



Taking Advantage of Using 3D Virtual Reality in Tourism: Case of Berati Ethnographic Museum

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Received: December 11, 2023

Revised: April 16, 2024

Accepted: April 27, 2024

Keywords:

3D VR;
Albania;
Ethnographic Museum;
Berat;
Virtual tour



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Abstract: *Berat is one of the most beautiful places in Albania, attracting thousands of tourists. The Ethnographic Museum, a former traditional house, today reassessed as a city museum represents one of the main attractions. The surrounding urban context in the proximity of the building presents some analogies with the organic structure of the historic quarters. Virtual travel is an innovative form of tourism where users can experience a place by being actively and meaningfully engaged with the history, people, culture, artefacts and environment of a specific historical period. Our goal was to create a user-friendly platform that empowers users with easy access to a vast range of cultural resources, thereby enhancing their overall experience. The proposed virtual tour is going to be a step forward in the museum sector because it will offer users a different experience based on interactivity thanks to 3D Virtual Reality.*

1. INTRODUCTION

Entering the current economic age represents a general challenge for the tourism industry, as customer expectations and demands become radically different. Tourism is no longer identified with the sale of products and services and is increasingly interested in “selling” experiences that meet consumer expectations. The goal of tourists is to more deeply understand a travel destination’s culture, people and history by connecting with it more than just by visiting it.

The future of tourism will be impacted by large-scale social, economic, political, environmental and technological changes, bringing new and often unseen challenges, threats and opportunities. These “megatrends” are slow to form, but once they have taken root, exercise a profound and lasting influence on human activities, processes and perceptions, including for tourism (OECD, 2018). Enabling technologies is expected to be one of the megatrends, likely to have significant impacts and relevance for tourism.

In recent years, due to the growing dissemination and acceptance of virtual reality technology in general and in the museum field in particular, the virtual museum has become a prominent subject (Schweibenz, 2019). The recording of three-dimensional metrical data of an asset allows one to preserve and monitor, but also to understand and explain the history and cultural heritage shared. In essence, it constitutes a digital archive of the state of an artefact, which can be used for various purposes, be remodeled, or kept safely stored (Balletti & Ballarin, 2019).

The objective of this work is the creation of Ethnographic virtual museums combining Captured Reality techniques and computer 3D modeling for the dissemination of cultural heritage and

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virtual experimentation. This is a novelty in Albania since there is no development of immersive virtual museums in the country. In this sense, one of the aims of the work is to combine the collections and resources of multiple regional institutions in just one virtual museum exhibition. Another aim of this work was the 3D reconstruction of the exhibited objects of the museum.

2. 3D VIRTUAL REALITY IN TOURISM MANAGEMENT

New technologies have changed how tourism providers create and offer tourism experiences and how tourists perceive and experience destinations. New technologies can facilitate encounters among tourists and destinations, and extend the experiential process (Marasco et al., 2018; Tussyadiah et al., 2017). One of these frequently used technologies is the so-called: 3D Virtual Reality.

The concept of Virtual Reality (VR) could be traced to the mid of 1960 when Sutherland (1965) attempted to describe VR as a window through which a user perceives the virtual world as if looked, felt and sounded real and in which the user could act realistically (Sutherland, 1965), over the last few decades, virtual reality has undergone technical evolutions including improvements in immersion and the feeling of telepresence (Loureiro et al., 2020).

Bishop and Fuchs (1992) defined VR as “real-time interactive graphics with 3D models, combined with a display technology that gives the user the immersion in the model world and direct manipulation” while Gigante (1993) described VR as “The illusion of participation in a synthetic environment rather than external observation of such an environment. Technologically, the devices used in virtual environments play an important role in the creation of successful virtual experiences (Cipresso et al., 2018).

Yung et al. (2022) propose the ‘SPEL Cube’ (The social presence-virtuality of environment-location) (SPEL) cube which integrates the dimensions of locality and social presence with the virtuality of the environment. The SPEL cube comprises eight vertices, charting virtual events across three critical dimensions. He and his colleagues highlight the contribution of the SPEL cube, drawing on event examples and existing technologies that best reflect each designated category on the continuum.

The integration of 3D virtual reality into tourism management enhances customer experiences, streamlines operations, and opens up new possibilities for marketing and engagement.

