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**Animal Welfare and Biodiversity Governance in Sustainable Art  
Production and Consumption: A Study in the Film and TV  
Industry in Northeast Asia**

**ABSTRACT**

This study investigates the understanding and perception of sustainable art production and consumption related to animal welfare in the film and TV industry in Northeast Asia. A mixed methods approach was employed, including a cross-sectional survey and an examination of policies, reports, and literature. The findings reveal limited awareness and knowledge of animal welfare or rights among respondents, with more than half of respondents having heard of it but not knowing what it is. A significant gap in training and activity participation related to animal welfare policy and regulation was also identified. Policy research reveals challenges in comprehensiveness, enforcement, and public awareness of animal welfare policies and regulations in Northeast Asia. The study emphasizes the need for increased education and awareness campaigns, accessible training programs, better communication and collaboration among stakeholders, and strengthened enforcement and monitoring mechanisms. A sustainability framework for the performing arts industry is proposed, integrating various components to promote animal welfare and biodiversity governance, ultimately fostering a more sustainable and responsible sector. Limitations of the study include a potentially biased sample, self-reported data biases, and a cross-sectional design. Future research should address these limitations and explore the complex interplay between animal welfare and biodiversity governance in Northeast Asia.

**KEYWORDS:** animal rights, awareness, performing arts, policy gaps, stakeholder participation



## RÉSUMÉ

Cette étude examine la compréhension et la perception de la production et de la consommation d'art durable en lien avec le bien-être animal dans l'industrie cinématographique et télévisuelle en Asie du Nord-Est. La méthodologie utilisée est mixte subsumant une enquête transversale et un examen des politiques en direction des animaux, des rapports de recherche et des études scientifiques. Les résultats révèlent une sensibilisation et une connaissance limitées du bien-être ou des droits des animaux parmi les répondants, plus de la moitié des répondants ayant une vague connaissance de la question. Une lacune importante dans la formation et la participation aux activités liées à la politique et à la réglementation en matière de bien-être animal a également été identifiée. La recherche sur les politiques révèle des défis en matière d'exhaustivité, d'application et de sensibilisation du public aux politiques et réglementations en matière de bien-être animal en Asie du Nord-Est. L'étude souligne la nécessité d'accroître les campagnes d'éducation et de sensibilisation, les programmes de formation accessibles, une meilleure communication et collaboration entre les parties prenantes, ainsi que des mécanismes renforcés d'application et de surveillance. Un cadre de durabilité pour l'industrie des arts du spectacle vivant est proposé, intégrant diverses composantes pour promouvoir le bien-être animal et la gouvernance de la biodiversité, favorisant ainsi un secteur plus durable et responsable. Les limites de l'étude comprennent un échantillon potentiellement biaisé, des biais de données autodéclarés et une conception transversale. Les recherches futures devraient aborder ces limites et explorer l'interaction complexe entre le bien-être animal et la gouvernance de la biodiversité en Asie du Nord-Est.

**MOTS-CLÉS:** droits des animaux, sensibilisation, arts du spectacle, lacunes politiques, participation des parties prenantes



## 1. Introduction

The rapid growth of the Northeast Asian TV and film industry has resulted in an increasing number of productions featuring animals, raising concerns about these creatures' ethical treatment and welfare.<sup>1</sup> Despite growing global awareness of animal welfare issues, there remains a lack of comprehensive research on awareness and policy gaps in Northeast Asia's performing arts industry.<sup>2</sup> While this expansion has provided new opportunities for economic development and cultural exchange, it raises crucial questions about the industry's environmental and ethical responsibilities. One such issue is the treatment of animals used in TV and film productions, which has implications for animal welfare and sustainable biodiversity governance.<sup>3</sup>

Animal welfare refers to the well-being of animals and encompasses their physical health, mental state, and the extent to which they can express their natural behaviors.<sup>4</sup> Using animals in TV and film productions has raised ethical concerns, as they often face stress, harm, and unnatural living conditions for entertainment purposes.<sup>5</sup> To reach full integration of animal welfare considerations into the United Nations Sustainable Development Goals (SDGs), it is essential to measure and assess animal welfare and engage with various stakeholders, including policymakers, animal welfare advocates, and the general public. Such efforts would enable a more comprehensive understanding of the implications of animal welfare for sustainable development and foster a greater awareness and commitment to addressing animal welfare issues in the context of the SDGs.<sup>6</sup> Using animals in production can cause stress and harm inflicted on individual

<sup>1</sup> Sarah S. Bexell, Richard J. Ladle, and Robert A. Luskin, 'Ethical Considerations in the Use of Animals in Film and Television', *Animal Welfare*, Vol. 21, No. 2 (2012): 167–175.

<sup>2</sup> Peter J. Li and Timothy C. M. Wong, 'A Survey of Attitudes Toward the Use of Animals in Northeast Asia's Performing Arts Industry', *Journal of Applied Animal Welfare Science*, Vol. 19, No. 2 (2016): 106-115.

<sup>3</sup> Matthew J. Silk, Sarah L. Crowley, Anna J. Woodhead, and Ana Nuno, 'Considering Connections between Hollywood and Biodiversity Conservation', *Conservation Biology*, Vol. 32, No. 4 (2018): 747-749.

<sup>4</sup>Bauer Regina, Sibylle Klinski, and Daniel Keilbach, 'Ethical Considerations in Animal-Assisted Interventions: A Systematic Review of Published Research', *Frontiers in Veterinary Science*, Vol. 9 (2022): 908513.

<sup>5</sup>Michael Williamson, David Curnick, David Jacoby, Sarah Durant, and Helen O'Neill, 'Ethical Considerations in Natural History Film Production and the Need for Industry-Wide Best Practice', *Global Ecology and Conservation*, Vol.34, (2021): e01981.

