The Bestowal of a Noble Mission: A Qualitative Study on the Psychological Experiences of Participants in Traditional Chinese Hand Papermaking

Zhou Zhong

School of Art and Design, Guangdong University of Technology, Guangdong, Guangdong, China zhongzhou@gdut.edu.cn

Xiaopeng Peng

He Xiangning College of Art and Design, Zhongkai Agricultural Engineering College, Guangzhou 510225, Guangdong, China pengxiaopeng@zhku.edu.cn

Wenfang Peng*

School of Art and Design, Guangdong University of Technology, Guangzhou 510090, Guangdong, China pengwfang@163.com

Abstract: Aims: This study aims to delve into the multifaceted psychological experiences of participants engaged in the traditional Chinese hand papermaking process, enhancing the emotional value component in the inheritance of intangible cultural heritage. By increasing the affective appeal from the aspect of psychological identification, it aids in the preservation of these vanishing traditional crafts. Method: Utilizing qualitative research methods, this study focuses on five artisans and ten tourists who participated in hands-on papermaking experiences. Data was collected through semi-structured interviews following their practical engagements. Subsequently, content analysis was systematically conducted using MAXQDA 2024 software to analyze their psychological responses and investigate strategies to amplify the positive psychological impact. Results: Participants demonstrated not only a deep appreciation for the wisdom of their predecessors but also a sense of pride in possessing this traditional craft. Participants generally recognize the potential market value of the craft and harbor expectations for its economic prospects. Moreover, they regard it as an eco-friendly material and process, and its modern application is seen as an innovation of the traditional craft. The papermaking process induces intense curiosity and a positive creative experience. Conclusion: Traditional hand papermaking carries a wealth of cultural connotations and can evoke favorable psychological experiences among participants. The study suggests enhancing the positive psychological influence of traditional hand papermaking on participants through immersive experiences, historical and community engagement, technological innovation, market expansion, and the emphasis on green production. These measures aim to attract broader public participation and further strengthen the protection and inheritance of this cultural practice.

Keywords: Intangible Cultural Heritage, Psychological Experience, Emotional Investment, Innovation Effect, Traditional Chinese Hand Paper

1. INTRODUCTION

In the grand tapestry of human civilization, craftsmanship has long served as a vital conduit for cultural heritage, bearing not only the memories of history but also a wealth of emotional and psychological experiences (Goedvriend, 1988). Traditional Chinese handmade paper, a unique gem within the realm of Chinese traditional crafts, is highly cherished for its distinctive manufacturing process, delicate texture, and rich cultural connotations (Tsien, 1973). However, due to its lack of economic prominence, the influence of traditional Chinese handmade paper in modern life is waning, and it is gradually fading into obscurity. To preserve and protect this art form, it is imperative to enhance the public's emotional connection and sense of identity with handmade paper, thereby increasing community engagement.

1.1 The State of Traditional Chinese Handmade Paper

The craft of Chinese handmade paper has largely continued the legacy of Cai Lun's papermaking techniques from the Eastern Han Dynasty, primarily utilizing bamboo pulp as the raw material. It undergoes a series of intricate processes, including soaking, pounding, cooking, papermaking, and drying (Liu & Chen, 2021). Through millennia of evolution, it has developed a unique style and paper quality. This craftsmanship bestows traditional Chinese paper with a distinctive artistic allure and cultural value (Bloom, 2017). Over the past few decades, handmade paper has demonstrated its unique value across various fields such as cultural heritage, artistic design, environmental protection, and academic research, serving as a significant medium for writing and artistic creation (Man et al., 2020). The future development of handmade paper is fraught with both challenges and opportunities (Wen & Guo, 2020). Amidst a growing awareness of environmental conservation, handmade paper has emerged as a paragon of sustainable development due to its low-carbon production process and the use of renewable raw materials. Agricultural waste, such as bagasse, banana fibers, and rice husks, has been integrated into handmade paper production, enhancing paper quality while promoting resource recycling and alleviating environmental stress (Shen & Fatehi, 2013). Furthermore, in modern packaging design, handmade paper offers innovative possibilities through the adept use of visual elements (Coles,

2013). Nonetheless, the high costs and low production efficiency of handmade paper limit its commercial applications, presenting significant challenges for its future development (Gargaro et al., 2019).