Accommodation Preview: Hotels and resorts can provide virtual tours of their rooms and facilities, giving potential guests a realistic sense of the accommodation. This can significantly contribute to the decision-making process and reduce uncertainty (McLean & Barhorst, 2022; Pestek & Sarvan, 2020).

Virtual Destination Exploration: Tourists can take virtual tours of destinations before making travel decisions. This allows them to explore key attractions, hotels, and local points of interest in a highly immersive manner, helping them make more informed decisions about their travel plans (Griffin et al., 2017).

Training and Simulation: Staff training can benefit from VR simulations. Employees can undergo virtual reality training sessions to simulate real-world scenarios, such as customer interactions, emergency procedures, or cultural sensitivity training (Lui & Goel, 2022). This approach enhances the skills and preparedness of the tourism workforce (Huang et al., 2013).

Immersive Marketing Campaigns: Tourism boards and businesses can create immersive VR experiences as part of their marketing campaigns. These experiences can transport potential tourists to the destination virtually, showcasing its unique features, activities, and cultural highlights in a more engaging way than traditional promotional materials (Guerra et al., 2015; Scholz & Smith, 2016).

Collaborative Planning: Teams involved in tourism, including travel agencies, event planners, and destination management organizations, can use VR for collaborative planning. Collaborative planning emphasizes a shift in the dominant approach to planning, from a rational scientific to a relational approach (Phi & Dredge, 2021). Virtual meetings in 3D spaces can streamline communication, decision-making, and project coordination.

Remote Attendance: VR can enable remote attendance at events, conferences, or meetings. This provides a more immersive experience for participants who cannot be physically present, allowing for increased accessibility and inclusivity (Soifer et al., 2021). Additionally, VR environments can be created for customers to provide feedback and reviews. This not only provides a more immersive platform for users to share their experiences but also offers valuable insights to tourism management for service improvement.

Cultural Preservation: According to (Guerra et al., 2015) one of the uses of this technology is linked to the exhibition of art and cultural heritage. Indeed, since the 90s, VR has been employed to create virtual replicas of museums, historical sites, and cultural attractions which aims to disseminate art online (Schweibenz, 2019). Much of this art is created especially to be shown online, but there are also photographic records and information about real-world museum collections (Carvajal et al., 2020). It is important to highlight that the first virtual museums are not virtual environments where the user can move around; they are collections of digital archives with the sole purpose of disseminating art. This not only preserves cultural experiences but also allows tourists to explore and appreciate heritage sites in a virtual environment, contributing to cultural awareness and education (Guerra et al., 2015; Lee et al., 2020).

3. BERATI CULTURAL HERITAGE AND TOURISM

3.1. Key Attractions of Berat

Located in south-central Albania, Berat bears witness to the coexistence of various religious and cultural communities down the centuries. It features a castle, locally known as the Kala, most of which was built in the 13th century, although its origins date back to the 4th century BC (Corniello & Maliquari, 2016). The citadel has many Byzantine churches, mainly from the 13th century (Kodheli, 2017), as well as several mosques built during the Ottoman era which began in 1417 (UNESCO, 2023).

Berat is often referred to as the city of a thousand windows and is considered one of the architectural treasures of Albania. It is unclear whether it really means “Thousand windows”. Indeed, the quarter butt is in a very steep place and windows seem to be one over another.

Traces from Illyrians, Greeks, Romans, Byzantines and Ottomans are still evident and well preserved in the city with castles and mansions, old churches and mosques and impressive wall paintings, icons and murals (Meksi et al., 2013). Throughout the centuries, Berat was the place where various religions and communities coexisted in peace (Dipasquale et al., 2021).

A very valuable global treasure that is affiliated with Berat is the Codex Purpureus Beratinus, a manuscript of a Gospel Book written in Ancient Greek. The Codex was inscribed on UNESCO’s Memory of the World Register in 2005 in recognition of its historical and liturgical significance. Comprising two codices, part of the “seven purple codices” written in 13 European countries between the 6th and 8th centuries, its text was published in 1887 (Meksi et al., 2013). The Codex Beratinus was once kept in St. George Church in Berat and is now preserved at the Albanian National Archives in Tirana.

Berat attractions can be summarised in the following table.