<sup>6</sup> Linda Keeling, Håkan Tunón, Gabriela Olmos Antillón, Charlotte Berg, Mike Jones, Leopoldo Stuardo, Janice Swanson, Anna Wallenbeck, Christoph Winckler, and Harry Blokhuis, 'Animal Welfare and the United Nations Sustainable Development Goals', *Frontiers in Veterinary Science*, Vol. 6 (2019): 336.



animals, which impacts their populations and ecosystems.<sup>7</sup> The treatment of animals in entertainment can influence public attitudes toward animal welfare and biodiversity conservation since positive portrayals can raise awareness and promote a culture of respect for animals and their habitats.

Addressing animal welfare in the industry can have economic implications as consumer demand for ethically produced content grows.<sup>8</sup> This research paper investigates animal welfare in Northeast Asia's TV and film industry and explores the role of sustainable biodiversity governance in addressing this issue. The study focuses on challenges, opportunities, and practices that can promote the responsible use of animals in TV and film productions, contributing to the knowledge of animal welfare, sustainable biodiversity governance, and sustainable art production and consumption.

## 2. Literature Review

### 2.1 Animal Welfare in the Global TV and Film Industry

In recent years, concerns about animal welfare have grown within the global TV and film industry.<sup>9</sup> Several studies underscore the significance of animal welfare in these productions, concentrating on ethical dilemmas and the potential adverse consequences on wildlife populations and ecosystems.<sup>10</sup> However, it is essential to consider the limitations of these studies, such as the extent to which they represent the industry's practices and the potential influence of biases in the data collection process.

Media portrayals of animals, including in TV and film, can significantly affect public attitudes toward animal welfare and biodiversity conservation.<sup>11</sup> While previous

<sup>7</sup> Geoff Hosey and Vicky Melfi, 'Human-Animal Interactions, Relationships, and Bonds: A Review and Analysis of the Literature', *International Journal of Comparative Psychology*, Vol. 27, No. 1 (2014): 117-142.

<sup>8</sup> Gemma C. Harper and Aikaterini Makatouni, 'Consumer Perception of Organic Food Production and Farm Animal Welfare', *British Food Journal*, Vol. 104, No. 3/4/5 (2002): 287-299.

<sup>9</sup> Phil McManus, 'Animal-Based Entertainment Industries, Animal Death and Social Licence to Operate (SLO): An Analysis of 'The Final Race' and the 2019 Melbourne Cup', *Social & Cultural Geography*, (March 17, 2022): 20.

<sup>10</sup> Hitchens Peta L., Rachael H. Booth, Kirsten Stevens, Annabelle Murphy, Bidda Jones, and Lauren M. Hemsworth, 'The Welfare of Animals in Australian Filmed Media', *Animals*, Vol. 11, Issue 7 (2021): 1986.

<sup>11</sup> Harold A. Herzog Jr., Nancy S. Betchart, and Robert B. Pittman, 'Gender, Sex Role Orientation, and Attitudes toward Animals', *Anthrozoös*, Vol. 4, Issue 3 (1991): 184-191.



studies emphasize the impact of media portrayals on public attitudes<sup>12</sup>, further research is also needed to understand the long-term effects of these portrayals on individual and societal behavior.<sup>13</sup>

Ethical consumerism may drive positive change in the industry as production companies recognize the value of aligning practices with consumer preferences.<sup>14</sup> Nevertheless, further research is needed to understand the relationship between consumer demand and industry practices. In addition, regional differences in attitudes and practices emphasize the need for a global approach to animal welfare in the industry, considering cultural differences.<sup>15</sup>

## 2.2 The Role of Animal Welfare in Biodiversity Conservation

Biodiversity conservation is crucial for maintaining ecosystem balance and species survival, and animal welfare plays a significant role in this process.<sup>16</sup> Human activities, such as habitat destruction, pollution, and climate change, significantly impact animal welfare and biodiversity conservation.<sup>17</sup> Conservation strategies integrating animal welfare considerations can enhance biodiversity conservation efforts, which ensure that conservation efforts are both ecologically and ethically sound.<sup>18</sup> Further research is required to explore efficient ways to integrate animal welfare and biodiversity conservation and resolve potential conflicts between these objectives.

<sup>12</sup> Christopher Anderson. 'The Psychology of Doing Nothing: Forms of Decision Avoidance Result from Reason and Emotion', *Psychological Bulletin*, Vol. 129, Issue 1 (2003): 139-167.

<sup>13</sup> Serpell, JA. 'Factors Influencing Human Attitudes to Animals and their Welfare', *Animal Welfare*, Vol. 13, Issue S1 (2004): 145-151.

<sup>14</sup> Julian Le Grand and Jonathan Roberts, 'Buying for Good: Altruism, Ethical Consumerism, and Social Policy', *Social Policy & Administration*, Vol. 55, Issue 7 (December, 2021): 1341-1355.

<sup>15</sup> Chung Jah Ying and Jack Stennett, 'Chinese Consumers' Attitudes Toward Animal Welfare: Behaviors, Beliefs, and Responses to Messaging', *Faunalytics*, (2022).

<sup>16</sup> Guillaume Futhazar, 'Biodiversity, Species Protection, and Animal Welfare under International Law', *Beiträge*, Vol. 290 (2020).

<sup>17</sup> Colin G. Scanes, 'Human Activity and Habitat Loss: Destruction, Fragmentation, and Degradation', *Animals and Human Society*, eds. Colin G. Scanes and Samia Toukhsati (Academic Press, 2018), 451-482.

<sup>18</sup> Nitin Sekar and Derek Shiller, 'Engage with Animal Welfare in Conservation', *Science*, Vol. 369, Issue 6504 (August 7, 2020): 629-630.



