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THE ROLE OF DIGITAL TECHNOLOGY IN ARCHIVING ETHNO-TOURISTIC LANDMARKS

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SUMMARY

Ethno-touristic sites must be conserved to preserve the cultural heritage and historical identity of the people. Documenting these sites is easier with enhanced digital technology, which provides faster and new ways of documenting, conserving, and managing tourism. Digital technology such as 3D scanning, virtual reality (VR), augmented reality (AR), and photogrammetry can potentially preserve Ethno-touristic sites and promote them. By analyzing the application of these technologies, the paper highlights their potential to enhance cultural narration, improve accessibility, and ensure the sustainability of intangible and tangible heritage. The research also discusses ethical considerations and methodological approaches to digitizing ethnographic resources, with emphasis on the need for sustainable and community-based digital archiving practice. The study suggests that the integration of digital technology with Ethno-tourism can potentially enhance the visitor experience and conservation of heritage amidst a constantly evolving technological landscape.

Key words: *ethno-tourism, digital archiving, preservation of cultural heritage, 3D scanning, virtual reality, augmented reality, photogrammetry, digital technology, sustainable tourism, intangible heritage, historical documentation.*

INTRODUCTION

Preserving the elements of human civilization encompasses the socio-cultural aspects of Ethno-touristic landmarks, which are essential in the depiction of cultural diversity and richness observed throughout

centuries. Breathtaking sceneries transformed by time and human activity carry a treasure of historical tales. Immovable ethnographic property has been mentioned as the ethnographic features preserved as objects with livestock in our traditions, typically reflecting the material and social cultures of nomadic herders such as their livelihood, customs, and religious practices. Ethno-touristic landmarks are valuable in presenting the diverse history found in the social environments and the whole of their tangible and intangible cultural and spiritual properties.

The evolution of technology in preserving heritage has been discussed in line with the emphasis on the importance of the knowledge revolution within the past decade. As technology has the power to enhance compatible inspiration derived from tangible and intangible heritage, present-day circumstances show that towering structures can be found around. Additionally, cultural infrastructure and ethnographic museums have been adjoined with the aim of facilitating the transmission of basic knowledge about how traditional communities were adapted to the surrounding landscape in a non-destructive way. Since then, various measures have been taken, such as the ethno village venture, which foresees an enormous network of village museums and galleries. On another front, digital technologies have also been employed, with an emphasis on 3D reconstructions and copies of immovable cultural heritages [2]. On another front, one of the threats facing cultural heritage in that country is the natural decay of indelicate material from which it is composed, particularly wood. Subsequently, this body commenced a project to consolidate and conserve the wooden structural elements of buildings of cultural value. In light of these policies, the current situation in Bostanlar village chiefdom has thus been appraised, which was also proposed as the primary target of digital and/or sustainable preservation and representation in the explication of landscape in the six-foot region and thematic landscape analysis of Ethno-touristically compelling regions [4]. All in all, the examination calls for a clear framework concerning the role of digital tools in the preservation and representation of immovable Ethno-touristic objects and sites resting upon historical, cultural, and socio-environmental values in the context of fast-growing technology-changed modes. In so doing, the proficiency on contemporary practices and the possibilities of useful digital, and/or sustainable solutions are forecasted. With all this in mind, a collection of scenic and piloting investigations seems warranted on a global scale.

