

Research on the Drinking Culture of the Choseon dynasty's Ruling Class using Semantic Network Analysis

Mi-Hye Kim*, Yeon-Hee Kim

* Department of Food and Nutrition, Hoseo University, Asan 31499, Republic of Korea

Department of Semiconductor Engineering, Hoseo University, Asan 31499, Republic of Korea

ABSTRACT

In this study, the drinking culture of the *Choseon* dynasty is examined with the text frequency analysis technique on the entire 『*Choseonwangjosilok* (朝鮮王朝實錄)』. This study examined a total of 1,968 volumes and 948 books about 27 kings of *Choseon*, which spans a total of 518 years, through web crawling on the National Institute of Korean History website. Python 3.8 was used to extract sentences related to alcohol, Rhino 1.4.5 was used for morphological analysis to extract nouns, and Gephi 0.9.2 was used for semantic network analysis. According to 『*Choseonwangjosilok* (朝鮮王朝實錄)』 about alcohol culture, the results of the analysis are as follow: Alcoholic beverages were more often used in court or in ritual ceremonies rather than those based on specific ingredients or manufacturing methods commonly used by the general public. regarding the ruling class through semantic network analysis 1 in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, the *Choseon* dynasty was found to be highly associated with political issues related to maintaining the power relations within the Korean royal court system. At times, alcohol was used to maintain personal relationships, while at other times it was seen as an essential item in state ceremonies. It was also used as a highly political means to maintain and strengthen national power.

Keywords 『*Choseonwangjosilok* (朝鮮王朝實錄)』, semantic network analysis, Choseon dynasty, the drinking culture, ruling class.

INTRODUCTION

Alcohol has been an integral part of Korean life since ancient times when people drank and sang at *Jecheon* ceremonies which is a primitive religious ceremony that worships and sacrifices heaven for a successful harvest. It played a major role when the ruling class began consolidating its power to build and rule countries. Alcohol adds a sense of sanctity to human events, allows us to enjoy the pleasure of festivals, and lubricates social activities.¹ Human society developed a hierarchical system of rulers and subjects. As the production economy developed, the form of alcohol changed. A small ruling class, corresponding to the upper class of pre-modern

society, enjoyed various types of alcohol, and above all, they left records about alcohol. In the "*Goryeodo-kyeong*" (高麗圖經)² written by a Chinese envoy during the *Goryeo* dynasty, it is recorded that the people of *Goryeo* generally enjoyed alcohol, but that the common people drank alcohol that was tasteless and strong color because it was difficult to obtain the good quality alcohol brewed at the "*Yangonseo*" (良醞署). It showed the difference between the alcohol consumed by the ruling class and the common people.

In the *Choseon* dynasty, the three traditional alcohol systems of *cheongju*, *takju*, and soju were established and the methods and techniques for brewing them developed and diversified.³ The "*Gojori*" during the *Choseon* dynasty contains a lot of records and various types of alcohol and their brewing methods, so much so that it could be considered a book on alcohol preparation. However, it is difficult to confirm how the *Choseon*

*Correspondence: Mi-Hye Kim

E-mail: kimmihye92@hoseo.edu

Received Feb 19, 2023; Accepted Feb 23, 2023; Published Feb 28, 2023

doi: <http://dx.doi.org/10.5667/Cellmed.2023.003>

©2023 by CellMed Orthocellular Medicine Pharmaceutical Association

This is an open access article under the CC BY-NC license.

(<http://creativecommons.org/licenses/by-nc/3.0/>)

people perceived alcohol and what it meant to them by reading the "Gojori" book.

During the *Choseon* dynasty, Confucianism was highly esteemed and the proper way of drinking alcohol. The Confucious philosophy of ethics (儒家) and alcohol (酒德) was to distinguish time and place, follow order and manners, create an appropriate amount and desirable atmosphere for drinking.⁴ Studies on alcohol culture during the *Choseon* dynasty are divided into two main categories: research on the types of alcohol and methods of production based on the *Gojori* book,⁵⁻⁹ and research on drinking culture during the *Choseon* dynasty based on literary records by humanities scholars.^{4,10-12} However, these studies only cover specific points in time during the *Choseon* dynasty and have limitations in generalizing the characteristics of the all *Choseon* dynasty period.

The 『*Choseonwangjosilok* (朝鮮王朝實錄)』 is the only chronicle that contains historical facts from the all *Choseon* dynasty period and is an essential reference material for studying the *Choseon* dynasty.¹³ It is also a representative historical record (史書) that allows us to examine changes, development, and continuity in the dietary life. The compilation trend of the *Choseon* dynasty's chronicles was thorough, with court historians (史官) recording and archiving (史草) events in detail, making the records of life during that period vivid and experiential. Recently, the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 and other classical literature have been analyzed through various methods such as meta-analysis and information technology to investigate their relevance and meaning. For example, Applying network analysis technology to 『*Choseonwangjosilok* (朝鮮王朝實錄)』 to study dynamic changes in royal networks,¹⁴ text mining was applied to analyze the ruling style and educational terms during the *Choseon* dynasty,¹⁵ and big data analysis was used to study Confucian politics.¹⁶

Moreover, the study of dietary life history through the analysis of the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 has become increasingly active in recent years. Starting with studies on the characteristics of Jang (fermented soybean) based on official documents and royal records from the *Choseon* dynasty,¹⁷ research on tea culture during the *Choseon* dynasty¹⁸ and analysis of seafood during the *Choseon* dynasty,¹⁹ Research on the status and relevance of various ingredients and the meaning of the

times is being conducted through the text of the vast Annals of the *Choseon* Dynasty such as 'A Perspective Study on Vegetables through Scientific Quantitative Analysis'²⁰, 'A Study on the Characteristics of Fruits in the Joseon Dynasty through the Analysis of Big Data'²¹, 'A Study on the Current Status of Fishery Products and Characteristics of Processed Products'²², 'A Study on Food Poisoning in the *Choseon* Dynasty'²³ and 'Characteristics of Grain Recognition in the *Choseon* Dynasty through Text Frequency Analysis'. However, research on the type and status of alcohol and alcohol culture in the Annals of the *Choseon* Dynasty has not yet been attempted.

Recently, with the full-scale utilization of unstructured text data analysis, many efforts are being made to analyze unstructured data such as policy issues and consumer opinions easily and simply. The process involves manually preprocessing the collected data, analyzing it through the word cloud technique using the R program to extract key issues, proposing new data refinement models, and presenting effective measures for the practical application of the word cloud technique.^{24,25} The word cloud is a text data visualization technique that shows the size of each word according to its frequency or importance, making it easy to intuitively grasp keywords and concepts of documents by highlighting keywords.²⁶ Words with a high frequency of appearance are displayed largely, and they mean that they are of great importance or high interest in related issues.

Therefore, this study aims to examine the types and status of alcohol in the *Choseon* dynasty, as well as the perception of ruling classes regarding alcohol, by utilizing the text frequency analysis technique to explore the alcohol culture of the *Choseon* dynasty. Through this, it is intended to be used as basic data for research on food culture during the *Choseon* Dynasty.

MATERIALS & METHODS

Materials (Subject)

In order to analyze alcohol-related records of the entire period of the *Choseon* Dynasty, this study included the annals of King *Taejo* to the annals of *Sunjong*, the last king, in the research category.^{20,21} The Annals of the *Choseon* Dynasty analyzed 1,968 volumes and 948 books, a total of 518 years of the reign of 27 kings from King *Taejo* to *Sunjong*.

Data Collection

The original and translated versions of the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 were collected through web crawling from the National Institute of Korean History website²⁷. The web crawling software was developed with Python 3.8 algorithm to automatically collect all the Chinese characters and Korean texts. To analyze articles related to alcohol in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, we read articles within the categories of ingredients and related topics such as economy-finance-tribute, economy-

agriculture- promote agriculture, agricultural technology, farming, forestry, animal husbandry, fruit and special crops, economy-finance-fisheries and salt production, social-dietary life-staple and side dish, alcoholic beverages, favorite food, social-folkways-folkways and banquets. Chinese characters related to alcohol were extracted and classified. The web crawling results showed that 384,565 Korean texts and 384,567 Chinese texts were collected, indicating a loss rate of 0.01% (Table 1).

Table 1. Data collection by web-crawling

Korean(N)	Missing(N)	Rate(%)	Chinese Characters(N)	Missing(N)	Rate(%)
384,565	39	0.01	384,567	38	0.01

Methods (Analysis tool)

The data analysis process is the same as shown in (Figure 1). Using Python 3.8, sentences were extracted from the official website of the Annals of the Choseon dynasty, which were classified by year and month, and the necessary sentences were extracted again using a program

designed for this paper. All sentences related to alcohol were then extracted, and noun extraction through morphological analysis was performed using Rhino 1.4.5. Finally, semantic network analysis was conducted using Gephi 0.9.2.

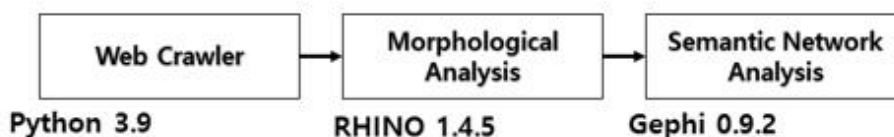


Fig. 1. Research analysis procedures

Research Contents

In this study, a frequency analysis of meaningful words through the research procedure was conducted to examine how the frequency of words differs according to the characteristics of each era in the entire data. In addition, the semantic network analyzes the degree and centrality of each node after extracting the main nodes through co-occurrence analysis of the nouns extracted through morphological analysis. This semantic network analysis shows the connection structure for a specific issue by showing how individual nodes are connected. Nodes in the semantic network refer to words that are embedded in the text, and the relationships that connect these words are called edges.²⁸ The network examines them by analyzing the degree and centrality of each node after extracting the

main nodes through co-occurrence analysis of the nouns extracted through morphological analysis.

