

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

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## Research Article

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# Abstract

This paper quantitatively explains research trends in postwar administrative studies in Japan using statistical analyses of nearly 40 years of article titles from *Public Administration Review Quarterly*, from its first issue (1978) to the 165th issue (2019). Co-occurrence network analysis and correspondence analysis revealed changes in research interests. There was substantially more research on administrative reforms through the post-war *Showa* and *Heisei* eras.

The configuration figures of correspondence analysis can be interpreted to mean that the first dimension concerns administrative reforms; the second dimension concerns historical events/administrative systems; and the third dimension concerns evaluations and *Kaizen*. Co-occurrence network analysis showed that the 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 of public administration during the *Heisei* era (1989–2018). These features are basically consistent with the previous quantitative studies.

## Introduction

In order to quantitatively assess the research trends of the postwar public administration of Japan, this paper analyzed the titles of articles in *Public Administration Review Quarterly* of Japan, from its first issue (1978) to the 165th issue (2019). This journal is one of the most famous journals in Japanese Public Administration, and is published quarterly by the Institute of Administrative Management in Japan. The institution is closely tied to the Ministry of Internal Affairs and Communications. The term “42 years” comprises the postwar *Showa* and *Heisei* eras. Japan's studies of public administration after World War II (WWII) have been strongly influenced by American public administration. Initially, the focus was on the introduction of American theories. 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 paper, the author uses the text-mining technique, a method enabling quantitative analysis of the qualitative information. One of the advantages of such a 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 of public administration using PDF files (3,934 articles) of *Public Administration Review (PAR)* from 1940 through 2013. The analysis focused on the characteristics of authorship, for instance, most productive authors, institutions of authors, gender composition, and the profession as a scholar or practitioner. In addition to the authorship, word analysis was carried out to show the top 50 most frequent title words in order to explain differences between 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). Imasato (2000) referred to the research of Wald (1973) using the Delphi method as a qualitative study of research trends in American public administration.

## Qualitative Analysis of Research Trends in Japanese Public Administration

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 divisions in Public Administration were set up at Tokyo Imperial University and Kyoto Imperial University (the predecessors of the two named universities) (Nishio, 2001, p. 43). Nishio (2001), 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 as important aspects of Japanese public administration (pp. 50–51). This textbook is also widely used among college students preparing for civil servant examinations at the national and local level. Professors in Japanese universities consider these three aspects as important in their lectures on the subject of public administration.

In contrast to Nishio (2001), which considered administration as one of the perspectives, Muramatsu (2001) (another influential textbook written by a professor at Kyoto University) took the position that public administration belonged to political sciences (the subtitle of the textbook in Japanese is *Political Analysis of Modern Public Administration*). Muramatsu (1983) showed a 4-quadrant matrix of studies of the Japanese public administration, covering foreign countries, Japan, theories, and practices (Figure of p. 49). He pointed out a lack of research in two quadrants: Japanese theories and practice in foreign countries. According to his remarks, Japanese public administration at that time focused on foreign theories and Japanese practice. And, he argued that the studies of public administration in Japan needed to deepen its research on practice in foreign countries and create theories based on Japanese contexts.

## Material And Methods

### Material Collection

In order to grasp postwar research trends in Japanese public administration, 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 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 paper magazines and entered the data into the Excel dataset. To enable reproduction studies, the author conducted machinery translation from Japanese to English by 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 also deleted. Issues 1–4 were also added, as explained above, to the original 1,356 cases. As a result of the above-mentioned modifications, 842 titles of papers remained in the dataset.

To examine this text data, this paper uses the KH Coder (version 3.Alpha.17k) produced by Dr. Higuchi Koichi of Ritsumeikan University. This is free-to-use software developed utilizing the Grant-in-Aid for Scientific Research of the Ministry of Education, Culture, Sports, Science and Technology, Japan (Higuchi, 2016). For 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. The author used all the words listed in the index compiled by Nishio (2001), a standard textbook of Japanese public administration. As a result, the number of the compound words based on the index of Nishio (2001) 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

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

## Co-occurrence Network Analysis

The co-occurrence network analysis was performed to understand how the focus changes from the first time period (the *Showa* era, 1978–1988) to the second time period (the *Heisei* era, 1989–2018). In Japanese governments, public officers use Japanese time periods (*Wareki*) 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 time periods. In the co-occurrence network analysis of Figure 1, the Japanese time periods *Showa* and *Heisei* were selected as external variables for drawing figures. In order to filter edges (nodes) of up to 60, the Jaccard Index was used for the selection criteria (for a Mathematical explanation of the Jaccard Index, see McCormick, Lyons, and Hutcheson (1992)).

