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MASTER'S THESIS

CO-CREATING A SMART TOURISM LOCAL SERVICE SYSTEM IN RURAL AREAS – A CASE STUDY FROM SOUTH ITALY

Ljubljana, January 2021   ENRICO MARIA DI FLORA

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LIST OF ABBREVIATIONS

AR   – Augmented Reality

DMO   -- Destination Management Organization

G-D   – Good Dominant

IoT   – Internet of Things

ICT   – Information and Communication Technologies

PoI   – Points of Interest

S-D   – Service Dominant

S-TLSS   – Smart Tourism Local Service System

SS   – Service Science

STD   – Service Tourism Destination

TLA   – Tourism Local Area

TLS   – Tourism Local System

U-TLSS   – Unstable Tourism Local Service System

VSA   – Viable System Approach

INTRODUCTION

According to (United Nations, 2019), by 2050 more than three out of four people will be living in urban areas. The most recent trends show an increase in the urbanization of cities, while, consequently, inner territories become more depopulated, business activities get closed, services get reduced and the overall services become poor and not able to offer quality offers to visitors (Bolay, 2020)

Nowadays, in the context of digital transformation which is drastically changing one's ways of living, many studies have addressed as well the evolution and features of Smart Cities (Van Dijk & Teuben, 2015) where tourism is also one of those spheres that got digitally transformed by Smart Cities (Khan, Woo, Nam, & Chathoth, 2017).

One of the features of smart applications is the possibility to let the user be a driver of value in creating and sharing contents. However, the explosion of smart solutions enabled by the latest technological innovations has been mostly contextualized in urban environments while fewer solutions have been developed in less urbanized rural areas (Steyn & Johanson, 2010).

The methodology used employs the merging of two core actual service research approaches: Service Science and Service-Dominant logic; the first offers an organizational framework to generate and integrate value co-creation in terms of a smart service systems (Polese, Botti, Grimaldi, Monta & Vesci, 2018). For the same purpose, but differently, the second proposes a different layout called service ecosystems (Vargo & Lusch, 2016).

By employing this methodology, the process lets investigate the core features to addressing value-co-creation and sustainability in the long term. This combination of approaches overcomes individual model limitations by setting an integrated model employable to very aggresive and experience-based sectors (Polese, Botti, Grimaldi, Monta & Vesci, 2018), and that was adopted by using a case study methodology, relying on semi-structured interviews.

More specifically, 20 interviews on the consciousness of the core elements of the smart service ecosystems were collected, during a period of 8 months (from December 2019 to July 2020) to elaborate a scenario that considers simultaneously the following

aspects: (1) stakeholders groups; (2) resource integration; (3) technology driver; (4) institutions engagement.

Overall, the purpose of this thesis is to explore alternative innovative solutions for less urbanized areas and to set a rural territory in terms of a smart tourism system, where every actor involved fully cooperates in the co-creation and development of value, and to build and maintain a collaborative mutualism among stakeholders.

Indeed, the field of smart tourism has been mostly investigated in the urban context, while very few studies consider rurality into consideration, and, therefore, this study can help literature to grow in this field of research which is in its recent stages. Moreover, it seeks to identify the current situation regarding the level of awareness of the benefits deriving from value-co creation.

Furthermore, I chose this topic to understand which are the factors and challenges in facing the implementation of a smart tourism system in term of local service as the focus of academics and practitioners in providing smart solutions has mainly been on urbanized areas and not in those placed outside of the city context (Bassano et al., 2018) and, because, personally, I come from rural village from South Italy, and it is my interest to understand better what solutions could exist for my territory.

The primary goal of the thesis is to present an overview of a solution for the development of a smart tourism system aimed to create a territorial network which creates synergism among the stakeholders and the territory of Vallo di Diano in South Italy. Mostly, it seeks to:

- understand existing tourism practices in rural territories and explore the factors that have been suitable to establish an effective environment for the implementation of smart tourism systems.
- identify the means of improving the processes that encourage smart tourism solutions in rural areas as vehicles to improve quality of life and environment.

Therefore, the goal of implementing a smart tourism system in rural areas is to provide a set of solutions which are able to improve tourism and quality of living through co-creation process (Buhalis & Foerste, 2015). The detection of ICTs tools enhancing growth and spread of value can foster value co-creation practices' knowledge and it

provides discernments about several types of entertainments produced throughout shared service delivery.

Plus, this study can be an insight on the comprehension of mechanisms aimed at actively engaging visitors in tourism destinations. Thus, a better understanding of these processes can help elaborate integrated procedures boosting the attractiveness of a rural destination, generating at the same time social innovation and service innovation.

This research merges the technological focus of the Service System with the main social focused features of Ecosystems to offer a framework able to highlight the core elements that decision-makers should consider to leverage value co-creation and innovation in the long run.

Basically, this integrated framework can be employed to hyper-competitive and experience-based sectors like tourism, where the offer is based on immaterial elements linked with context, human factors or social beliefs among individuals.

More specifically, based on the research questions tackled by (Polese, Botti, Grimaldi & Monti, 2017) in their paper named "Social Innovation in Smart Tourism Ecosystems: How Technology and Institutions Shape Sustainable Value Co-Creation" the aim is to adapt and apply their approach of Salerno's city analysis to its rural province, Vallo di Diano, in order to answer the following research questions:

- are the core elements of smart tourism systems (actors, technology, resource integration practices and institutions) driver of value co-creation and innovation also in rural attractions?
- what effect do the smart service ecosystem's dimensions have on the emerging of social innovation aligned to systems and strategic view of value co-creation when considering rural territories?

To start, the first two chapters deepen literature review on smart cities, Internet of Things, and smart tourism; then, the third chapter explains the value co-creation process in smart tourism systems with particular attention in presenting a scenario that considers also territorial implications.

Instead, the fourth chapter brings into account urbanizations issues, urban biases in ICT applications, differences between urban and rural tourism, and current directions and

examples in the field of study. To follow, the case analysis will be introduced and sample characteristics and interviews will be presented. Lastly, discussion, limitations, and conclusions will be addressed.

1 TECHNOLOGICAL IMPLICATIONS IN THE SMART CITY CONTEXT

In this chapter, I will try to clear the ideas regarding the Internet of Things (hereinafter: IoT), the technological infrastructure of Smart Cities. Therefore, short concepts about the Smart Cities will be provided as well. Secondly, I will refer to the evolution of IoT, and the business models triggered by it will be shown. The first review showed a precise path of the term, evolving with the advancement of technology, and, a particular to mention is that adjectives like "digital", "intelligent", and "smart" work as prefix to "city". Plus, many definitions about this concept have been reshaped from different areas as urban studies, information technology and biology.

Nowadays, smart city initiatives are enabled by new IoT applications worldwide, by furnishing the possibility to remotely monitor, manage and control devices, and to generate new insights from massive streams of real data (Alletto et al., 2016). The core elements of a smart city comprise of a elevate degree of IT integration and an-all inclusive application of information resources, and the main elements for its urban development should include smart technology, smart industry, smart services, smart management and smart life (Wortmann, & Flüchter, 2015).

The IoT, instead, is connected to installing sensors like RFID, IR, or GPS for everything, and linking them with the internet by proper protocols for information exchange to get smart detection, location, tracking and management. By the technical support from IoT, smart cities can become equipped, interconnected, and intelligent and, therefore, being formed by integrating all these intelligent elements at its advanced stage of IoT development (Neuhofer, Buhalis, & Ladkin, 2012).

1.1 Smart Cities and Internet of Things

Statistics shows that IoT will represent almost 75 billion interconnected devices by 2025 (Statista, Inc., 2020a). One of most dramatic changes in the current ages is that the

internet is characterized by a large network of interconnected elements, collecting external data using sensors and interacting with the physical world. It can be said that basically the role of IoT is to digitize physical objects, never connected before to the internet, to create infrastructures of shared "smart objects" serving different purposes (Wortmann, & Flüchter, 2015). Concerning big data, (Borgia, 2014) highlights three processes related to smart IoT devices:

- Collection: acquisition or generation of data through the sensors of the smart objects;
- Transmission: data gets dispatched via wireless systems to a data collecting and processing centre, where different sources are collected and analysed;
- Processing, managing and utilization phase: data assumed a meaningful value and made available for interpretation.

As a matter of fact, special algorithms and data analyses can be processed through sensors and the IoT, providing opportunities to explore newer and more innovative ways to achieve higher levels of sustainability, and to develop cities more efficiently. Generally, the implementation of smart city concepts is a hard task for the governments, but, with the support of big data applications, the level of sustainability to improve the living standards became possible to reach (Borgia, 2014).

To finish, according to (Statista, Inc., 2020a) IoT market share will grow to around 1.6 trillion by 2025 and its impact on cities and society, generating an increasing interest for Smart City and for IoT applications. Also for this reason, it is important addressing the questions regarding the implications, benefits and concerns which have been triggered by many scientists which are calling for technical debates on innovative research efforts from both academia and industry, especially for the development of efficient, scalable, and reliable Smart City based on IoT (J. I. Kim, 2014).

