

Exploring the Development and Conservation of Xuan Paper Craftsmanship based on a Visual Perspective

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Abstract

Based on the CNKI Zhiwang database and using CiteSpace visual bibliometric software, the data of 138 research papers were analysed to reveal research hotspots and their historical development, researchers and research institutions and their cooperation, and to show the development trend of Xuan paper research through knowledge mapping. The study found that the research on the Xuan paper production process is at a developmental stage, and that researchers and research institutions are somewhat independent and not strongly related. The study also analyses the innovative application and development of Xuan paper in indoor spaces through the case of Xuan paper cultural and creative shops, and provides suggestions for its development and conservation.

Keywords

Xuan Paper; Visualisation; Non-heritage; Interior Space.

1. Introduction

Intangible cultural heritage is both an important witness to historical development and a precious cultural resource, bearing the civilisation of human society and the crystallised wisdom of working people. According to the latest document "Opinions on Further Strengthening the Protection of Intangible Cultural Heritage", it is clearly pointed out that intangible cultural heritage is an important part of China's excellent traditional culture and is of great significance to the building of a strong socialist cultural state in China. Therefore, the issue of Xuan paper making skills inheritance and development needs to be explored, and there is an urgent need to enrich the connotation of Xuan paper culture of the times and to raise the responsibility and awareness of protection and inheritance.

2. Historical Development and Current Situation of Xuan Paper

Xuan paper can be traced back to the Tang Dynasty, when Jing County was under the Xuanzhou Prefecture, so it was called Xuan paper. Xuan paper is the name card of Anhui regional culture and is one of the top four literary treasures. Xuan paper is divided into raw, cooked and semi-cooked Xuan paper, which is characterised by strong moistening of the ink, not easily discoloured and resistant to ageing. Xuan paper has been known since ancient times as "the king of paper, with a paper life of a thousand years" and is a treasure of Chinese civilization[1]. The Xuan paper production process is one of the national intangible cultural heritage, with a history of more than 1,000 years, and its production process consists of more than 100 processes such as material selection, pulp making, ingredients and paper making. From manual production production - mechanical production - manual production production, reflecting the irreplaceable role of people in the production process.

The raw materials of Xuan paper are green sandalwood bark and Shatian straw[2], but the low economic efficiency of its cultivation, as well as the deterioration of the growing environment,

has led to a serious crisis of raw materials; at the same time, due to the unscrupulous operation of some manufacturers, counterfeit and shoddy products have damaged the reputation of Xuan paper and caused confusion in the market; as well as the departure of young people to work, resulting in an increasingly serious problem of the lack of successors to the Xuan paper making skills.

3. CiteSpace based Visual Analysis

The scientific literature itself has a wealth of information that can provide reliable arguments to support research, and CiteSpace, as a tool for visual analysis of the literature, frees people from some of the time-consuming and laborious burdens through computer algorithms and interactive visualisation, and presents the structure, patterns and distribution of scientific knowledge in a visual way[3], to get a "scientific knowledge mapping" that allows us to focus our energies on more important and critical analytical questions, abstract thinking, and creative thinking. Information based on citations not only gives us a better understanding of the past, but also has the potential to give us clearer expectations for the future and a better grasp of the direction of our research.

3.1. Data Sources and Methods

In this study, the journal Xuan paper making process from China Knowledge Network (CNKI) was selected as the research object and the information visualisation software CiteSpace (CiteSpace-6.1.R3 version) was applied to analyse the retrieved literature. The CiteSpace software was used to create a knowledge map to visually illustrate the focus and scope of research in the field and to analyse the development and conservation of the Xuan paper production process. In addition, as the first article on the Xuan paper making process was recorded in 1998, this study spans the period 1998 to 2022 to maximise the inclusion of all research. A total of 138 relevant research documents were retrieved; among them, 57 were academic journal articles, a total of 3 were domestic conference papers, 64 were dissertations, 1 was newspaper literature, 2 were results, and 11 were featured journals. Through the collation and analysis of the retrieved literature, 138 articles were selected as the data sample. Firstly, the literature was searched through China Knowledge Network and exported as a text file in RefWorks format; secondly, the CNKI citation format was converted into a citation format that CiteSpace could recognise and process for later analysis through the data conversion function of CiteSpace (CiteSpace - version 6.1.R3). The data was then visualised and analysed through the CiteSpace data processing and analysis tool; finally the visualisation results were adjusted and exported to become the knowledge graph for our study. The knowledge map provides a clear picture of the current state of research and trends in the field. This study is based on the visualisation of "annual publication volume", "research authors", "research institutions" and "keyword co-occurrence mapping". "The study reveals and explains the research hotspots and their evolutionary trends in the study of the Xuan paper production process in different historical periods, and reproduces the direction and focus of research on the Xuan paper production process, so that we can grasp its evolutionary patterns in general.

3.2. Analysis of Results

3.2.1. Annual Distribution of Publications

Related research shows that the number of publications can well reflect the development direction of this research[4], selected is the graph of the number of publications of research on the development and conservation of Xuan paper making process in China Zhiwang journal from 1998 to 2022. It can be seen that 1998 - 2011 was the initial stage of research on the Xuan paper making process, when China was in a period of new understanding of NRM research, so there were fewer research results on this research. From 2012 onwards, research results on

the Xuan paper craft gradually increased, indicating that there has been a high level of interest in Xuan paper research; it is still developing and forming a more complete research system.

3.2.2. Distribution of Authors

In the author collaboration analysis of CiteSpace, there are 157 nodes (N) and 72 lines (E) connecting these nodes with a density of 0.0059, as reflected by the author collaboration analysis graph and values[5], indicating that collaboration between authors in this field is more fragmented and mostly independent research. This indicates that although research in this field has received some attention, it is currently in a developmental stage in terms of annual literature publications, and therefore, there is less collaboration between researchers. Therefore, there is a need to strengthen the collaborative relationship between authors and to enhance communication and exchange, which could lead to better research on the Xuan paper making process.

