ANDEAN CULTURAL HERITAGE: A SYSTEMIC ANALYSIS OF PERUVIAN MUSEUMS FOR THEIR REPRESENTATION, PRESERVATION, DISSEMINATION AND SUSTAINABILITY

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1. Introduction

The Andean territory contains a unique cultural wealth, made up of the pre-Columbian legacy, colonial heritage and the syncretism that was subscribed from these historical processes up until the republican era. Additionally, its geographical, climatic and natural diversity have historically contributed to the various practices, products, creations and compilations that stand out for their high degree of international admiration, linguistic richness and identity representativeness [1-3].

In spite of this, the complex system that makes up the Andean Cultural Heritage (ACH) is in a situation of disadvantage and inequality compared to other educational, productive and cultural manifestations. With standardized models for professional development, the prevalent use of Spanish (the most widely spoken language in Latin America) to access citizen services and information, and the concentration of government institutions in large cities (such as Lima, Cusco and Arequipa), there is evidence of insufficient and/or precarious attention to most of the archaeological sites, museums and communities located in the Andean and Amazonian zones of the country. Indicators, such as 26% of indigenous languages being in danger of extinction [4], the constant problems of protecting archaeological spaces against invasions, alterations or looting [5] and the decrease in tourism, as a consequence of the COVID-19 pandemic are examples of how ACH requires comprehensive strategies for its representation, preservation, dissemination and sustainability.

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An example of this situation is evident in what Peruvian museums are able to offer as a digitized collection. Most of them lack options such as virtual visits or digital catalogs, thus restricting their participation, operations and digital presence. It means there are less opportunities to be analyzed or admired by the national and international public [6]. This situation is not only significant in normal times, in crisis situations, such as the COVID-19 pandemic many of these museums have been forced to suspend their operations. Finally, it should be mentioned that the linguistic and technological support of museums is rather restricted. When reviewing those that offer virtual tours, the majority only use 3D photographs (Museo de Sitio Julio C. Tello, Museo Nacional de Arqueología y Antropología); others have only some audio recordings at the beginning of the visit (Museo de Arte Italiano, Museo Chavín de Huantar); and some reach a more extensive and detailed explanation, but only in Spanish (Lugar de la Memoria, la Tolerancia y la Inclusión Social, Museo de Sitio de Pachacamac) [7] (Figure 1).
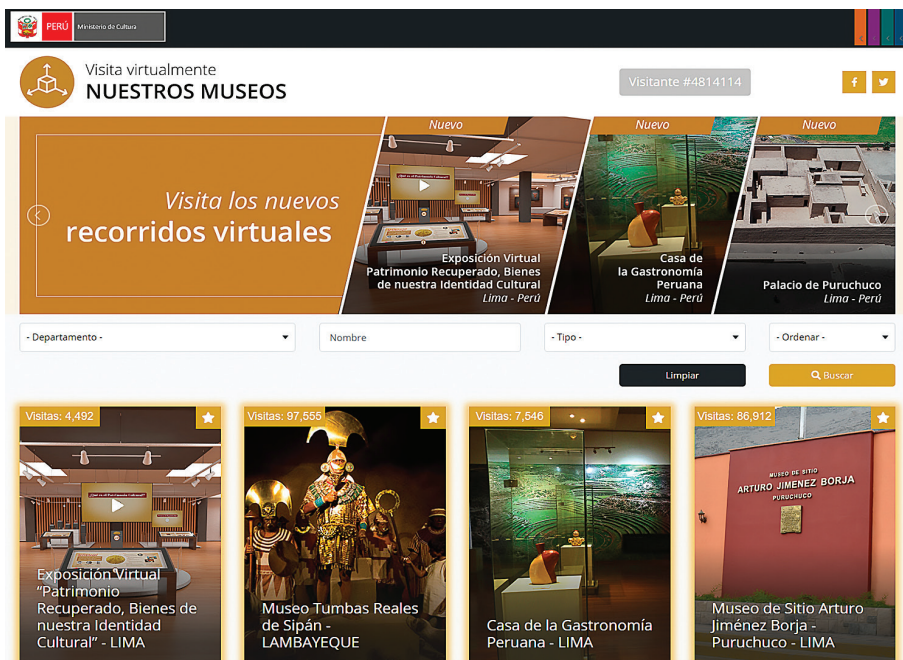