## 2.3 Enhancing Animal Welfare Awareness in the Performing Arts

### Industry

The performing arts industry, including television, film, theater, and live performances, has been increasingly focusing on animal welfare. While many professionals are aware of animal welfare issues, there is a need for improved understanding and best practices adherence.<sup>19</sup> Education and training are vital in fostering positive attitudes and knowledge among industry professionals.<sup>20</sup> Regulatory bodies and guidelines, such as those provided by the American Humane Association, promote ethical animal treatment.<sup>21</sup> Evaluating their effectiveness is crucial for identifying gaps in enforcement and compliance. Public opinion and consumer behavior also influence the industry's approach to animal welfare, with increased public awareness driving change.<sup>22</sup>

Research on live performances, such as circuses and theatrical productions, also contributes to understanding and advocating for ethical animal treatment.<sup>23</sup> Integrating animal welfare education in performing arts programs can lead to more responsible practices among future professionals.<sup>24</sup> Technological advancements, such as CGI, animatronics, and VR, offer alternatives to using live animals, reducing the reliance on them while maintaining high-quality entertainment. In addition, the performing arts industry can support the ethical treatment and conservation of animals and their habitats by focusing on education, regulation, public engagement, and alternative technologies.

<sup>19</sup> Sean Wensley, Vicki Betton, Nicola Martin, and Emma Tipton, 'Advancing Animal Welfare and Ethics in Veterinary Practice through a National Pet Well-Being Task Force, Practice-Based Champions and Clinical Audit', *Veterinary Record*, Vol. 187, Issue 8 (2020): 316.

<sup>20</sup> Oyewole Oluwaseun Oduwusi, 'Employee Training and Development as a Model for Organizational Success', *International Journal of Engineering Technologies and Management Research*, Vol. 5, Issue 3 (2018): 181-189.

<sup>21</sup> Janet M. Davis, 'The History of Animal Activism: Intersectional Advocacy and the American Humane Movement', in *The Routledge Handbook of Animal Ethics* (Routledge, 2019), 479-491.

<sup>22</sup> Giancarlo Bozzo, Roberta Barrasso, Claudia Annarita Grimaldi, Giuseppina Tantillo, and Rocco Roma, 'Consumer Attitudes Toward Animal Welfare and Their Willingness to Pay', *Vet Ital*, Vol. 55, Issue 4 (2019): 289-297.

<sup>23</sup> Peta Tait, 'Animals in Drama and Theatrical Performance: Anthropocentric Emotionalism', *Animal Studies Journal*, Vol. 9, Issue. 2 (2020): 213-239.

<sup>24</sup> Nancy R. Gee, Aubrey H. Fine, and Sabrina Schuck, 'Animals in Educational Settings: Research and Practice', in *Handbook on Animal-Assisted Therapy*, ed. Aubrey H. Fine (Academic Press, 2015).





## **3. Methodology**

### **3.1 Research Methods and Survey Design**

This study investigates the understanding and perception of sustainable art production and consumption related to animal welfare in the film and TV industry in Northeast Asia. The methodology adopted for this research is a mixed methods approach with a cross-sectional survey and a second research by examining policies, reports, and literature. The survey was developed in three languages, namely Chinese, English, and Korean, to cater to the diverse linguistic backgrounds of the participants. The Chinese version of the survey was distributed using the Survey Star app through the WeChat platform. In contrast, the English and Korean versions were distributed through Google Forms via the KakaoTalk platform.

The survey questionnaire consists of two main sections: “Participant Background” and “Knowledge Related to Animal Welfare”. The first section aims to collect demographic information about the participants, including their professional roles, organizational backgrounds, gender, age, educational background, international experience, and location. This information will help to understand the participants’ context and to analyze their responses about their demographic characteristics.

The second section assesses the participants’ knowledge, experiences, and opinions regarding animal welfare in the film and TV industry. This includes questions related to awareness of animal welfare or rights, the use of animals or their byproducts in art production, participation in training or events related to animal welfare, preferences for using real animals or replacements, the current situation of animal welfare in their respective industries, knowledge of organizations overseeing animal welfare, and suggestions for improvement. These questions aim to capture the participants’ perspectives on the importance of animal welfare in sustainable art production and consumption and to identify potential gaps and challenges in the current



practices.

### **3.2 Data Collection and Pre-Processing**

Before coding, the recovered questionnaires were checked, and invalid questionnaires were eliminated. After inspection, from the 104 domestic and foreign questionnaires received, 0 invalid questionnaires were deleted, and 104 valid questionnaires were finally recovered, with an effective recovery rate of 100%. Then, all the collected Chinese and foreign questionnaires were imported into Excel. Next, the data from China and South Korea were preliminarily coded. Finally, the data from the two parts of the questionnaire were assigned values.

### **3.3 Sample Description**

One hundred four survey responses were collected from China and South Korea, mainly distributed through industrial networks through online survey apps. The general background of the responses is attached at the end of the study in Appendix 1 (figures 1, 2, 3, 4, 5, 6, 7, 8).

## **4. Animal Welfare Knowledge and Awareness**

### **4.1 Animal Welfare Awareness and Practices**

The research results reveal the respondents' limited awareness and knowledge regarding animal welfare or rights. Most (62.5%) have heard about animal welfare or rights but do not know what it is, while 27.9% acknowledge its growing importance in their industry. This lack of understanding highlights the need for increased education and awareness campaigns within the art and performing arts communities. Promoting a better understanding of animal welfare or rights issues can lead to more responsible and ethical choices in using animals and their products within the industry.



