

2020 New Media Academic Map in Mainland China¹

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Abstract

The goal of this research is to describe the preference, emphasis and trend of new media research in mainland China in 2020. The authors used social network analysis as a research method to process and research the keywords of the captured paper information, and output an academic map of new media research in the Mainland in 2020.

Authors got the following conclusions, Communication & Medium are the Main Topics, “Convergence”, “Transformation” and “Innovation” are Cores, Interdisciplinary Research is Gaining Momentum, and Data Technology Plays an Important Role.

Keywords: New Media Studies, Academic Map, Mainland China

1 Introduction

When it comes to the coronavirus disease that has swept the world from 2019 to the present, we cannot ignore the systemic impact of this rare global epidemic on the operation of our entire human society. The new media seems to have a more special role in this stage when the large-scale social distancing order is implemented.

In order to express, in a certain extent, the evolution of new media. Authors, from the perspective of academic research, analysed the research topics of important new media-related academic papers in mainland China, 2020. On this basis, the authors attempt to display the above-mentioned research results in the form of an “academic map”.

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2 Research Methods

2.1 Mining and the Raw Data

The author's research adopts the literature research method.

First, authors used the “Advanced Search” function of CNKI Overseas platform to retrieve the required documents (ie: Raw Data).

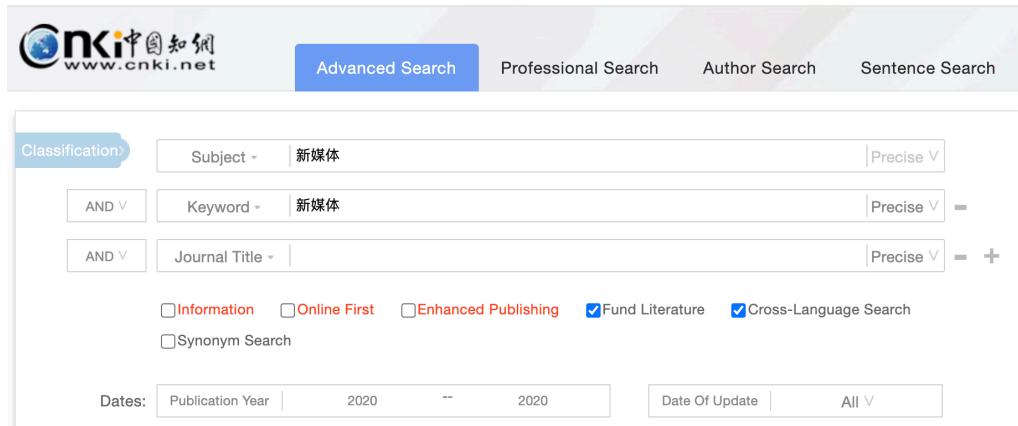


Figure 1 Search Criteria for Raw Data (Partial)

Referring to Figure 1, the authors set the “Subject” and “Keyword” of the paper as “新媒体”, and set the above two conditions to be met at the same time. Also, in order to ensure that the papers from the original data have high influence and academic value in mainland China, we set the source of the papers to be included in *the Chinese Social Sciences Citation Index (CSSCI)* and/or *A Guide to the Core Journal of China (PKUEAS)*, and funded by *the National Social Science Fund of China*.