Regarding the words closely connected to the *Showa* era (at the right part of the figure), we can see examples in article titles from the United States and the United Kingdom and 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, the political appointment system of officials, and the industrial policy of the country. In titles from the United States, we found mentions the parliamentary system, the Office of Management and Budget, and the approval process for new drugs. After its defeat in World War II, and especially as a result of the American occupation, Japan witnessed an evolution of social sciences, taking the United States and United Kingdom as the exemplars. On the

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

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

[insert Figure 1.]

## Correspondence Analysis

This section involved conducting the correspondence analysis, a typical technique for graphically displaying the category data. In order to grasp changes and periodical characteristics regarding the research trends in Japanese public administration, the author used a 10-year time period as an external variable, creating five time periods.

Figure 2 is a result of the correspondence analysis here. 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 can see the word *Rincho* at the far left of the configuration map. *Rincho* represents abbreviations of commissions of the government for administrative reforms from 1961–1964 (the *Ikeda* Administration) and from 1981–1983 (the *Suzuki* and *Nakasone* Administrations). On the far right of the figure, we can see the *Great East Japan Earthquake* and *Governance*. These extracted words are different from the extracted words related to administrative reforms. Here, the author interpreted dimension 1 as an axis of administrative reforms.

Regarding dimension 2, we can see *Information disclosure*, *Gyokakushin* and *Policy Evaluation* at the lower part of the figure. 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. Government Policy Evaluations Act (Act No. 86 of June 29, 2001) introduced policy evaluations at the national government level. At the upper part of the figure, we can 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 can see *Gyokakushi* and *Case Study* at the top of the figure. At the lower part of the figure, we can see *Policy Evaluationn 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]

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

[insert Figure 3]

## Discussions

Here, the author discusses the results of text mining 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) pointed out as one of the important perspectives, are actually features of Japanese public administration that appeared in the *Public Administration Review Quarterly* of Japan. Muramatsu (1983) emphasized the need for studying the practices in foreign countries and creating theories based on Japanese realities. The co-occurrence network analysis focusing on differences between the *Showa* era and *Heisei* era revealed that the 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 of public administration during the *Heisei* era (1989–2018). This result indicates that the Japanese studies of public administration shifted from importing theories from the United States and the United Kingdom to research on Japanese practice.

Concerning dimension 2 of the configuration map (Figure 2), at the top of the figure, we can find the *Great East Japan Earthquake*. The earthquake occurred in 2011, and greatly influenced theories and practice of Japanese public administration. Historical events such as the Great East Japan Earthquake have had a major impact on the study of public administration in Japan, and at the same time, the movements toward administrative reforms, modeled after corporate management, have been a major pillar of administration studies in Japan.

## Related Studies

For the content analysis, there is an accumulation of research dating back to Krippendorff (1980). Regarding studies on research trends of public administration, Wald (1973) attempted to quantitatively assess the research trends of American public administration using the Delphi method. As explained in the introduction, Ni et al. (2017) conducted the 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 percent of articles on social equity published in the PAR fell below five percent from 1940 to 2013 and the articles published in the PAR are primarily centered on personnel and public policy areas.

For research using text mining techniques in social sciences, Amado, Cortez, Rita, and Moro (2018) applied the text mining approach to management studies. Hung (2012) used referred journal articles and proceedings obtained from the Science Citation Index/Social Science Citation Index from 2000 to 2008. White, Guldiken, Hemphill, He, and Khoobdeh (2016) also conducted a management study using the text mining approach. Krallinger, Valencia, and Hirschman (2008) offer an example in the context of genome biology. In the field of public administration, however, the author cannot find any literature that uses 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 (Author, 2020).

In terms of Japanese academics, Saito (2011) surveyed studies using text mining methods from social sciences to natural sciences. Regarding the author's past studies, Author (2013) gathered the mid-term goals of independent administrative agencies as target text data and the Author (2014) used forewords of the ordinances of the Japanese municipalities. Sakushima, Sasaki, and Tashiro (2012) used the text mining method for titles of an academic journal "Clinical Neurology," obtaining text data from the CiNii database. Their research conducted correspondence analysis. Although the research area is different from that of this article, this paper refers to the method of Sakushima et al. (2012).

## Conclusion

This paper 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 issue (1978) to the 165th issue (2019). After implementing the morphological analysis using Stanford POS Tagger, 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, spanning 42 years. This feature is consisting with Administration, one of the three perspectives of the Japanese public administration Nishio (2001) pointed out.