1.2 Current Research Focuses on Traditional Chinese Handmade Paper

First and foremost, the transmission of traditional culture represents a crucial direction in current research. Traditional Chinese handmade paper carries a millennia-old history and culture, a testament to the wisdom and experience of our ancestors (Yi, 2023). A key research focus is the in-depth exploration and organization of these valuable ancestral experiences. Through literature reviews, field studies, and exchanges with veteran papermakers, efforts are made to comprehensively understand and preserve the traditional craftsmanship and techniques, thereby inheriting and promoting the outstanding traditional Chinese culture (Li et al., 2019). Secondly, the aesthetic artistic effects and industrial benefits are also among the current research hotspots. How to enhance the market competitiveness of traditional handmade paper while preserving its uniqueness and cultural connotations, achieving a win-win situation for both economic and social benefits, is an important research issue (Hashemzehi et al., 2022). Research is being conducted on how to improve the manufacturing process and optimize raw material ratios to make handmade paper more aesthetically pleasing and practical, meeting the needs of various consumer groups. Lastly, the application of eco-friendly materials and innovation in lowcarbon craftsmanship are also focal points of current research. With the increasing awareness of environmental protection, the traditional Chinese handmade paper industry has also begun to focus on the use of eco-friendly materials (Hubbe, 2007). Researchers are committed to developing handmade paper from renewable resources, such as bamboo fibers and waste paper, to produce environmentally friendly handmade paper and reduce environmental pollution (Fuhg, Fau, & Nackenhorst, 2021).

2. PARTICIPANTS AND MATERIAL

2.1 Participants

To understand the psychological experiences of participants and potential participants in hand papermaking, this study adheres to the principle of maximizing diversity in purposive sampling (Jain & Gupta, 2021), selecting five workers from a traditional handmade paper workshop in Sihui Town, Zhaoqing City, Guangdong Province, and ten visitors who

came to visit during the period from June to August 2024 as research subjects. General information about the research subjects is shown in Table 1.

2.2 Material and Methods

Prior to the study, participants were invited to experience the process of papermaking at a traditional handmade paper workshop in Sihui, Zhaoqing City, Guangdong. After going through the steps of raw material preparation, soaking and softening, cooking and washing, pulping and papermaking, pressing and drying, and final product arrangement, they were encouraged to experiment with and create various types of paper using innovative methods. After half a day of work, having produced multiple sheets of paper with different materials, thicknesses, colors, and textures, interviews were conducted with them.

2.2.1 Interview Outline Development

Using a descriptive qualitative research method, an open-ended interview outline was developed based on the research purpose, through literature review and expert consultation (Busetto, Wick, & Gumbinger, 2020). The outline was refined and perfected based on the results of three pilot interviews to form the formal interview outline. The interviewer began with "Could you tell me about your understanding of handmade papermaking?" The interview questions are as follows:

- (1) Do you believe that inheriting the culture of handmade paper is a form of cherishing and valuing the experiences of our ancestors?
- (2) Do you feel a sense of reverence and piety towards traditional culture while making paper?
- (3) As an industry, do you think we can reap significant economic benefits from papermaking in the future?
- (4) Do you feel sublime and take pleasure in the pursuit of aesthetic effects in papermaking?
- (5) Do you feel a sense of benefiting humanity due to its use of ecofriendly materials and low-carbon craftsmanship?
- (6) Are you curious and proud to innovate traditional craftsmanship while making paper?