Background and Significance

Ethno-tourism can be defined as the personal encounter of travelers with local communities to understand the latter's lifestyle, customs, and beliefs. With the growth of tourism in the second half of the 20th century, cultural relics have gradually become an industry that carries the community identity and lifestyle, the so-called 'Ethno-Cultural Tourism.' The importance of ethno-cultural relics in the tourism market is also well portrayed in their preservation, conservation, and maintenance to benefit future generations [15]. Cultural heritage protection does not end at preserving them but rather its continued utilitarian access by giving interpretation to the elements or artifacts as social-interactive media. Therefore, the inverse presence of ethno-tourism will enhance the role of cultural relics in the community's life through preservation, conservation, and maintenance. In every home, shop, or human-made landmark, there lies the esoteric cultural identity that narrates many communal or individual inspiring stories. In the same kind, the ethno-landmarks hold a unique and distinctive narrative to the approaches beyond the tourists' vision. Since the advancement of digital tools, many of the visible and invisible aspects of the landscape have been revitalizing the document. The intervention of digital tools for the conservation and interpretation of tangible cultural heritage has also become a current and upcoming issue. The technology will record even the minute details of the tangible objects or environment as well as how the site or object was created, by which material, and what techniques have been employed. Besides that, digital tools can categorize, fabricate, and interpret the information or data as demanded [16]. On the one hand, digital tools have been used to replace the invasive intervention on the historical site, and on the other hand, they will have a visualization and stimulating output for the large interpretation of the heritage. Therefore, the combination of the heritage with the digital aspect is not an option but rather a necessary phase to preserve the heritage. In light of such scenarios, this paper will address the role of digital tools for the documentation, preservation, purveyance, and conservation of the ethno-landmarks.

Research Questions and Objectives

The rapid development of technology has seen communities all across the world incorporate computer-aided technologies in attempts to preserve their intangible and tangible cultural heritage. Community members, policymakers, and others are increasingly drawn to digital technology-based approaches, which raise a number of methodological concerns and scientific debates. Through a general overview and critical analysis of recent studies, insights into the potential research directions and methodologies pertaining to how digital technology can be effectively employed to archive Ethno-touristic landmarks are offered [15].

As the diversification of digital technology is moving far beyond mere digitalization and modernization, the interest in and potential of using these tools to archive Ethno-touristic landmarks are discussed [10]. Understanding this meanwhile requires the focus to be made upon the highly complex evanescent nature of these landmarks. After singling out the terms and the problematic aspects of the topic, it is argued that the portrayed insights, mainly derived from a complementary study of previous cases, existing methodologies, and field participation, concern academic scholars, policymakers, community stakeholders, and residents. (a) The intersection of the choice of the technology used for the topic and the nature and impact of the landmarks is given an in-depth overview and analysis. (b) The methodologies employed in the case studies of digital technology fostering livelihood development and cultural heritage tourism in resilient landscapes in a rural-urban complex are critically examined and discussed [6] [12]. (c) It is acknowledged in conclusion that due to the specificity of landmarks, the use of the technology for heritage that is not 'touristically attractive but rather needs to be preserved effectively ought to be further investigated. Pose the methodological framework for evaluating the impact of digital applications on the enhancement of the attractions and user engagement with the tangible heritage, rituals, and crafts performed in the landmarks [8].

ETHNO-TOURISM AND CULTURAL HERITAGE PRESERVATION

The digitization and preservation of cultural heritage are fundamental tasks for the safeguarding of the cultural DNA of societies. Particularly important is the protection of cultural identity, the roots and traces of the stories of each nation, ethnicity, century, and millennium. Cultural heritage is of great importance for future generations in carrying on their history, preserving their memory, and educating themselves about their own culture, religion, and philosophy, which determines it and positions functions in society. Historical landscape values and artifacts bear values different from what human beings create today. The Ethno-touristic visits to those cultural landmarks are increasing every day. They are also important to their guardians, the people who understood the richness and value of their lands and handed them down, and who interpret the stories and traditions produced by them to their children. The communities that rise around cultural landmarks become more conscious and powerful to obtain their rights, and discourses about those lands and resources [13]. Landmark not only preserves the identity and traditional knowledge of the community but also become the scene of many social collaborations like meetings, ceremonies, art, and culture events.

Ethno-tourism has been a widely discussed term in scientific and professional communities recently. However, it is not defined in a unique way. In the broadest sense, it can be defined as the movement of individuals to cultural and/or natural environments and locations where the interaction with local people occurs significantly [14]. The cultures of the visited communities are being incorporated into the tourism experience, the historical places are being visited on a very intense basis, individuals trying different local food and visiting the historical places trying to satisfy their curiosity grow in those places have detected recently an interest to ecologically, ethnographically or anthropological valuable places experienced a serious increase in the number of visitors [9]. This selectivity resulted in the popularization and commoditization of the term culture which is of the utmost importance in the process of cultural diversity. As in any transnational public discourse produced by a relative minority of people who have the power to decide and carry them out, cultural diversity is reduced to certain lands, cultures, and dimensions, thereby consuming the commercial culture by commodifying it and making sure that it is consumed more effectively. The local capital - the guardians of the culture and biodiversity are trying so many ways to save their lands from the mesh that has started to be woven over them.