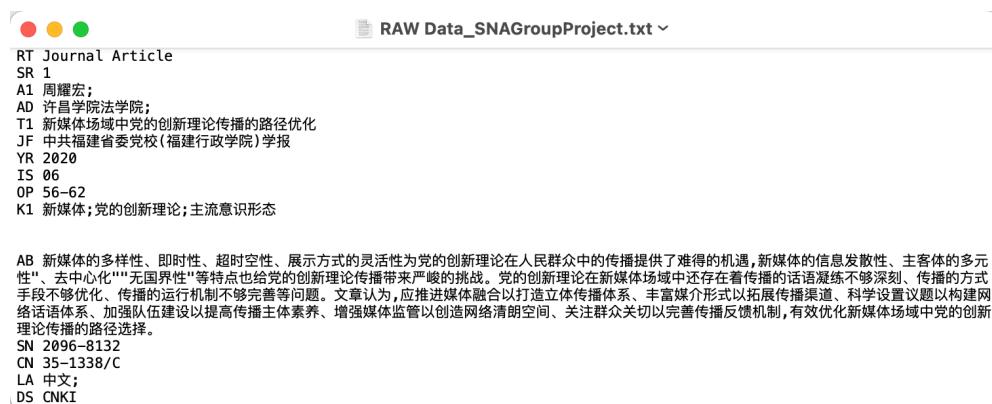


Figure 2 Sample of Raw Data

Through the above settings, authors obtained a total of 303 papers that met the search criteria, and all of them were exported in the “Refworks” format of CNKI Overseas (See Figure 2).

2.2 Data Processing

In the data processing, the tools used by authors include: Pandas based on Python language, MS Excel and Gephi. The authors have completed the extraction of keywords from the raw data, cleaning, sorting, and visualisation.

新媒体	创新	意识形态	中国共产党
新媒体	直播		
新媒体	短视频	传统文化	纪录片
新媒体	高校研究	图书宣传	
高校研究	教育	新媒体	
新媒体	意识形态	传播策略	
媒介化	农村研究	新媒体	赋能
新媒体	公共文化		
新媒体	影响力	传统媒体	
政治传播	另类	新媒体	
时尚	新媒体	信息技术	
直播	编辑	营销	新媒体
大学生	意识形态	新媒体	
新媒体	高校研究	意识形态	话语权
游戏理论	新媒体	图书宣传	
新媒体	短视频	深度伪造	信任危机

Figure 3 Search Criteria for Raw Data (Partial)

Authors first used the Pandas toolkit for capturing the content of the “keywords” in the raw data. The result of this stage is shown in Figure 3. You can also find the complete codes in *Annex 1*.

On this basis, authors cleaned the keywords to a certain extent according to the principle of “*synonym substitution*”, and use MS Excel to generate the edges needed for further research. Authors converted the keywords list of each paper to the edges list. For example, the first column and the second column can be a pair of edges.

Authors use Gephi to generate the relational network of the above keywords data. In this progress, authors import the processed data into Gephi. Firstly, authors run the average weighting and modularity, and the value of modularity is 0.304. Authors deal with the nodes part and choose the weighting degree in ranking. In order to display and observe more conveniently, we set the size of the smallest point to 5 and the size of the largest point to 50.

The second is the colour of the nodes. Select the modularity class in the partition, it will be divided into several modules with different colours. In the edges section, Authors choose the weight of the edges. Authors observe that the image is too complicated due to too many nodes. Authors use the filtering function to filter out the nodes whose degree value is less than 4. Among the 183 nodes, authors keep 49.46% visible, and among the 793 edges, authors keep about 64.68% visible. Finally, authors choose Force Atlas layout to adjust the image, open the label function to display, and we can get the Figure 4.

Modularity Report

Parameters:

Randomize: On
 Use edge weights: On
 Resolution: 1.0

Results:

Modularity: 0.304
 Modularity with resolution: 0.304
 Number of Communities: 32

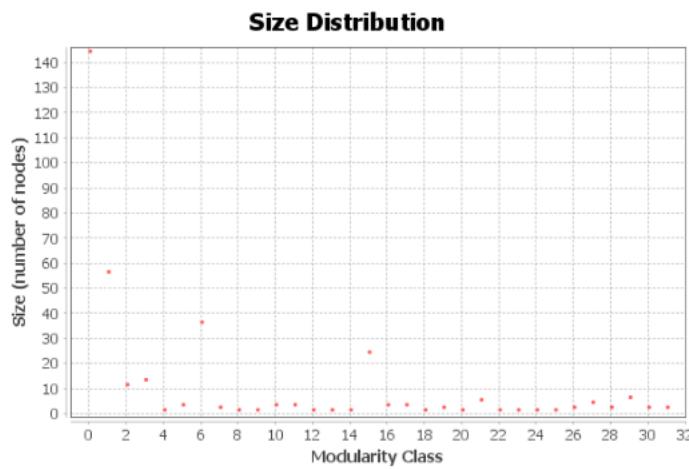


Figure 4 Modularity Report of Gephi

4 Results

As shown in Figure 5, the authors obtained the keywords relationship network.

