

Gjirokastra rebirth through distributed retirement houses

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Abstract

Gjirokastra is facing a shrinking process that is hitting both population and economy, collapsing both and increasing the average age of inhabitants. Despite it being a UNESCO site and a well-known touristic target, the crisis seems to be irreversible. It is necessary to revert this process to avoid the final collapse of a city which has a lot of resources and a long-lasting history. The paper investigates how to support the renaissance of Gjirokastra economy and society, fueling both through the redesign of its urban plan to support its transformation into a “City of Health”, which means widening the main economy pillar from tourism to health services. The idea is to create a local market for medical and sanitary services that will cause the creation of new industries and companies, attract new younger and professionally prepared people, bring equity and start a virtuous loop that will fuel itself for a long time. The local sanitary and medical market will be initially powered by attracting older people, following the example of other countries, especially basing on the Portugal experience. To move towards the “City of Health” target, the paper proposes to integrate currently isolated areas of the city; create a synergy between surrounding lands, the city and the industrial zone; develop a medical excellence area and attract people from abroad. The research question is: how to modify the urban plan of the city in order to attract elder people from abroad for their retirement and to create the opportunity of a local medical and sanitary industry development? The methodology used in this research has been based on an on-site survey, a literature review to analyse similar experiences, a SWOT analysis of the opportunities offered by current urban tissue and plan. Sketches and maps have then been developed to focus the strategy. Technology solutions have been also considered to solve issues emerged in the analysis. Final conclusions evidence that Gjirokastra has good opportunities and a main strategic plan that can be followed to trigger the rebirth of the city, but some important urban plan changes have to be made.

Introduction

Gjirokastra is currently known for its UNESCO label as World Heritage Site and most of its economy has been based on tourism but it seems to not work. Gjirokastra is a shrinking city that needs a rebirth or will die.

According to some studies (Bickert and Göler 2012), tourism is not enough because tourists visit the city in one day and do not stay for the night and do not remain in the city for many days.

After analysing the current state of Gjirokastra economy, a strategy to let the

city to rebirth has been defined, preserving existing economic positive factors, and creating an economic flywheel attracting money from abroad and people from both Albania and outside it. The main idea behind this strategy is to focus on health, building in Gjirokastra a set of healthcare resources that can take advantage of existing accommodation infrastructure and touristic resources. To develop such an idea, the strategy focuses on residential kinds of healthcare like geriatrics and rehabilitation services. The healthcare services should be designed to attract

foreign people, generating a new kind of medical tourism. Albania is currently the target of medical tourism, mostly for dental and aesthetic treatments, and this kind of tourism generates an economic positive flow because it requires the tourist to stay for many days in Albania (Nexhipi 2018).

Gjirokastra has an ideal configuration to support the development of "distributed retirement house" for foreign people. The main idea is to attract retired people to spend their retirement living in Gjirokastra, like already happens, for example, in the "sunset migration" for Portugal (King, Warnes and Williams 2000). The climate, the lower cost of life and the natural and cultural resources can be attractive for average-class retired people from middle and northern Europe. But to attract them is necessary to create good retirement services.

The most important of these services should be:

- Health services for older people (geriatrics and rehabilitation)
- Cultural opportunities
- Free time management

In this paper, a specific subset of them is analysed considering the "distributed retirement house" (DRH) concept.

The Distributed Retirement House

A DRH is a retirement house where old people live, autonomously, in residential units of one or more persons (De Florio 2007) (alone, couple, or familiar group). These persons can be monitored or helped by caregivers but maintain a good

degree of freedom and autonomy. The retired people will have, depending on the accommodation type, the possibility to grow their own vegetable garden, or flower garden and to sell these products on the local market. They can also be involved in various hobbies (handcrafts, cultural, ...) and sell the result of these hobbies too. Retired people can practise hobbies they already know or locally learned, generating a cultural exchange that can be useful both to them and to local citizens (Rothuizen 2011).

