Use of structural equation modeling in quantitative research in the field of management and economics: A bibliometric analysis in the systematic literature review

Agnieszka Zakrzewska-Bielawska[1]
Anna M. Lis[2], *Anna Ujwary-Gil*[3]

Abstract

PURPOSE: *This paper aims to provide a comprehensive review of scholarly research focusing on using quantitative methods and particularly structural equation modeling (SEM) in management and economics studies, as well as provide a bibliometric agenda including the time horizon of individual publications, the highest citation rate, geographic and industry areas, methodological context, and keywords.* ***METHODOLOGY:*** *A systematic literature review (SLR) was undertaken using the Web of Science and Scopus databases. We limited our search to the last five years to identify the newest research publications, and we used keywords related to quantitative research while excluding qualitative research. Then we analyzed papers related to SEM and those published in English.* ***FINDINGS:*** *Our results confirmed that quantitative methods are used both in management and economics research, and showed a growing trend in the number of publications in the last five years. However, there are many more publications on management than on economics as well as there are more papers published in the Scopus database than Web of Science. Taking into account structural equation modeling, this method is used primarily in*

1 Agnieszka Zakrzewska-Bielawska, Full Professor, Dean of the Faculty of Organization and Management; Head of Discipline in Management and Quality Studies; Head of Institute of Management, Lodz University of Technology, Piotrkowska 266, 90-924 Łódź, Poland, e-mail: agnieszka.zakrzewska-bielawska@p.lodz.pl (ORCID: https://orcid.org/0000-0001-8182-3591).

2 Anna M. Lis, Ph.D. Hab., Professor of Gdańsk University of Technology, Faculty of Management and Economics, G. Narutowicza 11/12, 80-233 Gdańsk, Poland, e-mail: Anna.Lis@zie.pg.gda.pl (ORCID: https: // orcid.org/0000-0002-1527-7796).

3 Anna Ujwary-Gil, Ph.D., Hab. Professor of Institute of Economics, Polish Academy of Sciences, Laboratory of Process and Network Analysis, Nowy Swiat 72, 00-330 Warsaw, Poland, e-mail: ujwary@inepan.waw.pl (ORCID: https://orcid.org/0000-0002-5114-7366).

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management research. In terms of industry, publications using SEM considered both single- and multi-industry including, first, all Asian countries and then African ones. Publications, especially in the management field, are descriptive in nature and based on primary data collected using a survey questionnaire. Papers are published in various journals and the most cited are those published in journals with wider subject areas. ***IMPLICATIONS:*** *The systematic literature review is a fundamental necessity in any field of knowledge, benefiting both academia and learners. Our results may be useful for future researchers planning research using quantitative methods, especially SEM, in the business or economic field, by indicating the most cited papers and journals as well as industry and country areas.* ***ORIGINALITY AND VALUE:*** *This paper represents a systematic attempt to link quantitative methods, with a particular emphasis on SEM, with research interests on managerial and economic subjects and papers published in the Web of Science and Scopus databases. Employing the bibliometric analysis within the systematic literature review, the paper shows interest and the current state of research using quantitative methods which proves its value and originality.*

Keywords: *quantitative methods, structural equation modeling, systematic literature review, management, economics, citation analysis, geographic area, industry, Web of Science, Scopus.*

INTRODUCTION

Each discipline of science has its own research methods. In social sciences, including management and economics, the methodology is highly diverse which makes it pluralist and eclectic (Dow, 2012). There are methods of interpretative (qualitative) research (Mohajan, 2018; Liamputtong, 2020) and methods of testing hypotheses, i.e., quantitative research (Mouhammed, 2015; Stockemer, 2019), using both deduction and induction logic (empiricism) (Stadler, 2004; Evans & Over, 2013), nomothetical and idiographic approaches (Czakon, 2015; DeFreese & Nissley, 2020). This makes the choice of research approach difficult, and scholars more and more often use mixed research in which there is integration and complementary synergy of qualitative and quantitative methods (Molina-Azorin, 2016). However, it should be strongly emphasized that the choice of research method is always secondary to the formulated research problem. In other words, the research question or hypotheses determine the research approach and methods (Molina-Azorin, 2016; Rinjit, 2020).

However, in the social sciences, especially in management and economics, the dominant research framework is still a quantitative methodology (Baškarada & Koronios, 2018). Quantitative research is concerned with the planning, design, and implementation of methods to collect and analyze data (Wilson, 2019). It refers to a set of techniques and tools used to gather a range of numeric data, which could be intrinsically quantitative or imposed

using different scales (Nardi, 2018; Rinjit, 2020). The collection of quantitative data allows researchers to conduct simple to extremely sophisticated statistical analyses. One of them is structural equation modeling (SEM) which is developing all the time. SEM is also called covariance structure modeling (Tarling, 2009), analysis of covariance structures (Blunch, 2008), or causal modeling (Keith, 2006). It uses advanced statistical procedures and techniques (Green, 2016), which allows the determination of the cause-and-effect link between independent and dependent variables and their graphical presentation (Bowen & Guo, 2011). A key advantage of SEM is examining latent unobserved variables as well as observed variables, combining path and factor analytic techniques in the one predictive model (Keith, 2006).

The procedure of structural equation modeling is made up of two stages (Hair et al., 2010). The first one covers building, based on a literature review, a conceptual model, defining individual constructs, development of measurement tools and carrying out studies, as well as the specification and assessment of the measurement model. In this stage, exploratory and confirmatory factor analyses, as well as estimation of the theoretical validity and reliability of scales are usually employed. The second stage covers the specification and assessment of the structural model to allow research conclusions to be drawn (Zakrzewska-Bielawska, 2021). For this purpose, a path model of relationship between latent variables is built and next its fit is checked, using various coefficients. The most popular include Chi-square statistics, Goodness of Fit Index (GFI), Comparative fit index (CFI), and Root Mean Square Error of Approximation (RMSEA). Satisfactory fit values allow estimating the path parameters and testing hypotheses (Mueller & Hancock, 2019; Xia & Yang, 2019).

The possibility of explaining the causality and influence between various unobservable multivariate variables means the interest in SEM is still growing. It has been especially evident in management and economics studies in recent years (e.g., Staniec, 2018; Zhang, Dawson, & Kline, 2021; Zakrzewska-Bielawska, 2021). Despite the growing number of papers in which researchers have applied SEM to solve managerial or economic problems, there is still a need for studies synthesizing and recognizing various aspects of using SEM in the business field. Hence, the research gap has emerged. We have attempted to fill it and our study aims to provide a comprehensive review of scholarly research in management and economics focusing on quantitative methods, especially on SEM, relating to some bibliometric standards. We put the research question such: What is the scope of quantitative methods application, especially SEM, in research in the field of management and economics? To answer it we used the systemic literature review focusing on bibliometric analysis including time, most cited studies and journals as well

as geographic and industry areas, methodological context, and keywords as basic parameters of publications analysis. Our databases were Web of Science and Scopus.

The outline of the paper is as follows. In the first part, we explain the research method. Next, we present and discuss the results of our analyses relating to quantitative methods in management and economics publications and then those using SEM. Finally, the conclusions with limitations and further research directions are included.

RESEARCH METHOD

The Systematic Literature Review (SLR) procedure used in our paper was based on the steps proposed by Tranfield et al. (2003). According to them, SRL should be carried out in three stages: planning the review, conducting the review, and reporting. At the beginning, we conducted a scoping study on using quantitative methods in economics and management sciences, looking for an adequate review of the literature within this area, limited to the last five years. This limitation was due to our willingness to establish the latest trends understood as interests and tendencies in research. We entered aligned keywords into the databases, which helped to establish the state of the art in the topic area under review to date. We also drafted a review protocol to guide the review process (Figure 1).