Figure 1. Screenshot of the museums page of the Ministry of Culture

In a megadiverse country like Peru (with 48 native languages, microclimates and geographic diversity), the needs are also equally complex. Therefore, the integration of interdisciplinary approaches, interconnected and intelligent digitization and multilingualism are the fundamental requirements needed to satisfy the educational, social, cultural and economic demands of museums. It means developing group strategies, oriented by systemic thinking. For this purpose, a brief tour of the main antecedents to this analysis will be given, and will then move on to the declared methodology, which includes *inputs* and *outputs*, representations of some of their dynamic relationships through archetypes and identification of types of museums whose characteristics may be suitable to begin and disseminate good practices.

2. Research aim

The proposal of this work is to reconcile Peruvian museum management with its environment, resources and community participation, exemplifying its heritage work through systemic thinking. Although it does not seek to single out a particular case, it does provide strategies that demonstrate the multiple needs that occur in a complex scenario such as the one described. For this reason, the virtual and face to face exhibition in some of the museums will be used as an example of good practice, but where it would be more suitable to begin an integral strategy based on systems thinking, with all of them involved in interdisciplinary schemes of technological innovation and economic sustainability, and oriented toward strengthening the identity and cultural practices of the community.

3. Main factors in the museum studies

This section develops the theoretical aspects of working with museums and considers the antecedents and their orientation towards cultural heritage. To this end, papers that refer to key aspects will be presented, such as the need and use of interdisciplinary studies; the impact that the use of digital technology has for the registration and projection of exhibits and historical buildings and the economic impact it can have on related industries; and the recognition of information, values, practices and customs which can be promoted and recognized, based on cultural products.

The first factor is the importance of collaborative interdisciplinarity in the added value it has for the user experience, in addition to information management for the various interrelated activities. Along these lines, the study by Kioussi et al. considers the potential of having an interconnection between the different variables and collections through the use of interfaces such as Matlab and Python [8]. Another wide-ranging case is The Network Initiative for Conservation Science (NICS), which has engaged a team of 11 institutions and 130 specialists to interconnect information, techniques, and studies among New York museums [9]. In both cases, there has been a significant investment in specialists who establish the bases, protocols and practices to be adopted in the museums. Additionally, this result has been optimized through information, practices and techniques in all the institutions that have come together for a common purpose.

A second factor is the adequate use of technological innovation to develop new types of work in the field of material heritage. Examples of these are studies that are based on the use of three-dimensional models for historic buildings, combining stratigraphy, artificial intelligence and statistics. In this way, different results can be achieved, such as estimating the building's past condition, preventing its deterioration, preserving it with adequate techniques or even digitally reconstructing historical buildings and sites that have been destroyed [10-12]. Similar methods have been used in Central America for the representation of museum pieces made before colonization [13]. Therefore, having a digital memory provides a strategic advantage for actions that can be carried out for different times: towards the past (study), in the present (preservation) and towards the future (reconstruction).

A third factor related to heritage is the economic impact it has. Although museums, ruins and historical spaces have a specific purpose, they also promote the generation of capital for themselves, the community and related industries. In addition to the entry fees to visit these spaces, there are benefits for the companies that offer food, accom-

modation and tours around the area. The work of Castillo-Manzano et al., aimed at demonstrating the economic impact generated by museums in three provinces of Spain, illustrates this point. Their research shows that culture is a greater attraction in geographical locations in the interior of the country than on the coast, which is consistent with the Latin American Andean region [14]. Furthermore, the frames of reference on aesthetics are very important. In this sense, the study by Elwazani explains the support that material samples can have in preservation programs, through criteria that justify the public's interest in the management of the exhibits [15].