Smart city can be imagined as composed of the brain leading a body. In fact, there is a control center, which can be seen as the brain of a nervous system, and a peripheral infrastructure, consisting of sensors collecting real-time data on the city which get analized by the control center to address better decisions and employ them (Cocchia, 2014). The objectives of a smart city are to improve the quality of life of the individual, to maintain fair governance, and to promote efficient asset integration.

There are six principal dimensions of smart cities, as shown in Figure 1, which were called smart innovations by (Boes, Buhalis & Inversini, 2016): smart economy, smart environment, smart mobility, smart people, smart living, and smart governance.

In the area of smart cities, the tourism industry has found a redefinition of its role, in what is now known as smart tourism, which involves an application of the concept of the smart city to the tourism industry.

To sum up, all this process connects the physical with the digital world without limitations. Still, overall it can be commonly agreed that Smart Cities can be distinguished for the pervading usage of Information and Communication Technologies (hereinafter: ICT), that eases cities to make better choices of their resources in various urban fields (Neirotti, De Marco, Cagliano, Mangano, & Scorrano, 2014).

Figure 1: The six Dimensions of Smart Cities
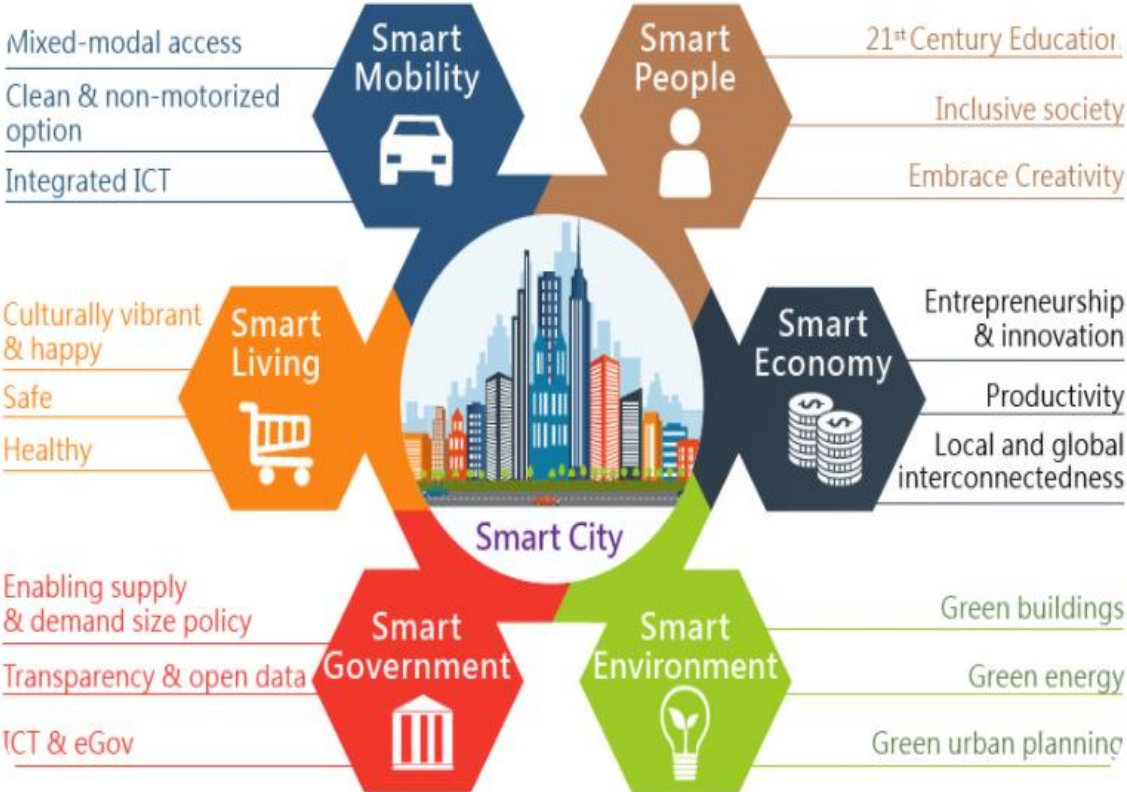
Adapted from: Boes, Buhalis & Inversini (2016).

Anyways, among scholars no definition of Smart Cities has been universally acknowledged yet, neither a general framework, nor a one-fits-all definition of it. Lately, assessing the level of smartness has become an important task for researchers

and public administrators, therefore, some rankings have been developed to evaluate the level variables such as economy, infrastructure, innovation, quality of life, resilience, transportation, urban development, etc (Neirotti, De Marco, Cagliano, Mangano, & Scorrano, 2014). As a matter of fact, these kinds of frameworks can address and inspire local governments to support Smart City initiatives, by recommending directions and agendas for Smart City research and expose practical demonstrations for government experts (Chourabi et al., 2012).

1.2 Value Delivery of Internet of Things

According to (Al Nuaimi, Al Neyadi, Mohamed & Al-Jaroodi, 2015), improvements for citizens' quality of living have been obtained by utilizing IoT and big data analysis in the field of health, education, energy, transportation, and tourism as well. With no doubts IoT offers many opportunities to improve Smart Cities by providing updated and accurate data exchanges, and to understand better decision making processes. One important tool is the Information Value Loop, in Figure 2, which shows the technologies of IoT combined in order to generate value, offered by (Deloitte, 2016).

Figure 2: Information Value Loop
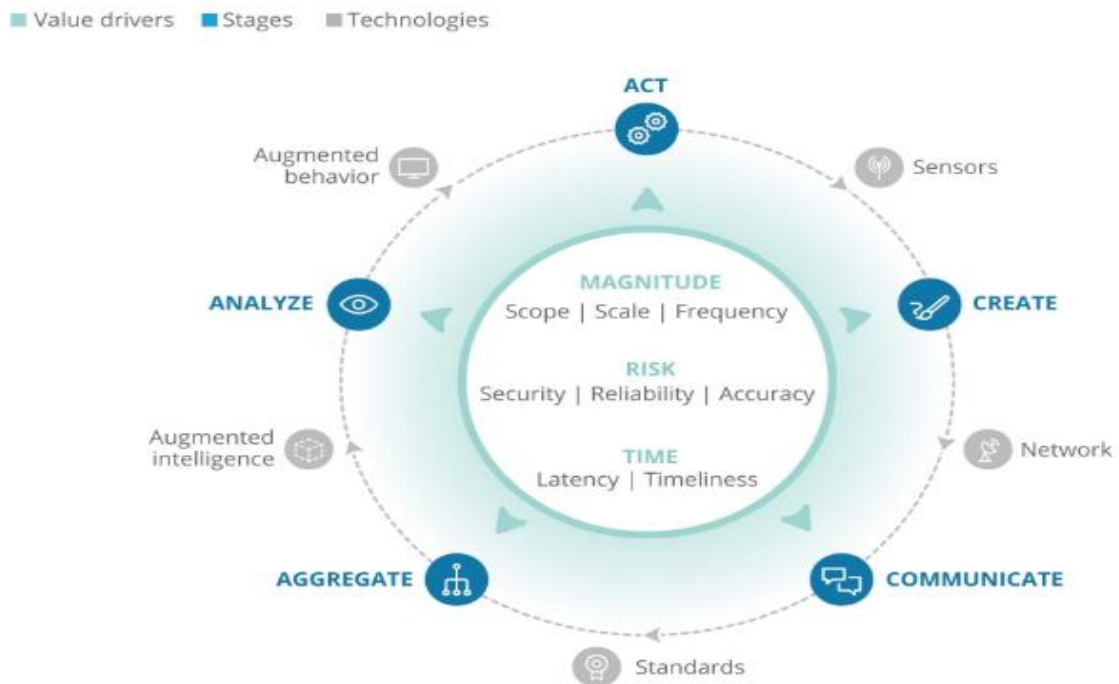
Source: Deloitte (2016).

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In order to generate the Information Value Loop, the following stages need to be going on (Deloitte, 2015):

- Create: physical environment elements that get collected by sensors;
- Communicate: a series of networks, devices or platforms, let data to be shared.
- Aggregate: data manipulation that gives meaningful information.
- Analyze: detecting patterns or anomalies that require deeper investigation got eased by analytical tools.
- Act; once delivered the insights, user is enabled to respond with a real-life action.

One of the key values to let IoT be fully adopted by businesses is surely financial revenue, especially needed for new business models and ways to create value for IoT technology. This is particularly relevant according (Van Dijk & Teuben, 2015), as current trends foresee new income opportunities are getting more appealing while the old traditional business models are declining and in future not applicable anymore.

This section wants to focus and present a list of business models and, below, Table 1 shows a list of business models, where most of them have been already implemented in the latest digital innovations.

Table 1: Examples of the Latest Revenues Model examples in ICT

Business Model	Basic features
Advertising based	Free content or services in exchange for receiving advertisements
Subscription	Fixed price, monthly or yearly subscription for consuming unlimited digital content and services
Pay-Per-Use	Price based on the number of consumed items
Data monetization	Free service content, but collection of consumers' behaviour/preferences data

Adapted from: Bassano, Pietronudo & Piciocchi (2018).

The clearest example to bring into the discussion can be offered by one of the 5 most visited websites of the world, Youtube (Statista, Inc., 2020b). Shortly, the income gets generated in two ways; from the advertisement revenue and the premium service, which allows access to special contents. This kind of business model is named freemium and its success depends on a simple fact: proposing costless physical things gets unsustainable compared to the current digitized framework, characterized by a low cost of increasing capacity.

