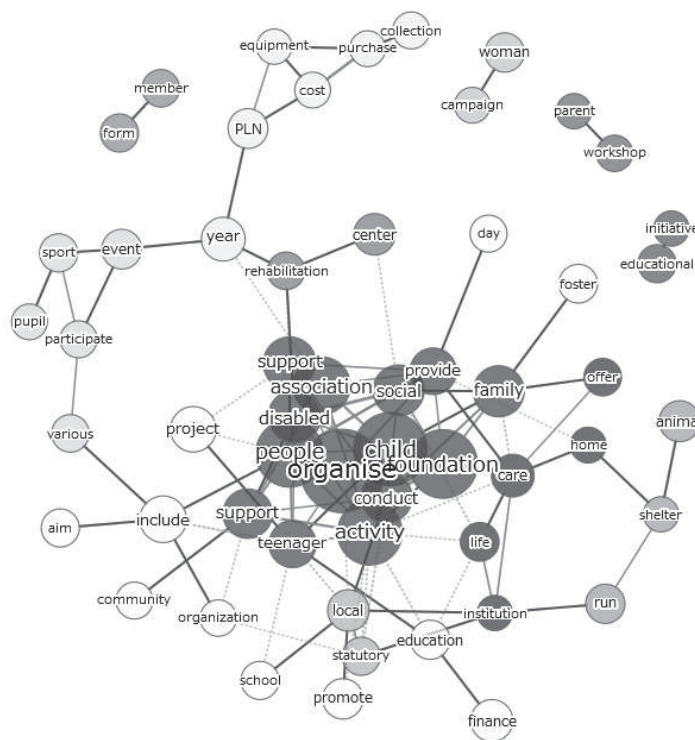


Fig. 2. The co-occurrence network of performance-related words in “selected” PBOs. Source: Generated using KH Coder software.

- In case of the “selected” PBOs, one can note the following tendencies:
- better integration of descriptions of social activities with the presentation of beneficiaries, including disabled people and families with young children and those in their teens,
  - a foundation as the preferred form of conducting social activities,

- a more transparent financial policy, including information on annual costs, major expenses, and the results of public collections,
- lower involvement in educational activities, and
- two different target groups, including women and animals.

On the other hand, the following regularities were observed in the case of “not selected” PBOs:

- the central place of sport as a domain of public benefit activities,
- an association as the preferred form of conducting social activities,
- close cooperation with schools and local communities,
- project oriented activities, and
- running information centers as a way to achieve social goals.

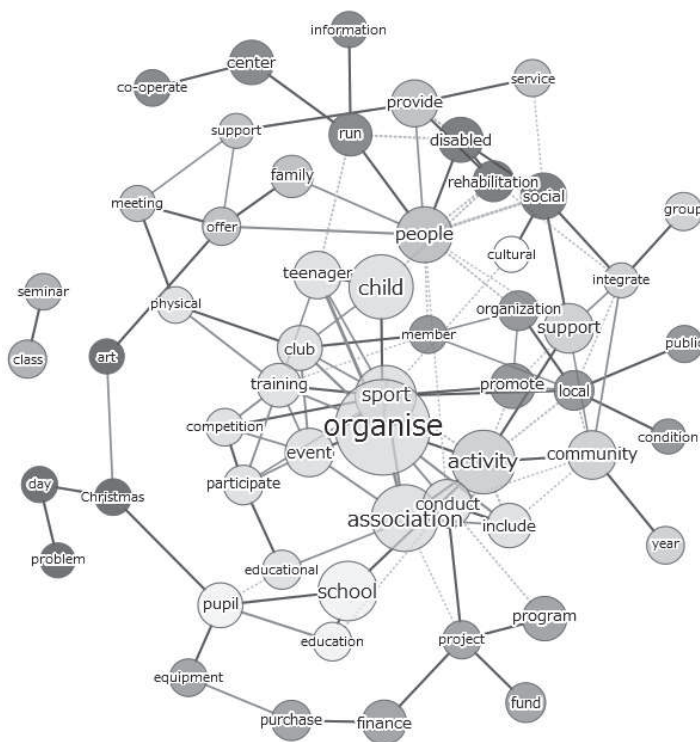


Fig. 3. The co-occurrence network of performance-related words for “not selected” PBOs. Source: Generated using KH Coder software.

Since there were certain differences observed that both respected the most frequently used words and the relations of those words between the groups of “selected” and “not selected” PBOs, it is worth quantifying those observations to check what the actual level of the discrepancies was. Thus,

three similarity coefficients (Jaccard's, Tanimoto's, and cosine) between word frequency arrays (vectors) for "selected" and "not selected" PBOs were computed and presented in Table No. 1.

