Textual Analysis of the Opening Ceremony Address by Japanese University Presidents for the Spring Semester of 2023 Based on KH Coder

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Abstract. Japanese universities are categorized into national universities, public universities, and private universities according to their operating entities. In this paper, we use KH coder text mining software to draw co-occurrence network diagrams for the theme parts of the speeches of Japanese university presidents in the opening ceremony of the spring semester of the year 2023 according to the above classifications and analyze them correspondingly. It is found that Japanese national universities are increasing their autonomy and self-discipline, and emphasize scientific research and research projects in education and research; public universities play the role of local academic centers, and play an important role in local health care and elderly care; private universities have a great deal of freedom, and tend to emphasize the cohesion of the university for reasons such as the survival of the university.

Keywords: KH coder text mining software, Presidents' address, Co-occurrence network diagram, Corresponding analysis

1 Introduction

The university opening ceremony marks a new stage of learning for freshmen and ushers in new campus vitality for the institution. The address by the university president at the opening ceremony is a core element, given its rich content and diverse themes. It not only showcases the unique campus culture of each university to the public, enabling freshmen to quickly understand and integrate into the institution, but also conveys the guiding educational philosophy for student growth. Therefore, it serves as an important material for presenting and researching university characteristics, talent cultivation goals, and other aspects.

Up to now, scholars have studied the university president's address at the opening ceremony from various perspectives. Some focus on the content itself, exploring the underlying goals, educational functions, and institutional development directions^[1, 2, 3, 4, 5] Some conduct pragmatic and comparative discourse analysis of multiple university presidents' speeches during the same time period^[6, 7]. Some conduct diachronic studies^[8, 9]. However, there has not been any research on the various addresses delivered by Japanese university presidents. Daisuke Hirouchi&Kentaro Harada (2016), after examining Japanese presidential addresses, pointed out a certain degree of standardization, with many presidents reusing content from the previous year or even using almost identical content throughout their term. The author feels

the same way during the text collection process. Therefore, based on the principles of temporality, limitedness, representativeness, and comparability of the text, the temporal location of the study is set in the first year of the post-pandemic era, the spring semester of 2023. The data source is the full text of speeches published on the official websites of various universities¹. This paper employs the KH Coder text mining software, which can quantify multilingual texts and match words in the text with pre-set word lists to predict text sentiment trends in advance. The research is conducted from the perspectives of high-frequency word statistics, textual content analysis, and analysis of university types, striving to make the study more scientific.

2 Text Mining of the Theme Section of the Opening Ceremony **Address by University Presidents**

The president's address at the opening ceremony, as a type of public speech, often consists of three parts: 1. Introduction. It primarily expresses welcome to the attendees, congratulations to the freshmen and gratitude to their families. 2. The theme part, with substantial content, generally includes an introduction to the university, its history, biographies of celebrities/alumni, educational philosophy, and hopes/suggestions for the freshmen. 3. The conclusion part, mainly ends the speech with the blessing to the freshmen and thanks to the attendees for listening^[10, 11]. This paper only examines the content of the theme part.

2.1 Statistical Analysis of High-frequency Nouns

Word Frequency Analysis is the process of counting the occurrences of core words such as keywords and subject words in a document. Its basic principle is to determine the focus and development direction of the document based on the frequency of occurrence.

Japanese universities can be classified into national universities, public universities and private universities according to their different operating entities. A total of 249 opening ceremony speeches were collected this time. See Table 1 for text information. It can be found that the number of speeches released by national universities is the highest, accounting for 82.55% of the total. Although there are many private universities, the speech disclosure rate is only 21.70%.

Table 1. Statistics of the Number of Japanese Universities and President's Address Texts							
University Type	National University	Public University	Private University				

University Type	National University	Public University	Private University
Number of Universities ²	86	100	622
Number of Address Texts	71	43	135
Percentage	82.55%	43%	21.70%

The author conducted word frequency analysis at the level of individual speeches, extracting the noun keywords with the highest frequency in the theme part of the speech. Based on this, the keyword data were exported to Excel for manual cleaning, review, and statistical analysis,

¹ Due to high text repetition rates, if separate opening ceremonies are held for undergraduate and graduate students, only addresses delivered to undergraduates are selected.

² Data as of May 1, 2023, excluding national and public universities that have stopped enrollment.

filtering out keywords relevant to the study. Then, the author used KH Coder text mining software to separately calculate the high-frequency nouns of the three types of universities, with the top 20 listed in Table 2.

