

Evaluating Key Determinants for Sports Artifact Classification

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Abstract

This study explores the institutional and cultural foundations of sports artifact classification in Taiwan, emphasizing how heritage management reflects broader processes of cultural governance and policy formation. Drawing on expert insights from academia, museums, and government sectors, the research identifies the key factors shaping the development of a coherent classification framework for sports heritage. The findings reveal that classification systems serve not merely as administrative tools but as mechanisms through which cultural legitimacy, historical narratives, and national identity are constructed. Preservation and Management emerged as the most influential dimension, followed by Institutional and Policy and Cultural Interpretation, highlighting the need for both structural regulation and interpretive depth. Six core determinants—legal support, institutionalization, symbolic value, preservation condition, interdepartmental coordination, and rarity and completeness—form the foundation of an integrated approach to sports heritage governance. The study contributes to understanding how classification can transform from a technical procedure into a strategic process linking cultural policy, education, and social memory.

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1. Introduction

As a vital component of cultural heritage, sports artifacts have increasingly become part of national cultural governance systems in recent years. Their classification and preservation are not merely technical procedures but also theoretical challenges involving the institutionalization of cultural knowledge and management (Hooper-Greenhill, 2000; Varutti and Gowlland, 2025). In the context of global shifts in cultural policy, museum collections and artifact classifications are no longer viewed merely as tools for storage and exhibition; instead, they are recognized as mechanisms for regenerating national memory, cultural identity, and knowledge systems (Coombe and Weiss, 2015; Reilly et al., 2014). However, the classification of sports artifacts in Taiwan remains at the “institutional periphery.” The current system primarily emphasizes physical attributes and registration procedures, lacking cultural semantics and cross-disciplinary interpretive frameworks (Chen and Ni, 2013).

According to the theory of the institutionalization of heritage systems, cultural memory is constructed through institutionalized processes of classification, whereby artifacts are not only preserved but also transformed into representations of policy discourse and cultural authority (Shih, 2021). Classification, in this sense, constitutes a form of “cultural governance act” that operationalizes standardized vocabularies and multilayered interpretive frameworks to achieve knowledge regeneration and social legitimacy (Hosagrahar et al., 2016; Wang et al., 2025). From this perspective, the construction of a sports artifact classification system should transcend mere technical cataloging and documentation; it should function as a process of knowledge institutionalization that integrates historical semantics, social context, and policy implications (Borish and Phillips, 2012).

International examples demonstrate the pivotal role of classification in cultural governance. The National Baseball Hall of Fame in the United States employs a “narrative-driven classification,” integrating athletes, events, and social issues into a multidimensional system of knowledge. Japan’s Koshien History Museum bases its classification on the national education curriculum, establishing a structural linkage between museums and formal education (Nakai and Metzler, 2005). Similarly, the National Football Museum in the United Kingdom adopts an open classification mechanism that combines public interaction and semantic annotation to continuously update its cultural lexicon (Romanelli, 2020). These cases reveal that artifact classification is not merely a process of organizing knowledge but a critical intersection between cultural interpretation and policy decision-making (Stell and Pocock, 2019).

Theoretically, artifact classification lies at the intersection of Knowledge Organization and Semantic Network Theory. Hooper-Greenhill (2000) argued that museum classification systems embody the manifestation of cultural power, while Le Boeuf (2011) emphasized that metadata design serves as the semantic core of cultural interpretation. Without standardized controlled vocabularies and semantic linkages, artifacts remain static data units incapable of supporting diverse functions

such as education, curation, and governance (Dupont et al., 2022; Ménard et al., 2010). In recent years, many international museums have adopted semantic models such as CIDOC-CRM and Dublin Core, utilizing hierarchical annotations and layered semantic structures to achieve cross-platform data integration and knowledge sharing (Goynov et al., 2024; Güntsch et al., 2019). This movement toward “semantic classification” represents a key trend in the digital governance of cultural heritage.

In contrast, Taiwan’s sports artifact classification remains object-oriented, lacking both cultural contextualization and policy integration, resulting in institutional discontinuities and challenges in resource allocation (Wang, 2009). From a policy perspective, the Cultural Heritage Preservation Act has not explicitly incorporated sports artifacts into its legal framework, leaving them without adequate legal and financial support. This institutional gap aligns with the “field periphery” concept of New Institutionalism, which posits that cultural domains lacking institutional legitimacy and knowledge frameworks are prone to marginalization despite their social value (Coombe and Weiss, 2015; Kurin, 2022). Hence, establishing a theoretically grounded and institutionally supported classification framework is essential for integrating sports artifacts into national memory and cultural governance systems.