The second stage – conducting the review – consisted of two sub-stages: literature research and screening, followed by analysis of the results obtained. The literature search was conducted on two databases: Web of Science (WoS) and Scopus on April 09, 2022. We chose these two databases because of their popularity – they contain the relatively largest number of global publications.

For the initial publication selection, we used keywords related to quantitative research, while excluding qualitative research. Then, we applied other search terms focused only on articles, conference proceedings and book chapters, published in the last five years with an additional year 2022 (so the period 2017-2022), in economics and management sciences (in WoS three categories were considered: Management, Business, and Economics, while Scopus considered two categories: Business, Management and Accounting and Economics, Econometrics and Finance). Thus, the literature search identified 879 records in the WoS database and 1681 records in the Scopus database. At this stage, we conducted a first analysis of quantitative research publications, focusing on the 10 highest cited papers (limited to author, year, number of citations, and journal data).

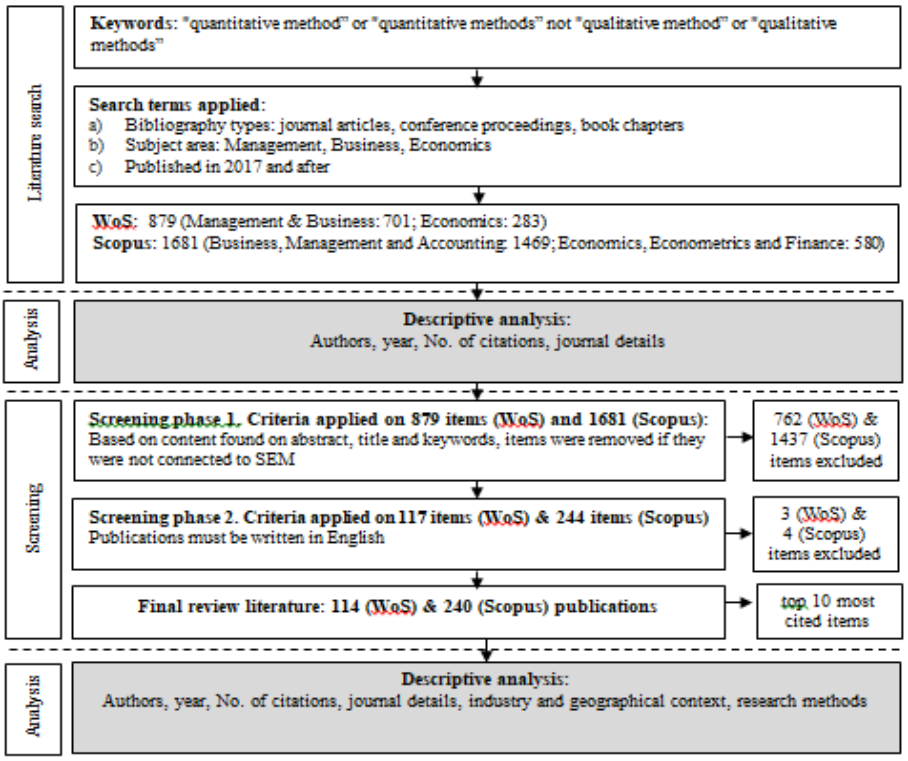

Figure 1. The systematic literature review process

Then, the above publications, as they met all the inclusion criteria specified in the review protocol, were qualified for the next phase of the review (screening), in accordance with the recommendation of Tranfield et al (2003). The inclusion process consisted of two screening phases. The first phase consisted of reading the abstracts, titles, and keywords connected to the bibliographic data and removing publications not related to structural equation modeling. This excluded 762 bibliographic items from the WoS database and 1437 items from the Scopus database. In the second screening phase, publications from Web of Science were taken into consideration, limiting them only to those published in English. Thus, seven bibliography items were excluded at this stage. Finally, 354 publications were qualified for the final review literature: 114 in the WoS and more than twice as many (240) in Scopus. Our reports were based on descriptive analyses of the highest-cited 10 papers (combined for WoS and Scopus), which examined a set of categories (such as authors, year, number of citations, journal data, and industry and geographic context, and keywords).

RESULTS

Quantitative methods in management and economics publications

The literature search yielded that the Scopus database contains more than twice as many works in both the categories discussed (i.e., management and economics) than the WoS database. The analysis also revealed a significant quantitative advantage of management papers compared to economics (Figure 2). In both databases, there were 2.5 times as many papers published in management as in economics (with some articles included in both categories together).

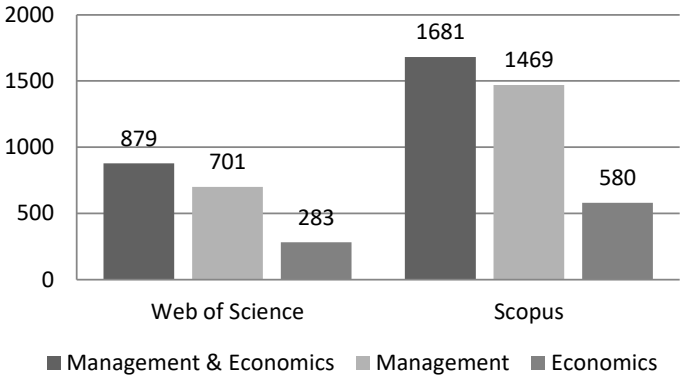

Figure 2. Number of identified publications on quantitative methods (2017-2022).

In particular, looking at the broader time context (post-1980), it is clear that the number of papers on quantitative research in management and economics has steadily increased. Between 1981 and 2022, 1814 papers on this topic were found in the WoS database, compared to 3020 in Scopus. In both databases, the distribution of publications by decade looks very similar: the first decade (1981-1990) produced 1% of all papers found, the second decade (1991-2000) - 3%, the third decade (2021-2010) - 19% (WoS) and 14% (Scopus), the fourth decade (2011-2020) - 70% (WoS) and 66% (Scopus), and finally, the last two years (2021-2022) created 12% (WoS) and 20% (Scopus).

It is interesting to relate these data to the trend observed in the increase in the number of papers based on quantitative research, without classifying them into any scientific category. Nearly 24,000 papers were identified in the WoS database, considering only scholarly articles, conference proceedings, and chapters in books. From the beginning of the 20th century until 1963,

several papers were published each year for more than half a century. In the period 1964-1990 (so less than thirty years) the numbers of these publications each year are in double digits (from 15 to 45 papers), while in the period 1991-2012 (almost 20 years) they are already in triple digits (from 153 to 940). And finally, between 2013 and 2021 (so just 8 years), over 1000 papers were published each year. It is worth noting that nearly twice as many papers were published in 2021 as in 2013 (1920 to 1056). The same trends were evident in the Scopus database, which registered more than 32,600 papers. Up until 1946, a few papers were found each year. Between 1947 and 1973, the number of papers published each year was in double digits (from 21 to 82); between 1974 and 2010, it was in triple digits (from 144 to 878); and after 2011, it was in four digits. The number of papers published in 2011 was 1027, while in 2021 - already 2662, which is almost 2.6 times more.

In the area of management, 701 quantitative method papers were identified in the WoS database, while 1469 papers were identified in the Scopus database. The number of papers in the period 2017-2021 shows an increasing trend (Figure 3). There were 89 publications in the WoS database in 2017, while the number doubled to 178 and 166 in 2020 and 2022, respectively. Similar proportions occurred in the Scopus database, with the number of papers from 2020 and 2021 (355 and 353) more than doubling compared to 2017.