The idea, then, is to create a retirement house that is made by many distinct residential units where people can have tailor-made assistance according to their needs but maintaining a good autonomy (Kaluža 2010). Each person will have a specific retirement context, that they can adapt to their needs and the technological infrastructure will conform to such a personalised view (González et al. 2009). Each person will be guided to identify this new situation as "home" (Ewart 2013), being inserted in a community of pairs, rich in stimuli, and with a lot of cultural and entertainment opportunities.

The DRH is an exceptionally good opportunity for Gjirokastra because it will use the existing touristic services in a different way, increasing their level of usage. But it will also be a part of an economic flywheel to invert the Gjirokastra economic trend and attract younger people from Albania, as workers, lowering the average age. In fact, basing on the Portugal (and similar) experience (King 2000) it has been clear that the presence

of elder people with expenditure capability over the average of the local population will create an induced economy that will also recall people (nurses, doctors, fitness trainers, ...) from other places to increase local workforce.

Methodology

The methodology followed in this paper has been based on an on-site survey, a literature review to analyse similar experiences, a SWOT analysis of the opportunities offered by current urban tissue and plan. Sketches and maps have then been developed to focus the strategy. Technology solutions have been also considered to solve issues emerged in the analysis.

The methodology has been implemented by the following steps:

- Analyse urban structure of Gjirokastra and of its neighbouring, through an on-site survey and maps analysis
- Analyse, through literature, other experiences about how older people can be organised in such distributed accommodation
- Identify resources available in Gjirokastra and develop a SWOT analysis
- Define a possible location of the DRH, using results of previous methodological steps
- Identify communication needs (both informative and transport), defining main flows according to above defined DRH and other resources location
- Identify suitable technologies (available and forthcoming) to fill communication needs, reviewing similar cases on literature and analysing their impact to the urban planning
- Define change proposals to the Urban Plan to fit above items, through maps and sketches.

Current urban context

Gjirokastra has in the Castle its focal point from which its development has started. The Castle is surrounded by ancient districts which are the original settlements and their evolution in time, following city growth.

The city is placed on the north-eastern slope of the mountain and develops in NE direction, sliding along four main "fingers" of the mountain, separated by small valleys. The fingers have, approximately, the same orientation of the Castle. This city core is enclosed into two wide areas that embrace it. One, on the north, is a recent residential, business and service area, grown along the main axis of Boulevard 18 Shtatori. The second one, on the south, is the industrial area.

On the eastern side of the side, parallel to the national road SH4, there is a river which flows from north-west to south-east and, crossing it, a wide plain which is suitable for agriculture. Proceeding in NE direction there is another set of mountains which runs parallel to the one from which the City starts. The recently developed zones suffer from a compromised and chaotic urban development. The residential zone fades from the initial settlements, which are mainly composed by Ottoman historical buildings, into a modern town, with progressive change from historical urban tissue into a recent and, often, compromised one. The industrial zone is mainly composed of old warehouses which are abandoned.

In the area along Boulevard 18 Shtatori, there are important resources like the University, the Hospital and most of the shops and services that, except for tourism, generate current economic flows in Gjirokastra. The transport system is not really developed and is mainly based on private, fossil fuels based, transport. The university has a good potential but the hospital, despite of the design made by Kristo Skender Luarasi, has been built at the end of the '40-th and needs further development to really support its role of Regional Hospital, being too small for the inhabitants of the region and due to the concurrence of Ioannina (Greece) Hospital, better organised and with a higher service quality.

Last, but not least, is the Gjirokastra morphology that, in the areas suitable to host the DRH, is made of steep slopes, narrow streets and abandoned or ruined buildings.

Due to these premises, creating a distributed retirement house in Gjirokastra requires a rethinking of the city urban plan and the introduction of some modern technologies to enable elderly to live in the city.

