

THE NEW PILGRIMAGE ROUTE ON MOUNT PARNASSOS: PROBLEMS AND SOLUTIONS

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Abstract

The east side of Mount Parnassos, which is located in the region of Central Greece, hosts four ancient cave-hermitages that are all called "Holy Jerusalem" and are connected to the nearest urban centres through difficult uphill paths. This paper seeks to explore the development of a new pilgrimage route with the aim of integrating these four paths. However, following the in situ recording of the paths and the hermitages, various problems have been identified, which hamper the achievement of this goal. The main problems concern: inaccessibility of the hermitages by people with mobility problems; lack of free space inside and around the cave-hermitages, which causes overcrowding; the related difficulty in providing a suitable tour in the limited spaces available; protection of the hermitages and the surrounding environment; direct and comprehensive provision of services and information to the pilgrims; and, finally, achievement of sustainable development in the region. To overcome these problems, relevant tried and tested solutions were sought in the international literature that relate to the application of new technologies such as GIS, VR, AR, MR, MAR and LBS. The use of these applications can offer pilgrims of the suggested route high quality services while also contributing to the achievement of sustainable development in the area.

Keywords: *Cultural Heritage, Religious Tourism, Pilgrimage Route, Sustainable Development.*

1. Introduction

Greece is a part of Europe with unique religious, historical, cultural and artistic value, which is to a certain extent attributed to religious monuments such as monasteries, churches and chapels that are numerous and scattered throughout Greece (Kilipiris & Dermetzopoulos, 2016). Every year, thousands of Greek and foreign pilgrims from all over the world visit these places. It is estimated that domestic pilgrims of religious places are more than 300,000 per

year (Redžić, 2019), which implies that the economic dimension of religious tourism provides great opportunities for sustainable development at regional and local level (Irimias & Michalko, 2013). Religious tourism forms an important part of tourism in Greece and plays a prominent role in the protection of local culture, its traditions as well as the protection of the natural and man-made environment (Balomenou & Poulaki, 2015). Although a mixture of social and economic classes participate in religious tourism and pilgrimages, the majority are senior citizens (Skoultos & Vagionis, 2015).

It is undeniable that religious reasons constitute the main driving force for visiting such places; however, aesthetic reasons, that is appreciation of the architectural, cultural and artistic value of the monuments, constitute another factor for the visit (Vuconic, 2002). In the process of seeking the Divine Presence and immersion in the pilgrimage, and also of enhancing their aesthetic and learning experiences, pilgrims commonly establish strong ties with the inhabitants and the natural environment of the pilgrimage area (Terzidou et al., 2018) due to a sense of excitement, enjoyment, socialisation and well-being such experiences offer them (Fernandes et al., 2017a). It is often the case that pilgrimage or cultural routes also provide a source of inspiration and implementation of innovative actions for the surrounding communities. Moreover, they contribute to the creation of small businesses and the development of products and services related to cultural and religious tourism (Georgitsoyanni. et al., 2012 ; Paiva et al., 2019).

The main aim of this paper is to explore the way in which the suggested pilgrimage route, which connects four isolated and remote hermitages, could be developed. Other objectives concern: a) accessibility of these routes by people with mobility problems; b) avoidance of over-concentration of pilgrims in the hermitages; c) protection of hermitages and their natural environment; and d) creation of new modern infrastructure, which will improve the level of service offered to pilgrims.

2. Literature review

The life of a Christian follows a path towards Christ, and it is likened to the path of a pilgrim. For this reason, pilgrimages constitute an important part of a Christian's life (Svoboda et al., 2013). Today, it is important that religious/pilgrimage tourism should maintain its primary role, which is the place of the search for the Divine. To this end, the most essential condition is respect for the sanctity as well as peace and quiet that a place of pilgrimage exudes, together with understanding and respecting each other's idiosyncrasies, protecting the architecture and buildings of the pilgrimage and also the surrounding natural environment. However, the unbridled commercialisation of many pilgrimages has led to a saturation of people in limited spaces resulting in a degradation not only of monuments and their surroundings, but also of the offered tours and the hospitality services provided to pilgrims (Lucarno, 2016). Today, in the era of the COVID-19 pandemic and the associated economic crisis, development studies of pilgrimage tourism have turned to sustainable development, which is based on ethics, respect for each individual, equality, inclusive access and social and environmental responsibility and justice (López & González, 2020). Thus, when creating, or even improving a pilgrimage route, it is necessary to take into account a safe and comfortable passage for all pilgrims including people with disabilities, elderly people, children and so on (D'Angeli & Scidurlo, 2019). Nevertheless, it has been demonstrated that access to historical monuments is particularly difficult not only for ordinary visitors but also for elderly and disabled visitors. Furthermore, this problem is exacerbated when the altitude difference between the monument and its point of access by visitors is quite large (Naniopoulos et al., 2015a). The United Nations and also the European and National Directives state that it is a fundamental right of people with reduced mobility, pregnant women, young children, the