Therefore, to found a deep user's base, company can revenue offering their services for free, gaining either by the incomes of the premium users (normally, monthly subscriptions) or with the advertisements targeted to the not-payers, or, instead of advertisements, the data generated by not-paying-users merely create value for the system, to understand human patterns and discover new trends (Van Dijk & Teuben, 2015).

The IoT seeks to shape new technologies into products. Indeed, the value of traditional physical products is given by their individual performances; but, when IOT comes into play, these products become connected generating a new core element for the product's value: information. Example in this matter can be standard light bulbs, where, just some years ago, brightness, efficiency and lifespan were reflecting their value, while, nowadays, automation, scheduling, remote controlling, and more are processes enabled by the latest enhancements in ICT (Deloitte, 2016).

2   SMART TOURISM

In this chapter, the concepts of smart tourism will be addressed. At December 2020, about 270 articles were returned into ScienceDirect when querying its database, while in Google Scholars these two terms reproduced more than 6.500 mentions from 2015 to 2020. Also other databases such as Scopus, Resarchgate have been used. It is evident that it is an area with undergoing research processes; this field has many implications and dependencies.

Overall, smart tourism can be conceptualized as a tourism development and management orientation overtakes technology installation (D. Kim & Kim, 2017). One intersting source in the literature in one of his recent study has been reviewing the state

of art in smart tourism field and particular attention has been given to 12 core elements, identified as the most discussed topics in smart tourism research (Kontogianni & Alepsis, 2020).

These elements, as shown in Figure 3, are: Privacy Preserving, Context Awareness, Cultural Heritage, Recommender Systems, Social Media, Internet of Things, User Experience, Real Time, User Modeling, Augmented Reality (hereinafter: AR) and Big Data, which are preceded by many theoretical approaches in the Smart Tourism sector.

Figure 3: Clusters Frequency Related to Smart Tourism Research
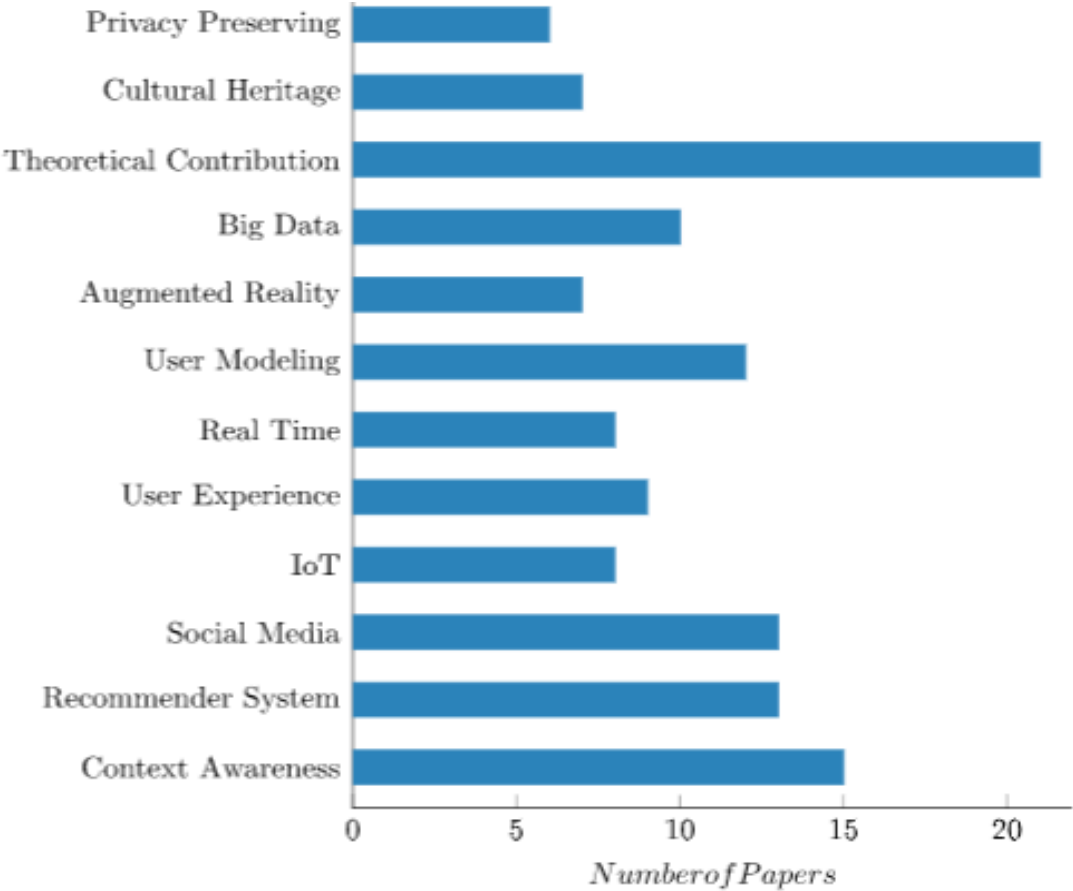
Source: Kontogianni & Alepis (2020).

What can be understood is that there is a lot of different topics buzzing around Smart Tourism. Therefore, some relevant points from the most quoted articles regarding smart tourism theories will be presesented first, and after those categories of topics more related to the technological features will be clustered and briefly tackled, as well as those aspects instead linked with society, norms and culture which represent more the social sphere of smart tourism implications.

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2.1 The Evolution from E-Tourism to Smart Tourism

To start, it has to be said that lately the term "smart tourism" has been wrongly mis-concepted as there is the belief that is merely linked with the adoption and employ of ICT in the tourism field. This approach according (Xiang, Tussyadiah & Buhalis, 2015) leads to a poor construct intended merely as developments attainable uniquely by innovative practices. On the contrary, a smart system could be intended as a touristic management orientation with greater impacts on the tourism governance and in terms of a strategic view of a given territory as (Gretzel, Reino, Kopera & Koo, 2015) mention.

One remarkable difference pointed out is the one between smart and e-tourism. As a matter of fact, if the focus of e-Tourism is on the informatization and virtualization of touristic exchanges taking advantage of the digital value chain, smart tourism, instead, merge the virtual and physical, and refers to broader techno-utopian views of a destination, highlighting the need of the primary role of the governance in the context of large ecosystem and the relative bond between public and private sector agreements (Gretzel, Reino, Kopera & Koo, 2015). Moreover, another difference between the two concepts regards the involvement. More specifically, if e-Tourism follows the tourist experience before, during and after the travel, on the other hand, smart tourism found its bases around the experiences during the travel, not taking the movements from and to a destination (Gretzel, Sigala, Xiang & Koo, 2015).

Figure 4: Differences between e-Tourism and Smart Tourism

	e-Tourism	Smart Tourism
Sphere	digital	bridging digital & physical
Core technology	websites	sensors & smartphones
Travel phase	pre- & post-travel	during trip
Lifeblood	information	big data
Paradigm	interactivity	technology-mediated co-creation
Structure	value chain/intermediaries	ecosystem
Exchange	B2B, B2C, C2C	public-private-consumer collaboration

Source: Gretzel, Sigala, Xiang & Koo (2015).

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Finally, (Lamsfus, Martín Del Canto, Alzua-Sorzabal & Torres-Manzanera, 2015) claim that human mobility is the final scope of smart tourism, while, on the other side, (Gretzel, Sigala, Xiang & Koo, 2015) sees tourist experience's enhancement as the target of all smart tourism efforts, and, on the same path, points on improving experience co-creation as the final goal of smart tourism (Buonincontri & Micera, 2016).

Similarly, the experience enhancement concept is also the interest core point of (P. Liberato, Alén & D. Liberato 2018), where the tourist destination is intended as a mix of feelings and experiences with smart destination. Therefore, following this idea, tourists communicate in an active way with the service providers, and together they co-create their personal involvement. To sum up what tackeld, above Figure 4 resumes the whole concepts for the differences between e-tourism and smart tourism.

2.2   Smart Tourism Features

Taking the technological infrastructure behind smart tourism, besides IoT which has been tackled in the previous chapter, two main forms of these technologies are vital for setting up Smart Tourism projects are: Cloud Computing, and End User Internet Service System.

Shortly, the first is basically the use of hardware and software to deliver a service over a network, typically the Internet. By using cloud computing, any user can access files and use applications with any device that connects to the Internet. Instead, for what regards the second one, (Khan, Woo, Nam and Chathoth, 2017) claim in their paper that the term "end-user internet service systems" means all the tools and applications providing access to the services related to tourism. Thus, those applications oriented towards tourists needs and that enhance access to products and supports services are included.

This is exactly the main objective of smart tourism, enhancing added value experiences for tourists. To clarify this point, back in the days, before smartphones, tourists could rely on paper maps, books in order to discover a place. These old-fashioned tools could not be updated nor even customized.

Instead, in the last years tourism market has been exploiting technological improvements, and now tourists can rely on a discrete number of mobile applications

provided by the public sector or privates, enabling them to explore an area smoothly and to access useful information to manage their short available time in the best possible way.

