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Importance and Digital Preservation of Cultural Heritage

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ABSTRACT

Every individual's culture has a heritage past which connects them with their ancestors, it embodies their values and beliefs. This paper discusses the economic significance, importance, and meaning of cultural heritage and that how conserving cultural heritage is necessary for understanding the previous events, motivating the young ones to come, uniting people, and appreciating different cultures. Cultural heritage also creates job opportunities through tourism, patronizes local businesses, and is strategically important in the soft power diplomacy and export business. In spite of these difficulties, how digitalization is bringing new possibilities for cultural heritage protection enabling people to access and to participate in culture in a wider way. It also discusses the matter that is it possible to save this priceless heritage for posterity by tackling the environmental, social and political risks and by using information technologies and what was the methodologies to preserve them.

Keywords: Cultural Heritage, Digital Preservation,

1. INTRODUCTION

1.1 Cultural Heritage: Meaning and Importance

[2] Cultural heritage is a legacy of the artifacts and intangible(incorporeal) attributes of a culture or society inherited from their ancestors and will be inherited by future generations. It is the key component that plays an important role in reflecting the spiritual and intellectual wealth of that particular civilization, society, or nation, besides the person's identity. There are three types of cultural heritage: immovable heritage, including monuments and excavation sites, moveable heritage, such as sculptures, paintings, scriptures, artifacts, and other historic objects of culturally important, and intangible heritage, that exists as cultural practices, knowledge, art forms such as music, dance, language, and folklores which is inherited.

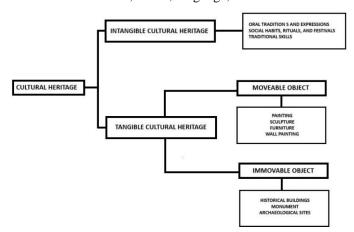


Fig1: the classification of the cultural heritage

So, it is important to preserve cultural heritage because it doesn't only provide insight into our present

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



society it also gives inspiration to future generations, making cultural heritage more and more relevant. It connects us to our roots, common identity which offers us a platform for our shared history. [6] Heritage preservation helps us to foster cultural diversity, allowing us to connect past and learn from our history. The maintenance of cultural heritage sites and traditions can become revenue-generating avenues through tourism promotion and enhancing local economic activities.

1.2 Economic importance of Cultural Heritage

Cultural heritage and traditions, including monuments, artwork and techniques handed down from generations have an economic significance at a global scale. Its economic value is more than one dimensional as it relates to development of tourism, local economies, employment, and even foreign trade. Tourism is the most important in all of them, millions of people travel every year to visit historical places, attend festivals or exhibitions, and go to see cultural sites, which becomes a tremendous income for the respective states. With the influx of such tourists, local businesses like hotels, restaurants, and curio shops thrive as well as development in ancillary services like transport and other infrastructural investments. Cultural heritage also provides an image and brand for the countries which helps in their global presence. Countries that value their ancestry often will seek to engage in cultural diplomacy utilizing their heritage in order to remove barriers to inward investments and enhance their presence and participation in international markets with their cultural products.

[4] The authors Tri Anggraini, Sadasivam, and Alpana (2015) think that a country's heritage, it elucidates its identity and cultural values promote economic progress. In this regard, if you have such potential, to revitalize the aimed regions which can provide distinct offerings in the tourism sector and supplementary activities, aimed at providing jobs, and impacting enhancing the standard of living. Because of its unique characteristics, culture is an essential aspect that helps in building the personality, identity, and image of a city. On the other hand, it is a reprisal of social and intellectual conditions existing in a certain period. Heritage is the history that we as people share and own, as well as the contemporary society, and even in the years to come. In more details, heritage pertains to the way of life, normal conduct, as well as practices of those people in charge in the said society as a whole. However, changes in technology, demography, and economic activity have affected cultural heritage. For this reason, culture and heritage are not fixed but rather elastic and can change something over time.

The Intellectual Capital of a Nation (or a Region of Nations) by author Rusu-Tanasa (2015), debated that how the identification of a country's invisible assets comprehension requires the elaboration of a set of variables. Apparently, knowledge is a fundamental resource for value creation at both the corporate level and regional level hence the countries and regions within the European Union seek to promote/use regional and national innovation policies in order to realise the Lisbon objective of making the European economy the most competitive knowledge-economy in the world.

