Research flows and results of studies on intangible cultural heritage: A network analysis of articles in related international journals, 2002–2020



# Research flows and results of studies on intangible cultural heritage:

A network analysis of articles in related international journals, 2002–2020

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#### ABSTRACT

Next year is the 20th anniversary of the preparation and adoption of the Convention for the Safeguarding of the Intangible Cultural Heritage. It is necessary to ensure the sustainability of intangible cultural heritage (ICH) for the future beyond basic protective activities. Concerning this, it is important to increase higher education and academic systems in ICH. Although it has been almost 20 years since the Convention was prepared and adopted, the results addressing this issue are insufficient. This study collects previous ICH research results and accumulates and investigates the main research subjects, topics and the change and flow of research through the keyword network analysis method based on big data analysis. Through this research, this study contributes to the establishment of the academic system and status of ICH.

#### Keywords

research trend, main research topics, knowledge system, academic system, keyword network analysis, knowledge map, big data analysis, big data mining

#### Introduction

The Convention for the Safeguarding of the Intangible Cultural Heritage (hereafter referred to as 'the Convention') is the first international convention to protect intangible cultural heritage (ICH). It was adopted at the 32nd General Assembly of UNESCO held in Paris in 2003. As of 2020, 180 countries had joined the Convention, an increase from the 30 that had ratified the agreement in 2006. Compared with UNESCO's other cultural conventions, many countries have joined in a short time, suggesting that the perception of the Convention's importance has increased. The Convention has a considerable impact on international communities. One of the most distinctive is the universal adoption of the term ICH. Most regions had used their traditional customs and cultural terms as substitutes (Tim 2013; Leem and Roger 2019). The Convention has similarly revitalised the study of ICH within the field of cultural heritage. Previously, cultural heritage research had been affected by the keystone of UNESCO's policy and concentrated on monuments, relics and archaeological excavations. After adopting the Convention for the Safeguarding of the Intangible Cultural Heritage (2003), active studies have been conducted concerning ICH, such as human knowledge, beliefs and actions (Shin 2019).

At a recent international conference related to ICH, experts emphasised the necessity of higher education and academic systems for the sustainability of ICH. When the Convention Concerning the Protection of the World Cultural and Natural Heritage was adopted in 1972, the related academic results were collected – and higher education systems were prepared – but not in the ICH field. The issue remains unresolved more than 10 years after the adoption of the Convention, and major students and specialists do not yet understand intangible cultural heritage. The present cultural heritage–related higher education and academic systems are focused on tangible culture. Thus, approaching ICH – a living heritage from the existing system – leads to problems (Galla 2018; Tim 2013).

Because of the importance of collecting previous research results related to ICH and understanding research trends and knowledge systems in the ICH field, this study collects data related to ICH gathered from previous articles since the preparation and adoption of the Convention and analyses the main research subjects, topics and the flow of research. Furthermore, the network analysis uses the keyword network analysis method based on the big data network analysis technique. This method extracts words from massive documents and conducts network analysis of the various characteristics of texts based on the network of the words. Because it allows the analysis of text contexts and structural features quantitatively and objectively, it is often used to supplement existing qualitative research methods (National Information Society Agency 2015; Oh 2020a).

### Materials and methods

This study aims to collect data from academic papers related to ICH published from 2002, when the Convention was prepared and adopted, to 2020. It analyses the main research subjects, topics and research trends, using the keyword network analysis method. Furthermore, this study will contribute to the establishment of the academic system in ICH research. This study collected and analysed English abstracts and bibliographical information of a total of 365 articles, searched with the keywords 'intangible heritage' in the *International Journal of Heritage Studies, Museum International* and the *International Journal of Intangible Heritage* – the representative international journals related to cultural heritage from 2002 to 2020.<sup>1</sup> This study considered the following research questions: What subjects are central to the discussion in the ICH field or keys to the organisation of research contents from 2002 through 2020? What are the main topics in the ICH field from 2002 to 2020? How have the main research subjects and the research topics changed and developed during the period? What characteristics appear when the above results are visualised in the form of a knowledge map?

