Japanese Marxian Economists and What They Have Discussed: A Quantitative Analysis of Article Titles in Japanese Marxian-Related Journals

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Summary

This paper examines what Japanese Marxian economists have discussed by conducting quantitative text analyses of articles in academic journals published by two major Marxian-related associations, the Japan Society of Political Economy (JSPE) and the Political Economy and Economic History Society (PEEHS). We analyse titles of 1,928 papers published in five journals of these two academic bodies (*Modern Political Economy Series, The Bulletin of the Japan Society of Political Economy, Political Economy Quarterly, The Journal of Agrarian History, The Journal of Political Economy and Economic History) until the 2010s. We find that (1) Japanese Marxian economics has dealt not only with the issues of productive manufacturing sectors, but also on other sectors including agriculture, finance, services, etc., thus expanding into all economic fields. (2) Recent Japanese Marxian economists have increasingly moved away from the use of traditional terminology such as 'empire' and 'monopoly'. (3) The spatial and geographical interest of research tends to focus on developed countries, while, in the case of the JSPE, this is complemented by studies on structural issues such as global capitalism and hegemony. (4) While the methodology espoused by the JSPE has maintained consistently its Marxian perspective, the PEEHS, after its renaming, has shifted its focus onto case studies, thus abandoning key Marxian conceptions like 'capital' and 'structure'.*

Keywords

Marx, Japanese Marxism, Marxian economics, Text-mining, Quantitative text analysis

1. Introduction

Since the beginning of the twentieth century Karl Marx has exerted a significant influence in Japanese academia. Nowhere has this been more so than within economics, with the establishment of 'Marxian economics' as a sub-discipline dedicated to the study of *Capital* and other Marxian texts. Since the Second World War Marxian economics has been studied alongside micro- and macroeconomics as a core course in many Japanese universities. The success of Marxism within economics has been such that it is common in Japan to consider Marxian scholars as 'Marxian economists.'

This paper provides an introduction to discussions within Japanese Marxian economics by means of quantitative text analysis. Utilizing the recent developments in text-mining, this article will look

at the topics discussed by Japanese Marxian economists in their natural language. The analysis will be undertaken using KHCoder software, which has significantly advanced the morphological study of Japanese texts, overcoming many of the difficulties faced by scholars seeking to apply quantitative text analysis within Japanese studies.¹

Due to the impossibility of covering all Marxian texts in Japanese, we will focus on texts published by two Marxian-related academic bodies, both of which have long traditions in the Japanese Marxian economic tradition. The one is *Keizai Riron Gakkai* (the Japan Society of Political Economy: JSPE) and the other is *Seiji Keizai Gaku / Keizaishi Gakkai* (the Political Economy and Economic History Society: PEEHS), formerly called *Tochi Seidoshi Gakkai* (the Agrarian History Society: AHS).

The above two academic bodies have issued journals, now titled Kikan Keizai Riron (*Political Economy Quarterly:* PEQ) and Rekishi to Keizai (*The Journal of Political Economy and Economic History:* PEEH) respectively. Unfortunately, most of the body texts are unavailable in an electronic form and so, due to the constraints of time, the focus here has been on an examination of the titles of articles published in the two journals until the 2010s to see what trends they reveal about studies of Marxian economics in Japan.

2. Outlines of JSPE and PEEHS

The JSPE and the PEEHS are most established bodies of Japanese Marxian economic thought over the past half century. Table 1 provides key information about both bodies.

	JSPE	PEEHS				
Foundation date	5 May, 1959	26 June, 1948				
The number of members	247	180				
when founded						
The first president	Hyoue Ouchi	Moritaro Yamada				
The incumbent president	Yasuo Goto	Masayuki Tanimoto				
The number of members today (2021)	700	692				

Table 1: Outlines of JSPE and PEEHS²

The aims and objectives of the JSPE set out the clear intention to support the development of Marxian economics as an academic field. 'Our approach centers on Marxian political economy, which encompasses the fields of Marxian thought and politics, heterodox economics such as Keynesian and

¹ Over 6,000 published papers have been accessed using KHCoder (<u>https://khcoder.net/en/</u>) on 8 September, 2023. In this paper, we shall not go into the technical details of textmining, as they are abundantly available elsewhere. As for the Japanese textmining study of the history of economic thought, see Komine ed. (2021).

² Source: JSPE Japanese website (https://www.jspe.gr.jp/), PEEHS Japanese website (https://seikeishi.com/), Gakkai Meikan (*Academic Body Directory*, https://gakkai.jst.go.jp/). All retrieved on 3 May, 2022. Unfortunately, since Gakkai Meikan's webpage was closed on 30 June, 2022, the current number of members are not made public now.

post-Keynesian economics, institutional economics, evolutionary economics and many other fields.³ Hyoue Ouchi (b.1888, d.1980), the first president, is an influential Marxian scholar of fiscal policies who worked for a long time at the University of Tokyo. Yasuo Goto, the incumbent president, has taught Marxian economics in Fukushima University for a long time.

The PEEHS was first established as the Agrarian History Society and was renamed in 2002. The original aim of the AHS 'was to study the overall process of the agricultural reform after WWII and to forecast the future of Japanese society.'⁴ This society is less concerned with Marx focusing rather on the field of economic history. Nevertheless, the first president, Moritaro Yamada (b.1898, d.1980), was a well-known Marxian economist in the University of Tokyo. According to the association's webpage, the name change was prompted by the diversification of the interests of members, but it is noteworthy that the term 'political economy' still refers to Marxian economics as one of the PEEHS's main theoretical foundations. Masayuki Tanimoto, the incumbent president, teaches economic history of Japan in the University of Tokyo.

Both academic bodies have their roots in Marxian economics, but it should be noted that their interests reflect the increasing diversification of fields studied within economics. For this reason, we have referred in the title of this article to 'Marxian-related' rather than 'Marxian' journals. Nevertheless, Marx's influence is so deep in Japanese academia that we see many cases where those who do not explicitly refer to Marx are essentially (and sometimes unconsciously) affected by preceding Marxian studies. It is, therefore, not always easy to distinguish whether a study is Marxian or not in Japan. Rather than seeking to pursue such differences, our study will focus on the content of the journals, which will hopefully enable us to bypass this difficult problem.