1.2.1 The importance of Intangible Cultural Heritage in the Economy in respect of Spain and Austriafrom 2009-14 and 2014-19:

From the data of Euromonitor (2013), domestic travel and tourism were promoted by the local authorities in Spain, they proactively engaged with travel and tourism companies in their respective region. This led to the fruitful growth of themed tourism, including additional orientations toward green tourism or promoting

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



regional culture and cultural festivals. The huge investment in social media was done by regional travel and tourism promotional officers. Domestic tourism is gaining more and more importance, especially in view of the fact that its main target audience is young and successful individuals who tends to use social networks and the web on a regular basis.

The annual per capita gross income in Spain showed a decrease of 12.3% in real terms over the period between 2009 and 2014, finishing at €20,562 (US\$27,280) at the end of the latter year. This decline was the second largest (after Greece in that order) among EU member nations illustrating the extent of the adverse effects that the 2008-2009 worldwide economic meltdown had on the Spanish economy which triggered the collapse of the decade long real estate growth experienced in the country.

The real gross income per capita in Austria adhered to a growth pattern of 0.2% on average every year (totalling to 0.9% increase during the entire period) between the years 2009 and 2014, to stand at €32,168 (US\$42,679) by 2014. All these notwithstanding, the performance was low in comparison to the developed countries of the region, as even the regional economic block registered a period decreased real per capita annual gross income of 1.1% in the venous years 2009-2014.

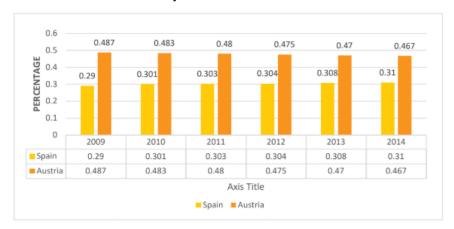


Fig2: Percentage if the Art, Culture and Heritage in total attraction between year 2009-2014

Source: [3]

[3] Tudorache Petronela consider two important factors to saw the importance of intangible cultural heritage: money spent by tourist on tourism and money spent by tourist on total attraction of tourist. In his research, he analyzed the period of 11 years:2009-2014 and 2014-2019 of five countries and value data are obtained from Euromonitor website. The objective of his research to identify the contribution of intangible cultural heritage in an economy.

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



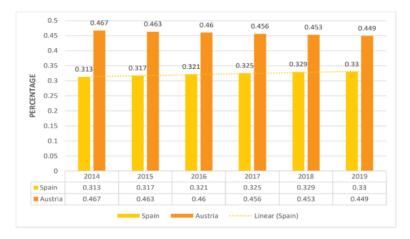


Fig3: Forecast for percentage of the Art, Culture and Heritage in total attraction between the year 2014-2019 Source: [3]

In Fig3, data showed that Austria show the slightly drop at segment art, culture and heritage and on the other side, Spain got increase in segment art, culture and heritage during same time period.

Transformational resources are of much more importance in generating emotional and sentimental loyalty towards a country in quest of domestic heritage tourism. In the second instance the local communities are involved in services provided for tourist activities such as hotels, transport, sale of traditional craft (souvenirs) and other commercial goods as well as enjoying easement created in terms of improved roads, cities, and conservation of some historical places. In the perspective of such Third World nations, it incorporates and envisions growth of tourism as a life expectancy booster where enhancement of aggregate employment levels is marginalised or less foreign currencies and taxes are required. This paper assayed the composite travel and tourism benefits mitigation adverse effects of intangible cultural heritage direct effects such as income and employment generation at the local level. Having gathered and assessed all the evidence presented, it is evident that there is a need to protect the ICH, as it has led to increased economic growth in the country and even encouraged foreign visitors to come and experience different types of cultural products, which in turn causes employment opportunities to rise.

Cultural heritage brings not only comfort and an essence of belonging but rather may also be an economic power. This implies that countries will derive economic benefits, while development will be in the right direction when measures to conserve and enrich cultural heritage are undertaken.