This study was conducted in four steps, including data collection, data preprocessing, data network analysis and synthesis and interpretation (Figure 1). Data preprocessing and network analysis were conducted using NetMiner (4.4.3.b). NetMiner is a software that specialises in big data network analysis. Based on the social network analysis method, an algorithm for big data network analysis combines statistics, graph mining and machine learning.



Data preprocessing should be undertaken to analyse the keyword *network*. The computer cannot understand the abstracts and bibliographical information of the articles collected in this study, because they are unstructured data comprised of human language. Thus, it has been necessary to transmute it into a standardised structure for computer analysis (Oh 2020a). This study deconstructed the unstructured texts, using the morpheme network analyser of NetMiner, and extracted noun morphemes in a standardised structure. The data were refined applying the thesaurus functions, such as 'Synonym', 'Directive', and 'Exception'. Refining the data using the thesaurus increases the accuracy of the network analysis result. The word 'Synonym' in the thesaurus defines the function that unifies words with similar meanings. For example, it unifies similar words such as *intangible heritage* and *intangible cultural asset* into ICH. 'Directive' is the function that extracts proper nouns with no morpheme segmentation as they are. 'Exception' is the function that removes the words generally used in abstracts – such as *abstract* and *study* – or unnecessary words (Oh 2020b).

As a result of the data preprocessing of the English abstracts of 365 academic papers concerning ICH collected in this study, 3,867 noun morphemes were extracted. With these words, a keyword network analysis was conducted. The main indices of the keyword network analysis were 'cooccurrence frequency', 'degree centrality' and 'eigenvector centrality'.

The phrase 'co-occurrence frequency' describes the calculation of how frequently the words appear in a certain range. Words with a high frequency often appeared in several papers simultaneously. Moreover, centrality is the calculation of the degree of the position in the central structure of a network

by word, which can be divided into degree centrality and eigenvector centrality. 'Degree centrality' is the calculation of the total number of interconnected words. Words with a high degree of centrality are connected to other words that are important and central within a text. 'Eigenvector centrality' is the value that measures the number of connections and the influence of words. Words with greater eigenvector centrality are those with important influences on the text composition (Kim 2016). Thus, words with greater degrees of centrality and eigenvector centrality; words with great co-occurrence frequency are vital keywords in the text composition or the main research subjects in the relevant field (Oh 2020a).

## Research trends in the field of intangible cultural heritage

#### 1. Status of published papers

It is important to evaluate the basic status of the 365 academic papers collected before examining the result of keyword network analysis. This study collected the abstracts and bibliographical information of a total of 365 articles, located with the keyword, 'intangible heritage'. There were, respectively, 134, 54 and 177 relevant papers

Table 1

Main indices of keyword network analysis (Source: Oh 2020a, 40; reconstructed)

Index	Description	Direction of Interpretation
Co-occurrence frequency	The number of times of co-occurrence within a certain range(Eigenvalue estimated for each word)	What are the words appearing often simultaneously in multiple texts?
Degree centrality	The sum of the number of neighbour nodes interconnected	What are the main words that are central in the text?
Eigenvector centrality	Specifying the number of node connections and location influences simultaneously	What are the words that have important influences on the text composition?

#### Table 2

Basic status of the articles collected

Journal title	Field	Citation index	Number of articles published	Number of articles collected
International Journal of Heritage Studies	Social sciences	A&HCI, SCOPUS, SSCI	2,509	134
Museum International	Arts and Humanities	A&HCI, SCOPUS	2,323	54
International Journal of Intangible Heritage	Humanities	A&HCI, SCOPUS, KCI	198	177



Number of articles published per year

published in the International Journal of Heritage Studies, Museum International and the International Journal of Intangible Heritage (Table 2). These academic journals are SCI international journals that publish the work of researchers with a high number of academic contributions. In particular, the International Journal of Intangible Heritage, founded in 2006, is the first international journal specialising in ICH. Excluding book reviews, 198 articles have been published at the time of writing, and this study selected 177 articles.

The status of the related academic papers must be examined by year. As seen in Figure 2, for ICH-related papers, four articles were published in 2003 when the Convention was adopted. This number sharply increased in 2004, when 27 articles were published. A considerable number of studies were published to interpret the contents of the Convention immediately after its adoption, such as its origin, purpose and implementation method. Following 2004, there was a decline; in 2006, with 17 related articles published, was another increase, more than 10 articles being published each year by 2012. In 2013, 10 years after the adoption of the Convention, the number of articles sharply increased – compared with the previous periods when 21 articles were published. At the time of writing, over 20 articles are published each year.