The paper of (Gretzel, Sigala, Xiang, Koo, 2015) define Smart Tourism as "the competitive advantage that comes from using Smart technologies such as sensors, beacons, mobile phone apps, radio frequency identification (RFID), near-field communication (NFC), smart meters, the Internet-of-Things (IoT), cloud computing, relational databases, etc., that together form a smart digital ecosystem that fosters data-driven innovations and supports new business models".

The same authors also wrote as well that Smart Tourism involves multiple components and layers of smart that are supported by ICTs. The three layers are: Smart Destination, Smart Experience and Smart Business Ecosystem, which are enabled by sum of the process of data collectiom, data exchange and data processing, and can be seen in the Figure 5.

Figure 5: Components and Layers of Smart Tourism
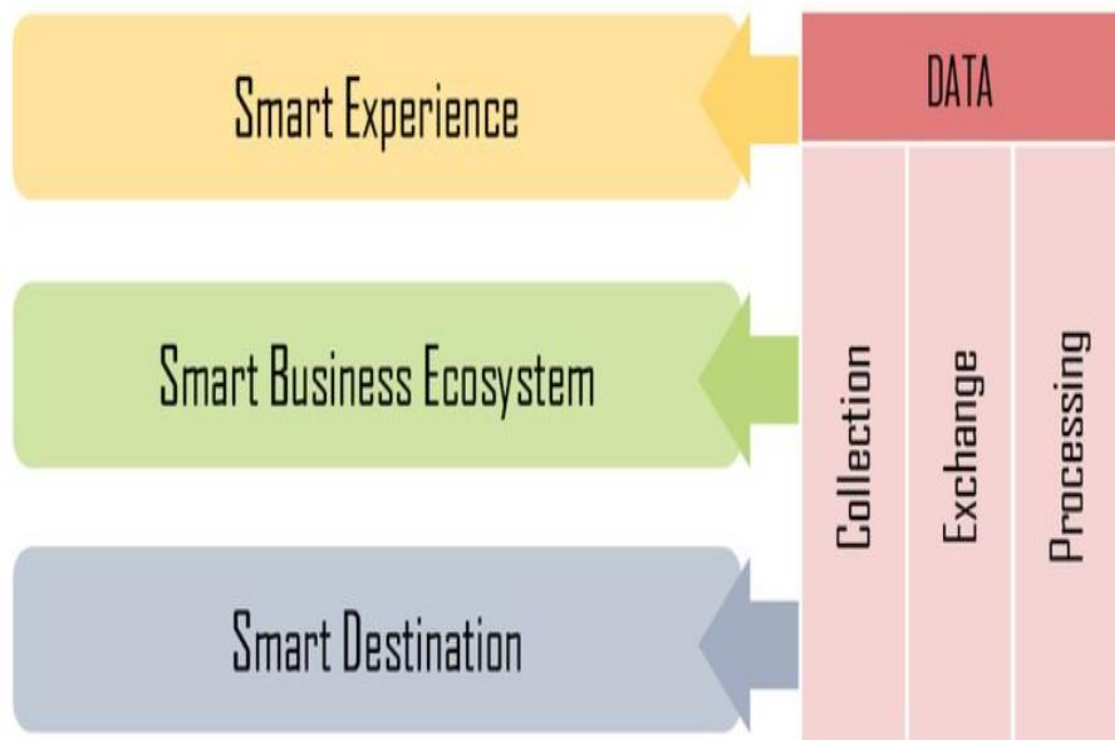
Source: Gretzel, Sigala, Xiang, Koo (2015).

Anyways, Smart Tourism should not get considered simply as a matter of mobile applications. Indeed, Smart Tourism is not just the mere digitalization of old processes linked to tourism. In fact, the challenging side is collecting and connecting data generated by various sources and to extract value from them.

One very important thing is that the stream of information among Smart Tourism components and tourists is not just purely monodirectional as they are not just users of a determinate technology, but they become content creators.

The data generated by the users produces an astonishing amount of data, and the dilemma is to translate them into useful information for making smart destinations, as well as for enhancing the satisfaction of visitors by personalized offers. For these reasons, the tourist is truly involved in the process of value generation, and tourism can actually become smart only when new technologies are embedded in destination's points of interest and in the entire smart business ecosystem.

2.3   Smartness in Tourism Destinations

In the literature sources many articles also mentioned Smart Tourism Destination (hereinafter: STD), which can be defined as a city able to generate value applying in an ubiquitous and organized way the concept of Smart Tourism.

In this definition particular attention falls on the word ubiquitous as the concept of smart tourism must cover all the city spheres. To clarify, the presence of a single mobile application that enhances a given experience is not enough to classify a city as STD.

In fact, the various smart tourism initiatives should cover and implement more PoI (hereinafter: PoI), and connect each initiative with another one to boost tourism efficiently and provide higher quality offers to visitors. Next, if the quality of the offer is high then the city should be able to attract more tourists and increase its competitiveness. In order to do this, the data generated by the users should be collected and managed to create value for every stakeholder involved.

This application of big data analysis could be applied in the public sector as well for privates to discover potential hints to increase the quality of the offer. For example, (Xiang, Tussyadiah & Buhalis, 2016) basically say that a destination can be considered

smart when it relies on the extensive adoption of technologies by personalizing and making tourists aware of services available to them at the destination.

According to these researchers, the ultimate goal in the STD is improving travelers experience and empower tourism industry with tourist data collected within destination. Figure 6 aims to resume the main characteristics of a STD. One distinctive difference between smart city and a STD is on the target focus. Indeed, for what regards smart cities, the citizens represent the main focus and not on tourists. In fact, (Boes, Buhalis & Inversini, 2015) highlight this point, explaining that a STD aims to enhance tourist experiences through ICTs. Instead, (Zhuang and Chao, 2015) claimed that the construction achievement of smart city is the foundation and support for Smart Tourism system building both on the conceptual and practical level.

Furthermore, there is also who mentions that Smart Tourism is a need for those city possessing heritage value or other touristic Points of Interests which can be satisfied by connecting the several stakeholders involved in tourism industry through a shared technological platform furnishing a mechanism for cooperative working by translating the touristic data, collected with sensors and other smart devices and storable on Cloud, into information exchange and analysis. (K. Kaur & R. Kaur, 2016)

Figure 6: Smart Tourism Destonation Characteristics

Stakeholders	Characteristics of outcome
Tourism organizations	• Function as smart hub that coordinates all relevant information and makes it easily accessible for users to access real-time information.
Governments	• Digitization of core business processes • Optimize their energy use • Engage with local communities, tourists and government in co-creating tourism experience
Local residents/ local communities	• Organizational agility, speed decision making and responsive to customers' needs based on just-in-time insights.
Tourists	• Precision targeting and personalized service • Information governance that support data openness • Regulate data privacy.

Source: Dominguez, Revilla, Talavera & Parra-Lopez (2017).

Following this path, (Buhalis and Amaranggana, 2014) explain that the smartness referred to a tourism destination needs the dynamic exchanging of real-time information among users related to tourism activities, maximizing then user or customer satisfaction and resource management efficiency. The outcome of these activities results into a huge amount of digital information, where tourism organizations can extract value meant as useful information.

2.4   Technology and Experiences in Smart Tourism Destinations.

One of the main goals of smart destination is improving tourist experiences by relying upon a personalization of services and products and a mutual and dynamic value co-creation. This objective gets achieved when the use of techonologies integrates different tourism data in a centralized and real-time infrastructure which allows better decision making and improved experiences (Boes et al., 2015).

In order to customize experiences, the most important step is collecting as much data as possible about tourists, which gets translated later in quantifying tourists' sensations and behaviors that can provide valuable insights regarding preferences and needs and will open opportunities to provide services in a real-time and context-aware environment (Choe, Kim & Fesenmaier, 2017)

One point of fact is that the variety of available technologies in a smart destinations ranges from the social medias and smartphones and other mobile technologies, which basically depends on the user choice to activate them which are available on the infrastructure proposed by the Destination Management Organization (hereinafter: DMO), and that in the literature are known as 'smart solutions', and encompasses more established technologies (e.g., public Wi-Fi, destination official website or mobile apps) to more contemporary ones (e.g., virtual and augmented reality tools, sensors, beacons).

The adoption of these solutions in enhancing tourism experience has been widely studied in the literature where particular attention has been paid on recommender systems, Augmented Reality, User Interface and User Design, Social Media Marketing. It does not surprise that their potential to be used at smart destinations for enhancing tourist experiences has been emphasised by several scholars (Femenia-Serra, Neuhofer, 2017; Huang, Goo, Nam and Yoo, 2017; Koo, Yoo, Lee and Zanker, 2016).