A fourth factor of relevance, within the studies on cultural heritage, is the rescue, recovery and transformation of techniques, practices, customs and conceptions in the linked communities and general public. An example of this is the research by Pascoe on the analysis of motherhood based on heritage recovered from different periods in the Australian territory. In this way, it is possible to determine how this universal practice has been assumed diachronically, not only in the museum, but in the objects and cultural practices used by mothers over many generations [16]. Along the same lines, it is possible to find paths of reconciliation between oral cultures and their relationship with the contemporary world, with the purpose of revitalizing their practice. Such is the example of the use of stories as a cultural practice in the Sámi community in Indonesia, strengthened through the use of video games [17]. This alternative highlights values such as conversation, collaboration and the identification of their own practices.

The scope of a museum space dedicated to cultural heritage also responds to forms of representation that reach a greater number of people. For this reason, Jamieson and Discepoli led an investigation into the influence that exhibits can have on deaf people. In this sense, just as it is important to strengthen the relationship of the communities themselves with their own practices and values, it is also important to have useful resources for people with different kinds of sensoriality or language [18]. For example, if the community around a site museum is bilingual, but the exhibits have been cataloged only in the majority language, the opportunity to provide an inclusive message regarding the people whose ancestors are represented within the site is lost.

These four factors, associated respectively with interdisciplinary work to provide a greater and better heritage preservation service; the use of technology to combat the decline caused by time; sustainability, through the analysis of the economic impact and the attractiveness of the cultural product; and the relationship between cultural heritage and information, practices, knowledge and forms of dissemination, are core elements to understand the problems and needs existing in ACH. The goal of this systemic analysis is, therefore, to achieve these objectives through the participation of Peruvian museums.

4. Methodology

Solving the various issues mentioned around ACH is an ambitious task. It implies both research and management. Therefore, although knowledge of diagnosis and good practices is essential, the situation reflected in the Latin American territory demands a strategy that integrates components which are normally treated separately.

Systems thinking, a theory developed by authors such as Senge [19-20], Arnold and Wade [21] and Clancy [22], suggests an idoneous approach. It implies the identification of a system delimited by objectives, structure, hierarchy and dynamic relationships between the interior and exterior elements of the system itself. In this way, it will be possible to include actions that manage to combine *what is to be achieved* and *how to achieve it* in the face of a certain non-linear process.

To proceed, at least two strategies must be applied. The first of these corresponds to the representation of *inputs* and *outputs*, which are determined by the actions carried out by the actors in a system and the expected results [23-24]. To achieve this, it is possible to use the literature on the system referred to, analyze the inner dynamic relations and then also consider the specificity of the systems in which it can be used (public or private institution, available resources, hierarchy, etc.).

In this case, the *inputs* and *outputs* that appear in museum management can establish a correlation with the aforementioned antecedents. On the *input* side, it includes interdisciplinary work, the use of digital technology, the analysis of the attractiveness of the cultural product and the relationship between ACH and other products. Consequently, all of them will seek *outputs* related to the quality of the heritage preservation service, the systematization of the heritage, its economic sustainability, the strengthening of community identity, and sensorial and linguistic inclusivity (Table 1).

Table 1. Inputs and outputs for an ACH system in Peruvian museums

Processes	Dimensions
Inputs	Interdisciplinary work
	Digital technology employment
	Attractiveness of the cultural product
	Relationship between ACH and other products
Outputs	Quality of service
	Systematization of the collection
	Economic sustainability
	Strengthening of community identity
	Sensory and linguistic inclusivity

Although it is possible to strengthen the inclusion of these dimensions in relation to the characteristics of the ACH, there are some specific characteristics that correspond to museum management. One of them is the management of a multilingual registry of the available collections (Peru, for example, registers 48 native languages) [25]; it is also necessary to take advantage of the international interest in specific heritage (for example, the citadel of Machu Picchu has been recognized as one of the Seven New Wonders of the World) [26], and the positive exhibit of cultural manifestations of the local community. In this case, it is about obtaining a representation of the dynamic relationships, in order to determine the best way to achieve the above objectives for managing the ACH housed in Peruvian museums.