Among them, although the order of the top 10 high-frequency words is slightly different, they all appear in the speeches of the presidents of the three types of universities. In addition, national universities uniquely have "talented person" and "solution", but lack "life"; public universities uniquely have "field"; private universities uniquely have "times", "words", "mind", and "experience", but lack "region". This exactly reflects the unique talent cultivation goals and characteristics of the three types of universities. The following will be interpreted through the co-occurrence network diagram and feature words.

Table 2. Statistical Table of High-frequency Nouns in Three Types of Universities (Top 20 Nouns)³

	National University			Public University		Private University			
	Word	En.	TF	Word	En.	TF	Word	En.	TF
1	皆さん	you	651	皆さん	you	296	皆さん	you	972
2	研究	research	408	大学	university	245	社会	society	524
3	大学	university	362	本学	our university	193	自分	yourself	510
4	教育	education	345	研究	research	152	大学	university	506
5	本学	our university	296	人	person	148	人	person	462
6	社会	society	235	地域	region	129	本学	our university	452
7	学生	students	195	社会	society	127	教育	education	409
8	自分	yourself	182	教育	education	109	世界	the world	259
9	世界	the world	178	自分	yourself	102	学生	student	250
10	人	person	172	世界	the world	101	研究	research	241
11	課題	issue	141	知識	knowledge	94	人間	human being	211
12	学部	faulty	136	看護	nurse	93	活動	activity	190
13	入学	enrolment	133	学生	students	71	時代	times	183
14	活動	activity	121	活動	activity	65	言葉	words	181
15	学び	learning	120	入学	enrolment	65	精神	spirit	180
16	知識	knowledge	112	学び	learning	63	生活	life	177
17	力	skill	110	生活	life	56	心	mind	172
18	人材	talented person	102	学部	faulty	54	力	skill	167
19	地域	region	102	分野	field	54	学部	faulty	164
20	解決	solution	96	課題	issue	53	経験	experience	157

2.2 Co-occurrence Network Diagram of Three Types of Japanese Universities

The author conducted word frequency statistics by treating each speech as a unit, extracted the highest frequency noun keywords with the highest frequency, and used this as a basis to export

³ The shaded words are high-frequency words appearing in all three types of universities.

the keyword data into Excel for manual cleaning, review, and statistical analysis and filtered out keywords relevant to the research.

2.2.1 Co-occurrence Network Diagram of Japanese National Universities

The collected text comprised speeches from 71 national universities. We selected the top 60 high-frequency nouns with 60 or more occurrences to create a co-occurrence network diagram (as shown in Figure 1), which shows that the speeches of the presidents of Japanese national university can be categorized into seven aspects:

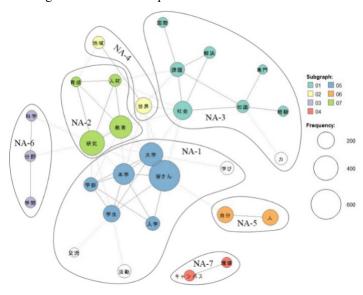


Fig.1. Co-occurrence Network Diagram of Japanese National Universities (Nouns)4

NA-1 mentions words such as you, university, our university, students, faculty, enrollment, communication and activity, etc., and focuses on basic information about the university, including the specific divisions of departments and on-campus activities.

NA-2 mentions words such as research, education, talented person and cultivation, clearly specifying the research, education, and talent cultivation functions that universities as educational institutions should possess.

NA-3 mentions society, issue, international, solution, knowledge, speciality, experience and skill, emphasizing the inspiration for students to engage in comprehensive thinking during their university years about their relationship with society, how to address issues, which specialized knowledge to acquire, how to accumulate skills, and how to gain and apply experiences. Among these, "solution" is a high-frequency term that distinguishes public universities from private ones and is a characteristic term of national universities.

NA-4 mentions world and region, clearly defining the cultivation objectives of national

⁴ In the co-occurrence graph, NA represents national universities; PU represents public universities; PR represents private universities.

universities, which are to have a global perspective while being rooted in, leading, developing, and contributing to the local area.

NA-5 mentions yourself and person, primarily emphasizing the personal growth of individuals during their university years, that is, "what kind of person to become".

NA-6 mentions science, field and study, elucidating "how to conduct academic research" and "what kind of academic research to pursue". Particularly noteworthy is the term "science", which, by emphasizing various scientific disciplines, highlights the mission of national universities to lead global scientific and technological capabilities. It also reflects the ongoing university reforms in Japan.

NA-7 mentions campus and environment, including the research and educational environment that freshmen are about to enter on campus, as well as environmental issues that emphasize the existence of the earth.