To identify the key factors in developing such a framework, this study adopts the Analytic Hierarchy Process (AHP) proposed by Saaty (1980). Although AHP effectively addresses multi-criteria decision-making problems, it assumes that expert judgments are precise and deterministic, thus neglecting the inherent fuzziness and subjectivity of human reasoning. When experts come from diverse disciplinary backgrounds, their assessments of importance may exhibit linguistic vagueness and context-dependence, which traditional AHP’s linear comparisons cannot adequately capture. To address these limitations, this study employs the Fuzzy Analytic Hierarchy Process (Fuzzy AHP), which integrates AHP’s structured decision logic with Fuzzy Set Theory. Expert evaluations are represented using Triangular Fuzzy Numbers and aggregated through fuzzy synthetic extent analysis to derive relative weights. This approach mitigates uncertainty arising from subjective variation and enhances decision consistency.

Accordingly, this study employs Fuzzy AHP as the core methodology to construct a framework of key classification factors that balances cultural interpretability and institutional decision relevance. By integrating the fuzzy judgments of experts from academia, museums, and policymaking bodies, the study calculates fuzzy weights for each dimension and criterion, thereby revealing the relative significance of different aspects in the institutionalization of sports artifact classification.

2. Literature Review

2.1 Preservation and Classification Systems of Sports Artifacts in Taiwan

The development of Taiwan's preservation and classification systems for sports artifacts has been shaped by historical contexts and shifts in cultural policy. Although the Cultural Heritage Preservation Act laid the foundation for heritage protection in Taiwan, its scope has primarily focused on monuments, historic buildings, and folk artifacts. As modern and contemporary products, sports-related objects were long excluded from the heritage framework (Wang, 2009). Early preservation efforts relied largely on private collectors and local museums, lacking formal legal recognition and standardized classification criteria. Since the 2000s, the government has gradually acknowledged the cultural and mnemonic significance of sports artifacts. In 2021, the Sports Administration under the Ministry of Education launched the National Inventory Project of Sports Artifacts, collaborating with regional institutions and academic organizations to conduct nationwide surveys and digital archiving. Nevertheless, the existing classification system remains centered on physical properties and administrative registration, with limited emphasis on cultural semantics, historical interpretation, and knowledge integration. Without a conceptual framework beyond cataloging and inventory statistics, the current system fails to meet the demands of cultural governance, underscoring the need to identify key factors that underpin classification decisions.

2.2 International Systems of Sports Artifact Classification and Preservation

Internationally, the evolution of sports artifact classification and preservation systems reflects a broader transition from collection-oriented to governance-oriented cultural management. In recent years, countries such as the United States, Japan, and the United Kingdom have established multi-layered classification structures integrating semantic data frameworks and public participation mechanisms, thereby enhancing cultural interpretation, policy application, and educational outreach. These systems not only manage artifacts but also shape national memory and cultural identity through the very process of classification (Phillips, 2012).

In the United States, the National Baseball Hall of Fame employs a narrative-driven classification system organized around figures, events, and social themes, embedding artifacts within broader historical and sociocultural narratives. Japan adopts an education- and community-oriented model: the Koshien History Museum, for instance, classifies artifacts by period, region, school, and individual, integrating results into school curricula and local educational materials to form a "museum–education–community" triadic network (Guttmann et al., 2001; Nakai and Metzler, 2005). Since 2004, Japan's Agency for Cultural Affairs has officially incorporated sports culture into the national heritage framework, promoting systematic collection and digital documentation that link educational and regional identity functions (Zemska, 2021).

In the United Kingdom, open data and public participation form the core of sports heritage management. The National Football Museum utilizes crowdsourced tagging and interactive classification to allow visitors to contribute stories and images, thus creating a socially shared knowledge network (Moore, 2021; Romanelli, 2020). At the policy level, the Department for Digital, Culture, Media and Sport (DCMS) has established cultural indicators and open-data platforms, making sports heritage management a key instrument for cultural policy evaluation and social impact assessment (Reilly et al., 2014).