RESULTS

Types of alcoholic drinks in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 and frequency of their appearance

To quantitatively interpret the types of alcoholic drinks and the frequency of records in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, they were classified as follows (Table 2).

Table 2. Classification of alcoholic drink in 『ChoseonWangjoSilrok』

Category		Variation	Frequency	Sum(N,%)	Total(N,%)
Collective	Bottle	瓶酒,壺酒	65	65(0.46)	140,85(82)
	Whole	酒	14,020	14,020(99.54)	
Method	Soju	燒酒	223	237(37.74)	628(3.66)
		紅燒酒	13		
		過夏酒	1		
	Chungju	釀酒	90	281(44.75)	
		清酒	92		
		藥酒	71		
		醇酒	8		
		冬釀酒	2		
		三亥酒	2		
		紫霞酒	2		
		方文酒	1		
		一日酒	1		
		春酒	5		
		梨花酒	3		
		流霞酒	4		
	Tacju	醪	83	110(17.52)	
		濁酒	27		
Material	Kokju	薏苡酒	1	4(30.77)	13(0.08)
		配酒	1		
		新酒	2		
	Gwasilju	柏子酒	2	2(15.38)	
	Hwaju	百花酒	2	2(15.38)	
	yakju	菖蒲酒	2	5(38.46)	
五加皮酒		3			
Purpose	Offices	都監酒	2	4(0.16)	2,450(14.26)
		法酒	2		
	The Court	宣醕	88		

	香醞	1,154	
	內酒	33	
	早飯酒	1	
	物膳酒	1	
	放砲酒	1	
	香醞酒	1	
	紅露酒	1	1,280(52.24)
Ancestral rites	祭酒	359	
	福酒	72	
	玄酒	76	
	三酒	5	
	昔酒	3	
	內事酒	2	
	醴酒	649	1,166(47.59)
Total		44 kinds	17,176

There are various ways to classify alcoholic drinks, but it is usually made with nonglutinous rice and glutinous rice as the main ingredients. Then the drinks are divided into *Cheongju* and *takju*, and distilled liquor is obtained by distilling them, and when making *Cheongju*, it is classified as a flower mixed with flower flavor liquor and medicinal liquor.⁵

Alcohol classification is mainly divided by manufacturing methods and materials, but the names of alcohol recorded in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 use special names according to the object or purpose of using alcohol in addition to manufacturing methods, materials, and uses. "*Sul*" (酒, alcoholic drinks), refers to the whole alcoholic drinks without referring to a specific type of kinds, and "*byeongsul*" (瓶酒, 壺酒, alcoholic drinks in bottle), which are called according to the container in which it is contained, were classified separately as common nouns.

There were a total of 44 types of liquor in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, with a total frequency of 17,176 records, of which 14,085 common

nouns referring to common liquor accounted for 82% of the total, *takju* (濁酒, raw rice wine), *Cheongju* (淸酒, refined rice wine), *Soju* (燒酒, Soju) by manufacturing method accounted for 628 cases, accounting for 3.66%, and 13 cases of *Gokju* (穀酒, grain wine), *Gwasilju* (果實酒, fruit wine), *huaju* (花酒, flower wine), and *Yakchoju* (藥草酒, herbal liquor), accounting for 0.08% of the total. The names of alcoholic drinks were divided into *gwanju* (官酒) used by the state or government offices, *gungju* (宮酒) used in the court, and *jeju* (祭酒) used for ancestral rites, and there were 2,450 cases, accounting for 14.26% of the total. As can be seen from the classification table of these drinks, it can be seen that the records of liquor in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 were more written by the names of liquors used separately in the court or during ritual ceremonies, rather than by the names of specific ingredients or recipes used by the common people. In the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 of the Choseon dynasty, there are records that more than 1,300

tea rituals were performed in the names of *Judarye* (晝茶禮), *Darye* (茶禮), and *Byuldarye* (別茶禮) from the time of *Sejong* to the end of the *Choseon* dynasty.²⁹ As such, numerous tea rituals, rituals, and banquets were held in the court, and it seems that the necessary alcoholic drinks were made.

Looking at the specific types of alcoholic drinks recorded in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, the first classification according to the recipe was divided into *soju*, *cheongju*, and *takju*, which showed a total of 237 cases with 223 cases of *soju*, 13 cases of *Hongsoju* (紅燒酒, red soju), and 1 case of *guhaju* (過夏酒). In *cheongju*, 90 cases of *Yangju* (釀酒), 92 cases of *cheongju*, 71 cases of medicinal liquor, 8 cases of *sunju* (醇酒, pure liquor), 2 cases of *dongyangju* (冬釀酒), 2 cases of *Samhaeju* (三亥酒), 4 cases of *Zahaju* (紫霞酒), 1 case of *bangmunju* (方文酒), 1 case of *ililju* (一日酒), 5 cases of *chunju* (春酒), 3 case of *ehwaju* (梨花酒), 4 case of *yuhaju* (流霞酒) were recorded. A total of 110 cases were recorded, with 83 cases in *ryo* (醪) and 27 cases in *Takju*. The types of alcoholic drinks according to the recipe were 44.75% alcoholic drinks, 37.74% *soju*, and 17.52% *takju*, indicating that the alcoholic drinks used in the palace were mainly in the form of *cheonju* or *soju*. Kim (2014)¹ said that from the *Goryeo* period, the consciousness that *Cheongju* was a saint and *Takju* was a sage was established, and in the early *Choseon* dynasty, *Cheongju* and *Soju* were favorite goods accessible only to a certain class of *yangbans*, and were perceived as luxury liquors, and *Takju* was perceived as the drink of the people.

Second, the classification according to the ingredients was divided into *gokju*, *gwasilju*, *whaju*, *yakchoju*, and a total of 4 cases were divided into 1 case of *Uiju* (蕙苡酒), 1 case of *Baeju* (配酒), and 2 cases of *Sinju* (新酒), two cases of *backjaju* (柏子酒) for *gwasilju*, 2 cases of *backhwaju* (百花酒) for *hwaju*, a total of five *yakju* cases were recorded, including two cases of *changpoju* (菖蒲酒) and three cases of

ogafiju (五加皮酒). The types of alcoholic drinks according to the ingredients are 30.77% *gokju*, 38.46% *yakchoju*, 15.38% *gwasilju*, and 15.38% *hwaju*, indicating that pure grain(*gokju*) or herbal liquor(*yakchoju*) is relatively more than alcoholic drinks using flowers(*hwaju*) and fruits(*gwasilju*). This can be said to reflect the idea that grain alcoholic drinks were the basis of alcoholic drinks ingredients due to the nature of Korea, which is an agricultural country, and that it uses medicinal ingredients to improve physical strength and prevent diseases.⁷

Third, the classification of alcoholic drinks according to their use was divided into *guanju*, *gungju*, and *jeju*, which consisted of 2 *dogamju* (都監酒) and 2 *beopju* (法酒), and 1,154 cases of *seonon* (宣醕), 88 cases of *hyangon* (宣醕), 33 cases of *naeju* (內酒), 1 case of *jobanju* (早飯酒), 1 case of *mulsunju* (物膳酒), 1 case of *bangpoju* (放砲酒), 1 case of *hyangonju* (香醕酒), 1 case of *hongroju* (紅露酒) and *jeju* had a total of 1,166 cases, including 359 cases of *jeju* (祭酒), 72 cases of *Bokju* (福酒), 76 cases of *Hyeonju* (福酒), 5 cases of *Samju* (三酒), 3 cases of *Seokju* (昔酒), 2 cases of *Naesaju* (內事酒), and 649 cases of *ryeju* (醴酒).

The types of alcoholic drinks according to the purpose were 0.16% in *Gwanju*, 52.24% in *Gungju*, and 47.59% in *Jeju*, confirming that the names of liquor mainly used in the palace or during ceremonies were recorded in a high proportion. Since the *Choseon* Dynasty had many ceremonial events such as chinese envoy banquet rites,¹² and was oriented toward a state of teaching and rules by manners, from the beginning of the nation, it made efforts to organize the five rituals and supervised many national festivals and events.³⁰

Characteristics of the appearance of types of alcoholic drinks by century

To examine the changes in the frequency of occurrence of 41 types of alcoholic drinks recorded in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 by century, they were classified as (Table 3). The frequency of records of 41 types of alcoholic drinks was 2,450, the most common was in the 15th century, with 998 cases and 40.73%, followed by the 18th century with 499 cases and 20.37%,

the 17th century with 395 cases and 16.12%, the 16th century with 339 cases with 13.84%, and the 19th century with 219 cases with 8.94%.