Figure 7: Type of Technology and Interactions in Smart Tourism Destination
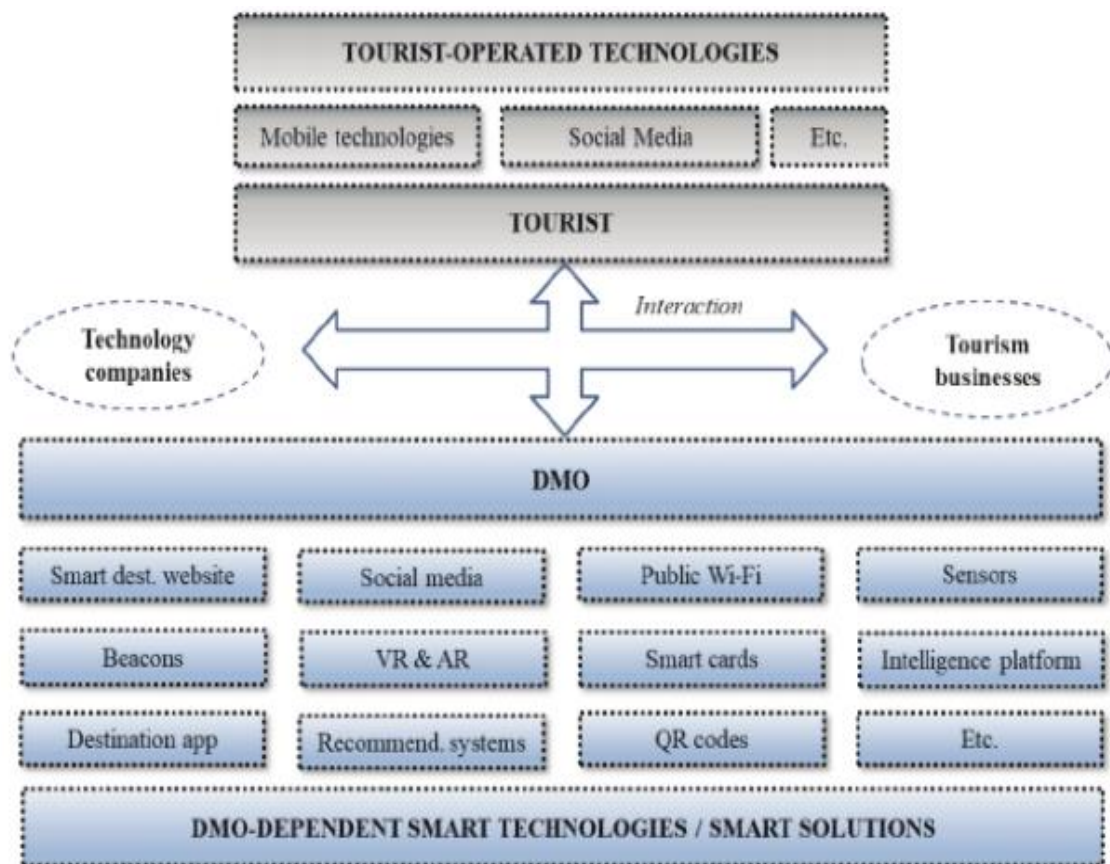
Source: Femenia-Ferra & Neuhofer (2018).

To sum up, what Figure 7 wants to highlight is the context where with this typology of ICT tools, tourists and DMOs interact in the smart destination and actively create the relations for further experience co-creation encompassing technological and tourism-related activities. This whole panoroma permits to better meet and satisfy users needs by collecting information from several touichpoints that are spread and integrated in the smart destination.

3   VALUE CO-CREATION IN SMART TOURISM SYSTEMS

Destinations have redefined their role and their business logical approaches started to involve tourists as active co-creators of experiences, equipped with technologies (Buonincontri & Micera, 2016). Therefore, in this chapter, what will be mainly discussed are the main features on which smart service systems framework and service ecosystems environment are based. Both will have a dedicated section to give the reader a deeper knowledge of the context.

In this way, what I would like to provide is a comparison analysis which tends to put similitudes, contrasts, and plausible convergences under the spotlight for the ulterior postulation of an integrated scanario to consider in the case analysis to discuss later.

3.1 The Foundations of Service Science and Smart Service Systems

To get the foundations of system service innovation, back in the days, IBM researchers launched the so-called SSME-D, also known as Service Science, Management, Engineering and Design, or, in short, Service Science (hereinafter: SS) as a result of the company's transition towards a centered-service logic and, to better analyze the part of service in the society.

More specifically, SS is a mixing of different theories taken from computer science, management, engineering, operational research, and social sciences to spread given knowledge, skills and competencies needed by a service-based economy

Overall, this approach comprises four main features, each one taken from a different subject and which shapes this discipline:

- Applying scientific principles to better analyze a service's field and how it evolves.
- Secondly, elements taken from management studies to more efficiently design and shape services, and reach competitive advantages building durable and win-win relationships with the stakeholders.
- Then, engineering services play a crucial role; they are used to design new technologies, to boost supply, detect, quantify, and let information flow;
- Last but not least, service design, which bases itself on analyzing the best configuration techniques for a feasible structure of the service.

The most important aspect of the model proposed is the service system, better identifiable as a "value-co-creation configuration of assets, ranging from people, technologies, entities, and shared information, which are joined inside and outside on other service systems by value propositions" (Polese, Botti, Grimaldi, Monta & Vesci, 2018).

The same authors explain how components of a service system are used to model the peculiar characteristics of a company, to maintain efficient and effective processes, to obtain and keep a sustainable competitive advantage, that can be translated as the

capability to establish strong bounds with other service systems (Polese, Botti, Grimaldi, Monta & Vesci, 2018).

What can be thought as the basis of SS are the model progress, the interactions and mutual value creation between service systems; these combined forces promote exchanges among the various existing service systems until value co-creation gets achieved.

One of the literature sources has highlighted how the sharing of knowledge happens throughout organizational and social networks, but not as much as through those technological tools facilitating productivity, constantly developing and improving, in order to produce and attract value, boosting the exchange of resources and value up (Polese, Botti, Grimaldi, Monta & Vesci, 2018).

As a matter of a fact, assets and information exchanging strikingly draw special attention to the fundamental role of technology as leverage for knowledge exchange to get all the actors involved and to constantly supporting innovation (Piciocchi, Siano, Confetto & Paduano, 2011).

For what concerns territory and regions, there exist a vast amount of literature sources linked to smart services. However, recently there has been some discussion regarding the duality of the orientations: according some views it is still seen as a mere and deterministic object, or, from a static perspective, a'product to be promoted (Bassano et al., 2012).

Whatever the interpretation, still there is a lack of systemic subjectivity, and for these reasons, the core strengths of the territory are not in the position to sustain competition. Something interesting to consider is resulting from a series of studies done by (Barile, Pels, Polese, & Saviano, 2012) around Viable System Component.

In fact, this indicates the main elements (natural, artistic, cultural, structural, infrastructures, etc.) owned by a territory that 'objectively' have roots into that territorial geographical area and systematic skills (companies, businesses, people, local administration) which take advantage from a self-generating value capability and to achieve their evolution in the specific territorial environment (Bassano, Pietronudo, and Piciocchi, 2018).

A fundamental condition to frame viable systems bases on the mandatory consideration of taking governance into account as a driver to generate added value for the systems and the actors.

By considering these assumptions, a Tourism Local Area (hereinafter: TLA), meaning an unstructured integration of structural components, can be pictured as a cohesive Tourism Local System (hereinafter: TLS), which can be interpreted as an interconnected set of correlated elements that cooperate and share with other system elements.

For what concerns TLS, it comprises several features, internal and external elements that coordinate their aspects until reaching a stable identity, an integration of two essential elements (Piciocchi, Siano, Confetto & Paduano, 2011):

● the natural tourism vocation, that considers the architectural structure of the place;
● the focusing on specific processes, deriving from system skills.

In the context of Viable System Approach (hereinafter: VSA), case when the provider, intended as the territory, and the user, meaning any stakeholder, interact among themselves, the final product will be an improvement of the service achieved through value co-creation, where the provider shares the knowledge, and the user provides the assets (Bassano et al., 2012).

Overall, it can be said that the intersection between VSA and SS enables the qualification of a territory with a touristic inclination in a configuration of assets that in a dynamic way co-produce valuable assets affecting internal and external dimensions of the structure, enabled by the process of information sharing.

To present a more detailed overview, the several territorial combinations, from resource to system, marking the core competitive advantage, with the diverse theoretical consideration regarding VSA, SS and their integration, can be seen in Table 2 and will be shortly discussed.

To start, territory as resource, it is a combination where the value proposition is based merely on the territory personality, on what is the current structuration (Bassano, Pietronudo & Piciocchi, 2018). However, the VSA mentions the embryonic stage of a system, where the elements behave without a mutual planification, with independent

scopes yet, sharing some relations as there is lack a shared guidance addressing the directions and the procedures.

Furthermore, according to SS's perspective this combination provides a good dominant direction, and for these reasons both are useful to interpret an area with these features as a Tourism Local Area (Piciocchi, Siano, Confetto & Paduano, 2011).

Secondly, territory is seen as a product. In this second configuration, the identity of the place is the core strength of a product to promote. More specifically, the territorial combination involves a series of visual attributes that dynamically represents the system in a context (Bassano, Pietronudo & Piciocchi, 2018) that in the VSA are identified as an administration with specific regulatory actions, responsibility-takers and other elements that behave in a cooperative, but opportunistic manner.

As a matter of a fact, a territory holds not only a functional usage, but, as the same time, supports and innovates the productive processes, and, thus, it can be labeled as a Local Tourism System (Piciocchi, Siano, Confetto & Paduano, 2011).