2.3 Key Dimensions and Criteria for Sports Artifact Classification

Based on the literature, this study identifies five major dimensions and fifteen criteria as key determinants for the classification of sports artifacts. These encompass cultural interpretation, preservation and management, institutional and policy considerations, knowledge and digitalization, and social education—each representing critical aspects of classification decision-making.

2.3.1 Cultural Interpretation Dimension

This dimension emphasizes the historical and symbolic meanings of artifacts—the deepest cultural aspect of classification. Hooper-Greenhill (2000) viewed museum classification as an embodiment of cultural power and knowledge construction, while Borish and Phillips (2012) argued that the value of sports artifacts lies in their ability to reconstruct historical narratives, social consciousness, and national identity. The three criteria under this dimension are: (1) historical representativeness—whether the artifact reflects key moments or figures in sports development; (2) symbolic value—the degree of its cultural and social significance; and (3) narrative potential—its capacity to support storytelling and curatorial interpretation (Moore, 2021).

2.3.2 Preservation and Management Dimension

Drawing on conservation science and heritage management theories (Zhang and Ala, 2024), the quality of preservation directly affects both classification priority and exhibition feasibility. Chen and Ni (2013) and Spuriņa (2025) emphasized the need for institutionalized preservation procedures to ensure long-term stability. The criteria include: (1) degree of institutionalization of preservation processes; (2) condition of preservation, including physical integrity and environmental suitability; and (3) rarity and completeness, reflecting the uniqueness and documentation integrity of the artifact (Valentini, 2023).

2.3.3 Institutional and Policy Dimension

Grounded in cultural governance and New Institutionalism (Coombe and Weiss, 2015; Hosagrahar et al., 2016), this dimension focuses on the institutional legitimacy and policy relevance of classification systems. Shih (2021) noted that without formal regulatory frameworks and inter-agency coordination, sports

heritage classification lacks policy effectiveness. Della Spina and Calabrò (2018) further proposed that classification can function as a tool for cultural statistics and policy evaluation. The criteria include: (1) legal support, (2) interdepartmental coordination, and (3) policy orientation. This dimension reflects the classification system's institutional position and decision-making function within national cultural governance.

2.3.4 Knowledge and Digitalization Dimension

This dimension represents the shift in heritage governance from collection-centered to knowledge-centered approaches. Le Boeuf (2011) and Ménard et al. (2010) identified metadata completeness and semantic annotation as core elements of cultural knowledge organization. Goynov et al. (2024) and Dupont et al. (2022) demonstrated that frameworks such as CIDOC-CRM, Dublin Core, and Linked Open Data facilitate data interoperability and academic reuse. The criteria are: (1) metadata completeness, (2) platform interoperability, and (3) semantic annotation applicability, ensuring both informational standardization and knowledge scalability.

2.3.5 Social and Educational Dimension

Romanelli (2020) and Parsons et al. (2022) argued that open vocabularies and crowdsourced tagging enhance public participation, fostering mechanisms of cultural co-creation. Askew (2009) further showed that museum classification outcomes can be integrated into educational materials and curricula. This dimension includes: (1) public interactivity, (2) educational applicability, and (3) curatorial reusability, highlighting the social dissemination and pedagogical value of classification systems.

3. Research Methodology

3.1 Research Framework and Design

This study aims to identify the key factors underlying the classification of sports artifacts by integrating expert opinions from academia, museums, and policy sectors through the Fuzzy Analytic Hierarchy Process (Fuzzy AHP). The method quantitatively evaluates the relative importance of each dimension and criterion. Based on the literature review, the hierarchical framework of this study is illustrated in Table 1.

Fuzzy AHP combines the structured decision-making logic of the Analytic Hierarchy Process (AHP) with Fuzzy Set Theory, effectively addressing the linguistic vagueness and subjective uncertainty inherent in expert judgments. Unlike conventional AHP, which assumes crisp and deterministic values, Fuzzy AHP represents expert comparisons using Triangular Fuzzy Numbers (TFNs) and derives relative weights through Fuzzy Synthetic Extent Analysis. A consistency ratio (CR) test is subsequently performed to ensure the rationality and reliability of the evaluation results.