2.2.2 Data Collection Methods

To ensure an uninterrupted interview process, we chose a quiet and private room for the interviews (Kallio et al., 2016). Before the formal

interview, we communicated fully with the interviewees, explaining the purpose and content of the interview. With the interviewee's consent, we recorded the entire interview process. During the interview, we paid close attention to the interviewee's non-verbal expressions and probed in a timely manner to obtain more in-depth information (Adeoye-Olatunde & Olenik, 2021). Each interview lasted approximately 30 minutes, and within one day after the interview, we transcribed the audio recordings verbatim and cross-checked them by two people to ensure the accuracy of the transcription.

2.2.3 Data Analysis Methods

This study employs content analysis to analyze the collected data, with the following specific steps:

- (1) Holistic reading and immersion: We read the transcribed materials repeatedly, immersing ourselves to gain an overall understanding and perception of the data.
- (2) Open coding: We conducted open coding on the data, categorizing similar concepts and viewpoints.
- (3) Formation of themes and subthemes: We further organized the categorized codes into higher-level themes and subthemes, using MAXQDA2024 software for auxiliary analysis (Andrade et al., 2018). Data collection and data analysis were carried out concurrently, continuously refining the processing of existing data until data saturation was achieved.

2.3 Quality Control Methods

To enhance the credibility of the study, we implemented the following quality control measures:

- (1) Establishing good relationships: Researchers participated in the papermaking process with the interviewees to establish a good cooperative relationship, enabling interviewees to share their inner information more freely.
- (2) Mastering interview skills: Interviewers prepared thoroughly before the interview, mastered the interview outline, probed appropriately during the interview, and closely observed the interviewee's movements and expressions (Adeoye-Olatunde & Olenik, 2021).
- (3) Independent analysis and consensus reaching: We invited independent analysts to conduct independent analysis and theme extraction to ensure the authenticity of the research results.
 - (4) Result verification and feedback: After the data analysis was

completed, we feedback the results to the interviewees for verification to ensure the stability and accuracy of the results.

3. RESULTS

Theme 1: Valuing the Accumulated Wisdom of Ancestors in Hand Papermaking: Does the process of crafting handmade paper evoke a sense of reverence and cherishment for the experiences accumulated by our predecessors?

Research indicates that for the majority of participants, this experience indeed may inspire a sense of sublimity, though the intensity, manifestation, and underlying motivations for this feeling can vary among individuals (Arcangeli et al., 2020). The majority of the artisans (approximately 10) expressed that they felt a profound sense of duty and mission in carrying on and promoting the wisdom of their ancestors. This respect and inheritance of ancestral experiences enhanced their sense of self-worth. Around 8 participants mentioned that as they gradually mastered the craft, they began to realize that each process and attempt was a tribute to the experiences of their forebears. Five artisans specifically highlighted that through close engagement with traditional handicrafts, they felt a spiritual connection with their ancestors, experiencing the sediment of time and the weight of history. Thus, participants in traditional handmade papermaking indeed feel a sense of nobility due to their appreciation and continuation of ancestral experiences. This experience stems from a multitude of psychological and emotional resonances (Zhou & Fredrickson, 2023).

Theme 2: Reverence and Devotion Toward the Traditional Culture of Hand Papermaking: During the process of crafting handmade paper, do artisans experience a sense of reverence and devotion toward traditional culture?

Interviews revealed that the majority of participants indeed felt a profound reverence and devotion towards traditional culture when deeply engaging with and practicing the traditional craft of handmade paper (Yu et al., 2020). These emotions often stem from the firsthand experience of the intricate processes of the ancient technique, the deep appreciation for the beauty of the paper made using traditional methods. Numerous practitioners (approximately 12) were captivated by the historical depth and cultural heritage embodied in each step of the papermaking process. This experience instilled in them an involuntary sense of awe towards traditional culture. Around 9 practitioners specifically pointed out that as their skills

improved, their understanding of the philosophical thoughts embedded in traditional culture deepened, further intensifying their reverence. Additionally, 7 practitioners shared their unique experiences during the papermaking process—a sense of time travel that allowed them to closely feel the lifestyle, aesthetic pursuits, and spiritual beliefs of ancient people. In summary, handmade papermaking is more than just learning a skill; it is a spiritual pilgrimage. In this process, people develop an indescribable sense of reverence and devotion towards traditional culture (Jain & Gupta, 2021).