The research has evidenced a possible set of changes that should be done in the city urban plan. First, because the old Gjirokastra is distributed on various hills, these must be connected, possibly further developing already existing connections, to allow communications in a form suitable for older people. These already sketched connections are parallel to the main national road that runs along the river. The Hospital should be moved on the border of the industrial zone, to allow it to grow and create an induced production site for healthcare products and services, also leveraging the already existing green area. The University should be expanded to support the expected increase in course

The Strategy

- 1 Excellence in Healthcare Services
Improving Hospital and University.
Excel in **Geriatrics** and **Rehabilitation**
- 2 Attract Retired People from abroad
Culture, healthcare, climate, wonderful site,
better purchasing power
- 3 Connect areas
Create people flows, **synergy** with tourism,
agriculture and industry, **smart mobility**
- 4 Develop farming and industry
Diversify, **integrate**, make **modern**



Rethink

Fig. 1 / Infographics about the Main Strategy. Source / infographics made by the author



Fig. 2 / Local artisan working stone. Source / image of the author 2019

differentiation and demand.

Before describing, in detail, how the urban plan should be rearranged, it is important to take a look at the technological requirements of smart mobility and remote healthcare because they will play an important role in redefining the city plan.

Technology role

The big challenges that have to be won are: how to enable old people to freely move in a city with steep slopes and badly paved (because they are ancient pathways) roads and how to let people feel safe when they live alone in a foreign country. Urban planning can rearrange

public space to satisfy these needs.

Other issues like the integration of elders into the new, foreign context, overcoming cultural and language barriers will not be considered because they will not impact urban planning.

The Role of Smart Mobility

To allow people to move in a city like Gjirokastra, allowing them to even exit from city premises and go in the neighbourhoods where there are a lot of natural resources, an autonomous mobility system has been considered.

The requirements for this autonomous mobility system are:

- Electric vehicles which move at slow

speed (max 40 km/h)

- Vehicles can be managed either in car sharing or as property
- When vehicles are shared, they can be called and, autonomously, they will reach the caller. After serving him or her, they will proceed with the next call or move to a recharge station, solving the issue of lack of parking.
- Vehicles must be able to climb low height steps and move in the narrow and steep paths available in the city
- Vehicles must be easily accessible by elderly
- Vehicles should have (Eck et al. 2012), mainly, 1 or 2 seats, and can have simple driving commands if the driver wants to drive them

This technology is not yet fully mature, but it can be ready in a few years, especially because the speed of the vehicle is low.

Smart Healthcare and Intelligent House

Elder people, to be attracted to a foreign country, need to perceive that they are safe, and this can be achieved through remote healthcare monitoring devices.

Each person will wear a wearable device (Melander Wikman 2008) and will be monitored by it and by some other devices (intelligent cameras, movement detection, ...) that can alert medical personnel (or even call an ambulance) if something is going wrong with the person's health.

The wearable device should be able to connect with the smart mobility vehicles and will continue to monitor a person's health and alert, if needed, even during transportation. Also, remote healthcare devices should be installed in every residential unit to allow physicians to remotely diagnose the person's health through tele-medicine services. This technology is already available, and it is expected that it will be improved in dimensions, communication distance and battery duration in the next few years. The residential units where people live should have smart capabilities to help elderly (Al-Shaqi et al. 2016) in their daily life. This kind of technology is already mature (Shreelakshmi et al. 2019) and is quickly improving, year by year.

Technology influence on public space

The above depicted technologies will influence the urban planning as described below:

- the original paths and streets can be preserved or restored without impacting the livability for elders, leading to a preservation of the original city morphology about communication roads
- the medical emergency or daily

transport of elders for therapies can be made reliable even in a case of distributed and not continuously guarded like in the concept of DRH, allowing the creation of small residential nucleus, exploiting existing Ottoman buildings, with no need to create huge centralised accommodation structures for elders, preserving or restoring existing urban tissue

- new paths can be easily created to connect zones of the city not yet connected but using a connection which is in harmony with the rest of the city.

The Urban Plan revision

Main planning strategy

The urban plan revision proposal is based on the need to reuse what exists (and possibly improve it), to develop what is missing but needed and to facilitate economic growth, aiming to support the "City of Health" creation.

In the main "City of Health" strategy (not described in this paper, which has been narrowed to the DRH development) four pillars have been identified to create a positive expansion of the economy. These pillars are health services, agriculture development, industrial zone, and knowledge development. Despite the main strategy is not detailed in this paper, its most important aspects of the Urban Plan revision are, anyway, described here, to give a global vision of the Gjirokastra future urban plan, in a wider perspective than focusing only on the DRH development, rather enclosing the DRH creation into a bigger picture. This especially applies to the agriculture and agroindustry development and for some aspects of the development of the industrial zone.

