

Unraveling the Joseon Dynasty: A Quantitative Approach to Historical Dynamics

Donghyeok Choi and Juyong Park

Graduate School of Culture Technology

The Annals of the Joseon Dynasty (조선왕조실록; AJD) is a comprehensive chronological record of the Yi family, the only royal family throughout around 500 years of reign. Spanning a total of 189,218 days of the kingdom's history, from its inception to its fall, the AJD meticulously describe the interactions and dialogues between Joseon's 27 kings and approximately 43,000 bureaucrats, including 248 premiers (called *Yeonguijeong*), as they addressed the political, cultural, economic, and philosophical issues and events of their time. In 2007, the original text in classical Chinese characters, along with its Korean translation, was made freely accessible in a digital format,¹ providing a valuable and convenient resource for scholars researching Korean history and culture. The corpus of articles contained within this resource comprises approximately 400,000 entries.

Given the sheer volume of data available and accessible, this study focus on the political society called *Yangban*, Joseon's ruling class, that differed from the European Aristocracy and the Japanese Samurais due to its meritocratic nature, rather than inherited status. *Yangban* managed to maintain their authority by consistently showcasing their family clan's academic excellence through a highly competitive state-administered examination called the *Gwageo*. Even after successfully passing the *Gwageo*, *Yangban* were constantly proving their competencies and being evaluated through personnel decisions, thereby amplifying their political prestige and social authority. Therefore, in the context of politics—defined as “an authoritative allocation of values”²—personnel matters represent a highly recursive form of political behavior, which can be perceived as the “politics of politics.”

Comprehending the rules of political appointment system not only goes beyond merely understanding the social values advocated by *Yangban*, but also offers insight into the political and social values of the Joseon Dynasty. Roughly speaking, to comprehend political history of Joseon Dynasty, it is imperative to examine **who succeeds in that society**.

Utilizing quantitative methods on detailed information and integrated dataset on Joseon's bureaucracy and its people, I aim to find clues to the following questions to help us obtain a better understanding of how political history evolve and decay: What type of talents did Joseon's vaunted bureaucracy recruit into itself? How did the bureaucrats' careers unfold over their lifetimes, and how did they correlate with major historical events? And what kinds of signals can we extract about Joseon's fate from these data?

To answer these questions, I employed other historical sources in addition to the AJD, such as *Mungwa Bangmok* and *Gyeonggukdaejeon:Ijeon*. The AJD contain records of bureaucrats' positions and ranks; however, it was essential to use the *Mungwa Bangmok* to ascertain the starting points of their careers. *Mungwa Bangmok*, a list of successful candidates from 805 *Gwageo* examinations, not only provides information, such as the passing rank and passing age, but also includes demographic data, such as the region of origin and family relationships, which are crucial for identifying the examinees' backgrounds. Furthermore, the *Gyeonggukdaejeon:Ijeon*, containing information on government positions and ranks in a dictionary format, offers a method to

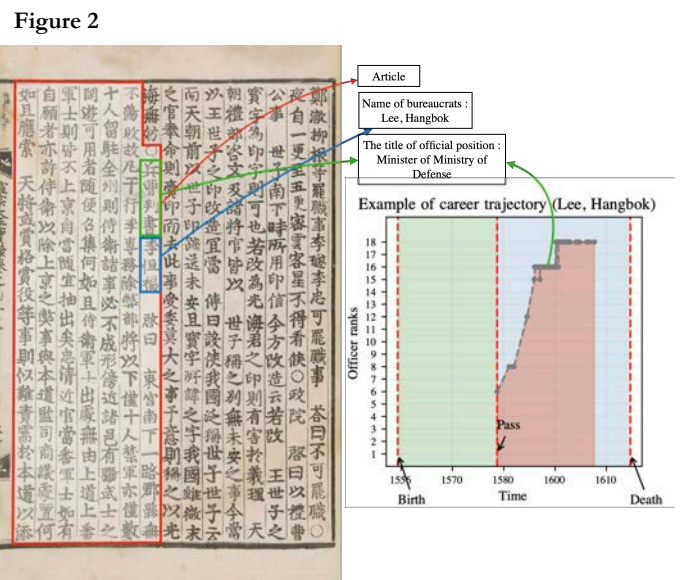
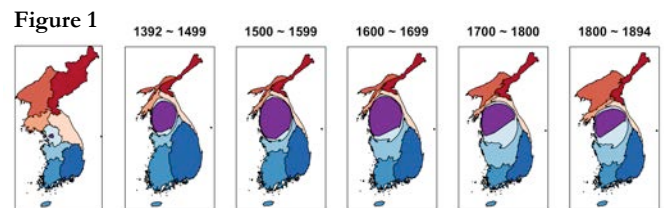


Figure 1. This cartogram depicts the distribution of provinces from which successful *Gwageo* examination candidates originated. Over time, a progressive concentration in Seoul becomes evident, indicative of the emergence of a regional class. Particularly noteworthy is the increased number of successful candidates from the *Pyeongan* Province starting from the 1800s.

Figure 2. This illustration represents the reconstructed career trajectory of Hangbok Lee (1556-1618), derived from the original Annals of the Joseon Dynasty (AJD) and extracted official title data. By leveraging resources such as the *Mungwa Bangmok*, AJD, and *Gyeonggukdaejeon:Ijeon*, we can piece together the career paths of all 15,151 *Yangban*s.

¹ The Veritable Records of the Joseon Dynasty, National Institute of Korean History, <https://sillok.history.go.kr>

² Easton, David. A Framework for Political Analysis. Prentice-Hall, 1965.

quantitatively assess an individual's success as a bureaucrat by converting government positions into classifications that can be represented by a total of 18 numbers, ranging from Senior First Class(정일품; 正一品) to Junior Ninth Class(종구품, 從九品).

In the upcoming presentation, given that the research process in digital history—and data analysis more generally—comprises four stages: 1) data collection, 2) dataset preprocessing, 3) exploratory data analysis (EDA), and 4) analysis and visualization, I will discuss the common challenges that may arise at each stage and suggest scientific and technological approaches for their resolution. Furthermore, I will share intriguing historical patterns unearthed through overcoming these very challenges.