Using animal products in performing arts by institutions is a common practice, with 41.3% of respondents reporting occasional use and 30.8% using them frequently. However, the results also show a notable portion (23.1%) of respondents preferring to create art projects without involving animals, and 11.5% opting for substitutes. These findings indicate a diversity of opinions and practices in the industry. Therefore, it is essential to facilitate dialogues and discussions on the ethical use of animal products and explore viable alternatives that can satisfy artistic needs without compromising animal welfare.

The study highlights a significant gap in training and activity participation related to animal welfare or rights policy/regulation. Nearly half of the respondents (46.2%) have never participated in any training or activities related to these issues. This gap suggests an urgent need for more accessible training programs and resources to educate professionals in the art and performing arts industry about the importance of animal welfare and rights. Providing such training opportunities can empower professionals to make more informed decisions about the use of animals in their work and promote better compliance with relevant policies and regulations.

A general lack of awareness about animal welfare monitoring agencies and peers with excellent animal welfare practices is apparent among the respondents. This lack of awareness points to the need for better communication and collaboration between monitoring agencies, art professionals, and institutions to promote the adoption of best practices and enhance compliance with animal welfare standards. Strengthening these connections can also foster a supportive network that encourages the exchange of knowledge and experiences in implementing ethical and sustainable practices within the industry.

## **4.2 Correlation Analysis of Influencing Factors**

The following analysis (see Appendix 2) investigates the correlations between various factors related to sustainable art production and consumption, specifically



focusing on animal welfare in the film and TV industry. The analysis of the survey data reveals several significant relationships among the variables, which can be informative for understanding the perceptions and practices of professionals in the field.

The perceived state of animal welfare in the respondents' industry was positively correlated with their knowledge of government departments, NGOs, or trade associations overseeing animal welfare enforcement in their area and their knowledge of peers excelling in animal welfare practices in their country. Furthermore, the respondents who expressed the need for stronger laws and regulations to protect animal welfare in art production and distribution were more likely to offer suggestions for improving animal welfare and to know peers who excel in animal welfare practices in their country. These findings provide valuable insights into the perspectives and practices of film and TV industry professionals regarding animal welfare and suggest potential areas for further research and intervention to promote sustainable art production and consumption.

## **5. Examining Policies and Regulations in Northeast Asia**

### **5.1 Animal Welfare Policies and Regulations in Northeast Asia**

Northeast Asian countries, including China, Japan, South Korea, and Mongolia, have implemented animal welfare policies and regulations with varying coverage and effectiveness. However, these policies often need help in comprehensiveness, enforcement, and public awareness. In the book “Animal Welfare in China: Culture, Politics, and Crisis”<sup>25</sup>, Peter J. Li, the author, offers a comprehensive analysis of the current state of animal welfare in China, delving into cultural, political, and social factors contributing to the existing challenges. Li highlights the rapid economic growth and urbanization that have increased demand for animal products and the intensification of animal agriculture. Simultaneously, the traditional Chinese values of compassion and

<sup>25</sup> Peter J. Li, *Animal Welfare in China: Culture, Politics, and Crisis* (Sydney University Press, 2021).



harmony with nature are explored, revealing a complex interplay between cultural beliefs, modern practices, and the performing arts industry. The book examines the role of the Chinese government in shaping animal welfare policies, stressing the need for stronger regulations and enforcement mechanisms to address issues such as inhumane farming practices, animal abuse, and the use of animals in entertainment, including performing arts. Li also discusses the rise of animal protection organizations and public awareness campaigns, which have emerged as influential forces in advocating for improved animal welfare standards. Overall, “Animal Welfare in China” presents an in-depth and critical analysis of the challenges and opportunities for advancing animal welfare in the country, emphasizing the necessity of addressing cultural, political, and systemic factors to bring about lasting and meaningful change. By considering the performing arts as an area where animal welfare concerns need to be addressed, Li’s work contributes to a broader understanding of the ethical considerations that should be taken into account in the creative industries, ultimately advocating for more compassionate and responsible practices in the performing arts and beyond.

Animal welfare policies and regulations in Northeast Asia, comprising countries such as China, Japan, South Korea, and Mongolia, vary in scope, comprehensiveness, and effectiveness (see Appendix 3). These countries have implemented various policies and regulations to ensure the well-being of animals, addressing issues like animal cruelty, neglect, and exploitation. However, challenges persist, including gaps in legislation, enforcement, and public awareness. The table comparing the primary documents related to animal welfare in China, Japan, South Korea, and Mongolia reveals some commonalities and differences in the approaches to animal welfare in the region. All four countries have legislation about protecting and managing wildlife, with China and Japan having separate laws for domestic animals and livestock. While the legislation in these countries addresses various aspects of animal welfare, including protection, management, and control of diseases, there is still room for improvement in clarity, scope, and enforcement mechanisms. In addition, enforcement challenges, such



as lack of resources, inadequate penalties, and difficulties in monitoring compliance, are prevalent across the region, potentially hindering the effective implementation of the existing laws and regulations.

Public awareness and education are crucial in promoting animal welfare in Northeast Asia. Governments, NGOs, and educational institutions have been working together to raise awareness about the importance of animal welfare and to develop educational programs targeting various age groups and professions. Regional cooperation has also been fostered by sharing information, expertise, and best practices among the countries, facilitating the development of more effective and comprehensive animal welfare policies. However, there is a need for continued investment in public education and strengthening enforcement and monitoring mechanisms to ensure compliance with existing laws and regulations. Moreover, regional cooperation should be further encouraged, as it offers opportunities for mutual learning and collaboration, ultimately contributing to improving animal welfare standards across Northeast Asia.

## **5.2 Biodiversity Governance Policies and Gaps for Improvement**

The analysis of animal welfare policy and regulations and biodiversity governance in Northeast Asia reveals several gaps and areas for improvement in promoting sustainable production and consumption while ensuring animal welfare and biodiversity conservation. These areas for improvement could significantly contribute to the integration of animal welfare and biodiversity governance, thereby enhancing environmental sustainability and ethical considerations in policy development and implementation.