2.2.2 Co-occurrence Network Diagram of Japanese Public Universities

The collected text comprised speeches from 43 public universities. We selected the top 60 high-frequency nouns with 30 or more occurrences to create a co-occurrence network diagram (as shown in Figure 2), which shows that the speeches of the presidents of Japanese public university can be categorized into six aspects:

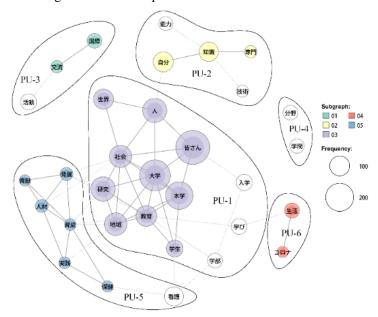


Fig. 2. Co-occurrence Network Diagram of Japanese Public Universities (Nouns)

PU-1 mentions you, university, our university, student, education, region, research, society, the world, person, enrolment, learning and faulty, etc. which are the same as national universities. It mainly introduces basic information about the university and emphasizes the main contents of university life. The "region" is slightly different from national universities, mainly reflected in considering their own university as a local "think tank" and advocating that

freshmen interact more with local people, engage in various activities locally, comply with local needs, and repay the local community. In addition, by mapping the abstract concept of "learning" to concrete concepts such as "objects" and "journeys", it evokes empathy among freshmen, thereby realizing clearer communication of information during the opening ceremony^[6].

PU-2 mentions knowledge, yourself, speciality, ability and technology, mainly including the knowledge, technology, and abilities mastered during the university period.

PU-3 mentions international communication and activity, emphasizing the activities that should be engaged in during the university period in the context of globalized education.

PU-4 mentions field and study, emphasizing that the university is a place for academic cultivation, similar to national universities.

PU-5 mentions talented person, cultivation, development, contribution, practise, health preservation and nursing, explicitly stating the goal of talent cultivation. The difference from national universities lies in a greater emphasis on the importance of practical application, reflecting a high degree of conformity with societal needs.

PU-6 mentions life and covid-19, and the impact of the pandemic on life over the past three years. As is well known, this incoming freshmen experienced unprecedented difficulties during their high school years due to the outbreak of the COVID-19 pandemic.

2.2.3 Co-occurrence Network Diagram of Japanese Private Universities

The collected text comprised speeches from 135 private universities. We selected the top 60 high-frequency nouns with 85 or more occurrences to create a co-occurrence network diagram (as shown in Figure 3), which shows that the speeches of the presidents of Japanese private university can be categorized into six aspects:

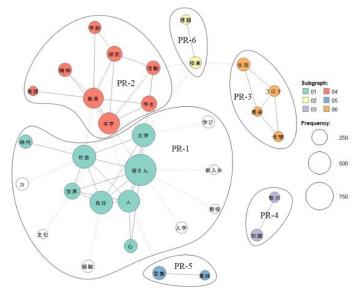


Fig. 3. Co-occurrence Network Diagram of Japanese Private Universities (Nouns)

PR-1 mentions you, society, university, yourself, world, person, times, mind, culture, experience and skill, reflecting the significance of university for student growth, emphasizing the relationship between students and the world, society, others, and the times. Three unique high-frequency words are as follows: "times" primarily embodies looking back on past eras, clarifying the unpredictability of the times, understanding the demands of the times, and opening up new eras; "mind" mainly refers to understanding the minds of others, broadening one's mind, cherishing one's own mind, cultivating one's character, and developing one's mind; "culture" mainly includes encountering different cultures, the birth of new cultures, perceiving the richness of cultures, and living in a society where multiple cultures coexist.

PR-2 mentions our university, education, spirit, research, activity, students, faulty and practice, similar to public universities. The emphasis on "spirit" highlights the founding spirit and philosophy of the university.

PR-3 mentions covid-19, life, infection and years. The same as public universities, there is a strong emphasis on the impact of the COVID-19 pandemic on the three-year high school life of freshmen.

PR-4 mentions ability and knowledge, clarifying the skills and knowledge to be mastered during university.

PR-5 mentions words and meaning, primarily manifesting as detailed interpretations of famous quotes or certain words to guide students' growth.

PR-6 mentions lessons and issue, including class formats, how classes are conducted, attitudes towards classes, in-class and extracurricular activities, as well as clearly pointing out the various issues currently faced, guiding students to understand the main tasks during university: actively discovering issues, and earnestly resolving them, which are more concrete compared to national and public universities.