3. Data

3.1. Journals to be Examined

The JSPE started publishing its bulletin in 1961 under the title Gendai Keizaigaku Sosho (*Modern Political Economy Series: MPES*), whose first volume featured an article on 'wages and profit rates.' Subsequent issues were brought out irregularly, appearing six times up to 1969. Things changed with the launch of the JSPE's annual bulletin with the title Keizai Riron Gakkai Nenpou (*The Bulletin of the Japan Society of Political Economy*). In 2004 the annual bulletin was replaced by the current quarterly, renamed Kikan Keizai Ririon (*Political Economy Quarterly: PEQ*). These three journals have successive numbering up to now.

Since 1958 the PEEHS published a quarterly journal, originally the Tochi Seidoshi Gaku (*The Journal of Agrarian History: AH*). When the name of society was changed in 2002, the journal's title was

³ Ehara (2020) p. 50.

⁴ Sakon (2021) p. 48.

changed to Rekishi to Keizai (*The Journal of Political Economy and Economic History: PEEH*). As with the JSPE, the journal has been issued in successive numbers.

Before starting *AH*, the AHS issued *The Bulletin of AHS* five times in the period from 1954 to 1957. The issue numbers were not succeeded by *AH*. Among the material found in *The Bulletin of AHS* are summaries of papers that were presented in the association's conferences and study meetings, which provide valuable source materials for the study of trends during the 1950s. Nevertheless, many of the articles in the journal are untitled and have been excluded from the scope of our study.

This gives us, therefore, a textual corpus made up of all the article titles published in the following five journals: *MPES*, *Bulletin of JSPE*, *PEQ*, *AH*, and *PEEH*. *AH* brought out an extra number in 1999, *Proceedings of the 50th Anniversary Conference*, which is also included in the study.

3.2. Method for Collating Article Titles

In this section we provide an outline of the nature of data we searched, all of which is only available in Japanese. Below is a summary of the source materials and where they can be found.

- *MPES, Bulletin of JSPE* tables of contents in hardcopies held by the Institute of Social Science Library in the University of Tokyo, which possesses every issue except Vol. 30. The contents of Vol. 30 are taken from the copy owned by the Library of Economics in the University of Tokyo. The journals of JSPE include all papers presented in the annual conferences until Vol. 26. From Vol. 27, due to the transcripts of the breakout sessions being replaced by abstracts from Vol. 27 onwards, we have decided to exclude these from our study.
- b) PEQ: J-Stage (https://www.jstage.jst.go.jp/browse/peq/list/-char/ja)
- *c) AH*: J-Stage (https://www.jstage.jst.go.jp/browse/tochiseido/list/-char/ja). Some issues lacking in J-Stage are found in CiNii Research (https://cir.nii.ac.jp).
- *d) PEEH*: J-Stage (https://www.jstage.jst.go.jp/browse/rekishitokeizai/list/-char/ja)

The titles of JSPE journals include special issue papers, peer-reviewed articles, plenary session papers, research notes, surveys and special contributions. Comments on plenary sessions, discussions, book reviews, replies and informational notes have been excluded from our study.

The titles of PEEHS journals include peer-reviewed articles, plenary session papers, research notes, surveys, research material analyses, actual analyses and special contributions. Comments on plenary sessions, discussions, book reviews have been excluded.

The title data available online often includes variety of information including titles of special issues and types of articles included, but such irrelevant data has been manually deleted. The subtitles of all articles studied have been included.

4. Results

4.1. On the Journals of the Two Bodies

	JSPE				PEEHS	Total		
	MPES	Bulletin	PEQ		AH	PEEH		
Period	1961~	1970~	$2004\sim$	1961~	1958~	$2002\sim$	1958~	1958~
	1969	2003	2019	2019	2001	2019	2019	2019
Books	6	34	64	104	177	72	249	353
(a)								
Titles	39	442	418	899	768	261	1,029	1,928
(b)								
b/a	6.5	13	6.53	8.64	4.34	3.63	4.13	5.46
b/year	4.33	13	26.16	15.24	17.45	14.5	16.6	31.1
subtitles	9	140	208	357	460	183	643	1,000
(c)								
c/b	0.23	0.32	0.50	0.40	0.60	0.70	0.62	0.52
Tokens	378	4,865	6,300	11,542	12,891	4,941	17,835	29,365
(in use)								
Tokens/	9.69	11.01	15.07	12.84	16.89	18.93	17.33	15.23
b								

Table 2: Outlines of the Journals

The total number of the articles studied comes to 1,928, with the JSPE accounting for 899 and the PEEHS for 1,029. Since the journals of the PEEHS are published quarterly, the number of the titles is relatively constant. Meanwhile, as the publishing schedule of JSPE journals changed, the number of JSPE titles significantly increased in 2004. In particular, the number of titles per year in *PEQ* (6.53) is much larger than that in *PEEH* (3.65).

Both *PEQ* and *PEEH* are peer-reviewed journals, but the above difference is not necessarily due to the difficulty in the reviewing procedure. Each issue of *PEQ* has four or five special issue articles, which boost the total number of articles. Meanwhile, *PEEH* does not have such contents except the plenary session papers presented in the annual conference. This editorial difference should account for the difference in the number.

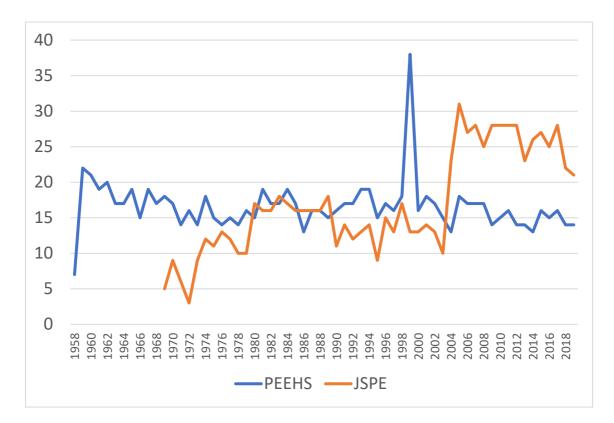


Figure 1: Numbers of Articles of JSPE and PEEHS

Figure 1 provides a line graph of changes in numbers of articles published. The PEEHS usually publishes 15 to 20 titles a year, whereas the numbers of titles in the JSPE fluctuate because of the changes in publication's schedule over the years. It should also be noted that 1999 was something of an outlier for the PEEHS due to *Proceedings of the 50th Anniversary Conference*.

We should be aware of the difference in the number of articles in each journal. The total number of titles in *MPES* and *Bulletin of JSPE* (39 + 442 = 481) is not vastly different from that in *PEQ* (418). Meanwhile, the number of titles in *AH* (768) is much larger than that in *PEEH* (261). Therefore, the overall trend in the PEEHS is more influenced by *AH* than by *PEEH*.