The comparison of biodiversity governance policies in Northeast Asia (see Appendix 4) focuses on whether they cover animal welfare, as well as their critical aspects related to Legislation, Enforcement Challenges, Public Awareness & Education, Regional Cooperation, and Future Directions. The table highlights that none of the policies explicitly address animal welfare, indicating a gap in integrating animal



welfare concerns into biodiversity conservation strategies. While Japan and South Korea show progress in legislation and public awareness, China and Mongolia exhibit limited progress in these areas. Enforcement challenges are present across all countries, emphasizing the need for enhanced efforts. Finally, all policies acknowledge the importance of regional cooperation and future directions for improvement, suggesting that there is potential for collaborative and holistic approaches to integrate animal welfare into biodiversity governance in the region.

## **6. Principles of Sustainability Framework**

Developing a sustainability framework for sustainable art production and consumption promoting animal welfare and biodiversity governance involves integrating various components. By incorporating these elements into the sustainability framework, the performing arts industry can achieve a more comprehensive approach to promoting animal welfare and biodiversity governance, ultimately fostering a more sustainable and responsible sector.

### **6.1 Adoption of Credible Practices In animal Welfare**

Enhancing sustainability in the performing arts industry involves promoting responsible and ethical practices concerning animal welfare and biodiversity governance. However, the lack of standardization in animal welfare certification schemes complicates international trade, as there is no internationally agreed mechanism for recognizing the equivalence of such schemes. Therefore, certification schemes are suggested to adopt a scheme-level continuous improvement approach to promote improvement at an organizational level.<sup>26</sup> The approach would include a management system, progressive resources and outcomes requirements, assessment

<sup>26</sup> D.C.J. Main, S. Mullan, C. Atkinson, M. Cooper, J.H.M. Wrathall, and H.J. Blokhuis, 'Best Practice Framework for Animal Welfare Certification Schemes', *Trends in Food Science & Technology*, Vol. 37, Issue 2 (2014): 127-136.



and support resources targeting, and external scrutiny and involvement. This framework would assure minimum levels of welfare and promote welfare improvement within scheme membership, ultimately contributing to a more standardized and credible animal welfare certification system.

## **6.2 Collaboration Between Stakeholders**

Stakeholder collaboration is vital in developing and implementing sustainable practices in the performing arts industry, as it accounts for diverse perspectives and interests.<sup>27</sup> By collaborating, artists, producers, policymakers, and non-governmental organizations can create innovative sustainability strategies that address various needs and concerns. This collaboration fosters open dialogue and cooperation, building trust and mutual understanding, which is crucial for long-term commitment to sustainable initiatives. Platforms for communication and cooperation can facilitate the exchange of ideas and best practices, while participatory decision-making processes ensure stakeholder involvement and ownership. Continuous monitoring and evaluation promote accountability, transparency, and ongoing improvement in sustainable practices.

## **6.3 Education and Training**

Education and training in animal welfare and biodiversity governance are essential for promoting sustainability within the performing arts industry.<sup>28</sup> By offering workshops and seminars and integrating these topics into performing arts curricula, professionals can make informed decisions regarding the ethical treatment of animals and the preservation of ecosystems. In addition, collaborations among educational institutions, NGOs, and industry experts can enhance the effectiveness of these

<sup>27</sup> Valesca Lima, 'Collaborative Governance for Sustainable Development', *Peace, Justice and Strong Institutions* (2021): 1-11.

<sup>28</sup> Jen Jamieson, M. J. Reiss, Dave Allen, Lucy Asher, C. M. Wathes, and S. M. Abeyesinghe, 'Measuring the Success of a Farm Animal Welfare Education Event', *Animal Welfare*, Vol. 21, Issue. 1 (2012): 65-75.





initiatives, fostering a proactive and responsible attitude among professionals and leading to a more sustainable performing arts sector.

## **6.4 Public Awareness and Engagement**

Raising public awareness and engagement is vital for promoting animal welfare and biodiversity governance in the performing arts industry. Public campaigns, media coverage, and educational programs for the general public can increase awareness and inspire collective action.<sup>29</sup> Engaging the public in policy development and implementation can lead to more effective and inclusive decision-making, fostering a sense of shared responsibility and support for sustainable practices within the performing arts industry.

## **6.5 Monitoring and Evaluation**

Monitoring and evaluation are critical for implementing sustainability initiatives in the performing arts industry.<sup>30</sup> Data collection, audits, and transparent reporting help determine the effectiveness of these efforts, identify areas requiring improvement, and maintain accountability. These processes contribute to the ongoing refinement and enhancement of sustainability efforts within the industry, promoting continuous learning and adaptation.

## **6.6 Greening Artistic Productions**

Incorporating eco-friendly practices and equipment into artistic productions is essential for promoting sustainability within the performing arts industry.<sup>31</sup> Energy-

<sup>29</sup> Yinglin Wu, Ling Xie, Shiang-Lin Huang, Ping Li, Zengwei Yuan, and Wenhua Liu, 'Using Social Media to Strengthen Public Awareness of Wildlife Conservation', *Ocean & Coastal Management*, Vol. 153, (2018): 76-83.

<sup>30</sup> John J. Loomis and Maurício Dzedzic, 'Evaluating EIA Systems' Effectiveness: State of the Art', *Environmental Impact Assessment Review*, Vol. 68 (2018): 29-37.