Based on the data obtained in the literature research process and the above figure, the author made the following summary and conjecture.

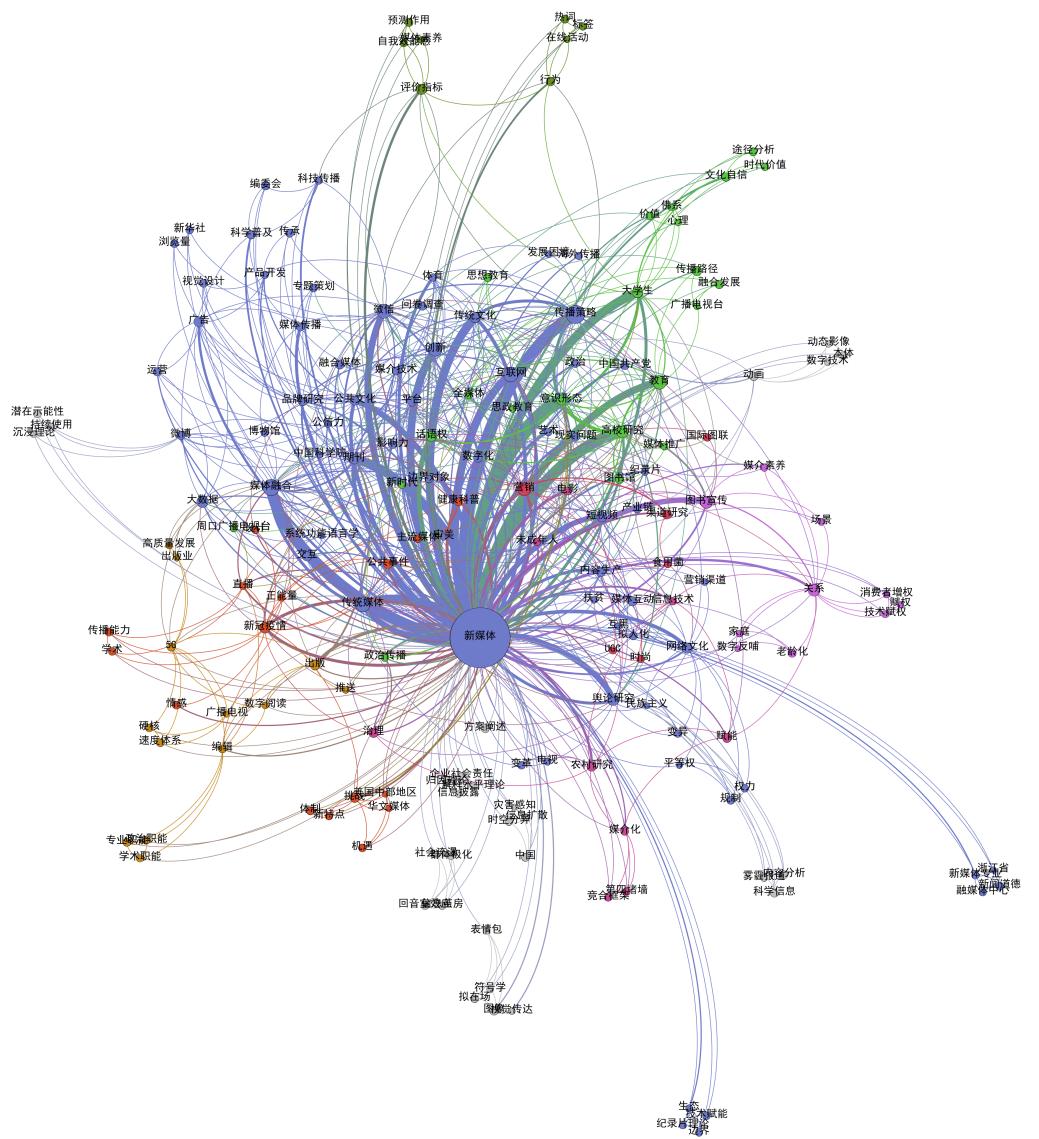


Figure 5 the Map of Academic in Mainland China with the Theme of “New Media” in 2020