Articles with subtitles are more common in the PEEHS than in the JSPE. This is because the research published in the PEEHS tends to be more empirically focused and, thus, includes more information in its titles than those in the JSPE. Though there has been a notable trend in recent years for subtitles to be used for articles published in both journals.

The same tendency can be seen in 'tokens (in use).' Here 'tokens (in use)' refers to the words used in the analysis of KHCoder. Japanese is an agglutinative language, which uses many auxiliaries and

particles that complement other words but do not have meanings themselves. KHCoder automatically extracts the meaningful words as 'tokens (in use)' by conducting the morphological analysis.⁵

Table 3 below sets out the word frequency list using KHCoder. 'TF' stands for term frequency (viz., the number of occurrences of each target word in the entire data), and English translations of each word are provided next to the Japanese original in brackets. The analysis that follows we will be using the English translations for each term.

No.	Word	TF	No.	Word	TF	No.	Word	TF
1	keizai (economy)	365	51	kaikaku (reform)	50 101 gurobaru (global)		24	
2	shihon (capital)	360	52	hihan (critique)	50 102 <i>kiso</i> (basis)		24	
3	shugi (-ism)	309	53	<i>keitai</i> (form)	49	103	saihen (reorganisation)	24
4	nihon (Japan)	179	54	jinushi (landlord)	47	104	shokumin (colonisation)	24
5	kouzou (structure)	169	55	kahei (money)	46	105	<i>tenbou</i> (outlook)	24
6	chusin (centre)	169	56	kokusai (international)	46	106	fuantei (unstable)	24
7	<i>roudou</i> (labour)	163	57	dokusen (monopoly)	45	107	jigyo (undertaking)	23
8	nougyo (agriculture)	155	58	kanren (relation)	44	108	<i>boueki</i> (trade)	23
9	mondai (problem)	154	59	keiei (management)	44	109	kihon (basic)	22
10	shakai (society)	148	60	junkan (circuit)	44	110	<i>keikaku</i> (plan)	22
11	seisan (production)	135	61	nouson (farming	44	111	saikentou	22
				village)	(reinvestigation)		(reinvestigation)	
12	seisaku (policy)	123	62	hatten (development)	44	112	soshiki (organisation)	22
13	tenkai (development)	120	63	kousatsu	43	113	nichi (Japan)	22
				(consideration)				
14	kin'yu (finance)	119	64	chikuseki	42	114	kanou (possible)	21
				(accumulation)				
15	nen (year)	111	65	dankai (stage)	40	115	zaisei (fiscal)	21
16	<i>bunseki</i> (analysis)	109	66	teikoku (empire)	40	116	shiten (viewpoint)	21
17	seiki (century)	105	67	seicho (growth)	38	117	ryutsu (circulation)	21
18	kachi (value)	102	68	taisen (world war)	38	118	sabisu (service)	20
19	gendai	101	69	kadai (issue)	36	119	senzen (prewar)	20
	(contemporary)							

Table 3: Top 150 Word Frequency List of JSPE and PEEHS

⁵ We have tended to avoid any technical coding rules in this paper. Neither stop word nor word cluster is used in their technical sense, though cluster is retained for its common use in English to describe the data plotted in the co-occurrence figures that follow.

10.110	20	sangyo (industry)	101	70	seikaku (character)	36	120	tenkan (turn)	20
12rive (theory)9372taise (system)35122tokashisu (feature)2023sengo (postwar)9273Meiji35123bunkai (decomposition)2024shijo (marke)8574undo (movement)31124guobarizeshon1925kiki (crisis)7975chugoka (China)33125kakuadi (expansion)1926amerika (America)7876horb yo (transformation)33126kakuadi (expansion)1926amerika (America)7877moderu (model)32128shoki (early)1928kokka (state)7877moderu (model)32128shoki (early)1929kenkyu (study)7779Arenk (change)30131fouse (control)1930katei (process)7380shinyou (credit)30131fouse (control)1931jirei (case)7181kokku (price)30131fouse (control)1932igirisu (Britain)6783katneu (nevestigation)30133hikaku (comparison)1933kakai (Gramation)6585pisue (centrol)29133kiteri (conception)1834sokai (Gramation)6585pisue (centrol)29134kiteri (conception)1834sokai (Gramation)6585pisue (centrol) <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>. ,</td><td></td></td<>								. ,	
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49 nomin (peasant) 52 99 chingin (wage) 25 149 tokucho (feature) 17	47	ginko (bank)	52	97	kousei (structure)	25	147	keiki (business phase)	17
	48	seiritsu (formation)	52	98	seiji (politics)	25	148	kokumin (nation)	17
50 houhou (method) 52 100 hukyo (depression) 25 150 apurochi (approach) 16	49	nomin (peasant)	52	99	chingin (wage)	25	149	tokucho (feature)	17
	50	houhou (method)	52	100	hukyo (depression)	25	150	apurochi (approach)	16

Before carrying out an analysis of these terms it is worth noting that some English words are used to translate more than one Japanese term. For instance, the English word 'crisis' is used both for *kiki* (ranked as no. 25) and *kyoko* (ranked as no. 38). The former literally means a dangerous phase and the latter is a state of panic. Both terms are used to refer to an economic crisis, but *kiki* is more generally used while *kyoko* sounds more Marxian. In our data, we find that *kiki* is used to refer to financial crises (*kin'yu kiki*), currency crises (*tsuka kiki*) and similar types of crisis, while *kyoko* is used in the contexts of discussing the theory of crisis (*kyoko ron*), the Great Depression in the 1930s (*dai kyoko*) etc.

As might be expected for a Marxian-related journal, terms like 'capital,' '-ism,' and 'labour' rank high. It is notable, among other things, that '-ism' is affixed to the words 'capital' as *shihon-shugi* (capitalism), 'empire' as *teikoku-shugi* (imperialism), and 'society' as *shakai-shugi* (socialism). Meanwhile, terms like 'centre' and 'problem' appear frequently in the titles of the articles examined. Other frequent terms include 'structure', which reflects the interests of the authors in examining structural issues.

Types of economic sector examined are shown in the terms 'agriculture,' 'production,' 'finance,' 'industry,' 'market,' 'manufacturing,' 'bank,' 'peasant,' etc. It should be noted that Marxian economics in Japan is concerned not only with production and manufacturing that create surplus value through exploitation, but also with other economic sectors.