## 2. Network analysis of keywords and the main research topics

Through the results of co-occurrence frequency and centrality network analysis, it is possible to discover the main research subjects and topics in the research field of ICH. First, unstructured data from 365 articles were preprocessed to extract 3,867 noun morphemes. After forming a network based on the connections between these words and documents, network analysis of cooccurrence frequency, degree centrality and eigenvector centrality was conducted.

Co-occurrence frequency is the value that calculates how often the words appeared in a certain range. The words with a high co-occurrence frequency are those commonly used by the authors while writing related papers. As a result of the network analysis, excluding the search term, intangible cultural heritage,<sup>2</sup> the word with the highest co-occurrence frequency was 'community' (111 times), followed by 'culture' (95 times), 'practice' (90 times), 'process' (69 times), 'role' (65 times), 'value' (65 times), 'form' (65 times) and 'safeguarding' (63 times).



Word cloud for co-occurrence frequency analysis

Next, degrees of centrality and eigenvector centrality were analysed. These values calculate the degree of the position in the central structure of a network by word. The words with high centrality are those that have important influences on the text composition. As a result of the network analysis – excluding the search word ICH – the word with the highest degree centrality was 'community' (0.2180), followed by 'practice' (0.1996), 'culture' (0.1793), 'value' (0.1730) and 'knowledge' (0.1715). The result of the network analysis of eigenvector centrality was similar to that of degree centrality. The order was 'community' (0.1830), 'practice' (0.1681), 'culture' (0.1512), 'value' (0.1464) and 'knowledge' (0.1440).

#### Table 3

Anal	ysis r	esults (	of co	-occurr	ence fr	requency	/. degr	ee cent	rality	and	eigenve	ector	central	ity
											·			

Co-occurrence free	luency	Degree cei	ntrality	Eigenvector ce	ntrality
Word	Value	Word	Value	Word	Value
ICH	188	heritage	0.268901	heritage	0.221147
heritage	187	ICH	0.259229	ICH	0.215178
community	111	community	0.218046	community	0.182957
culture	95	practice	0.199634	practice	0.168135
practice	90	culture	0.179339	culture	0.151184
cultural heritage	72	cultural heritage	0.178297	cultural heritage	0.150572
process	69	value	0.17299	value	0.146350
role	66	knowledge	0.171465	knowledge	0.143921
value	65	process	0.164668	process	0.138166
form	65	role	0.163789	role	0.138081
safeguarding	63	place	0.163356	place	0.137561
person	60	safeguarding	0.158482	safeguarding	0.136046
museum	60	development	0.157468	development	0.132663
knowledge	60	identity	0.154766	identity	0.132066
UNESCO	60	history	0.153975	UNESCO	0.129718
place	57	UNESCO	0.151654	history	0.129641
history	57	context	0.149457	context	0.126023
development	56	museum	0.148314	2003 Convention	0.125574
tradition	53	form	0.147008	museum	0.125310
identity	48	2003 Convention	0.146097	form	0.123742
2003 Convention	48	tradition	0.144793	tradition	0.122476
site	47	site	0.143688	site	0.122137
context	46	person	0.138225	person	0.117293
group	45	policy	0.136947	list	0.115724
concept	45	list	0.134705	policy	0.115546
society	41	understanding	0.132540	management	0.112077
issue	41	management	0.131509	understanding	0.111479
understanding	40	issue	0.128569	group	0.110077
system	40	world	0.128374	issue	0.109383
list	40	group	0.128085	preservation	0.109179
policy	39	preservation	0.127694	society	0.108045
change	39	society	0.126384	world	0.107964
material	37	protection	0.124953	protection	0.106943
art	37	life	0.124615	life	0.105878
world	36	activity	0.124270	activity	0.105694
preservation	36	system	0.123755	material	0.104820
conservation	36	material	0.123394	system	0.104812
challenge	36	tourism	0.123281	tourism	0.104268
area	36	interest	0.121938	change	0.103901
work	35	challenge	0.121902	memory	0.103795
relationship	35	change	0.121886	interest	0.103744
importance	35	importance	0.121333	world heritage	0.103476
management	34	memory	0.120596	challenge	0.103196
field	34	world heritage	0.120408	government	0.103139
world heritage	34	concept	0.120348	concept	0.103066
perspective	33	field	0.120301	importance	0.102805
nature	33	resource	0.119938	expression	0.101612
institution	33	government	0.119469	perspective	0.101506
experience	33	perspective	0.119391	field	0.101395
region	32	expression	0.118820	significance	0.100571

% The keywords with high values of co-occurrence frequency, degree centrality and eigenvector centrality are in bold and underlined.

