

A Mathematical Analysis of Historical Papers After the Reissue of *Journal of Silk*

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Received: March 22, 2021

Accepted: April 7, 2021

Online Published: April 27, 2021

doi:10.5539/ass.v17n5p33

URL: <https://doi.org/10.5539/ass.v17n5p33>

Abstract

After the reissue of *Journal of Silk*, the historical papers published can reflect the academic history of Chinese Textile and Apparel History research. The mathematical analysis of these papers is helpful to clarify the territory and important towns of the research on Chinese Textile and Apparel History. Through literature collation and mathematical analysis, the paper believes that: ① The changes in the types of historical papers in *Journal of Silk*, especially the decline in the amount of papers published by corporate personnel, indicate that the Journal has transformed from a journal that integrates education, academia, and training into an academic publication. ② For a long time, authors from Zhejiang and Jiangsu have published more than half of the papers. This phenomenon is related to the earliest research on historical theory in the two places, especially the Zhejiang Silk Institute of Technology, which was the first organization to engage in professional research on historical theory in China. ③ Authors in Zhejiang Province had the largest number of papers before 2003. But after 2004, authors in Jiangsu had the largest number of papers. And after 2004, authors in Shanghai had more papers published, which is related to the strengthening of relevant majors by Suzhou University, Jiangnan University and Donghua University. At the same time, the experience of Jiangnan University shows that restricting the graduation conditions for master's students is conducive to research in the field of Historical Theory.

Keywords: *Journal of Silk*; historical papers; mathematical analysis

Journal of Silk was founded in 1956, ceased publication in 1966, and resumed publication in 1971. It is the longest-run Textile and Apparel Publication since the founding of the People's Republic of China. Analyzing its historical papers is helpful to clarify the territory and important towns of the research on Chinese Textile and Apparel History. This paper will conduct a mathematical description and analysis of the historical papers published in *Journal of Silk* after the resumption of publication in 1971, with a view to exploring the factors behind the data.

1. Trend Analysis of Historical Papers in *Journal of Silk* After Its Reissue

The author had conducted statistics on the historical papers in *Journal of Silk* after the reissue, and found that during the 5 years (1971-1975), the column on historical studies did not revert until the political situation improved in 1977. Under the circumstances, the column would be doubled. The author made a statistical map of the historical papers in *Journal of Silk* from 1977 to the present (Figure 1). Based on this trend map, the author made the following stages: ① The period from 1977 to 1986 was a period of infancy, and the number of papers was less than 10 per year. ② The period from 1987 to 2003 was a wandering period. Some years contained less papers, but some years contained more papers. Not all columns existed in the period. ③ The period from 2004 to 2014 was a stable period, and there were columns for each issue, basically about 2 papers per issue. ④ From 2015 to present is a period of accelerated development, and the proportion of papers is getting higher and higher.

The author draws the statistical data of the proportion of papers in the history of *Journal of Silk* (Figure 2), and finds that it is consistent with the situation of every phase. This figure can prove the correctness of the stage division. Because the annual proportion of papers published in the history of textiles and apparel from 1977 to 1986 was less than 1%, and only 1.09% in 1986, which was the embryonic period. The annual proportion of papers published in the history of textiles and apparel from 1987 to 2003 was 0-3.9%, which was a period of wandering. The papers published in the history of textiles and apparel from 2004 to 2014 accounted for 20-30% each year, which was a period of stable development. Since 2015, the annual proportion of papers on textile and

apparel history has been 15-25%, which is a period of rapid development.