An interest in spatial and geographical topics is indicated by a number of terms including 'Japan,' 'America,' 'Britain,' 'Germany,' 'France,' 'international,' 'farming village,' 'China,' 'city,' and 'Russia.' Notable too is the primary focus on developed capitalist countries. For instance, references to 'America' focus exclusively on the United States, rather than Latin America. There are references to 'Britain' but not its constituent nations (England, Scotland, Wales and Northern Ireland). References to Germany tend to separate 'West' and 'East Germany'. Furthermore, many nation states are referred to using Japanese abbreviations, such as *eikoku* and *ei* for Britain, which are all counted separately from instances where the full name is spelled out in the title.

From the foregoing we can see that the nation state is the preferred geographical unit of analysis. The next most popular unit consists of international analyses, with urban and rural areas constituting the third most frequent group.

'Marx' is the only person who ranks in top 150 list of terms. Outside the list, 'Keynes' and 'Lenin' crop up the most frequently, with twelve and nine instances respectively. Among Japanese names 'Yamada' appears seven times (referring to the political economist Moritaro Yamada (b.1897, d.1980)), which is followed by 'Uno' (for the political economist Kozo Uno (b.1897, d.1977)), which occurs six times.

It should also be noted that there is a significant absence of terms relating to gender, race, and ecology, highlighting the need for these subjects to be explored further in Japanese Marxism.

9

We now turn to the results of correspondence analysis powered by KHCoder. Here the terms have been filtered by chi-square value and the top 20 terms have been plotted to provide an analysis of correspondences in Figure 2 below (variables are indicated by the squares).

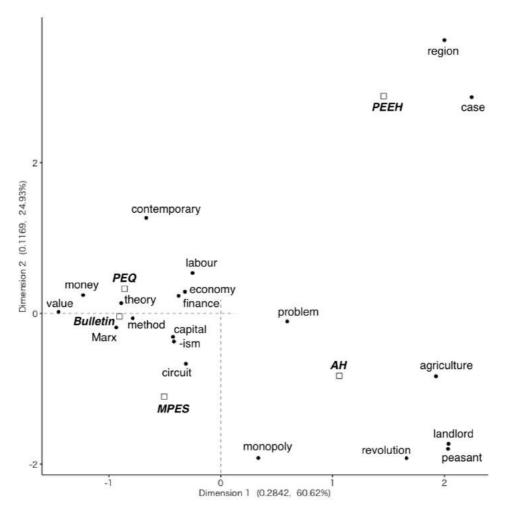


Figure 2: The 20 Most Distinctive Words of All Data Sorted by Journals

In the correspondence analysis that follows, we have used the journals as variables and plotted the frequency of terms to establish whether there is a correspondence between a particular journal and a particular term or set of terms. In the correspondence analysis, those terms that appear clustered far from the origin represent a strong correspondence between the term and the journal in that direction, while those plotted near the origin represent a weak correspondence between term and journal. Additionally, there are several terms that appear equidistant to each of the journals, which represents a moderate or dispersed correspondence between the term and the journals. For example, terms such as 'value,' 'theory,' 'method' and 'Marx' cluster closely around *PEQ* and the *Bulletin* (denoting a close correspondence), while terms such as 'agriculture,' 'monopoly,' 'landlord' and 'peasant' are exclusively

correlated with *AH*, but more loosely (denoting a weaker but definite correspondence). Meanwhile, terms such as 'contemporary,' 'economy,' 'labour,' and 'problem' tend to be more equally distributed between the journals (denoting no particular correspondence with any one of the journals).

As we have seen the JSPE journals consistently focus on topics such as 'value,' 'money,' 'theory,' and 'Marx.' This reflects the JSPE's role as one of the leading bodies in the explicit development of Marxian theory.

Meanwhile, the looser correspondences we note with the PEEHS journals is a reflection of a change of focus when *AH* was replaced as the house journal in 2002. Prior to that date the main focus was on agriculture, so terms such as 'peasant' and 'landlord' featured heavily. After 2002 these terms have tended to be displaced by a different terminology, with the terms 'region' and 'case' becoming more frequent. Again, this is a reflection of *PEEH*'s growing interest in case studies.

To address this issue, we have looked at the use of terms over time, by plotting the correspondence between a particular term and a particular decade in Figure 3 below.

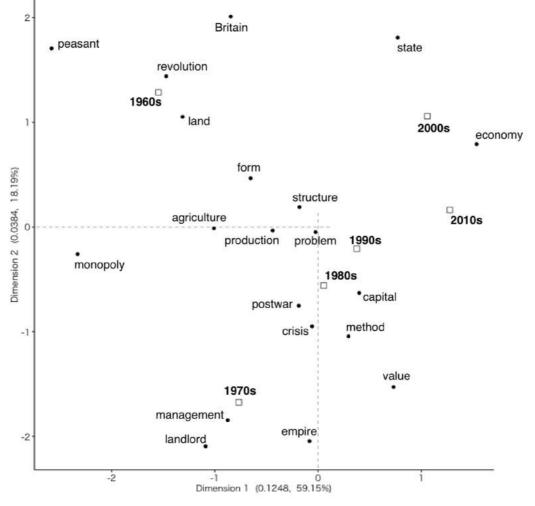


Figure 3: The 20 Most Distinctive Words of All Data Sorted by Decades (*AH* articles from 1958 and 1959 are included in the 1960s).

Here the correspondence analysis provides a new set of patterns. Terms that are strongly correlated with a particular decade tend to cluster around the margins of the figure, while terms with a weaker correspondence tend to cluster in the centre of figure.

There is a strong correspondence between the 1960s and the terms 'peasant', 'revolution' and 'Britain'. While the terms 'landlord', 'management', and 'empire' are strongly correlated with the 1970s. However, it is notable that some terms straddle more than one decade, such as the term 'monopoly' which features strongly in the 1960s and 1970s.

Of all the terms plotted in Figure 3, the term 'economy' appears the most frequently, but its appearance is characteristic of the period from the 2000s onwards. This reflects the broadening focus of Marxian-related journals and their adoption of a broader-based terminology.

In the next phase of analysis, we sought to establish coefficients between terms that enable us to examine the way terms are clustered together.

KHCoder enables us to plot terms using a co-occurrence network, which allows us to visualise the collocation of any term or set of terms selected for analysis. KHCoder automatically groups the collocations according to their coefficients and shows the groups as subgraphs. In the graph, each word forms a vertex and a coefficient showing the frequency of the collocation is shown by the thickness of the edge. KHCoder has three types of calculating edges: the Jaccard coefficient, the Cosine coefficient, and the Euclid coefficient. In this paper, we use the Jaccard coefficient in all co-occurrence networks.⁶

⁶ The Jaccard coefficient option is recommended when the data is sparse, since the word co-occurrence is calculated irrespective of appearance frequency in this option. See Higuchi (2016) p. 47.