elderly and also people with disabilities to have equal access and to be able to visit places of interest (Ioannidis & Vozikis, 2007a; Naniopoulos et al., 2015b) such as archeological sites or cultural heritage sites (temples, monasteries, etc.). However, their long existence together with a natural wear and tear render such places particularly delicate while equally delicate is their surrounding natural environment.

Consequently, the saturation of a large number of people together with their uncoordinated presence in usually confined spaces pose significant risks of degradation of both the monuments and their surrounding environment as well as increasing risks of accidents (Aziz & Siang, 2014a; Ioannidis & Vozikis, 2007b). Creating the conditions that will prevent a massive influx of pilgrims to these places constitutes a key factor in avoiding these problems (López & González, 2020b). At present, due to the COVID-19 pandemic and the urgent need to avoid overcrowding, we are faced with a novel situation that demands changes in the design and creation of infrastructure. New technologies can play an instrumental role in satisfying the conditions for pilgrims' safe, comfortable and pleasant stay (Mroz, 2021; Bourret & Boustany, 2018a).

3. The research field

3.1. Methodology

The research methodology of this study focused on two areas:

a) The field research of the geographical area of the route, that is between the southeastern side of Parnassos and the northeastern side of Mount Elikonas. This included locating, observing, recording and photographing all the reference points and their surroundings. It also included crossing and timing both the paths that lead to the reference points and the route that connects them. In addition, the infrastructure, deficiencies, problems and necessary improvements were recorded. This primary research was conducted during the period 10/9/2019 - 15/12/2019 and led to the identification of problems that hamper the creation of the route.

b) The literature review, mainly from recent international literature, in order to find tried and tested solutions to the problems that were identified in the field research.

3.2. The creation of the new route

As previously stated, the aim of this study was to connect to a single pilgrimage route a monastery and four ancient hermitages that share the name "Holy Jerusalem" and constitute local pilgrimages. These hermitages are located in small caves or on steep cliffs on Mount Parnassos and offer a spectacular view of the surrounding area, which is of outstanding natural beauty. Mount Parnassos is protected by the "Natura 2000" network while this area has many religious, archaeological, historical and architectural monuments, the most important of which is the Oracle of Delphi (Parnassos National Park, 2020). It is worth noting that the distance that separates these monuments from the urban centers is relatively small.

The suggested route will consist of two parts. The first part, which will connect the urban centres associated with the hermitages, is 78 km long and is accessible to all. The second part of the route consists of four independent ancient paths, which connect the hermitages with the nearest urban centres. These are crossed only on foot and have large altitude differences. This part can only be crossed by pilgrims who are in good health, in good physical condition and love nature. On the contrary, people with reduced mobility, people with disabilities, the elderly, pregnant women or young children will most likely encounter difficulties crossing it.

The objectives for the creation of this new route are: a) providing access to a wide range of pilgrims, including pilgrims with movement problems; b) preventing over-concentration of pilgrims; c) protecting both the hermitages and their surrounding natural environment; and d) creating a new modern infrastructure, which will improve the level of service to the pilgrims. The responsibility for achieving these goals, that is for the creation, development and promotion of the new route, can be taken over by a specific body that can be supervised by the state and coordinate all the other involved bodies.

3.2. The location of the pilgrimage route

The route extends along two mountains, that is Parnassos and Elikonas, with a length (including the trails) of 85 Km. In Parnassos, there are three hermitages that are close to the villages of Amfiklia, Ano Tithorea and Davlia while the fourth hermitage is located on Mount Elikonas near the town of Livadia. The three villages and the town have railway stations, and are a short distance from the Athens - Livadia - Lamia road while Livadia is located 142 Km from Athens.