Agriculture and agroindustry

To develop agriculture, an adequate riverbank must be built and the plain in front of the city should be filled with greenhouses, most of them to produce vegetables that will be processed in the industrial zone.

The plain must be organised to have easy access to the plots to allow easy transfer of produced goods into the industrial zone, through bridges and through the national road.

Hospital development

The existing public hospital must be moved from its current position to a new one near the industrial zone because this will facilitate the growth of a local industry of sanitary services. This relocation of the hospital will also allow its empowerment, making it bigger and, maintaining a good

ratio among buildings vs. existing green, will also be more restful and comfortable for patients. The relocation of the hospital will require the empowerment of already existing streets to allow both traffic with the main road (the local national road) and with the industrial zone. To support transition towards clinical excellence, the hospital must be easily connected with more equipped hospitals in the neighbouring (even in Greece, because, today, Ioannina, for example, is already a destination for Albanian people that need medical assistance) that can support the local hospital both with remote medicine and with advanced services that can be provided in site. For this reason, good surface connections are needed. These connections must be defined based on an inter-regional and international plan that goes far over the scope of this paper.

Knowledge development

To develop knowledge in medical and sanitary fields, it is necessary to review the University giving more space to the Medicine faculty, moving it into the new hospital buildings.

But not only the Medicine faculty must be improved: engineering and professional schools must also be created.

Engineering, mainly electronic engineering, robotics, computer science, mechanical and materials engineering, will be the technological partner of Medicine to allow the local industry to take off and develop sanitary and medical services (as considered in the main strategy, not described here).

Professional schools (for nurses, sanitary operators, ...) are also particularly important to make Gjirokastra the "City of Health". All these schools (engineering and professional) can be hosted in the spaces where today the hospital is.

To develop knowledge (but also to support smart mobility and remote medicine) a modern telecommunication infrastructure (Samala 2019) must be built (Gui et al. 2007). In addition, the local medical and sanitary services (and their information systems) should be able to digitally communicate through standard protocols (Saman et al. 2012) with similar resources in the region and in the neighbouring countries.

The Industrial Zone

Following the strategy to further enhance the agriculture in the lands near Gjirokastra, the development of an industry for food processing (that is over the scope of this paper but complies with the bigger

strategic picture) should be considered in the urban plan change. To really support the "City of Health", an industry of sanitary and medical services and entertainment services should be developed. To support this, urban planning must be adapted and focused on these kinds of industries.

The industrial zone is composed of two main areas, one along the national road and another on the south of the city. The new urban plan should allocate entertainment (and fitness) industry on the side of the national road and the food processing and sanitary and medical services on the back of the national road area or in the southern city zone. The entertainment industry should be partitioned among two main ranges: adult people and elderly people. This partitioning is important because the same space can be used during the day by elderly and in the evening by young people or under-seventy people. This dual-use entertainment zone is one of the keys to attract people from abroad.

Old City renaissance and the Green Zebra
To support the Distributed Retirement House concept, it is necessary to restore existing buildings in the ancient city area, developing from them the accommodations required by elderly. But the Old City can be considered as a set of settlements distributed along some neighbouring hills. These settlements are poorly connected through narrow and often even not paved roads, with wild green everywhere.

To develop the idea of a distributed retirement house, it is necessary to create good connections between these hills, improving the roads, controlling the green, creating, on the city map, something like a black and green zebra crossing, where "black" are the settlements and "green" are the areas between them. This group of settlements and green areas has been named by the author as "The Green Zebra" because, looking it on the map, is composed by the "city fingers" cited above, separated by wild green areas (the valleys between them), generating a pattern that is similar to a zebra-crossing with black and green stripes, as shown in the picture below.

The Current Urban Plan

The current Urban Plan is structured, moving from North to South, with the new town, a modern and chaotic set of mostly residential buildings, where are located both the Hospital and the University, the Green Zebra, with the most of the ancient buildings, in various states of restoring, and the Industrial Zone to the far South



Fig. 3 / Modern wearable device. Source / Photo by Daniel Korpai on Unsplash



Fig. 4 / Audi off-road autonomous electric vehicle concept car. Source / The Wheel Network, 2019



Fig. 5 / "The Green Zebra" surrounded by a red border

(and a portion on a strip parallel to the National Road and the river axis).