2. CHALLENGES IN PRESERVATION OF CULTURAL HERITAGE

We have discussed the meaning and importance of cultural heritage, now in this topic we saw the various challenges faced by practitioners, researchers and policymakers to preserve cultural heritage. [16] But it is crucial to secure and protect cultural heritage for the sake of the feeling of belonging among communities and for the future generations to know where they come from. Yet, in the modern-day world the culture faced enormous threats to its preservation due to various environmental, political, economic and social factors. Therefore, in order to meet such challenges, there is digitalization of cultural heritage as a new trend which is becoming very important in the world today.

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



Environmental factors, is one of the foremost challenge in safeguarding cultural heritage. Several historical cities and artifacts are composed of stone, timber, and metals, which are catalysts of most weather, pollution, and climate changes. Such sites are also prone to destruction from natural phenomena earthquakes, floods, and hurricanes - that can adversely affect and even destroy such sites. [1] One such catastrophe was the 2015 earthquake in Nepal which wreaked destruction in and around the Kathmandu Valley, a UNESCO World Heritage Site, stressing the impact of natural disasters on old monuments. The effects of climate change are a concern that it cannot be overlooked due to its direct impact to cultural heritage in the long run. Most heritage sites situated within coasts are endangered by the escalating sea levels. Also, the rise in temperature and humidity is likely to accelerate damage on artefacts. Ready expressions like time-tested monuments are not immune to the changing faces of weather Apart from the fact that cities, such as Venice whose beauty is unparalleled due to the presence of canals and historical buildings, are fast eroding due to flooding and harsh salt water.

Sometimes these threats are faced with mitigation measures but these measures will often find the scale and complexity of the threats beyond them. While physical restoration and protective measures like shelters and barriers are of assistance, they may not be adequate. In addition, cultural heritage preservation in such regions is frustrating due to the unavailability of threats of natural disasters.

Another interruption is posed by the direction of its **urbanization and modern development**. The moment cities are poured into and pampered with infrastructure, the heritage sites find themselves in peril of being demolished and or invaded. Most of the heritage structures, especially in developing countries, are situated in areas with high propensity for commercial development and hence, face the danger of being demolished for modern constructions. In certain aspects, however, the very practice of tourism, which is fundamental for generating the funds necessary for the conservation works, can also be interpreted as an aggressive factor vis-a-vis the sites, which are supposed to be permanently protected from tourism. It has also been seen that over tourism places, where a large number of tourists visit, physically damages sensitive edifices. With the advantages of tourism, there come dangers as well, thus tourism to historical sites has to be controlled to prevent such sites from damage.

Taking India as an example, the initiative for urbanization in the last decade has forced down the ruins of many heritage properties in place of highways, shopping centres and habitation projects. The unyielding state of urbanization envisaged by looking for more residential and commercial places has always worked against preserving historic edifices. Furthermore, none of the mobile monuments, protected by law, is spared from the surrounding contemporary buildings creating a geographical void, which perverts the very meaning of preservation.

One of the greatest difficulties confronting the protection of cultural heritage emerges as **armed political conflicts**. The majority of cultural heritage lost over the years can be attributed to the wars. In recent years, wars in countries such as Syria, Iraq, and Yemen have resulted to the saturation of historical looting and destruction, targeting even the ancient cities Heritages such as Palmyra. It is important to note that in many of the conflict zones, cultural heritage is, not only collateral damage, but intentionally destroyed targets. This can be illustrated by how attacks on cultural monuments may be employed as a means of attempting to erase the very existence of these people, their history and their struggles. This form of destruction of

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



cultural identity by political forces is why there is a call to action in all continents, seeking to protect cultural property from wars and similar conflicts.

[17] Another menace is posed by buried treasures and unwanted elements within the system of cultural conservation Management. Many unique cultural artifacts are taken up and transported illegally out of their respective countries for sale which results in loss of cultural heritage to the residents of the country. Although numerous treaties are providing for the protection of cultural property and the prevention of its illegal traffic, over the last few decades, even centuries, there has been an epidemic of organized looting of archaeological sites and museums.