Definition and Concepts

The recent trend of physical travel and the cabinet company that provides traveling goods made the opportunity to visit different ethnic or aboriginal places easier than ever before. Referring to this trend, some people invented a new concept, as they determined it: "ethno-tourism – the soft spot of physical travel." Ethno-tourism is a kind of travel involving learning the culture through history, language, religion, etiquette, and recreational games inherently accompanied by aboriginality or meticulous cultural connotations in the form of joining cultural events, eating aboriginal or ethnic food, and living in the traditional architecture as well. These practices make travelers reciprocally understand the multidimensional culture in depth.

Authenticity, as a subjective feeling of assessment stimulated by the objects or events experienced, is a visitor-centered consideration instead of an objective evaluation of the authenticity of the culture or history presented by the host community. Through the evaluation of authenticity, the visitor measures the originality representation of the culture and thinks about the hostile friendliness. The service provider must satisfy the demand of the visitor, who has to establish a belief-bound trust relationship with the service in terms of the service's benevolent intentions, fair treatment, and honest goodwill. The interactive action of the visitor becomes in a reciprocal relationship with the performed ethno-cultural history by the provider [3]. The harmony and sharing create a combined cultural meaning that an impressive experience is induced to boost the satisfaction or the revisit intent assessed by the visitor.

Importance of Ethno-touristic Landmarks Preservation

In the management of Ethno-touristic sights, digital technologies such as archiving, recording, and inscribing could enable local communities to preserve records for their community memory. Visiting heritage sites contributes to fostering and legitimizing a sense of community identity, as mentioned [5]. Further preserving the Ethno-touristic sights thus becomes an important topic for the tourism industry. Once identified as heritage, the sites are transformed into resources for tourism. It helps direct the interest of investors and governments and leads to a series of actions to concretize the categorization and turn them into magnet sights [9]. On the other hand, heritage tourism helps communities benefit economically from cultural resources, as evident in the blossoming of the home town of Quesha folk religious traditions of Southern Fujian. Therefore, preserved Ethno-tourism gateways not only revive cultural history but also produce economic resources in a sustainable way. Maintaining a particular heritage site thus becomes a way through which the stakeholders who define such economic interests are able to ensure its persistence through time.

As guided by, a series of interrelated reasons couples these approaches in a given place and lead to value EWQ (ethnic world quality) sites for community stakeholders. The narratives engraved into the natural and built environments that bear memory to a community align its identity and contrast its importance to the eyes of those born after the events have ended. These same narratives and senses of place similarly support patrimonialist readings of what is archivable as a historicity to be made material and re-disseminated in everyday routines [7]. One can therefore expect a significant reinforcement in labelling ethnic landmarks in transnationally aware areas that are simultaneously pivotal arrival locations for ethno-touristic flows. Far less understood and at least as important is the role that local communities play in maintaining and constructing indicators of ethnicity. Efforts at self-construction, bracketed for convenience under the broad and often misleading rubric of ethnicity, are inherently tied to changes in the mobility space of ethno-tourists, and vice versa, changes in local constructions of authentic alterity are themselves deeply bound to tourism. Here on the island of Bali in Indonesia, the 'Balinese' are known to publicly and privately voice dissatisfaction with 'tawanan' treatments, mostly perceived as aggressively over-committed buying and 'pejalan kaki' traffic in sacred settlements hosting unveiled confessional performances of ritual.

DIGITAL TECHNOLOGIES IN ARCHIVING ETHNO-TOURISTIC LANDMARKS

Preservation and archiving cultural heritage nowadays needs essential integration also using digital technologies and technological tools. The widespread use of technological tools is a first response to the need to involve the new generations to an unusual experience. Secondly, the integration of analogue

preservation systems with digital ones irrevocably changes the configuration and the importance of heritage. The concentration of technologies in the goal of safeguarding heritage changes its perception, the environment in which it is placed, the uses made by it, the show. Digital archiving of monuments and objects becomes an essential circumstance for their increasing accessibility by a large number of people.