The Revised Urban Plan

The revised Urban Plan sees the movement of the Hospital into the southern green area of the Green Zebra, the expansion of the University in the Old Hospital and in the New Hospital buildings, a change in the distribution of activities in the Industrial Area (entertainment & fitness on main road side and other industries in the southern interior), the connection of the stripes of the Green Zebra, and the creation of the Distributed Retirement Home inside the upper and middle area of the Green Zebra as depicted in the image below.

Conclusions

Gjirokastra morphology, through a focused urban planning, can be empowered to support the development of an economy

also based on medical and sanitary services, that partially relies on existing tourism infrastructures. This urban plan should, anyway, be a part of a bigger picture aimed to create synergies and development between tourism, industry, medicine, and educational resources.

With some improvements and adaptations, the existing urban space can quite naturally support the development of a DRH, although some innovative technologies (smart transport and smart healthcare) must be applied to avoid huge or intolerable impacts on urban tissue. Connecting the original settlements (i.e. the "Green Zebra" stripes), restoring Ottoman buildings, redesign industrial zone master plan to facilitate medical and sanitary industry, empower hospital and university are some of the main steps needed to develop a DRH-based contribution to the economy.

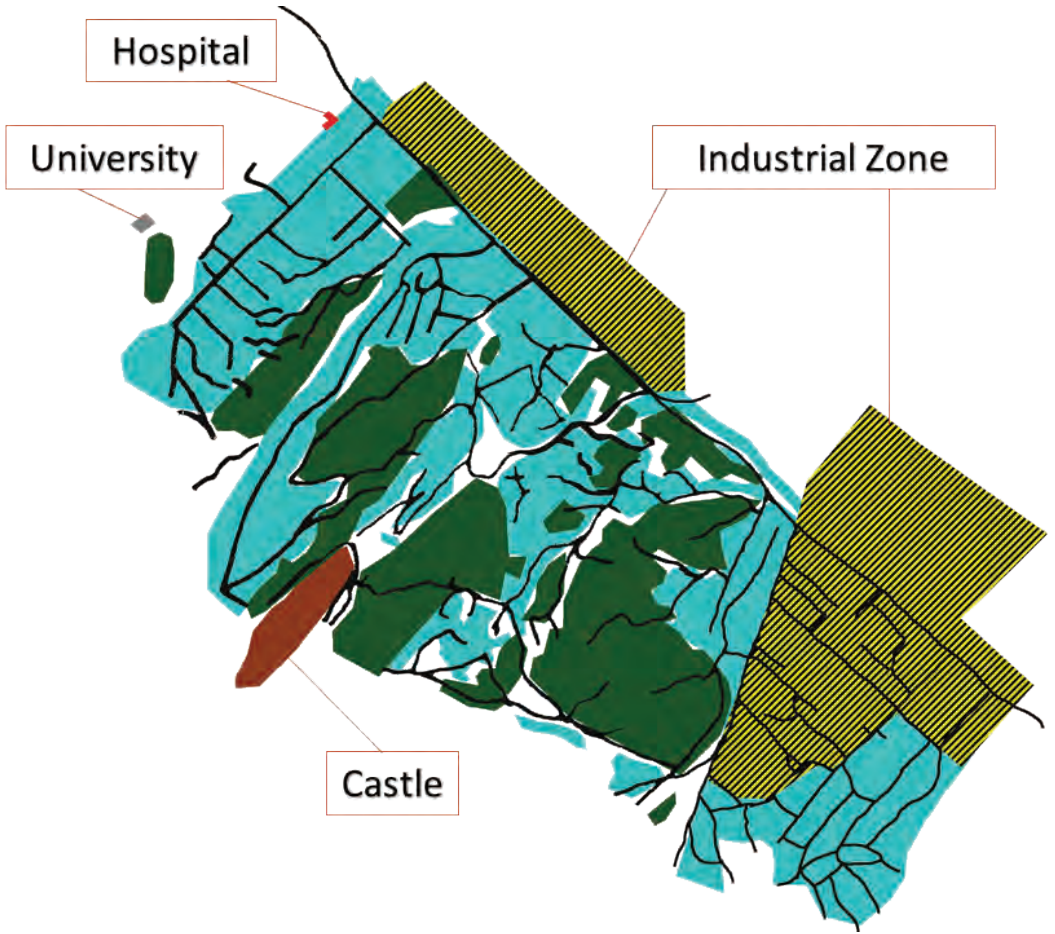


Fig. 6 / The As-Is situation. Source / infographics of the author 2019

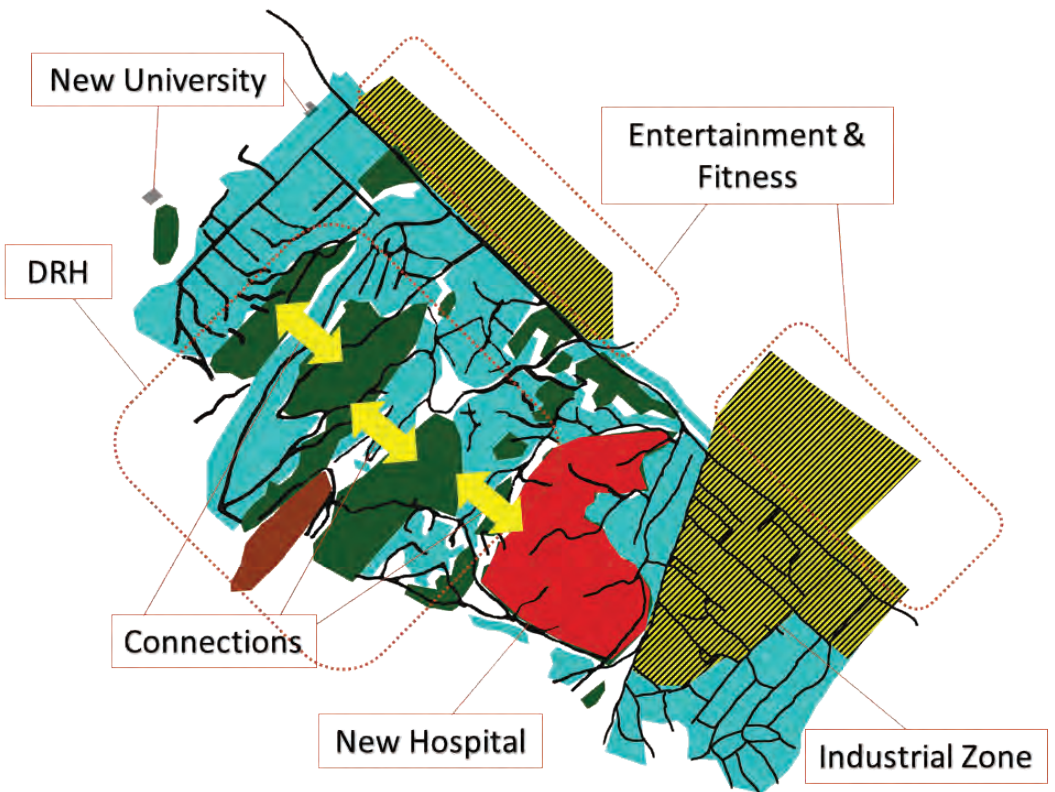


Fig. 7 / The New Urban Plan with Distributed Retirement House (DRH)

Bibliography

Al-Shaqi, R. Mourshed, M. and Rezgui, Y. (2016), Progress in ambient assisted systems for independent living by the elderly, SpringerPlus

Bickert, M. and Göler, D. (2012) Terra incognita oder Touristenmagnet? Einblicke in die albanische Welterbestadt Gjirokastra, Berlin: Hausdruckerei BBR

De Florio, V. (2007) Participant: A new concept for optimally assisting the elder people, Proceedings of the Twentieth IEEE International Symposium on Computer-Based Medical Systems, Jun 20, 2007