Theme 3: Anticipation of Industrial Benefits from Hand Papermaking: Exploring the vast realm of handmade papermaking, it is evident that this ancient craft carries not only rich cultural connotations but also significant industrial potential and economic value (Rullifank et al., 2020). Thus, do participants in the handmade papermaking process harbor expectations for industrial profits?

Surveys show that the vast majority of participants (approximately 12) maintain a positive and optimistic attitude towards the future development of the handmade paper industry. They firmly believe that through relentless effort and innovation, handmade paper can become a competitive industry. They look forward to achieving a win-win situation of economic and social benefits by improving product quality, expanding sales channels, and strengthening brand building. About 10 participants specifically mentioned that if people commit to technological improvements and process innovation to enhance production efficiency and reduce costs, handmade paper will surely stand out in fierce market competition. Another 7 participants focused more on the cultural value and social impact of the handmade paper industry. They believe that by developing the handmade paper industry, local employment can be stimulated, and societal prosperity can be promoted. In conclusion, participants in handmade papermaking generally hold high expectations for the industrial benefits of handmade paper. They believe that through technological improvements, process innovation, market expansion, and other measures, the development of the handmade paper industry can be actively promoted (Latha et al., 2018).

Theme 4: Appreciation and Pursuit of Aesthetics in Handmade Paper: We understand that each sheet of paper is not merely a physical entity but a crystallization of art and craftsmanship, bearing the traditional craftsmen's ultimate pursuit of craftsmanship and unique interpretation of beauty. So, do people pursue and enjoy the aesthetic effects of paper during the handmade papermaking process?

In-depth research reveals that numerous participants (approximately 12)

are drawn to the unique texture and grain of handmade paper. They express that this visual and tactile enjoyment effectively alleviates the aesthetic fatigue from daily mechanical products, allowing one to rediscover the diversity and depth of beauty. About 9 participants further pointed out that every detail in the papermaking process is a pursuit of aesthetics. It providing more visual pleasure and spiritual touch during the papermaking process. Additionally, 7 participants mentioned that they also think about the application effects of paper in various artistic forms such as painting, calligraphy, and origami. They believe that the act of papermaking is a creative and pursuitful behavior of beauty. In summary, the process of handmade papermaking not only reflects people's pursuit and yearning for beauty but also promotes the integration and innovation of traditional handicrafts with modern aesthetic concepts (Madhukar Thakker & Sun, 2023).

Theme 5: Feeling of Benefiting Humanity Through Low-Carbon Crafts and Eco-Friendly Materials: In traditional handmade papermaking, the craft is low-carbon and energy-saving, and the materials are ecological and environmentally friendly. This is a positive response to environmental protection (Bajpai, 2015). During the interview, we asked: Do you like eco-friendly materials and crafts? Do you think it is a practice that benefits humanity and thus persist in it?

Surveys show that the majority of participants (approximately 12) feel a strong sense of mission when engaging with and practicing low-carbon papermaking crafts. This sense of responsibility for environmental protection and pride in benefiting humanity encourages them to focus on this traditional craft and hope to persist in it. About 9 participants specifically pointed out that this papermaking method is an act of living in harmony with nature. In addition, 7 practitioners expressed that during the papermaking process, they not only inherit the wisdom of humans using natural resources for creation but also achieve the goal of coexisting harmoniously with nature. This makes them believe that this work is full of meaning. It can be seen that the pursuit of low-carbon papermaking crafts and eco-friendly materials not only reflects people's deep care for environmental protection but also demonstrates a firm pursuit of the path of sustainable development (Bajpai & Bajpai, 2015).