Digital technology today is determining profound transformations in the ways of producing, disseminating and appraising the places that locally aggregate historical and cultural values. The immediate result is that digital technology makes it easier to access cultural goods and services, making them usable to a staggeringly wide public, regardless of the distance and of the physical separation of museums and cultural places [17]. Methods and tools for recording monuments, ensembles, historical centers have in fact been emerging in recent years that call into question traditional techniques as regards the distance and the invariability of the observer's gaze. New measurements are based on digital imaging, the use of gps and more and more sophisticated database systems. The use of digital photographs is becoming increasingly important and thanks to simple software today it is possible to overlap distances, surfaces, colors and, in some measure, historical and literary references, deepening spaces and places otherwise illegible [15]. The recording of an entire suggestive place, the transfer and the reproduction of these images on new mobile devices, thanks to miniaturized softwares, allow a reuse of these places according to infinite phenomenologies (history, ethnography, art history and, clearly, the cinematographic one). This augmentation of the very concept of archiving as a form of visual documentation (and historical and textual documentation that must necessarily accompany it) is likely to determine in the short term an overall digitalization of cultural heritage. But if it is true that an increasingly engaging, detailed and spectacular reproduction of the places can be implemented, it is also true that the strategic choices on how these places should be reproduced and made accessible to the public can enhance one use compared to another. The wide range of choices referable to the media used, the kind of stand-alone and/or web use, the use stand-alone and/or accompanied by educational explanations or guided itineraries will have to lead to precise critical computer conclusions, where the benefit of the balcony is more widely nameable.

Overview of Digital Archiving Technologies

Digital archiving benefits cultural heritage documentation, exhibition, education, preservation, and interpretation. This is made possible through hardware and software used for recording, analyzing, storing, retrieving, transferring, processing, presenting, and managing a large amount of information mass [17]. The digitalization process of tangible heritage evolved from 2D to 3D, reproducing material reality in a virtual form. Digitally born documentary form of intangible heritage, which includes oral traditions, performing arts, social practices, rituals and festive events, knowledge and practices, has been attempted since afterward. The most conventional digitization methods involve the usage of storage formats on electronic gadgets. File formats, software, and hardware become obsolete over time. Deterioration and decay of electronic gadgets and storage mediums result in the loss of data. The recovery of data becomes expensive and might not always be possible completely. Digital archiving does not sustain the authenticity of the archived heritage, and it is subject to manipulation. This could lead to the distortion of history [15]. Digital archiving with the community involvement of living heritage is a novel and demanding application compared to conventional cultural heritage preservation. The importance of considering the community engagement during digital archiving projects to sustain the usability, reusability, interpretability, and authenticity of the archived heritage in the long run is emphasized. Digital archiving platforms are required to provide feasible and effective interfaces for community engagement in order to share, upload, enrich, tag, comment, search, and retrieve heritage data. Technologies are needed that support the sustainable collaboration and contribution of heritage communities. The platforms must be capable of maintaining the authenticity and ownership of the contributed heritage, which requires a rights management system. The use of well-documented or standard file formats is suggested for the long-term storage of data. The file formats should support metadata embedding and the metadata structures should be developed according to the standard as well. Software tools for visualization, manipulation, analysis, and management must be kept pace with technological evolutions. Regarding this need, interdisciplinary and cross-institutional collaboration of experts is put forward to establish guidelines and protocols for digital archiving practices [18].

3D Scanning and Photogrammetry

Introducing the following section, attention is shifted to two specific digital archiving methods: 3D scanning and photogrammetry. Placed in such a way as to follow closely on both the data acquisition methodology and the approaches to 3D representation and interaction, the first method (3D scanning) is described and discussed in a *vitro* sense. Conversely, the following section is framed in a more applied sense, emphasizing the broader scope context while describing the nature of the recordings that the general public can view. Here, 3D scanning is defined as the process of capturing the shape of physical objects digitally such that accurate three-dimensional representations are produced [11]. Despite its general and widely varied use, certain methods are distinguishable from others, like laser and LIDAR scanning; the focus of which is on structured light, circular flash, and photogrammetric methods. Each of these methods, all of which are non-invasively appropriate in many cases, has the beneficial capacity of revealing tangible details, intricacies, and characteristics that traditional and non-digital technologies might otherwise miss.