The words with high degrees of centrality, eigenvector centrality and co-occurrence frequency are interpreted as vital keywords in the text composition or the main research subjects in the relevant field. The words with high values in all indices were identified in Table 3 to examine the keywords or the main research subjects in the ICH field.

The words measured with high co-occurrence frequency, high degree centrality and high eigenvector centrality included 'community', 'practice', 'culture', 'value', 'knowledge', 'process', 'role', 'place', 'safeguarding', 'development', 'identity', 'history', 'UNESCO' and '2003 Convention'. These words are the keywords and primary research subjects essential in the composition of academic papers on ICH.

The results were compared by analysing co-occurrence frequency and degree centrality to examine the difference

between the main research subjects depending on the academic journal. The analysis revealed that 'community' commonly appeared as the main research subject in the three academic journals. Additionally, the contents were summarised and compared (Table 4) to the results of the analysis of the *International Journal of Heritage Studies* (hereafter, IJHS) and the *International Journal of Intangible Heritage* (hereafter, IJIH), which identified significant differences. This is the summary of the top 30 words by grading them based on the analytical results.

In a comparison between the two journals, the following differences were found in the main research subjects: 'conservation', 'preservation', 'site' and 'context' appeared in IJHS, while 'hand', 'safeguarding', 'person', 'life' and 'activity' appeared in IJIH. Consequently, the journals seem to differ in their perceptions of ICH.

#### Table 4

	Co-occurrence frequency		Degree cen	trality	Eigenvector centrality		
Index	Word	Value	Word	Value	Word	Value	
	heritage	103	heritage	0.340124	heritage	0.258894	
	ICH	52	ICH	0.242825	ICH	0.189402	
	practice	44	practice	0.222075	practice	0.175941	
	community	43	community	0.221171	community	0.174091	
	cultural heritage	38	cultural heritage	0.214011	cultural heritage	0.170500	
	value	35	value	0.199519	value	0.160455	
	site	34	place	0.195356	place	0.153958	
	process	33	site	0.193707	site	0.151641	
	place	33	context	0.188504	context	0.149088	
	UNESCO	30	process	0.187595	process	0.148988	
	role	27	development	0.180175	UNESCO	0.143237	
	context	27	UNESCO	0.178469	development	0.142882	
	history	26	history	0.174189	understanding	0.136918	
	culture	26	understanding	0.172072	history	0.136675	
	understanding	23	world heritage	0.164538	world heritage	0.131712	
	conservation	23	conservation	0.163875	conservation	0.131518	
	world heritage	23	role	0.162738	role	0.128644	
	list	22	identity	0.16106	identity	0.128564	
	development	21	significance	0.160564	significance	0.128172	
	concept	21	interest	0.154027	culture	0.121529	
	identity	20	culture	0.153782	interest	0.120891	
	group	20	policy	0.151193	management	0.120806	
	work	19	management	0.149537	concept	0.119998	
	significance	19	group	0.149008	policy	0.119955	
	policy	18	list	0.148664	list	0.119715	
	material	18	concept	0.148313	group	0.119153	
	management	18	knowledge	0.148308	knowledge	0.116943	
	form	18	preservation	0.147413	work	0.116403	
	tradition	17	resource	0.144548	preservation	0.115599	
	region	17	change	0.144157	government	0.113843	