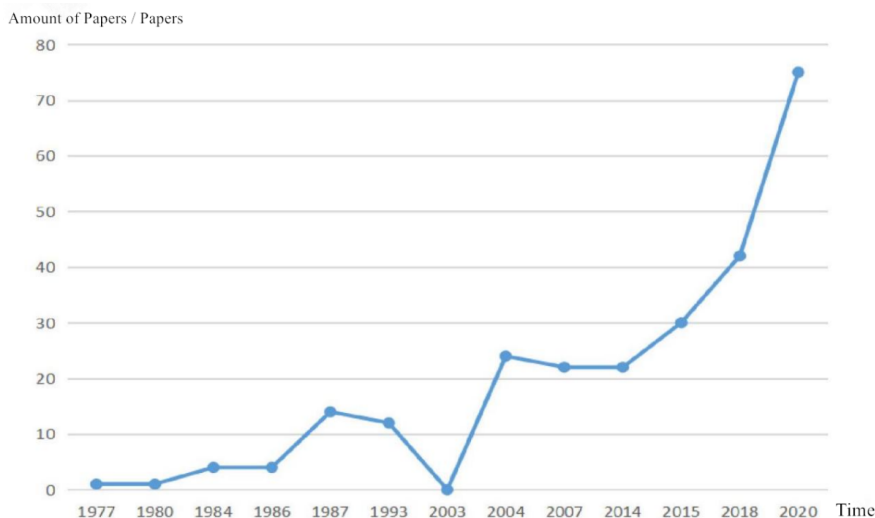


Figure 1. The annual volume of historical papers in *Journal of Silk*

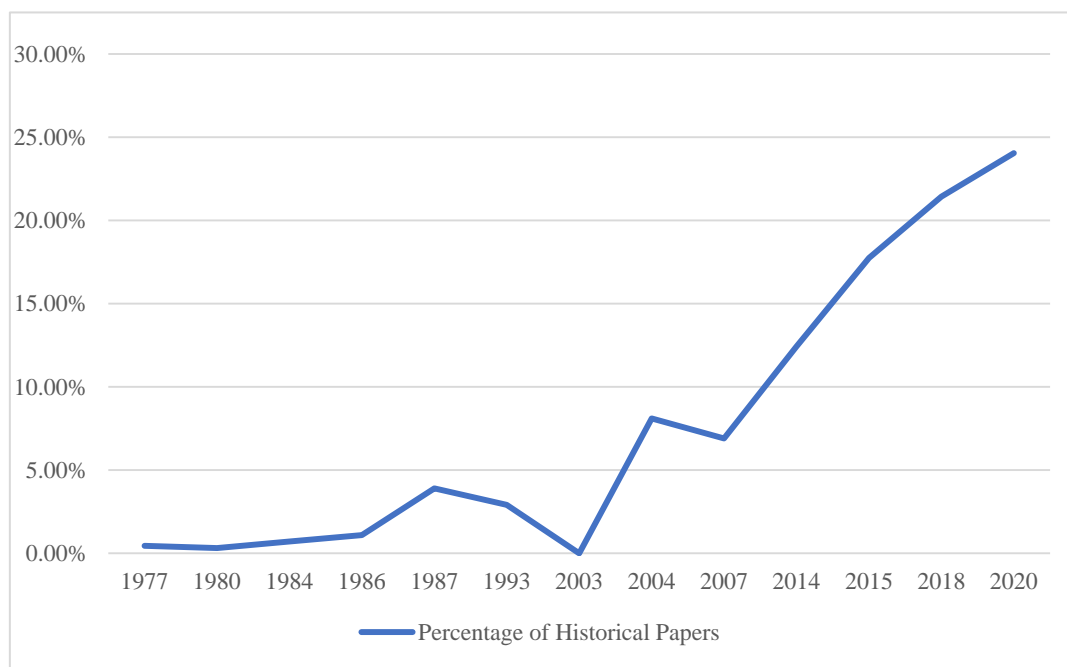


Figure 2. The annual proportion of historical papers in *Journal of Silk*

2. A Mathematical Analysis of the Development of Papers in *Journal of Silk* History and Theory Columns (1977-1986)

2.1 The Mathematical Representation of the Embryonic Development of the Columns of History in Journal of Silk

In this period, the first author of papers (Figure 3) accounted for more than half of the papers of universities, a quarter of enterprises, and more than 10% of research institutions. With Zhao Feng from Zhejiang Silk Institute of Technology as the best, who published five papers; Followed by Liu Manchun from Northwest Normal University and Yu Tao from Sichuan Silk Industry Research Institute, each of them published three papers; Bao Mingxin from East China Institute of Textile Technology (now Donghua University) and Zhou Dehua from Shengze Xinsheng Silk Factory each published two papers. The province where the first work was located

(Figure 4) was basically concentrated in places where the silk industry had been relatively developed since ancient times in Jiang (Jiangsu), Zhe (Zhejiang), Hu (Shanghai), and Shu (Sichuan).

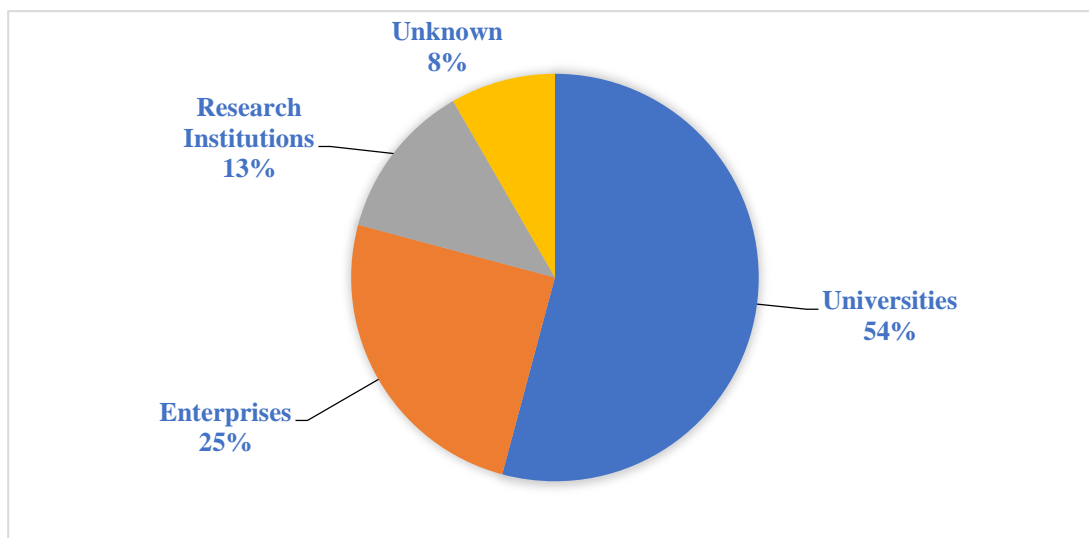


Figure 3. Proportion of first papers on Historical Theory in *Journal of Silk* from 1977 to 1986