Table 1. Berat’s key cultural heritage attractions

Cultural attractions	
UNESCO World Heritage List	<i>Berat’s Historical Centre: Mangalem, Medieval Quarter (old religious monuments of Bektashi sect) Gorica (ruins of Gorica castle, Gorica bridge), Castle (as well Acropolis and Water cistern within its walls) The Codices of Berat</i>
Museums and galleries	<i>“Onufri” – Iconographic Museum, Ethnographic Museum, Art - Gallery “Edward Lear”</i>
Sacral heritage attractions	
Churches and monasteries	<i>Cathedral of Sleeping St. Mary (18th century) in the castle, Church of Saint Mary Vlaherna (13th century), Church of Saint Nicola (16th century), Church of Saints Constantine and Helen (17th century), Church of the Holy Trinity (13th – 14th century), Church of Saint Demetrius (16th – 17th century), Church of Saint Theodore (16th century), Church of St. Michael (13th century), Church of Saint Elijah (18th century), Monastery of St. Spiridon (18th century), St. Thomas’s Church (18th century)</i>
Mosques	<i>Red Mosque (15th century), King’s Mosque (15th century), Bachelor’s Mosque (19th century), Leaden Mosque (16th century), Tekke of Helveti (15th century), Tekke of Kulmak at the top of Tomorri Mountain.</i>

Source: Municipality of Berat, 2016

3.2. The UNESCO Zone

Berat was declared Museum City (Qytet Muze) in 1961, as a result of the first attempt of the Albanian Government to preserve the architectural and historic heritage in cities and villages and has been thereafter subject to the national cultural heritage regulation, recently assembled in the Law No. 27/2018 “On Cultural Heritage and Museums”. The protected area, consisting of three neighborhoods: Gorica, Mangalem and Kala (Castle) (Qiriazhi, 2022), has also been included by UNESCO in the World Heritage List as “rare example of an architectural character typical of the Ottoman period” clearly defining the limits of the historic core and the buffer zone. According to UNESCO requirements, a Management Plan has been prepared since 2008.

Furthermore, in 2014, DCM No. 767 defined a more detailed regulation “For the protection, integrated conservation and administration of Berat’s historic centre and the surrounding buffer zone”. By this regulation, the possible interventions in the core zone are limited to the restoration of the existing buildings, while in the buffer zone, new constructions are allowed with limitations in height, density and architectural style.

