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On the Use of Quantitative Methods in Accounting Research in Poland

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ABSTRACT

This paper presents a review of published accounting research based on quantitative methods originating in Poland between 2010 and 2021. Twenty-one international and national journals were examined, all having “accounting” in their title, as well as the leading Polish journal on accounting research – *Zeszyty Teoretyczne Rachunkowości* (ZTR, *Theoretical Journal of Accounting*). The principal finding is that Polish authors – especially those using quantitative methods – rarely publish in top accounting journals outside of Poland. They most frequently publish quantitative papers in ZTR, although those papers account for just 5% of the total number of papers published there. The corresponding percentage of quantitative papers is much higher in leading international accounting journals. This paper is presented as a voice in the debate within Polish academia on the development of the accounting discipline.

JEL Classification: C50, C58, G30, M40

Keywords: applied accounting, quantitative methods, empirical corporate finance.

1. INTRODUCTION

Accounting research is contemporarily defined very broadly, with many topics covered within other fields such as corporate finance or corporate governance. For example, in 2018, the *Journal of Accounting Research*, the leading journal in the field, composed the following list of research topics historically published in that journal (Gruszczyński, 2020):

- the impact of financial reporting and disclosure on stock prices,
- the economics of auditing, enforcement, and audit oversight,
- the use of accounting information in contracting in the debt, labour, supply, and other markets,
- the role of accounting in compensation and in corporate governance,
- the role of managerial accounting in internal decision-making such as budgeting, costing, and transfer pricing,
- the real effects of financial reporting and disclosure,
- the economics of the regulation of financial reporting and disclosure including bank regulation,
- international differences in financial reporting and the role of reporting standards in international capital markets,

- the political economy of accounting standard-setting,
- the use of accounting information in public finance,
- the impact of tax regulation on transaction structuring.

The above topics coincide with, encompass or are intertwined with typical topics of corporate finance research, as reflected in research published in corporate finance and other journals of finance. To narrow the scope of our survey, this paper concentrates on those journals that have “accounting” in their title.

This review is rooted in other reviews of accounting research. The examples of recent surveys include the paper by Lennox and Wu (2022) on Chinese accounting research over the past twenty-five years, the paper by Lopes (2015) on research methods in accounting, as well as two papers by Bromwich and Scapens (2010, 2016).

Polish research has been reviewed in the papers by Dobroszek and Michalak (2013) and Jaworski and Sokołowska (2014).

One incentive to undertake this review was the level of interest in the 2009 paper entitled “Quantitative Methods in Accounting Research” that has been read more than twenty thousand times via ResearchGate¹ (Gruszczyński, 2009).

This paper concentrates on published research that: (1) employs quantitative methods and (2) originated in Poland. Journals in accounting issued during the 2010–2022 period were reviewed, the period beginning after publication of the paper cited above.

Quantitative methods are in frequent use in today’s accounting research as the preeminent methodological choice in cases with an abundance of data (e.g., corporate reports text mining) and provide a more rigorous approach in examining survey outcomes (e.g., structural equations modelling), among other undertakings.

We sought to uncover papers that use quantitative methods in accounting research and are presented by Polish academia in journals of accounting. The search concentrated on major international and European scientific journals that specialize in publishing accounting research. The vast majority of papers, however, came from a single Polish journal *Zeszyty Teoretyczne Rachunkowości*. (ZTR, *Theoretical Journal of Accounting*).

Section 2 presents the results of the search for papers published in leading international accounting journals authored by scholars affiliated in Poland. In section 3, papers are presented that use quantitative methods and are published in Poland in ZTR. Section 4 concludes the review.

It should be noted that our search does not purport to be comprehensive, and any omissions are not intentional. We apologize if a paper that meets the stated criteria has not been included here.