In both databases, most of the identified publications are articles (about 76.7% in the WoS database and 83% in the Scopus database), while the remaining records are proceedings papers and book chapters. Almost all the publications found were in English – with the exception of 22 publications in the WoS database and 23 publications in the Scopus database (mainly in Spanish and Portuguese).

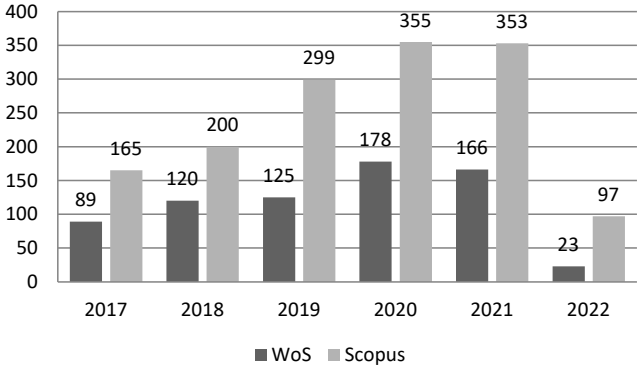

Figure 3. Number of publications on quantitative methods (Management, 2017-2022).

As a result of the analysis, the 10 most cited articles were also selected using the Google Scholar (GS) database (Table 1). It was decided to add this database as well, since it is commonly used and it contains publications not indexed in WoS and Scopus databases. The most cited paper was found to be "The Importance of Consumer Trust for the Emergence of a Market for Green Products: The Case of Organic Food" (Nuttavuthisit & Thogersen, 2017) (citation count: 455 in GS, 220 in WoS, 265 in Scopus). This publication ranked third in the WoS and the Scopus databases, just after two review publications: "Review of quantitative methods for supply chain resilience analysis" (Hosseini et al., 2019) (citation count: 426 in GS, 252 in WoS, 293 in Scopus) and "Literature review on disruption recovery in the supply chain" (Ivanov et al., 2017) (citation count: 384 in GS, 245 in WoS, 275 in Scopus).

Table 1. Measurements of publications citations (Management)

Author/s	Title	Venue of publication	GS	WoS	Scopus
(Nuttavuthisit & Thogersen, 2017)	The importance of consumer trust for the emergence of a market for green products: The case of organic food	Journal of Business Ethics	455	220	265
(Hosseini et al., 2019)	Review of quantitative methods for supply chain resilience analysis	Transportation Research Part E: Logistics and Transportation Review	426	252	293
(Ivanov et al., 2017)	Literature review on disruption recovery in the supply chain	International Journal of Production Research	384	245	275
(Zaid et al., 2018)	The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study	Journal of Cleaner Production	267	148	170
(Bruning & Campion, 2018)	A role-resource approach-avoidance model of job crafting: a multimethod integration and extension of job crafting theory	Academy of Management Journal	222	103	112
(Tu, 2018)	An exploratory study of Internet of Things (iot) adoption intention in logistics and supply chain management: A mixed research approach	International Journal of Logistics Management	190	72	109

Author/s	Title	Venue of publication	GS	WoS	Scopus
(Anggadwita et al., 2017)	Socio-cultural environments and emerging economy entrepreneurship: Women entrepreneurs in Indonesia	Journal of Entrepreneurship in Emerging Economies	170	66	95
(Wilkesmann & Wilkesmann, 2018)	Industry 4.0-organizing routines or innovations?	Vine Journal of Information and Knowledge Management Systems	163	68	78
(Li et al., 2018)	A novel approach to leveraging social media for rapid flood mapping: a case study of the 2015 South Carolina floods	Cartography and Geographic Information Science	159	94	109
(Etter et al., 2018)	Measuring organizational legitimacy in social media: Assessing citizens' judgments with sentiment analysis	Business and Society	156	89	92

Note: Citation details were retrieved on Apr. 09, 2022.

We also identified the journals with the highest number of papers using quantitative research, with an assigned h-index in Scientific Journal Rankings (SJR) in the analyzed period of time (Table 2). We selected the 10 highest ranked journals from each of the selected databases. All are categorized as business, management and accounting and only four are assigned to economics, econometrics and finance. *The Journal of Cleaner Production* ranked highest (h-index at 200), with 40 papers on quantitative methods identified. *Journal of Construction Engineering and Management* with a slightly lower h-index (114) contains 21 papers on the analyzed issues. Both journals are indexed in the Scopus database and represent – in addition to business, management and accounting – engineering, and in the case of *The Journal of Cleaner Production* – Energy and Environmental Science. In turn, in the WoS database, the highest ranking journals include: *Journal of Management Development* and *Engineering Construction and Architectural Management* (h-index: 59 and 58, respectively), in which seven papers each related to quantitative methods were identified. Both represent business, management and accounting, plus arts and humanities (*Journal of Management Development*) and Engineering (*Engineering Construction and Architectural Management*).

Table 2. Measurements of journals (Management)

Journal name	h-index in SJR*	No of articles		Journal subject area
		WoS	Scopus	
Journal of Cleaner Production	200	-	40	Business, Management and Accounting Energy Engineering Environmental Science
Journal of Construction Engineering and Management	114	-	21	Business, Management and Accounting Engineering
Journal of Management Development	59	7	-	Arts and Humanities Business, Management and Accounting
Engineering Construction and Architectural Management	58	7	-	Business, Management and Accounting Engineering
Journal of Portfolio Management	50	-	19	Business, Management and Accounting Economics, Econometrics and Finance
Journal of Islamic Marketing	39	9	-	Business, Management and Accounting
International Journal of Organizational Analysis	25	8	-	Business, Management and Accounting
Entrepreneurship and Sustainability Issues	25	7	-	Business, Management and Accounting Economics, Econometrics and Finance Environmental Science
Quality-Access to Success	21	8	-	Business, Management and Accounting
Polish Journal of Management Studies	21	9	-	Business, Management and Accounting
International Journal of Recent Technology and Engineering	20	-	25	Business, Management and Accounting Engineering
International Journal of Scientific and Technology Research	18	-	35	Business, Management and Accounting Engineering Social Sciences
Management Science Letters	17	-	23	Business, Management and Accounting
International Journal of Supply Chain Management	17	-	26	Business, Management and Accounting Computer Science Decision Sciences

Journal name	h-index in SJR*	No of articles		Journal subject area
		WoS	Scopus	
Academy of Strategic Management Journal	17		12	Business, Management and Accounting
Cogent Business & Management	16	8	-	Business, Management and Accounting Decision Sciences
International Journal of Business and Society	15	7	-	Business, Management and Accounting Economics, Econometrics and Finance
Journal of Asian Finance Economics and Business	14	52	35	Business, Management and Accounting Economics, Econometrics and Finance
African Journal of Hospitality Tourism and Leisure	11	-	17	Business, Management and Accounting Social Sciences

Note: *Data retrieved from SJR on Apr. 09 2022.

In the area of economics, 283 and 530 papers related to the topic of quantitative methods were found in the analyzed databases. In the case of WoS, their number in individual years (2017-2021) is quite similar and oscillates between 43-58 publications. In the Scopus database, an upward trend is visible, with a very large increase in papers in 2021 (183) (Figure 3).