2.3 Corresponding Analysis of the Three Types of Universities

To grasp the differences in the content of speeches from the three types of universities with distinct educational principles, the author conducted a corresponding analysis, as shown in Figure 4. Words with indistinct features are outlined near the origin (0, 0). The farther away from the origin, the more features of the category are depicted (Koichi Higuchi 2014).

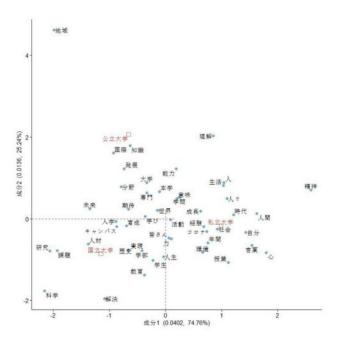


Fig. 4. Corresponding Analysis of the Three Types of Japanese Universities

2.3.1 Japanese National Universities that Clarifies Scientific Classification and Prioritizes Task-oriented Research

Japanese national universities, numbering 86 in total with at least one in each prefecture, have been engaged in world-class research and education since their establishment. They have inherited and developed crucial academic fields, facilitating the circulation of knowledge and contributing to society. In addition, each national university ensures equal opportunities for higher education nationwide. Serving as cores for regional development, they nurture and cultivate talents that lead society. They leverage their own strengths and characteristics, emphasizing talent development, graduate education, and scientific research. They also collaborate with local communities and industries, addressing diverse social issues at the forefront, and making contributions to local, national, and global levels.⁵

As shown in Figure 4, the characteristic words of national universities are "science" and "solution". Using the KWIC (Keyword in Context) retrieval method, we found that natural sciences, humanities, life sciences, social sciences, computer science, and neuroscience are all mentioned. Furthermore, emphasis is placed on scientific research and scientific fields (See Figure 5).

⁵ Kyosuke Nagada, On the Publication of the Issues to be Considered for the State of National University Corporations Towards the Fourth Medium-term Objectives Period (interim summary) November 2020. https://www.mext.go.jp/content/20201202-mxt_hojinka-000011398_11.pdf

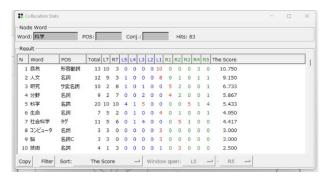


Fig. 5. KWIC Concordance Results for "Science"

As shown in Figure 6, "solution" is predominantly manifested in addressing topics and problems and the solutions. It can be observed that the presidents hold high hopes for freshmen's awareness of issues and their problem-solving abilities.

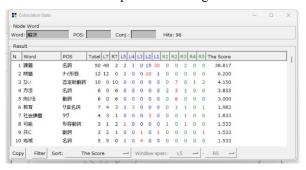


Fig. 6. KWIC Concordance Results for "Solution"

To sum up, since the corporatization reform in 2004, national universities have seen an enhancement in autonomy and self-discipline. However, their educational research function, characterized by a focus on scientific research and task-oriented research, remains consistent. National universities have consistently served as Japan's academic highland and are considered the benchmark for higher education reform in Japan.

2.3.2. Japanese Public Universities as Academic Centers in the Region

Japan's public universities, as academic centers, aim to disseminate knowledge extensively, impart profound expertise in various disciplines, and cultivate students' knowledge, ethics, and practical abilities. Particularly considering they are established and managed by local authorities, they play a central role in providing higher education opportunities for the local populace and serve as intellectual and cultural hubs for local communities. Moreover, they are expected to contribute to the social, economic, and cultural development of their respective regions.⁶

⁶ Source: Ministry of Education, Culture, Sports, Science and Technology, Japan (https://www.mext.go.jp/a_menu/koutou/kouritsu/index.htm)

In this study, the characteristic word for public universities is "region". From Figure 7, it can be observed that this primarily refers to seeking a future for the region, taking roots, and contributing to the local area, as previously mentioned in 2.2.2.

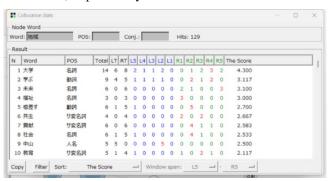


Fig.7. KWIC Concordance Results for "region"

As mentioned above, public universities, established and managed by local public institutions, have particularly close ties with their local communities. As proposed by the "Local First Strategy" of Japanese public universities, they tend to advocate for students to be rooted in and contribute to their local communities. Additionally, as seen in Figure 2, high-frequency terms like "health" and "nursing" arise due to the aging population in Japan and the implementation of the elderly care insurance system. Public universities play an indispensable role in this regard.