Comparison of analysis results by journals

#### Table 4

Comparison of analysis results by journals

Index	Co-occurrence frequency		Degree cer	ntrality	Ity Eigenvector centrality   Value Word Value   0.298447 ICH 0.233031   0.238024 community 0.188010	
muex	Word	Value	Word	Value	Word	Value
	ICH	109	ICH	0.298447	ICH	0.233031
	heritage	64	community	0.239024	community	0.188919
	community	61	heritage	0.234349	heritage	0.185091
	culture	57	culture	0.215829	culture	0.172493
	practice	45	practice	0.208246	practice	0.165737
	safeguarding	44	safeguarding	0.201234	safeguarding	0.163069
	person	40	knowledge	0.194458	knowledge	0.155429
	form	40	form	0.179224	form	0.140803
	museum	38	role	0.176162	role	0.139989
	knowledge	37	museum	0.176004	museum	0.139733
	tradition	33	value	0.172529	2003 Convention	0.138110
	role	33	2003 Convention	0.168591	value	0.136866
	process	30	person	0.168154	person	0.133952
	development	30	tradition	0.165889	tradition	0.133436
	2003 Convention	30	process	0.165528	cultural heritage	0.129905
	value	27	cultural heritage	0.165517	process	0.129753
IJH	importance	25	development	0.159213	life	0.12693
	history	25	place	0.157516	development	0.126731
	cultural heritage	25	life	0.157256	identity	0.125138
	world	24	identity	0.155649	place	0.123478
	United Nations Educational	24	world	0.152157	world	0.121402
	system	23	activity	0.150910	United Nations Educational	0.121289
	issue	23	United Nations Educational	0.149938	activity	0.118847
	group	23	issue	0.148428	issue	0.118559
	challenge	23	importance	0.146944	importance	0.118425
	art	23	history	0.146907	challenge	0.116917
	area	23	list	0.146090	history	0.116371
	place	22	art	0.145263	list	0.116356
	life	22	challenge	0.143265	art	0.116187
	activity	22	expression	0.142075	protection	0.113447

Meanwhile, NetMiner's PFNet is the function utilised to keep the key nodes intact and leave important links only. This function is usually used to draw a network map. A PFNet keyword network map was drawn to examine how the words displayed as the main research subjects, including 'community', 'practice', 'culture' and 'value', were connected to other words and used as research topics. The topics are identified by arranging the words connected to the keywords (marked in yellow) by looking at the picture. As seen in Figure 4, the main research topics in the ICH field included 'ICH community (form, resources and government)', 'heritage practice', 'heritage value', 'ICH knowledge', 'ICH knowledge and museum', 'heritage role and challenge', 'heritage process', 'UNESCO convention' and 'heritage history'.



#### 3. Changes in keywords and research topics by period

This chapter classified and analysed the collected data by period and compared the results to examine how the main research subjects and topics have evolved. The period from 2002 to 2020 was divided into five-year units: Period 1 (2002–2006), Period 2 (2007–2011), Period 3 (2012–2016) and Period 4 (2017–2020). Table 5 classifies data by the four periods and determines the number of words extracted through the preprocessing work.

#### Table 5

Data classification results by period

Index	Period 1 (2002–2006)	Period 2 (2007–2011)	Period 3 (2012–2016)	Period 4 (2017-2020)	
Number of articles collected	54	88	229	104	
Number of words extracted	660	1,434	1,938	1,771	

