

THE HIT K-MOVIE EXHUMA: A BIG DATA ANALYSIS

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The main goal of this paper is to analyze 27 articles of Google written in 2024 regarding the hit K-movie *exhuma*. A major point of this paper is that the word *film* was the most widely used in 27 articles, followed by the word *exhuma*, the word *movie*, the word *Korea*, and the word *grave*, in that order. A point to note is that in the word cloud, the word *film* is the biggest, thereby counting as the most important, central, and key word in 27 articles of Google. Python produces the so-called word cloud in accordance with the use of keywords. This in turn implies that the word *film* was the most widely occurred one in 27 articles of Google. A further point to note is that the word *burial* occurred around the center. What this suggests that the *burial* is a core one in 27 articles of Google. Exactly the same can be said of *events*. The word *events* also showed up in the center, thereby referring to a core one in 27 articles. Quite interestingly, the word *exhuma* turned up around the center, thus being deemed to be a central and important one in 27 articles of Google. Finally, it is interesting to point out that the relevant words can be grouped together, depending on their relevance (or similarities). It is significant to note that the distance among these words with similar properties is close.

Keywords: big data, film, movie, article, word cloud, network, cluster

1. Introduction

The main purpose of this paper is to analyze 27 articles of Google written in 2024 regarding the hit K-movie *exhuma*. First, we got rid of verbs, adjectives, adverbs, prepositions, etc. Put differently, we obtained only nouns for the network analysis, the keyword analysis, the word cloud analysis, and the cluster analysis. Second, this paper aims to analyze keywords that occurred in 27 articles of Google. This keyword analysis provides the representative keywords that mainly consist of 27 articles of Google. Third, we aim at providing the word cloud analysis in which key words show up in different fonts, which in turn shows how keywords are made up of 27 articles of Google. Fourth, we attempted to provide the network analysis in which some show up in the center, whereas others appear in the corner. Important and central words turn up in the center, whereas less important and central words show up in the corner. This leads us to see what important words are. Finally, we aim to provide the cluster analysis, which leads us to capture similar words. Python produced many clusters, but we obtained the part of a cluster for the reason of space. More importantly, the distance between clusters and words was calculated by using the Euclidean distance.

2. Methods

The main goal of this paper is to provide an in-depth analysis of 27 articles of Google regarding the hit K-movie exhuma. Our research was carried out by the common coding language python. We eliminated adjectives, adverbs, verbs, and prepositions from the original texts. That is to say, we obtained only nouns for the cluster analysis, the network analysis, the word cloud analysis, and the keyword analysis. The word cloud analysis was carried out by the keyword analysis. Simply put, python produces a word cloud in accordance with the use of keywords.

3. Results

3.1. Pretreatment of 27 Articles

This section is devoted to providing information on the pretreatment of 27 articles of Google written in 2024. The following table shows the part of keywords obtained after processing the original texts:

Table 1 Pretreatment of 27 Articles

Samples Obtained after Processing 27 Articles
'Exhuma', 'horror', 'film', 'Jang', 'Jae', 'hyun', 'Choi', 'Min', 'sik', 'Kim', 'Go', 'eun', 'Yoo', 'Hae', 'jin', 'Lee', 'Do', 'film', 'mystery', 'occult', 'elements', 'process', 'grave', 'consequences', 'Exhuma', 'Forum', 'section', 'Berlin', 'International', 'Film', 'Festival', 'February', 'theatres', 'February', 'Showbox5', 'accounting', 'box', 'office', 'performance', 'film', 'number', 'box', 'office', 'admissions', 'opening', 'film', 'till', 'film', 'US', 'worldwide', 'box', 'office', 'grossing', 'film', 'Box', 'office6', 'List', 'films', 'South', 'Korea', 'place', 'Domestic', 'films', 'place', 'Domestic', 'films', 'admissions', 'Korean', 'Film', 'Council7', 'Plot', 'Korean', 'shaman', 'Hwa', 'rim', 'Kim', 'Go', 'eun', 'protégé', 'Bong', 'gil', 'Lee', 'Do', 'hyun', 'family', 'illness', 'family', 's', 'son', 'Hwa', 'rim', 'curse', 'Grave', 's', 'ancestor', 's', 'spirit', 'family', 's', 'patriarch', 'Park', 'Ji', 'Yong', 'grave', 'ancestor', 'grandfather', 'Hwa', 'enlists', 'colleagues', 'Feng', 'shui', 'master', 'Kim', 'Sang', 'deok', 'Choi', 'Min', 'sik', 'Yeong', 'geun', 'Yoo', 'Hae', 'jin', 'Sang', 'deok', 'locations', 'wealthy', 'Yeong', 'geun', 'home', 'encounter', 'Ji', 'yong', 'Sang', 'deok', 'Ji', 'insists', 'grave', 'mountain', 'border', 'Sang', 'deok', 'sinister', 'energy', 'Hwa', 'rim', 'rituals', 'grave', 'curse', 'Ji', 'yong', 'monk', 'Gisune', 'grave', 'location', 'grandfather', 'Hwa', 'rim', 'Bong', 'gil', 'excavation', 'proceeds', 'gravediggers', 'head', 'snake', 'omen', 'rain', 'Yeong', 'geun', 'coffin', 'rain', 'stops', 'ward', 'hearing', 'rumors', 'treasure', 'tomb', 'coffin', 'entity', 'Ji', 'yong', 's', 'entity', 'bloodline', 'Ji', 'yong', 'parents', 'Ji', 'yong', 'grandfather', 'loyalist', 'occupation', 'era', 'burial', 'Sang', 'deok', 'coffin', 'entity', 'baby', 'Months', 'Yeong', 'geun', 'informs', 'Sang', 'deok', 'gravedigger', 'snake', 'gravesite', 'head', 'onna', 'site', 'foot', 'coffin', 'Hwa', 'rim', 'Bong', 'gil', 'Yeong', 'geun', 'coffin', 'excavate', 'temple', 'Hwa', 'rim', 'Gisune', 'Kitsune', 'night', 'Bong', 'gil', 'ghoul', 'pigs', 'Hwa', 'rim', 'Bong', 'gil', 'coffin', 'inside', 'Hwa', 'rim', 'Samurai', 'Ghoul', 'Bong', 'gil', 'others', 'ghoul', 'turn', 'ball', 'fire', 'mountain', 'Hwa', 'rim', 'ghoul', 's', 'origin', 'Bong', 'gil', 'Sang', 'deok', 'returns', 'grave', 'samurai', 'dormant', 'coordinates', 'grandfather', 'tombstone', 'grave', 'robbers', 'patriots', 'conquest', 'relic', 'Korea', 'Sang', 'deok', 'Hwa', 'rim', 'Yeong', 'geun', 'plan', 'pole',

