

Research Trends in Japanese Public Administration: Statistical Content Analyses of Article Titles in Public Administration Review Quarterly (1978–2019)

Yasutoshi Moteki (✉ moteki@hiroshima-u.ac.jp)

Hiroshima University <https://orcid.org/0000-0001-7763-670X>

Research Article

Keywords: Japanese public administration, text mining, research trends, content analysis, administrative reforms, evaluations, Kaizen

Posted Date: February 25th, 2022

DOI: <https://doi.org/10.21203/rs.3.rs-1106615/v2>

License:  This work is licensed under a Creative Commons Attribution 4.0 International License.

[Read Full License](#)

Abstract

This paper quantitatively explains research trends in postwar administrative studies in Japan using statistical analyses of nearly 40 years of article titles from *the Public Administration Review Quarterly*, from its first (1978) to 165th issue (2019). Published quarterly by the Institute of Administrative Management, which is tied to the Ministry of Internal Affairs and Communications, this is a renowned journal in public administration in Japan. The co-occurrence network analysis and correspondence analysis revealed changes in research interests. There was substantially more research on administrative reforms through the postwar *Showa* and *Heisei* eras. The configuration figures of the correspondence analysis indicate that the first dimension concerns administrative reforms, the second concerns historical events/administrative systems, and the third concerns evaluations and *Kaizen*. The co-occurrence network analysis showed that studies during the *Showa* era (1978–1988) could be partly characterized by two extracted compound words: the *United States* and the *United Kingdom*. In other words, public administration in Japan in this period was strongly influenced by Western public administration. *Japan* became a feature of studies of public administration during the *Heisei* era (1989–2018). These features are consistent with those found in previous quantitative studies.

Introduction

With the rise of online journals and mega-journals based on the premise of open access, an increasing number of papers are being published, predominantly in English, which is the main language used in the academic world. Previously published research in native languages is now being written in English and published in English journals, partly because of the development of AI-based machine translation technology. Since 2019, COVID-19, now a global pandemic, has generated a large body of academic literature on the disease and how to respond to it. This includes the status of infections in countries worldwide, success or failure of policies to address the same, and effective treatment strategies for patients. Much of the literature on COVID-19 has also been subjected to bibliometric analysis, a frequent practice in other fields since the 1990s (Akintunde et al., 2021).

Research on public administration in Japan is increasingly being published in English, particularly by young researchers. However, to catch up with the West on the development of the nation, public administration and other academic studies have been developed in Japanese, the native language since the Meiji era. Thus, the research published in Japanese has accumulated. Research on Japanese public administration is now being published in English, but it is difficult to understand the context in terms of research position and practical implications in Japan by simply reading these papers in isolation. Therefore, this study analyzed the titles of articles in *the Public Administration Review Quarterly* of Japan from its first (1978) to 165th issue (2019) to quantitatively assess the research trends of postwar public administration in Japan. Published quarterly by the Institute of Administrative Management in Japan, this journal is one of the most renowned in the field of Japanese public administration. The institution is closely tied to the Ministry of Internal Affairs and Communications. The term “42 years” comprises the postwar *Showa* and *Heisei* eras. Public administration studies in Japan after World War II (WWII) have

been strongly influenced by public administration in the United States. Initially, the focus was on the introduction of American theories. However, as a result of the accumulated research in Japan, there has been an increase in studies that seek solutions to administrative issues in Japan.

In this study, the author uses the text mining technique, a method enabling the quantitative analysis of qualitative information. One advantage of this type of quantitative method is that other researchers can perform additional tests and reproduction studies. Ni et al. (2017) used the bibliometric method to examine research trends in American studies on public administration using PDF files (3,934 articles) of the *Public Administration Review (PAR)* from 1940 through 2013. The analysis focused on the characteristics of authorship including the most productive authors, authors' institutions, gender composition, and the author's profession as a scholar or practitioner. In addition to authorship, word analysis was conducted to identify the top 50 most-frequent title words to explain differences between the periods 1940–1964, 1965–1989, and 1990–2013 (Appendix C). The article referred to previous quantitative research using bibliometric data of the *Public Administrative Review* (p. 505).