4. The pilgrimage route

4.1 The parts of the pilgrimage route

4.1.1. The first part

This part starts from the Monastery of the Nativity of the Virgin "Dadiou" and follows the course Amfikleia - Ano Tithorea - Monastery of the Assumption of the Virgin / Agia Marina - Monastery of the Assumption of the Virgin "St. Jerusalem" - Davlia- Chaeronia; it ends in the town of Livadia.

It is worth noting that the Monastery of the Assumption of the Virgin "St. Jerusalem" was founded in 1091 AD and its icons date back to the 16th and 17th centuries (Figure 1).



Figure 1, Holy Monastery of the Assumption of the Virgin Mary "St. Jerusalem" in Davlia. (Photo source: Personal archive after field research)

4.1.2. *The second part - the hermitages*

This part consists of the four independent paths that connect the hermitages to the nearest urban centres. More specifically, these paths are:

The path from the hermitage of "Holy Jerusalem" to Amfiklia, which can be crossed in approximately 2h 15min. (Figure 2).



Figure 2, Hermitage of "Holy Jerusalem" in Amfiklia. (Photo source: Personal archive from field survey)

The hermitage dates back to the 12th century, and is located in a ravine at an altitude of 850m (Municipality of Amfiklias – Elatias, 2011; onparnassos.gr 2016-2019).

The path from the hermitage of "Holy Jerusalem" to Upper Tithorea is very steep and can be crossed in approximately 1h 30min. (Figure 3),



Figure 3, The hermitage of "Holy Jerusalem" Ano Tithorea. (Photo source: Personal archive from field survey)

The path from the hermitage of Panagia "Faneromeni" to the Monastery of the Assumption of the Virgin "St. Jerusalem", which can be crossed in approximately 10min. The Monastery of the Assumption of the Virgin "Saint Jerusalem" was built at a later stage by the hermits who had originally settled in this hermitage. It is noteworthy that the Monastery features beautiful Byzantine icons that date back to the 17th century (Figure 4) (Metropolitan of Thebes and Livadia Ieronimos. 2005).



Figure 4, The hermitage of Panagia Faneromeni in the Monastery "Holy Jerusalem" in Davlia. (Photo source: Personal archive from field survey)

The path from the hermitage "Holy Jerusalem" to Livadia, which consists of 700 steps and can be crossed in approximately 1h 15min (Figure 5)