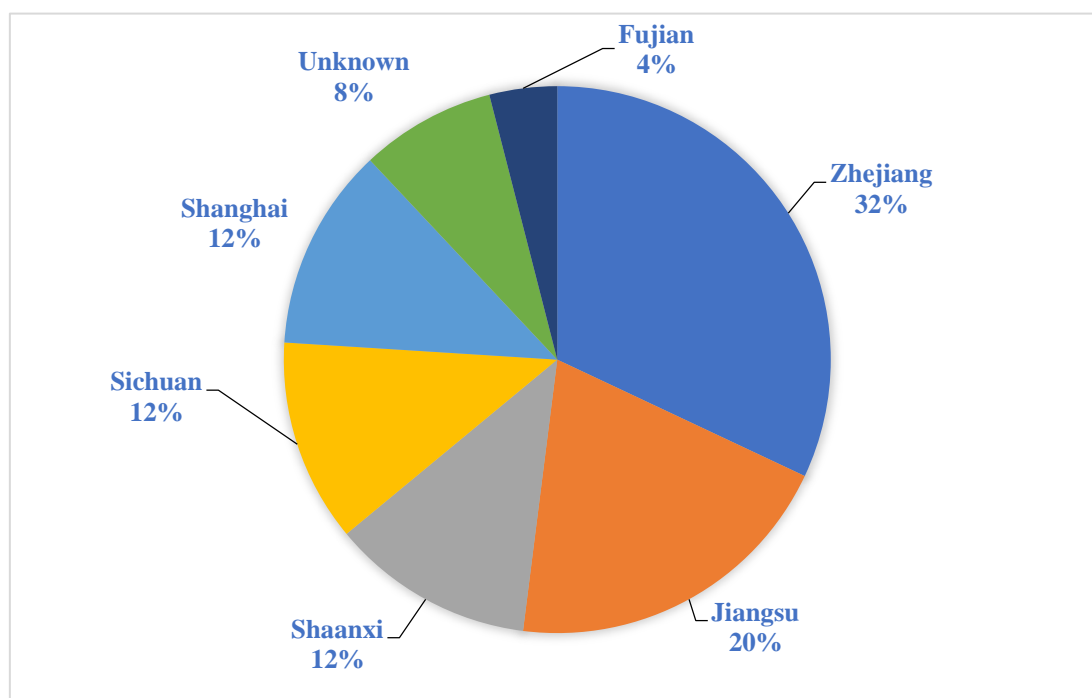


Figure 4. Proportion of the location of the first paper on Historical Theory in *Journal of Silk* from 1977 to 1986

2.2 Analysis of the Reasons for the Mathematical Representation in the Embryonic Period of the Papers in the History Category of *Journal of Silk*

During this period, there were many academic authors in *Journal of Silk* history category papers, mainly Zhu Xinyu, president of Zhejiang Silk Institute of Technology, who founded the Silk History Research Office in 1980 and concurrently served as the director of the research office. He was a master tutor, whose postgraduate named Zhao Feng. *Journal of Silk* was founded by Zhu Xinyu, which had a natural connection with Zhejiang Silk Institute of Technology. At this time, Liu Manchun of Northwest Normal University paid attention to the problems of the Western Regions, and incidentally studied the problems on the Silk Road. Therefore, in his life, he only published three papers related to silk, all of which were in the journal *Silk*. Yu Tao of the Sichuan Silk

Industry Research Institute is an engineer who is interested in the History of silk, so he has always insisted on writing about silk. Bao Mingxin came from a professional background and later became an expert in Clothing History. Inspired by Zhao Chengze, Zhou Dehua continued to write papers in *Journal of Silk* and became an expert in the history of silk. At this time, *Journal of Silk* is a reading material for silk professionals, which has low requirements for historical papers, but only requires readable ones. In addition, there are not many researchers engaged in the field of historical theory, and some enthusiasts in enterprises also get the opportunity to publish papers.

3. A Mathematical Analysis of the Wandering Period (1987-2003) of the Columns of History in *Journal of Silk*

3.1 The Mathematical Representation of the Wandering Period of the History Columns in *Journal of Silk*

During this period, *Journal of Silk* was ranked first among the research institutes, second in enterprises, and third in universities (Figure 5). This phenomenon is very strange. The papers of research institutes and enterprises account for more than 60%. The main contributors of this period in research institutes are China Silk Museum (Zhao Feng team), Sichuan Silk Industry Research Institute (Yu Tao), Suzhou Silk Museum (Zhou Dehua and Wang Chen), Palace Museum (Zhang Fengrong and Li Yinghua), Suzhou Embroidery Research Institute (Sun Peilan), Zhejiang Academy of Silk Science (Yuan Xuanping, Sun Liying), Zhejiang Academy of Agricultural Sciences (Jiang Youlong, Zhou Yaozu), Jingzhou Museum (Peng Hao), Cultural Relics Department of Hunan Provincial Bureau of Cultural Relics (Hou Liang). The main contributors of this period in universities are Zhejiang Silk Institute of Technology (Zhao Feng, Liang Jialong, etc.), Anhui Agricultural University (Zhao Zexiang), Dandong Textile College (now Liaodong College, Jiang Shuyuan), and Suzhou University College of Art (Miao Liangyun, Zhuge) Kai et al.), College of Humanities and Arts, Zhejiang University of Technology (Yuan Xuanping, etc.), etc. The representative of the author in the enterprise is Zhou Dehua, who has never stopped writing.