Qualitative Analysis of Research Trends in Public Administration in Japan

Public administration scholars at the University of Tokyo and Kyoto University have been very influential in the field. This is because Japan's modern administrative science started in 1921, before WWII, when university departments in Public Administration were established at Tokyo Imperial University and Kyoto Imperial University (the predecessors of the abovementioned two universities) (Nishio, 2001, p. 43). One of the most popular textbooks in Japanese public administration was published by a professor at the University of Tokyo who considered institutions, administration, and policies important aspects of public administration in Japan (Nishio, 2001, pp. 50–51). This textbook is also widely used by college students preparing for civil service examinations at the national and local levels. Professors in Japanese universities consider these three aspects important in their lectures on the subject of public administration.

In contrast to Nishio (2001), who considered administration as one perspective, Muramatsu (2001) (who wrote another influential textbook as a professor at Kyoto University) took the position that public administration belonged to the political sciences (the subtitle of the textbook in Japanese is *Political Analysis of Modern Public Administration*). Muramatsu (1983) formulated a four-quadrant matrix of studies of public administration in Japan, which includes foreign countries, Japan, theories, and practices (figure on p. 49). He highlighted a lack of research in two quadrants: Japanese theories and practice in foreign countries. According to him, public administration in Japan at that time focused on foreign theories and Japanese practice. Moreover, he argued that studies on public administration in Japan needed to deepen its research on practice in foreign countries and create theories based on the Japanese context.

Material And Methods

Material Collection

To grasp postwar research trends in public administration in Japan, the titles of *Public Administration Review Quarterly* were gathered as target data. First, the keyword *Kikan Gyosei Kanri Kenkyu* (the Japanese title) was used to search the CiNii (Citation Information by NII) Articles database organized by the National Institute of Informatics (NII). Second, the author chose to display the search results in a Tab Separated Values (TSV) format and saved the results (September 11, 2019, implementation). Finally, the author converted the TSV files into a Microsoft Excel spreadsheet. As issues 1–4 were not included in the CiNii database, the author used the printed paper publications and entered the data into the Excel dataset. To enable reproduction studies, the author conducted a machine translation from Japanese to English using Google Translate. The author read through the results and confirmed the appropriateness of the translation. Thereafter, the titles of the articles were treated in English.

For the dataset file, the author made the following modifications: (1) Titles (cases) indicating “book reviews” were deleted. (2) Titles related to special articles on academic association conferences were excluded. (3) Non-papers such as lectures and forewords were deleted. Furthermore, issues 1–4 were added, as mentioned, to the original 1,356 cases. As a result of the abovementioned modifications, 842 titles of papers remained in the dataset.

To examine this text data, this study used the KH Coder (version 3.Alpha.17k) developed by Dr. Higuchi Koichi of Ritsumeikan University. This free-to-use software was developed via a Grant-in-Aid for Scientific Research of the Ministry of Education, Culture, Sports, Science and Technology, Japan (Higuchi, 2016). For a morphological analysis of the sentences, the author used Stanford POS Tagger.

Processing compound words for technical terms by using the program alone may be insufficient. Therefore, the author used all the words listed in the index compiled by Nishio (2001) in the standard textbook for public administration in Japan. As a result, the number of compound words based on Nishio’s (2001) index became 815. Following this process, the author checked the extracted words. Important concepts that were not extracted, such as “governance” and “the United Kingdom,” were added manually to the list of compound words.

Results

To examine the relationships between the extracted words, the author performed a correspondence analysis and co-occurrence network analysis. Using 10-year time periods as external variables in deriving relationships between the extracted words led to an understanding of the transition and characteristics of each period in studies on public administration.

Co-occurrence Network Analysis

The co-occurrence network analysis was performed to understand how the focus changed from the first period (the *Showa* era, 1978–1988) to the second period (the *Heisei* era, 1989–2018). In Japanese local governments, public officers use the Japanese periods (*Wareki*), which are named according to the reign of each emperor (*Tennou*). To compare the differences between the first decade and those that follow, the author used these Japanese periods. In the co-occurrence network analysis shown in Figure 1, the Japanese time periods *Showa* and *Heisei* were selected as external variables to draw the figures. To filter up to 60 edges (nodes), the Jaccard index was used as the selection criteria. (For a mathematical explanation of the Jaccard Index, see McCormick et al. (1992).)