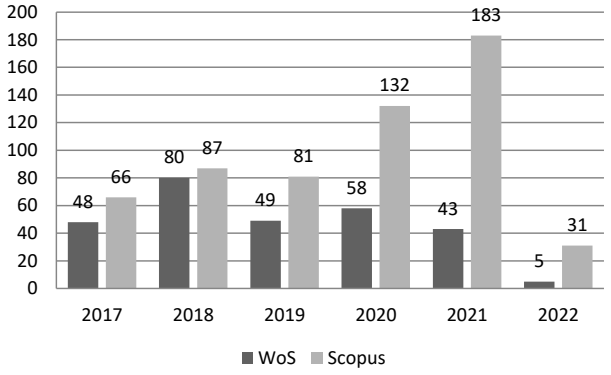

Figure 3. Number of publications on quantitative methods (Economics, 2017-2022).

In the WoS database, it is noteworthy that the share of proceedings papers is very high (42%), and only slightly more than half of the papers are articles (57%). In the case of Scopus, the majority of papers (91%) are articles, while conference proceedings have only a 2% share. The vast majority of publications in both databases are in English, with the exception of 18 publications in WoS and 24 in Scopus (publications in Russian and Spanish, among others). Next, we employed the same procedure and selected 10 of the most cited papers (Table 3). The publication "The importance of consumer trust…" (Nuttavuthisit & Thogersen, 2017) ranked first, the most cited also in the area of management. The following publications were ranked next: "Evaluating the causes of cost reduction in photovoltaic modules" (Kavlak et al., 2018) (citation count: 260 in GS, 119 in WoS, 147 in Scopus) and "Socio-cultural environments and emerging economy entrepreneurship: Women entrepreneurs in Indonesia" (Anggadwita et al., 2017) (citation count: 170 in GS, 66 in WoS, 95 in Scopus).

Table 3. Measurements of publications citations (Economics)

Author/s	Title	Venue of publication	GS	WoS	Scopus
(Nuttavuthisit & Thogersen, 2017)	The importance of consumer trust for the emergence of a market for green products: The case of organic food	Journal of Business Ethics	455	220	265
(Kavlak et al., 2018)	Evaluating the causes of cost reduction in photovoltaic modules	Energy Policy	260	119	147
(Anggadwita et al., 2017)	Socio-cultural environments and emerging economy entrepreneurship women entrepreneurs in Indonesia	Journal of Entrepreneurship in Emerging Economies	170	66	95
(Duran Sanchez et al., 2017)	Bibliometric analysis of publications on wine tourism in the databases Scopus and WoS	European Research on Management and Business Economics	141	85	94
(Sánchez et al., 2017)	Bibliometric analysis of publications on wine tourism in the databases Scopus and WoS	European Research on Management and Business Economics	141	88	92

Author/s	Title	Venue of publication	GS	WoS	Scopus
(Prochniak & Wasiak, 2017)	The impact of the financial system on economic growth in the context of the global crisis: Empirical evidence for the EU and OECD countries	Empirica	119	29	32
(Salonen, 2018)	Passenger's subjective traffic safety, in-vehicle security and emergency management in the driverless shuttle bus in Finland	Transport Policy	113	62	79
(Martín Gómez et al., 2018)	Smart eco-industrial parks: A circular economy implementation based on industrial metabolism	Resources, Conservation and Recycling	93	48	59
(Khan et al., 2019)	Exploitative and exploratory innovations in emerging economies: The role of realized absorptive capacity and learning intent	International Business Review	81	52	59
(Adnan et al., 2017)	Examining the role of consumer lifestyles on ecological behavior among young Indian consumers	Young Consumers	64	34	38

Note: Citation details were retrieved on Apr. 09, 2022.

Similarly, we used the same procedure to identify the most cited journals with the highest number of papers relating to quantitative research. The 10 most highly ranked journals were identified in both databases. The highest-ranking journals (SJR) were found in WoS: *Energy Policy*, *World Development*, *Forest Policy and Economics* (h-index: 217, 175 and 68 respectively), assigned to different areas (Table 4). Each of them published six papers related to quantitative methods. In the Scopus database, the highest ranked journals in the analyzed issues include *Environment Development and Sustainability* and *Journal of Portfolio Management* (h-index at 56 and 50). On the other hand, the highest number of publications related to quantitative methods was identified in the *Journal of Asian Finance Economics and Business* (35).

To sum up, quantitative methods are used both in management and economics but in management are much more popular. An upward trend could be noticed in both fields of analysis, especially in the Scopus database. The most cited papers are those of a review nature published in journals with wider subject areas.

Table 4. Measurements of journals (Economics)

Journal name	h-index in SJR*	No of articles		Journal subject area
		WoS	Scopus	
Energy Policy	217	6	-	Energy Environmental Science
World Development	175	6	6	Economics, Econometrics and Finance Social Sciences
Forest Policy and Economics	68	6	-	Agricultural and Biological Sciences Economics, Econometrics and Finance Environmental Science Social Sciences
Environment Development and Sustainability	56	-	8	Economics, Econometrics and Finance Environmental Science Social Sciences
Journal of Portfolio Management	50	-	19	Business, Management and Accounting Economics, Econometrics and Finance
Technological and Economic Development of Economy	47	3	-	Economics, Econometrics and Finance
International Journal of Emerging Markets	30	4	-	Business, Management and Accounting
Economic Research-Ekonomska Istrazivanja	27	3	-	Economics, Econometrics and Finance
International Journal of Business and Society	15	-	7	Business, Management and Accounting Economics, Econometrics and Finance
Journal of Asian Finance Economics and Business	14	-	35	Business, Management and Accounting Economics, Econometrics and Finance
International Journal of Entrepreneurship	12	-	8	Business, Management and Accounting Economics, Econometrics and Finance
Academy of Entrepreneurship Journal	12	-	8	Business, Management and Accounting Economics, Econometrics and Finance
Economies	11	3	-	Economics, Econometrics and Finance Social Sciences
Journal of Social Sciences Research	10	-	8	Arts and Humanities Economics, Econometrics and Finance Social Sciences
Risks	10	-	7	Business, Management and Accounting Economics, Econometrics and Finance
Estudios De Economia Aplicada	6	3	-	Economics, Econometrics and Finance
Studies in Business and Economics	3	4	-	Business, Management and Accounting Economics, Econometrics and Finance Psychology
Eurasian Studies in Business and Economics	unavailable	3	-	unavailable
Pertanika Journal of Social Sciences and Humanities	unavailable	-	13	unavailable

Note: * Data retrieved from SJR on Apr. 09 2022.

Structural equation modeling in management and economics publications

At the second stage – screening – in the collection of publications related to quantitative methods, only those in which structural equation modeling was used were selected. In the WoS database, we identified 117 such papers (including 106 in the area of management and only 11 in the area of economics). The Scopus database found more than twice as many publications on this topic – a total of 244 (including 189 representing management and 55 in economics). From this pool, we excluded seven more papers not published in English. It turned out that in both databases, the percentage of SEM-related publications represents only 15% of the total quantitative methods papers identified earlier. However, WoS and Scopus data show a clearly increasing trend in the use of structural equation modeling. Interestingly – in both databases it is quite similar: the number of papers published in 2017 and 2018 represent only 8% and 11% of all identified SEM-based papers, while in the following two years (2019 and 2020) the percentage of publications is 15% and 21%, respectively. The most number of papers using SEM were published in 2021 – approximately 30% of all papers found. Considering an even broader temporal context, it is worth noting that the first publications on SEM were published only after 1990 (this applies to management and economics). During the period 1991-2022, a total of 139 papers using SEM were found in the WoS database, while 361 papers were found in Scopus. The first paper indexed in Scopus database was published in 1998, in WoS database – only in 2005. In the period 2001-2010, about 3-4% of all found papers were created (according to WoS and Scopus), but in the period 2011-2020 – already 64% (in both databases this is the same share). In the last two years (2021-2022) – the share of papers about SEM is as high as 33% (WoS & Scopus) in the collection of all found from this topic.