<sup>31</sup> Theresa J. May, 'Greening the Theater: Taking Ecocriticism from Page to Stage', *Interdisciplinary Literary Studies*, Vol. 7, Issue 1 (2005): 84-103.



efficient lighting and sound systems, waste reduction strategies, and adopting sustainable materials and processes can minimize environmental impact and reduce resource demand. As the industry embraces sustainability, integrating these practices and technologies will play a pivotal role in ensuring a more sustainable future.

## **6.7 Policy Integration and Coherence**

Policy integration and coherence are vital in fostering a supportive environment for sustainable practices in the performing arts industry.<sup>32</sup> By aligning and complementing policies across different levels of government, a clear framework can be created for industry stakeholders to follow, encouraging the adoption of environmentally responsible practices. Collaboration among government entities can lead to developing policies addressing the specific needs and challenges of the performing arts industry while promoting broader sustainability goals. Policy integration and coherence challenges can be addressed by establishing dedicated agencies or task forces to coordinate efforts and facilitate dialogue among stakeholders. Engaging the performing arts community in policy development and implementation processes can ensure the needs and experiences of industry practitioners inform policies.

## **6.8 Incentives and Support Mechanisms**

Incentives and support mechanisms play a crucial role in promoting the adoption of sustainable practices in the performing arts industry.<sup>33</sup> Financial support, tax incentives, awards and recognition programs can encourage eco-friendly technologies and practices, research and development initiatives, and create a favorable financial environment for sustainable art production and consumption. In addition, these

<sup>32</sup> Lisa-Maria Glass and Jens Newig, 'Governance for Achieving the Sustainable Development Goals: How Important Are Participation, Policy Coherence, Reflexivity, Adaptation, and Democratic Institutions?', *Earth System Governance*, Vol. 2 (2019).

<sup>33</sup> Rui-dong Chang, Veronica Soebarto, Zhen-yu Zhao, and George Zillante, 'Facilitating the Transition to Sustainable Construction: China's Policies', *Journal of Cleaner Production*, Vol. 131 (2016): 534-544.



programs can inspire others to follow suit, raise the sustainability profile within the industry, and create a positive feedback loop as artists and organizations receive recognition for their sustainability efforts.

## **6.9 Research and Innovation**

Research and innovation are essential for advancing sustainable practices in the performing arts industry.<sup>34</sup> Interdisciplinary research combining the arts, environmental sciences, and social sciences can lead to a better understanding of the complex relationships between artistic production, consumption, and environmental impacts. Collaboration between researchers and practitioners is vital for translating innovative ideas into practical applications within the industry. Promoting the development of innovative solutions can contribute to more environmentally friendly and resource-efficient artistic productions and help enhance the overall quality and appeal of sustainable art, increasing public engagement.

## **6.10 Global and Regional Cooperation**

Global and regional cooperation is crucial for addressing transboundary issues related to animal welfare and biodiversity governance within the performing arts industry.<sup>35</sup> International collaborations can facilitate knowledge exchange and sharing of best practices among different countries, helping to identify common challenges and opportunities, enhance the understanding of different cultural and regional contexts, and promote the development of more effective and context-specific solutions. Participating in global sustainability initiatives can align the performing arts industry's sustainability efforts with broader global objectives and contribute to achieving shared targets. Regional cooperation can help address the specific challenges and needs of

<sup>34</sup> Petulia Blake and Jonathan Gano-an, 'Advancing Sustainability Innovation within the Organizational Learning Sphere', *JBFE*, Vol. 3, Issue. 1 (2020): 23-32.

<sup>35</sup> Iyan Ofor, 'Global Animal Law and the Problem of "Globabble": Toward Decoloniality and Diversity in Global Animal Law Studies', *Asian Journal of International Law*, Vol. 12, Issue. 1 (2022): 10-39.



different geographic areas, facilitating the development of shared strategies, policies, and regulatory frameworks that consider each region's unique ecological, social, and cultural contexts.

By adopting these principles, the performing arts industry can contribute to the broader goals of sustainable development, environmental conservation, and ethical treatment of animals.

## **7. Conclusion and Discussion**

The research identified gaps in animal welfare policy and biodiversity governance in Northeast Asia, indicating considerable room for improvement in promoting sustainable art production and consumption while ensuring animal welfare and biodiversity conservation. By addressing these gaps, the integration of animal welfare and biodiversity governance can be significantly enhanced, leading to more environmentally sustainable and ethically considerate policy development and implementation.

The survey findings on animal welfare knowledge and awareness indicate a limited understanding of animal welfare or rights issues among the respondents in the art and performing arts industry. Although most respondents (62.5%) have heard of animal welfare or rights, they do not know what it is, and only 27.9% acknowledge its growing importance in their industry. Furthermore, the use of animal products in performing arts is standard, with 72.1% of respondents reporting occasional or frequent use. The study also reveals a significant gap in training and activity participation related to animal welfare policy and regulation, with 46.2% of respondents having never participated in any related training or activities. The lack of awareness about animal welfare monitoring agencies and peers with excellent animal welfare practices highlights the need for better communication and collaboration among monitoring agencies, art professionals, and institutions to promote the adoption of best practices and enhance compliance with animal welfare standards. The correlation analysis of



influencing factors indicates that the perceived current state of animal welfare in the industry is positively correlated with the respondents' knowledge of government departments, NGOs, or trade associations overseeing animal welfare enforcement in their area, as well as with their knowledge of peers excelling in animal welfare practices in their country. The findings suggest that promoting education and awareness campaigns, providing accessible training programs and resources, and strengthening communication and collaboration among stakeholders can help promote more responsible and ethical choices in using animals and their products within the industry.