2.3.3 Japanese Private Universities that Emphasize the Founding Spirit and Advocate Diversity and Deep Understanding

In terms of quantity, private universities in Japan account for three-quarters of the total number of universities and the number of students. They are the main force driving the popularization and accessibility of higher education in Japan. In the course of their development, the government regulates the quality of education through autonomous policies^[12]. As they are established and autonomously managed by private donors, private universities place greater emphasis on the founding spirit of their founders and their unique academic atmosphere, emphasizing the autonomy stipulated in Article 1 of the Private School Law. In addition, Article 8 of the Fundamental Law of Education (revised in December 2006) stipulates that private universities have a public nature requires them to be public.⁸

In this study, the characteristic words of private universities are "spirit" and "understanding". As shown in Figure 8, "founding spirit" takes the lead. Additionally, private universities, including some church-affiliated institutions, feature terms like "(Buddhist spirit" and "Christian spirit". It is worth noting that since the beginning of the modern era, the Japanese government has explicitly stated that the sovereignty of church-affiliated universities will not

⁷ That is, starting from a regional (local) perspective, giving top priority, emphasizing local resources, culture and history, and creating a sustainable and **vibrant communities.**

⁸ Source: https://www.shidaikyo.or.jp/apuji/about/basic.html (Association of Private Universities of Japan since 1946)

be transferred. This has facilitated the "integration" of Japanese churches with indigenous religions and achieved sustainable development^[12].

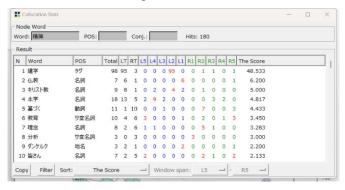


Fig. 8. KWIC Concordance Results for "Spirit"

As shown in Figure 9, diversity and profound "understanding" specifically refer to a comprehensive and deep understanding of culture (including indigenous and foreign cultures), of others, of knowledge, and of oneself.

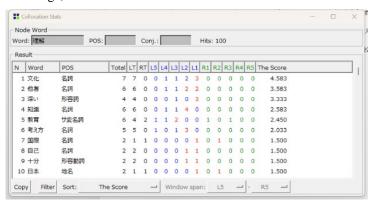


Fig. 9. KWIC Concordance Results for "Understanding"

Private universities tend to use founding spirit to rally people and promote growth through understanding and tolerance. These characteristics are closely related to the management model of private universities. While private universities enjoy greater freedom and can absorb, test, and develop innovative educational and management ideas, educational leaders can boldly reform. However, once a university corporation closes, it damages the reputation of the entire group, and there also exists the "Year 2018 Problem", so the survival of the private university and the cohesion of the university is very crucial.

⁹ Since 2005, Japan's population of 18-year-olds has remained stable at around 1.2 million, but it began to decrease from 2018, and is projected to decrease to around 1 million by 2030. As 95% of Japanese universities have an entrance age of 18 or 19, this will inevitably lead to a decrease in university enrollment, posing a challenge of closure for small and medium-sized private universities. This is what is referred to as the "Year 2018 Problem".

3 Conclusion

The presidents' address at the freshman opening ceremony is a public expression of their educational philosophy, teaching and nurturing ideas, individualized teaching policies, and cultivation of talents^[13], which holds considerable research value. As a core component of university opening ceremonies, the presidents' address not only highlights the educational philosophy and academic spirit of a university but also embodies rich educational values such as guiding values, cultural heritage, emotional inspiration, and character shaping^[14]. This study analyzed the theme parts of the presidents' address at the opening ceremonies of the three types of universities in Japan using KH Coder text mining software and found that the three types of universities have distinct styles due to differences in their educational principles and management methods. The 86 national universities are the most important universities in Japan, with a high level of faculty, facilities, quality of student population, education and research, and a strong emphasis on scientific research and research output due to their national and social responsibilities; the public universities have a slightly lower level of research compared to the national universities, with a stronger emphasis on academic specialization, and strong local ties for employment and research output due to the homogeneous nature of the student population (the majority of the students are from the local area); while private universities, with the exception of Keio University, which is one of the world's top universities, focus on the practical aspect, and the president's speech emphasizes the role of ideals more prominently, which is designed to help students fully understand the importance of ideals for their own success, and to enhance the contagious force of beliefs and cohesive force of the university. On the basis of collecting as many valid texts as possible, this study has carried out a comparative study of the differences among the three types of universities. The synchronic study of the president's speech text is of great benefit to understanding the historical development of Japanese higher education, and the author will continue to pay attention to it in the future research.

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