The provinces where the first author is located are still concentrated in Jiangsu and Zhejiang, but the geographical distribution of excellent work has expanded from 7 provinces in the previous period to 21 provinces (Figure 6), which shows that its influence is gradually expanding. But on the other hand, the regional imbalance of the first work is intensified. There is also a very strange phenomenon here. The number of papers in Shanghai has always not been high. This is not in line with common sense, because there were relatively high-level colleges and universities such as China Textile University and a large number of textile enterprises in Shanghai at that time.

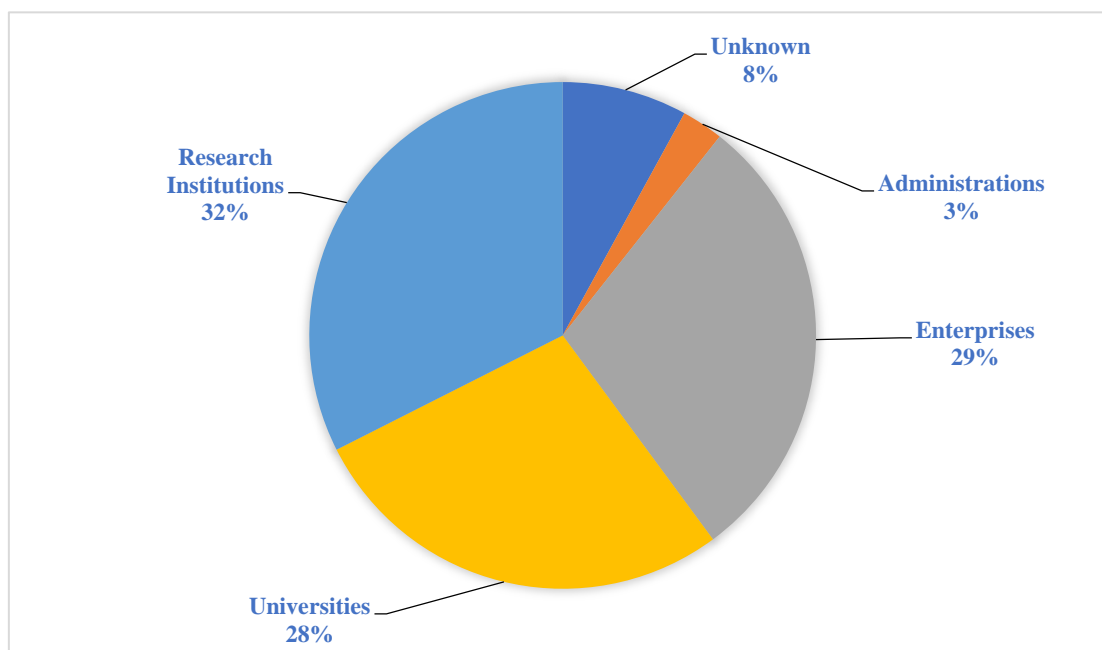


Figure 5. Proportion of the first papers on Historical Theory in *Journal of Silk* from 1987 to 2003

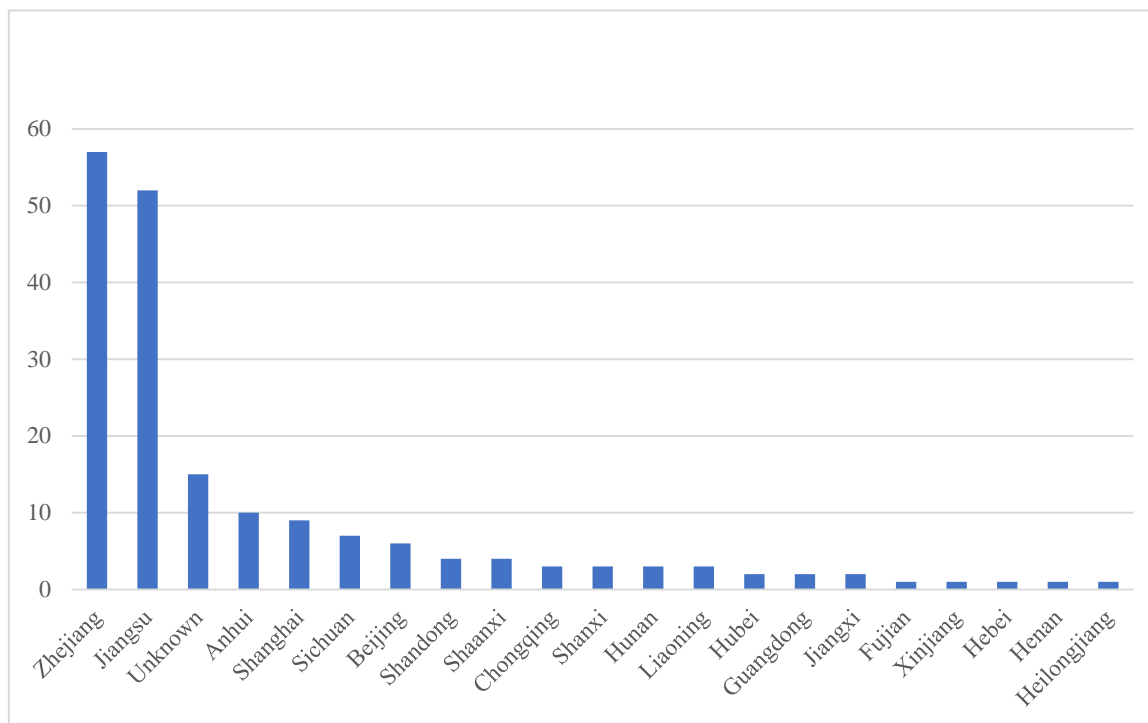


Figure 6. Location distribution of the first paper on Historical Theory in *Journal of Silk* from 1987 to 2003

3.2 Analysis on the Reasons of the Mathematical Representation of the Development of the Historical Columns in *Journal of Silk*

Among the organizations to which the first author belongs, the research institute ranked first. The reason is that Zhao Feng of the Zhejiang Silk Institute of Technology was transferred to the China Silk Museum (opened to the outside world in 1992) that was under preparation at the time. Zhao Feng is a great writer, and his departure caused one to ebb and flow. On the other hand, *Journal of Silk* has always been included in the core catalog of Peking University. Major institutions have requirements for the evaluation of professional titles, and *Journal of Silk* can be used as its evaluation condition, which has been welcomed by many research institutions and colleges.