3. DIGITALIZATION AND THE CULTURAL HERITAGE

[5] In the course of only a few years because of internet and mobile devices, these changes have been felt in the most profound spheres of human societies - the interactions and the ways the societies make sense of the surrounding environment - and the cultural industry is slowly but surely following suit. In numerous regions of the globe, cultural institutions and cultural workers are engaged in procuring digital technologies in order not to lag behind the faster-progressing industries. More and more often, it is the fans of culture who remain active, sitting at home, watching theatre plays or concerts, or visiting museums or other cultural places in various countries. There are no longer peoples or concepts of archivists and curators as cultural institutions offer educational and entertainment resources on the web in addition to the existing ones, and with the advent of social networks, the need to confinement to a few 'core' audiences is no more.

For artisans, creative people, and a bunch of other representatives of culture, the value chain in which they are involved has been modified resulting in changes to their everyday work. Such "cultural digitization" is not just limited to web-imposed technologies that many are used to and hence familiar with, it goes further to encompass the very fast-growing technologies such as artificial intelligence, virtual and augmented reality, and even robotics all of which have the power to shift the paradigm of cultural preservation, creation, access and consumption. The impact anticipated from the deployment of 5G, AI and Big Data is said to prompt more profound changes with 5 years than has happened with any other technology in the past 30 years.

The use of digital technologies to protect cultural heritage, especially after armed conflicts, natural calamities, and any emergencies. For instance, in Syria, UNESCO joined efforts with UNITAR-UNOSAT to assess the damage caused to the Ancient City of Aleppo based on satellite images and a 3D reconstruction of the structure developed by French start-up, Iconem. UNESCO has also embarked on similar initiatives in Yemen where it is educating heritage practitioners on 3D documenting of building, monuments and sites and in Iraq, where UNESCO is partnering with local authorities in the use of drones and photogrammetry to capture the extent of destruction in the Old City of Mosul for the "Revive the Spirit of Mosul' project. This type of knowledge can also be fundamental in rebuilding nations and peoples possessing a corpus of structures that speaks to their common history, or where for whatever reason, damage has occurred to memory without recovery being possible. Digital technology can also aid in curbing the unlawful movement of art and cultural possessions. Since such criminals have access to social media, forums, and

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



the dark web, officials can use remote imaging to find and track the sites of illegal digging, and also employ AI and 3 firearms manufacturing blockchain technology to maintain database records against theft. Data sharing is equally important and ought to be regional in nature, with countries striving to enhance it through existing technologies.

Digital technologies can also be used in the recording, communication and revitalization of intangible heritage. Since intangible cultural heritage exists only in form of actions or expressions and not matter, recording in this case gets a special meaning due to media production projects, which helps to analyze the changes of a certain element of intangible cultural heritage and, therefore, helps to develop a protection system of such element. For example, a project undertaken by a UNESCO category II centre. This particular project assists Asia-Pacific Member States in preserving and managing by digitization, old – damaged analogue audiovisual resources. However, it should be emphasized that such initiatives and practices are not easy as it concerns intangible cultural heritage as they, in particular, raise the issue of ownership with respect to the local culture. The communities' appropriation is clearly reflected in the safeguarding policies for the intangible cultural heritage abhorring the prior world view of national sovereignty over such practices. Because of this, community based engagements to recording and circulation of digital representations of local intangible practices.

Furthermore, creation, distribution and provision access to a significant share of the world's cultural heritage is gradually shifting to the digital medium. Resources that exist solely in digital forms also known as born digital resources such as e-journals, websites or online library systems present a vast storehouse of information that can help in the exchange of culture. On the other hand, these are at a higher risk of being outdated and deteriorating. The UNESCO Charter on the Preservation of Digital Heritage (2009) offers recommendations regarding which text, audio, film and images should be preserved and for how long.

3.1 India and the Digital Preservation of Cultural Heritage

The National Digital Repository for the Museums of India has been making possible the unrestrained and simplified integration of thematically organized collections and artefacts with no consideration of the physical or geospatial boundaries of the different museums. The portal presents a plethora of digital collections varying from sculptures and paintings to manuscripts, armaments, coins, and many other objects which together help in showcasing the cultural history of the country. Such virtual museums are the storehouse of knowledge which can be accessed from anywhere and anytime for the benefit of the students, teachers, researchers as well as the tourists. It is for the first time ever that perhaps in the world, 10 national museums are available online from one portal. This initiative is blessed by the Ministry of Culture, Government of India. The digital collections created using the JATAN: Virtual Museum Builder are complemented by a national digital repository which is of a national portal for public access. The Ministry of Culture has embarked on an ambitious project of collection digitization of the Museums under it with the twofold aim of employing technology in museum management and also making the exhibitions of these museums accessible to the audiences by providing the opportunity for their online display. In this regard, the Ministry has according to the need of its technical systems designed a software entitled "Jatan" with the help of C-DAC Pune and the Art Institute of Chicago for the use at its museums.