Table 5 shows the 10 journals from each database where the most articles using SEM were found. The two highest-ranked journals, i.e., *Journal of Management Development* and *Journal of Islamic Marketing* (h-index: 59 and 39 respectively), published only a few articles indexed in each of the two databases analyzed (three and four indexed in WoS and four and six in Scopus). In turn, the largest number of SEM-related papers was published in the *Journal of Asian Finance Economics and Business* (16 in both databases), which is assigned to business, management and accounting andeconomics, econometrics and finance. For Scopus, *the International Journal of Supply Chain Management* proved to be also very popular (with a total of 13 articles), as well as *Management Science Letters* and *Uncertain Supply Chain Management* (nine articles each).

Table 5. Measurements of journals (SEM, Management & Economics)

Journal name	h-index in SJR*	No of articles		Journal subject area
		WoS	Scopus	
Journal of Management Development	59	3	4	Arts and Humanities Business, Management and Accounting
Journal of Islamic Marketing	39	4	6	Business, Management and Accounting
Polish Journal of Management Studies	21	1	6	Business, Management and Accounting
International Journal of Recent Technology and Engineering	20	0	6	Business, Management and Accounting Engineering
International Journal of Supply Chain Management	17	0	13	Business, Management and Accounting Computer Science Decision Sciences
Management Science Letters	17	0	9	Business, Management and Accounting
Cogent Business & Management	16	3	5	Business, Management and Accounting Decision Sciences
Uncertain Supply Chain Management	16	0	9	Business, Management and Accounting Decision Sciences
International Journal of Business and Society	15	3	3	Business, Management and Accounting Economics, Econometrics and Finance
Journal of Entrepreneurship in Emerging Economies	15	3	4	Business, Management and Accounting Economics, Econometrics and Finance
Journal of Asian Finance Economics and Business	14	16	16	Business, Management and Accounting Economics, Econometrics and Finance

Note: * Data retrieved from SJR on Apr. 09 2022.

Analysis of publications attributed to management, using previous procedures, identified the 10 most cited papers (taking both WoS and Scopus databases together) (Table 6). The top three included those publications that were also on the list of most cited papers for quantitative methods: "The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study" (Zaid et al., 2018), "An exploratory study of Internet of Things (IoT) adoption intention in logistics and supply chain management: A mixed research approach" (Tu, 2018), and "Socio-cultural environments and emerging economy entrepreneurship: Women entrepreneurs in Indonesia" (Anggadwita et al., 2017). The citation rate of these papers oscillated between 170-281 (GS), 66-147 (WoS), and 96-173 (Scopus).

Table 6. Measurements of publications citations (SEM, Management)

Author/s	Title	Venue of publication	GS	WoS	Scopus
(Zaid et al., 2018)	The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study	Journal of Cleaner Production	281	147	173
(Tu, 2018)	An exploratory study of Internet of Things (IoT) adoption intention in logistics and supply chain management: A mixed research approach	International Journal of Logistics Management	190	72	113
(Anggadwita et al., 2017)	Socio-cultural environments and emerging economy entrepreneurship: Women entrepreneurs in Indonesia	Journal of Entrepreneurship in Emerging Economies	170	66	96
(Mahmood et al., 2019)	The influence of transformational leadership on employees' creative process engagement: A multi-level analysis	Management Decision	123	49	62
(Eisingerich et al., 2019)	Hook vs. hope: How to enhance customer engagement through gamification	International Journal of Research in Marketing	105	40	52
(Khan et al., 2019)	Exploitative and exploratory innovations in emerging economies: The role of realized absorptive capacity and learning intent	International Business Review	86	52	60
(Uddin et al., 2019)	Why individual employee engagement matters for team performance? Mediating effects of employee commitment and organizational citizenship behaviour	Team Performance Management	72	29	41
(Agyabeng-Mensah et al., 2020)	Examining the influence of internal green supply chain practices, green human resource management and supply chain environmental cooperation on firm performance	Supply Chain Management - An International Journal	70	34	45
(Shafiee & Es-Haghi, 2017)	Mall image, shopping well-being and mall loyalty	International Journal of Retail & Distribution Management	50	21	26
(Han et al., 2019)	Impact of core-product and service-encounter quality, attitude, image, trust and love on repurchase: Full-service vs low-cost carriers in South Korea	International Journal of Contemporary Hospitality Management	49	18	25

Note: Citation details were retrieved on Apr. 09, 2022.

We further analyzed the extracted publications in the context of the described industry and geographical distribution (Table 7). In terms of industry, the number of publications devoted to single-industry is similar to those describing multi-industry. However, it is worth emphasizing that almost

all papers focus on Asian countries (Bangladesh, Indonesia, Pakistan, and Iran, among others). One publication is about an African country (i.e., Ghana). Moreover, the focus on Asian countries is also clearly visible in more articles. Considering the 20 most cited articles, the majority of them (14 in total) just describe Asian countries (mainly Bangladesh - three articles, Indonesia - three articles, Pakistan - two articles and Vietnam - two articles), and four articles are about African countries (Ghana - two articles, Tunisia and Egypt - one article each). Only one article is about a European country (Spain).

Table 7. Industry and geographical context of each review publication (SEM, Management)

Bibliography	Context		Geographical distribution	
(Agyabeng-Mensah et al., 2020)	Multi-industry	Food, beverage and alcohol, textiles, agrochemical and plastics	Single-country	Ghana
(Anggadwita et al., 2017)	Multi-industry	General	Single-country	Indonesia
(Han et al., 2019)	Single-industry	Airlines	Single-country	South Korea
(Mahmood et al., 2019)	Multi-industry	General	Single-country	Bangladesh
(Shafiee & Es-Haghi, 2017)	Single-industry	Mall	Single-country	Iran
(Tu, 2018)	Multi-industry	General	Single-country	Taiwan
(Uddin et al., 2019)	Multi-industry	General	Single-country	Bangladesh
(Eisingerich et al., 2019)	Single-industry	Digital service	Multi-country	General
(Khan et al., 2019)	Single-industry	Automotive	Single-country	Pakistan
(Zaid et al., 2018)	Multi-industry	Food, chemical, and pharmaceutical	Single-country	Palestine

Almost all papers represent a pure quantitative research approach (Table 8). They are primarily descriptive or causal in nature, based on primary data collected through a survey questionnaire. Only two publications are exploratory, presenting mixed models, using additional data collection and analysis methods typical of qualitative research.

Table 8. Overview of the research designs, approaches and methods (SEM, Management)

Author/s	Research Approach	Data Source	Data collection method	Methodology
(Agyabeng-Mensah et al., 2020)	Quantitative	Primary	Questionnaire	SEM
(Anggadwita et al., 2017)	Quantitative	Mixed	Documents, questionnaire	SEM
Han et al., 2019)	Quantitative	Primary	Questionnaire	SEM
(Mahmood et al., 2019)	Quantitative	Primary	Questionnaire	SEM
(Shafiee & Es-Haghi, 2017)	Quantitative	Primary	Questionnaire	SEM
(Tu, 2018)	Mixed	Primary	Interviews, questionnaire	Grounded Theory, SEM
(Uddin et al., 2019)	Quantitative	Primary	Questionnaire	SEM
(Eisingerich et al., 2019)	Mixed	Primary	Interviews, questionnaire	Inductive qualitative data analysis
(Khan et al., 2019)	Quantitative	Primary	Questionnaire	SEM
(Zaid et al., 2018)	Quantitative	Primary	Questionnaire	SEM

Note: * Design is not explicitly stated or clearly described in the text.