Table 2: Different Interpretations of the various Territorial Configurations

Territorial Configurations	Source of Competitive Advantage	VSA	SSME + D	SSME + D & VSA
Territory as resource	Personality	Embryonal System	Good	**Tourism Local Area (TLA)**
Territory as product	Identity	Evolving System	Extended Good	**Tourism Local System (TLS)**
Territory as Image	Image	Unstable accomplished System	Unstable Service System	**Unstable Tourism Local Service System (U-TLSS)**
Territory as System	Reputation	Stable Viable System	Stable Service System	**Smart Tourism Local Service System (S-TLSS)**

Adapted from: Bassano et al. (2012).

To continue, the next view interprets territory as a image. The most peculiar thing of this configuration is that the place image, which basically is the stakeholder's general perception of the territory at a given period, represents the competitive advantage, and the local administration offers the agreements, rules and manages the controls. However, by having a variable decision-making process, the system tends to become unstable. Indeed, for what concern SS, service is the scope, but, in this way, it would lead value co-creation to a fast sinking as no seeds have been sown in the social environment. This scenario configures an Unstable Local Tourism Service System (hereinafter: U-TLSS) (Bassano, Pietronudo & Piciocchi, 2018).

The final combination, territory as a system, makes a shift from the previous direction, grounding the territorial competitive advantage founded on reputation, a set of socially shared beliefs through which co-creating value for and with the actors (Bassano et al., 2018) In synthesis, it is an asset combination adapted for systemic value co-creation because its brand, or value proposition, is distinctive and steady inside, while competing on reputation and spreading commitment and valuable programs.

By having proceeded in this way, a Smart Tourism Local Service System (hereinafter S-TLSS), meaning the result of the SS & VSA mix, can be set and seen as a valuable structure, capable to set a location branding at a structural point of view and a place reputation from a systemic point of view (Bassano et al., 2018).

Anyways, it worths to mention a couple of points on the addressing the discussion around the importance of argument like communication, because it owns a special role in guaranteeing a strategical and efficient interchange, the effects resulting from synergistic coordinated processes, and the mediation of the stakeholder's interests.

By focusing on these aspects, collaboration and cooperation is eased and allows a better planification and support on building, improving the distinctive cores of the system, and guaranteeing the satisfaction of each stakeholder involved in the process.

Taking everything into account, in the combined vision of SS & VSA the sytemic territorial configuration of a territory becomes a smart and stable system when its reputation becomes source of competitive advantage as each stakeholder gets involved to lead the rise of value co-creation and innovation (co-design, co-development, co-delivery) over the environment of touristic services.

3.2 Evidences from Service Dominant Logic and Smart Ecosystems

In the current competitive scenario, services pervade every business activity, involving any production system and any organization. The emerging importance of services with respect to goods, traditionally intended, and the decisive role played by them in the context of all economic transactions in the global economist encourages scholars, professionals and business experts to engage in the search for models, paradigms and theoretical constructs able to more effectively describe the new value generation processes.

The arguments and the theoretical construct of S-D (hereinafter: S-D) logic is quite general; by its nature it aspires to represent a new interpretative model of the business logic of the global economy. For these reasons, it perfectly suits to interpret the concepts in the context of an economic field, the touristic one, where service component is so important and where tourism trend is continually subject to evolutionary phenomena depending on the intrinsic characteristics of its product (creation, distribution, dissemination, innovation, duration) which favor repeated interpretative variations and numerous changes of perspective (Wang, Li & Li, 2013).

From this perspective, the S-D logic was introduced in the international scientific panorama by Vargo and Lusch, represents a change of perspective compared to traditional paradigms, capable of overturning the existing link between goods and services, revisiting the considerations connected to their exchange and consequent use, re-reading the concepts of value and its creation, reinterpreting the meanings of interaction, relationship and loyalty.

Indeed, these authors claim that businessmen previously followed a "goods-dominant" (hereinafter: G-D) logic; it particularity was the focus on producing tangible products and boosting revenues. Instead, the S-D logic proposes:

- a shift on the process of serving instead of creating goods, which means switching to the primacy of intangibles goods opposed to the tangibles one in the busienss marketplace offering;
- promoting the application and usage of dynamic operant resources instead of the consumption and depletion of static operand resources;

- an acknowledgment of the strategic importance of symmetric rather than asymmetric information;

- an understanding that an activity is able to make and follow through on value propositions rather than create or add value and it should address more relational rather than transactional exchange;

- a shift to an accent on financial performance for information feedback and learning rather than profit maximization.

Taking these aspects into account, it can be stated that S-D logic argues the collaboration of different stakeholders towards value creation and suggests their interaction in dynamic environment through the voluntary exchange of operant resources (Wang, Li & Li, 2013).

Moreover, this approach deepens the interactions among all ecosystem stakeholders, the social norms that compose the ecosystem, and the relative combination of assets for innovation and value co-creation; plus, it offers a concrete elucidation of the process where value gets mutually created between the producer and the consumer (Boes, Buhalis & Inversini, 2016). Therefore, these assumptions become very important to get the value co-creation and the innovation operations in the field of smart cities and smart tourism destination.

Overall the S-D logic proposes an enveloping viewpoint of organizations by the proposal of a service ecosystems view which overgoes the definition of service systems coming from SS, embracing a simplified approach to spot the various enablersof value co-creation; and also an integrated view for taking the growth of innovation at a broader level into account and, by taking the relevance of social norms into account in configuring interchanges and in the generation of new benefits as well.

According to this view, technology is surely conceptualized as one of the most important features of an ecosystem, but institutions have a leading role in asset combination and value creation actions, capable of increasing or decreasing exchanges (Vargo, Wieland & Akaka, 2016). Summing up to conclude this argument, the most relevant traits contextualizing the service ecosystems are: (1) institutions (cultural communication, beliefs, traditions, etc.); (2) value orientation; (3) asset combination.

Anyways, according to (Wang et al. 2013) S-D logic is still far from being a solution for the elaborated scenario of smart tourism destinations, as it has been criticized for its terminology, the stance towards the meaning of information, its focus on marketing. Nonetheless, some researchers (Cabiddu, Lui, Piccoli, 2013; Shaw, Bailey & Williams, 2011) embrace its framework as they have found a fair way to justify the value co-creation concepts in many field; and therefore, this discipline may offer an understanding as well on the process of value co-creation in smart tourism destinations.

For example, (Vargo & Lusch, 2011b) in their paper give as definition of an ecosystem of this kind as a relatively self-contained, self-adjusting system of resource-integrating actors linked with mutual institutional logics and value creation through service exchange".

By embracing this definition, tourism destination stakeholders can be seen as resources integrating actors connected through the organizational bounds of the tourism destination and the mutual and voluntary exchange of knowledge and skills. Indeed, it is the interaction and interrelation among these different actors that form a specific whole (i.e. the tourism destination) as well as the interrelation of this whole with the environment which forms the philosophy of S-D logic.

To sum up what tackled, S-D logic is a recent approach and only recently it has been employed in the area of strategic management; for these reasons, it may still not be enough to describe the value co-creation process in an holistic way, and throw lights on the intricacy of the smart tourism destination (Wang et al. 2013); however, its assumptions can be recognized as a valuable framework for investigating value co-creation and innovative processes in smart tourism destinations.

3.3   Integration of the methodologies

Tracking what discussed until now, one may say that smart service systems (imputable to SS) and service ecosystems (presented by S-D logic) present some similarities as well as divergences between them.

What can be understood from previous considerations is that this mutual behavior opens an opportunity to permit their synergies to present an idea of a system foundation capable of conceiving service ecosystems in an intelligent way, and, basically, the

sources of the newer theorization takes cues from the harmonization of the two conceptualizations.

To understand its final target, it could be relevant to recall the based-view technology of SS. As a matter of fact, considering the system from an engineering perspective, the scenario tends to outline the discovery of the micro-level of real developments of service delivery, even when the focusing of the results relies on sustainable outcomes (Vargo et al., 2017).

While, what is proposed in the S-D logic is a wider and more profound innovation scenario, analyzing service ecosystems where the overview starts from considering the pure investigation of binary user-supplier matchings till adopting a value-based system configuration (Siltaloppi, Koskela-Huotari & Vargo, 2016).

However, the most interesting comparison between the two methodologies lays on the fact the SS investigates the generation of mutual information that leads towards newer and more sustainable forms of innovation from a technological point of view (Siltaloppi, Koskela-Huotari & Vargo, 2016), while the S-D focuses on how the primary influence that the social framework affects innovation from the primordial phases of the activities, until being well-set to sustain the generation of valuable outcome for all the stakeholders involved in the long term (Lusch & Sphorer, 2012).

What value co-creation fosters is a deeper awareness which can be shaped into new forms of knowledge in a given time by asset combinations; indeed, social context is a necessary condition to take advantage from new technology, even though this can have great social impact leading towards a circular economy (Bolivar, 2018).

Still, there is a need to pinpoint that merged stakeholders' structural reorganization, or changes in institutional decisions may cause variability in the value of co-creation activities, which for these reasons do not depend only on institutional arrangements (Siltaloppi Koskela-Huotari & Vargo, 2016).

According to some studies, the overall tourism value proposition represents the competitive leverage on which building the value co-creation for setting competitiveness as it gets generated by several processes of sharing internally and externally (Piciocchi, Siano, Confetto & Paduano, 2011).