Relatedly, photogrammetry is also a 3D scanning method. Though commonly paired with conventionally-created photographic datasets, photogrammetry uses these photographs to extract precise measurements and ultimately generate 3D models. And like direct methods, photogrammetric XYZ coordinates and subsequent models may take several forms, such as point clouds, geometric mesh, volumetric presentation, or others. That many of these models can then be formatted for VR/AR engagement is a natural consequence. Practically applied, the ability of 3D technologies in recording structures, landscapes, and artifacts is ready for wide inclusion these contexts (often regarding many in Ethno-touristic locales), and said recording can easily be viewed and navigated by various publics for educational and inspirational purposes. On the other hand, however, the equally wide viewing capability of these massive datasets leads to the necessity of large-scale data storage and curated viewing options, while also demanding potentially inaccessible processing tools. Even in these acknowledgements of challenges, 3D technology conveys a picture of the further transformative capabilities it brings to the stage of preservation landscape.

Virtual Reality and Augmented Reality

The development of digital technology enables innovative approaches toward preserving and archiving Ethno-touristic cultural landmarks. Virtual Reality (VR) has been emerging as a technology to digitally preserve tourism sites; it generates a 3D cyber replica modeling landscapes and environments, and immerses people in the cyber realm [15]. In the context of preserving Ethno-touristic cultural landmarks, this VR technology can be employed as powerful tools that not only preserve the sites as they are in the present and in the past, but also present traditional events having been undertaken in a cultural landmark, and the stories passed down by force of mouth. Virtual reality experiences have a learning curve; people become more familiar with the landmarks and have a better understanding of the message associated with these after repeated interactive experiences. Augmented Reality (AR) reveals a different kind of digital preservation in the realm of the real world; it superimposes or overlays real scenes with digital information beneath the camera view based upon the technology of smartphone or desktop PC [1]. The conservation of tangible and intangible culture heritage by AR technology connects the public and cultural thematically memorable spots which may sustain traditional rituals or ceremonies performed at these sites. In the wake of the development of AR technology, people who visit a particular cultural landmark can experience the hidden stories that are not completely explained in the travels by reading the inexplicit encryptions on site using in their smartphones. The function and power of AR digital preservation activates the storytelling in the form of audios, pictures and videos passing down perceived custom and history [19]. However, in terms of universal access of AR or VR digital preservation system constructed Ethno-touristics landmarks, the governments are mandated to provide these contents as an officially and politically acceptable formats.

CONCLUSION

In conclusion, stakeholders of ancient, ethnic, and culturally significant places as well as other intangible heritage should be convinced that it is both possible and necessary to accomplish any assignment via digital means for putting more information and contextualization to safeguarding a marking in the internet can raise awareness about them, remind the field more about them, and potentially safeguard them, thereby making them more sustainable. When digitally archiving Ethno-touristic landmarks with the cooperation of the concerned people, it helps increase their presence and popularity on the internet and boosts the number of researchers and visitors to see or come to them, which in turn can lead to their being safeguarded in a better way. Consequently, it is essentially suggested that more ethno-cultural noteworthy and valuable places should proactively be digitally captured, processed, and shared online.

Digital technology can be exploited to involve and engage local communities and indigenous stakeholders in the formal safeguarding and management of their cultural heritage. The sharing and dissemination of digital data and mapping ethnographic knowledge contribute to empowerment and the greater influence of concerned parties in the naming or adoption of innovative techniques for the effective long-term maintenance of a local culture is likely to be very efficient and the legitimacy of digital archiving local knowledge may soon represent a cultural element, a wide subcategory of intangible heritage trustworthy, on the helpful primacy of digital data recording and storage intended to last forever.

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