Table 3. Alcohol types and frequency by century

Category	Variatio n	Frequency (number, %)					Total	
		15C	16C	17C	18C	19C		
Method	Soju	燒酒	177(79.4)	19(8.5)	22(9.9)	5(2.2)	-	223
		紅燒酒	9(69.2)	1(7.7)	3(23.1)	-	-	13
		過夏酒	1(100)	-	-	-	-	1
	Chung-ju	釀酒	25(27.8)	21(23.3)	11(12.2)	28(31.1)	5(5.6)	90
		清酒	80(87.0)	1(1.1)	-	9(9.8)	2(2.2)	92
		藥酒	68(95.8)	-	3(4.2)	-	-	71
		醇酒	4(50)	-	4(50)	-	-	8
		冬釀酒	1(50)	-	1(50)	-	-	2
		三亥酒	-	-	-	1(50)	1(50)	2
		紫霞酒	-	1(50)	-	-	1(50)	2
		方文酒	-	-	-	1(100)	-	1
		一日酒	1(100)	-	-	-	-	1
		春酒	-	1(20)	1(20)	1(20)	2(40)	5
		梨花酒	3(100)	-	-	-	-	3
		流霞酒	-	-	-	-	4(100)	4
	Tacju	醪	14(16.9)	18(21.7)	11(13.3)	18(21.7)	22(26.5)	83
		濁酒	14(51.9)	1(3.7)	-	5(18.5)	7(25.9)	27
Material	Kokju	薏苡酒	1(100)	-	-	-	-	1
		配酒	-	-	1(100)	-	-	1
		新酒	2(100)	-	-	-	-	2
	Gwa-silju	柏子酒	2(100)	-	-	-	-	2
	Hwa-ju	百花酒	-	1(50)	-	1(50)	-	2
	yakju	菖蒲酒	1(50)	-	1(50)	-	-	2
		五加皮酒	-	2(66.7)	-	1(33.3)	-	3
purpose	Offic-es	都監酒	1(50)	1(50)	-	-	-	2
		法酒	2(100)	-	-	-	-	2

The Court	宣醕	531(46.0)	223(19.3)	189(16.4)	151(13.1)	60(5.2)	1,154
	香醕	52(59.1)	10(11.4)	16(18.2)	10(11.4)	-	88
	內酒	9(27.3)	3(9.1)	12(36.4)	9(27.3)	-	33
	早飯酒	-	-	-	1(100)	-	1
	物膳酒	-	-	-	1(100)	-	1
	放砲酒	-	-	-	1(100)	-	1
	香醕酒	-	1(100)	-	-	-	1
	紅露酒	-	-	-	1(100)	-	1
Ancestral rites	祭酒	56(15.6)	11(3.1)	84(23.4)	120(33.4)	88(24.5)	359
	福酒	64(88.9)	1(1.4)	2(2.8)	3(4.2)	2(2.8)	72
	玄酒	63(82.9)	-	-	13(17.1)	-	76
	三酒	4(82.9)	-	-	1(17.1)	-	5
	昔酒	3(100)	-	-	-	-	3
	內事酒	2(100)	-	-	-	-	2
	醴酒	211(32.5)	89(13.7)	92(14.2)	188(29.0)	69(10.6)	649
	41 kinds	998(40.73)	339(13.84)	395(16.12)	499(20.37)	219(8.94)	2,450

The high frequency of records of alcoholic drinks in the 15th century is not only due to the development of the written culture in the 15th century but also to the perception of alcoholic drinks by the ruling classes in the early *Choseon* dynasty. At that time, the issue of eating and drinking was a symbol of wealth and strength, so the ruling class's perception of alcohol was very positive and tolerant.¹⁰ According to a study by Kang (2003)³¹, the early *Choseon* drinking culture emphasized the amount of alcohol drunk and sought to understand it as revealing the inner size and strength of the drinker. It is also said that in the early days of the *Choseon* dynasty, being able to drink alcohol at will became a collective identity of Yangban in itself.

In the 15th century, nearly half of the types of alcoholic drinks appeared during the *Choseon* dynasty. Looking at the characteristics of alcohol appearance in the 15th century, most of the classification by manufacturing method was *Cheongju* and *soju*, and the main ingredient was grain liquor, and all types of *Jeju* were recorded in the classification by use. various methods of brewing alcoholic drinks are introduced, including how to brew *soju*, how to brew *ehwaju*, how to make quick alcoholic

drinks, how to make *hyangonju* (香醕酒造釀式), and *yeju* (醴酒). In addition, the most common types of *danyangju*, such as *gamju*, *guadonggambaekju*, *momiju*, *yeogaju*, *yugamju*, *jungamju*, and *hajulsamilju*, were made only with yeast and water added to grains at once and without adding.³² As such, the liquor of the ruling class in the 15th century can be seen as dominated by *soju* and *cheongju*, the *danyangju*.

In the 16th century, the types of *cheongju*, *jahaju* (紫霞酒), *chunju* (春酒), a type of herb, *ogafiju* (五加皮酒) and *baekhwaju* (百花酒) with flowers were recorded. In the 16th century, *Seonjo* is recorded to have suffered from neurosis and colds frequently, and on March 12, in the 31st year of *Seonjo* (1598), he prescribed *ogapiju* in a medicine store, saying 五加皮酒 味頗辛烈 少和熟水 風寒陰雨之日 進御亦當 (*Ogapiju* is spicy and strong in taste, but it should also be consumed on windy, cold, and rainy days due to a little burnt water). As such, the characteristic of

alcoholic drinks in the 16th century can be said to be the development of not only pure grain alcoholic drinks, but also flavor alcoholic drinks with auxiliary ingredients such as *ogapi* and flowers to add flavor and aroma. Depending on the number of times the alcoholic drinks are made, the alcoholic drink brewed once is called *danyangju*, the alcoholic drink brewed twice is called *yyangju*, and the alcoholic drinks brewed three times is called *samyangju*. In the 15th century, most of Danyang liquor was made once, but in the 16th century, *Yiyangju* include pure grain liquors such as *dongyangju*, *sunju*, *dugangju*, *baekhwaju*, *sashiju*, *julju*, and *jumju*, as well as medicinal liquors such as *ogapiju* and *baekhwaju*.³³

Typical alcoholic drinks of the 17th century include *dongyangju* (冬釀酒) and *sunju* (醇酒), *baeju* (配酒, grain liquor), *changpoju* (菖蒲酒, herbal liquor), and *naeju* (內酒) which is a court liquor. Han et al (2004)³⁴ considered one of Korea's best food scenes of the 17th century, introduces *dongyangju*. 'When two pieces of white rice are made damp and boiled and cooled, two pieces of yeast powder are mixed, and on the third day two sticky rice rolls are washed and steamed to ripen with water, and when they have not yet cooled down, they are mixed first and made in a double bath.' The earliest record of the *changpoju* in the ancient books is introduced in *Limwonsibyukji* (林園十六志),³⁵ citing the prime minister. In the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 of the Choseon dynasty, it is recorded that on May 4 of the 17th year of Injo (1639) in the 17th century, 端午日 內資寺例進菖蒲酒 六曹進物膳 上以旱災方酷不受 禮曹固請之 上終不許 (On the 5th day of Dano, when he put up *changpoju* as customary in *naejasi*(a government office established to administer various materials used in the royal family) and put up the ingredients for making food in *Yukjo*(the central government office that divided and handled national affairs), the king did not receive it because of the severe drought. *Yejo*(a government office)asked for it, but the king did not allow it.) Also, *Naeju* is recorded in “*Kimsyeengjideakjoobangmoon*”,³⁶ and it is presumed that it was named because it is a liquor that women drink with "the alcohol that they drink when peach blossoms bloom in March and drink even in Dano." As can be seen through *Naeju* and *Changpoju* on Dano Day, it can be seen that in the 17th century, the seasonal customs and customs that ordinary people also drank

while enjoying the arts developed. Kang (2003)³¹ said in his literature study that the alcoholic drinks culture since the mid-Choseon period emphasized the quality of drinking and understood it as revealing inner beauty or morality.

In the 18th century, the most frequent occurrences of the Cheongju liquor *Samhae* (三亥酒), the visiting liquor (方文酒), the *Jeju* (祭酒), and the *Yaju* (醴酒) were the most frequent. Also recorded were the *jobanju* (早飯酒), *mulsunju* (物膳酒), *bangpoju* (放砲酒), *hongroju* (紅露酒), and flower-filled *backwhaju* (百花酒) used in the court. In the 18th century, 『*Kyuhapchongseo* (閨閣叢書)』³⁷ records how to make *bangmunju* and *Backhwaaju*. The 『*Yourok* (要錄) 』³⁸, written by *Sukjongdae* around 1680, records how to make *Samhaeju* (三亥酒). 'On the first day of the new year, three horses of white rice are washed a hundred times and finely powdered. Pour 3 bowls of boiling water over 1 part of the rice and stir to make porridge. After cooling, mix 7 parts of yeast flour and 3 parts of flour and place in a jar. On the second day, wash 4 parts of rice a hundred times, turn them into a fine powder, make porridge with boiling water, and after cooling, mix 1 part of yeast powder and mix them with the previous liquor. On the third day, eight horses of white rice are washed a hundred times, and the liquor is made in the same way as before, and mixed with the above liquor.'

Hongroju (紅露酒) is a liquor made with the highest care in the royal pharmacy, and the recipe can be found in the National Culture Promotion Association ed.,³⁹ in which the yeast is put up to two horses, and two scoops of three bottles of incense wine are orphaned into one bottle, but when the shochu is lowered, a piece of self-herb is finely sliced and placed on the spout of the bottle, and the red color is very fine.

In the 19th century, the most common alcoholic beverage was *ryo* (醪), a *takju*. This is because the citations of *ryo* in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 are mainly from the ancient word "*turyo*". *Turyo* is a archaic word quoted in the Three Kingdoms, which means to share joys and sorrows of life with the soldier. It comes from the saying that once upon a time a man presented a jar of wine to a general, and the general poured the wine into the flowing stream and let the soldiers drink

it together. *Makgeolli* has been cited many times as an encouragement to strengthen community solidarity or to overcome difficulties well in difficult times. The high frequency of the occurrence of the word "ryo" in the 19th century can be said to reflect the difficult situation of the times, such as famine and foreign invasion. Also, in the 19th century, *liuhaju* (流霞酒), a kind of *cheongju* was first recorded in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』. However, it is not a new drink in the 19th century. This is because *liuhaju* (流霞酒) is a common *iyangju* recorded in the 15th-century *Sangayorok*, the 17th-century *Wymsikdimibang*, the late 18th-19th-century *Limwionsibyukji*, the 19th-century *Dongukseasigi*, and

the late 19th-century *Siuijeonseo*.