3.2.3. Distribution of Research Institutions

From the research institutions and research articles it is clear that there are the following characteristics of research institutions in this field: Firstly, Anhui University of Finance and Economics is the representative of this research, having started the earliest and with the most research, followed by Anhui University, University of Science and Technology of China, China Academy of Art and Tsinghua University. The reason for this is that Professor Cao Tiansheng of Anhui University of Finance and Economics worked in Jing County, Anhui Province, in the early days and had a certain understanding of the area, which provided valuable practical experience for later research on Xuan paper, and secondly, as the chief expert of the major national social science project "Research on the rescue excavation and collation of the traditional production techniques of Chinese Xuan paper", he provided significant support for Xuan paper research; finally, as the name card of Anhui Province and China, Anhui universities have unique geographical conditions for this research. The Chinese Academy of Arts and Tsinghua University, as China's top research universities and highest academic institutions, have been leading and influential in the study of national intangible cultural heritage. Secondly, except for Anhui universities, the research on Xuan paper craft is basically the first-class universities in the country, which indicates that these universities are committed to the research on intangible cultural heritage and have invested more in it.

4. Ways to Visualize the Xuan Paper Craft - the Example of a Cultural and Creative Shop

With the development of science and technology, scene experience has become the new direction of industry development, coupled with the development of domestic infrastructure, the innovation ecology is once again changing and the immersive experience industry has become an important target for the future development of the cultural tourism industry. With the rapid rise of the immersive experience market, there has been a significant change in demand for products[6], with travellers paying more attention to the character, experience and cultural nature of tourism activities. With the rapid development of the cultural tourism industry, the tendency to consume culture and experience is becoming increasingly evident.

4.1. Visual Visualisation

In the interior space of the cultural creation, through the packaging of the products, the shape of the lamps, the materials and elements used in the cultural creation products are extracted, based on the planar composition and colour composition, the Xuan paper is used as the basis for the abstract deformation design through points, lines and facing elements. Based on the range of Xuan paper, it is both rich in patterned decoration and reflects the characteristics of Xuan paper. On the one hand, based on the local Xuan paper historical and cultural resources,

the Xuan paper IP is created to highlight traditional culture and focus on panoramic immersive expressions, through digital creativity and exhibition displays, allowing consumers to have an "immersive" "On the other hand, we pay attention to the current social and cultural trends, refine the "subcultures" that young people are interested in, create high-quality IPs in line with modern pop culture, seize On the other hand, we will pay attention to the current social and cultural trends, cultivate "subcultures" that are popular among young people, create high-quality IPs that are in line with modern popular culture, capture the interests of visitors and regularly upgrade them.

4.2. Product Visualisation

In the town of Dingjiaqiao, Jing County, Anhui Province, the birthplace of Xuan paper, the local government has taken many measures to help the development of the paper industry with the advantages of the Xuan paper painting and calligraphy industry. The various ways in which the 'industry' has brought more and more people home and the development of the paper industry has brought a constant stream of life to the area. In the design of the cultural and creative shop, through the extraction of the constituent elements of Xuan paper, the lamps, interior models, paper crafts and creative products in the cultural and creative space are processed and designed to highlight the thematic nature of Xuan paper cultural and creative. Through the extraction of the green sandalwood tree, the design of the main body of the sales area is constructed to highlight its characteristics; the Xuan paper cultural and creative products are designed to stimulate the cultural attributes and humanistic spirit of the products through the design of table lamps, ornaments and gift boxes. For example, the foldable Xuan paper book lamp is an attempt to bring Xuan paper to the home; closed is a book, opened is a lamp, and the unique fibres of Xuan paper are clearly visible under the light. At present, the cultural and creative development of Xuan paper is only a process of accumulation and there is still a long way to go. But one day in the future, Xuan paper can be found in the Chinese way of life, enhancing the cultural taste of the national lifestyle.

4.3. Environmental Visualisation

Promote a high degree of integration of technology and art in space design. We guide and support the development of "VR+", promote the application of virtual reality technology products, expand the application in cultural and creative shops, build 3D interactive cinemas, innovate cultural communication methods, and continuously create new consumer scenes. Through the integration of 3D displays and realistic scenes, the atmosphere of the cultural and creative space is accentuated by the use of light and shade to give consumers a tangible experience; through the design of the interface shape to make the space more layered and three-dimensional, the design of the top shape, wall shape and floor shape of the cultural and creative shop constitutes the different constructive relationships of the interior space, and different design styles give consumers a different sensory experience; through the combination of virtual + reality Through the combination of virtual and real, consumers get the best experience and feeling; in the details of the design to reflect the care of consumers, indoor devices, environment, green plants, brand image logo design to give consumers a sense of beauty and association, so that consumers to develop and maintain - a kind of relaxed mood and a happy spirit. The design of the experience area should be simple, and the space for making Xuan paper should be convenient for consumers to observe and learn, and provide them with the tools for their own experience to meet their needs.

5. Conclusion

In summary, through the econometric analysis of the literature on the Xuan paper production process, the annual publication volume of relevant Xuan paper literature, the keyword co-

occurrence map, the research author map and the research institution map were obtained using CiteSpace software, from which we found the research trends of the Xuan paper production process. From the trend of publications, the number of publications on the Xuan paper production process shows an overall fluctuating upward trend, while the correlation between research authors and research institutions is not strong, and the connection between research authors and research institutions needs to be strengthened to better promote the research in this field. In addition, the application of Xuan paper through the Qingtan Creative Shop can provide a better way for the conservation and development of Xuan paper.

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