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



The National Study Report on the Digital Preservation Requirements of India by C-DAC (Katre 2010) notes that the majority of audio, video, film, and government archives in India are currently in various stages of digitization. Digitization also means preparing 'digital catalogues' which have appropriate descriptive metadata for the items created. However, many digital libraries have already come up including the Digital Library of India as well as networks of libraries such as DELNET, INFLIBNET, unlike museums and archival facilities. The Human-Centred Design and Computing Group in C-DAC, Pune is setting up a Centre of Excellence for Digital Preservation, where they will partner with National Archives of India and Indira Gandhi National Centre for Arts to facilitate preservation of government documentation and cultural digital contents.

India possesses a large basket of living and multiplicity of cultural traditions, traditional manifestation, intangible cultural heritage which comprises work of art that needs institutional encouragement and support so as to deal with the issues which are fundamental to the live and continuance of these kind of cultural heritage. Such attempts at preservation are however in practice being done in a piecemeal fashion hence the need is being elicited to establish and operationalize a centrally initiated and directed Scheme for effective work at professional levels aimed at raising interest in Intangible Cultural Heritage (ICH) and also systematically conserving, protecting and propagating it. [7] In this regards, the Ministry of Culture has come up with a Scheme called, 'Scheme for Safeguarding the Intangible Heritage and Diverse Cultural Traditions of India' to keep various institutions, groups, individuals, non-MOC institutions, NGO's, researchers and scholars who have been identified and encourage them to implement or participate in activities/projects aimed at enhancing the protection, preservation and promotion of the rich intangible cultural heritage of India. The Scheme will include all the recognized areas of ICH such as oral traditions and expressions, language of intangible cultural heritage, Performing arts, social practices, rituals and festive events, Knowledge and practices about nature and universe, traditional crafts etc.

3.2 Digitalization of Museums- Case Study

This case study reinforces, for both Italian museums and foreigners, the general consideration that there is no digital coherence strategy, which could have been helpful in organizing the content that exists and the content that is to be created in a more effective manner for everyone's resourceful use. For this reason, it was intended to assign a particular importance to the elaboration of the Digital Strategy for the National Archaeological Museum of Naples (MANN), which not only corresponds with the clear strategic aims but also can nourish the overall pathway strategy of the museum, in several ways, for the various activities that it intends to implement, in order attain the objectives that it has set itself.

The collection of digital resources of the MANN comprises, primarily, the texts, drawings, photos, and digital reconstructions of the artworks and surrounding environments pertaining to the museum, its exhibition, and its stored or returned artwork. These resources are becoming a more and more significant part of the interaction between the museum and the audience/visitor and are helping to change the very nature of use and the distance, non-physical interaction with – the institution. Such digital resources can be on offered differently, both to the inside of the museum, from one functional area to another, and in the outside world, which includes making them available to other similar and cultural institutions, to the science and museum visitors communities. The proper and full use of the MANN digital resources

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



assumes also that there will be a very good level of cooperation and coordination among the people producing and using the digital resources in the museum for its functional clarity. In broad terms, MANN is equipped with a capability to continuously enhance its range of digital information resources by producing various and abundant materials that would as much as possible optimise their usage and attract more users, including the existing audience with the museum. Digital products made by MANN, thus, are clear and user-friendly. Written text, for example, is devoid of technical jargon and presented in easily readable form divided into subsections and bulleted points for easy navigation.