The reason why Shanghai, Jiangsu, and Zhejiang had fewer papers during this period was due to two points: ① There were not as many textile and art universities in Shanghai as Jiangsu and Zhejiang at that time, and the insufficient supply of manuscripts would inevitably lead to an insufficient amount of manuscripts and application of manuscripts. ② At that time, China Textile University had many journals on campus. As homogenized products of *Journal of Silk*, they attracted a large number of papers that could have been submitted to *Journal of Silk*.

4. A Mathematical Analysis of the Stable Development Period (2004-2015) of the Historical Columns in *Journal of Silk*

4.1 The Mathematical Characterization of the Stable Development Period of the Columns of Historical Theory in *Journal of Silk*

During this period, the first author of historical papers for *Journal of Silk's* ranked first among universities, second in research institutes, and third in enterprises (Figure 7). Since 2007, there were no research papers from enterprises. During this period, the provinces where the first author was located were still concentrated in the Jiangsu and Zhejiang provinces. But compared with the previous stage, it changed a lot from the fifth place (Figure 8) which shows that the quality of the manuscripts is increasing year by year, and the competition for manuscripts is becoming more and more fierce.

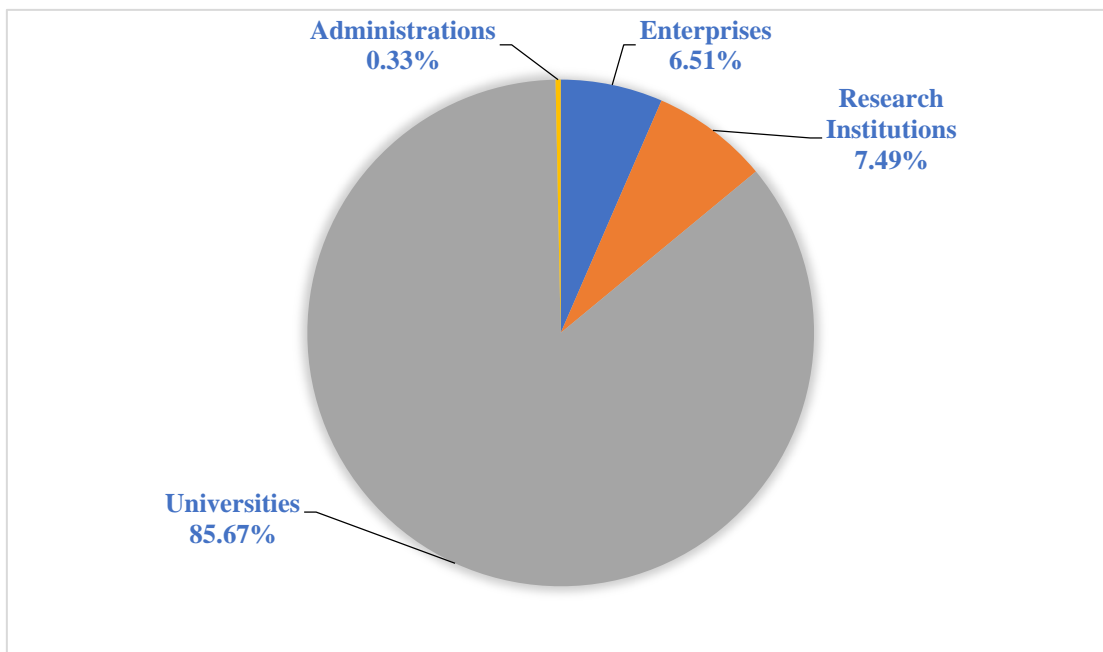


Figure 7. Proportion of the first author of papers on History in *Journal of Silk* from 2004 to 2015