'creature', 'midnight', 'Hwa', 'rim', 'samurai', 'others', 'grave', 'vision', 'Monk', 'Kitsune', 'katana', 'samurai', 's', 'body', 'samurai', 'ghoul', 'Ji', 'yong', 'grandfather', 's', 'cover', 'relic', 'Sang', 'deok', 'relic', 'sword', 'creature', 's', 'body', 'feng', 'shui', 'knowledge', 'Sang', 'deok', 'samurai', 'faints', 'regains', 'occult', 'thriller', 'Exhuma', 'fire', 'animal', 'abuse', 'allegations', 'animal', 'advocacy', 'group', 'production', 'animals', 'carcasses', 'movie', 'Korea', 'Animal', 'Rights', 'Advocates', 'KARA', 'Friday', 'films', 'production', 'distributor', 'Showbox', 'Thursday', 'questionnaire', 'animal', 'safety', 'group', 'April', 'letter', 'animals', 'pigs', 'dogs', 'chickens', 'thriller', 'viewers', 'shamans', 'feng', 'shui', 'expert', 'occurrences', 'Korean', 'family', 'United', 'States', 'quest', 'grave', 'family', 'ancestor', 'Korean', 'village', 'gut', 'ritual', 'animals', 'KARA', 'production', 'pig', 'carcasses', 'livestock', 'retailer', 'retailer', 'gut', 'performance', 'Kim', 'Ko', 'eun', 'stabbing', 'pigs', 'sacrifices', 'beings', 'fish', 'ground', 'bait', 'key', 'production', 'expiration', 'date', 'farm', 'aquarium', 'result', 'spending', 'time', 'ground', 'group', 'animals', 'chickens', 'dogs', 'pigs', 'production', 'organizations', 'animal', 'owners', 'production', 'didn', 'hire', 'veterinarian', 'filming', 'process', 'officials', 'livestock', 'retailer', 'farm', 'management', 'KARA', 'productions', 'use', 'animals', 'film', 'production', 'efforts', 'recurrences', 'productions', 'use', 'animal', 'carcasses', 'media', 'productions', 'possibilities', 'decay', 'spreading', 'disease', 'Their', 'bodies', 'regulations', 'group', 'statement', 'group', 'government', 'guidelines', 'use', 'animals', 'media', 'production', 'regulate', 'filmmakers', 'animals', 'safety', 'animals', 'humans', 'Humane', 'guidelines', 'use', 'animals', 'media', 'content', 'abuse', 'Korea', 'guidelines', 'KARA', 'guidelines', 'safety', 'media', 'production', 'ethology', 'depth', 'interviews', 'media', 'workers', 'guidelines', 'producers', 'filmmakers', 'movie', '"', 'Exhuma', 'occult', 'mystery', 'film', 'waves', 'box', 'office', 'success', 'film', 'invitations', 'film', 'festivals', 'occult', 'mystery', 'film', 'occurrences', 'geomancer', 'shamans', 'sum', 'money', 'tomb', 'movie', 'Exhuma', 'Mongolia', 'Feb', 'Indonesia', 'Feb', 'Taiwan', 'Mar', 'Australia', 'New', 'Zealand', 'Singapore', 'Malaysia', 'Brunei', 'Mar', 'movie', 'set', 'North', 'America', 'UK', 'Ireland', 'Vietnam', 'Mar', 'Philippines', 'Mar', 'Thailand', 'Mar', 'Hong', 'Kong', 'Macao', 'Cambodia', 'April', 'movie', 'storyline', 'grave', 'performances', 'Choi', 'Min', 'sik', 'Kim', 'Go', 'eun', 'Yoo', 'Hae', 'jin', 'Lee', 'Do', 'hyun', 'direction', 'response', 'distributors', 'world', 'Well', 'Go', 'USA', 'North', 'American', 'distributor', 'movie', 'twists', 'occult', 'film', 'fans', 'distributor', 'film', 'elements', 'cast', 'Choi', 'Min', 'sik', 'star', 'blockbuster', '"', 'Oldboy', 'MockingBird', 'Vietnamese', 'distributor', 'excitement', 'films', 'year', 'Vietnamese', 'cinemas', 'Showbox', 'distributor', 'film', 'surge', 'interest', 'movie', 'Berlin', 'International', 'Film', 'Festival', 'company', 'invitations', 'film', 'festivals', 'inquiries', 'rights', 'purchases', 'Indonesia', 'Exhuman', 'film', 'sensation', 'representatives', 'Showbox', 'releases', 'Asia', 'North', 'America', 'Australia', 'expectations', 'films', 'success', 'film', 'flurry', 'invitations', 'film', 'festivals', 'Exhuman', 'Udine', 'Far', 'East', 'Film', 'Festival', 'Apr', 'May', 'interest', 'Udine', 'Far', 'East', 'Film', 'Festival', 'Europes', 'film', 'festival', 'films', 'world', 'films', 'value', 'box', 'office', 'success', 'Night', 'Owl', 'Man', 'Standing', 'Next', 'Outlaws', '"', 'Confidential', 'Assignment', 'Sabrina', 'Baracetti', 'co', 'founders', 'Udine', 'Far', 'East', 'Film', 'Festival', 'movie', 'Exhuma', 'ability', 'Koreas', 'history', 'culture', 'faith', 'cast', 'director', 'Jang', 'Jae', 'hyun', 'cinematographer', 'Lee', 'Mo', 'gae', 'movie', 'viewers', 'world', 'occult', 'everyone', 'film',