The flow of the frequency of the appearance of the Choseon dynasty

The textual data were analyzed to examine whether the frequency of alcoholic drinks' appearance according to the historical era during the 518 years of the *Choson* dynasty differs depending on the specific type of alcoholic drinks, as illustrated in (Figure 2). As a result of the analysis, it can be confirmed that there was little difference between *soju*, *cheongju*, *takju*, *gokju*, *gwasilju*, *hwaju*, *yakchoju*, and *kwanju* with time, but the flow of *gungju* and *jeju* changed according to the times.

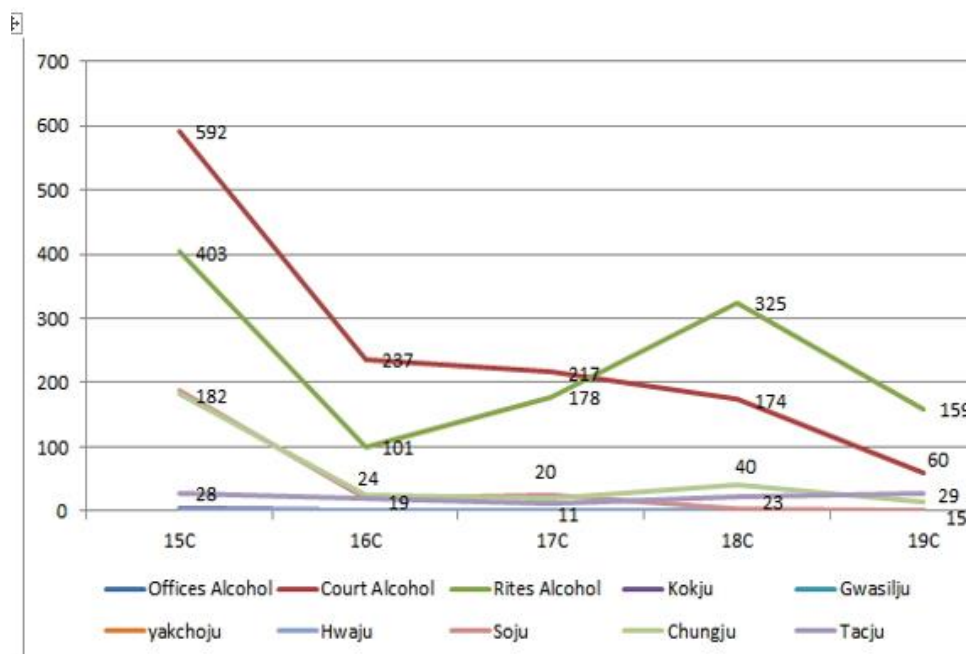


Fig. 2. The change in the frequency of alcohol by time

The number of palace palaces used in palaces was the highest with 592 cases in the 15th century, followed by 237 cases in the 16th century, 217 cases in the 17th century, 174 cases in the 18th century, and 60 cases in the 19th century, showing a gradual decline over time. Among the palace lords, the most frequent are 1,154 cases of *hyangon* (香醕) and 88 cases of *Seonon* (宣醕). On April 17, the 6th year of *Taejong* (1406), 慶尙道都節制使柳龍生 使兵馬使金乙雨 鹿島千戶金仁祥 捕倭船一艘 于葛伊島 倭三十餘人 皆投海而死 斬九級以獻 遣人

賜內廐馬一匹于龍生 仍賜宣醕 迎使臣 (The Gyeongsang Province general Yu Yong-saeng ordered the soldiers Kim Eul-woo and Cheonho Kim Sang-sang to captured one Japanese ship at Gali Island. all 30 of Japanese soldiers them drowned in the sea. When they cut down the ninth grade and offered it, they sent a man to give one durable horse to Yu Yong-saeng, and therefore they gave *seonon*). On August 22, in the year of *Sejong's* accession (1418), 遣長川君 李從茂于義州 齎宣醕 迎使臣 (He sent Yi Chongmu of the Changcheongun to Uiju to take *Seonon* with him and receive an envoy.) On March

12, in the 6th year of Sejong (1424), 兵曹及鎮撫所聚入直軍士于關東門內 始習射 賜宣醕十五瓶(Soldiers from the *Byungjo* and *Jinmuso* gathered inside the East Gate of *Daegyeon* to practice archery, and they were given 15 bottles of *seonon*.) On February 4, the 9th year of *Seongjong* (1478), 賜成均館畫罇畫大鍾各二事 仍命左副承旨孫比長往賜宣醕 (After giving two bottles of alcohol and a large glass to *Sungkyunkwan*, he ordered *Son Bi-jang* of *Jwabuseungji* to give *seonon*). On August 8, in the 17th year of *Sukjong* (1691), 上特遣中官于江都 慰諭築城將士 賜香醕六十瓶 (The king sent a lieutenant to the *Gangdo* to comfort the builders of the castle and gave 60 bottles of *seonon*.) On January 26, in the 4th year of *Yeongjo* (1728), 教曰 粵在孝廟日次香醕 惟進一瓶 今之所進 乃至四倍 兩慈殿外 五瓶封進者 勿論日次名日 各減二瓶 上愛民節財用 凡係冗費 一切革罷 酒房所進香醕 乃是三朝舊例 特命量減 (The king said, that in the old days of *Hyomyojo*, the primary *hyangon* was only one bottle, but today it is four times as much. take out 5 bottles each, 2 bottles each.) In this way, the king mainly congratulated his meritorious servants or comforted his subjects who were suffering from turbulence, and for diplomatic purposes, such as past salary congratulations, and comfort envoys. Chin (2014)²⁴ studied the symbolic system of alcoholic drinks in Confucian scriptures is discussed, stating that metaphors and symbols are a kind of narrative technique that appears throughout Eastern classics. The *hyanum* ritual, which corresponds to drinking banquets, played a role in contributing to the maintenance and strengthening of social status order through alcohol. In other words, it can be confirmed that incense drinking ceremonies for state governance and status maintenance were actively carried out in the early *Choseon* dynasty, but their role and meaning weakened towards the late *Choseon* dynasty. The *naegukhyangonboeb* (內局香醕法) was recorded in the Lee SW ed. 1992⁴⁰ in 1554.

On the other hand, the number of cases used in rituals decreased sharply from 403 cases in the 15th century to 101 cases in the 16th century, then increased again to 178 cases in the 17th century, 325 cases in the 18th century, and then decreased again to 159 cases in the 19th century. Among the types of alcoholic drinks, *Jeju* (祭酒), *bokju*

(福酒), and *Hyeonju* (玄酒) showed the highest frequency in the records of the 『*Choseonwangjosilok*(朝鮮王朝實錄)』, which are as follows: On June 23 of the first year of *Taijong* (1401), 下司農注簿鄭欽之于巡軍罪之 以宗廟及諸祀祭酒味惡故也 (The *Sanong jubu jeng Humji* was sent down to *Shungun* to condemn him because the *jeju* taste of *Jongmyo* and various sacrifices was bad.) On April 26, the 2nd year of *Sejong* (1420), 禮曹啓 在前文宣王朔望奠 只用飯餅 油果 栢子等物 自今朔望奠依諸祀序例 每一位簠一盛稻米 簋一盛黍米 左一饌鹿脯 右一豆鹿醢 正配五位刺燭各二柄 從享十位刺燭各一柄 祭酒依舊五瓶 行一獻禮 從之 (Before the retirement of *Yejo*, only rice, rice cakes, milkweed, white porcelain, etc. were used in King *Munseon*'s *Sakmangejeon*. But from now on, according to the procedure of holding the *Sakmangejeon* as the turn of all the sacrifices, put the rice in one bowl on each table, the millet rice in one ark, and the green cloth on the left side. Let the two on the right side contain the rust sea, and let the main shrine be held with two candles each on the five sides of the shrine and one candle each on the tenth side of the shrine, and five bottles of candles as before, and ceremonial ceremonies.) April 10, 42nd year of *Sukjong* (1716) 命釐正宗廟祭物之有違 五禮儀 者 禮曹言 考諸 五禮儀 及 宗廟儀軌圖式 則各室尊床西邊 設明水 玄酒 而今則只設空尊 (He commanded that the offerings of the *Jongmyo* Temple should be corrected against the Five Rites, and *Ye Jo* said, the schematics of the Five Rites and the Ark of the *Jongmyo* Temple were examined, and in each chamber, the statues of the Crown were placed on the west side of the *Myeongsu* and *Hyeonju*, but now only *Gongjun* is presented). On September 29, in the 3rd year of *Yeongjo* (1727), 王世子祭酒 興降席西南向 跪啐酒 以爵授標 (The crown prince and crown princess received the cup together and finished drinking, and the two of them took the cup back and brought it to the shrine). As in the records of the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, *jeju*'s alcoholic offerings to the administration of national affairs at that time were so central that when *jeju*'s alcohol tasted bad, it was considered a crime. Alcohols were necessary sacrifices to gods (天) and ancestors (神), and the

primordial ritual was absorbed and practiced as an example of *yuga* during the *Choseon* dynasty.¹¹ *Bokju* (福酒) was not only a ritual but also a drink for banquets and other events. As such, *Jeju* has various names, but it generally belongs to well-cooked rice wine, and the name varies depending on the degree of fermentation of the alcoholic drinks, and the difference between the alcoholic drinks that people eat and the alcoholic drinks used as *Jeju* depends on whether the ingredients are given sacredness

when making alcoholic drinks.⁴¹

Interest in king-by-king alcoholic drinks in the Choseon Era

To understand the interest in alcoholic drinks of the 27 kings of the *Choseon* dynasty, the recorded frequency of alcoholic drinks was corrected to the year of office and the number of knights, and the ranking of each king was shown in (Figure 3).