Arrays compared	Similarity coefficient		
	Jaccard's	Tanimoto's	cosine
Formula*	$J(A,B) = \frac{ A \cap B }{ A \cup B }$	$T(A,B) = \frac{A \cdot B}{\ A\ ^2 + \ B\ ^2 - A \cdot B}$	$\cos(\theta) = \frac{A \cdot B}{\ A\  \ B\ }$
All words	31.5%	74.8%	86.1%
"Top 60" lists	48.2% (98.8%)	72.2% (79.8%)	84.4% (89.3%)

\* The two word frequency arrays are represented by vectors  $A$  and  $B$ .

Tab. 1. Similarity of word frequency arrays for "selected" and "not selected" PBOs. Source: Own presentation based on word frequency arrays generated by KH Coder software.

It should be pointed out that the Jaccard's similarity coefficient only considered the binary situation – whether a given word did or did not appear in particular arrays. The other two coefficients considered the number of occurrences, as well. All three coefficients were calculated both for complete lists of words included in performance-related descriptions (except for "stop words"), and for lists of the sixty most frequently used words counted separately for both groups (in case of "not selected" PBOs those were sixty-six words due to an equal number of occurrences). In that last case, two values were computed. The first attributed positive values (based on word counts) to those elements of an array (words) that appeared in the other "Top 60" list (otherwise zero was attributed). The second coefficient attributed the actual number of occurrences, even if a particular word belonged to one "Top 60" list only.

Considering the results obtained, it should be noted that expect for the Jaccard's similarity coefficient (31.5%) – reflecting the fact that of all 1,706 different words considered (inflection insensitive count), only 537 appeared in both groups at least once – high levels of similarity were detected. Differences between the arrays of word counts in both analyzed groups did not exceed 27.8% (Tanimoto's coefficient considering exclusively the two "Top 60" lists). Moreover, only one word – "a contest" – that belonged to the "Top 60" list for the "not selected" organizations did not appear even once in the performance-related descriptions of "selected" organizations. These observations cast doubt over the validity of hypothesis  $H_2$ .

## 5. Conclusion

As indicated in the introduction to this paper, its objective was to determine whether the level of detail of performance-related narrative disclosures included in the obligatory annual activity statements of Polish PBOs

and the selection of topics discussed in the statements could stimulate the financial decisions of donors. It is, therefore, worth summarizing the major findings included in the paper and focus on those that support or falsify the research hypotheses. Moreover, limitations of the research and potential future steps are put forward.

The content analysis conducted with the support of text mining software helped to identify nine major areas of performance-related disclosures, including “social activities and its beneficiaries,” “support for the disabled,” “sport,” “education,” “support for families,” “finance,” “statutory activities,” “social centers,” and “cooperation with the local community.” There were certain differences detected between the PBO reports that stimulated donors’ financial decisions versus all the others. In particular, a better link between statutory goals, beneficiaries, and performance was noted. This was together with a more detailed explanation of financial activities. It was also proven that “selected” PBOs presented their achievements in greater detail. Their reports were twice as long as those of other organizations. Therefore, hypothesis  $H_1$  was proved valid. On the other hand, the statistical analysis of word frequencies in reports of “selected” and “not selected” organizations indicated, with some exceptions, the high level of similarity between those two groups. Consequently, hypothesis  $H_2$  cannot be confirmed.

Some limitations of this research cannot be passed over. The asymmetry in lengths of performance-related narrative descriptions and the decision to restrict the content analysis to 123 of 177 objects included in the initial sample might be the first. Secondly, the decisions of participants in the experiment had a declaratory character and were limited to a choice of one organization from three randomly selected ones. Finally, it remains uncertain whether after taking part in the experiment the participants would actually refer to obligatory annual activity statements of PBOs while making their decisions as to the 1% tax write-offs.

Nonetheless, the contribution of this paper to the literature is derived from its unprecedented combination of content analysis with the experimental study and from the formalized computer aided analysis of discrepancies in performance-related disclosures of those PBOs that earned the most donor attention versus all the other ones. The results, inconclusive to some extent, require further validation. This will be done in two ways, by repeating the research, subject to Polish conditions, and by comparing the results with an examination of narrative disclosures made by British registered charities. The latter represent a much more mature nonprofit sector with a well-funded reporting scheme, which may serve as a benchmark for Poland.

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