Regarding words closely connected to the *Showa* era (on the right side of the figure), we see examples in article titles from the United States and the United Kingdom. Also evident are some of the specific themes of these papers that introduce each country's administrative practices and institutions. In titles from the United Kingdom, we found mentions of the civil service system, political appointment system of officials, and industrial policy of the country. In titles from the United States, we found mentions of the parliamentary system, Office of Management and Budget, and approval process for new medications. After its defeat in WWII, and especially as a result of the American occupation, Japan witnessed an evolution of the social sciences, taking the United States and the United Kingdom as exemplars.

In contrast, Japan is located on the left side of the figure (related with the *Heisei* era). Here, *Japan* emerged as a popular topic in administrative research in the *Heisei* era because the Great East Japan Earthquake of 2011 had a significant impact on the government, and the journals analyzed in this study featured policies and systems related to the earthquake and the crisis it caused. This indicates that research trends shifted from studies involving cases of foreign countries to those on domestic cases and solutions, partly because of the economic, human, and environmental problems caused by the earthquake. In addition, we see *Governance*, *Local Government*, and *Policy Evaluation* on the left side of the figure (*Heisei* era). These words indicate research features regarding the respective time periods. At the center of the figure, we see the extracted compound words such as *reform*, *administrative reform*, *management*, *theory*, and *administration*. These are common words across both time periods.

Figure 1: Co-occurrence Network Analysis of Extracted Words (*Showa* and *Heisei* Time Periods)

[Insert Figure 1 here.]

Correspondence Analysis

A correspondence analysis, a typical technique for graphically displaying category data, was also conducted. To grasp the changes and periodical characteristics of research trends in public administration in Japan, the author used a 10-year time period as an external variable, creating 5 time periods.

Figure 2 is the result of the correspondence analysis. The extracted words located near the origin where two dimensions intersect do not have distinctive features. Dimension 1 is an axis from left to right. We see the word *Rincho* at the far left of the configuration map. *Rincho* represents the abbreviations of government commissions for the administrative reforms from 1961–1964 (the *Ikeda* Administration) and 1981–1983 (the *Suzuki* and *Nakasone* Administrations). On the far right of the figure, we see the *Great East Japan Earthquake* and *Governance*. These extracted words differ from those related to the administrative reforms. Here, the author interpreted dimension 1 as an axis of administrative reforms.

Regarding dimension 2, we see *Information disclosure*, *Gyokakushin*, and *Policy Evaluation* on the lower part of the figure. The Act on Access to Information Held by Administrative Organs enacted in 1999 established a mechanism for government agencies to disclose information. *Gyokakushin* (an abbreviation of *Rinji Gyosei Kaikaku Suishin Shingikai* [Extraordinary Administrative Reform Promotion Council]) started in July 1983 during the era of the *Nakasone* Administration. The Government Policy Evaluations Act (Act No. 86 of June 29, 2001) introduced policy evaluations at the national government level. In the upper part of the figure, we see *Great East Japan Earthquake*, *History*, and *Development*. Considering the foregoing, the author interpreted dimension 2 as an axis of historical events/administrative systems.

Figure 3 is a configuration map of dimensions 2 and 3. We see *Gyokakushin* and *Case Study* at the top of the figure. In the lower part of the figure, we see *Policy Evaluation* and *improvement (Kaizen)*. Based on these extracted words, the author interpreted dimension 3 as an axis of evaluations and *Kaizen*.

Figure 2: Correspondence Analysis (the first and second dimensions)

[Insert Figure 2 here.]

Figure 3: Correspondence Analysis (the second and third dimensions)

[Insert Figure 3 here.]