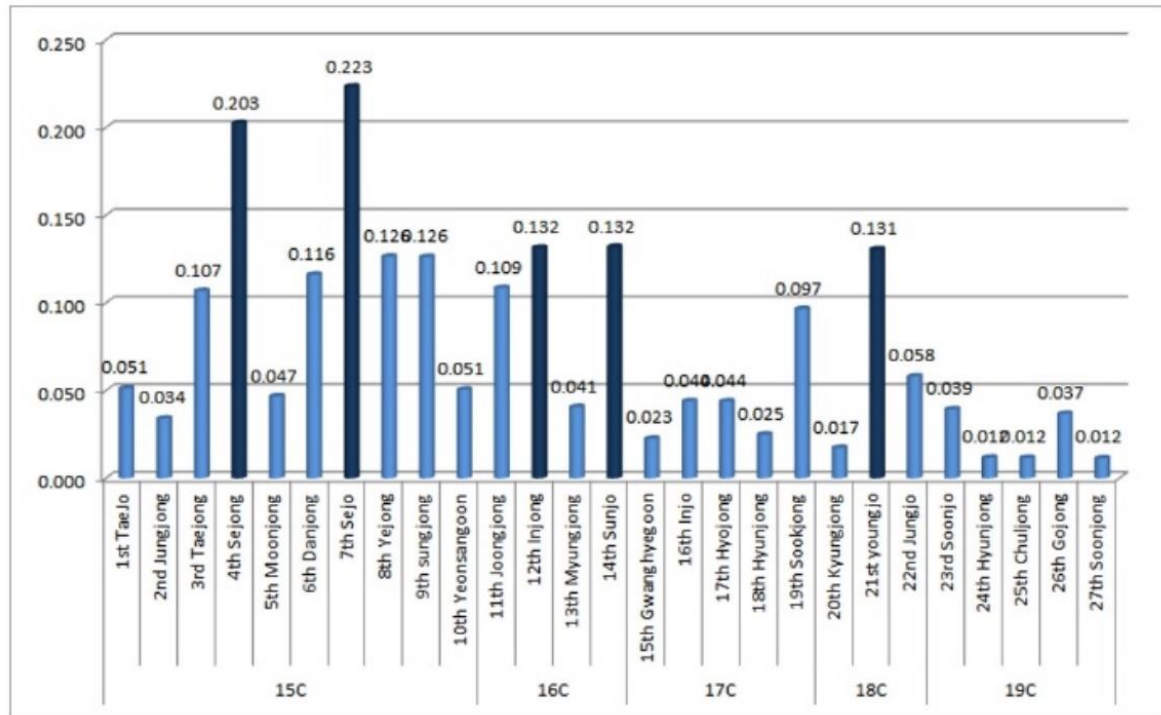


Fig. 3. Alcohol Interest Index by king

The kings who were interested in alcoholic drinks were *Sejo* and *Sejong* in the 15C, *Sejo* and *Sejong* in the 16th century, followed by *Yeongjo* in the 18th century. According to a study by Kim (2021a), the three kings with the highest interest in vegetables during the *Choseon* dynasty were *Sukjong*, *Yeongjo*, and *Jeongjo* in the early 18th century, the three kings with the highest interest in fruits were *Seonjo*, *Myeongjong*, and *Sejong* in the 15th century,²¹ and the three kings with the highest interest in seafood were *Seongjong*, *Sejong*, and *Sejosun* in the 15th century.²⁰ As such, the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 of the *Choseon* dynasty are mainly political and historical records, but by analyzing the food big data recorded in them, the interest and importance of food by the ruling classes of the era are different can be seen. Such

findings can be interpreted as the metaphor and symbolic system contained in the food according to the times.

Through the contents of the 『*Choseonwangjosilok* (朝鮮王朝實錄)』, the perceptions and policies regarding alcoholic drinks of the five kings, who were highly interested in alcoholic drinks as an example, will be examined. The king with the greatest interest in alcoholic drinks was *Sejo* (世祖, 1417-1468) in the 15th century. On August 18, 1455, 御思政殿 受常參 仍設小酌 令內人作樂 上親賜入侍諸臣酒 世子行酒亦如之 (Before ejaculation, he was given a reward and then a small drinking party was given and the nine were made to play music, and the king personally gave liquor to the various

servants who had entered the examination, and so did the marchers of the prince). February 14, 4th year of *Sejo* (1458) 司憲府啓曰 比年飢饉太甚 無知之民 迎饒往來 強費酒穀 不顧後日之計 請禁民間用酒 不允 (The Ministry of Justice said that even though the famine is very severe every year, the ignorant people are forced to spend their money on greeting and transmitting those who come and go, and do not take care of the schemes of the future, so they forbid the use of alcohol in the private sector, but they did not prosper). On March 17, in the 9th year of *Sejo* (1463), 幸昌德宮 御後苑 命左承旨李文炯 齋酒穀 往賜成均館官及儒生 又賜隨駕宰樞酒 (He went to *Changdeokgung* and commanded Lee Moon-hyung to take the *juhyo* and give it to the Sungkyunkwan official and *Yusaeng*, and also to give it to Sugahan *Jae-chu*). As such, *Sejo* often held drinking parties to comfort the public gods, and he also offered drinks to the Sungkyunkwan students and officials to inspire loyalty. On the other hand, the courtiers asked the people to impose a prohibition, but the articles that did not allow it show that *Sejo* was a generous king concerning alcohol. Furthermore, in the 6th year of *Sejo* (1461), the king personally went to the shrines of *Dangun*, *Goguryeo*, and *Giza* to perform sacrifices, and the king's sacrifice was the first in the *Choseon* dynasty, and it was done to strengthen the kingship of *Sejodae* with ceremonial measures that were not seen afterward.⁴²

The second king with a high interest in alcohol was *Sejong* (世宗, 1397-1450) in the 15th century. On May 19 of the 1st year of *Sejong* (1419), 上憂旱 命司憲府申嚴禁酒之令 又壽康宮外 勿進酒 (I saw the government, the king was worried about the drought, so he ordered the Ministry of Justice to reiterate the spirit of abstinence and not to drink except in the palace). On July 14 of the 5th year of *Sejong* (1423), 遣內臣 賜大提學卞季良燒酒 (He sent an vassal to bestow a *soju* to *Daejehak Byun-ryeong*). June 29, 6th year of *Sejong* (1424) 四時及臘 有名日親享儀 前享三日 殿下散齋二日 致齋一日 凡散齋 治事如故 唯不縱酒 不食葱韭蒜薤 (Rituals that are affinity to the four seasons, naps, and holidays are interspersed for two days before the intimacy, and the prosecution is interspersed for two days, and the leek is kept for one day; when there is a dispersion, the work is governed as before, but no liquor is drunk in vain, and no green onions, no

scallions, garlic, leeks, etc.). Thus, during *Sejong*, alcoholic drinks were used as good medium to express the king's feelings to his subjects, and major royal events were held according to the procedures for performing state and royal ceremonies, and during *Sejong*, the *Sejong Silok olye* (世宗實錄五禮) and the *Kukjo olye*(國朝五禮儀) were compiled, and efforts to practice Confucian ideals were systematized. On the other hand, during the reign of King *Sejong*, a letter of command to be wary of alcohol was issued under the royal order, and it was hung in the room by the government office.

The king with the third highest interest in alcohol was *Seonjo* (宣祖, 1552-1608). March 5, 26th year of *Seonjo* (1593) 司憲府啓曰 春窮禁釀 在平時尚然 當此喪亂 板蕩之時 尤不可不嚴其禁 而近來各邑 用酒依舊 糜費日滋 闕內御供 天將接待外 各衙門及公私用酒處 一切禁斷 竝下諭各道 上從之 (The Ministry of Justice said that the abstinence of the *Chungong* period is rather true even during the holy period, but in such a cluttered and uneventful time, it must be even more strict. In the 32nd year of *Seonjo*'s reign (1599), on December 26th, the Inspector General wrote, "Recently, due to a shortage of small rice, the inspectorate has been making alcohol with the old rice from *Shandong*, which has a reddish color and sour taste and has been rejected numerous times. This is extremely unsatisfactory. Now that our country's supply of large rice has increased, why not use white rice instead to avoid any criticism from the generals? It is said, 'Approved.' "On April 9th, the 39th year of *Seonjo*'s reign (1606), the Vice Minister, *Song Jun*, said to the Ministry of Rites, 'We respectfully observed that after the Vice Envoy drank a cup during the banquet held for the transmission of orders to the Grand Secretaries yesterday, he did not turn the cup over, which seems inappropriate. Although the instruction on this matter is not clearly recorded, it appears to be included in the general ceremony, as mentioned before. We humbly report this, fearing that it may be related to the ceremony of offering alcohol, and we are afraid to be disrespectful.' During the *Seonjo* period, there was a national crisis like the *Imjin* War, which caused a severe shortage of rice. Diplomatic banquets were often held to receive envoys, but as in the above article, there were cases where the procedure of offering alcohol was violated, which was seen as disrespectful to the king. During *Seonjo*'s reign, the liquor ban was also enforced to maintain and strengthen the social hierarchy

amidst the chaos of war. In particular, from *Seonjo's* reign, the practice of reducing food rations (*gamseon*) was introduced even in cases of man-made disasters, not just natural disasters such as fires at the royal tombs. This practice was aimed at recognizing the royal tombs and heaven as equals.”⁴³

The fourth king with the highest level of interest in alcohol was *Injong* (仁宗, 1515-1545). *Injong* was the shortest-reigning king in *Choseon*, with a reign of only 9 months. The reason for his high-interest index is considered to be an error that occurred during the process of adjusting the frequency of alcohol appearance for his reign period and the number of recorded articles, rather than actual interest in alcohol. However, since the records were made by the ruling class at the time, including officials, they can be considered as an indicator of the ruling class's interest in alcohol. On May 10, 1545, in the first year of *Injong's* reign, he bid farewell to Guo, a visiting envoy, at the *Muwhagwan* Pavilion, where they had tea and then requested to drink alcohol, to which the envoy expressed concern that it would tire the king, but *Injong* replied that it was a farewell banquet and asked if he would not show his sincerity by having a drink.