Theme 6: Curiosity and Pride in the Innovative Application of Traditional Papermaking Crafts: Our question is: Do you think that making paper by hand in modern times is an innovative act? Do you feel curious and proud?

In exploring the path of innovation in traditional papermaking crafts, it

is not difficult to find that this process is not only a continuation of ancient skills but also a modern interpretation and innovation of them (Kaur, Bhardwaj, & Lohchab, 2017). Survey results show that the vast majority of participants (approximately 12) have a great deal of curiosity about the innovation of traditional papermaking crafts. They are eager to inject new vitality into this ancient craft through the introduction of new technologies and materials. Each successful attempt makes them feel an unprecedented sense of achievement and pride. About 9 participants clearly stated that when they see their innovative results recognized and even applied to a broader range of fields, they feel proud and joyful. In addition, 7 participants talked about the challenges and difficulties they encountered in the innovation process, but they are proud to be explorers on the road of innovation in this traditional craft. In summary, for the innovation of traditional papermaking crafts, participants not only have a strong sense of curiosity but also gain a full sense of achievement in exploration and practice (Balea et al., 2020). This emotion stems not only from the mastery and innovation of skills but also from a profound understanding and recognition of cultural inheritance and innovation.

4. DISCUSSION

4.1 Enhancing Participants' Appreciation for Ancestral Wisdom

During the process of handcrafting paper, participants commonly experience a profound reverence and appreciation for the wisdom of their ancestors. This psychological experience motivates them to engage more deeply in learning and practicing, viewing the inheritance of the craft as a responsibility and mission (Murti et al., 2023). Based on this understanding, we can enhance the motivation for inheritance in the following two ways:

- (1)Strengthening Immersive Experiences and Interactive Learning: By organizing immersive handcraft paper-making experiences (Murti et al., 2023), participants are allowed to personally touch and feel the traditional process of handcraft paper production. Interactive learning segments should be established, while also encouraging participants to try their hand at it. This hands-on experience can ignite their passion for passing.
- (2)Conducting Skill Demonstrations and Master Guidance: Inviting masters of traditional handcraft paper-making to conduct live demonstrations can inspire participants to witness and personally experience the exquisiteness and uniqueness of the traditional craft, stimulating their enthusiasm for learning and respect for handcraft paper-

making (Tu et al., 2011). Concurrently, through the guidance of masters, participants can deepen their understanding and identification with the culture of handcraft paper.

4.2 Deepening Participants' Veneration and Devotion to Traditional Culture

When participants engage with and practice the craft of handcraft paper-making, they often develop a deep sense of identification and emotional resonance with traditional culture. This emotional resonance stems not only from the cultural connotations of the craft itself but also from the historical and social context that the craft carries (Hubbe & Bowden, 2009). Therefore, the following two measures can be taken to promote cultural identification:

- (1)Emphasizing the Narration of Historical Stories and the Presentation of Cultural Backgrounds: By narrating the historical stories of handcraft paper-making and showcasing the cultural depth behind it, participants can feel the profound emotions and cultural values carried behind each step of the process. Utilizing multimedia and live exhibitions to vividly reproduce the entire process of handcraft paper from raw material collection, processing to finished products, helps participants to immerse themselves in that era.
- (2)Leveraging Cultural Festivals to Expand Community Participation: Combining traditional cultural festivals with themed events on handcraft paper-making, can attract more people to participate. These activities not only showcase the cultural charm and artistic value of handcraft paper but also enhance community cohesion and cultural identity. It can spread this traditional culture more widely.