It is interesting to notice that the territorial perspective proposes new directions to the study referring to smart governance and territorial management, able to affect the obtainment of a competitive advantage, or more specifically, a multilevel structure – organized and shared by local actors, to assess those skills and fly-wheels for improve identity and reputation.

According to (Bassano et al., 2012), these drivers are useful to evaluate both the structural conditions, useful to comply a consonance analysis on which the local tourism service system brand destination, both the systems condition to generate a reputation analysis to enhance attractiveness.

What is important to remind as well is that, structurally, a S-TLSS comprises of human and material capital whose scope is co-generating value to the processes: in fact, every social and economic asset is involved in the distribution of the benefit created according to the win-win, while, systematically, a S-TLSS is a set of co-generating and co-participative nets aimed at improving destination appeal and territory attraction through smart multilevel governance.

Indeed, a smart multilevel governance unifies the public and private interests of decision makers to enhance the tourism local service system. By sharing informative cells, schemes of interpretation and sources of values, multilevel governance offers an overall competitive advantage that gives shape to its competitiveness traits.

The integration of these happens by a collaborative approach based on common values and trust starting from the bottom of the organization till reaching the top (Bassano et al., 2012).

The capability to compete generates value for the whole environment, but this should be intended as a virtuous loop of syntropy that keeps the progressive status of the value proposition and identity reputation, and at the same time, keeps track of the analysis gap between how the offered value is perceived in the market and the value proposition (Piciocchi et al., 2017).

Furthermore, the social interactions between users across embedded contexts of exchange work as input for organizational renovation and for the development of newer

ways of social practices, institutions, and cultural meanings (Barile, Grimaldi, Loia, Sirianni, 2020).

To conclude, the research of (Piciocchi, Siano, Bassano & Conte, 2012) explains that when technological and social features get merged, the system needs to provide the following conditions in order to enforce territory competitivity:

- structural conditions: setting and sharing a recognizable value proposition in line with the local features, customs and traditions, and on the same position with what stakeholders expect, to appeal the territory in terms of a synergistic mutuality between the value proposition and the required input.
- engaging the stakeholders in defining and co-creating the service in a systematic way, to get reliable and contextualized value proposition, improving place reputation by satisfying different interacting entities through the functions of a smart multilevel governance (Bassano, Pietronudo & Piciocchi, 2018).

After having also considered these assumptions into account, in this analysis it will be offered a circular vision capable of combining service system's innovation inclination ecosystem's social focuses to study a smart service system. Taking all the above-mentioned insights into analysis, the final intention here is to gestate tourism as a smart service system as expressed in Figure 8.

Figure 8: Value Co-Creation Process in Smart Service Ecosystems
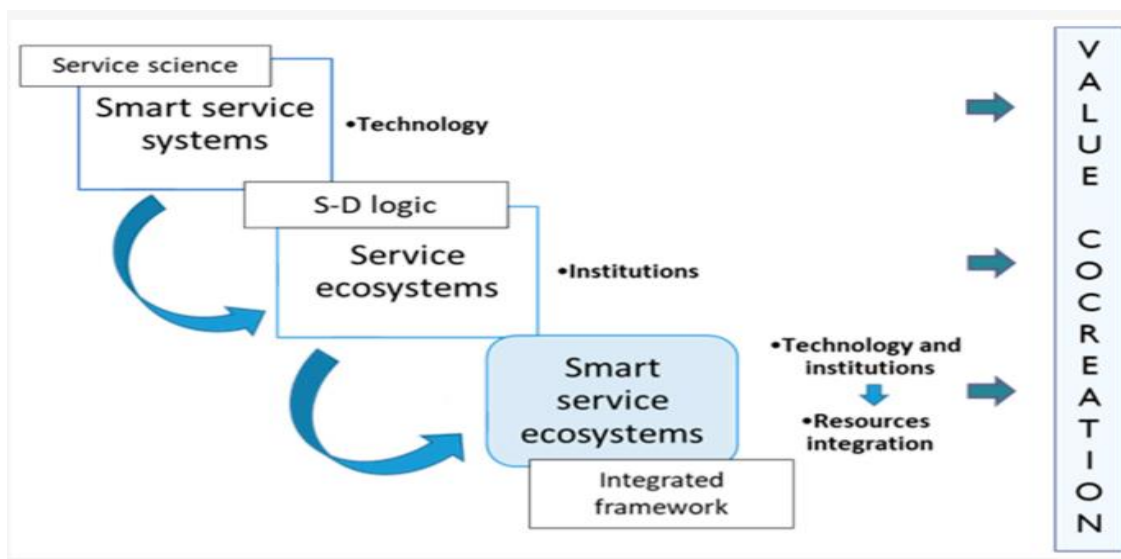
Source: Polese, Botti, Grimaldi, Monta & Vesci (2018).

Therefore, even though there is no univocal agreement on what are the features triggering the birth of service ecosystem, the existence of the three main different orientations deriving from papers review will be briefly mentioned:

- an interactive sphere, which basically is the meeting point with the user provider and the specific moment where resources interchanges happen.
- the technological component, that represents the leverage point to sustain value co-creation and continuous improvements.
- a symbolic dimension, meaning all those cultural values, beliefs, institutions, value propositions, and all those characteristics of the macro-context that works as vehicles for value exchange.

It is strikingly important to mention that users do not share just mere information, but some much useful, like experiences, skills, comments and other intangible traces, that is fundamental to the process to generate more knowledge on which to create competitive advantage. For this reason, in the asset integration dimension of information sharing tackled by researchers has been join on the category of interactive sphere (Lusch & Sphorer, 2012).

4   RURAL CONTEXTUALIZATION

The research on smart cities and tourism keeps advancing but problems linked with communities living rural areas tend to be addressed as a part of discussions in neighboring research field, like environmental studies, sociology. Arguably, the concept of 'the village' has not been very depeened by academics, even if rural areas and countryside communities are subject of interests for important polices such as the European Union's Cohesion Policy and the CAP, the Common Agricultural Policy.

For these reasons, when advances in sophisticated information and ICT led to the emergence of a extent amount of research on smart cities, the application and usability of ICT in the context of rural areas villages has been not deeply tackled in the literature.

The first section will take into consieration the latest urbanization trends and pointing on the difference between city and rural features; following, urban bias to consider when applying and referring to smart tourism initiatives will be presented.

Indeed, the focus is to highlight how smart initiatives have been proposed mainly in city context, and therefore, these models developed in an urban environment may have different implications in rual areas; different definitions and approaches for smart tourism solutions in less urbanized areas are explored.

Lastly, examples of initiative to support these places and further consideration will conclude the chapter. Therefore, this section will discuss also the scalability of smart destinations to a regional level, considering the smart tourism features that are heavily present in the urban awareness of smartness integrating the smart city topic.

4.1   Trends in population growth

In the 21st century, a constantly upward trend of human migration out of the countryside, and into swelling metropolitan centres, has characterized the world's power dynamic just in the last 70 years (World Economic Forum, 2019).

Indeed, since 1950, the world's urban population has risen from 751 million to 4.2 billion in 2018, and the trend shown in Figure 9 testifies how the rural population is expected to eventually decline (World Economic Forum, 2019).

Figure 9: Rural vs Urban growth population rate for 2050
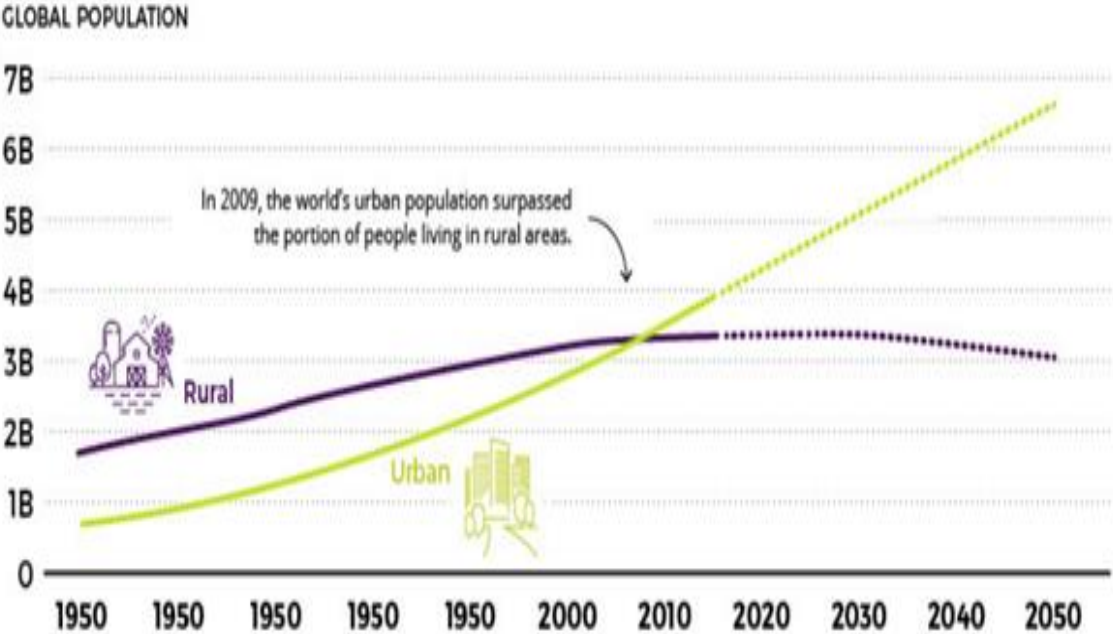
Source: World Economic Forum (2019).