2. RESEARCH FROM POLAND PUBLISHED IN MAJOR INTERNATIONAL ACCOUNTING JOURNALS

The search focused on leading international accounting journals. Various sources publishing lists of highly rated journals were referenced, beginning with the Web of Science (Social Science Citation Index and Emerging Sources Citation Index). Also consulted was the Scopus list of major journals in the field of “Business, Management and Accounting,” by countries, as published by Scimago.

The search was restricted to journals having the word “accounting” in their titles. Twenty-one publications were identified:

- *European Accounting Review*, *Accounting in Europe*; journals of the European Accounting Association (EAA)

¹ Score in May 2022.

- *The Accounting Review, Journal of Management Accounting Research*; journals of the American Accounting Association (AAA)
- *Contemporary Accounting Research*; journal of the Canadian Academic Accounting Association
- *Journal of Accounting Research*
- *Journal of Accounting and Economics*
- *Journal of Business Finance and Accounting*
- *Journal of International Financial Management and Accounting*
- *Review of Accounting Studies*
- *Journal of Accounting Literature*
- *Journal of Accounting Auditing and Finance*
- *International Journal of Accounting Information Systems*
- *Critical Perspectives on Accounting*
- *British Accounting Review*
- *Advances in Accounting*
- *Accounting Horizons*
- *Abacus-A Journal of Accounting Finance and Business Studies*
- *Accounting and Finance*
- *Comptabilité Contrôle Audit*; journal of the Francophone Association of Accounting
- *Revista de Contabilidad – Spanish Accounting Review*; journal of the Spanish Association of Accounting Academics

To find papers from Poland, we searched, when possible, for the word “Poland” in the author’s affiliation or within the content of the papers. In accordance with this paper topic, we concentrated on finding articles on accounting research that employ any type of quantitative methods. Some of the authors from Poland are not affiliated with accounting research units but with finance, management and other university departments or institutions.

Table 1 presents the results of our search, by journal, indicating the type of indexing in the Web of Science, the number of ministerial points in the current classification of scientific journals in Poland, and the number of published papers using quantitative methods by authors affiliated in Poland. The journals were searched in May 2022, with results including papers published online until that time.

Table 1

Accounting journals examined in the paper for the period January 2010–May 2022

| Journal title | Web of Science | Polish score | No. of papers |
|---|----------------|--------------|---------------|
| <i>European Accounting Review</i> | SSCI | 100 | 0 |
| <i>Accounting in Europe</i> | ESCI | 70 | 2 |
| <i>The Accounting Review</i> | SSCI | 200 | 0 |
| <i>Journal of Management Accounting Research</i> | ESCI | 100 | 0 |
| <i>Contemporary Accounting Research</i> | SSCI | 140 | 0 |
| <i>Journal of Accounting Research</i> | SSCI | 200 | 0 |
| <i>Journal of Accounting and Economics</i> | SSCI | 200 | 0 |
| <i>Journal of Business Finance and Accounting</i> | SSCI | 100 | 0 |
| <i>Journal of International Financial Management and Accounting</i> | SSCI | 100 | 2 |
| <i>Review of Accounting Studies</i> | SSCI | 100 | 0 |
| <i>Journal of Accounting Literature</i> | ESCI | 70 | 0 |

Table 1 – continued

| Journal title | Web of Science | Polish score | No. of papers |
|--|----------------|--------------|---------------|
| <i>Journal of Accounting Auditing and Finance</i> | ESCI | 70 | 0 |
| <i>International Journal of Accounting Information Systems</i> | SSCI | 100 | 1 |
| <i>Critical Perspectives on Accounting</i> | SSCI | 100 | 0 |
| <i>The British Accounting Review</i> | SSCI | 140 | 1 |
| <i>Advances in Accounting</i> | ESCI | 20 | 0 |
| <i>Accounting Horizons</i> | SSCI | 100 | 0 |
| <i>Abacus-A Journal of Accounting Finance and Business Studies</i> | SSCI | 70 | 0 |
| <i>Accounting and Finance</i> | SSCI | 70 | 0 |
| <i>Comptabilité Contrôle Audit</i> | SSCI | 40 | 0 |
| <i>Revista de Contabilidad – Spanish Accounting Review</i> | SSCI | 70 | 1 |

SSCI = Social Sciences Citation Index; ESCI = Emerging Sources Citation Index; Polish score = the score in the classification of journals in Poland published by the Ministry of Science and Education (November 2021), Polish scores ranged between 20 and 200; No. of papers = the number of papers that use quantitative methods published by Polish authors in that journal.