#### Table 5

Analysis results by period

Index	Period 1 (2002–2006)		Period 2 (2007–2011)		Period (2012-20	3 16)	Period 4 (2017–2020)	
	Word	Value	Word	Value	Word	Value	Word	Value
	ICH	32	heritage	38	heritage	69	heritage	57
	heritage	23	ICH	38	ICH	62	ICH	56
	museum	13	culture	27	practice	37	community	42
	value	12	community	25	culture	34	safeguarding	26
Co-occurrence	culture	12	museum	23	community	34	practice	26
frequency	community	10	practice	22	process	27	role	22
	description	10	form	21	cultural heritage	27	process	22
	cultural heritage	9	role	19	form	24	person	22
	tradition	8	person	17	tradition	23	knowledge	22
	safeguarding	8	UNESCO	16	site	21	culture	22
	ICH	0.275912	heritage	0.255839	heritage	0.291116	heritage	0.278897
	heritage	0.256062	ICH	0.254589	ICH	0.264805	ICH	0.273394
	value	0.203727	culture	0.218116	practice	0.224715	community	0.239482
	community	0.195428	community	0.215875	community	0.211151	practice	0.204240
Degree	museum	0.185689	museum	0.207905	form	0.190155	safeguarding	0.203266
centrality	knowledge	0.182329	practice	0.206531	culture	0.189148	cultural heritage	0.198744
)	challenge	0.175041	institution	0.193762	cultural heritage	0.186376	knowledge	0.180794
	culture	0.166998	knowledge	0.180497	process	0.179854	process	0.178508
	practice	0.159970	place	0.177406	site	0.179226	culture	0.175807
	history	0.159168	role	0.175738	UNESCO	0.178941	person	0.174032
	ICH	0.225682	ICH	0.2056	heritage	0.224296	heritage	0.213804
	heritage	0.214630	heritage	0.2039	ICH	0.204407	ICH	0.212839
	value	0.186061	culture	0.1738	practice	0.176802	community	0.189335
	community	0.182634	community	0.1724	community	0.166135	safeguarding	0.163748
Eigenvector	knowledge	0.166458	museum	0.1672	cultural heritage	0.148779	practice	0.162289
centrality	challenge	0.166443	practice	0.1662	culture	0.147498	cultural heritage	0.157176
,	museum	0.161460	institution	0.1612	form	0.146189	knowledge	0.142887
	practice	0.152695	place	0.1469	UNESCO	0.144222	culture	0.139726
	identity	0.149771	preservation	0.1467	process	0.143070	process	0.138030
	life	0.147980	knowledge	0.1425	site	0.141743	role	0.137715



Privet Reyword network map (Period 1 [2002–2006])



The words with high co-occurrence frequency, degree centrality and eigenvector centrality are interpreted as keywords essential in generating texts or the main research subjects in the relevant field. In Table 6, the words with both high frequency and high centralities by period include 'ICH', 'value' and 'community' in Period 1; 'ICH', 'museum' and 'community' in Period 2; 'ICH', 'practice' and 'community' in Period 3; and 'ICH', 'safeguarding' and 'community' in Period 4.

It is interesting to note that network analysis was conducted on 'community' as a main research subject in all the periods. This suggests that 'community' has been an important research subject in the ICH field irrespective of the period. The Convention commentary book, published by UNESCO, also specifies that the role of the community is important in the protection of ICH. UNESCO emphasises that regular performance and learning should be undertaken among generations in the community, so the intangible can come to life (ICHCAP 2019; UNESCO 2010).

Next, a PFNet keyword network map was drawn to examine the connection between the keywords, as the main research subjects, and the other words, to show how they were used as topics. The examination revealed that the main research topics in Period 1 (2002–2006) included 'ICH description (definition, preservation)', 'community value', and 'community role'. Period 1 is the period during the adoption of the Convention. This suggests that the studies were mainly conducted on the definition of the concept of ICH and the direction of the interpretation of the Convention. It is important to note that, instead of 'safeguarding', 'preservation' is connected to 'ICH description'.

The main research topics in Period 2 (2007–2011) can be examined using the same method. As seen in Figure 6, the main research topics were 'ICH preservation concept', 'Convention practice' and 'museum theory'. In Period 2, studies related to the Convention's execution method and the implementation of the Convention through museum theory were conducted.

The main research topics in Period 3 (2012–2016) were 'ICH development', 'ICH community form' and 'ICH policy'. As seen in Figure 7, compared with Periods 1–2, the number of words connected to 'ICH' increased in Period 3, and their meanings were diversified. From this information, studies of ICH on various topics were clearly conducted in Period 3. Of note, 'development' appeared, which had not been seen in the previous periods, and 'preservation' was not among the words connected to 'ICH'. 'ICH development' can be interpreted as the development and use of ICH or the sustainability of ICH. UNESCO announced that it would also aim at the



PFNet keyword network map (Period 3 [2012-2016])



PFNet keyword network map (Period 4 [2017-2020])

sustainability of ICH and the future protection of ICH – at the sixth session of the General Assembly of the States Parties to the Convention for the Safeguarding of the Intangible Cultural Heritage held in 2016 (ICHCAP 2017).