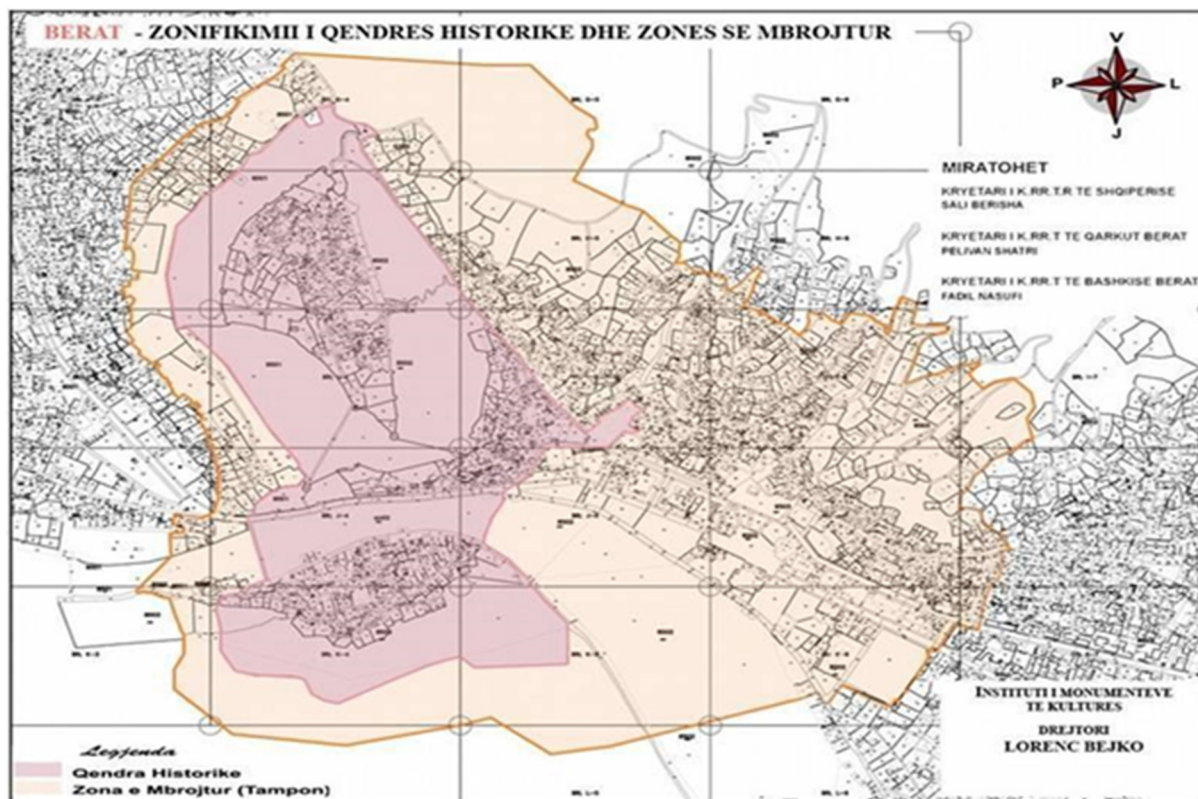


Figure 1. The UNESCO historical centre (in red) and buffer zone (yellow)

Source: Institute of Cultural Monuments, 2014

3.3. The Ethnographic Museum

The Ethnographic Museum is a former traditional house, today converted into a museum of the city, sited on Toli Bojaxhiu Street. In the proximity of the building, the surrounding urban context presents some analogies with the organic structure of the historic quarters: cobblestone streets following the topographic constraints and residential buildings showing different shapes and colours. The area still conserves the pleasant view composed of gardens, green areas and houses of medium dimensions. However, some of the buildings are abandoned and neglected and require an architectonic arrangement, especially when considering the importance of this street that constitutes access to the Castle and the important Ethnographic Museum.

The Ethnographic Museum was established in 1979 in one of the most interesting traditional buildings in the city. The structure is a principal example of Berat’s rich history and culture. The building is a two-story house built in the XVIII century with an accessible lobby attached to the side of the house. On the ground floor of the museum, it showcases a medieval bazaar of traditional crafts, including unique ornament and clothing, displaying the intricate skills of the craftsmen and the aristocratic taste of its time. The upper floor of the house, traditionally reserved for everyday family life and activities, hosts the lobby with a sitting area, a guest room

which is considered to be the most prominent feature, the kitchen and the utility room with numerous objects used for daily use.

The Ethnographic Museum with a rich collection of 1,300 objects is an important testimony to the culture, the interesting and rich traditions of the Berat area.

On the first floor, a recreated street of a medieval bazaar showcases objects that are representative of the once most developed crafts of the region, such as weaving, silver-smithing, and copper-smithing as well as clothes and decorations that indicated the aristocratic quality of life of the middle and rich classes of the city. In the open space of the porch, there is an exhibition of crafts that were practiced at home for the needs of the family. The porch is naturally connected to the well and the courtyard in which there is an exhibition of ceramic and stone-carved objects. The exhibitions in the rooms on the second floor show the former lifestyle, organization, traditions and customs of a rich family from the city in the late Medieval Ages.

The Medieval Bazaar represents a recreation of a medieval street. The Bazaar has on both sides small wooden shops with shutters in which different articles are produced, shown and sold. Some of these products are textiles woven in gold and silver, accessories for women and men in silver and bronze, costumes made of felt, shoes, copperware, etc. (National Museum Center of Berat, n.d.).

On the porch of the building, there is an exhibition of some of the crafts that were practiced at home for domestic needs. Some of the objects shown are the olive oil production complex, the wooden oil press, the potter's wheel, the forge, the alembic for raki production, etc.

The main part of the house, entirely constructed of wood (Hajnaj, 2016) is the chardak, which is open and with no ceiling. The extending and wide shelters facilitated the doing of housework and craft-work during the warm months of the year. The corner is a special and favored element of the chardak covered with kilims and high pile rugs. The wide space and the possibility to stay and contemplate made the chardak the place that was most used by the family members and where family ceremonies were organized also.