To reach that goal, the archetypes that appear in the theory of systems thinking will be used. The proposal involves the identification, delimitation and establishment of objectives in a complex system, such as that of the ACH in Peruvian museums. This system is not limited to determining the individual achievements of a specific museum, but to search for a new quality standard. This will be done by examining the contrast between the museums in the most important cities and the situation in the provinces. Archetypes are useful to predict the consequences of human behavior and to illustrate the effects of linear, reactive or incomplete decision making. In addition, the use of ar-

chetypes facilitates the participation of the actors involved in the system, so that individual initiatives are made viable within collective reasoning and actions [27].

To develop a transformation that implies the digital standardization of ACH collections, it is necessary to develop strategies that integrate interdisciplinary and technological work, with commercial appeal and with a connection to other cultural products. Since the reviewed literature has shown a technological level for high-quality 3D visits, the medium-term goals of other museums (even without a digital presence) should be the same. The future possibility of digitalizing the collections for intelligent searches would provide benefits for study and cultural research. Finally, the realization of this system in a multilingual format (at least Spanish, English and the predominant native languages) would allow a greater scope for cultural, social and economic benefits.

A transformation of this magnitude must rationally consider the balance between resources and achievements. Otherwise, it will face catastrophic situations, causing the collapse of the entire system. For example, in a vertical management model, with rigid budgets and a political selection of officials, as in the Peruvian public sector, the pursuit of individual goals is very frequent. Furthermore, if institutional pressures are added to this (such as legal framework, the groupings to which the departments belong, and the imitation of actions), the strategies will be more conservative than innovative [28-29].

An example of this scenario is *Drifting goals*, an archetype of systems thinking that compares high goals with an adverse scenario, which prevents the initial plan being followed. This clash between a demanding individual initiative and the situation presented offers symptoms such as changes in delivery dates, a decrease in product quality and a gradual decrease in expectations. Obviously, this process affects the actions carried out, forcing changes, corrections and mobilization of efforts to be chanelled in other directions, resulting in the wastage of the entire system (Figure 2).
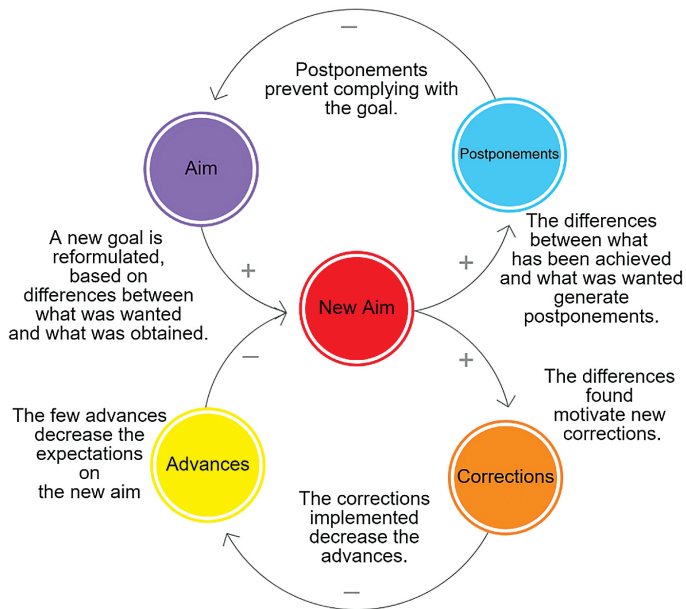

Figure 2. Representation of Drifting Goals archetype according to systems thinking theory.