Table 1: Hierarchical framework and theoretical basis for the classification of sports artifacts

Dimension	Criterion	Theoretical Basis
Cultural Interpretation	Historical Representativeness	Hooper-Greenhill et al. (2000)
	Symbolic Value	Borish and Phillips (2012)
	Narrative Potential	Moore (2021)
Preservation and Management	Degree of Institutionalization	Chen and Ni (2013); Spuriņa (2025)
	Preservation Condition	Zhang and Ala (2024)
	Rarity and Completeness	Valentini (2023); Wang et al. (2025)
Institutional and Policy	Legal Support	Hosagrahar et al. (2016); Coombe and Weiss (2015)
	Interdepartmental Coordination	Shih (2021)
	Policy Orientation	Della Spina and Calabrò (2018)
Knowledge and Digitalization	Metadata Completeness	Le Boeuf (2011); Ménard et al. (2010)
	Platform Interoperability	Dupont et al. (2022); Goynov et al. (2024)
	Semantic Annotation Applicability	Güntsch et al. (2019)
Social and Educational	Public Interactivity	Romanelli (2020); Parsons et al. (2022)
	Educational Applicability	Nakai and Metzler (2005); Askew (2009)
	Curatorial Reusability	Moore (2021)

3.2 Questionnaire Design and Expert Participants

To ensure professional validity and multidimensional perspectives in evaluating the criteria for sports artifact classification, seven experts were invited to participate in this study. The expert group represented a balanced composition of academia, museum practitioners, and government officials, reflecting the interdisciplinary and policy-oriented nature of sports heritage management.

Among the participants, two scholars from national universities specializing in sports history and cultural heritage studies provided theoretical and historical insights into the classification of sports artifacts. Two experts from museums and cultural institutions contributed extensive practical experience in curatorship, preservation, and exhibition design, offering operational perspectives on artifact management. In addition, two senior practitioners from the sports industry and cultural organizations shared expertise in thematic exhibitions and public education, particularly regarding the narrative presentation of sports heritage. Finally, one representative from a central government agency responsible for sports and cultural policy contributed valuable policy-level knowledge, including regulatory frameworks and interdepartmental coordination mechanisms.

This diverse composition of experts ensured that the assessment incorporated academic rigor, practical applicability, and institutional relevance. The integration of multiple perspectives also enhanced the content validity of the evaluation and strengthened the representativeness of expert judgments, providing a reliable foundation for the subsequent Fuzzy AHP analysis.

4. Empirical Results and Analysis

This study employed the Fuzzy Analytic Hierarchy Process (Fuzzy AHP) to integrate the judgments of seven experts and to evaluate the key determinants for classifying sports artifacts in Taiwan. The consistency ratio (CR) for all dimensions and criteria was below 0.1, meeting the thresholds recommended by Saaty (1980) and Chang (1996). This indicates that the experts' evaluations were both stable and logically consistent, providing a reliable foundation for further analysis. The results of the dimensional and criteria weighting are presented in Table 2.

At the dimensional level, Preservation and Management emerged as the highest-priority dimension, indicating that the condition, completeness, and institutionalization of preservation practices are fundamental to the classification of sports artifacts. The second-ranked dimension, Institutional and Policy, underscores the importance of legal frameworks and cross-departmental collaboration to ensure administrative efficiency and resource allocation. The Cultural Interpretation dimension ranked third, highlighting that artifact classification should reflect not only physical characteristics but also historical narratives and symbolic meanings. Meanwhile, Knowledge and Digitalization and Social and Educational dimensions, though weighted lower, remain essential for sustaining long-term heritage utilization, knowledge circulation, and public engagement.

Within each dimension, the following weighting patterns were observed.

- (1) In Cultural Interpretation, the overall weights were: Symbolic Value (0.106) > Narrative Potential (0.066) > Historical Representativeness (0.064). Experts emphasized that the symbolic and narrative dimensions of artifacts—such as the representation of national identity and collective memory—take precedence over purely temporal or material attributes.
- (2) In Preservation and Management, the weights were: Degree of Institutionalization (0.130) > Preservation Condition (0.093) > Rarity and Completeness (0.074). This suggests that establishing standardized management procedures is central to sustainable classification, while preservation quality and uniqueness serve as supporting factors.
- (3) In Institutional and Policy, the ranking was: Legal Support (0.159) > Interdepartmental Coordination (0.075) > Policy Orientation (0.042), confirming that legal legitimacy and administrative collaboration are critical drivers for institutionalization.
- (4) In Knowledge and Digitalization, Metadata Completeness (0.043) ranked highest, followed by Semantic Annotation Applicability (0.023) and Platform Interoperability (0.015), indicating the necessity of unified metadata and semantic models to enhance data integration.
- (5) In Social and Educational, Curatorial Reusability (0.053) ranked first, followed by Public Interactivity (0.031) and Educational Applicability (0.025), showing that classification systems should support exhibition reuse and public participation to reintroduce artifacts into the cultural sphere.