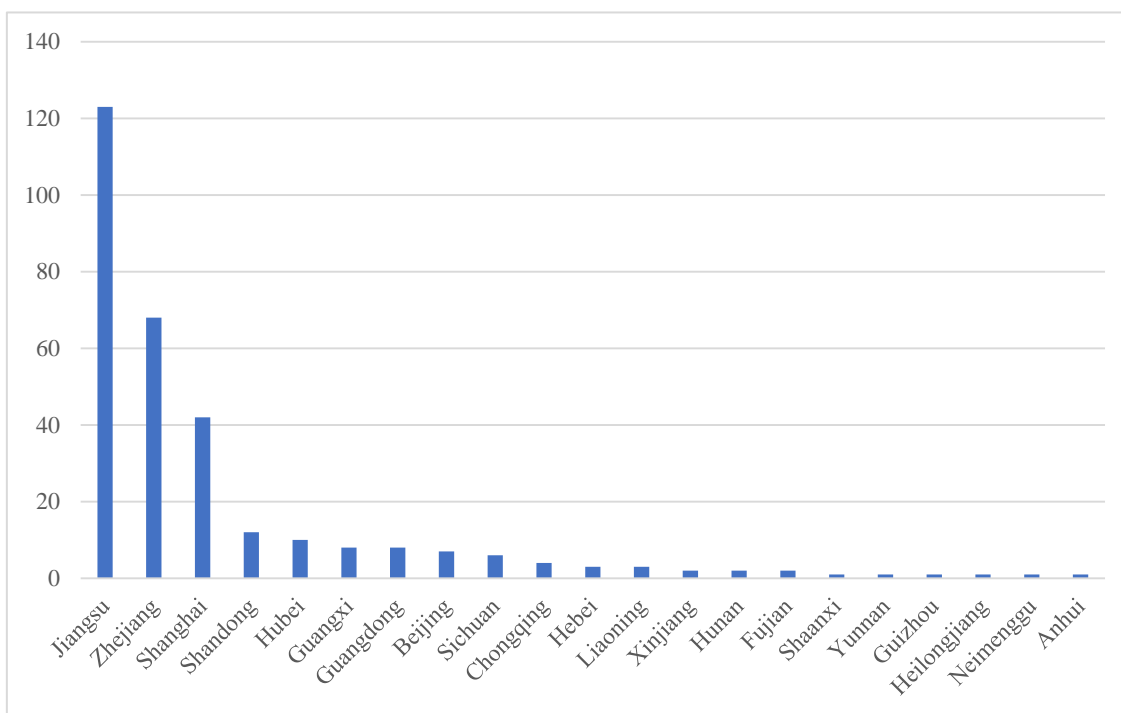


Figure 8. Location distribution of the first paper in the direction of History in *Journal of Silk* from 2004 to 2015

4.2 Analysis of the Reasons for the Mathematical Representation of the Stable Period of the Development of the Historical Columns in *Journal of Silk*

To *Journal of Silk*, the institution of the first author of the Historical Theory column paper is the institution in the first place. Since 2000, Suzhou University has increased its team building and research efforts in the field of art, and published a large number of papers in *Journal of Silk*, which strongly supported the college's submission in *Journal of Silk* (Figure 9). The reason for this is that at the turn of the 20th century and the 21st century, the art discipline of Suzhou University was granted the right to confer a doctoral degree, and related teachers had been

encouraged to make academic achievements (Liao, 2001). However, as the popularity of the art discipline of Suzhou University of *Journal of Silk* has become more and more popular, its publishing channels have increased. However, *Journal of Silk* is a scientific and technological journal and has not been included in the CSSCI. For the art discipline, its title and calculation of the academic achievements are weaker than important ones, and it is inevitable that there will be a decrease in the number of publications in the art disciplines of Suzhou University. This can be seen from the “Reward for Papers” in paper 3, paragraph 1, of the “Notice on Printing and Distributing the “Reward Measures for Scientific Research Achievements of Suzhou University (Humanities and Social Sciences)” in Suda Social Science [2017] No. 9 Notice. Because of the stipulation that journals like *Journal of Silk* are included in the core journal catalog of Peking University, publishing an paper in *Journal of Silk* will not receive any rewards(Office of the President of Suzhou University, 2017) .

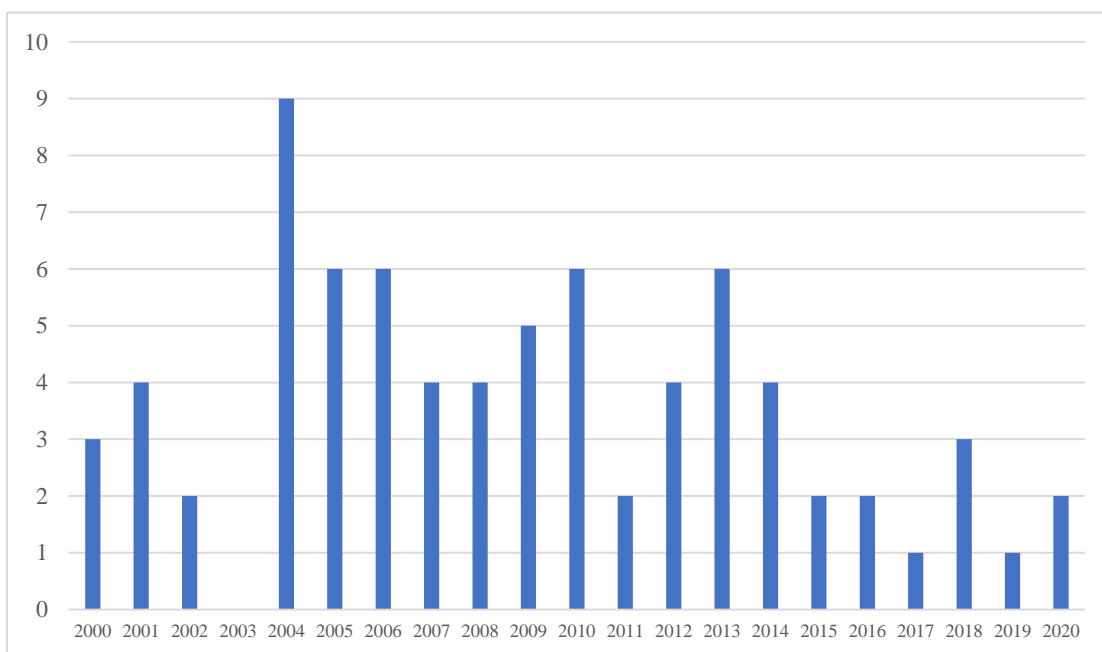


Figure 9. The publication situation of teachers and students of Suzhou University in the history column of *Journal of Silk* from 2000 to 2020