Discussion

In this section, the results of text mining are discussed in contrast to the factors pointed out in Nishio (2001) and Muramatsu (1983). The correspondence analysis showed three dimensions: administrative reforms, historical events/administrative systems, and evaluations and *Kaizen*. The first dimension implies that problems related with administrative matters, which Nishio (2001) highlighted as an important perspective, are actually features of public administration in Japan that appeared in the *Public Administration Review Quarterly* of Japan. Muramatsu (1983) emphasized the need for studying practices in foreign countries and creating theories based on the Japanese reality. The co-occurrence network analysis, which focused on differences between the *Showa* and *Heisei* eras, revealed that studies during the *Showa* era (1978–1988) could be partly characterized by the two extracted compound words:

the United States and the United Kingdom. *Japan* became a feature of studies on public administration during the *Heisei* era (1989–2018). This result indicates that Japanese studies on public administration shifted from importing theories from the United States and the United Kingdom to conducting research on practices in Japan.

Concerning dimension 2 of the configuration map (Figure 2), at the top of the figure, we see the *Great East Japan Earthquake*. The earthquake occurred in 2011, and greatly influenced the theories and practice of public administration in Japan. Historical events such as the Great East Japan Earthquake have significantly impacted research in this field and the movement toward administrative reforms, modeled after corporate management, and have been a major pillar of these studies in Japan.

Related Studies

For the content analysis, an accumulation of research dates back to Krippendorff (1980). Regarding studies on research trends of public administration, Wald (1973) attempted to quantitatively assess the research trends of public administration in the United States using the Delphi method. Content analysis methods are often called bibliometric analyses and are an important part of research evaluation methods. As explained in the introduction, Ni et al. (2017) conducted a 75-year bibliometric analysis and introduced Gooden (2015), Groeneveld et al. (2015), Perry and Kraemer (1986), and Jones and Doss (1977). Gooden (2015) found that the percentage of articles on social equity published in the *Public Administration Review* fell below 5% from 1940 to 2013, and those published focus on personnel and public policy areas. An example of a recent bibliometric analysis was conducted by Agrifoglio et al. (2021) based on a systematic literature review of knowledge management in public organizations using the Scopus and Web of Science databases. Cuccurullo et al. (2016) conducted a bibliometric analysis of research trends on performance management in both business administration and public administration using 25 years of data.

For research using text mining techniques in social sciences, Amado et al. (2018) applied the text mining approach to management studies. White et al. (2016) also conducted a management study using the text mining approach. Krallinger et al. (2008) offer an example in the context of genome biology. Similarly, Kwon (2022) examined the research debate on transparency in the social sciences through bibliometric analysis. He used historiography and co-occurrence analyses to analyze and visually clarify the changing academic interest in transparency and relationships between themes. A co-occurrence analysis was also used by the author in this study. Furthermore, Hung (2012) used refereed journal articles and proceedings obtained from the Science Citation Index/Social Science Citation Index from 2000 to 2008. In the field of public administration, however, the author cannot find any literature using this technique in English journals. The author also examined articles from another major academic journal in Japanese public administration (*The Annals of the Japanese Society for Public Administration*) using the text mining method (Moteki, 2020).

In terms of Japanese academics, Saito (2011) surveyed studies using text mining methods in the social and natural sciences, and Sakushima et al. (2012) employed it for titles in the academic journal “Clinical

Neurology,” obtaining text data from the CiNii database. Their research included a correspondence analysis. Although the research area differs from that in this article, this study refers to the method of Sakushima et al. (2012).

Conclusion

This study quantitatively examined research trends in postwar administrative studies in Japan using statistical analyses of nearly 40 years' worth of article titles from *Public Administration Review Quarterly*, from its first (1978) to 165th issue (2019). After implementing a morphological analysis using Stanford POS Tagger, a co-occurrence network analysis and correspondence analysis were conducted, revealing changes in research interests over time. Specifically, there was substantially more research on administrative reforms through the *Showa* and *Heisei* eras, which spans 42 years. This feature is consistent with Administration, one of the three perspectives of public administration in Japan Nishio (2001) pointed out.

The results of the co-occurrence network visualized differences across research trends between the *Showa* and *Heisei* eras. Traditional Japanese studies on public administration focused on introducing foreign theories from the United States and the United Kingdom to actual Japanese policies. The extracted word *Japan* in the co-occurrence network figure implies a research shift of these Japanese studies of public administration to create their own administrative theories.