Although this archetype highlights the development of a very common practice when there is no interdisciplinary team, it is also recurrent when there is an administration whose hierarchy hinders the contributions of the same. Thus, to make this innovation proposal viable, the provision of actors and agents (leaders) is essential. In so far as computing resources are associative, it is feasible to do the same with experts from various institutions (private or state) who can collaborate in different areas: heritage, management, linguistics, computing, aesthetics, etc. This brings together positive effects in different directions: it provides for the fulfillment of goals, strengthens the aesthetics of the collection, and promotes the economic sustainability of the entire system (Figure 3).
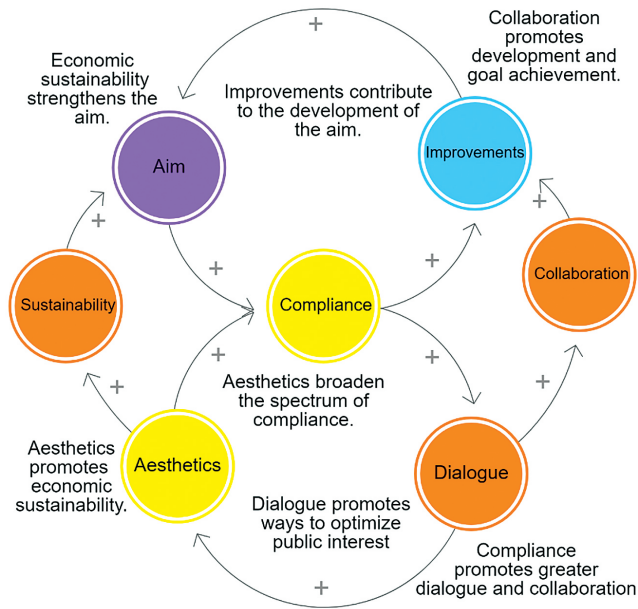

Figure 3. Representation of corrected Drifting Goals archetype according to systems thinking theory.

The correction of the *Drifting goals* archetype has several benefits. In the first place, it provides an understanding of the proposal or improvement that is wanted in a museum, considering the dynamics in the different relationships. Second, it provides an explanation tool to stabilize the individual creative act, so that it works in a more orderly manner, and allows the commitment of internal and external actors and agents to the system. Finally, this proposal also promotes a balance between the patrimonial, technological and economic dimensions, whose interests are necessary to turn ideas into consolidated objectives.

This style of work implies changes in structural management, in which investment and strategies must be given in a flexible way; regional museums can become spaces of convergence, in which tourists and residents can easily understand cultural phenomena such as the role of the museum, the native culture and the projection of the heritage into contemporary society; and the accumulated heritage can generate a wish to study it even more deeply. Of course, this is not a visible problem for museums such as Larco Herrera, Lugar de la Memoria, la Tolerancia y la Inclusión Social or el Museo de Sitio de Pachacámac. All of them have a significant amount of state investment, qualified work

teams and the possibility of coordinating digital efforts with other museums in Lima. However, there are many museums in the Andean territory, where investment is fundamentally for maintenance; the few personnel in charge have to solve multiple tasks and there is a lack of digitalization, not only of the collection, but also of the museum itself.

5. Results and discussion

Although this systemic vision proposal is not focused on a case study, it is necessary to include some characteristics that provide for its application in future projects or research on the ACH.

Most museums managed by the Peruvian state are run with few resources, limited staff, and inflexible hierarchies. During the pandemic, several of them had only one person to cover all aspects relating to administrative work and maintenance. However, as a counterpart, there are private initiatives that have achieved a potential balance between the main *outputs* required in a museum: quality of service, systematization of the collection, economic sustainability, strengthening of community identity, and sensorial and cultural inclusiveness.

For this reason, the following private museums could assimilate the type of balance that is sought in the present approach. The first example is Casa del Retablo (https://casadelretablo.mystrikingly.com/), a museum dedicated to highlighting the internationally recognized making of altarpieces in Ayacucho. This administration combines the exhibition, workshops, and the sale of pieces, with accomodation and experiential tourism. In other words, a sample of ACH has been integrated into the development of a commercial movement, transforming the museum into a dynamic and attractive space for those who visit or stay in it. In the first place, the altarpiece, as an artistic piece, is shown as one of the most representative and cultural manifestations of this region. Second, it makes convergence through learning available and accessible to people. Finally, it offers a space that strengthens the sensory and cultural experience.