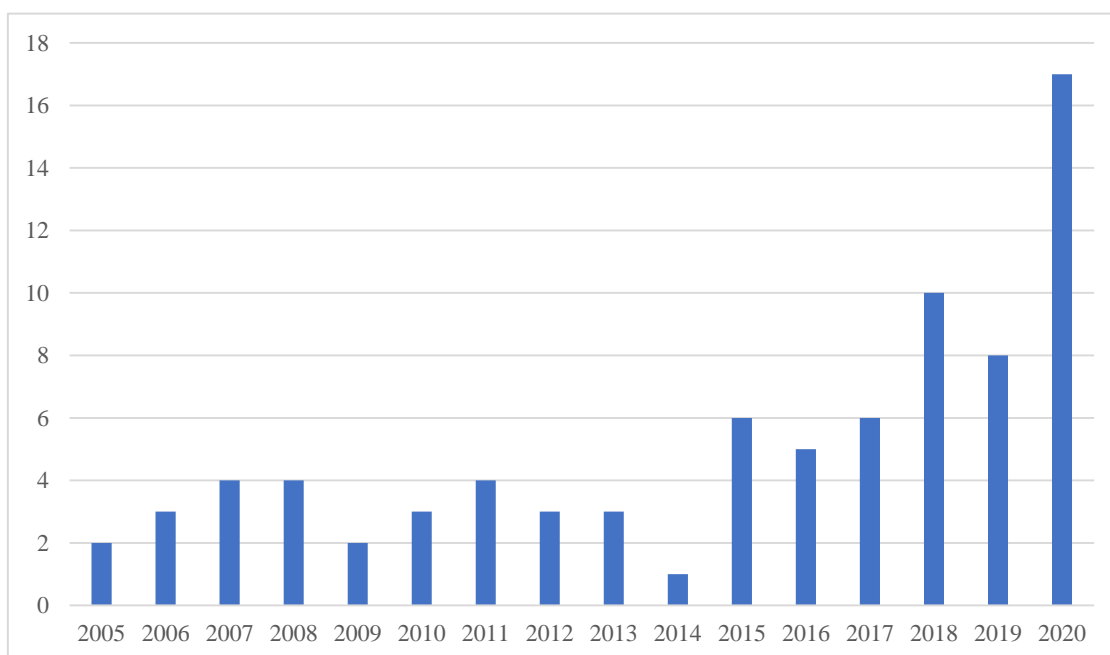


Figure 10. 2005-2020 Jiangnan University teachers and students published in *Journal of Silk* history category

In addition, the research results of the teams of Cui Rongrong, Liang Hui'e, and Zhang Jingqiong from Jiangnan University strongly supported the historical column of *Journal of Silk* (Figure 10).

The Yang Xiaoming research team in the history of textile technology at Donghua University and the Bian Xiangyang team in the history of clothing also published some papers in *Silk* during this period.

These papers are mostly written by masters and PhD students, because Jiangnan University and Donghua University have rigid requirements for doctoral graduates. Donghua University requires a paper from Peking University for PhD students. The core is one of the basic conditions, therefore, Donghua University Doctoral students in the research direction of Textile Technology History and Clothing History mostly publish papers in *Journal of Silk*. Jiangnan University also has similar regulations, but some teams even stipulate that masters must publish two core papers from Peking University in order to graduate. As a result, most of the papers published by Jiangnan University in *Journal of Silk* are issued by master students. An important reason for the decline in the proportion of research institutes at this stage is that the Zhao Feng team of the China National Silk Museum has slowed down in essay writing and went to concentrated on writing monographs. The disappearance of enterprise Historical Theory papers indicates that the quality of the journal Historical Theory column has increased.

5. Mathematical Analysis of the Accelerated Development Period (after 2016) of the Historical Column in *Journal of Silk*

5.1 The Mathematical Representation of the Accelerated Development Period of History Columns in Journal of Silk

After 2016, *Journal of Silk* has accelerated the development of the historical column. In 2016, there were 35 historical papers, 54 in 2019, and 75 papers in 2020. All papers of the historical ones in the three years came from colleges and universities. In 2017, there were 32 papers in the history column, of which 31 were from colleges and universities and 1 was from research institutes. In 2018, there were 42 papers in the history column, 39 of which were from universities, 1 from research institutes, and 2 from foreign non-governmental organizations (associations). Because of that colleges and research institutes are all professional researchers, judging from the above data, the papers in the Historical Theory column are more professional. However, the decline in the proportion of research institutes indicates that higher-level papers have been diverted by other publications, such as “Hundred Artists”, “Decoration”, and “Art Observation” included in CSSCI.

During this period, the provinces where the first work was located were still concentrated in the three provinces of Jiang, Shanghai, and Zhejiang, and Beijing and Hubei made rapid progress (Figure 11). There are few manuscripts in minority areas, indicating that their research foundation is weak.