The survey of these accounting journals showed that only seven papers by authors from Poland employing various quantitative methods had been published. In addition to identifying each paper and journal, the following list presents the title of each, the method(s) used, and the number of citations in the Web of Science (WoS) and Google Scholar² (GS) or journal website (JW).

1. Panfilo and Krasodomska (2022). Published in *Accounting in Europe*.

Title: Climate change risk disclosure in Europe: The role of cultural-cognitive, regulative, and normative factors.

Method: **ordinal probit** explaining CDP (Carbon Disclosure Project) climate change ratings for a sample of European companies, linear **regression** for explaining CDP climate change disclosure quality score.

Citations: 1 (WoS), 2 (GS).

2. Hadro, Klimczak and Pauka (2017). Published in *Accounting in Europe*.

Title: Impression management in letters to shareholders: Evidence from Poland.

Method: content analysis of impression management techniques in a sample of letters to shareholders for companies listed on the Warsaw Stock Exchange (WSE), **clustering method of k-means** for identifying groups of similar mix of impression management techniques, linear **regression** for the length of letters, **logit** regression for assigning letters to clusters.

Citations: 12 (WoS), 30 (GS).

3. Grabiński and Wójtowicz (2022). Published in *Journal of International Financial Management and Accounting*.

Title: The impact of Catholic religion on earnings management: A case of Poland.

Method: for a sample of WSE-listed companies, linear **regression** of discretionary accruals on religiosity in the diocese where the headquarters of the company are located and on company financials; the religiosity proxy is the share of Catholics receiving Holy Communion during the Sunday Eucharist.

Citations: 3 (WoS), 3 (JW).

² Via Publish or Perish (retrieved July 6, 2022).

4. Altman, Iwanicz-Drozdowska, Laitinen and Suvas (2017). Published in *Journal of International Financial Management and Accounting*.
 Title: Financial distress prediction in an international context: A review and empirical analysis of Altman's Z-Score model.
 Method: for a sample of European and non-European companies, re-estimation of the original Altman's Z" score (using linear **discriminant analysis**), **logit** regression version of Z" score, both with the effect of the year of bankruptcy.
 Citations: 185 (WoS), 203 (JW).
5. Monteiro, Vale, Leite, Lis and Kurowska-Pysz (2022). Published in *International Journal of Accounting Information Systems*.
 Title: The impact of information systems and non-financial information on company success.
 Method: **structural equations model** (SEM) applied to a survey questionnaire of managers in Portuguese companies; SEM is applied to analyse causal relationships between constructs representing accounting information system quality, internal control system quality, non-financial information quality, decision-making success, and non-financial performance.
 Citations: 0 (WoS), 1 (GS).
6. Roszkowska, Langer and Langer (2021). Published in *The British Accounting Review*.
 Title: Pension funds and IPO pricing. Evidence from a quasi-experiment.
 Methodology: **quasi-experiment** involving Polish pension funds' government-forced changes; IPO underpricing and long-term underperformance due to rapid changes in pension funds presence on the stock market is tested with cross-sectional **regression**, test of pre- and post-treatment mean returns, **diff-in-diff** estimation, **event study**.
 Citations: 0 (WoS), 1 (GS).
7. Hadro, Klimczak and Pauka (2021). Published in *Revista de Contabilidad – Spanish Accounting Review*.
 Title: Management's choice of tone in letters to shareholders: Sincerity, bias and incentives.
 Methodology: **ordered logit** regression to model linguistic tone of letters to shareholders, from negative to positive, with information from the IFRS financial statement for a sample of companies listed at the Warsaw Stock Exchange and Vienna Stock Exchange.
 Citations: 3 (WoS), 3 (GS).