A similar case is evidenced in the Casona Catalina Huanca (https://www.facebook.com/CasonaMuseoCatalinaHuanca). This cultural space, located in the city of Huancayo, also combines museum work with other activities such as lodging, food and civil events. In this case, the integration of different kinds of practices allows a complete and lively experience of integration for the visitor. For this reason, it offers a close relationship between the museum pieces and the cultural reaffirmation of the community itself. For example, a Christmas celebration includes the typical clothing of the region and the image of vicuñas (a wild relative of the llama) instead of reindeer (Figure 4).

Finally, the Museum of the Santo Domingo de Cusco Convent, administered by the Dominican order, creates a balance between the museum space, the investigation of religious art, the sale of cultural products and the promotion of artists from different branches (www.museoqorikancha.pe/). This space, which represents the integration between the Inca culture and the Spanish colony, is a strategic point historically, geographically and culturally. In addition to being located in the Inca capital, it preserves elements of two key buildings in both cultures: the indigenous temple and the Spanish church. This enclosure, at present, also seeks the management of a multilingual heritage, which includes the preservation of native languages [30]. The Museum is one of the most representative buildings in ACH. A Catholic church was built on top of an Inca temple, representing cultural and religious hegemony. However, the Dominican order has preserved numerous spaces and manifestations of both cultures, in addition, the administration offers library services and cultural events (Figure 5).

Figure 4. The Casona Catalina Huanca Museum; a Christmas scene.

Figure 5. The Museum of the Santo Domingo Convent, Cusco, Peru

The private management model allows these spaces to be self-managed through activities that comply with the presentation, protection and promotion of ACH; in addition, they also promote a more active role for the visitor and the resident. With the aid of appropriate resources, museum managers could have a clearer view of public feedback and become promoters of digital innovation processes such as the one briefly proposed above. Its successful application could then be transferred to museums with other types of administration, such as those managed by the State.

6. Conclusions

The existence of institutions designed to promote representation, preservation, dissemination and sustainability, in a complex country such as Peru, implies models of innovation that transcend linear or reactive actions. Although the existence of individual initiatives may be adopted, the collective configuration of ideas and team actions is what fosters an organic alternation between *input* and *output*. This is particularly favored by including the development of interdisciplinary work, the use of digital technology, the attractiveness of the cultural product and the relationship between ACH and other products. As a result, there is evidence of a balance between the quality of the service, the systematization of the collection, economic sustainability, the strengthening of community identity, and sensorial and linguistic inclusiveness.

Although there are many examples of good practices for museum management, the particular conditions of the Peruvian nation make a gradual and strategic model necessary. In this sense, to develop innovations that can represent, preserve, disseminate and make ACH sustainable, it is convenient to start with private entities; that is, with those whose administration is more flexible and more focused on obtaining innovative results. Once this process has been achieved in museums, such as the ones presented in this paper, it will be much more feasible to replicate an interdisciplinary, standardized work model suitable for entities managed by the State. This process requires the commitment of actors and agents who share common goals, and managements that take advantage of the success of other cases, such as the Casa del Retablo, the Casona Catalina Huanca or the Museum of the Santo Domingo Convent, all of which have been examined in this study.

References

[1]   Floccia, C., Luche, C., Lepadatu, J., Chow, J., Ratnage, P. & Plunkett, K. (2020). Translation equivalent and cross-language semantic priming in bilingual toddlers. *Journal of Memory and Language*, 112 (1).
https://doi.org/10.1016/j.jml.2019.104086

[2]   Günther, F., Petilli, M., & Morelli, M. (2020). Semantic transparency is not invisibility: A computational model of perceptually grounded conceptual combination in word processing. *Journal of Memory and Language*, 112(1). https://doi.org/10.1016/j.jml.2020.104104

[3]   UNESCO (2021). World Heritage List. http://whc.unesco.org/en/list/.