The most important room in the traditional houses, well-known for its decorative and architectural values remained the guest room. The room was used for welcoming guests and organizing family ceremonies. Distinct in the room are the elegant fireplace, the built-in cupboards, the decorated ceiling, the mahfil attached to the closet, the divans with high pile rugs, and the tableware (National Museum Center of Berat, n.d.).

4. METHODOLOGY

The following section introduces an approach for creating an interactive museum experience with 3D digital assets in conjunction with gaming systems. The study was conducted in three phases.

The initial stage encompassed the processes of conceptualization, data acquisition, and story development. During this phase, a comprehensive range of data pertaining to the Ethnographic Museum is gathered. This includes engaging in discussions with museologists, procuring textual information on the diverse artifacts housed within the museum's premises, obtaining architectural drawings of the museum, and conducting a survey of all objects using the

photogrammetric method. The objective of this survey is to obtain precise and detailed models and textures, which will be utilized to recreate the objects as a three-dimensional digital representation. An additional method that was taken into consideration for conducting a comprehensive survey and achieving three-dimensional reconstruction was the utilization of a laser scanner. This device served the purpose of converting genuine object photographs into digital format or directly digitizing them. However, when taking into account the dimensions and shape of the artifacts, it can be argued that photogrammetry offers greater flexibility. Consequently, a substantial quantity of photographs was obtained, serving the dual purpose of constructing the three-dimensional model and generating realistic textures for the objects. The culmination of this phase is the consolidation of historical and cultural content inside a designated space at the Berat Ethnographic Museum. This entails the creation of an archive that encompasses relevant materials for each artifact, as well as the development of a conceptual framework for facilitating interactive experiences within a virtual environment. The aforementioned concept pertains to the narrative or storytelling aspect inside the virtual museum context. The system encompasses several types of content, such as written information, images, 3D models (with or without texture), and video animations of 3D models. Additionally, it provides enhanced interactivity by allowing users to edit and reposition objects.

The subsequent stage involved the automated generation of three-dimensional models for intricate objects, commencing from dense point clouds derived from image-based methodologies. The utilization of highly intricate pictures captured from various angles facilitated the creation of exceptionally precise three-dimensional models. The majority of the objects under consideration exhibited intricate detailing and exhibited non-geometric forms. Therefore, a determination was made regarding the extent of information pertaining to the geometric characteristics of the objects, with other levels of precision being conveyed through the representation of texture. The model was generated utilizing 3D Studio Max, a widely-used software for three-dimensional modelling that operates with mesh structures. The software can effectively handle the modelling of data gathered during the survey phase. It demonstrates adaptability in both the modelling process and the importing/exporting of various file formats. The software can provide dynamic visuals and videos, and it can be seamlessly connected with external plug-ins that enhance the user's architectural navigation experience, such as VIZ 3D.