Table 2: Overall weights and rankings of dimensions and criteria for sports artifact classification

Dimension	Overall Weight	Criterion	Overall Weight	Rank
Cultural Interpretation	0.236	Historical Representativeness	0.064	8
		Symbolic Value	0.106	3
		Narrative Potential	0.066	7
Preservation and Management	0.298	Degree of Institutionalization	0.130	2
		Preservation Condition	0.093	4
		Rarity and Completeness	0.074	6
Institutional and Policy	0.276	Legal Support	0.159	1
		Interdepartmental Coordination	0.075	5
		Policy Orientation	0.042	11
Knowledge and Digitalization	0.081	Metadata Completeness	0.043	10
		Platform Interoperability	0.015	15
		Semantic Annotation Applicability	0.023	14
Social and Educational	0.109	Public Interactivity	0.031	12
		Educational Applicability	0.025	13
		Curatorial Reusability	0.053	9

According to Daniel's (1961) Critical Success Factors (CSF) theory proposed in "Management Information Crisis," only a small number of factors—typically three to six—determine the core effectiveness of any organizational system or decision framework. Based on this perspective, the six criteria with the highest overall weights in the Fuzzy AHP results are identified as the critical determinants of Taiwan's sports artifact classification system. These six factors, each with weights above 0.07, collectively account for 64.3% of the total variance, representing the structural core of the classification decision framework.

- (1) Legal Support (0.159): This criterion received the highest weight, highlighting that without a clear legal basis, sports artifact classification lacks continuity and policy legitimacy. Consistent with institutional theory, legal frameworks confer legitimacy and authority to institutional actions. This finding suggests that Taiwan's sports heritage classification should be incorporated into the Cultural Heritage Preservation Act or supported by a dedicated legislative framework.
- (2) Degree of Institutionalization (0.130): Ranked second, this reflects that systematic and traceable management procedures are fundamental to effective classification. Without standardized processes, even highly valuable artifacts cannot be sustainably managed or integrated into official systems.
- (3) Symbolic Value (0.106): Ranked third, this criterion emphasizes that classification should prioritize artifacts embodying symbolic and cultural significance—those representing national identity, athletic spirit, or collective memory—over purely chronological or material attributes.

- (4) Preservation Condition (0.093): Ranked fourth, it represents the fundamental threshold for artifact classification. The physical integrity and environmental stability of artifacts directly affect their display and research feasibility, highlighting the need for standardized inspection and restoration protocols.
- (5) Interdepartmental Coordination (0.075): Ranked fifth, this reflects the networked nature of cultural governance. Effective coordination among the Ministry of Sports, the Ministry of Culture, and local governments is essential. The establishment of a “Sports Cultural Heritage Classification Committee” is recommended to enhance integration and operational efficiency.
- (6) Rarity and Completeness (0.074): Ranked sixth, this criterion underscores the importance of uniqueness and documentation integrity in assessing the cultural significance and research potential of artifacts. Rarity denotes not only scarcity but also irreplaceability and witness value within the broader cultural context.

5. Conclusion and Recommendations

5.1 Conclusion

This study examined the key determinants underlying the classification of sports artifacts in Taiwan, situating the issue within the broader context of cultural governance and institutionalization. Through the integration of expert judgments using the Fuzzy Analytic Hierarchy Process (Fuzzy AHP), the analysis revealed that the classification of sports heritage is not merely a technical or administrative procedure, but a mechanism through which cultural legitimacy, historical continuity, and national identity are constructed.

Among the five major dimensions, Preservation and Management emerged as the most influential, indicating that the effectiveness of classification fundamentally depends on systematic preservation, institutionalized management, and quality control. The Institutional and Policy dimension ranked second, underscoring the necessity of legal frameworks and interdepartmental collaboration for ensuring administrative coherence and policy sustainability. Cultural Interpretation followed closely, suggesting that sports heritage classification must also encompass symbolic meanings, narrative potential, and social representation beyond physical attributes. The six critical factors—legal support, degree of institutionalization, symbolic value, preservation condition, interdepartmental coordination, and rarity and completeness—together form the core structure of an effective classification framework. These findings demonstrate that the sustainable management of sports heritage requires a balance between technical precision and cultural interpretation, supported by formalized institutional systems. In essence, classification operates as a form of cultural governance that shapes how collective memory, identity, and policy priorities are represented and sustained.