[4]   World Bank (2019). Languages at risk in Latin America and the Caribbean. https://www.worldbank.org/en/news/infographic/2019/02/22/lenguas-indigenas-legado-en-extincion

[5]   Presidencia de la República del Perú (2020). Decreto Legislativo Nº 1467. *El Peruano*. https://busquedas.elperuano.pe/normaslegales/decreto-legislativo-que-refuerza- acciones-y-establece-medida-decreto-legislativo-n-1467-1865717-1/

[6]   Marcondes, G. (2019). Perú pone a disposición recorrido virtual en 3D de 12 museos. http://www.ibermuseos.org/recursos/noticias/peru-pone-a-disposicion-recorrido-virtual-en-3d-de-12-museos/#:~:text=Facebook&text=Un%20total%20de%2012%20museos,visitavirtual.cultura.pe%2F

[7]   Ministerio de Cultura (2021). Visita los nuevos recorridos virtuales. https://visita-virtual.cultura.pe/

[8]   Kioussi, A., Karoglou, M. Protopapadakis, E., Doulamis, A., Ksinopoulou, E. Bajolas, A. & Moropoulou, A. (2021). A computationally assisted cultural heritage conservation method. *Journal of Cultural Heritage,* 48, pp. 119-128. https://doi.org/10.1016/j.culher.2020.12.001

[9]   Pozzi, F. & Basso, E. (2021). The Network Initiative for Conservation Science (NICS): Building Bridges across New York City Museums. https://www.springeropen.com/collections/nics

[10]   Mesanza-Moraza, A., García-Gómez, I & Azkarate, A. (2021). Machine Learning for the Built Heritage Archaeological Study. *Journal of Computing and Cultural Heritage, 14*(1). https://doi.org/10.1145/3422993.

[11]   Rodríguez-Miranda, A., Valle Melón, J., Korro Bañuelos, J., & Elorriaga Aguirre, G. (2021). Interactive virtual representation of the disappeared convent of El Carmen (Logroño) generated from a paper craft model. *Virtual Archaeology Review, 12*(24), pp. 77-89. doi:https://doi.org/10.4995/var.2021.14038

[12]   Zouaoui, M., Djebri, B. & Capsoni, A. (2020). From Point Cloud to HBIM to FEA, the Case of a Vernacular Architecture: Aggregate of the Kasbah of Algiers. *Journal of Computing and Cultural Heritage, 14*(1). https://doi.org/10.1145/3418039

[13]   Rangel-de Lázaro, G., Martínez-Fernández, A., Rangel-Rivero, A., & Benito-Calvo, A. (2021). Shedding light on pre-Columbian crania collections through state-of-the-art 3D scanning techniques. *Virtual Archaeology Review, 12*(24), 1-10. doi:https://doi.org/10.4995/var.2021.13742

[14]   Castillo-Manzano, J., Castro-Nuño, M., López-Valpuesta & Zarzoso, A. (2021). Assessing the tourism attractiveness of World Heritage Sites: The case of Spain. *Journal of Cultural Heritage, 48*, pp. 305-311.https://doi.org/10.1016/j.culher.2020.12.005

[15]   Elwazani, S. (2021). Purposing aesthetics in historic preservation: advocating, signifying, and interpreting aesthetics. *Virtual Archaeology Review*, 12(24), 66-76. https://doi.org/10.4995/var.2021.13812

[16]   Pascoe, C. (2021) Maternal heritage: remembering mothering and motherhood through material culture. *International Journal of Heritage Studies*, *27*(3). https://doi.org/10.1080/13527258.2021.1893792

[17]   Laiti, O., Harrer, S., Uusiautti, S. & Kultima, A. (2021) Sustaining intangible heritage through video game storytelling - the case of the Sami Game Jam. *International Journal of Heritage Studies, 27*(3), pp. 296-311. https://doi.org/10.1080/13527258.2020.1747103

[18]   Jamieson, K. & Discepoli, M. (2021). Exploring Deaf heritage futures through critical design and 'Public Things'. International Journal of Heritage Studies, 27(2), 117-133. https://doi.org/10.1080/13527258.2020.1771750

[19]   Senge, P. (2006). *La quinta disciplina en la práctica.* Granica

[20]   Senge, P. (1990). *The Fifth discipline. The Art & Practice of the Learning Organization*. New York: Currency Doubleday

[21] Arnold, R., & Wade, J. (2015). A definition of systems thinking: a systems approach. *Procedia Computer Science*, 44, pp. 669-678