The policy research reveals that Northeast Asian countries, including China, Japan, South Korea, and Mongolia, have implemented animal welfare policies and regulations with varying degrees of coverage and effectiveness, facing challenges in comprehensiveness, enforcement, and public awareness. The comparison of biodiversity governance policies in Northeast Asia reveals a gap in integrating animal welfare concerns into biodiversity conservation strategies, indicating several areas for improvement to enhance environmental sustainability and ethical considerations in policy development and implementation. The study emphasizes the need for increased education and awareness campaigns, facilitated dialogues and discussions, accessible training programs and resources, better communication and collaboration between monitoring agencies, art professionals, and institutions, as well as strengthened enforcement and monitoring mechanisms and regional cooperation to improve animal welfare standards in the performing arts and beyond.

Developing a sustainability framework for the performing arts industry to promote animal welfare and biodiversity governance involves integrating various components. These include adopting best practices in animal welfare, stakeholder collaboration, education and training, public awareness and engagement, monitoring and evaluation, greening artistic productions, policy integration and coherence, incentives and support mechanisms, research and innovation, and global and regional cooperation. By incorporating these elements into the sustainability framework, the performing arts



industry can achieve a more comprehensive approach to promoting animal welfare and biodiversity governance, ultimately fostering a more sustainable and responsible sector.

This research has several limitations that should be acknowledged when interpreting the findings. First, the survey sample may only partially represent the broader population involved in the performing arts and art production industries in Northeast Asia, as it is based on a relatively small and potentially biased sample of respondents, which may limit the generalizability of the results to the broader population. Second, the reliance on self-reported data in the survey can introduce biases, such as social desirability bias, where respondents may provide answers they perceive to be more socially acceptable rather than reflecting their accurate opinions or experiences. Third, the cross-sectional nature of the survey limits our ability to examine changes in respondents' knowledge, attitudes, and practices over time. Thus, it is impossible to establish causal relationships between the observed variables. Finally, the qualitative analysis of animal welfare policy and biodiversity governance is based on limited academic resources. It may not capture the full complexity of the situation in the region. Future research should address these limitations by employing more robust sampling methods, using longitudinal designs, and incorporating a wider range of data sources to provide a more comprehensive understanding of the interplay between animal welfare and biodiversity governance in Northeast Asia.



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## Appendix 1. Data Description