Papers in the area of economics are published in various journals. The most cited papers turned out to be: "Socio-cultural environments and emerging economy" (Anggadwita et al., 2017) – which is also among the top three most cited articles in the area of management. The second and third most cited articles are: "Exploitative and exploratory innovations in emerging economies: The role of realized absorptive capacity and learning intent" (Khan et al., 2019) (citation count: 86 in GS, 52 in WoS, 60 in Scopus), and "Examining the role of consumer lifestyles on ecological behavior among young Indian consumers" (Adnan et al., 2017) (citation count: 68 in GS, 34 in WoS, 64 in Scopus) (Table 9). However, the citations here are much lower than in management fields.

Table 9. Measurements of publications citations (SEM, Economics)

Author/s	Title	Venue of publication	GS	WoS	Scopus
(Anggadwita et al., 2017)	Socio-cultural environments and emerging economy entrepreneurship Women entrepreneurs in Indonesia	Journal of Entrepreneurship in Emerging Economies	170	66	95
(Khan et al., 2019)	Exploitative and exploratory innovations in emerging economies: The role of realized absorptive capacity and learning intent	International Business Review	86	52	60
(Adnan et al., 2017)	Examining the role of consumer lifestyles on ecological behavior among young Indian consumers	Young Consumers	68	34	64
(Jiménez-Barreto & Campo-Martínez, 2018)	Destination website quality, users' attitudes and the willingness to participate in online co-creation experiences	European Journal of Management and Business Economics	50	19	18
(Rani et al., 2018)	Interplay between trust and distrust in the workplace: examining the effect of psychological contract breach on organizational disidentification	Journal of Asia Business Studies	26	16	15
(Mardi et al., 2018)	Sustaining Organizational Performance Through Organizational Ambidexterity by Adapting Social Technology	Journal of the Knowledge Economy	24	10	12
(Wijaya & Suasih, 2020)	The effect of knowledge management on competitive advantage and business performance: A study of silver craft SMEs	Entrepreneurial Business and Economics Review	15	3	6
(Hoa et al., 2020)	Knowledge sharing influence on innovation: A case of textile and Garment enterprises in Vietnam	Journal of Asian Finance Economics and Business	14	12	11
(Srikalimah et al., 2020)	Do creativity and intellectual capital matter for SMEs sustainability? The role of competitive advantage	Journal of Asian Finance, Economics and Business	14	8	9
(Balcerzak & Pietrzak, 2017)	Sustainable development in the European Union in the years 2004-2013	Regional Studies on Economic Growth, Financial Economics and Management	8	8	4

Note: Citation details were retrieved on Apr. 09, 2022: * Google Scholar.

Publications relating to SEM in the field of economics were equally related to single and multi-industry. They are based on single-country, dominated – as in the case of management – by Asian countries (Table 10). Similarly, in this case, almost all of them are based on a quantitative research approach (only two also use other methods, such as Grounded Theory) as presented in Table 11.

Table 10. Industry and geographical context of each review publication (SEM, Economics)

Bibliography	Context		Geographical distribution	
(Adnan et al., 2017)	Multi-industry	General	Single-country	India
(Anggadwita et al., 2017)	Multi-industry	General	Single-country	Indonesia
(Hoa et al., 2020)	Single-industry	Textile	Single-country	Vietnam
(Mardi et al., 2018)	Multi-industry	General	Single-country	Indonesia
(Rani et al., 2018)	Single-industry	Health-care	Single-country	Pakistan
(Wijaya & Suasih, 2020)	Single-industry	Silver craft	Single-country	Indonesia
(Jiménez-Barreto & Campo-Martínez, 2018)	Multi-industry	General	Single-country	Spain
(Khan et al., 2019)	Single-industry	Automotive	Single-country	Pakistan
(Srikalimah et al., 2020)	Multi-industry	General	Single-country	Indonesia
(Balcerzak & Pietrzak, 2017)	Multi-industry	General	Multi-country	the European Union countries

Table 11. Overview of the research designs, approaches and methods (SEM, Economics)

Author/s	Research Approach	Data Source	Data collection method	Methodology
(Adnan et al., 2017)	Quantitative	Primary	Questionnaire	SEM
(Anggadwita et al., 2017)	Quantitative	Mixed	Documents, questionnaire	SEM
(Hoa et al., 2020)	Quantitative	Primary	Questionnaire	SEM
(Mardi et al., 2018)	Mixed	Primary	Questionnaire	Grounded Theory, SEM
(Rani et al., 2018)	Quantitative	Primary	Questionnaire	SEM
(Wijaya & Suasih, 2020)	Quantitative	Primary	Questionnaire	SEM
(Jiménez-Barreto & Campo-Martínez, 2018)	Mixed	Primary	Questionnaire	Content analysis, SEM
(Khan et al., 2019)	Quantitative	Primary	Questionnaire	SEM
(Srikalimah et al., 2020)	Quantitative	Primary	Questionnaire	SEM
(Balcerzak & Pietrzak, 2017)	Quantitative	Secondary	Documents	SEM

Note: * Design is not explicitly stated or clearly described in the text.

Taking into account keywords in particular papers, we observed quite big diversification. Therefore, based on our results, it was impossible to identify consistent thematic clusters. This applies to both management and economics publications. The most frequent keywords turned out to be: leadership, behavior, information, product, order, sustainability, implementation, loyalty, perception, and involvement. For the 10 papers selected from management and economics, the most frequently addressed issues appeared to be: sustainability and green economy, supply chain management, innovation and knowledge management (including absorptive capacity), leadership, and organizational behavior (Table 12).

Table 12. Author keywords (SEM, Management & Economics)

Author/s	Management	Economics	Keywords
(Adnan et al., 2017)		x	Adolescence; Children and brands; Quantitative methods
(Agyabeng-Mensah et al., 2020)	x		Collaboration; Sustainability; Environmental management; Surveys; Structural equation modelling
(Anggadwita et al., 2017)	x	x	Indonesia; Emerging economies; Women entrepreneurship
(Balcerzak & Pietrzak, 2017)		x	European Union; Structural Equation Model (SEM); Sustainable development
(Eisingerich et al., 2019)	x		Gamification; Digital service; Engagement; Hope; Compulsion; Digital sales
(Han et al., 2019)	x		Brand trust
(Hoa et al., 2020)		x	Trust; Management Support; Reward; Teamwork; Knowledge Sharing; Innovation
(Jiménez-Barreto & Campo-Martínez, 2018)		x	Co-creation; Attitude toward the website; Online co-creation experience; Tourism destination website; Website quality
(Khan et al., 2019)	x	x	Potential absorptive capacity; Realized absorptive capacity; Learning intent; Exploratory innovation; Exploitative innovation; Knowledge transfer; Automotive parts industry; Organizational learning; Quantitative methods
(Mahmood et al., 2019)	x		Task complexity; Transformational leadership; Intrinsic motivation; Creative process engagement; Support for innovation
(Mardi et al., 2018)		x	Organizational ambidexterity; Organizational performance; Social technology; Absorptive capacity