4.1 The Status Quo & Characteristic of Academic Research

As Gephi has generated keyword network of literature, it can be used to summarise the aggregation points. Besides, each cluster can be regarded as a closely connected, although independent, research field. (Liu X, 2016). Key words are the core vocabulary of academic writing and also act as natural language tool to express the subject concept of the literature in the titles, abstracts and texts of the present literature. In general, keywords are the internal characteristics of documents, which can reveal or express the core meaning of paper and reflect the internal information. That's to say, analysing the keywords can reflect academic research circumstance and summarise characteristic in new media field.

4.1.1 Communication & Medium are the Main Topics

From the table 1, it is obvious that the ‘media convergence’, ‘traditional media’, ‘communication strategy’, ‘WeChat’, ‘marketing’ and ‘Public Opinion Research’ have the strongest ties and connection with the central node – new media. These six keywords all belong to majors of communication and medium, but the differentiation of research topics is not obvious.

Table 1 Six Nodes with the Highest In-degree Value

Node	In-degree	Out-degree	Degree
新媒體	120	296	416
傳播策略	27	21	43
媒體融合	19	23	42
互聯網	19	13	32
微信	17	16	33

As one of the hot topics, communication and medium are still the main stream topics of academic research in new media area in recent years. Among the top five keywords, “WeChat” is the new one and has become one of the most popular representative of new media academic research. As the most popular social app in China, WeChat was launched by Tencent in 2011 and had reached over 300 million users till January 2013.

4.1.2 “Convergence”, “Transformation” & “Innovation” are Cores

From the keyword network and the table 2, it can be seen that convergence, transformation and innovation play vital roles in the academic area of new media. With the rapid development of high-tech, technology like ‘5G network’, "Internet +", ‘big data’, ‘internet of things’, ‘interactive information technology’, ‘digital technique’ and ‘cloud computing’ have stepped into the economic and social fields. All of these have accelerated the development and innovation of new media in China. At the same time, the emerging forms of communication represented by ‘WeChat’, ‘Weibo’ continue to develop, and new media communication research in China has made new explorations in open innovation, deep integration and diversified governance.

Table 2 Seven Nodes with the Highest Eigenvector Centrality Value

Node	Closeness Centrality	Betweenness Centrality	Eigen Centrality
新媒體	0.927746	0.439376	1
傳播策略	0.927746	0.439376	0.515288
媒體融合	0.927746	0.439376	0.375133
創新	0.927746	0.439376	0.366095
傳統媒體	0.927746	0.439376	0.33006
微信	0.927746	0.439376	0.316019

Table 3 Follows the Contents of Table 2

Node	Closeness Centrality	Betweenness Centrality	Eigen Centrality
营销	0.490826	0.008433	0.292608
教育	0.493088	0.011439	0.283674
图书宣传	0.488584	0.003219	0.257447
舆论研究	0.496904	0.008724	0.248062
高校研究	0.501563	0.00799	0.245548
广告	0.335073	0.002597	0.230778
关系	0.483434	0.012357	0.229756
新冠疫情	0.49537	0.008959	0.22632
评价指标	0.33368	0.007356	0.22448
内容生产	0.485628	0.002647	0.223914
话语权	0.487842	0.005194	0.208923
公共事件	0.488584	0.001258	0.205495
大数据	0.484894	0.006322	0.20531
数字化	0.484894	0.004523	0.196333
媒体互动	0.484894	0.001909	0.193824
大学生	0.5	0.013985	0.191137
期刊	0.516077	0.007318	0.189794
意识形态	0.503135	0.00701	0.189706
治理	0.488584	0.002445	0.189633

According to network and the table 4, ‘education’, ‘high education research’, ‘journals’, ‘ideological and political education’ and ‘College students’ play important roles in the academic research of new media. New media has the advantages of convenience, timeliness, efficiency, and interactivity, which can meet the current needs of students for information. College students have a strong ability to accept new things, which makes new media exert a certain influence on higher education. In the new era, the power of new media can accelerate the improvement and innovation of education, and help to break through the old mode. Mixing new media with education not only enhances appeal to students, but also activates the education system.