In the correspondence analysis, both the first and second dimensions and the second and third dimensions were selected as the axes of the configuration figures describing the relationships between the extracted words. The following interpretations can be derived from each configuration figure: The first dimension concerns administrative reforms, the second concerns historical events/administrative systems, and the third concerns evaluations and *Kaizen*. Policy evaluations are an important stage during policy processes. (Nishio (2001) considered policies an important perspective.) The introduction of management methods from the private sector, such as *Kaizen*, into the Japanese government is also a major feature. These methods of improving organizational management are further related to Administration, which Nishio pointed out.

Based on the above, these features show that the major pillars of Japanese postwar administrative studies from 1978 to 2019 are consistent with the qualitative research of Nishio (2001) and Muramatsu (1983). Previous qualitative research relied on the analysts' experience and perceptions and can be comprehensively re-examined in light of the findings of this study. Nishio (2001) considered institutions, administration, and policies important aspects of public administration in Japan, and these are the three dimensions of the correspondence analysis of this study. The qualitative analysis herein was based on the researcher's experience, but validated by a quantitative analysis of the data, strengthening this study's contribution to the research field. Muramatsu's (1983) emphasis on the need for theories based on Japanese practices is demonstrated in the co-occurrence network analysis in this study, which focused on the differences between the *Showa* and *Heisei* eras. The changes in public administration in Japan,

which Muramatsu (1983) pointed out as necessary, have been quantitatively confirmed by the empirical evidence of the text mining method of changes in the frequency of use of the terms “United States,” “United Kingdom,” and “Japan.” Moteki (2020) analyzed the titles of another journal on public administration in Japan. This study was published in the Japanese language. In the study, the three dimensions of the correspondence analysis were time, evaluation and reform, and policy process. While similar, the results of the two studies differ slightly. The variation stems from the difference in the journals’ respective target readers and characteristics. The author will examine these differences further in future research.

Declarations

Declaration of Conflicting Interests

The author declares no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The author received no financial support for the research, authorship, and/or publication of this article, except for subsidies for English editing at the affiliated institution.

References

- Agrifoglio, R., Metallo, C. & di Nauta, P. (2021). Understanding knowledge management in public organizations through the organizational knowing perspective: A systematic literature review and bibliometric analysis. *Public Organization Review*, 21, 137–156. <https://doi.org/10.1007/s11115-020-00480-7>
- Akintunde, T. Y., Musa, T. H., Musa, H. H., Musa, I. H., Chen, S., Ibrahim, E., Tassang & Helmy, M. S. E. D. M. (2021). Bibliometric analysis of global scientific literature on effects of COVID-19 pandemic on mental health. *Asian journal of psychiatry*, 63, 102753. <https://doi.org/10.1016/j.ajp.2021.102753>
- Amado, A., Cortez, P., Rita, P., & Moro, S. (2018). Research trends on Big Data in Marketing: A text mining and topic modeling based literature analysis. *European Research on Management and Business Economics*, 24(1), 1–7. <https://doi.org/10.1016/j.iedeen.2017.06.002>
- Cuccurullo, C., Aria, M. & Sarto, F. (2016). Foundations and trends in performance management. A twenty-five years bibliometric analysis in business and public administration domains. *Scientometrics* 108, 595–611. <https://doi.org/10.1007/s11192-016-1948-8>

Gooden, S. T. (2015). PAR's social equity footprint. *Public Administration Review*, 75(3), 372–381. <https://doi.org/10.1111/puar.12346>

Goyal, N. A. (2017) “review” of policy sciences: bibliometric analysis of authors, references, and topics during 1970–2017. *Policy Sciences*, 50, 527–537 (2017). <https://doi.org/10.1007/s11077-017-9300-6>

Groeneveld, S., Tummers, L., Bronkhorst, B., Ashikali, T., & Van Thiel, S. (2015). Quantitative methods in public administration: Their use and development through time. *International Public Management Journal*, 18(1), 61–86. <https://doi.org/10.1080/10967494.2014.972484>

Higuchi, K. (2016). A Two-step approach to quantitative content analysis: KH Coder tutorial using Anne of Green Gables (part I). *Ritsumeikan Social Science Review*, 52(3), 77–91.