5.2 Recommendations

Based on the empirical findings, several practical and theoretical recommendations are proposed for enhancing Taiwan's sports artifact classification and management system.

- (1) **Legal and Policy Integration:** Sports heritage should be explicitly incorporated into Taiwan's Cultural Heritage Preservation Act or regulated through a dedicated Sports Cultural Heritage Ordinance. Such inclusion would provide the legal foundation and administrative legitimacy required for sustainable classification and resource allocation.
- (2) **Institutionalization of Management Practices:** A standardized and traceable management mechanism should be established to govern preservation, registration, and evaluation procedures. Developing a national guideline for sports artifact documentation would ensure consistency across institutions and facilitate data interoperability.
- (3) **Cross-Sectoral Collaboration:** The establishment of a Sports Heritage Classification and Review Committee composed of representatives from the Ministry of Sports, the Ministry of Culture, local museums, and academic experts is recommended. This platform would enhance interdepartmental coordination, streamline decision-making, and prevent resource duplication.
- (4) **Cultural Interpretation and Public Engagement:** Classification should move beyond material typology to include symbolic and narrative values that reflect sports' cultural and social roles. Encouraging public participation through crowdsourced tagging, digital storytelling, and educational programs can strengthen cultural identification and democratize heritage interpretation.
- (5) **Digital Knowledge Infrastructure:** The adoption of semantic web technologies such as CIDOC-CRM and Linked Open Data is essential for integrating sports artifact information across platforms. Building a unified digital infrastructure will promote transparency, accessibility, and knowledge sharing among institutions and researchers.

References

- [1] Askew, D. (2009). *Sport and politics: The 2008 Beijing Olympic Games* (pp. 103 - 120). Routledge.
- [2] Borish, L.J. and Phillips, M.G. (2012). Sport history as modes of expression: Material culture and cultural spaces in sport and history. *Rethinking History*, 16(4), pp. 465 - 477.
- [3] Chang, D.Y. (1996). Applications of the extent analysis method on fuzzy AHP. *European Journal of Operational Research*, 95(3), pp. 649 - 655.
- [4] Chen, Y.P. and Ni, T.H. (2013). Taiwanese sports culture assets of digital archive. *Journal of Physical Education, Fu Jen Catholic University*, (12), pp. 186 - 202.