4.3 Accelerating the Industrialization of Handcraft Paper and Enhancing Its Appeal to Inheritors

Although most participants do not engage in handcraft paper-making purely for economic reasons, they also widely recognize the market potential and economic value of this craft. Through industrial development, not only can the economic benefits of the craft be enhanced, but it can also promote the inheritance and development of the craft. We can promote the industrialization of handcraft paper and increase sales revenue from the following three aspects:

(1)Enhancing Technological Innovation and Quality Improvement: Introducing modern technological methods to enhance the production efficiency and quality control of handcraft paper. By using precision instruments to measure various indicators of the paper and developing new types of environmentally friendly materials, we can promote the craft towards a green and sustainable development direction.

- (2)Expanding the Market and Building Brands: Strengthening market research to understand consumer needs and developing a variety of handcraft paper products. Actively building handcraft paper brands and promoting them through online and offline channels to enhance brand awareness and reputation. Participating in domestic and international exhibitions and cultural exchange activities to expand market networks.
- (3)Seeking Policy Support and Talent Cultivation: Seeking government policy support, including financial subsidies, tax incentives, and project support, to provide a strong guarantee for the industrial development of handcraft paper. At the same time, strengthening talent training and introduction to establish a professional team of inheritors of handcraft paper-making skills. Inject new blood and vitality into the handcraft paper industry.

4.4 Enhancing Inheritors' Sense of Mission in Practicing Ecological Concepts

The use of natural plant dyes and environmentally friendly materials and processes in handcraft paper-making not only endows the works with unique textures and colors but also reflects the participants' ecological and environmental protection concepts and social responsibility. The practice of this ecological concept is not only a respect and protection for the natural environment but also a contribution and promotion to sustainable development. We can enhance the public's attention and understanding of environmental protection issues through the following two methods:

- (1) Promoting Green Raw Materials and Production Processes: Encouraging the use of renewable and degradable natural resources as the main raw materials for handcraft paper, such as bamboo pulp and cotton and linen waste, to reduce dependence on forest resources. At the same time, optimizing the production process to ensure that the impact on the environment during production is minimized (Wang et al., 2021). Such practices not only protect the ecological environment but also make inheritors aware of their important role in environmental protection.
- (2) Conducting Environmental Education and Publicity: Organizing regular environmental education activities, publicizing the unique value of handcraft paper as an environmentally friendly product through various forms such as social media, exhibitions, and lectures, to enhance the

public's awareness and acceptance of environmentally friendly handcraft paper. In summary, the psychological experience of participants in the handcraft paper process is rich and profound. Through valuing and inheriting the wisdom of ancestors, identifying and resonating with traditional culture, exploring the path of industrial development, and practicing ecological and environmental protection concepts, we can further promote the inheritance and development of the handcraft paper craft (Worku et al., 2023).

4.5 Limitations of this Study

First, the sample size is limited and concentrated in specific areas, which may affect the broad applicability of the research results. Future studies should consider expanding the geographical scope and sample diversity. Second, data collection relies on interview methods, which, although capable of deeply understanding the participants' subjective feelings, may be limited by the subjective interpretation of the interviewer. Future studies can combine multiple data collection methods to improve the objectivity and comprehensiveness of the research. Furthermore, this study's analysis of the macro factors such as social culture and economy behind the psychological experiences is still insufficient, and future research needs to further explore the complex relationship between these macro factors and psychological experiences.

5. CONCLUSION

This study, through qualitative research methods, deeply explores the psychological experiences of participants in the handcraft paper process and draws several important conclusions. First, participants generally experience a deep appreciation and cherishing of the wisdom of their ancestors during the practice, which inspires their sense of loftiness and mission, enhancing their sense of responsibility for the inheritance of the craft. Second, reverence and piety for traditional culture are common among participants, psychological experiences and this identification promotes the intergenerational transmission of the craft. Furthermore, although economic benefits are not the main motivation, participants recognize its potential market value and hope to enhance the economic returns of the craft through industrial development. In addition, participants enjoy the aesthetic pleasure in the creative process, and their fascination with ecological and environmental protection materials and

processes reflects the modern pursuit of sustainable development. Lastly, curiosity and initiative in the innovation of traditional crafts stimulate the participants' innovative vitality, providing momentum for the modern development of the craft. In response to the above situations, the article proposes methods to strengthen these positive psychological effects from nine aspects: immersive experience, master guidance, historical storytelling, community participation, technological innovation, market expansion, policy support, green materials and processes, and environmental education. In summary, this study not only reveals the rich psychological experiences of participants in handcraft paper but also provides beneficial references and insights for the inheritance and development of the craft. Future research should further explore how to effectively integrate these psychological experiences to promote the sustainable development of the craft.