The main research topics in Period 4 (2017-2020) were also examined (Figure 8). First, the words that were excluded in the previous periods, including 'person', 'process', 'life' and 'heritage context', appeared in connection with 'ICH' in Period 4. The main research topics were 'ICH person', 'ICH process', 'ICH and heritage context', 'community practice' and 'community culture system'.

This suggests that the understanding of ICH as living heritage was broadened and that studies on this broadened understanding were actively conducted. Moreover, 'preservation' is notably not included in the words connected to 'ICH' in Period 4. Instead, 'safeguarding' is connected. 'Safeguarding' and 'preservation' appear to be similar words, yet they have completely different meanings. 'Preservation' is a word with static and passive implications, observing culture as an object to preserve. Meanwhile, 'safeguarding' focuses on the process of human-based holistic understanding (ICHCAP 2019). In summary, almost 20 years after the adoption of the Convention, the understanding of ICH as living heritage has

expanded, and, in place of 'preservation', 'safeguarding' is universally used.

### Conclusion

This study collected the article data in the ICH field from 2003 - when the Convention for the Safeguarding of the Intangible Cultural Heritage was prepared and adopted - to 2020. It analysed the main research subjects, research trends and the change and flow of research, using the keyword network analysis method. Furthermore, this study contributes to the establishment of an academic system in the ICH field.

This study collected the English abstracts and bibliographical information data of 365 articles, searched with the keywords 'intangible heritage', from three representative international cultural heritage-related journals, the International Journal of Heritage Studies, Museum International and the International Journal of Intangible Heritage. It also involved a keyword network analysis. The study results can be summarised, focusing on the research questions presented in section 2, as follows.

First, as a result of the co-occurrence frequency analysis, 'community' had the highest frequency, followed by 'culture', 'practice', 'process', 'role', 'value', 'form' and

'safeguarding'. This suggests these words are the most commonly used when the authors prepared ICH-related articles.

Second, this study found and examined the words with high co-occurrence frequency, degree centrality and eigenvector centrality. The words with high values of the three indices were identified as the main research subjects in the ICH field, or the essential keywords in preparing the related texts. The examination revealed that 'community', 'practice', 'culture', 'value', 'knowledge', 'process', 'role', 'place', 'safeguarding', 'development', 'identity', 'history', 'UNESCO' and 'convention', were keywords – or the main research subjects.

Third, to examine if the main research subjects differed depending on the academic journal, cooccurrence frequency analysis and centrality analysis were conducted to compare the results. According to the analysis, 'conservation', 'preservation', 'site' and 'context' appeared in the *International Journal of Heritage Studies*. Meanwhile, 'safeguarding', 'person', 'life' and 'activity' appeared in the *International Journal of Intangible Heritage*. This suggests differences in the perceptions of ICH between the two journals.

Fourth, to examine the change and flow of research in the ICH field, a keyword network analysis of data was conducted and compared by breaking down the period into Period 1 (2002–2006), Period 2 (2007–2011), Period 3 (2012–2016) and Period 4 (2017–2020). As a result of the co-occurrence frequency and centrality analysis, the value of 'community' was high in all periods. The analysis indicated that 'community' was an important research subject in the ICH field.

Fifth, the change and flow of the research results of keyword network analysis were compared by drawing a PFNet network map for each period. The examination revealed that the main research results of keyword network analysis in Period 1 (2002-2006) and Period 2 (2007-2011) were 'ICH description', 'convention practice' and 'museum theory'. Studies - such as the direction of the interpretation of the Convention and the implementation method - were conducted. In Period 3 (2012–2016), compared with Periods 1 and 2, the number of words connected to ICH increased and their meanings diversified. Consequently, in Period 3, studies of ICH were actively conducted with various results of keyword network analysis. Last, in Period 4 (2017-2020), 'ICH person', 'ICH process', 'ICH and heritage context', 'community practice' and 'community culture system' appeared without precedent. This suggests that the understanding of ICH as living heritage has deepened and studies related to this deeper understanding have been conducted.

Sixth, a change in the perception of ICH occurred throughout the periods. In Period 1, 'preservation' was connected to 'ICH description'; however, in Period 3, 'preservation' disappeared, and in Period 4, instead of 'preservation', 'safeguarding' appeared and was connected to ICH. 'Preservation' implies passivity, viewing culture as an object to be preserved. Meanwhile, 'safeguarding' focuses on the process and people involved in ICH, based on a holistic understanding of heritage. In summary, almost 20 years after the Convention was adopted, understanding ICH as living heritage has deepened and – instead of preservation – safeguarding has been used universally.