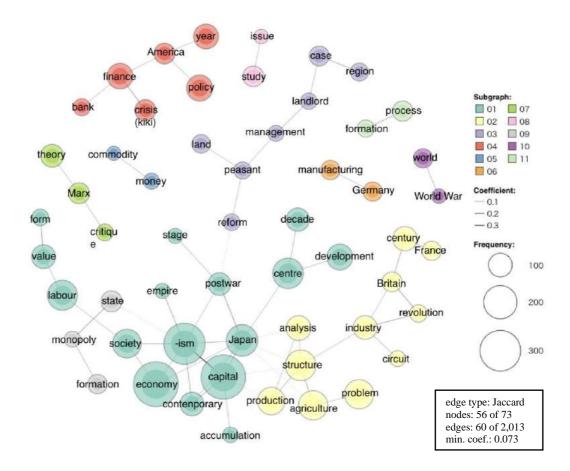


Figure 4: Co-occurrence Network of All Data: network illustration of top 60 coefficients.

In the network map of coefficients presented in Figure 4, we can identify eleven clusters of terms that centre around a nodal term, or more than one nodal terms, as well as terms that link more than one cluster. For instance, the cluster that includes 'capital' and '-ism' is clustered closely with 'economy,' 'contemporary,' and 'Japan.' Another cluster centres on the terms 'production,' 'agriculture,' and 'structure,' and a third cluster that focuses on 'finance,' 'crisis,' and 'America.' Then there is a cluster associated with agrarian case studies in which the terms 'peasant' and 'management' feature strongly.

4.2. On the Journals of JSPE

In the next phase of our research, we looked at the frequency of terms within each of the journals. In Table 4 below we set out in rank order the results of our analysis of the titles published by the JSPE.

No.	Word	TF	No.	Word	TF
1	shihon (capital)	243	51	sabisu (service)	20
2	keizai (economy)	239	52	kadai (issue)	19
3	shugi (-ism)	208	53	taikei (system)	19
4	roudou (labour)	104	54	henka (change)	19
5	kachi (value)	96	55	igi (significance)	18
6	shakai (society)	80	56	kousatsu (consideration)	18
7	<i>kin'yu</i> (finance)	79	57	seiji (politics)	18
8	gendai (contemporary)	77	58	dankai (stage)	18
9	nihon (Japan)	77	59	hen'yo (transformation)	18
10	riron (theory)	75	60	kakaku (price)	17
11	mondai (problem)	64	61	katei (process)	17
12	marukusu (Marx)	63	62	keisei (formation)	17
13	seisan (production)	61	63	kentou (investigation)	17
14	kiki (crisis)	54	64	rekishi (history)	17
15	kouzou (structure)	50	65	kanou (possible)	16
16	kokka (state)	49	66	ginko (bank)	16
17	shijo (market)	47	67	fukushi (welfare)	16
18	bunseki (analysis)	47	68	hosoku (law)	16
19	kahei (money)	41	69	genri (principle)	15
20	houhou (method)	40	70	koyo (employment)	15
21	kyoko (crisis)	38	71	chugoku (China)	15
22	hihan (critique)	36	72	apurochi (approach)	14
23	amerika (America)	35	73	posuto (post)	14
24	sekai (world)	33	74	Regulation	14
25	seido (institution)	32	75	kaikyu (class)	14
26	chusin (centre)	32	76	kanren (relation)	14
27	kigyo (firm)	31	77	kihon (basic)	14
28	kokusai (international)	31	78	kaikaku (reform)	13
29	shohin (commodity)	31	79	kakusa (inequality)	13
30	chikuseki (accumulation)	30	80	gijutsu (technology)	13

Table 4: Top 100 Word Frequency List of JSPE

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Due to its more theoretical focus, it is no surprise that the terms 'value' and 'theory' rank higher than they did in Table 3, which included the results for both the JSPE and the less theoretically-oriented PEEHS. Other terms that notably rank higher include 'finance' and 'contemporary,' which, again, reflects the JSPE's greater interest in more recent phenomena.

Also noteworthy is the preponderance of terms relating to various aspects and sectors of the modern economy, with terms such as 'finance,' 'production,' 'market,' 'industry,' 'service,' etc featuring in the top 100, while the term 'agriculture' is notable for its absence (and incidentally, 'manufacturing'). These findings reflect the JSPE's interests not only with production, but also with other sectors including finance, trade, and services.

When it comes to spatial or geographical categories, it is notable that the terms 'Japan,' 'America,' 'international,' 'global,' 'China,' are among those that appear in the top 100 rankings. This would seem to underscore the JSPE's focuses on hegemonic powers in the global capitalism, rather than the developed capitalist countries in general.

In the next stage of analysis, we looked at differences in the rank orderings of key terms between the periods in which the JSPE was publishing *MPES* and *Bulletin* and the period in which they have been publishing *PEQ*. The results of this analysis are set out in Table 5 below, which includes in rank order the top 30 words from the articles published in each journal.

No.	Word in MPES &	TF	Word in <i>PEQ</i>	TF	MPES & Bulletin ->
	Bulletin				PEQ
1	capital	143	economy	136	3->1
2	-ism	121	capital	100	1->2
3	economy	103	-ism	87	2->3
4	value	67	labour	57	7->4
5	problem	51	finance	54	16->5
6	Japan	48	theory	42	11->6
7	labour	47	society	41	9->7
8	contemporary	41	contemporary	36	8->8
9	society	39	Marx	33	12->9
10	production	39	value	29	4->10
11	theory	33	Japan	29	6->11
12	Marx	30	model	28	NA->12
13	state	29	analysis	27	24->13
14	method	29	crisis (kiki)	26	15->14
15	crisis (kiki)	28	structure	26	17->15
16	finance	25	market	25	20->16
17	structure	24	institution	22	NA->17
18	crisis (<i>kyoko</i>)	23	production	22	10->18
19	money	22	America	21	NA->19
20	market	22	state	20	13->20
21	monopoly	22	global	19	NA->21
22	international	21	money	19	19->22
23	centre	20	world	18	NA->23

Table 5: Changes in top 30 words from MPES & Bulletin to PEQ

24	analysis	20	accumulation	18	NA->24
25	profit	20	firm	17	NA->25
26	empire	19	growth	17	NA->26
27	critique	19	year	17	NA->27
28	postwar	18	critique	17	27->28
29	development	18	relationship	16	NA->29
30	commodity	17	unstable	16	NA->30

From the results set out in Table 5, the change in journal has made little different to the top three terms – 'economy,' 'capital,' and '-ism,' thus reflecting the dominant and continuing interest of the JSPE, but visible shifts occur lower down the ranking order. A notable change is the less frequent use of the terms 'value' and 'Japan' and the more frequent use of the terms 'finance' and 'theory.'