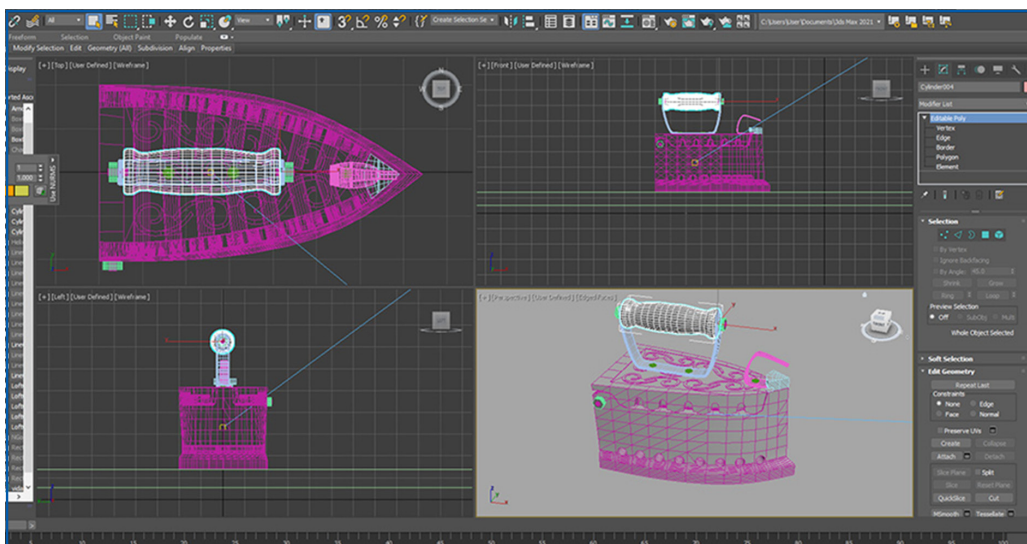


Figure 2. 3D Old Iron created in 3d studio max

Source: Own research

The texturing process was conducted using software, specifically Photoshop. This involved manipulating the images to conform to the 3D models, ensuring that the textures accurately represented the desired shape, colors, and lighting. The last phase of the procedure involves the integration of various textures with three-dimensional models, the assembly of all objects within three-dimensional rooms, and the establishment of ambient lighting.

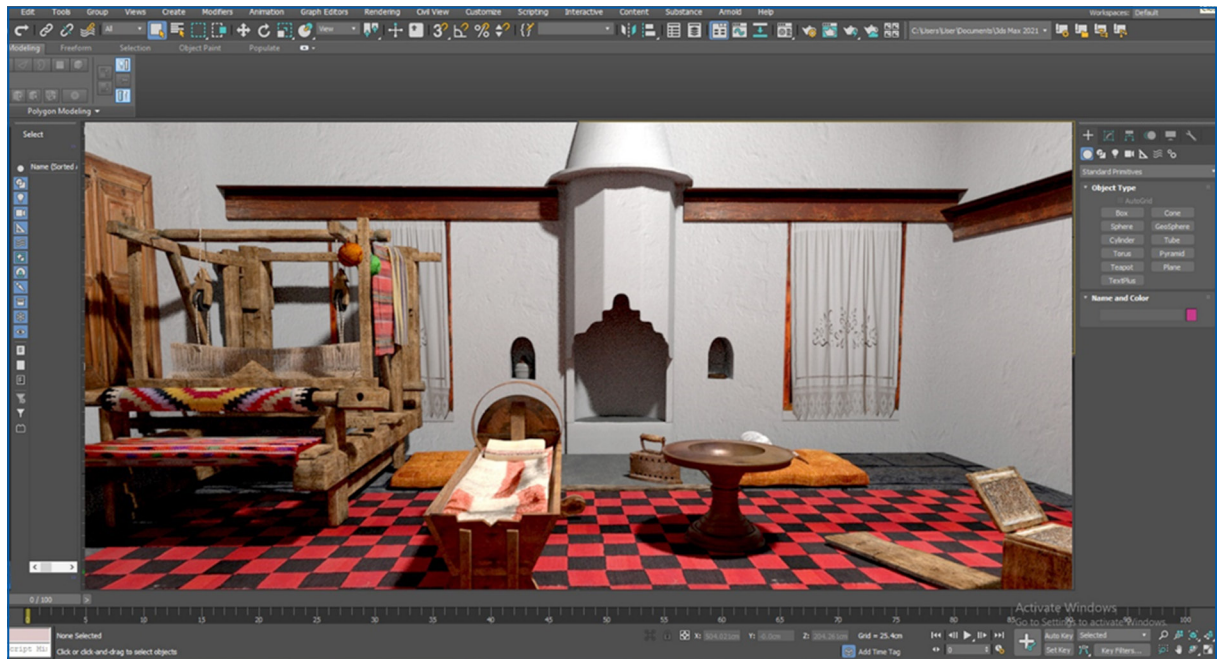


Figure 3. 3D VR Scene with textures and materials in 3d studio max.

Source: Own research

The third stage involves the creation of interactive applications in virtual reality (VR) with the gaming engine Unreal Engine. In this study, we present a rudimentary first-person application that allows the prospective user to navigate and interact with a virtual room environment, thereby facilitating an immersive encounter with the spatial layout and many objects within. One possible approach to achieve this objective is by utilizing VIZ3D, a plugin designed for 3D Studio MAX that facilitates the creation of architectural 3D presentations. Alternatively, Unreal Engine can also be employed as a tool for architecture presentations. Understanding the proper utilization of standard assets, which may be freely obtained from platforms such as 3D Studio Max or Unreal Engine, is of paramount importance. Failure to do so may necessitate the involvement of computer science experts to provide programming or coding assistance for interaction purposes. In the context of Unreal Engine, it is necessary to acquire visual scripts at no cost or construct many scripts specifically designed for calculating the distance between objects of interest. These scripts are essential for the creation of pop-up notifications that provide information about artifacts using various media formats like as images, text, audio, video, and animations. This approach aligns with the concept of storytelling inside the Unreal Engine framework. The employed technique involved the utilization of image tracking and planar surface detection to generate a three-dimensional model entity and store historical data.