- [5] Coombe, R.J. and Weiss, L.M. (2015). Neoliberalism, heritage regimes, and cultural rights. In *Global Heritage: A Reader* (ed. Meskell, L.). Somerset: John Wiley & Sons, pp. 43 - 69.
- [6] Della Spina, L. and Calabrò, F. (2018). Decision support model for conservation, reuse and valorization of the historic cultural heritage. In *Proceedings of the International Conference on Computational Science and Its Applications* (Vol. 10962, pp. 3 - 17). Springer.
- [7] Dupont, S., Woodburn, M., Collier, B., Ellis, L., Hey, G., Hsu, T.-T., Sadka, M. and Smith, D. E. (2022). RECODE: Towards a next-gen collections management system as part of the institutional and community data ecosystem. *Biodiversity Information Science and Standards*, 6.
- [8] Goynov, M., Luchev, D., Paneva-Marinova, D., Senka, G., Rangochev, K., Pavlova, L., Pavlov, R. and Zlatkov, L. (2024). CultIS: Web-based platform for intelligent cultural content management. *Digital Presentation and Preservation of Cultural and Scientific Heritage*, 14, pp. 19 - 36.
- [9] Güntsch, A., Luther, K., Müller, A., Kohlbecker, A., Plitzner, P., Kilian, N., Henning, T., von Mering, S., von Raab-Straube, E., Kusber, W.-H. and Berendsohn, W.G. (2019). The Platform for Cybertaxonomy: Standards, services and tools. *Biodiversity Information Science and Standards*, 3.
- [10] Guttman, A., Thompson, L. and Hofmann, A.R. (2001). *Japanese sports: A history*. University of Hawai'i Press.
- [11] Hooper-Greenhill, E. (2000). *Museums and the interpretation of visual culture*. Routledge.
- [12] Hosagrahar, J., Soule, J., Fusco Girard, L. and Potts, A. (2016). Cultural heritage, the UN sustainable development goals, and the new urban agenda. *BDC. Bollettino Del Centro Calza Bini*, 16(1), pp. 37 - 54.
- [13] Kurin, R. (2022). *Recognizing Intangible Cultural Heritage*. In *Music, Communities, Sustainability* (pp. 21 - 51). Oxford University Press New York.
- [14] Le Boeuf, P. (2011). De la sémantique des inventaires aux musées en dialogue: La modélisation CIDOC CRM. *Muséologies*, 6(1), pp. 5 - 22.
- [15] Ménard, E., Mas, S. and Alberts, I. (2010). Faceted classification for museum artefacts: A methodology to support web site development of large cultural organizations. *Aslib Proc.*, 62, pp. 523 - 532.
- [16] Moore, K. (2021). Triumph in austerity? The National Football Museum for England, 2008 to 2017. *Soccer & Society*, 22(6), pp. 677 - 691.
- [17] Nakai, T. and Metzler, M. W. (2005). Standards and Practice for K-12 Physical Education in Japan. *Journal of Physical Education, Recreation & Dance*, 76(7), pp. 17 - 22.
- [18] Phillips, M.G. (Ed.). (2012). *Representing the Sporting Past in Museums and Halls of Fame* (1st ed.). Routledge.
- [19] Parsons, S., Azevedo, F., Elsherif, M., Guay, S., Shahim, O. N., ... and Oliveira, C. M. F. (2022). A community-sourced glossary of open scholarship terms. *Nature Human Behaviour*, 6, pp. 312 - 318.

- [20] Reilly, J.N., Clayton, J. and Hughson, J. (2014). Uniting sport and heritage: An evaluation of the “Our Sporting Life” exhibition programme. *Cultural Trends*, 23(1), pp. 42 - 55.
- [21] Romanelli, M. (2020). Museums and Technology for Value Creation. In J. Strandgaard Pedersen, B. Slavich and M. Khaire (Eds.), *Technology and Creativity* (pp. 181 - 210). Cham: Palgrave MacMillan.
- [22] Saaty, T.L. (1980) *The Analytic Hierarchy Process*. McGraw-Hill, New York.
- [23] Shih, F. (2021). Taiwan’s culture wars from “re-China-ization” to “Taiwan-ization” and beyond: President Tsai Ing-wen’s cultural policy in long-term perspective. In *Taiwan and the Cultural Politics of Democracy* (pp. 284 - 311). Routledge.
- [24] Spuriņa, M. (2025). Digitization of museum objects and the semantic gap. *Heritage*, 8(9), 369.
- [25] Stell, M. and Pocock, C. (2019). In *Community Hands: Memory and the Material Culture Legacy of a Mega Sporting Event: Commemorating the 1982 XII Commonwealth Games in Brisbane*. *The International Journal of the History of Sport*, 36(6), pp. 551 - 569.
- [26] Valentini, A.P. (2023). A roadmap for measuring the local impact of culture from a legislative perspective—Normative, regulatory, and technical mechanisms. *Land*, 12(8), 1492.
- [27] Varutti, M. and Gowlland, G.K. (2025). Museums as sites of indigenous revitalisation. . In Cai, Yunci (Ed.), *The Museum in Asia* (pp. 221 - 234). London : Routledge.
- [28] Wang, S. (2009). Taiwanese baseball: A story of entangled colonialism, class, ethnicity, and nationalism. *Journal of Sport & Social Issues*, 33(4), pp. 355 - 372.
- [29] Wang, N., Wang, W., Yang, X., Chen, J. and Yu, S. (2025). A sandglass tiered model for integrating cultural value into built environment management. *Buildings*, 15(18), 3259.
- [30] Zemska, A. (2021). Intangible cultural heritage in Japan. *Gdansk Journal of East Asian Studies*, 20, pp. 157 - 167.
- [31] Zhang, Y. and Ala, T. (2024). Classification and value assessment of sports intangible cultural heritage resources combined with digital technology. *Applied Mathematics and Nonlinear Sciences*, 9(1), pp. 115 - 130.