The choice of accounting journals from outside Poland was restricted here to those that are indexed in the Web of Science. Our search identified a journal from Czechia: *European Financial Accounting Journal*³, which also publishes papers of authors with affiliation in Poland. This journal is not indexed in the WoS and has no score in the classification of journals in Poland published by the Ministry of Science and Education.

In summary, although we recognize that authors from Poland rarely appear in the identified accounting journals, these infrequent papers must present a very high quality of research design and performance to be accepted for publication. The methods used are up to date and thoroughly applied.

³ *European Financial Accounting Journal* has been published by the Faculty of Finance and Accounting, Prague University of Economics and Business, since 2006.

3. RESEARCH PUBLISHED IN *ZESZYTY TEORETYCZNE RACHUNKOWOŚCI*

Zeszyty Teoretyczne Rachunkowości (*Theoretical Journal of Accounting*) or ZTR is the leading journal publishing accounting research in Poland. ZTR has a score of 70 in the classification of journals in Poland published by the Ministry of Science and Education. The journal publishes papers in Polish and in English.

For this review on quantitative methods in accounting research, we have selected all suitable papers published in ZTR in the period between January 2010 and December 2021. There are forty papers that utilize some type of quantitative methodology. Our ZTR list is by no means comprehensive.

In the list below, we present the forty papers, identifying each paper's topic, the data used, the type of quantitative method(s), the author(s) and year of publication, and the number of citations in Google Scholar⁴.

1. Bankruptcy modelling perspectives. Review article. No own research. Hołda (2010). Citations: 9.
2. Effectiveness of higher education in Poland. Data on higher education institutions. Method: data envelopment analysis (DEA). Ćwiakała-Małyś (2010). Citations: 2.
3. Determinants of asset accounting write-offs. Data on WSE-listed companies. Methods: linear regression, binomial logit. Piosik and Rówińska (2010). Citations: 14.
4. Bankruptcy study: stability of cash flows for bankrupt and non-bankrupt companies. Data on Polish bankrupt and non-bankrupt companies (choice-based sample). Methods: McNemar's test, Yule coefficient, canonical correlation. Wędzki (2010). Citations: 4.
5. Classification of companies with the use of *k*-means clustering. Data on WSE-listed construction companies. Method: *k*-means clustering for partitioning companies into groups in terms of financial distress. Dyczkowska (2010). Citations: 0.
6. Disclosure and investor protection. Data on selected WSE-listed companies. Method: design of the corporate disclosure index for Poland, correlation. Świdorska, Pielaszek and Borowski (2010). Citations: 2.
7. Portfolio analysis and accounts receivable. Proposal of a method for categorizing company clients with the use of graphical (Lorenz curve) and mathematical approach, taking into account sales and accounts receivable. Wędzki (2011). Citations: 3.
8. Earnings management and economic situation. Time-series cross-section data on WSE-listed companies. Method: statistical tests. Wójtowicz (2012). Citations: 13.
9. Financial condition of food industry in Poland. Time-series cross-section data on WSE-listed food companies. Method: classification of companies into clusters with the use of TOPSIS and *k*-means methods. Bieniasz, Gołaś and Łuczak (2012). Citations: 5.
10. Debt ratios in European manufacturing companies. Time-series cross-section data on selected companies in selected countries. Method: graphical analysis of ratios, cluster analysis. Kędzior (2012). Citations: 0.
11. Bankruptcy study: Sequence of cash flows in bankruptcy prediction. Data on Polish bankrupt and non-bankrupt companies (choice-based sample). Method: logit regression. Wędzki (2012) [extension of paper 5]. Citations: 12.
12. Evaluation of financial condition of communes in Poland. Data on communes in Poland for one year. Method: classification of communes into clusters with the use of TOPSIS method. Bieniasz, Gołaś and Łuczak (2013). Citations: 0.
13. Determinants of upward revaluation of fixed assets while adopting IFRS in Poland. Time-series cross-section data on WSE-listed companies. Method: factor analysis, correlation, regression. Piosik and Poniatowska (2013). Citations: 2.