Another trend appears to be the replacement of terms such as 'monopoly,' 'international,' 'empire,' and 'post-war,' which have clearly become dated, by terms such as 'model,' 'America,' 'institution,' 'global,' and 'firm.' This change in terminology suggests two trends. One is the change in the historical conceptualisation of the latest stage of capitalism, which has shifted from 'monopoly capitalism' or 'imperialism' to 'global capitalism.' The other is the change in methodology. Scholars in the JSPE are now more acquainted with the growing use of economic models and modelling techniques in economic analysis and institutional economics in recent years.

In Figure 5 below we plot the 20 most distinctive words used by the JSPE journals correlated by decade.

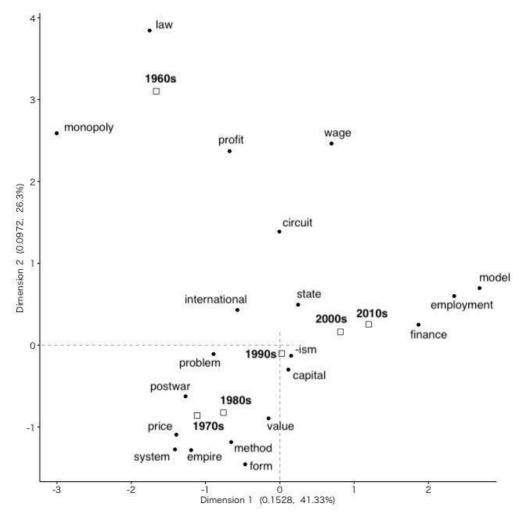


Figure 5: The 20 Most Distinctive Words of All JSPE Data Sorted by Decades

The result of correspondence analysis in Figure 5 highlights several trends. The first is the distinction between the terms most frequently employed in the 1960s and those more frequently correlated with subsequent decade. It is also worth noting that *MPES* only brought out 39 issues in the 1960s, so the sample size for this decade is much smaller – making the results something of an outlier.

When it comes to the 1970s and 1980s, the most distinctive terms are 'system,' 'price,' and 'empire.' This largely reflects the focus on research and debate on the 'transformation problem,' which dealt with the transformation of value into prices, and on questions of Marx's 'system,' relating to the structure of *Capital*, that were in vogue during this period.

Meanwhile, the most distinctive terms from the 2000s onwards are 'model,' 'employment,' and 'finance.' Again, this reflects the influence of economic modelling and analysis in recent years at the likely expense of work on the study of *Capital* and imperialism. As for the increase in the frequency of terms such as 'employment' and 'finance,' this likely reflects the influence of the 2008 financial crisis.

Below we set out the co-occurrence network of the data examined across the JSPE journals.

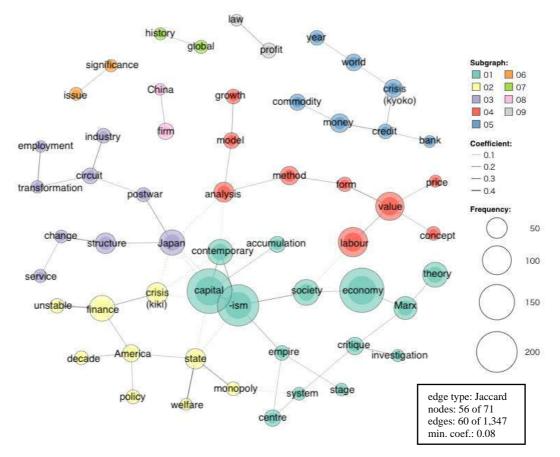


Figure 6: Co-occurrence Network of All JSPE Data

Looking at the top 60 coefficients in the co-occurrence network, it is possible to identify nine clusters. These include a cluster on the capitalist economy as a totality ('capital,' '-ism,' and 'economy'); a cluster on value theory ('labour,' 'value,' 'model'); a cluster on the Japanese economy ('Japan,' 'structure,' 'transformation'); a cluster on the financial crisis ('finance,' 'crisis (*kiki*),' 'America'); and, a cluster on money and crisis ('money,' 'crisis (*kyoko*),' 'world'). Again, when compared to Figure 4, the results from Figure 6 demonstrate the absence of agricultural issues and a notable increase in theoretical subjects.

In order to examine the change in interest from *MPES* & *Bulletin* period to *PEQ* period, let us further illustrate two more co-occurrence networks.

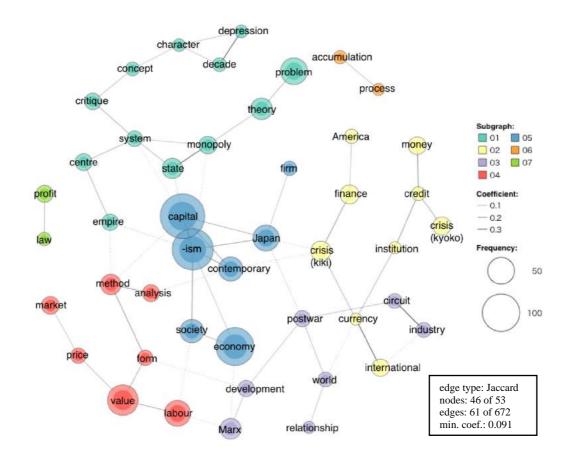


Figure 7: Co-occurrence Network of MPES & Bulletin of JSPE

Figure 7 shows the top 60 coefficients in a co-occurrence network based on the article titles of *MPES* and *Bulletin of JSPE*. Here it is possible to detect seven clusters. These include the following clusters: the capitalist economy as a totality ('capital,' '-ism,' 'economy'); the theory of monopoly and imperialism ('theory,' 'monopoly,' 'empire'); the labour theory of value ('labour,' 'value,' 'price'); and, financial crisis ('money,' 'finance,' 'crisis').