Hung, J. L. (2012). Trends of e-learning research from 2000 to 2008: Use of text mining and bibliometrics. *British journal of educational technology*, 43(1), 5–16. <https://doi.org/10.1111/j.1467-8535.2010.01144.x>

Jones Jr, W. A., & Doss Jr, C. B. (1977). Contributions to the Public Administration Review: 1966–1975. *Public Administration Review*, 270–275. <https://doi.org/974822>

Krallinger, M., Valencia, A., & Hirschman, L. (2008). Linking genes to literature: text mining, information extraction, and retrieval applications for biology. *Genome biology*, 9(2), S8. <https://doi.org/10.1186/gb-2008-9-s2-s8>

Krippendorff, K. (1980). *Content analysis: An introduction to its methodology*. Sage.

Kwon, O.J. (2022). Tracing two faces of extended visibility: A bibliometric analysis of transparency discussions in social sciences. *Quality and Quantity*, (2022). <https://doi.org/10.1007/s11135-022-01334-8>

McCormick, W. P., Lyons, N. I., & Hutcheson, K. (1992). Distributional properties of jaccard's index of similarity. *Communications in Statistics: Theory and Methods*, 21(1), 51–68. <https://doi.org/10.1080/03610929208830764>

Moteki, Y. (2020). Sengo Nihon no Gyosei-gaku Kenkyu no Teiryō-teki Kento: “Nenpo Gyosei Kenkyu” (1962–2018) Keisai Ronbun Daimoku no Tekisutomainingu Shuhoni Motodzuku Toketei-teki Naiyo Bunseki [Focus Changes in Administrative Studies in Postwar Japan: Statistical Content Analyses of Articles in The Annals of the Japanese Society for Public Administration (1962–2018)]. *Hiroshima Hougaku [The Hiroshima Law Journal]*, 43(4), 206–235. <http://doi.org/10.15027/49260>

Muramatsu, M. (2001). *Gyoseigaku Kyokasho: Gendai Gyosei no Seiji Bunseki* [Political Analysis of Modern Public Administration] (2nd eds.). Tokyo: Yuhikaku.

Muramatsu, M. (1983). *Gyoseigaku no Kadai to Tenbo* [Issues and Prospects of Public Administration]. *Nenpo Gyosei Kenkyu [The Annals of the Japanese Society for Public Administration]*, 17, 39–59.

Nederhof, A.J., Zwaan, R.A., De Bruin, and Dekker, P. J. (1989). Assessing the usefulness of bibliometric indicators for the humanities and the social and behavioural sciences: A comparative study. *Scientometrics* 15, 423–435. <https://doi.org/10.1007/BF02017063>

Ni, C., Sugimoto, C. R., & Robbin, A. (2017). Examining the evolution of the field of public administration through a bibliometric analysis of public administration review. *Public Administration Review*, 77(4), 496–509. <https://doi.org/10.1111/puar.12737>

Nishio, M. (2001). *GyoseiGaku [Public Administration]* (new ed.) Tokyo:Yuhikaku.

Perry, J. L., & Kraemer, K. L. (1986). Research Methodology in the *Public Administration Review*, 1975–1984. *Public Administration Review*, 215–226. <https://doi.org/3110436>

Saito, A. (2011). *Nihon ni okeru Tekisutomainingu no Oyo [Application of text mining in Japan]*. *The University of Kitakyushu Economic Association Working Paper Series*, (2011–2012). https://www.kitakyu-u.ac.jp/economy/study/pdf/2011/2011_11.pdf

Sakushima, K., Sasaki, H., & Tashiro K. (2012). *Tekisutomainingu wo Mochiita Gakkaishi Ronbun Taitoru no Jikeiretsu bunseki: Nihon Shinkei Gakkai-shi 'Rinsho Shinkei-gaku' no Bunseki [Time-series analysis of the titles of the journal articles using text mining: analysis of the journal of the Japanese Society of Neurology Clinical Neurology. Iryo Jyoho Gaku [Medical Informatics]*, 32(6), 315–321. <https://doi.org/10.14948/jami.32.315>

Virani, A., Wellstead, A.M. & Howlett, M. (2020). Where is the policy? A bibliometric analysis of the state of policy research on medical tourism. *Global Health Research and Policy*, 5, 19. <https://doi.org/10.1186/s41256-020-00147-2>