The fourth king with the highest level of interest in alcohol was *Injong* (仁宗, 1515-1545). *Injong* was the shortest-reigning king in *Choseon*, with a reign of only 9 months. The reason for his high-interest index is considered to be an error that occurred during the process of adjusting the frequency of alcohol appearance for his reign period and the number of recorded articles, rather than actual interest in alcohol. However, since the records were made by the ruling class at the time, including officials, they can be considered as an indicator of the ruling class's interest in alcohol. On May 10, 1545, the king visited *Mohwagwan* to hold a farewell party for envoys. After sitting down and drinking tea, the king wanted to give alcohol. At that time, the envoy expressed concern that it would tire the king. *Injong* replied that it was a farewell banquet and asked if he would not show his sincerity by having a drink.

The king with the fifth highest interest in alcohol was *Yeongjo* (英祖, 1694-1776). On August 25th in the fifth year of *Yeongjo's* reign (1729), he announced a prohibition on excessive drinking, stating that those who violate the ban should not be punished. However, it was said that some people were brewing large quantities of alcohol, even up to nearly a hundred sacks, which was visible to the public eye. Although there was no way to deceive the

public, brewing and selling alcohol indiscriminately under the pretext of offering it at a sacrifice was not only a violation of the law of the court but also a disgraceful act that could not be surpassed. In the seventh year of *Yeongjo's* reign (1731), on December 29th, he established the etiquette for worshiping ancestors and drinking alcohol in the countryside, allowing the consumption of alcohol. Although it was indispensable to have alcohol on these occasions, due to the great shortage of rice at the time, all excessive expenses were reduced. This was especially true for the expenses related to alcohol. However, it was necessary to first give a warning against excessive drinking and then enforce the ban on excessive brewing.

However, with a severe famine, the government had to cut back on all kinds of expenses. And restricted consumption was severe for the common people. However, orders should be given first, and laws should be executed afterward. A warning against alcohol was first displayed and later issue a prohibition on excessive alcohol consumption. The period of *Yeongjo* was the time when the strongest prohibition on alcohol was announced throughout the *Choseon* dynasty. Since the prohibition on alcohol was constantly enforced during the period of *Yeongjo*, there was no need to issue it again. During the period of *Yeongjo*, the prohibition on alcohol was strengthened as a means of reducing crime, and people who drank alcohol were sentenced to death or exile, and it was the time when the strictest alcohol control was enforced. However, the people who farmed considered *Takju*, a type of rice wine, important, and it was decided to exclude *Nongju*, a type of liquor that the common people drank, from the subject of prohibition¹

As such, depending on the king, there were different levels of interest in alcohol, and as alcohol was made from grains, it was linked to social and economic issues. Therefore, to maintain economic and social order and stability, alcohol was sometimes controlled at the national level, and the period of the *Choseon* dynasty when alcohol was actively controlled was also the time when royal authority was the strongest⁴⁴

Characteristics of the Korean ruling class's perception of alcoholic drinks through semantic network analysis

A semantic network analysis was conducted using selected contents of the 『*Choseonwangjosilok*(朝鮮王朝實錄)』 of the *Choseon* dynasty related to alcohol, which consisted of a total of 1,358 words. The analysis resulted in the creation of 1,387

nodes and 2,271 edges, with an average centrality of 3.247. This means that each of the 1,387 words was connected to an average of 3.247 other words, with the minimum number of connections being 1 and the maximum being 18. The most frequently extracted words are shown in Table 4.

The high-frequency words related to alcohol were *geumjureung* (禁酒令, the federal prohibition of alcohol, 41), *Imgeum* (主, king, 39), *yakju* (藥酒, medicinal liquor, 37), *geumju* (禁酒, prohibition of drinking, 22), *jusig* (酒食, alcohol and food, 17), *sang wang* (上王, the abdicated king, 16), *jinbae* (進拜, greeting drinks for the elderly, 15), *jugwa* (酒果, alcohol and fruit, 15), *geunsi* (近侍, liege homage, 15), *joe* (罪, crime, 14), *uijeongbu* (議政

府, royal advisory council, 14), *jusaek* (酒色, alcohol and sexual indulgence, 13), *jesa* (祭祀, ancestral rites, 13), *sulyeong* (守令, ancestral worship, 13), *suju* (壽酒, a drink to celebrate a long life, 12), *mulgeon* (物, object, 12), *juchan* (酒饌, feast with liquor and snack, 11), *jeonha* (殿下, the king or queen, 11), *sasin* (使臣, envoy, 11), *juyeon* (酒宴, alcohol and banquet, 10), and *janchi* (宴, feast, 10). Additionally, to examine how alcohol is connected to other words, betweenness centrality, and closeness centrality were looked at (Table 5).

Table 4. Top keywords associated with alcoholic drink in 『ChoseonWangjoSilrok』

Ranking	The main word	Key word	Count
1	The federal prohibition of alcohol	禁酒令	41
2	King	主	39
3	<i>Yakju</i>	藥酒	37
4	Stop drinking	禁酒	22
5	Alcohol&Food	酒食	17
6	The abdicated king	上王	16
7	<i>Jinbae</i>	進拜	15
8	Alcohol&Fruits	酒果	15
9	Liege	近侍	15
10	Crime	罪	14
11	<i>Uijeongbu</i>	議政府	14
12	Booze and women	酒色	13
13	Ancestral rites罪	祭祀	13
14	Chief	守令	13
15	<i>Sooju</i>	壽酒	12
16	Object	物	12
17	Alcohol&Side dish	酒饌	11
18	<i>Junha</i>	殿下	11
19	Envoy	使臣	11
20	Feast	酒宴	10
21	Party	宴	10

Table 5. Betweenness centrality and Closeness centrality associated with alcoholic drink

Rank	The main word	Key word	Degree	Betweenness centrality	Closeness centrality
1	King	主	48	2,349.90	0.47
2	Yakju	藥酒	23	1,344.60	0.46
3	An order	下命	41	863.10	0.58
4	The federal prohibition of alcohol	禁酒令	34	834.30	0.40
5	Alcohol&Side dish	酒饌	19	831.70	0.33
6	Bestow	遣使	37	494.90	0.46
7	Stop drinking	禁酒	23	470.20	0.30
8	Booze and women	酒色	16	415.10	0.39
9	Prohibition	禁止	30	330.60	0.49

Words with high betweenness centrality, which play an essential role in interpreting the subject of the word while acting as intermediaries, are as follows: *Imgeum* (主, king, 2379.90), *yakju* (藥酒, alcohol, 1344.60), *hamyeong* (下命, An order, 863.10), *geumjureung* (禁酒令, the federal prohibition of alcohol, 834.30), *juchan* (酒饌, feast with liquor and snack, 831.70), *hasa* (遣使, bestowment, 494.90), *geumju* (禁酒, prohibition of drinking, 470.20), *jusaek* (酒色, alcohol and sexual indulgence, 415.10), and *geumji* (禁止, prohibition, 330.60). In other words, the most essential words for interpreting the alcoholic drinks recorded in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 are The king, *yakju*, An order, the federal prohibition of alcohol, liquor and snack and bestowment. Additionally, as the closeness centrality approaches 1, the more closely related a word is to the subject and the more central its role in the sentence. The words with a closeness centrality of 1, which are considered to be closely related to the subject, are *soju*, *myeongryeong*, *seolchi*, *gaksam*, *goeul*, *noemul*, *eumju*, *gwajang*, *jugum*, *bumo*, *haok*, *bulchung*, *taepyeong*, *gyeongyeon*, *pajik*, and *uae*. The words with both high betweenness centrality and closeness centrality are *hamyeong* (0.58), *geumji* (0.49), *imgeum* (0.47), *yakju* (0.46), *hasa* (0.46), *geumjureung* (0.40), *jusaek* (0.39), *juchan* (0.33), and *geumju* (0.30), in that order.

Top-frequency words related to alcohol, betweenness centrality, and closeness centrality were

analyzed to examine the perception of the ruling class in the *Choseon* dynasty regarding alcohol. The results of the semantic network analysis, which visualized all these factors, are shown in (Figure 4).

As seen in the above picture, the most representative term for alcohol used by the ruling class during the *Choseon* dynasty was "*yakju*" (藥酒). *Yakju* refers to liquor made with beneficial medicinal herbs, can be used as a pronoun for clear liquor in general, and can also be used as an honorific term for liquor. It can be easily found in records of the *Choseon* dynasty such as the legal codes and cookbooks.⁹ On April 24, 1417, in the 17th year of the reign of King *Taejong*, a messenger was sent to provide meat, dried venison, and deer meat combined in 15 portions, 30 bottles of *yakju*, 10 bottles of *soju*, and other items to the governor of Chungcheong Province. This is recorded in an official document (*sillok*)⁹. In this record, both *yakju* and *soju* are listed separately, suggesting that *yakju* was recognized as a type of liquor made with medicinal herbs, rather than a pronoun for clear liquor in general. On August 6, 1418, in the 18th year of King *Taejong*'s reign, *Lee Myeong-deok* was instructed to provide only new liquor for the elderly and ailing Princess of *Uihwa*, and not to use aged liquor, calling it "*yakju*." This record suggests that *yakju* was used as an honorific term for the liquor used by the royal family and the ruling class. Therefore, it can be seen that the term "*yakju*" in the official records referred to both the liquor consumed by the royal family and the ruling class, as well as liquor made with medicinal herbs.