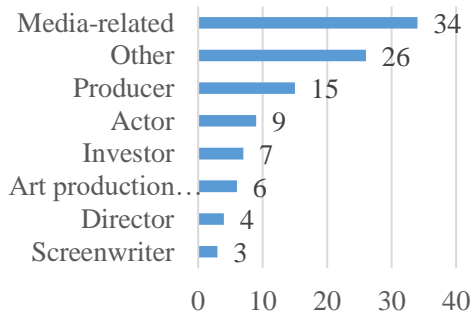


Figure 1. Occupational distribution pattern

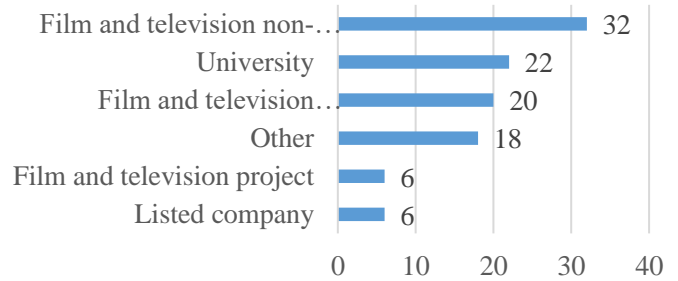


Figure 2. Distribution of working mechanism

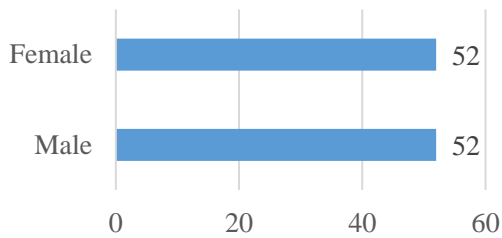


Figure 3. Gender distribution

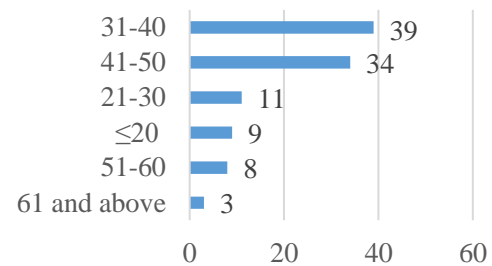


Figure 4. Age distribution

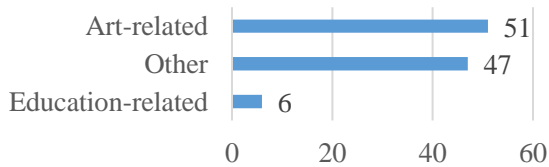


Figure 5. Job distribution

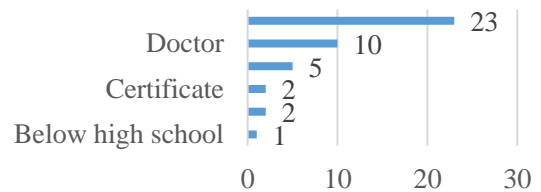


Figure 6. Educational experience



Figure 7. International experience distribution

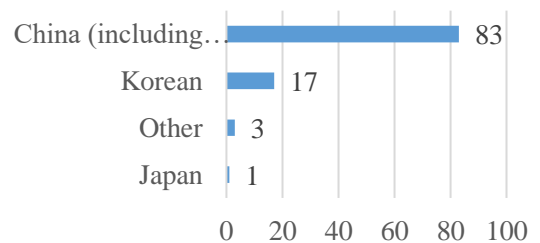


Figure 8. Location distribution



## Appendix 2. Correlation Analysis of Influencing Factors

	M	SD	MAX	MIN	1.1	1.2	1.3	1.4	1.5	1.6	1.7	1.8	2.1	2.2	2.3	2.4	2.5	2.6	2.7	2.8	2.9	2.10	
1.1	5.65	2.4086	8	1	1																		
1.2	3.7	2.0757	7	1	0.168	1.000																	
1.3	1.52	0.521	3	1	-0.149	0.028	1.000																
1.4	3.29	1.1292	6	1	-.195*	.306**	.304**	1.000															
1.5	1.96	0.9747	3	1	.288**	.234*	-.075	0.063	1.000														
1.6	4.35	0.9631	7	1	0.144	0.110	0.083	.211*	-.099	1.000													
1.7	3.61	1.803	7	1	.239*	0.051	-0.121	-0.044	0.019	-0.083	1.000												
1.8	1.3	0.7617	5	1	0.083	0.057	0.096	0.001	0.173	0.096	-0.168	1.000											
2.1	1.72	0.7939	3	1	0.051	-0.080	0.142	0.004	0.011	-0.076	0.106	-0.022	1.000										
2.2	3.19	1.3371	5	1	0.060	-0.095	-0.075	-0.146	0.006	-0.052	0.064	0.105	0.097	1.000									
2.3	2.72	0.6147	3	1	0.006	0.041	-0.059	0.089	0.031	0.001	0.119	0.159	0.018	.338**	1.000								
2.4	2.61	1.2496	5	1	-0.020	0.070	-0.070	0.068	-0.036	0.034	-0.152	0.084	0.006	.301**	.197*	1.000							
2.5	2.75	1.5376	6	1	0.026	0.004	-0.091	-0.014	0.117	0.066	0.034	-0.102	-0.050	0.005	-0.136	0.029	1.000						
2.6	1.07	0.2518	2	1	-0.153	0.020	0.175	0.170	-0.029	0.023	-0.155	0.097	-0.148	-0.097	-0.003	0.054	-0.056	1.000					
2.7	1.05	0.215	2	1	-0.043	0.032	0.035	0.022	0.055	-.269**	-0.076	0.030	-0.091	-0.100	-0.191	0.071	0.066	.478**	1.000				
2.8	1.13	0.3323	2	1	-0.139	-0.002	-0.098	0.032	-0.015	0.076	-0.176	0.043	-0.087	-0.098	-0.065	0.190	0.081	.247*	.323**	1.000			
2.9	1.51	0.8476	3	1	-0.174	-.205*	0.099	0.048	0.012	-0.075	-0.128	0.033	0.112	0.135	0.070	0.072	-0.058	.202*	0.077	-0.056	1.000		
2.10	1.13	0.3323	2	1	0.042	-0.030	-0.042	0.136	-0.045	0.167	-.241*	0.158	-0.124	-0.055	-0.065	0.167	-0.052	.363**	0.187	.209*	-0.022	1.000	

Note: \*. At level 0.05 (two-tailed), the correlation was significant  
 \*\*. At level 0.01 (two-tailed), the correlation was significant

## Appendix 3. Policy Comparison of Animal Welfare<sup>36</sup>

Country	Legislation	Enforcement Challenges	Education	Regional Cooperation	Future Directions
China	- Wildlife Protection Law (1988, 2016) - Animal Husbandry Law (2005) - Prevention and Control of Animal Epidemic Diseases Law (1997, 2013)	- Limited scope of existing laws- Inadequate enforcement mechanisms	- Low public awareness- Need for educational campaigns	- Sharing expertise and resources- Addressing transboundary issues	- Development of comprehensive animal welfare laws - Strengthening enforcement mechanisms
Japan	- Act on Welfare and Management of Animals (1973, 2012) - Act on Prevention of Cruelty to Animals (1950, 2012)	- Weak enforcement mechanisms- Limited penalties for non-compliance	- Increasing public awareness- Integration of animal welfare in school curricula	- Sharing best practices- Collaborating on transboundary issues	- Revision of existing laws to address gaps- Strengthening enforcement mechanisms
South Korea	- Animal Protection Act (1991, 2017)	- Lack of effectiveness in addressing animal cruelty	- Raising public awareness-	- Sharing information and resources-	- Improvement of enforcement mechanisms-

<sup>36</sup> Note: the information in the table summarizes the main aspects of animal welfare in the four countries.

<https://eia-international.org/wildlife/saving-tigers/tiger-farming/chinas-wildlife-protection-law/>



Country	Legislation	Enforcement Challenges	Public Awareness & Education	Regional Cooperation	Future Directions
		and neglect- Limited scope in species protection	Collaboration with NGOs	Addressing transboundary issues	Expansion of the legal scope to cover more species
Mongolia	- Law on Hunting (2000)	- Limited scope focusing on wildlife- Absence of comprehensive animal welfare legislation	- Need for educational campaigns- Increasing public awareness	- Learning from neighboring countries- Collaborating on transboundary issues	- Development of comprehensive animal welfare laws- Strengthening enforcement mechanisms

#### Appendix 4. The Comparison of Biodiversity Governance Policies<sup>37</sup>

Country	Policy Document	Covers Animal Welfare	Legislation	Enforcement Challenges	Public Awareness & Education	Regional Cooperation	Future Directions
China	Biodiversity Conservation Strategy and Action Plan (2011-2030)	No	Limited	Yes	Limited	Yes	Yes
Japan	National Biodiversity Strategy (2012-2020)	No	Yes	Yes	Yes	Yes	Yes
South Korea	National Biodiversity Strategy (2014-2018)	No	Yes	Yes	Yes	Yes	Yes
Mongolia	National Biodiversity Program (2015-2025)	No	Limited	Yes	Limited	Yes	Yes

<sup>37</sup> Please note that the columns represent vital aspects discussed in the paragraphs but may be outside each policy document. <https://www.cbd.int/countries/>