White, G. O., Guldiken, O., Hemphill, T. A., He, W., & Khoobdeh, M. S. (2016). Trends in international strategic management research from 2000 to 2013: text mining and bibliometric analyses. *Management International Review*, 56(1), 35–65. <https://doi.org/10.1007/s11575-015-0260-9>

Figures

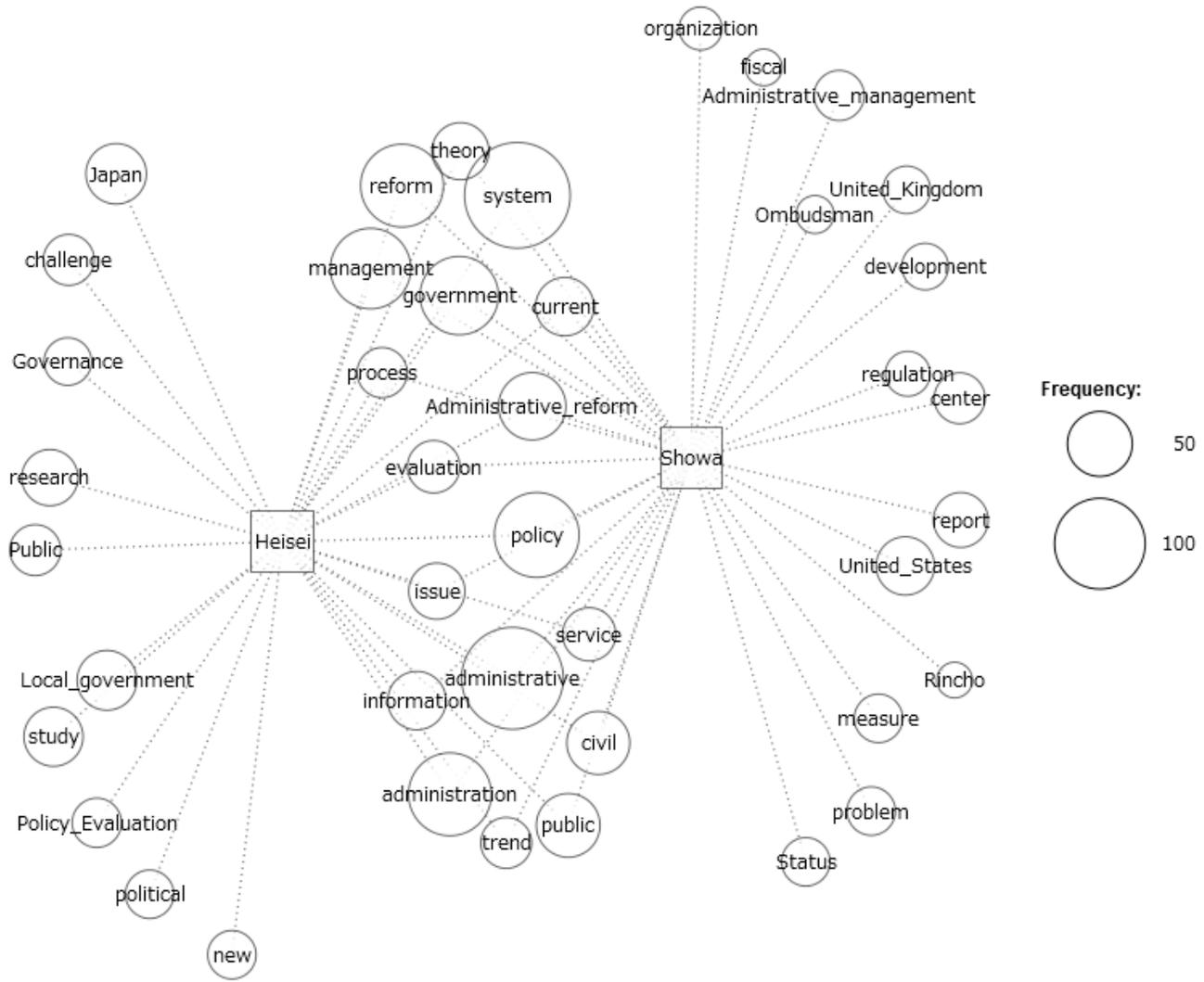


Figure 1

Co-occurrence Network Analysis of Extracted Words (*Showa* and *Heisei* Time Periods)