'invitations', 'festivals', 'Berlin', 'International', 'Film', 'Festival', 'Hong', 'Kong', 'International', 'Film', 'Festival', 'Udine', 'Far', 'East', 'Film', 'Festival', 'interest', 'world', 'horror', 'blockbuster', 'Exhuma', 'countries', 'invitations', 'film', 'festivals', 'movie', 's', 'distributor', 'Showbox', 'March', 'film', 'debut', 'month', 'Mongolia', 'Indonesia', 'Taiwan', 'release', 'schedule', 'March', 'Australia', 'New', 'Zealand', 'Singapore', 'Malaysia', 'Brunei', 'March', 'North', 'America', 'UK', 'Ireland', 'Vietnam', 'March', 'Philippines', 'March', 'Thailand', 'month', 'Hong', 'Kong', 'Macao', 'Cambodia', 'Well', 'Go', 'USA', 'film', 's', 'distributor', 'North', 'America', 'movie', 's', 'twists', 'occult', 'genre', 'fans', 'continent', 'Splendid', 'film', 's', 'distributor', 'Germany', 'occult', 'film', 'cast', 'actor', 'Choi', 'Min', 'sik', 'star', 'Old boy', 'Jang', 'Jae', 'hyun', 'Exhuma', 'events'

As exemplified in Table 1, we got rid of adverbs, prepositions, relative pronouns, gerunds, to-infinitives, verbs, and adjectives. As observed earlier, for the network analysis, the cluster analysis, the word cloud analysis, and the keyword analysis, we obtained only key nouns, which in turn indicates that these analyses play a pivotal role in the big data analysis. At a glance, we can see important, central, and pivotal words through these four analyses. Additionally, we can measure the distance among key words by using the Euclidean distance. We can also observe that the relevant words can be grouped together (the so-called cluster analysis).

3.2. The Keyword Analysis

In what follows, we aim to investigate 50 major keywords. We classified them into descending order:

Table 2 50 Keywords

Number	Keyword	Frequency	Number	Keyword	Frequency	Number	Keyword	Frequency
1	film	164	21	Vietnam	19	41	Festival	14
2	exhuma	161	22	audiences	18	42	life	14
3	movie	76	23	place	18	43	people	14
4	Korea	54	24	south	18	44	platforms	14
5	grave	40	25	metal	17	45	thriller	14
6	Kim	40	26	story	17	46	year	13
7	Korean	34	27	success	17	47	ancestor	13
8	films	33	28	time	17	48	Indonesia	13
9	shui	32	29	elements	16	49	record	13

10	director	31	30	experien ce	16	50	years	13
11	family	31	31	history	16			
12	horror	29	32	march	16			
13	box	26	33	viewers	16			
14	office	24	34	admissi ons	15			
15	characte rs	23	35	country	15			
16	occult	22	36	genre	15			
17	release	21	37	geoman cer	15			
18	world	21	38	media	15			
19	cast	19	39	ancestor s	14			
20	producti on	19	40	distribut or	14			