Funding

The author(s)declare financial support was received for the research, authorship, and/or publication of thisarticle. This research was approved by the 2023 Philosophy and Social Sciences Planning Project of Guangdong Province: Research on the Creation and Operation Strategy of Guangdong Folk Handmade Paper Culture IP under the Rural Revitalization Strategy (Grant No. GD23XYS014).

References

- Adeoye-Olatunde, O. A., & Olenik, N. L. (2021). Research and scholarly methods: Semi-structured interviews. *Journal of the american college of clinical pharmacy*, 4(10), 1358-1367.
- Andrade, L. R., Costa, A. P., Linhares, R. N., de Almeida, C. A., & Reis, L. P. (2018). Qualitative data analysis software packages: An integrative review. World Conference on Qualitative Research,
- Arcangeli, M., Sperduti, M., Jacquot, A., Piolino, P., & Dokic, J. (2020). Awe and the experience of the sublime: A complex relationship. *Frontiers in Psychology*, 11, 1340.
- Bajpai, P. (2015). Green chemistry and sustainability in pulp and paper industry.
- Bajpai, P., & Bajpai, P. (2015). Basic overview of pulp and paper manufacturing process. *Green chemistry and sustainability in pulp and paper industry*, 11-39.
- Balea, A., Fuente, E., Monte, M. C., Merayo, N., Campano, C., Negro, C., & Blanco, A. (2020). Industrial application of nanocelluloses in papermaking: a review of challenges, technical solutions, and market perspectives. *Molecules*, 25(3), 526.
- Bloom, J. M. (2017). Papermaking: the historical diffusion of an ancient technique. *Mobilities of knowledge*, 51-66.

- Busetto, L., Wick, W., & Gumbinger, C. (2020). How to use and assess qualitative research methods. *Neurological Research and practice*, 2(1), 14.
- Coles, R. (2013). Paper and paperboard innovations and developments for the packaging of food, beverages and other fast-moving consumer goods. *Trends in packaging of food, beverages and other fast-moving consumer goods (FMCG)*, 187-220.
- Fuhg, J. N., Fau, A., & Nackenhorst, U. (2021). State-of-the-art and comparative review of adaptive sampling methods for kriging. *Archives of Computational Methods in Engineering*, 28, 2689-2747.
- Gargaro, S., Cigola, M., Gallozzi, A., & Catuogno, R. (2019). Relationships between paper mills and technological evolution of paper production. Explorations in the History and Heritage of Machines and Mechanisms: Proceedings of the 2018 HMM IFToMM Symposium on History of Machines and Mechanisms,
- Goedvriend, G. (1988). Papermaking past and present. Endeavour, 12(1), 38-43.
- Hashemzehi, M., Mesic, B., Sjöstrand, B., & Naqvi, M. (2022). A comprehensive review of nanocellulose modification and applications in papermaking and packaging: Challenges, technical solutions, and perspectives. *BioResources*, 17(2), 3718.
- Hubbe, M. A. (2007). Water and papermaking. 3. Measures to clean up process water. *Paper Technology*, 48(3), 23-30.
- Hubbe, M. A., & Bowden, C. (2009). Handmade paper: a review of its history, craft, and science. *BioResources*, 4(4).
- Jain, P., & Gupta, C. (2021). A sustainable journey of handmade paper from past to present: a review. *Problemy Ekorogwoju*, 16(2), 234-244.
- Kallio, H., Pietilä, A. M., Johnson, M., & Kangasniemi, M. (2016). Systematic methodological review: developing a framework for a qualitative semi-structured interview guide. *Journal of Advanced Nursing*, 72(12), 2954-2965.
- Kaur, D., Bhardwaj, N. K., & Lohchab, R. K. (2017). Prospects of rice straw as a raw material for paper making. *Waste Management*, 60, 127-139.
- Latha, A., Arivukarasi, M., Keerthana, C., Subashri, R., & Vishnu Priya, V. (2018). Paper and pulp industry manufacturing and treatment processes—a review. *International journal of engineering*, 6(2), 177-189.
- Li, Z., Zeng, H., Xiao, X., Cao, J., Yang, C., & Zhang, K. (2019). Resource value flow analysis of paper-making enterprises: A Chinese case study. *Journal of Cleaner Production*, 213, 577-587.
- Liu, Z., & Chen, Y. (2021). Cultural Study on traditional Chinese Papermaking: Problem Awareness and Research Review. Revista Brasileira de Pesquisa Jurídica, Avaré, 2(2), 183-209.
- Madhukar Thakker, A., & Sun, D. (2023). Handmade Papers: Innovation, Technology, and Design. *Journal of Natural Fibers*, 20(1), 2187505.
- Man, Y., Li, J., Hong, M., & Han, Y. (2020). Energy transition for the low-carbon pulp and paper industry in China. Renewable and Sustainable Energy Reviews, 131, 109998.
- Murti, K. G. K., Darma, G. S., Mahyuni, L. P., & Gorda, A. N. E. S. (2023). Immersive experience in the metaverse: implications for tourism and business. *International Journal of Applied Business Research*, 187-207.