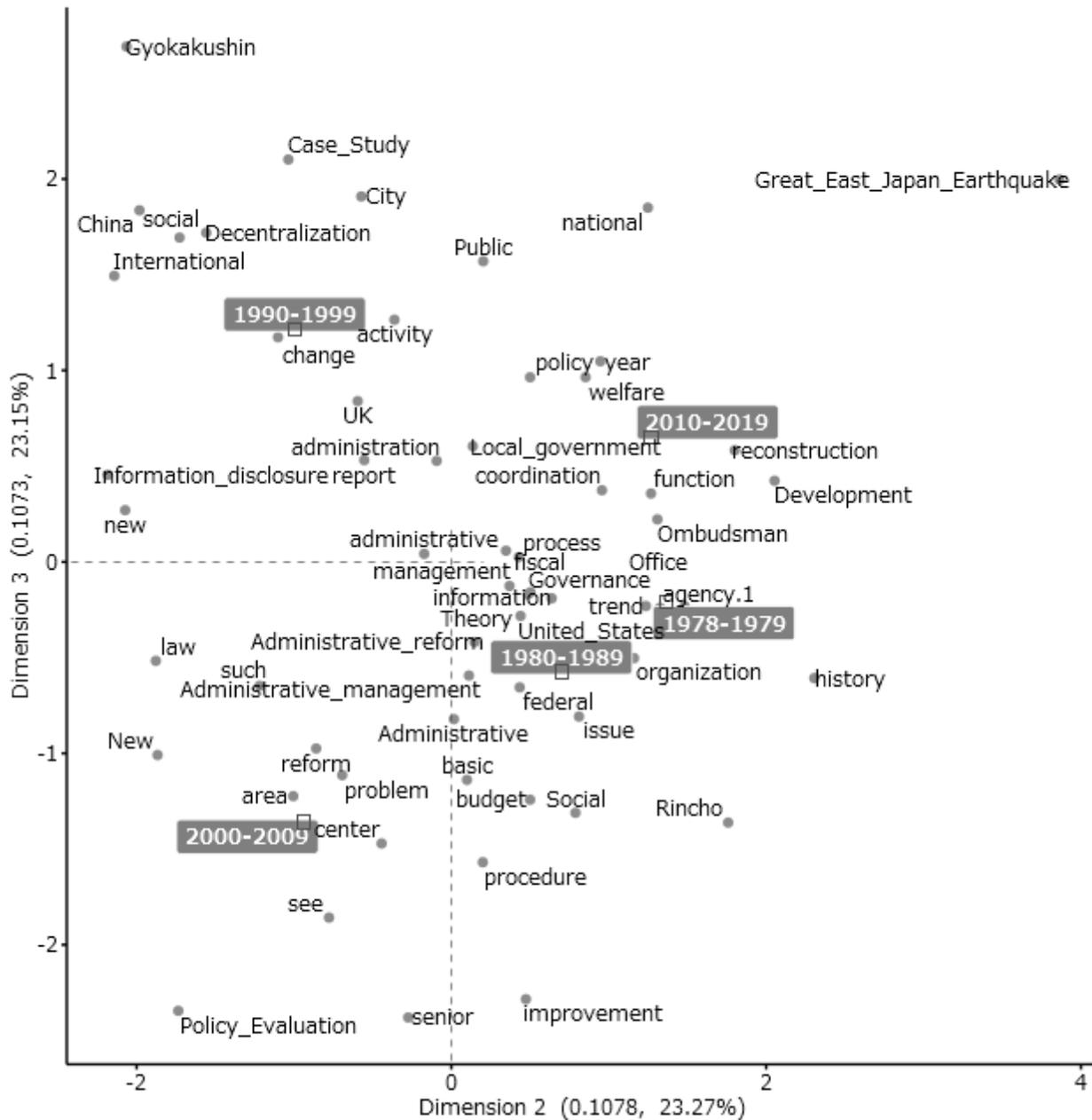


Figure 3

Correspondence Analysis (the second and third dimensions)