Author/s	Management	Economics	Keywords
(Rani et al., 2018)		x	Social identity theory; Organizational behaviour; Research design
(Shafiee & Es-Haghi, 2017)	x		Hedonic value; Utilitarian value; Mall image; Mall loyalty; Shopping well-being
(Srikalimah et al., 2020)		x	Creativity; Intellectual capital; Competitive advantage; SMEs; Sustainability
(Tu, 2018)	x		Internet of Things; RFID; Mixed method; Asia; Logistics and supply chain management; IoT adoption intention; Mixed research approach
(Uddin et al., 2019)	x		Organizational commitment; Positive psychology; Employee engagement; Team performance; Citizenship behaviour
(Wijaya & Suasih, 2020)		x	Business performance; Competitive advantage; Knowledge management; SEM analysis; SMEs
(Zaid et al., 2018)	x		Green human resource management; Green supply chain management; Sustainable performance; Sustainable operations management; Manufacturing sector; Palestine

DISCUSSION AND CONCLUSION

Quantitative methods are widely used by economists and management specialists who study economic and managerial problems. Their undoubted advantages, such as the possibility of testing and checking as well as repeatability which makes them more reliable, less openness to error and subjectivity thanks to straightforward, objective statistical analysis, and also prestige and technical advancements in the analytical tools used (Stockemer, 2019; Oakshott, 2020), make them popular and eagerly performed by researchers. It is confirmed by our results. Providing a comprehensive review of scholarly research in management and economics focused on quantitative methods, especially on SEM, we identified the scope and some trends of research interest in those fields, thus achieving our goal and answering the research question.

First, we proved a growing trend in a number of publications employing quantitative methods in the last five years. It is particularly marked in the number of publications indexed in the Scopus database and those related to management research. This is probably due to the fact that the field of business

and management has more journals assigned in databases than the economics field, and also more researchers represent the discipline of management.

Second, in quantitative research, a change in applying statistical methods has been observed since the 1990s. There is a move away from simple description and statistical exploration and has moved on to explaining causality and modeling, allowing for causal inference. This approach stimulates the use of structural equation modeling to test hypothetical cause-effect relationships between variables (Hair et al., 2010; Martínez-López, Gázquez-Abad, & Sousa, 2013). Thus, SEM models began to be widely used in management and economics research to identify and estimate the paths of dependencies in often complex phenomena. Hershberger (2003) reports that SEM is the most commonly used multivariate technique and Tarka (2018) states that the increase in the number of publications regarding SEM is currently one of the most discernible analytical strategies in social sciences literature. These trends confirmed our research. The increase in the number of SEM articles is visible both in WoS and Scopus databases as well as in management and economics fields. Green (2016) noticed similar trends indicating that SEM has gained increasing popularity over time with a record amount of publications in recent years, while Staniec (2018) reviewed the publications in the Elsevier database with limitations to the business management and accounting field, indicating 3492 SEM papers at the end of January 2018, of which 517 articles were published before 1998.

Third, our keywords analysis showed that scholars used SEM models for various research problems among which the most frequent keywords included issues of sustainability (Balcerzak & Pietrzak, 2017; Agyabeng-Mensah et al., 2020; Srikalimah et al., 2020; Zaid et al., 2018); supply chain management (Tu, 2018; Zaid et al., 2018), innovation and knowledge management (Hoa et al., 2020; Khan et al., 2019; Mahmood et al., 2019; Mardi et al., 2018; Srikalimah et al., 2020); leadership (Bharadwaj & Deka, 2021; Fauzi et al., 2021; Haque et al., 2020; Mahmood et al., 2019), and organizational behavior (Khalid et al., 2021; Loan et al., 2021; Rani et al., 2018; Uddin et al., 2019). This trend of variety was also observed by other researchers (e.g., Hirschmann & Swoboda, 2017; Staniec, 2018; Zhang, Dawson, & Kline, 2021). The heterogeneity of issues and also keywords according to which we made our analysis made it impossible to distinguish consistent thematic clusters for which SEM models are useful. For the same reason, the most cited papers and journals represent different problems and areas of research.

Fourth, we identified geographic and industry trends of research interest in using SEM in the business field. Most publications consider Asian countries and then African ones. Taking into account industry, both management and economics published papers on single- and multi-industry equally. It means

that SEM is appropriate for different industry contexts, which confirms its universal application indicated by some researchers (Williams, Vandenberg, & Edwards, 2009; Tarka, 2018; Mueller & Hancock, 2019).

Our results could be useful for future researchers planning research using quantitative methods, especially SEM. The most cited papers and journals could be a map pointing out which topics identified on keywords applying structural equation modeling are of the greatest interest and which journals are interested in publishing those kinds of results. Besides the inspiration for future researchers, our paper contributes to the management and economic literature by providing a systematic literature review and discussing bibliometric standards, such as time, most cited studies and journals, as well as geographic, industry, methodological context, and keywords in extracted studies. Thus, we identified trends of research interests focused on quantitative methods with concern on structural equation modeling.

Our study is not free from limitations, which points further directions of research. Firstly, publications were selected from only two databases – WoS and Scopus. Therefore, further research should include other popular databases such as Elsevier, Proquest, Emerald or Ebsco. Secondly, we focused on a descriptive review of previous research without links to SEM theory, which could be the next step for future research. Lastly, we chose only a few criteria for analysis, concentrating on basic bibliometric standards, hence future research could include additional and more sophisticated criteria as well as deep content analysis allowing to determine the state of knowledge about SEM. Overall, we are confident that our study offers an interesting map of quantitative research in the field of management and economics, which will be extended by future research, including those presented in this thematic issue of the *Journal of Entrepreneurship, Management and Innovation*.

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In this thematic issue of the *Journal of Entrepreneurship, Management and Innovation*, entitled Quantitative Research in Economics and Management Sciences, the authors used many quantitative methods and research models, e.g., SEM, PLS-SEM, or probit models. Each of these approaches is characterized by methodological rigor and an assessment of the reliability and validity of the research instruments used. Pini and Tchorek (2022) analyze the determinants of exports in two European, culturally related countries, such as Italy and Poland, using an econometric and probit model, which implies a normal distribution of errors and is adapted to binary responses (excluding size and age variables). The authors investigate the influence of many independent variables (size, age, management by

family members or external managers) on the dependent variable (export), controlling the research model by product and process innovation, location in a less developed region, operations in a high/medium-high technology-intensive sector or cooperation with many banks. The results confirm the authors' initial assumptions that the size of companies influences the exports of the surveyed countries; the age of companies exporting their goods is more important in Italy than in Poland, where no such impact has been recorded. In addition, management by an external manager increases the likelihood of exports for younger family businesses in Italy and smaller family businesses in Poland. The authors also showed that product innovation is the engine of exports in Italy and Poland, and geographic location affects the likelihood of exports in Italy, but not in Poland.

In other studies, Paulino (2022) presents the growing business analytics and business intelligence in the Philippines, their impact on organizational performance, and on marketing, financial, and business-process performance indicators. Retail companies were selected for the study, focusing on advanced data management used in business operations. The author mainly used the well-known PLS-SEM model, and his research instrument was assessed in terms of content validity, construct validity, and reliability. The results of the measurement and structural model evaluation were also subject to verification. The results indicate the impact of business analytics capabilities (including the ability of the decision support system (DSS), business process improvement (BPM), data dashboard (DD), and financial analysis (FA) on the business intelligence level. In addition, it has been empirically verified that organizational performance influences marketing, financial, and business process performance. Overall, business intelligence is an essential predictor of a retail company's organizational performance. The assumption that the level of readiness to implement business analytics can be treated as a moderating factor between business analytics and organizational performance has not been confirmed.