[22] Clancy, T. (2018). Systems Thinking: Three System Archetypes Every Manager Should Know. *IEEE Engineering Management Review*, 46(2), pp. 32-41. https://ieeexplore.ieee.org/document/8404057

[23] Marino-Jiménez, M., Torres-Ravello, C., & Valdivia-Llerena, G. (2020). Educación y medios audiovisuales: una reflexión sistémica para su implementación, fortalecimiento y sostenibilidad. *Propósitos y Representaciones, 8*(1). http://dx.doi.org/10.20511/pyr2020.v8n1.438

[24] Moore, M.G., & Kearsley, G. (2012). *Distance education: A systems view of online learning*. Belmont, CA: Thomson/Wadsworth

[25] Ministerio de Educación (2021). *Lenguas originarias del Perú*. http://www.minedu.gob.pe/campanias/lenguas-originarias-del-peru.php.

[26] 7 New Wonders of the World (2021). Machu Picchu. https://world.new7wonders.com/ wonders/machu-picchu-1460-1470-peru/

[27] Latan, H. Chiappetta, C. Lopes, A., Fosso, S. & Shahbaz, M. (2018). Effects of environmental strategy, environmental uncertainty and top management's commitment on corporate environmental performance: the role of environmental management accounting. *Journal of Cleaner Production,* 180, 297-306. https://doi.org/10.1016/j.jclepro.2018.01.106

[28] Cady, P. (2020). Applied systems thinking: The impact of system optimization strategies on financial and quality performance in a team-based simulation. *Healthcare Management Forum*, 34(1), pp. 29-33. https://doi.org/10.1177/ 0840470420950378

[29] Wang, S., Wang, H. & Wang, J. (2018). Exploring the effects of institutional pressures on the implementation of environmental management accounting: Do top management support and perceived benefit work? *Business Strategy and the Environment, 28*, pp. 233-243. doi: 10.1002/bse.2252

[30] León-Paredes G.A., Barbosa-Santillán L.I., & Pareja-Lora A. (2020) Enabling the Latent Semantic Analysis of Large-Scale Information Retrieval Datasets by Means of Out-of-Core Heterogeneous Systems. In: Narváez F., Vallejo D., Morillo P., Proaño J. (eds) *Smart Technologies, Systems and Applications. SmartTech-IC 2019. Communications in Computer and Information Science*, vol 1154. Springer, Cham. https://doi.org/10.1007/978-3-030-46785-2_9

Biographical notes

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Summary

Andean Cultural Heritage (ACH) is determined by multiple dimensions: material, intangible and documentary, all of which contribute to constituting its particular identity and characteristics, the formation of solid relationships with other cultures and historical legacy. However, geographical, health, economic, linguistic and social inequalities not only diminish potential benefits, but also the possibilities for their representation, preservation, dissemination and sustainability. The aim of this paper is, therefore, to develop a systemic analysis of the collection and presentation of the available collections in Peruvian museums, with the purpose of establishing strategies and measures that allow ACH to be integrated into the aforementioned benefits, as well as promoting greater participation of the actors involved: institutions, local governments, central government and the citizens themselves.

Riassunto

Il patrimonio culturale andino (ACH) è costituito da molteplici dimensioni: materiale, immateriale e documentario, che contribuiscono a costituirne l'identità e le caratteristiche peculiari, la formazione di solide relazioni con altre culture e l'eredità storica. Tuttavia le disuguaglianze geografiche, sanitarie, economiche, linguistiche e sociali non solo riducono i potenziali benefici, ma anche le possibilità di rappresentazione, conservazione, diffusione e sostenibilità. Lo scopo di questo lavoro è, quindi, quello di sviluppare un'analisi sistematica del patrimonio culturale presente nei musei peruviani, con lo scopo di stabilire strategie e misure che consentano di integrare l'ACH nei suddetti benefici, oltre a promuovere maggiore partecipazione degli attori coinvolti: istituzioni, governi locali, governo centrale e cittadini stessi.