Accordingly, the Museum of National Art elaborates attractive and engaging narrative genres about collections in a systemic and progressive manner that is meant to transform and elevate an apprehensive understanding of a collection to a more complex and detailed understanding of the collection. Social straightforwardness towards its audiences is intertwined with extending the span of engagement, cognizance, and even action such as interactions that its audiences engage in. MANN's digital assets are sociable and sharable, inside and outside, under all the due considerations of their specificities, across any stage that can be engaged with them. In other words, encouraging active engagement of users in the production of additional digital content with them, simply posting content on the internet, for instance in social media, is rather not a goal of a museum's outreach strategy but a catalyst for exponential growth of such content. Lastly, digital resources can be also employed with regard to fixed (PC, TV, console etc.) and mobile (smartphone, tablet, wearable etc.) devices regardless of the platform used for its delivery, be it social, site, app etc., hence facilitating transference across different delivery platforms while upholding the inherent qualities. Regarding the communication strategies emphasized through social networks, for instance, it is possible to determine for each of the available digital resources which external transmission channel is most appropriate at that given moment; is it Facebook, YouTube, or other network-based pictures, is it a sound only, within the video, or within a different format altogether.

3.3 Digital preservation of Rare Books and Manuscript- Case Study

The library at Aligarh Muslim University (AMU) houses an impressive array of old books and [10] manuscripts from different periods. Although digitization is a useful technique for preservation, there are advantages and disadvantages concerning its implementation, especially if contracted out. Books from the 18th and 19th centuries are very thin and brittle and may need a lot of care that third-party contractors may not provide. According to the library, these old manuscripts can be successfully digitized only if patience and careful attention is paid. AMU has made enormous achievements in the work of registration of its manuscript base. Six major collections have been prepared and hand lists created that include, among others, details such as the author, title, call number, script, and date of transcription. These lists are available on the internet where they will remain until a new version is introduced which will incorporate details like the size of the manuscripts. Additionally, two important collections - the Abdussalam Collection and the Jawahar Museum Collection - have been made available to the public recently. In contrast, the descriptive catalogues contain many more variables that include short articles about the author of the manuscript, his historical period, his works and contents of the particular manuscript. In addition, it contains information about whether there are reproduced copies of the manuscript elsewhere and if it has ever been in print. Such catalogues contain a provision relating to the manuscripts that are

Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



covered - they are almost like mini research articles. The library also features a physical preservation of manuscripts where the qualified team undertakes a conservation work of not less than 10,000 folios. Besides the printed and unpublished hand lists, the manuscript holdings of AMU are accessible through a card catalogue system, which is still fondlyretained for the benefit of the users who are not computer literate.

The Library is in the process of capturing the images of the manuscripts and rare books which are not in good condition. Most of the manuscript are rare and precious materials that the library decided to digitize them in-house instead of outsourcing the work. The digitized manuscripts have been provided to the scholars for on-screen reading within the premises of the Manuscript Division. This kind of work is usually done by the Experienced Library staff members. They mostly abide by the same procedure which is applied by many Libraries. Here is the process through which staff of Maulana Azad library digitalize books:

STEP1: bring out the manuscript from the stack.STEP2: check if already digitalized

STEP3: enter it into the record register with following information: Title, Call Number, Collection,

Language and Folios

STEP4: start scanning

STEP5: scanned manuscript is automatically saved in computer attached with the scanner STEP6: after scanning, a stamp/seal "DIGITIZED" and the signature of the person along with date are put on the manuscript.

STEP7: fine tuning is done and saved in different folders separately collection-wise.STEP8: final manuscript is ready.

CONCLUSION

Heritage is an asset for our future generation and it must be safeguarded and cherished. This is because heritage defines a community, and so, it should be protected from any harm. In addition to the protection of physical heritage sites, the protection of the cultural practices and values within communities, meaning the 'intangible' cultural heritage, is an equally important aspect that requires preservation. As we live in a contemporary digital-based society, one way of safeguarding such priceless legacies is by making use of digital technology. On the other hand, the intangible cultural heritage that is resistant to digital preservation makes it more difficult to avoidthat culture's fading or extinction.

This paper has examined the concept of heritage and provided a report on the preliminary analysis of problems related to intangible cultural heritage that is concerned most about its preservation. There are not too many members of the society who understand the importance of preserving the intangible cultural heritage and currently the keepers of the heritage are relying on memory as a way of keeping the information. They, though, understand that the knowledge and skills should be saved in electronic form. Hence, digital preservation is appropriate to embrace for intangible cultural heritage knowledge as a solution for preservation. Future research will identify the most effective methods for safeguarding the intangible heritage associated with the local crafts.

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Volume No. 13, Issue No. 11, November 2024 www.ijarse.com



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