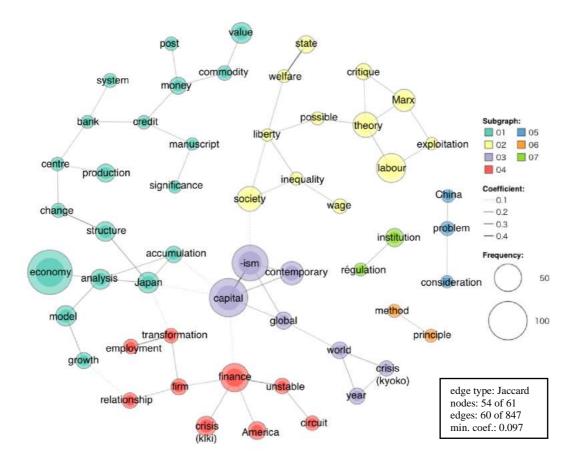


Figure 8: Co-occurrence Network of PEQ

On the other hand, when we just focus on *PEQ* (Figure 8) the co-occurrence network reveals clusters on global capitalism ('capital,' '-ism,' 'global'); models for the analysis of the Japanese economy ('economy,' 'Japan,' 'model'); labour theory ('labour,' 'theory,' 'society'); and, financial crisis ('finance,' 'crisis (*kiki*),' 'unstable').

Comparing Figures 7 and 8, we find several features that stand out as focal points for the JSPE over the past couple of decades. (1) A comprehensive analysis of capitalism that focuses on the global structure of capitalism. (2) Studies of the Japanese economy based on economic modelling. (3) An increased separation between studies of value and wider theoretical studies of labour. (4) A growing interest in financial crises.

4.3. On the Journals of PEEHS

First, let us look at the top 100 terms from articles in rank order, as shown in Table 6.

No.	Word	TF	No.	Word	TF
1	nogyo (agriculture)	148	51	taisei (system)	28
2	chusin (centre)	137	52	toshi (city)	28
3	keizai (economy)	126	53	kyoko (crisis)	27
4	kozo (structure)	119	54	seido (institution)	27
5	shihon (capital)	117	55	kankei (relationship)	26
6	nihon (Japan)	102	56	kiki (crisis)	25
7	shugi (-ism)	101	57	keitai (form)	25
8	seisaku (policy)	100	58	kousatsu (consideration)	25
9	seiki (century)	94	59	gendai (contemporary)	24
10	tenkai (development)	92	60	kindai (modern)	23
11	mondai (problem)	90	61	shokumin (colonisation)	23
12	nen (year)	86	62	seikaku (character)	23
13	sangyo (industry)	76	63	dokusen (monopoly)	23
14	nendai (decade)	75	64	rosia (Russia)	22
15	seisan (production)	74	65	undo (movemenet)	22
16	jirei (case)	69	66	dankai (stage)	22
17	sengo (postwar)	69	67	saihen (reorganisation)	21
18	shakai (society)	68	68	jigyo (undertaking)	20
19	<i>kenkyu</i> (study)	65	69	shoyu (property)	20
20	igirisu (Britain)	64	70	bunkai (decomposition)	20
21	furansu (France)	64	71	shoki (early)	19
22	doitsu (Germany)	63	72	senzen (prewar)	19
23	bunseki (analysis)	62	73	nouchi (farmland)	19
24	kogyo (manufacturing)	60	74	shoto (beginning)	18
25	roudou (labour)	59	75	chugoku (China)	18
26	tochi (land)	58	76	chosen (Korea)	18
27	katei (process)	56	77	tekko (steel)	18
28	nomin (peasant)	52	78	boeki (trade)	18
29	chiiki (region)	51	79	riron (theory)	18
30	keisei (formation)	49	80	yoroppa (Europe)	17

Table 6: Top 100 Word Frequency List of PEEHS

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As with the JSPE, the terms 'capital,' '-ism,' and 'economy' rank high. However, key differences begin to emerge with the PEEHS's focus on 'agriculture,' and the greater weight given to items focusing on 'production,' 'industry' and 'manufacturing,' as opposed to other sectors of the economy.

In terms of spatial or geographical categories the main terms include 'Japan,' 'Britain,' 'France,' 'Germany,' 'America,' 'farming village,' 'city,' 'Russia,' and 'China.' In comparison to the JSPE, the perspective appears to remain focused on the study of national and regional economies rather than the international system.

No.	Word in AH	TF	Word in <i>PEEH</i>	TF	AH -> PEEH
1	agriculture	127	centre	40	5->1
2	structure	108	Japan	38	12->2
3	capital	105	case	34	NA->3
4	economy	97	society	33	NA->4
5	centre	97	region	30	NA->5
6	-ism	92	economy	29	4->6
7	policy	73	year	28	14->7
8	development	72	policy	27	7->8
9	problem	70	century	25	10->9
10	century	69	decade	24	18->10
11	production	68	agriculture	21	1->11
12	Japan	64	Germany	20	27->12
13	industry	61	development	20	8->13
14	year	58	problem	20	9->14
15	postwar	54	city	19	NA->15
16	analysis	54	labour	17	28->16
17	Britain	53	France	16	21->17
18	decade	51	study	15	19->18
19	study	50	contemporary	15	NA->19
20	peasant	49	manufacturing	15	24->20
21	France	48	industry	15	13->21
22	land	48	postwar	15	15->22
23	revolution	47	formation	14	30->23
24	manufacturing	45	undertaking	13	NA->24
25	process	44	world war	13	NA->25
26	landlord	44	process	12	25->26
27	Germany	43	capital	12	3->27
28	labour	42	farming village	12	NA->28
29	management	36	Britain	11	17->29
30	formation	35	structure	11	2->31

Table 7: Changes in top 30 words from AH to PEEH

The move from *AH* to *PEEH* is reflected in a change in some of the key terms that crop up in the analysis. Terms such as 'case,' 'society,' and 'region' do not appear in the top 30 list of *AH* but rank high in that of *PEEH*. It should be noted, however, that the terms 'Japan' and 'Germany' also rank higher in the later journal. These facts indicate that the case studies of national economy have increased.

On the other hand, the usage of the terms like 'agriculture' and 'Britain' have decreased. It must also be noticed that the PEEHS researchers increasingly tend to avoid terms such as 'capital' and 'structure,' which were once associated with Marxian studies. This point is difficult to observe if we are not aware of the difference in the number of titles in *AH* and *PEEH*, which we have noted above.

In Figure 9 we plot the most frequent terms to appear in PEEHS journals by decade.