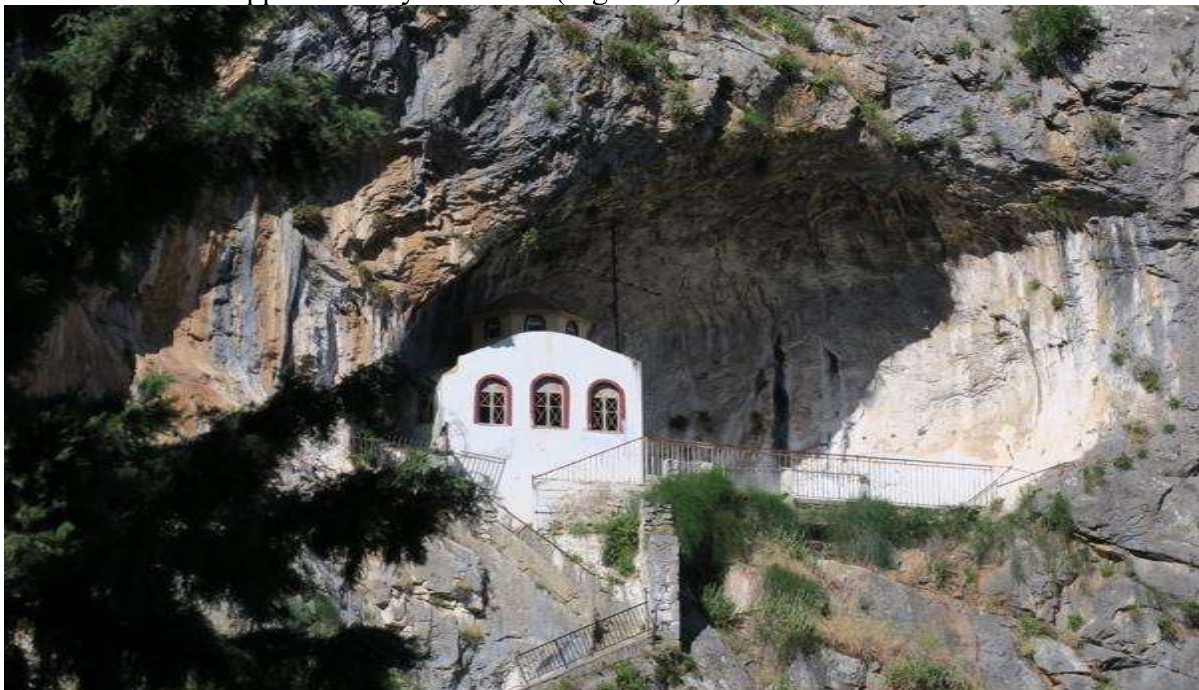


Figure 5, The hermitage of "Holy Jerusalem" to Livadia. (Photo source: Personal archive from field survey)

5. Problems and their solutions

5.1. The problems

Following the field research, four significant problems were identified, which hamper the creation of the new route. These are: a) inaccessibility of the second leg of the path by all pilgrims; b) narrowness of space inside and around the hermitages, which creates touring and safety issues; c) protection of the hermitages and their natural environment; d) creation of new modern infrastructure, which will improve the level of service to the pilgrims.

5.2 Technology as a solution to complicated problems

New technologies are used in a variety of scientific fields, but also in the field of tourism. These are: Global Positioning System (GPS), Geographic Information System (GIS), Location Based Services (LBS) as well as Virtual Reality (VR), Augmented Reality (AR), Mixed Reality (MR) and Mobile Augmented Reality (MAR). It is likely that the vast majority of pilgrims will be able to use applications relating to these technologies on their smartphones and tablets (Ramos et al., 2018a; Boboc et al., 2019a; Palos-Sanchez et al., 2017a; Sheehy et al. 2019). As a result, such technologies can be employed in the creation of the suggested path in order to overcome the problems mentioned above.

More specifically, a possible solution to the problems outlined in (a) and (c) above are virtual pilgrimages, which are based on VR technology. Using such applications, pilgrims are able to experience inner peace and awe (Mansour, 2019a; Golan and Martini, 2018) and an overall feeling of worship of a place, which under normal conditions they would not be able to visit (Dwivedi and Narula, 2020a). Virtual pilgrimages are created in order to: a) serve pilgrims with health problems, mobility difficulties, financial issues, as well as pilgrims who are interested in using new technologies or simply use them for educational purposes; and b) for the protection of sanctuaries and their surrounding natural environment (Mansour, 2019 b; Dwivedi & Narula, 2020b; Ali & Frew, 2014a). Thus, in India, a virtual pilgrimage was established at the Kumbha Mela as a solution for those who wished but were unable to attend the pilgrimage (Dwivedi & Narula, 2020c).

Furthermore, GPS and GIS technologies can provide possible solutions to problem (b) above through the programme ArcGIS 10.2 and the method of inverse distance weighing (IDW). This was employed in the archeological site of Petra, in South Jordan, to avoid over-concentration of people (Makhadmenh et al., 2020). Moreover, a possible solution to problem (b) above relating to the field of touring can be achieved through AR and MAR technologies. More specifically, Virtual Signage can contribute to the protection of monuments and their surrounding environment (Cranmer et al., 2016a). Thus, in the city of Melaka in Indonesia, visitors can use their smartphones to locate and be guided through and informed about areas of interest relating to entertainment, sports, health and so on (Aziz & Siang, 2014a). Through MAR, the 3D animated models of people, buildings and objects can render the presentation of the tour thorough and realistic. Therefore, today's viewers can relate their experiences to events of the past. For instance, today's pilgrims to the Canterbury Cathedral are able to experience the 15th century pilgrimage to St. Thomas Beckett thanks to digital modelling of four specific parts of the Temple (Hampson, 2017).