⁴ Via Publish or Perish (retrieved July 6, 2022).

14. Sample size for audit purpose. Theoretical proposal with examples. Method: construction and solving the optimization problem of determining stratified sample size in audit sampling – to minimize risks of errors. Wywiał (2013). Citations: 0.
15. Decomposition of financial rate of return. Data on food industry by subbranches in Poland. Method: logit regression. Bieniasz and Golaś (2013). Citations: 0.
16. Macroeconomic and institutional determinants of financial results of companies. Time-series cross-section data on companies from selected European countries. Method: correlation, analysis of variance. Kędzior (2013). Citations: 2.
17. Upward revaluation of fixed assets and information value of financial statement. Time-series cross-section data on WSE-listed companies. Method: regression. Piosik, Kumor, and Sulik-Górecka (2013). Citations: 0.
18. Financial condition of merging companies. Data on merged companies in one region of Poland. Method: new data are substituted into several “canonical” bankruptcy models for Poland that use discriminant analysis and have been estimated on another data sets. Luty (2014). Citations: 0.
19. Provisions and the balance sheet and income statement. Data on WSE-listed companies. Method: Mann-Whitney U-test, correlation. Chraścina (2015). Citations: 0.
20. Capital structure and its determinants. Review article. No own research. Białek-Jaworska and Nehrebecka (2015). Citations: 6.
21. Non-controlling interests and financial performance versus the equity of groups. Data on groups whose parents are registered in Poland and whose securities are traded on the WSE. Method: statistical tests, correlation. Ignatowski and Zatoń (2015). Citations: 1.
22. Determinants of capital budgeting methods. Data: sample of companies operating in Poland. Method: rank correlation, statistical tests. Wnuk-Pel (2015). Citations: 3.
23. Economic crisis and earnings management. Time-series cross-section data on companies from selected European countries. Method: panel regression. Grabiński (2016). Citations: 7.
24. Book-tax conformity. Time-series cross-section data on accounting and taxable results of selected non-public companies in Poland. Method: ANOVA, panel regression. Białek-Jaworska (2016). Citations: 4.
25. Bankruptcy prediction in the time of economic crisis. Time-series cross-section data on WSE-listed companies. Method: new data are substituted into several “canonical” bankruptcy models for Poland and other models that use discriminant analysis and have been estimated on another data sets. Kopczyński (2017). Citations: 2.
26. Determinants of earnings per share in the companies from Central and Eastern European countries. Data on companies from CEE countries. Method: statistical tests, correlation, regression. Kędzior (2017). Citations: 1.
27. R&D investments and company profitability. Time-series cross-section data on US companies. Method: panel regression. Grabińska and Grabiński (2018). Citations: 6.
28. Appropriateness of Altman type model of discriminant analysis for predicting bankruptcy. Data on bankrupt and non-bankrupt companies from a regional court in Poland. Method: new data are substituted into Altman model several “canonical” bankruptcy models for Poland. Iwanowicz (2018). Citations: 6.
29. Non-audit fee and the auditee’s failure risk. Data on listed and unlisted Polish companies. Method: linear regression, logit regression. Staszekiewicz and Górka (2018). Citations: 0.
30. ACCA accreditation and the quality of academic accounting education. Data from a survey questionnaire of university students in Poland. Method: regression. Zarzycka, Krasodomska, Biernacki (2018). Citations: 4.
31. Timeliness of financial reporting. Data on selected WSE-listed companies. Method: statistical test. Grzybek (2018). Citations: 0.
32. Comprehensive income, net income, and market value of equity. Time-series cross-section data on WSE-listed companies. Method: rank correlation, regression. Sajnog (2018). Citations: 2.