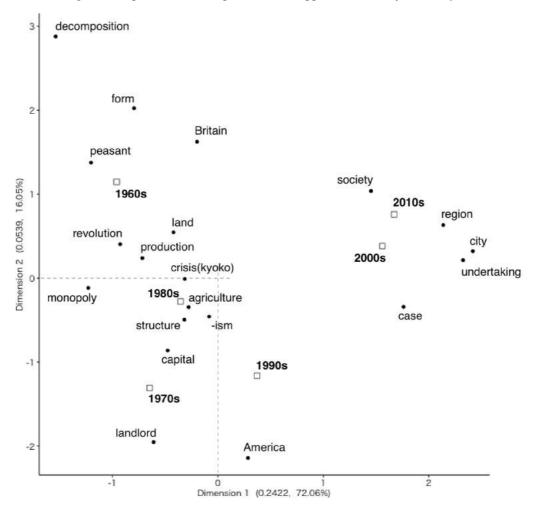


Figure 9: The 20 Most Distinctive Words of All PEEHS Data Sorted by Decades

Figure 9 indicates several changes of interest between the *AH* period and subsequently. During the 1960s the term 'decomposition' appeared in the title of articles that were interested in the class decomposition of the peasantry and its reconfiguration into capitalists and the workers - precipitated by increasing competition in the local market and farming villages. This thesis was maintained by Hisao

Otsuka (b.1907, d.1996), who led the study of economic history at that time. By the 1970s interest had shifted to the analysis of new forms of land ownership, as characterised by the term 'landlord.' The prevalence of the US as a term during the 1990s is more difficult to explain. As for the 2000's onward, the frequency of terms such as 'region,' 'case,' 'city,' and 'undertaking' reflect the interest in case studies.

Below we set out the PEEHS data as a co-occurrence network.

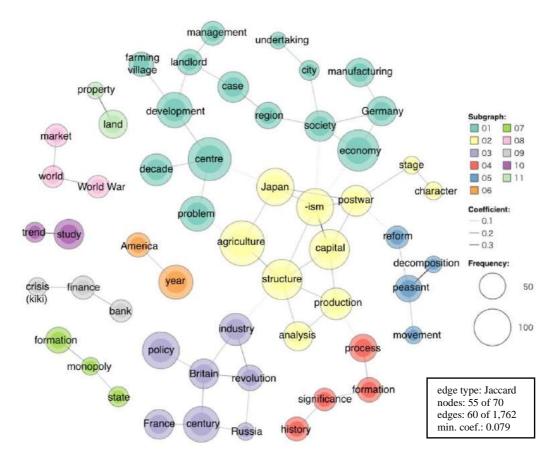


Figure 10: Co-occurrence Network of All PEEHS Data

Figure 10 sets out the co-occurrence network of the top 60 coefficients of all data of PEEHS. It is possible to detect eleven clusters, which include Japanese capitalism, especially on agriculture ('Japan,' 'capital,' 'agriculture'); the German economy ('economy,' 'Germany'); and, British and French industries ('Britain,' 'France,' 'industry'). While the JSPE has a common focus on the structural aspects of capitalism, the PEEHS is distinguished by its interest in European national economies and agriculture.

In the following paragraphs, we conduct a comparison between *AH* and *PEEH* in order to examine the changes of focus that have taken place.

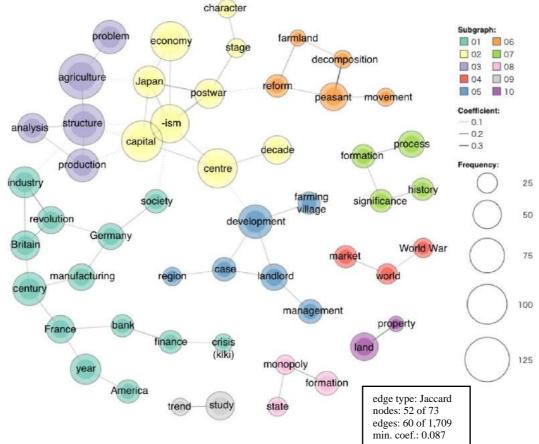


Figure 11: Co-occurrence Network of AH

Here we visualise the top 60 coefficients of all data of *AH* in Figure 11, where it is possible to identify ten clusters, including agriculture ('agriculture,' 'structure'); the comprehensive analysis of the capitalist economy ('capital,' 'economy,' '-ism'); and, analyses of industries in Western countries ('industry,' 'Britain,' 'France').

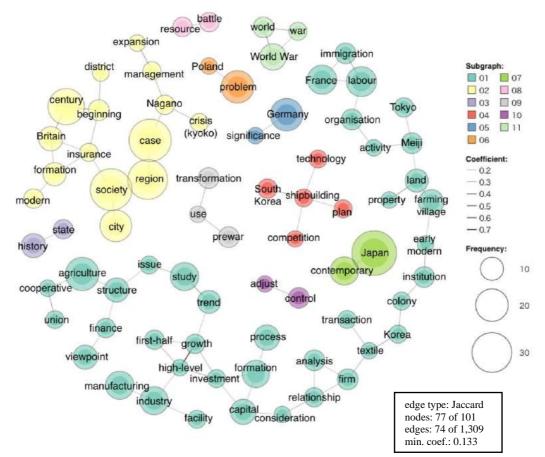


Figure 12: Co-occurrence Network of PEEH

Figure 12 is an illustration of co-occurrence network of the top 60 coefficients of all data of *PEEH*. First, it is worth highlighting that the numbers of nodes and edges are larger. This increase means that the titles in *PEEH* have more kinds of collocations that are in the same level of co-occurrence. In other words, the terms in the titles have diversified.

We can detect eleven clusters, including case studies ('case,' 'region,' 'society,' 'city'). The cluster which includes the terms 'agriculture,' 'industry,' and 'labour' is made up of a larger number of terms overall, which reflects the *PEEH*'s increasing diversification of interest.

Comparing the two co-occurrence networks in Figures 11 and 12, we can assume a correlative decline in the PEEHS's interest in the comprehensive analysis of capitalism in favour of case studies.

5. Concluding Remarks

By conducting a quantitative text analysis, we have been able to survey a vastly larger amount of literature than would otherwise be possible. From our analysis above, we conclude that (1) Japanese Marxian economics has dealt not only with the issues of productive manufacturing sectors, on which Marx himself primarily focused, but also on other sectors including agriculture, finance, services, etc.,

thus expanding into all economic fields. (2) Recent Japanese Marxian economists have increasingly moved away from the use of traditional terminology such as 'empire' and 'monopoly.' (3) The spatial and geographical interest of research tends to focus on developed countries, while, in the case of the JSPE, this is complemented by studies on structural issues such as global capitalism and hegemony. (4) While the methodology espoused by the JSPE has maintained consistently its Marxian perspective, the PEEHS, after its renaming, has shifted its focus onto case studies, thus abandoning key Marxian conceptions like 'capital' and 'structure.'

Acknowledgement

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