Ultimately, the file will be converted into a game format, enabling its execution on any machine operating on the Windows operating system. Additionally, the project will provide a high-end configuration version suitable for utilization with Head Mounted Displays within the Museum room or for mobile displays.



Figure 4. An illustrative photo of the interface of the sandbox tool mentioned above by modifying the materials of our model

Source: Own research

5. STORYTELLING INTERACTIVE FOR THE BERAT VIRTUAL MUSEUM

The purpose of this virtual tour is to provide an academic description of the lifestyle of a family during the Ottoman period. The trip will focus on a visit to a typical Ottoman house constructed in the year 1700, which was formerly owned by the governor and is now known as the Berat Ethnographic Museum. The residence is replete with relics and things originating from the specified historical era, encompassing a diverse range of goods such as furniture, ornamental components, and utilitarian objects. Despite the house possessing multiple rooms, exceeding a count of eight, the decision was made in this initial undertaking to incorporate solely two rooms, namely the living room and the working room, within the virtual tour. The living room, commonly known as the men's room, is equipped with a fireplace and an assortment of items including a brazier for heating, a teapot, a dining table with cutlery, weapons, kitchen utensils, and decorative objects. In contrast, the working room, designated for women engaged in textile work, contains textile machines, cribs, various tools associated with this craft, as well as textiles and a traditional dress displayed on a mannequin.



Figure 5. View of Ethnographic Museum digitally-enabled room. 3D models as well as model with texture applied

Source: Own research

The process involves the reconstruction of both rooms and the connecting corridor in a three-dimensional (3D) format, encompassing all interior elements such as furnishings, daily goods, and craft instruments. The aforementioned artifacts have been systematically categorized into categories according to their functional utilization within the various rooms, so facilitating the presentation of a comprehensive historical account of a prototypical Ottoman residence in Albania. The aforementioned procedure was executed with the involvement of both the curator and the director of the museum.

The narrative's portrayal is non-linear, confined to a single layer that encompasses elements such as introduction, navigation, and interactivity. Interactive storytelling is predicated upon two primary tiers of interactivity, namely experience and transformation.

In the present situation, we employed a first-person navigation modality concerning experience. The user can go between rooms by utilizing arrow keys to traverse the corridor, while also employing the mouse pad to see their surroundings. The process of navigating through the house can be enhanced by the inclusion of a voice-over, which serves the purpose of narrating the story of the house and providing explanations about each area. The software does not possess a guiding function for the user; instead, the user has the freedom to navigate and explore space and objects in a self-determined sequence. Individuals are provided with the choice to engage in gazing, observe their surroundings within the virtual space encompassing a 360-degree field of view, or navigate by simulating walking at eye level, or alternatively, soar around the environment from a birds' eye perspective. In order to examine and analyze objects inside the virtual environment, individuals have the ability to manipulate the camera through the utilization of either the arrow keys on their keyboard or the mouse. This manipulation includes the ability to rotate, zoom, and pan the camera.

The perspective from which the scene is observed is that of the user, commonly referred to as a first-person perspective (FPP) in the context of video games. The virtual reality (VR) experience can be exhibited inside the confines of a museum setting, employing VR headsets, or alternatively, it can be accessed in personal environments via desktop or mobile applications.

The subsequent stage of interactivity pertains to the concept of change. Transformational interactivity encompasses a range of user actions inside the environment, such as selecting, moving, opening, holding, closing, rotating, and placing items. At this juncture, we determine how the information is disseminated to the user. The system facilitates user engagement through the use of a Head-Mounted Display (HMD) and a controller equipped with a pointer or buttons. These input devices enable users to navigate the interface, make selections, and interact with the virtual environment.