Finally, the use of GIS and LBS technologies can provide possible solutions to problem (d) above with regard to improving the level of service, communication, information and hospitality of pilgrims. Therefore, through advertisements displayed in mobile marketing, pilgrims can browse through and purchase goods or services offered by professionals in the

area (Palos-Sanchez et al., 2018b; Egedy & Ságvári, 2021). They may also receive information on navigation, hazard avoidance, emergencies and so on (Ali & Frew, 2014b). Finally, by creating pilgrimage communities on social networks (Facebook, etc.) pilgrims can exchange ideas, experiences and useful information (Bourret & Boustany, 2018).

6. The contribution of the pilgrimage route to sustainable development of the area

A large number of studies on sustainable development of tourism focus on the use of new technologies and technological innovations. It is thus necessary for relevant bodies involved in pilgrimage tourism to adopt new technologies that can improve or even enhance tourists' educational and recreational experience (Cranmer et al., 2016b). High season for tourism in the area discussed in this study is in winter, and it is supported by tourists who ski at the ski resort of Parnassos; on the contrary, summer tourism is not especially developed. This route could bridge this gap since the most important seasons for a safe visit of its reference points are from the end of spring until almost the end of autumn. More importantly, during this period, a large number of religious, cultural, artistic and sports events take place in this area (Theodoropoulou & Karagianni, 2013). This could, therefore, contribute to overcoming or alleviating the problem of seasonality of tourism in the region (Marton et al., 2019).

In order to make use of the specific hermitages, new infrastructure must be designed and constructed in the entire route, that is in both parts, as well as in the three villages and the city of Livadia. This mainly concerns the creation of: a) safe passage for pilgrims along the entire length of the route; b) resting points, landscape observation areas, placement of direction signs and so on; and c) adequate technical infrastructure for strong and stable GPS and internet signal, so that the pilgrims can obtain the information they need, such as navigation, weather forecast, dangerous weather warnings, emergencies and information on self-defense, but also information on default locations along the route, transformations of the terrain or the path (e.g., after a geological event) as well as information on local history, geology and fauna and flora in the area (Statuto et al., 2014a). Finally, inside and around the hermitages, pilgrims (either in groups or individually) may be offered virtual tours using VR, AR or MAR applications on their smartphones (Zaušková et al., 2016a; Boboc et al., 2019c).

Along the first leg of the route, which is accessible to all, a special section may be created, which could be crossed on foot, by bicycle or even by horse. This section could start from the Monastery of Dadiou, then pass through Amfiklia - Ano Tithorea - Monastery of Panagia / Agia Marina - Monastery "Agia Jerusalem" and end in Davlia, with a length of 47 km. Throughout this route, the infrastructure can be adapted to the natural environment of the area while useful information can be provided through GIS, VR, AR or even MAR applications, thus creating a "Greenway" (Zaušková et al., 2016b; Boboc et al., 2019d).

Furthermore, pilgrims who may not be able to access the hermitages due to weakness or health problems, will be able to access them digitally through a virtual pilgrimage (Tussyadiah et al., 2018), which may be installed in a special room in one of the villages of the route or in the city of Livadia. In this room / digital museum, the pilgrims will be able to experience a virtual pilgrimage of the second part of the route and be guided to all its reference points (Aziz & Siang, 2014b; Ali & Frew, 2014c). Furthermore, different types of information could also be provided, such as on the history of the Parnassos area, local traditions, festivals and cultural events, but also information on the history of adjacent urban centres, their local products and tasting. Finally, the infrastructure of the villages and the city of Livadia, such as Public Services, Emergency Services, hotels, hostels, restaurants, cafes and archeological sites could be integrated in the GIS, VR, AR and LBS systems. In this way, pilgrims can receive useful information concerning navigation, tour and a more comfortable stay in the villages of Amfikleia, Ano Tithorea, Davlia and the city of Livadia, thus turning

them into "smart villages" (Čorejová et al., 2021; Szalai et al. 2021; Ramos et al., 2018b). This information could be accessed through the creation of a Web-GIS of the specific route ensuring that the operation of the databases and Web-GIS is simple and easy to use by non-specialists (Statuto et al., 2014b).