33. Determinants of non-financial information disclosure. Data on selected joint-stock companies in Poland. Method: correlation, regression, Tobit model. Szadzińska, Spigarska, Majerowska (2018). Citations: 2.
34. Financial disclosures and culture. Hofstede's cultural dimensions and financial data on companies from selected countries. Method: statistical tests, rank correlation. Gierusz and Koleśnik (2019). Citations: 3.
35. Intra-group loans and earnings management. Data on financial statements of listed and unlisted Polish companies. Method: regression, propensity score matching. Białek-Jaworska and Dec (2019). Citations: 6.
36. Earnings forecasts and actual returns. Time-series cross-section data of selected WSE-listed companies. Method: correlation, regression. Jakubowski and Wójtowicz (2019). Citations: 2.
37. Value relevance and predictive value of comprehensive income. Time-series cross-section data on selected WSE-listed companies. Method: regression. Bareja, Giedrojć and Wrzosek (2019). Citations: 2.
38. Determinants of impairment losses on net fixed assets. Time-series cross-section data on selected WSE-listed companies. Method: statistical tests, analysis of variance. Hołda and Staszek (2020). Citations: 0.
39. Bankruptcy prediction. Time-series cross-section data on WSE-listed companies. Method: new data are substituted into several “canonical” bankruptcy models for Poland and other models that use discriminant analysis and have been estimated on another data sets. Kopczyński (2020). [new version of paper 25]. Citations: 0.
40. Non-financial reporting standard and company's orientation towards employees in large public interest entities in Poland. Data on large public interest entities in Poland. Method: logit regression. Krasodomska, Zarzycka and Dobija (2021). Citations: 0.

Table 2 presents the summary of methods that prevail in our selection of quantitative papers published in *Zeszyty Teoretyczne Rachunkowości*.

Table 2

Quantitative methods employed in papers published in ZTR in 2010–2021

| Method(s) | Number of papers | Number in the list of paper(s) employing the method(s) |
|---|------------------|--|
| discriminant analysis and binomial logit regression (for bankruptcy models) | 7 | 1,4,11,18,25,28,39 |
| clustering methods, <i>k</i> -means, TOPSIS, and others | 4 | 5,9,10,12 |
| binomial logit regression | 4 | 3,15,29,40 |
| panel regression | 3 | 23,24,27 |
| regression analysis (also in cases of time series or panel data) | 7 | 13,17,26,30,32,36,37 |
| statistical testing and correlation | 9 | 6,8,16,19,21,22,31,34,38 |
| propensity score matching | 1 | 35 |
| tobit model | 1 | 33 |
| DEA method | 1 | 2 |
| theoretical papers | 2 | 7,14 |
| review paper | 1 | 20 |
| Total | 40 | – |

These are principal findings:

- a) The leading Polish accounting research journal rarely presents papers with research outcomes based on quantitative approaches.
- b) Predominant quantitative method is statistical testing and correlation.
- c) Linear regression is used frequently, also in cases of time series data.
- d) Discriminant analysis applied to modelling financial distress and bankruptcy is also common.
- e) Binomial logit (logistic) regression is also used, sometimes in addition to discriminant analysis.
- f) The clustering methods (k -means, TOPSIS) are relatively frequent.
- g) There are few instances of the use of more advanced econometric methods, like panel regression or tobit regression.