Although the word "*sool*" or alcohol(酒) does not

appear directly in the records of the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 of the *Choseon* dynasty, words with high relevance to “*sool*” and mediation include “*imgeum*” (主, king), “*jaesa*” (祭祀, ancestral rites), “*hamyeong*”(下命, An order), “*hasa*” (遣使, bestowment), and “*geumji*” (禁止, prohibition). Words that directly include the word “*sool*”(酒, alcohol) are “*geumju*” (禁酒, prohibition of drinking), “*geumjulyeong*” (禁酒令, the federal prohibition of

alcohol), “*jusaek*” (酒色, alcohol and sexual indulgence), “*juyeon*” (酒宴, drinking party), “*juchan*” (酒饌, feast with liquor and snack), “*jugwa*” (酒果, alcohol and fruit), and “*jusik*” (酒食, alcohol and food). “*Juyeon*” refers to a banquet with alcohol, “*juchan*” refers to alcohol and side dishes, “*jugwa*” refers to alcohol and fruit, and “*jusik*” refers to alcohol and food. All of these terms are used in social community events, confirming that alcohol was an essential item that could not be left out when people gathered for a feast or a ceremonial event.

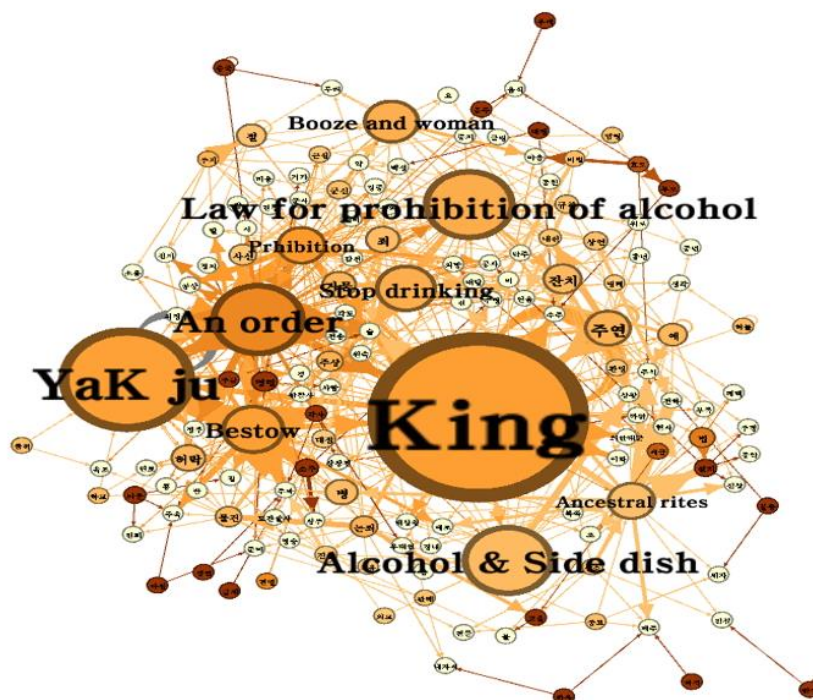


Figure 4. Visualization of semantic network analysis of alcoholic drink in 『*ChoseonWangjoSilrok*』

“*Jusaek*” is a compound word that means alcohol and women, emphasizing the pleasurable element that alcohol provides, and it appears frequently in the records. The most representative elements in which alcohol is directly included in the word are “*geumju*” and “*geumjulyeong*” (prohibition of alcohol). In the first year of the reign of King Taejong (1401), on April 24th, while he was teaching “*Unhanpil*” to his attendant Jin Gae, who was born in the year of “*Imwu*”, the king was concerned because the people had been drinking excessively for a long time. He ordered the suspension of alcohol and said, “Even though I issued the prohibition of alcohol, those who continue to

drink are causing me to be unable to break off their habit. When the people hear about it, they do not dare to drink anymore.” In the 15th century, alcohol was not particularly problematic socially, so the “*geumjulyeong*” during the early *Choseon* period was enforced temporarily through the king's order when there were natural disasters such as droughts, crop failures, or floods. On January 20th in the second year of the reign of King *Jungjong* (1507), it was recorded that even though the prohibition order had been issued, people outside continued to drink recklessly without restraint, so a strict order was given to strictly enforce the prohibition.

Discussion

In this study, the drinking culture of the Choseon dynasty was examined by utilizing text frequency analysis on the entire 『Choseonwangjosilok (朝鮮王朝實錄)』 of the Choseon dynasty. We investigated a total of 1,968 books and 948 volumes of records covering 518 years of the reign of 27 kings in the Choseon dynasty, which were collected through web crawling from the website of the National Institute of Korean History. Sentences and nouns related to alcohol were extracted through the programs, and Gephi0.9.2 was used for semantic network analysis. Referring to the 『Choseonwangjosilok (朝鮮王朝實錄)』, the results of the study on the drinking culture of the nobility of the Choseon Dynasty are as follows.

The names of alcohol were more often the names of the alcohol used in the palace separately or the names of the alcohol used during ritual ceremonies, rather than specific names based on the materials or production methods used, which were mainly used by the general public. This is because numerous banquets, rituals, and receptions were held in the palace, and customized alcohol was likely produced for each occasion. Looking at the specific types of alcohol, according to the production method, it is most probable that the types of alcohol used in the palace were mainly *cheongju* (44.75%), *soju* (37.74%), and *takju* (17.52%). According to the materials, it can be seen that pure grain-based alcohol (30.77%) and herbal-based alcohol (38.46%) were relatively more prevalent than alcohol made from flowers or fruits (15.38%) or distilled alcohol (15.38%). In terms of purpose, the names of alcohol used in the palace or during ritual ceremonies were recorded at a higher rate, with *guanjo* (0.16%), *gungjo* (52.24%), and *jejo* (47.59%) being the main types. Looking at the changes in the occurrence frequency of 41 types of liquor recorded in the *Sillok* by century, it can be seen that in the 15th century, the characteristics of liquor were mostly *cheongju* and *soju* in terms of production classification. Also *gokju* in terms of material classification, and *Jeju* liquor were recorded in terms of usage classification. It can be said that the liquor of the ruling class in the 15th century was dominated by *soju* and *cheongju*. The characteristic of liquor in the 16th century was the development of flavored liquor, which not only used pure *gokju* but also added ingredients such as mugwort and flowers to add taste and aroma. In the 16th century, a double-brewed "*iyangju*" also appeared. In the 17th century, it can be seen that the people enjoyed a culture of drinking and developed a "*sesi*

pungsokju". In the 18th century, the highest frequency of appearance was seen in *cheongju* liquor such as *samhaeju*, *bangmunju*, and *Jeju* liquor such as *Jeju* and *Yeju*. In the 19th century, the most frequently appearing liquor was "*ryo*" which was a type of *taktju*. The high occurrence frequency of the word "*ryo*" in the 19th century can be considered a reflection of the difficult social conditions at the time, such as famine and foreign invasions. In addition, in the 19th century, *ryu-haju*, which is a type of *cheongju* liquor, was first recorded in the *Sillok*.

Furthermore, we investigated whether the frequency of liquor appearance was changed by an era during the Choseon dynasty. As a result of the analysis, there were almost no differences in the changes by era for *soju*, *cheongju*, *taktju*, *gokju*, fruit liquor, *hwa-ju*, medicinal herb liquor, and *gwaju*. However, it was confirmed that there were changes by an era in the flow of "*gungju*" and "*Jejuju*". *Gungju* used in the palace appeared 592 times in the 15th century but gradually decreased over time with 237 times in the 16th century, 217 times in the 17th century, 174 times in the 18th century, and 60 times in the 19th century. *Jeju* used in ceremonies appeared 403 times in the 15th century, but rapidly decreased to 101 times in the 16th century, then increased again to 178 times in the 17th century and 325 times in the 18th century, and then decreased again to 159 times in the 19th century. The results which analyse about interest in liquor during the Choseon dynasty showed that the kings with high interest in liquor were *Sejo* and *Sejong* in the 15th century, and *Seonjo* and *Injong* in the 16th century, followed by *Yeongjo* in the 18th century. As liquor was made from rice and grains, it was closely linked to the social and economic situation. Therefore, liquor was sometimes controlled on a national level to maintain economic and social order, and the period in which liquor was actively controlled in the Choseon dynasty was the time when royal authority was strongest. The perception characteristics of the Choseon ruling class regarding alcohol were examined through semantic network analysis, and the results showed that the most representative term used by the Choseon ruling class for alcohol was *yackju* (藥酒).