Dhiamandi, J. Jovic, S. Kristo, S. (2016), The Importance of Cultural Heritage for Sustainable City Identity; Gjirokastra and Kruja the showcase where Bektashi Phenomenon can be the catalyst for a new rebranding strategy of the cities, Conference: Problems and Challenges of Transformation of the Society towards Standards of the European Union ConferenceAt: Tirana, Albania

Eck, D. Schilling, K. Abdul-Majeed, A. Thielecke, J. Richter, P. Boronat, G. Schens, I. Thomas, B. Williger, B. and Lang, F. R. (2012), Mobility assistance for older people, Applied Bionics and Biomechanics 9 (2012) 69–83DOI 10.3233/ABB-2012-0053IOS Press

Ewart, I. J. (2013) Living 'from' home: Older people looking beyond the house, Home Culture

Freire Bastos-Filho, T. Kumar, D., Poosapadi Arjunan, S., (2014), Devices for Mobility and Manipulation for People with Reduced Abilities (Rehabilitation Science in Practice Series Book 7), CRC Press 1st edition

González, N. Kämäräinen, A. Luštrek, M. Gams, M. and Vélez, I. (2009) From Users' Needs to System Specifications: A Care System Supporting Older People's Independent Living, Centro de Estudios e Investigaciones Técnicas de Guipuzkoa, 20018 Donostia – San Sebastián , Spain

Gui,N. Sun, H. De Florio, V. and Blondia, C. (2007) A Service-oriented Infrastructure for Mutual Assistance Community, University of AntwerpDepartment of Mathematics and Computer Science

Janku, E. Allkja, L. Besnik, A. Dhamo, S. (2014), Albania 2030 Manifesto, a National Spatial Development Vision, Tiranë: POLIS University ISBN: ISBN: 978-9928-175-45-8

Kaluža, B. (2010), Improving the Quality of Life for Elderly by Adapting to Each Specific User, Tangible Information Technology for a Better Ageing Society, Proceedings of the CONFIDENCE 2010 International Conference:Open Doors to ICT for Ageing and elnclusion9-10 December 2010, Jyv äskylä, Finland

King, R., Warnes, T. and Williams, A. (2000), Sunset Lives. British Retirement Migration to the Mediterranean, Oxford: Berg Publishers.

Lohman, H. Byers-Connon, S., Padilla, R. (2018), Occupational Therapy with Elders: Strategies for the COTA - 4th Edition, Mosby; 4th edition

Melander Wikman, A. (2008), Ageing well: Mobile ICT as a tool for empowerment ofelderly people in home health care and rehabilitation, Luleå University of TechnologyDepartment of Health ScienceDivision of Health and Rehabilitation

Nexhipi, O. (2018) Medical Tourism Management Challenges - The Case of Dental Tourism in Albania, European Journal of Interdisciplinary Studies, January-April 2018, Volume 4, Issue 1

Prince Research Consultants Limited, (2008), A Key Tourism Development Project

Rothuizen, J. J. (2011) Elder people learning to be mentors for young people, VIA University College

Samala Durga Prasad Reddy (2019), Evolution of 5G Technology, IJIRT - Volume 6 Issue 7 - ISSN: 2349-6002

Samala Durga Prasad Reddy (2019), Evolution of 5G Technology, IJIRT - Volume 6 Issue 7 - ISSN: 2349-6002

Saman, I. Wajahat, A. K. Farooq, A. and Kiran, F (2012). Semantic Interoperability in E-Health for Improved Healthcare, Semantics in Action - Applications and Scenarios, Dr. Muhammad TanvirAfzal (Ed.), ISBN: 978-953-51-0536-7, InTech, Available from: <http://www.intechopen.com/books/semantics-in-action-applications-and-scenarios/semantic-interoperability-in-e-health-services-for-improved-healthcare>

Shreelakshmi, C. M. Parvathi, S. J. Asharani, M. Ambreen, K. (2019), Smart Home Design for Disabled People, IJIRT - Volume 6 Issue 2 - ISSN: 2349-6002

Tourism Development International, (2010), Albania Culture Marketing Strategy, United Nations Albania