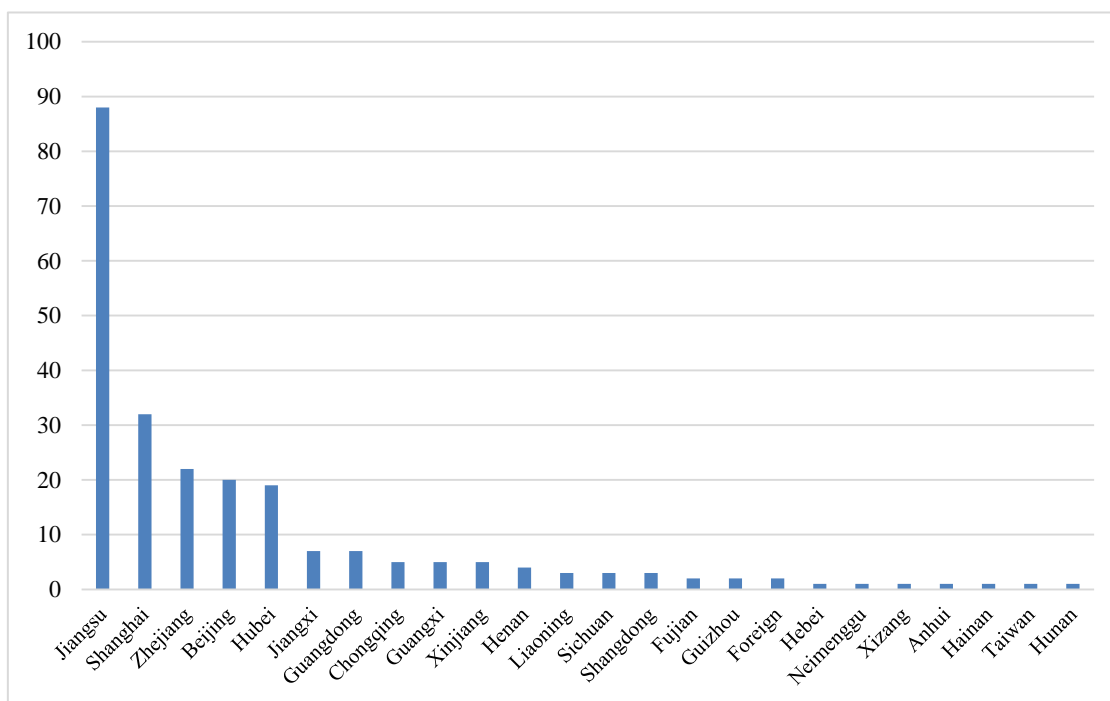


Figure 11. Location distribution of the first paper on history in *Journal of Silk* from 2016 to present

5.2 An Analysis of the Reasons for the Accelerated Development of the Historical Columns in *Journal of Silk*

The high number of papers in Jiangsu Province in *Journal of Silk* in the history and theory column is due to the Jiangnan University Department. Jiangnan University's Textile and Apparel Majors account for the majority of the postgraduates, all due to the limitations of the master's graduation requirements. The rapid growth of Shanghai's papers in *Journal of Silk* in the history category is due to the graduation conditions of Donghua University's doctoral students. Because the enrollment of doctoral students and master's students is different, the difference between the two regions is obvious. Therefore, the limitation of graduation conditions has a significant role in promoting the improvement of the overall scientific research strength of colleges and universities. The number of papers in Beijing has remained stable, mainly due to the contributions of teachers and students in relevant majors of Beijing Institute of Fashion Technology. The rapid growth of Hubei's papers in *Journal of Silk* is due to the fact that Li Qiang and Li Bin from the Donghua Department came to Wuhan Textile University for teaching. The small growth of published papers in *Journal of Silk* in Jiangxi is due to the work of Wuhan Textile University master's students entering Jiangxi Institute of Clothing Technology. Due to Most historical papers from Jiangxi Institute of Clothing Technology's published in *Journal of Silk* are directed by Li Qiang, these authors are classified into the Department of Wuhan Textile University. The downward trend of papers in Zhejiang Province is directly related to the decline in the publication of papers by the China Silk Museum, Zhejiang Sci-Tech University, and Zhejiang University of Technology. Following the similar situation of lacking of researchers like Zhao Feng, Luo Qun, etc., the scientific research of China Silk Museum, Zhejiang Sci-Tech University, and Zhejiang University of Technology may appear the shortage of researchers to publish papers in *Journal of Silk*, who focus mostly on writing monographs. The researchers of the above three scientific research institutions are cross-cutting and closely cooperating with each other.

6. Conclusion

Through research, this paper believes that the development of the historical column of *Journal of Silk* is consistent with the development of the times. The changes in the types of historical papers in *Journal of Silk* are dominated by papers from universities, and the gradual disappearance of corporate papers indicates that the journal has changed from a journal integrating education, academia, and training to an academic publication. Authors from Zhejiang and Jiangsu have published more than half of the papers. This phenomenon is related to the earliest research on historical theory in the two places, especially the Zhejiang Silk Institute of Technology, which was the first organization to engage in professional research on historical theory in China. Authors in Zhejiang Province had the largest number of papers before 2003, and authors in Jiangsu after 2004 had the largest number of papers. After 2004, authors in Shanghai had more papers, which is related to the strengthening of relevant majors in Suzhou University, Jiangnan University, and Donghua University. At the same time, the experience of Jiangnan University shows that restricting the graduation conditions for master's students is conducive to research in the field of Historical Theory.

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