No matter the blending of traditional media and new media, or the integration of new media and big data, digital technology, education and so on, both indicating the importance of convergence, transformation and innovation have become cores in academic research of new media field.

4.2 The Trend in New Media Area

Keywords analysis is used for gaining more insight into the substance of a field and can identify the current research hot topics and future orientation. Based on figure 4, it would be helpful to find new topics and orientation in future academic study in new media area.

4.2.1 Interdisciplinary Research is Gaining Momentum

In figure 4, it can be seen that the topic of new media academic research is diversified, which covers the field of art, business, natural science, computer science, humanities and so on. In the previous academic study, interdisciplinary researches of new media and related disciplines, such as communication, journalism and law are common, but the integration of communication and non-related disciplines is still rare.

Based on the status quo, the interdisciplinary research in academic research of new media is on the rise. This innovative trend not only shows that new media can blend with many related disciplines (such as journalism, art, etc.), but also "dock" with non-related disciplines (such as computer science, natural science etc.), so that to generate more innovative disciplines and derive new theories, models or even new theoretical frameworks in interdisciplinary research. In summary, it is beneficial to the new media, as well as to related and non-related subjects.

4.2.2 Data Technology Plays an Important Role

In the keyword network, it is obvious that topics like ‘big data’, ‘internet’, ‘digitalisation’, and ‘information technology’ have strong ties with the central node, which indicates the importance of data technology in academic research of new media.

In terms of the definition of new media, it can be roughly divided into two major orientations: one is focused on Internet and technology, and the other is based on media industry, media convergence, media system. Stepping into the generation of internet, the revolution of new media is mainly driven by technology and internet. Besides, media and users need to acquire valuable data and search available information efficiently and conveniently by certain technical ways in an explosive period. Furthermore, big data is the product of fragmented society, which can obtain valuable information through the analysis and processing of massive data. Therefore, data technology helps solve a series of problems caused by media changes and information explosion. In the future, data technology would become a research hotspot in the field of new media.

4.3 Conclusion

Based on the Map of Academic in Mainland China with the Theme of new media in 2020, it is found that the academic research mainstreamed topics in the field of new media are communication and medium, new media and media convergence. Besides, “Convergence”, “Transformation” and “Innovation” are cores of new media academic research. At the same time, the interdisciplinary research in academic research of new media is on the rise. Big data, internet and other technologies closely have increasingly become the main technical support for research on new media.

This paper visually reveals the research status quo in China and indicates the future academic trend and orientation, which has practical significance and reference value for the follow-up research.

You are also welcome to browse all the data and codes of our project by Click: [Github](#)

COM5506 Social Network Analysis for Communication (2021B) - Group 3

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Appendix 1

```
1. #coding=utf-8
2. import pandas as pd
3. data_dirt_list=open("/Users/xueyugavin/Library/
Mobile Documents/com~apple~CloudDocs/G's/
Postgraduate in CityU_HK/Sememter B/
COM5506 Social Network Analysis for Communication/
COM5506_Coding& Data/GroupProject_SNA/DATA/
RAW Data_SNAGroupProject.txt")
4. lines=data_dirt_list.readlines()
5. keywords=[]
6. for i in lines:
7.     if "K1" in i:
8.         K1_list=i.strip('K1')
9.         K1_list=K1_list.strip('\n')
10.        K1_list=K1_list.strip()
11.        K1_list=K1_list.split(';')
12.        keywords.append(K1_list)
13. print(keywords)
14. print(len(keywords))
15. p_k=pd.DataFrame(data=keywords)
16. p_k.to_csv("/Users/gavin/Library/Mobile Documents/
com~apple~CloudDocs/G's/Postgraduate in CityU_HK/
Sememter B/
COM5506 Social Network Analysis for Communication/
COM5506_Coding& Data/GroupProject/DATA/
k_p.csv",encoding='utf-8')
```