More general observations include the following:

- Time-series cross-section data on WSE-listed companies are frequently used with methodology not related to time series or panel econometrics.
- The use of “canonical” bankruptcy models with unchanged coefficient estimates. These models, typically discriminant analysis or logit models, are used in papers with new data sets. Such a procedure appears incorrect according to the paper by Altman et al. (2017) presented in Section 2.
- The scope of the research selected from ZTR is not confined to major accounting research questions. This is also the case for other accounting journals, as indicated in Section 1. For example, financial distress and bankruptcy topics may be relevant to any journal on corporate finance. Nevertheless, the main body of ZTR comprehensively covers topics dedicated to accounting.

Among the forty papers, the majority undertakes strictly accounting topics:

- asset accounting write-offs,
- financial disclosure,
- non-financial disclosure,
- earnings management,
- upward revaluation of fixed assets,
- provisions and the balance sheet and income statement,
- book-tax conformity,
- non-audit fee,
- comprehensive income, net income, and market value,
- impairment losses on net fixed assets,
- non-financial reporting standard.

Our research identified attempts to use quantitative methods in papers published in the leading Polish journal of accounting, although it is not clear how these attempts should be assessed. The presence of Polish entries in the leading international journals presented in Section 1, however, demonstrates that the level of sophistication in methodological approaches is high. This perhaps indicates the direction of the future development of accounting research in Poland. The number of papers that use some type of quantitative method in ZTR averages 3 to 4 annually, representing approximately 5% of all entries published there: forty papers out of the 754 papers published in the 12-year period of 2010–2021.

Quantitative papers in ZTR are less frequent than in other international accounting journals. For example, *The British Accounting Journal* (2022 Impact Factor = 5.577) published 8 quantitative papers in 2010 out of 18 (44% of the total) and 20 quantitative papers in 2021 out of 40 (50%). In *The Journal of Accounting Research* (2022 Impact Factor = 4.364), this proportion is higher: 34 quantitative papers in 2010 out of 34 (100%) and 40 quantitative papers in 2021 out of 40 (100%).

4. CONCLUSION

The review presented in this paper concentrates on articles with a quantitative edge published by researchers with an affiliation in Poland between 2010 and mid-2022. The search covered leading international journals in accounting and one Polish journal.

There is not a singular outcome of our research. It has been shown that Polish researchers in accounting rarely publish papers employing quantitative methods in international journals as presented in Section 2. However, many more attempts are published in Poland's leading accounting journal as shown in Section 3, although the occurrence of quantitative papers in ZTR is very rare (only 5% of papers published during the 12-year period), and their methodological complexity varies.

The most popular topics that appear in the selected papers are bankruptcy and financial distress, financial and nonfinancial disclosure, classification of companies, earnings management, and comprehensive income. The primary methods used are discriminant analysis, logit regression, multiple regression, *k*-means, correlation, and statistical testing.

To narrow the scope of the survey, our review focused on journals having the word “accounting” in their title. Obviously, such a survey could be extended to journals that publish papers in corporate finance and accounting – but without “accounting” in their titles. However, based on the findings of this paper, in the near term, it is difficult to foresee any major increase in the number of publications that could be the subject of such a review. A broader orientation toward quantitative methods in Polish accounting research may come in the more distant future.

Possible changes might begin with accounting programmes offered in institutions of higher education. For example, the Master's Programme in Accounting at Aalto University School of Business includes a “Big Data Analysis in Accounting” course. Such classes are offered at business schools in Poland but are not necessarily attached to the core accounting curriculum. At SGH (Warsaw School of Economics), the field of study in Finance and Accounting at the master level offers no quantitative classes in the list of major courses. The course “Financial Econometrics” is offered as an elective. Another example is the MSc Accounting and Data Analytics Master's degree offered at the University of Portsmouth. The core courses there include “Statistics and Data Modelling” and “Data Analysis and Visualization.” Such courses seem to fit well within the contemporary curriculum of accounting majors. Along with introducing data analytic subjects in advanced degree studies, doctoral tracks in accounting could also include courses on quantitative methods in research.

We hope this paper shows the current state of the use of quantitative methods in accounting research in Poland and may play a part in discussions in academia about the development of the accounting discipline in the country.

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