Advertising constitutes another important factor in promoting this route, which may be achieved both by creating a dedicated website, but also through specialised websites for this type of tourism, such as mountaineering / hiking clubs, the Parishes throughout Greece, radio stations of the Metropolises, local radio and television stations or through social media, such as Facebook, YouTube, Twitter or Pinterest (Ftefko et al., 2014a ; Çavuş, 2016). In addition to advertising, the route's website can also provide information on the following: a) the history of the Parnassos area, the Monastery of "Jerusalem", the hermitages of "Holy Jerusalem" and the city or adjacent villages; b) local traditions, festivals, cultural events and religious festivals; c) videos of the reference points and the way they are approached from various geographical points; d) means of transport needed to access the route as well as ticket cost; e) religious, historical, archeological architecture, buildings and monuments of the area (Hernandez et al., 2006); f) local products, hostels, restaurants, tasting, sports venues (Stefko et al., 2015b) and g) other hiking routes in Parnassos that begin from the specific area (Stefko et al., 2015c). This information will undoubtedly enable pilgrims to be much better prepared for their journey while the knowledge that during their hike they will be able to receive information through GIS and AR is likely to make them feel safer (Fernandes et al., 2017b).

In order to design, construct and maintain the necessary infrastructure, a special body must be established for the suggested pilgrimage route, which will be responsible for its management, maintenance, renewal and financial utilisation while also overseeing the promotion of advertising. Moreover, this body will need to manage the database and Web-GIS as well as expenses, revenue and profits. It can be supervised by the state and can also be responsible for coordinating the relevant public bodies (Ministry of Culture, Region, Municipalities), the two Metropolises, which religiously belong to the hermitages and the Monastery, the reference points, the National Management Body of Parnassos National Park, the responsible Chambers of Commerce and Industry of the two prefectures, the cooperatives in the area, private professionals, farmers and cattle breeders in the area. It will also be responsible for educating local people and raising awareness on environmental issues, protection of cultural heritage and so on (Mitoula et al., 2013). An important role for this purpose can also be played by local volunteer groups, local associations and the faithful in the local parishes (Balestrieri & Congiu, 2017). Thus, the coordinated actions of all these bodies, appropriate advertising of the route and the aforementioned upgraded services offered are likely to lead to the development of local productivity. This can result in expansion of local economy during the summer months and the preservation of the traditions and the cultural heritage of the area (Theodoropoulou et al., 2008).

7. Conclusions

The development of a pilgrimage route today is based on sustainability. Factors that influence this type of development are safety, appropriate guided tours, practices of hospitality towards pilgrims and protection of monuments of the pilgrimage and the natural environment. Unfortunately, today, pilgrimages are under a lot of pressure due to the arrival of many pilgrims, which may result in loss of religious devotion and stillness, reduced quality of the guided tour and the services offered as well as damage to buildings and a general degradation of the surrounding area.

Failure to address these issues by local communities and pilgrimage managers removes the potential for sustainable development. However, the use of new technologies, such as GIS,

VR, AR, MR, MAR and LBS, can provide an effective solution to these problems. The international literature on this subject states that the use of applications of new technologies by pilgrims has had positive results, some of which concern the following areas: a) reduction in overcrowding, noise, risks for accidents, wear and tear of the monuments, but also in environmental burden in the area; b) the opportunity given to pilgrims to communicate with each other through social media on both the route and issues of interest to them; c) a variety of advertising channels for products and services in the area; d) enhanced interaction between professionals and pilgrims; and e) accessibility to everyone, which constitutes the main advantage of these applications, since the information offered is provided via mobile telephony.

Thus, appropriate development and use of new technologies can resolve a number of problems enabling pilgrims with health problems to worship the hermitages through a virtual pilgrimage. Pilgrims who arrive at the hermitages may be guided through a digital guided tour while also being able to cross the part of the track that includes Greenway features. Moreover, through mobile marketing they will be able to be informed and to communicate with other pilgrims through the dedicated website of the suggested pilgrimage route. Therefore, the use of GIS, VR, AR, MR, MAR and LBS technologies can offer high quality services to pilgrims, which could result in an enhancement of the religious, spiritual and cultural experience gained. Finally, both the hermitages and the natural wealth of the East side of Parnassos can be protected, resulting in sustainable development in the area.

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