- Rullifank, K., Roefinal, M., Kostanti, M., & Sartika, L. (2020). Pulp and paper industry: An overview on pulping technologies, factors, and challenges. IOP Conference Series: Materials Science and Engineering,
- Shen, J., & Fatehi, P. (2013). A review on the use of lignocellulose-derived chemicals in wet-end application of papermaking. *Current Organic Chemistry*, 17(15), 1647-1654.
- Tsien, T.-H. (1973). Raw materials for old papermaking in China. *Journal of the American Oriental Society*, 510-519.
- Tu, W., Zhang, L., Zhou, Z., Liu, X., & Fu, Z. (2011). The development of renewable energy in resource-rich region: A case in China. Renewable and Sustainable Energy Reviews, 15(1), 856-860.
- Wang, T., Chang, D., Huang, D., Liu, Z., Wu, Y., Liu, H., Yuan, H., & Jiang, Y. (2021). Application of surfactants in papermaking industry and future development trend of green surfactants. *Applied Microbiology and Biotechnology*, 1-16.
- Wen, G., & Guo, Z. (2020). A paper-making transformation: From cellulose-based superwetting paper to biomimetic multifunctional inorganic paper. *Journal of Materials Chemistry A*, 8(39), 20238-20259.
- Worku, L. A., Bachheti, A., Bachheti, R. K., Rodrigues Reis, C. E., & Chandel, A. K. (2023). Agricultural residues as raw materials for pulp and paper production: overview and applications on membrane fabrication. *Membranes*, 13(2), 228.
- Yi, X. (2023). Development and Evolution of Papermaking in Ancient China based on the Uses and Forms of Paper. *Paper & Biomaterials*, 8(3).
- Yu, K., Tan, Y., Zhang, T., Zhang, J., & Wang, X. (2020). The traditional Chinese kang and its improvement: A review. *Energy and Buildings*, 218, 110051.
- Zhou, J., & Fredrickson, B. L. (2023). Listen to resonate: Better listening as a gateway to interpersonal positivity resonance through enhanced sensory connection and perceived safety. *Current Opinion in Psychology*, 101669.

Zhou Zhong



Xiaopeng Peng



Wenfang Peng