The result of the co-occurrence network visualized differences across research trends between the *Showa* era and the *Heisei* era. Traditional Japanese studies of 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 figure of co-occurrence network implies a research shift of the Japanese studies of public administration in order to create its 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 dimension concerns historical events/administrative systems; and the third dimension concerns evaluations and *Kaizen*. Policy evaluations are an important stage during policy processes (Nishio (2001) considered policies as an

important perspective). The introduction of private-sector management methods such as *Kaizen* into the Japanese government is also a major feature. These methods of improving organizational management are also related to Administration, which Nishio pointed out.

Based on the above, these features shows the major pillars of the Japanese postwar administrative studies from 1978 to 2019 are basically consistent with two qualitative research of Nishio (2001) and Muramatsu (1983). Previous qualitative research has 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 to be important aspects of Japanese public administration, and these are the three dimensions of the correspondence analysis of this paper. The qualitative analysis herein was based on the researcher's experience, but it was 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 are shown in this paper's co-occurrence network analysis, which focused on the differences between the Showa era and Heisei era. The changes in Japanese public administration, which Muramatsu (1983) pointed out as necessary, have been quantitatively confirmed by the text-mining method's empirical evidence of changes in the frequency of use of the terms "United States," "United Kingdom," and "Japan." Author (2020) analyzed the titles of another journal about Japanese public administration. In the study, the three dimensions of the correspondence analysis were time, evaluation and reform, and policy process. The two results are similar, but slightly different. The variation arises 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.

**Competing interests:** The author declares no competing interests.

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## Abbreviations

TSV stands for Tab Separated Values, a file format arranged by separating each data by tab characters.