Although the term for alcohol (酒) is not directly used in the records of the 『Choseonwangjosilok(朝鮮王朝實錄)』 of the Choseon dynasty, words with high centrality related to alcohol included king (主), ancestral rites (祭祀), imperial orders (下命), sending envoys (遣使), and prohibition (禁止). In addition, there were words with the term alcohol (酒) such as *geumju* (禁酒) and

geumjuryeong (禁酒令) which prohibit alcohol, and *jusaek* (酒色), *juyeon* (酒宴), *juchan* (酒饌), *jukwa* (酒果), and *jusig* (酒食), which directly include alcohol. It was an essential item that could not be missed when people gathered for feasts or when performing ritual events. The most representative element in which the term alcohol directly appeared was *geumju* (禁酒) and *geumjuryeong* (禁酒令). Records related to alcohol in the 『*Choseonwangjosilok*(朝鮮王朝實錄)』 of the Choseon dynasty had many meanings associated with highly political issues for maintaining the national system. At times, alcohol was offered as a gift to maintain friendly relations, and alcohol was an essential item that could not be left out in national ancestral rites for the maintenance of the national system. It was confirmed that it was used as a highly political means to maintain national power and strengthen the royal authority. In the 16th century, the policy of restricting alcohol consumption began to be recorded in legal codes after the compilation of the "Daejeonhu Maerok" in the 38th year of King Jungjong's reign (1543). As social and economic changes occurred, the items covered by the alcohol restriction were expanded, and various methods of controlling alcohol consumption were discussed (Park 2013). In the 8th year of King Hyunjong's reign (1667) on July 25th, it was said that even though there was no law prohibiting alcohol consumption at that time, the drought had already become severe. How could the gentlemen gather and drink? They knew the number of utensils, but they did not know the distant sound of songs and flutes. Is this not a clear example of detail and omission? Moreover, abstaining from food and drink on national holidays is something that is recorded in the legal code. Lee Su-gwang (1563-1628), who is evaluated as a pioneer of practical learning in the 17th century, regarded alcohol as a type of food in his book "Jibong Yuseol" written in 1614. It was understood as a cultural aspect as well as an indicator of political and social status. It was believed that alcohol was a gift from the heavens and that the quality and taste of alcohol could reflect the goodness or badness of the host. In the 39th year of the reign of Yeongjo (1763), on November 22nd, during a visit to a government office, the King remarked that there were a few criminals and asked if the ban on alcohol had been effective. The officials replied in agreement, and so the King enforced a strict ban on alcohol, with violators often being punished by death. In addition, a law was established that if one household violated the ban, three households would be punished together. The people were fearful, and even the court officials dared not object.

The records about alcohol in the 『*Choseonwangjosilok* (朝鮮王朝實錄)』 of the Choseon dynasty show that it had many political implications related to maintaining the national system. At times, alcohol was used to maintain friendships, and it was

considered an essential item in national ceremonies. It was confirmed that it was used as a very political means to maintain national power and strengthen royal authority.

ACKNOWLEDGEMENT

None

CONFLICT OF INTEREST

The authors have no conflicting financial interests.

REFERENCES

- 1 JH, K. Understanding of Takju Liquor & drinking culture of the classical scholars during the Lee Dynasty. *The Journal of Korean Historical-folklife*, 131-158 (2014).
- 2 Jo DW, K. D., Lee KR, Lee SK, Hong KP. *Goryedokyung*(高麗圖經). pp. 2005.
- 3 Chung HK, K. M. *What is Macguli to Koreans*. . pp. (Kyomoonso, Seoul) 2012.
- 4 YD, N. A Study on the Awareness of Alcoholic Beverage of 『Soaepyeon』 and Drinking culture of in the mid and late Joseon Dynasty. *JANGSEOGAK* **41**, 178-203 (2019).
- 5 YS, L. Study on the Liquors of Yi - dynasty. *Korean Society of Food and Cookery Science* **2**, 17-37 (1986).
- 6 Choi, J.-H. & Lee, H.-G. A study on wine of Yi Dynasty in 1600. *Journal of the Korean Society of Food Culture* **2**, 17-24 (1987).
- 7 Shin, M., Lee, Y. & Choi, S. Literature review on the pharmaceutical effect on Korean traditional foods in'eumsikdimibang'. *J East Asian Soc Dietary Life* **11**, 325-335 (2001).
- 8 Lee, H. The transmission and the modern value of the traditional method of family fermented vinegar in the old references. *The Society Of Onji Studies* (2019).
- 9 Baik, Y., Ahn, J., Kim, J.-h. & Kim, D.-H. A Comparative Study on Medicinal Liquor (藥酒) from the 『Donguibogam (東醫寶鑑)』 and Major Culinary Texts (調理書) of the Joseon Period. *Journal of Korean Medical classics* **34**, 169-206 (2021).
- 10 JW, R. Yanban's Drinking Culture in the Early Choseon Dynasty. *Dongbanghak*(東方學), 335-364 (2010).
- 11 Chin, S. The symbol of alcohol in confucian scriptures. *Yangmyeonghak* **37**, 271-302 (2014).
- 12 JS, K. Changes in Joseon's Chinese Envoy

- Banquet Rites - Court banquets for Chinese envoys. *The Society Of Onji Studies* 69-120 (2014).
- 13 MS, K. The present situation of the study on the Annals of Joseon Dynasty. *THE CHOSON DYNASTY HISTORY ASSOCIATION (CDHA)* 74, 215-245 (2015).
- 14 Kim HY, K. H. Analysis of Network Dynamics from Annals of the Chosun Dynasty. *The Journal of the Korea Contents Association* 14, 529-537 (2014).
- 15 Han, Y. An analysis on concepts related to education in the annals of the Joseon dynasty. Korean Class. Stud 74, 357-380 (2017).
- 16 HJ, M. Study on Confucian Politics about the Annals of the Choson Dynasty through Big Data Analysis. *The Journal of the Korea Contents Association* 18, 253-261 (2018).
- 17 Ann, Y.-G. Jang (fermented soybean) in official and royal documents in Chosun dynasty period. *The Korean Journal of Food And Nutrition* 25, 368-382 (2012).
- 18 Lee, S. & Jung, J. Korean Tea Therapy in 『The Annals of the Joseon Dynasty』. *Journal of Society of Preventive Korean Medicine* 17, 17-28 (2013).
- 19 JB, K. An Scientometric Analysis of Fisheries Records in the Annals of the Joseon Dynasty. *Ocean Policy Research* 33, 59-92 (2018).
- 20 Kim, M.-H. A Scientific Quantitative Analysis on Vegetables of Joseon Dynasty using the Joseonwangjoshilrok based Data. *Journal of the Korean Society of Food Culture* 36, 143-157 (2021).
- 21 Kim, M.-H. A Study on Fruits Characteristics of the Chosen Dynasty through the Analysis of Chosenwangjoeshirok Big Data. *Journal of the Korean Society of Food Culture* 36, 168-183 (2021).
- 22 Kim, M.-H. Analysis of Current Status of Marine Products and Characteristics of Processed Products Seafood in Joseon-via the Veritable Records of the Joseon Dynasty based data. *Journal of the Korean Society of Food Culture* 37, 26-38 (2022).
- 23 MH, K. A study on food poisoning during the Joseon dynasty using the veritable records of the Joseon dynasty based data. *J. Korean Soc. Food Cult. J. Korean Soc. Food Cult.* 37, 300-309 (2022).
- 24 Chi, M.-T., Lin, S.-S., Chen, S.-Y., Lin, C.-H. & Lee, T.-Y. Morphable word clouds for time-varying text data visualization. *IEEE transactions on visualization and computer graphics* 21, 1415-1426 (2015).
- 25 Li, J., Shin, S. Y. & Lee, H. C. Text mining and visualization of papers reviews using R language. *Journal of information and communication convergence engineering* 15, 170-174 (2017).
- 26 Lee JD, Y. S., Lee C. A Big data analysis of civil complaint texts using R language. *J Korea Inst Inf Commun Eng*, 323-325 (2020).
- 27 history., N. i. o. K. *Choseonwangjosilok(朝鮮王朝實錄)*, 28th December 2022).
- 28 Doerfel, M. L. What constitutes semantic network analysis? A comparison of research and methodologies. *Connections* 21, 16-26 (1998).
- 29 YS, J. A Study on the Completion and the Background of Religious Tea Services in Chosun Dynasty. *The Korean Society Of Confucianism* 25, 55-93 (2006).
- 30 BJ, P. Joseon Dynasty's National Rituals and the Use of 尊 and 罍. *THE CHOSON DYNASTY HISTORY ASSOCIATION (CDHA)* 58, 171-240 (2011).
- 31 MK, K. *The scenery of Choseon's back alleys*. pp. (A blue history, Korea) 2003.
- 32 Won, S.-I. Review on Sools, Korean Traditional Rice Liquors of Ancient Literatures Published in 1400~ 1600s: Focusing on Single-Brewed Rice Liquors, Danyangju. *Korean journal of food and cookery science* 29, 193-208 (2013).
- 33 RD, P. *Korean traditional a famous wine*. . pp. 199-201 (Korea show case) 2005.
- 34 Jang, A. D. Around 1670. 「Wymsikdimibang (飮食知味方)」. *Han BR, Han BS, Han BJ. editor*, 78-115 (2004).
- 35 Lee HJ, J. S., Chung NW, Chai KH *Limwionsibyukji(林園十六志)*. pp. 330-356 (Kyumoon, Korea) 2007.
- 36 SW, L. *Kimsyeengideakjoobangmoon(金承旨宅廚方文)*. pp. 1341-1351 (Suhaksa) 1992.
- 37 YW, J. Kyuhapchongseo (閨閣叢書). 31-46 (2008).
- 38 SJ, Y. *Yourok (要錄)*. pp. 179 2008.
- 39 Association, N. C. P. Sanlimgyungje(山林經濟). 30-231 (1986).
- 40 SW, L. *Gosachyalyoo (攷事撮要)*. pp. 221 (Suhaksa) 1992.
- 41 SB, K. *The food culture of the Choseon dynasty*. pp. (Garamkihyoek) 2006.
- 42 HJ, H. A study on the successive founders's shrine in Joseon Dynasty. *Korean Studies* 39, 281-317 (2019).
- 43 J, P. The political application of the prohibition law and the temperance on king's table. *The Journal of Korean Historical-folklife*, 93-128

- (2017).
44 SM, H. Pragmatism of the Chosun and Alcohol
Korean Silhak Review **12**, 121-146 (2006).