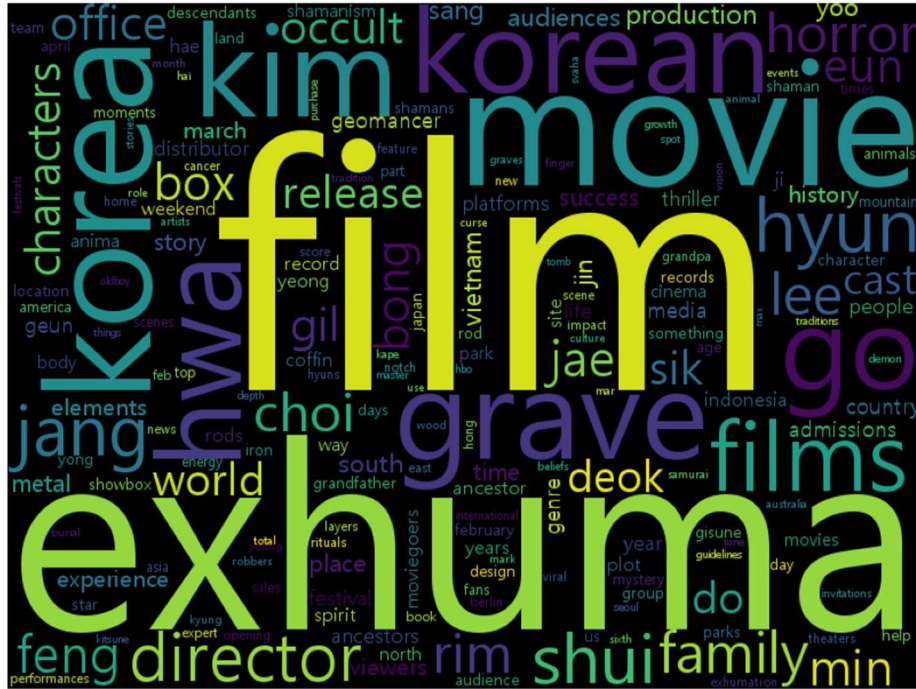
It must be stressed that the word *film* occurred 164 times in 27 articles of Google. It ranks first in keywords. This in turn suggests that the *film* was the most occurred one, thereby counting as the most important and central keyword. Quite interestingly, the word *film* is followed by the word *exhuma*. As observed earlier, the word *exhuma* is the title of the movie, thus being much used in 27 articles. It is important to note that the word *movie* showed up 76 times in 27 articles of Google. It is worth noticing that the word *Korea* ranks fourth in keywords. It seems to me that the reason why this word was much used is that the film *exhuma* is the title of the hit K-movie. More importantly, the word *Korea* is followed by the word *grave*. The latter showed up 40 times in 27 articles of Google. It seems thus reasonable to contend that the word *film* was the most widely used in 27 articles, followed by the word *exhuma*, the word *movie*, the word *Korea*, and the word *grave*, in that order. It is worth noting that the word *director* turned up 31 times in 27 articles of Google. It seems that the so-called hit K-movie *exhuma* was written and directed by Jang, Jaehyun, so the word *director* showed up 31 times. Quite interestingly, the word *horror* occurred 29 times in 27 articles. Similarly, the word *occult* appeared 22 times in 27 articles of Google. Finally, it should be pointed out that the word *thriller* showed up 14 times in 27 articles. From all of this, it is clear that the word *film* obtained the highest frequency (164 tokens).

3.3. The Word Cloud Analysis

This section is focused on inquiring into the word cloud of 27 articles. As well-known, the so-called word cloud plays a major role in providing the picture of important and central keywords

that occurred in documents. Central, important, and key words show up as the biggest, whereas less central, important, and key words turn up as smaller in the word cloud. Figure 1 shows the word cloud of 27 articles:

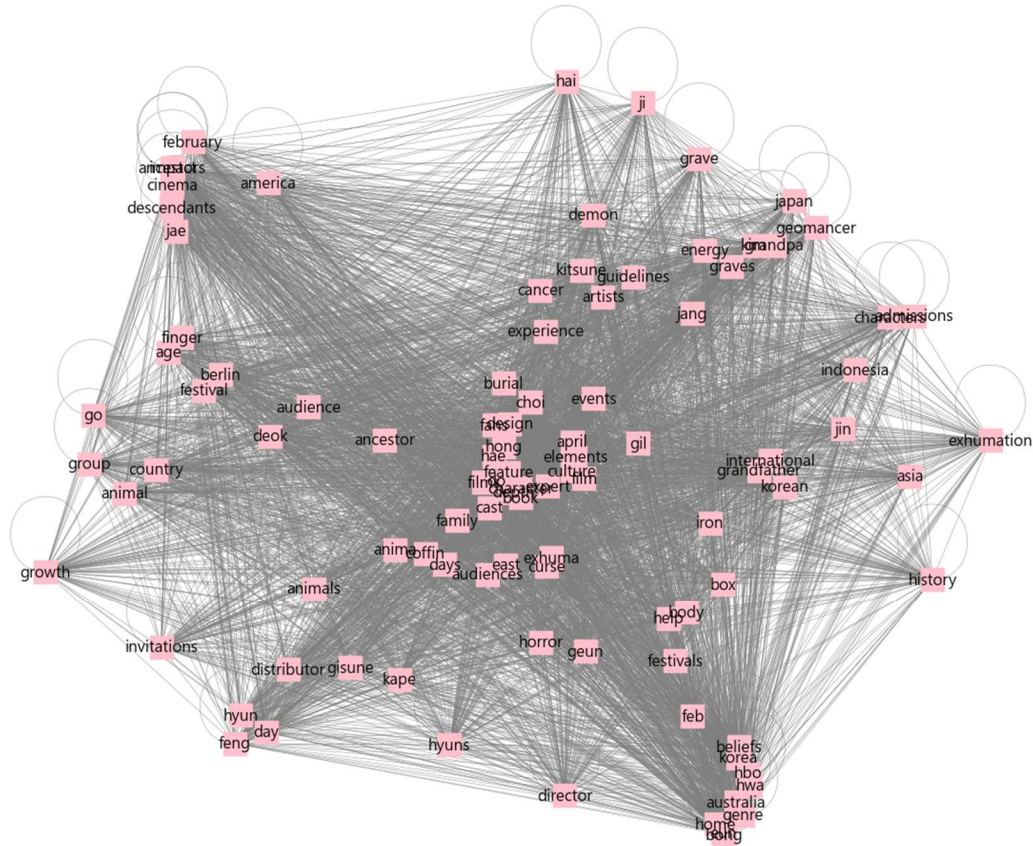
Figure 1 Word Cloud of 27 Articles



It is worth observing that as exemplified in Figure 1, the word *film* is the biggest, thereby counting as the most important, central, and key word in 27 articles of Google. Python produces the so-called word cloud in accordance with the use of keywords. This in turn implies that the word *film* was the most widely occurred one in 27 articles of Google. It must be noted, on the other hand, that the word *film* is followed by the word *exhuma*. Put differently, the word *exhuma* is the second biggest, hence implying that it is the second most occurred keyword in 27 articles. It is worthwhile noting that the word *movie* is the third biggest. This amounts to saying that the *movie* is the third most important, central, and key word in 27 articles. It is significant to note that the word *Korea* is the fourth biggest, thereby being regarded as the fourth most important and central one in 27 articles of Google. Finally, it is interesting to observe that the word *grave* is the fifth biggest, thus being deemed to be the fifth most widely occurred one in 27 articles of Google.

3.3. The Network Analysis

In the following, we aim at probing into the network analysis of the relevant words. Important and central words are supposed to show up in the center, whereas less important and central words are supposed to turn up in the corner. The following figure shows the core networks of 27 articles in which core words and less important words occur in different places in the map:

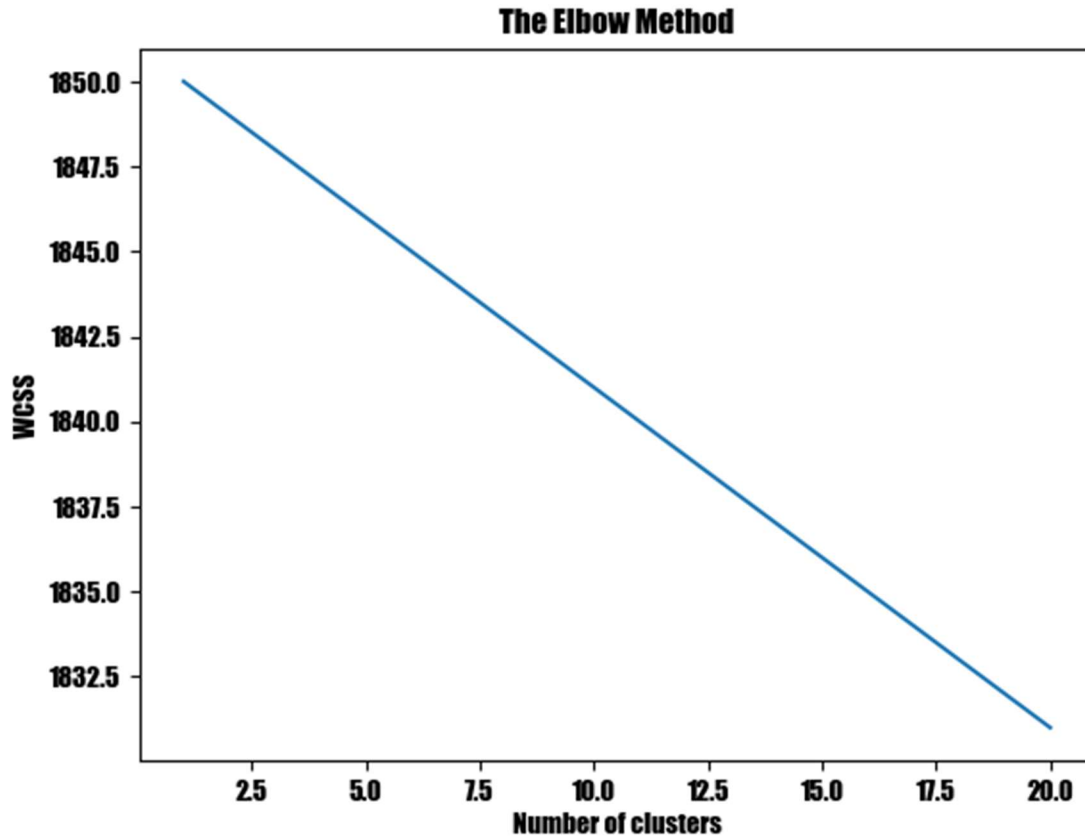
Figure 2 Map of Networks

Particularly noteworthy is that the word *burial* occurred around the center. What this suggests that the *burial* is a core one in 27 articles of Google. Exactly the same can be said of *events*. The word *events* also showed up in the center, thereby referring to a core one in 27 articles. Quite interestingly, the word *exhuma* turned up around the center, thus being deemed to be an important and central one in 27 articles of Google. Similarly, the words *family* and *ancestor* turned up around the center, which we take as suggesting that these two words are the central and important ones in 27 articles of Google. It is interesting to note, on the other hand, that the word *invitations* turned up in the corner, hence counting as less important in 27 articles of Google. It is also interesting to point out that the words *growth* and *group* showed up around the corner. We take this fact as meaning that these two words are less important and central in the map. Exactly the same can be said about *descendants* and *history*. More interestingly, these two words also occurred around the corner, which we take as indicating that they are less important and central in 27 articles of Google. Finally, perhaps it is worthwhile saying that the word *geomancer* appeared in the corner. This seems to suggest that this word is less important and central in 27 articles of Google.

3.4. Clusters

In what follows, we aim at probing into the so-called cluster which refers to grouping words with similar properties. Additionally, we aim to inquire into the distance among words which occurred in 27 articles of Google. To begin with, let us turn our attention to the following graph:

Figure 3 Distance among Words



The term WCSS indicates the distance among the relevant words. The distance was calculated in terms of the Euclidean distance. The graph also shows the number of clusters. Note that the more there are more clusters, the closer the distance among the relevant words is. As exemplified in Figure 3, the total number of clusters are 20 and the Euclidean distance is less than 1832.5. It is noteworthy that if the number of clusters increases, then the distance among the relevant words decreases.

Now attention is paid to the samples of cluster 0. Python produced 7 clusters, but we included a cluster (cluster 0) since it contains many words with similar properties:

Table 3 Cluster

Cluster 0
abigail ability absence abuse access accessibility accessms accessories accident accomplices accordance account accounting across acting action activities actor actors adaptation addition additional additionally administration admiral admissions advantage adversity advocacy advocates aesthetics affection affiliate afflictions aficionados afterlife again age agency agonising agreements ahn ailment air align alive allegations alt altering alternative amazon