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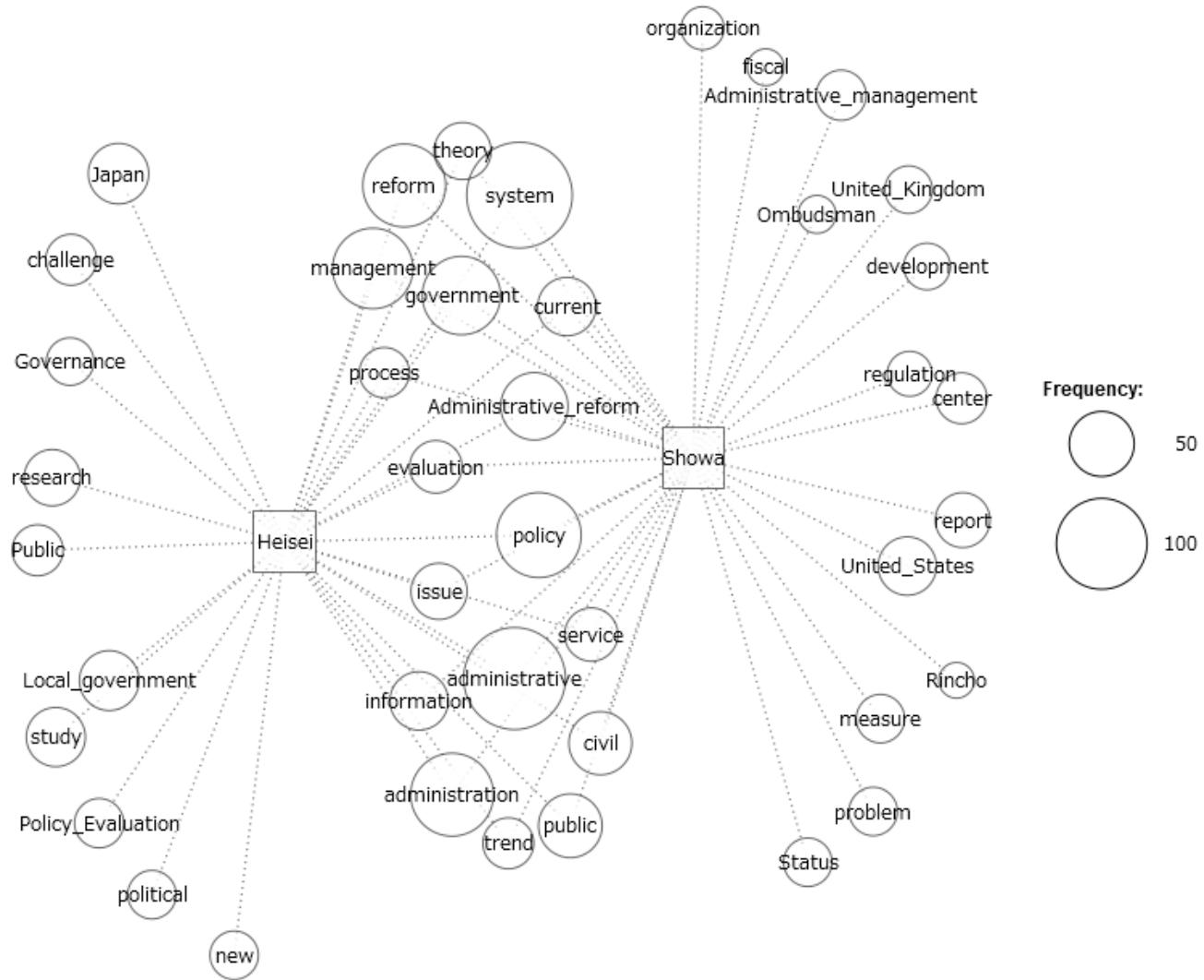
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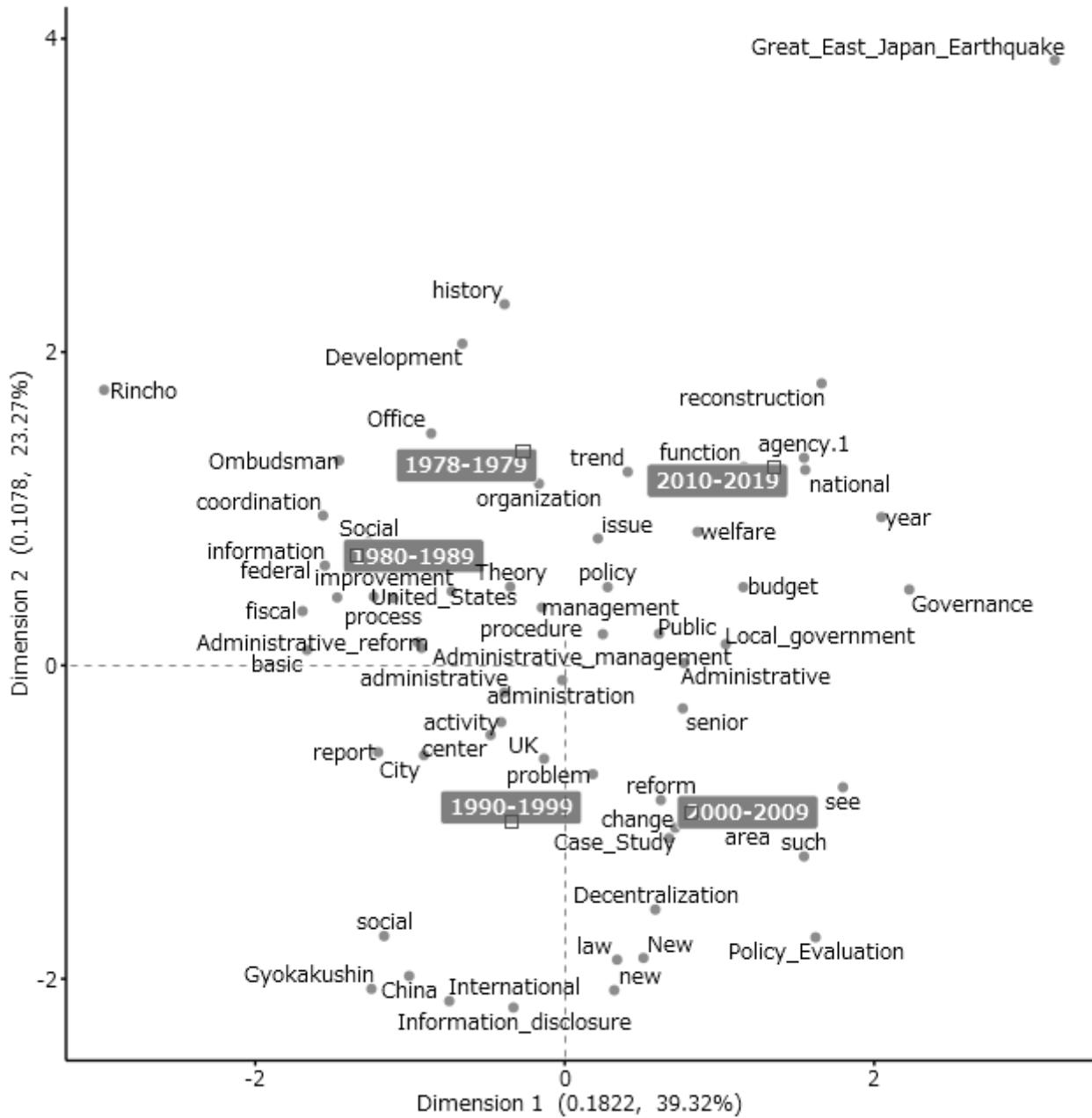
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## Figures