The next article by Klimontowicz and Majewska (2022) presents the positive impact of intellectual capital (IC), especially its three components, such as process capital, human capital and relational capital, on the competitiveness of banks and market efficiency. The authors used the following methods and tools: Principal Axis Factor Analysis, PLS-SEM, PAPI, and CAWI. As a result of their application, they emphasize that, in contrast to previous research, the process capital dominates the bank's potential to create a competitive advantage, not human capital, proving the vital role of technology and innovation. They found that competitive performance moderates the relationship between IC and market efficiency; the environment positively moderates the relationship between IC and

competitor performance as well as the relationship between competitor performance and market efficiency. The size of the bank and the length of its market activity affect the market efficiency measured by the average rate of changes in ROA and ROE. The study expands the existing evidence, mainly from well-developed countries, on the intellectual capital of Polish banks, emphasizing the process capital to a much greater extent as a modern and, so far, little exposed component of IC in other research.

The last two articles refer to human resource management. Hassan's study (2022) explores the impact of human resource management (HRM) practices on employee retention. In addition, he moderates the role of performance evaluation, training and development in the relationship between HRM practices and employee retention. Using SEM and questionnaires validated by other researchers, the author proves the originality of research in the retail sector in the Maldives on improving employee retention, a complementary approach to the impact of rewards and compensations, training and employee development, as well as assessing their results in human capital management, recommending practical solutions for the sector retail Maldives. In another study on workers' adaptive performance, Tan and Antonio (2022) use PLS-SEM to prove that the new form of remote work and the so-called e-leadership forced by the COVID-19 pandemic has changed the way employers and employees interact. Organizational commitment, teleworking, and a sense of purpose directly affect employees' adaptive performance, while the perception of e-leadership indirectly. It is also one of the first studies to capture intrinsic motivation as the antecedent of employee adaptive performance, along with perceived e-leadership and teleworking results.

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Abstrakt

CEL: *Celem artykułu jest przeprowadzenie kompleksowego przeglądu literatury z ostatnich pięciu lat aby zidentyfikować główne trendy zainteresowania badaczy zastosowaniem metod ilościowych, w szczególności modelowania równań strukturalnych (SEM). Badaniami objęto nauki o zarządzaniu i ekonomię. Określono aktywność badawczą ze względu na horyzont czasowy, najwyższy wskaźnik cytowań, kontekst geograficzny, branżowy i metodologiczny oraz słowa kluczowe wybranych do analizy publikacji.* ***METODYKA****: Badania przeprowadzono przy użyciu metody systematycznego przeglądu literatury (SLR) wykorzystując dwie kluczowe bazy danych, jak Web of Science i Scopus. Analizie poddano wyłącznie opracowania z ostatnich pięciu lat. W celu rozpoznania trendów badawczych wykorzystano słowa kluczowe związane z badaniami ilościowymi, wykluczając jednocześnie badania jakościowe jako kryterium poszukiwań. Następnie przeanalizowano publikacje związane z SEM oraz te opublikowane w języku angielskim.* ***WYNIKI:*** *Uzyskane wyniki potwierdziły, że metody ilościowe są wykorzystywane zarówno w badaniach z zakresu zarządzania, jak i ekonomii oraz wykazują trend rosnący w zakresie liczby publikacji w ciągu ostatnich pięciu lat. Jednocześnie publikacji z zakresu zarządzania jest znacznie więcej niż z ekonomii, przy większej ich liczebności w bazie Scopus niż Web of Science. Biorąc pod uwagę modelowanie równań strukturalnych, metoda ta jest stosowana przede wszystkim w badaniach z zakresu zarządzania. W ujęciu branżowym, publikacje wykorzystujące SEM dotyczyły zarówno analiz jedno-, jak i wielobranżowych, obejmując w pierwszej kolejności kraje azjatyckie, a następnie afrykańskie. Z kolei badania z zakresu ekonomii są bardziej jednorodne, obejmując najczęściej jedną branżę lub jeden kraj. Publikacje, zwłaszcza z zakresu zarządzania, mają charakter deskryptywny i bazują na danych pierwotnych zebranych za pomocą kwestionariusza ankiety. Opracowania podlegające analizie zostały opublikowane w różnych czasopismach, jednak najczęściej cytowane są te zamieszczone w czasopismach o szerszym zakresie tematycznym.* ***IMPLIKACJE:*** *Systematyczny przegląd literatury jest ważną metodą systematyzacji wiedzy i określania trendów badawczych w każdej dyscyplinie naukowej, inspirując i dostarczając implikacji badawczych. Nasze wyniki, poprzez wskazanie najczęściej cytowanych artykułów i czasopism a także branż i obszarów geograficznych prowadzonych analiz, mogą być przydatne dla przyszłych badaczy planujących badania z wykorzystaniem metod ilościowych, zwłaszcza SEM, w obszarze zarządzania lub ekonomii.* ***ORYGINALNOŚĆ/WARTOŚĆ:*** *Artykuł jest próbą powiązania metod ilościowych, ze szczególnym uwzględnieniem SEM, z problematyką nauk o zarzadzaniu i ekonomii przy wykorzystaniu publikacji indeksowanych w bazach Web of Science i Scopus. Wykorzystując systematyczny przegląd literatury i analizę cytowań, artykuł ukazuje trendy i aktualny stan badań w zakresie wykorzystania metod ilościowych w literaturze biznesowo-ekonomicznej, wypełniając lukę poznawczą w tym obszarze.*

Słowa kluczowe: *metody ilościowe, modelowanie równań strukturalnych, SEM, systematyczny przegląd literatury, SLR, zarządzanie, ekonomia, analiza cytowań, obszar geograficzny, przemysł, Web of Science, Scopus*

Biographical notes

Agnieszka Zakrzewska-Bielawska is a full professor and head of the Institute of Management, Lodz University of Technology, Poland. Her research interests focus on strategic management and the organization of enterprises. In particular, the main research topics are creating and implementing strategies, especially in the high-tech sector, inter-organizational relations including the strategy of cooperation and coopetition as well as the evolution and changes of organizational structures, and recently the concept of ambidexterity. She is the author or co-author of over 160 scientific publications in Polish and English. She has participated in and managed numerous research projects, including those financed by the National Science Center. She is a member of the Presidium of the Organization and Management Sciences Committee of the Polish Academy of Sciences, and also a member of the Strategic Management Society, Academy of Management, and the Polish Economic Society in Lodz.

Anna M. Lis is the Associate Professor at the Gdańsk University of Technology. Her scientific interests have been focused on problems related to institutional forms of support provided for the development of inter-organizational cooperation including cluster organizations and business environment institutions. Her recent research concerns issues related to sustainability, the green economy, and the circular economy. She has participated in many research projects implemented at academic centers, as well as in projects requested by the public authorities.

Anna Ujwary-Gil is a professor at the Institute of Economics, Polish Academy of Sciences in Warsaw, Poland. She received her Ph.D. and habilitation in economics and management from the Warsaw School of Economics, Poland. She is founder and president of the Cognitione Foundation for the Dissemination of Knowledge and Science. Her research interests include social (organizational) network analysis, knowledge management, intellectual capital, resource-based views, and dynamic approaches to organization and management. She has published her works in *Library & Information Science Research, Electronic Markets, Journal of Business and Industrial Marketing,* and *Economics & Sociology.*

Conflicts of interest

The authors declare no conflict of interest.

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