ambient america american americas amount analyses ancestor ancestors andy angeles anima
 animal animals anniversary announcements anyone anything apartments app appeal apple
 applications appreciation apprentice approach apr april aquarium architecture area armor
 arrival art article articles artists arts ashamed asia asian aspect aspects assignment assistant
 assumption assumptions athe atmosphere attempt attempts attendance attendants attention
 auction audience audiences august aura australia auteur author availability avengers average
 baby back backbone backdrop background bad bae bait balance ball banter baracetti battle
 battles beauty bed bee beekeeper bees befalls beginning behavior beings belief beliefs bell
 benefits berlin berlinale besides betrayer beyond biff bio birds births bit bitin blackhawk blend
 blending blockbuster blocks blog blogs blood bloodline blow blurs boards boasts bodies body
 bone bones bong bonus book books boom border borders born boss box boy breadth break
 breakdown breast breath brilliant brother brought brunei bts buddhism buddhist bukhan burial
 burn busan call calling cambodia camera camerawork canada cancer cancers captivated
 captivating car carcasses cardio career case cast casual catering catholicism caught cause
 celebration central centuries century ceremony cgv chain chalamet challenges champion
 chance chandler chandlers chang changes channels chants chapters character characters charts
 chatter chemistry chemo chemotherapy cheol cheon chicken chickens child childhood children
 chinilpa choice choices christianity cinema cinemagoers cinemas cinematic cinematographer
 cinematography circulating clarity class classics classmate classrooms client club clues co
 coffee coffin cohesion coin coincidentally coins collaborating colleagues colon colonialism
 colonization colors columbia combination come comedy comes comfort comments
 commitment communities community company compassion competition complex
 complexities comprehension concept concepts concert conclusion confidential conflict
 confrontations confusion connect connection connections conquest consciousness
 consequences consider content context continent continue contradiction convenience
 conventions conversation coordinates copper core corpse corridors costume costumes council
 council7 countries country countrymen countrys countryside courage course cover covid crash
 create creation creature credulity creepy cremation crew crime critic critics cross crossover
 crucial cult culture cumulative curiosity currently currents curse customs cuts dabble dae
 daesalgeot daily daimyō dam danger dark darker dastamalchian data date dates david day days
 deacon dead deal dealers dealt death deaths debut decades decay decision decisions deeper
 defies defines definition deliberate delivers demagoguery demarcation demon deny deok depth
 depths descendants design designers desperate destinies destiny detail detailed details detective
 development device devil didn dig digging digital dilemmas direction director directorial
 directors dirt disarray discovery discussion discussions disease disney distance distribution
 distributor distributors do doctors documentaries documents does doesn't dogs doh
 domestic dong doo doors dormant download dr drama dramatization drawn draws dread
 dreams dregs droves drugs dub due dune duo dynamics dynasty eagerness earthy ease east
 Easter echoes editing editors edm effect effectiveness effects efforts eggs election element
 elements embrace emergency emerges emmy emotions emotiveness empire encounter end

endeavors energy engagement engaging English enjoyment enlists entertainment enthusiasts
entity environment epic equilibrium era eras escapes essence establishment

As illustrated in Table 3, these words are closely related in each document, hence grouping a cluster. As well-known, the so-called keywords consist of topics, which in turn are made up of a document (documents). These keywords are closely related to one another, so they consist of topics, which in turn are made up of a document(s). It should be pointed out that the distance among these words is close, hence a cluster (group). Python provided more words, but we included the part of the relevant samples for the reason of space. It can thus be inferred that the relevant words can be grouped together, depending on their relevance (or similarities). Note that the distance among these different words with similar properties is close. For big data, deep learning, and machine learning, see Kang (Kang 2014, 2014b, 2014c, 2014d, 2014f, 2014g).

4. Conclusion

To sum up, we have analyzed 27 articles of Google written in 2024 regarding the hit K-movie *exhuma*. In section 3.1, we have contended that the word *film* was the most widely used in 27 articles, followed by the word *exhuma*, the word *movie*, the word *Korea*, and the word *grave*, in that order. In section 3.2, we have maintained that the word *film* is the biggest, thereby counting as the most important, central, and key word in 27 articles of Google. Python produces the so-called word cloud in accordance with the use of keywords. This in turn implies that the word *film* was the most widely occurred one in 27 articles of Google. In section 3.3, we have argued that the word *burial* occurred around the center. What this suggests that the *burial* is a core one in 27 articles of Google. Exactly the same can be said of *events*. The word *events* also showed up in the center, thereby referring to a core one in 27 articles. Quite interestingly, the word *exhuma* turned up around the center, thus being deemed to be a central and important one in 27 articles of Google. In section 3.4, we have further argued that the relevant words can be grouped together, depending on their relevance (or similarities). Note that the distance among these different words with similar properties is close.

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