This paper facilitates the understanding of research subjects – the result of keyword network analysis – and the change and flows in the ICH field by collecting and analysing academic data previously accumulated in the ICH field. This study evaluated the contents of the abstracts intuitively by presenting the research results in the form of a knowledge map. The research methodology of this paper can be used to understand and investigate future global issues related to ICH.

## ENDNOTE

- 1 Fifty related academic journals and 3,365 related papers surfaced when 'intangible heritage' was searched on Korea's representative academic research information service, www.riss.kr. However, a considerable number of contents about intangible assets unrelated to cultural heritage are included among them. Thus, to achieve significant results, this study collected and analysed data focusing on SCI journals related to cultural heritage.
- 2 Because intangible culture heritage is a search term, co-occurrence frequency and centrality must be high. Thus, the network analysis results were examined, focusing on the words that appeared at the next highest frequency, excluding the search term.

## REFERENCES

- Bandarin, Francesco. 2016. 'Linkages between ICH Safeguarding and the Sustainable Development Goals: UNESCO's Action.' 27.
- Galla, Amareswar. 2018. 'Synergies in Safeguarding Intangible Heritage: How best can Universities add Value?' Paper presented at 2018 International Forum Unlocking the Potential of Tertiary Education for Intangible Cultural Heritage Safeguarding, Seoul, South Korea, 157–167.
- ICHCAP. 2017. The Sixth Session of the General Assembly of the States Parties to the Convention for the Safeguarding of the Intangible Cultural Heritage. Epub ahead of print.
- · ICHCAP. 2019. Understanding Intangible Cultural Heritage. Jeonju: ICHCAP
- Julio, S. R., and A. C. Ariane. 2018. 'ICH and "Frugal Innovation": A Contribution to Development through the Framework of the 2003 Convention.' *International Journal of Intangible Heritage* 13: 173–187.
- Kim, M. J. 2018. 'Forecasting the Future Korean Society: A Big Data Analysis on "Future Society"-related Keywords in News Articles and Academic Papers.' *Informatization Policy* 25, no. 4: 37–64.
- · Kim, Y. H. and Y. J. Kim. 2016. Social Network Analysis. Seoul: PAKYOUNGSA.
- Lee, S. I. 2018. 'Quantitative Analysis of Research Trends in Korean E-Government Using Text Mining and Network Analysis Methods.' *Informatization Policy* 25, no. 4: 84–107.
- Leem, D. H. and L. Janelli Roger. 2019. 'South Korea's intangible cultural asset system and UNESCO's intangible heritage policies: comparison and discussion.' *Journal of National Academy of Sciences, Republic of Korea* 58, no. 1: 87–149.
- NIA. 2015. *IT & Future Strategy*. Daegu: National Information Society Agency.
- Oh, J. S. 2020a. 'A Study on Research Trends and Knowledge System in Cultural Contents Studies Using Topic Modeling and Text Network Analysis Based on Big Data.' *The Journal of Cultural Policy* 34, no. 2: 35–69.
- Oh, J. S. 2020b. 'Research Trends and Knowledge System Analysis of the Academic Field of Intangible Cultural Heritage through Big Data Text-Mining.' *Korean Journal of Intangible Heritage* 8: 93–127.
- Shin, D. W. 2019. 'A Study on Value Change of Intangible Cultural Heritage in Korea Cases of Domination Process for Intangible Cultural Heritage.' PhD diss., Hanyang University.
- Tim, Curtis. 2013. 'Overview of the Impacts of the 2003 Convention to the Asia-Pacific Region.' *Reflection on the Efforts to Safeguard ICH and Prospects*, 175–183.
- UNESCO. 2010. Kit of the Convention for the Safeguarding of the Intangible Cultural Heritage. Epub ahead of print.
- Yulong, Chen, Ke, Xue, and Megan Dai. 2020. 'The academics of Intangible Cultural Heritage knowledge map analysis based on CiteSpace (2003–2019).' *International Journal of Intangible Heritage* 15, no. 2: 157–174.