During the process of navigation, users can halt their movement in order to examine specific artifacts by selecting them with a simple click. Individuals have the option to select from a range of options that are displayed through multimedia pop-ups. These alternatives include the ability to listen to an audio explanation of the object, read a textual or visual description of it, observe its movement, or examine a 3D model of the thing either as geometry or with texturing. Upon selecting an item, a panel consisting of multiple possibilities is presented to the user, so enabling them to peruse and make a choice from a diverse range of content categories and pertinent information. When a user engages with a three-dimensional model of an object of interest, they can manipulate the model by rotating it and adjusting the magnification level, so enabling them to observe the object from multiple perspectives. Users can manipulate and interact

with virtual objects by employing their virtual hands, enabling them to move, rotate, and even physically touch these items. When employing a gyroscope controller, the user may have a tactile sensation akin to physically grasping the object. Furthermore, customers are provided with the choice to conduct measurements on either the room or a diverse range of things.

6. FUTURE RESEARCH DIRECTIONS

Developing virtual reality technologies are becoming instrumental in addressing the many challenges of modern tourism. Virtual tours in marketing and management proved to be a promising tool to organize and manage the tourism industry. Marketing experts widely use virtual tours to attract potential clients to particular tourist destinations and tours. Visualization helps to promote destinations' positive image that leads to their economic development due to the growing number of visitors. With the development of the digital economy, the research of virtual reality is becoming more practice-oriented, in both the improvement of IT technologies and industrial digital platforms and, most importantly, the study of its consequences for a person immersed in the virtual world. It gives scientists new questions to answer. Further design of virtual worlds and travel organizations must be based on the anthropological approach. It is necessary to take into account the impact of virtual tourism on a real person, to form the culture of virtual tourism, which is going to help to make the tourism industry a people-oriented digital economy sector.

The current applied research illustrates the steps involved in building a virtual museum, from gathering data (such as historical analysis and fieldwork) to developing a 3D model to providing a VR experience that enhances the degree of detail available about the interior design and artifacts. Based on these studies, we developed a workflow for creating interactive virtual reality experiences in Unreal Engine and a template for VR displays that can be utilized throughout the entire museum as well as in other museums in Albania.

In the future, experts in programming and coding can be involved to create further interactivity. The user can engage with smartphones through objects, experiencing their dimensions and materiality as well as their functionality. The intention is to inspire individuals to investigate and comprehend every item, something that is impossible during a real museum visit since the guide can only provide information on a limited number of items.

7. CONCLUSION

Digitization of the tourism industry as well as the use of virtual tours have their positive and negative impacts on the sustainable development of tourism. VR environment may be used to promote a destination or site, to augment the reality at the destination, or eventually to immerse the consumers in a new and completely challenging tourism experience (Guttentag, 2010). VR allows consumers to have immersive and stimulating different forms of reality, using stereoscopic head-mounted displays (HDM) (Williams & Hobson, 1995). The development of virtual tours for the attractions of the city of Berat, with tourist attractions of international importance (UNESCO site), brings positive impacts such as:

- Reduction of environmental effects caused by the physical presence of tourists, such as reduction of carbon emissions, damage to the environment from over-tourism, etc.;
- Increasing access (accessibility) for people with limited abilities, who do not have the opportunity to physically visit the city of Berat but through the virtual tour can get also “inside” the ethnographic museum;

- Increasing the promotion and marketing of tourist potential in the city of Berat, specifically in the Ethnographic Museum;
- Promotion of the preservation of Berat's ethnographic cultural heritage;
- Increasing the education and awareness of young people about the ethnographic values of the city of Berat. The potential and touristic values of the world heritage, which are located in the city of Berat, are part of the education of the new generations. Teachers might use it as an effective tool for demonstrating the architectural, ethnographic and cultural values of the city of Berat.

Although virtual reality (VR) is more effective in tourism marketing compared to traditional methods, questions have been raised about whether VR could be a double-edged sword (Li & Chen, 2019) i.e. whether VR has any negative effect on tourism marketing. Thus, despite the positive effects, the return of attractions to the virtual tour also carries some risks, such as:

The risk of decreasing the number of tourists who physically visit the city of Berat, which is accompanied by economic effects for tourist businesses;

The loss of originality in cases of the organization of authentic events in the city of Berat, where virtual tourists cannot be part of them, affects the fading of the originality of the authentic culture of the local population.

Summing up, the results of introducing virtual reality in tourism, especially in protecting and promoting cultural heritage, are considerable and can enable it to become a digital economy sector.

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