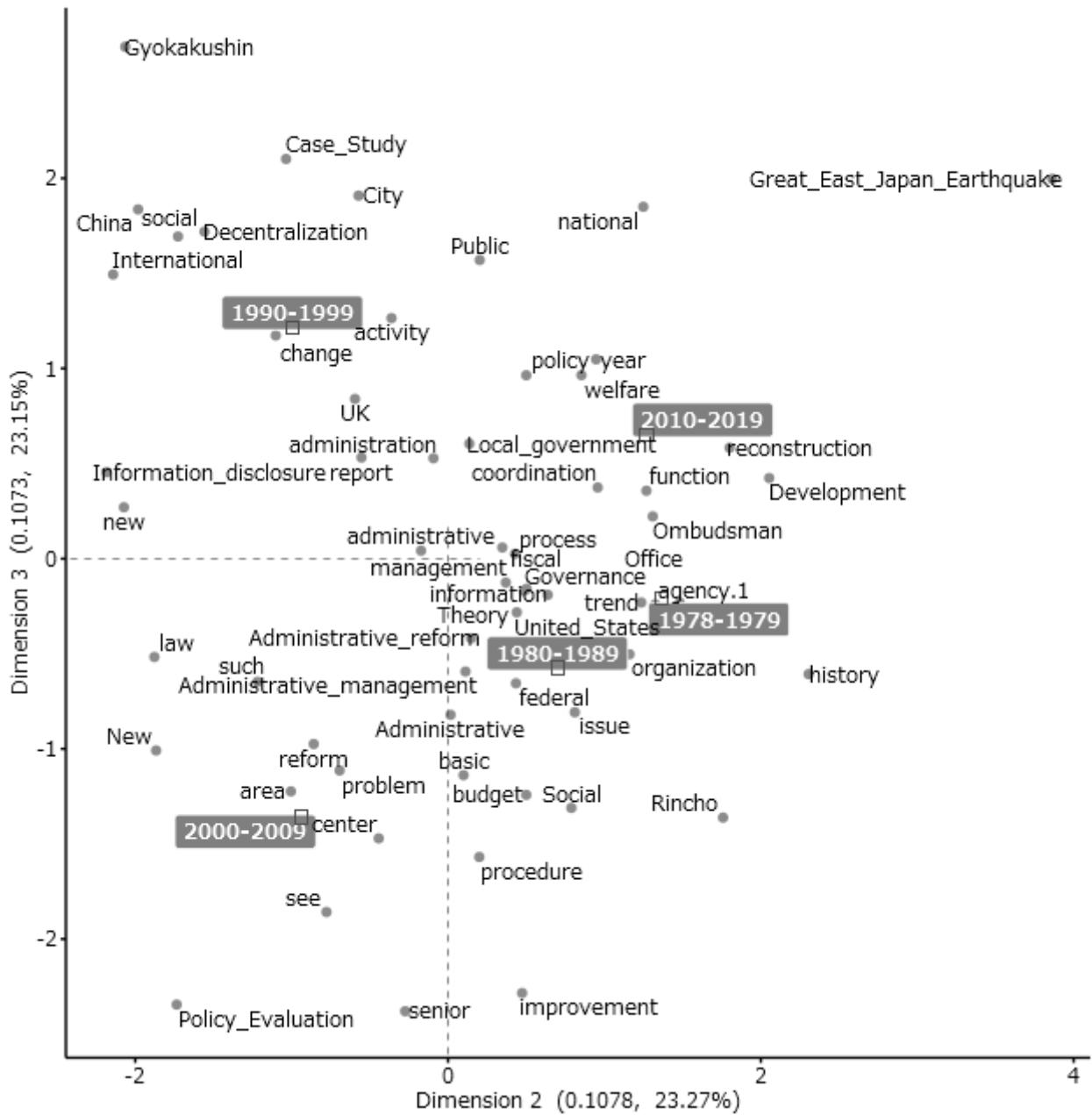
**Figure 1**

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



**Figure 2**

## Correspondence Analysis (the first and second dimensions)



**Figure 3**

## Correspondence Analysis (the second and the third dimensions)