Plus, as Figure 10 illustrates, the number of regional to mid-sized cities (500k to 5 million inhabitants) will greatly increase by 2030. Moreover, India, China, and Nigeria represent one third of the expected urban growth till 2050 (World Economic Forum, 2019).

However, fast urbanization does not imply only a drastic rise in urban populations. Indeed, some metropolises experience population contractions, given to low fertility rates in Asia and Europe. Given the rapid urbanization shaping the global economy, finding ways to provide the right infrastructure and services in cities will be one of the critcal problems to solve both for communities and businesses around the world.

Especially this last figure explains the evolutions of metropolis and rural settlements between 1990 and 2030, and it is evident how, even though the major trend results in a extension of urban environment, urban settlements worths a very large part of our society and businesses, which need particular attention when designing innovative solutions not only for urban realities but for rural territories as well.

Figure 10: Global workforce by 2020, by generation
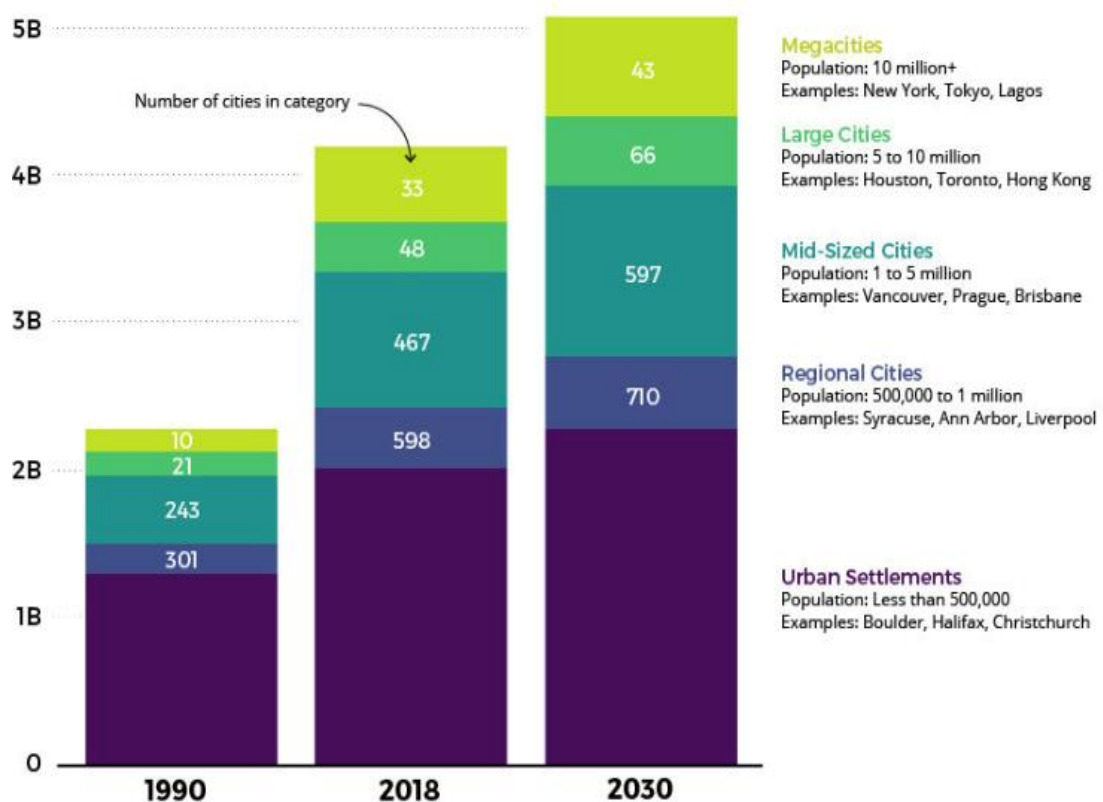
Source: World Economic Forum (2019).

4.2   Comparing Rural and Urban Tourism

Nowadays, society is evolving fast and yesterday's attractions may not have the same impact as before. Also, the dynamics of cities have changed; products are available everywhere online, but still there are problems like air pollution, trafic and stressful life. Then, the latest touristic trends, especially after Covid-19, become valuable insights, as rural destinations have became included into travel destinations, which assign positive connotations to the inner and less urbanized territories. Overall, it should be mentioned that the rural area is, essentially, composed of two main elements: its characteristic landscapes and agricultural production.

According to (Garau, 2015), by combining these distinctive features, a territory becomes worthy of being labelled as a place of interest. On the other hand, Rural Tourism is also linked with those touristic campaigns taking place in the rural locations with the objective of interacting with rural life, and acquiring knowledge about traditions and lifestyles of the people and the attractions of the zone" (W.T.O., 2019). Overall, it can be also claimed that rural areas are basically comprised of two core components: characteristic countryside points of view and agricultural production.

Table 3: Differences between urban tourism and rural tourism

Tourist attractions in the rural zone:	Tourist attractions of the urban zone:
Stays in places clearly identified with the cultural and historical identity of the area	Intense cultural agenda – the visitors can get to know the city through its architecture, museums and variety of spectacles.
Contact with nature, calmness, and quietude.	Trade malls and local shops – allow the tourist to buy both national and imported products.
Participation in gastronomical experiences »from the land to the plate« – cuisine of typical dishes that are made directly in the place where the products were obtained	Gastronomy experience – combining local products, generally from the rural sector, with global culinary innovations and trends, guaranteeing quality and attractiveness.
Wineries – sale of artisanal wines and production of products such as cheese, honey, etc., elaborated in perfect conditions.	Factory production – elaboration of own products.
Routes and guided visits to places that form part of the historical-cultural heritage.	Artisanal production – generally with products from the interior of the territory.
Walks that take advantage of nature such as processions, hikes, climbing.	Routes and guided visits to places that form part of the historical-cultural heritage of the sector.
Artisanal production: direct access to certain raw materials like wood, leather and wool allow the ingenious rural individual to create unique products.	Disposition of infrastructure and mechanisms to generate contacts with the international sphere – advertising, communication and commerce.
Popular and folkloristic festivals of the region	Typical festivals of the region – which are more massive and famous than those in the rural area

Source: Own work.

Furthermore, the rural setting not only became attractive to older generations dreaming to return to that immaculate old times, but the peacefulness, laidback lifestyles and nearness to nature characterizing the rural environment made youth as well curious to discover these experiences. Many nations share the same urban settings, given to the resemblance in architecture. For these reasons, only the rural environment can actually present cultural differences (Amoah, Radder & Van Eyk, 2018).

Given the wide range of supply, another point of discussion could ne that it is not so difficult for big cities sponsorizing themselves as touristic centers, as they count on being base of the economic impulse of the economy; instead, the rural sector gets emarginated in this matter as it cannot rely on several assets.

To summarize, topic is very deep to contextualize, and Table 3 tries to shortly summarize the differences, but, beyond the discrimination between the rural and urban, an ideal growth of tourism comes into play when the features of both environment co-create in a participative way, improving then the economy (Zhou, 2019).

4.3   Urban Biases and ICT Implications for the Rural Context

It is important to recall that the literature almost exclusively discusses the application of smart tourism to city destinations. In fact, the whole notion of smart tourism came out with the smart city development where smart destinations got intended as special examples of smart cities (Boes, Buhalis & Inversini, 2016), while smart tourism as a specific application of a smart city proposition (Gretzel, Sigala, Xiang & Koo, 2015).

Taking this into account, it can be understood as the focus on city destinations derives from a broader and more strategic smart city framework. There are studies that show how ICT and tourism destination are highly interdependent within each other and that it actually changes the tourist's relation with the destination (Koo et al., 2016)

While there are also some who claims that there is an infiltration of smart development topics considered as fantasies or too futuristic, and this is very evident in Northeast Asian visions of cities described in studies (J. I. Kim, 2014), and this regards also smart destinations. Instead, another point highlighted and made by (Herrera-Priano, Armas & Guerra, 2016) is that exists a trend to exclusively smartify capital cities given their higher population densities and the greater costs they can allocate, or often those areas

which surround the capital cities get classified into smart regions, as it can be noted in the case of Helsinki.

Indeed, the more feasible smart tourism development happens in the context of a city for the coexistence of several situation as can be the greater concentration of technology initiatives, or, of communication and built infrastructure, plus, public transportation networks are more rooted, and, for what concerns tourism, also the higher density of tourists in small spatial areas and with less seasonality.

Moreover, it must be added that generally the development of smart initiatives addresses urban problems like traffic jams, energy consumption and crowding, and, for these reasons, it could more easily be integrated to urban destinations, struggling with tourist mobility issues and all the social consequences connected to these. Taking this into account, nevertheless, there always are surely urban biases in the topic of Smart Tourism Destinations, indeed, with this "urban" burden, it results difficult applying the concepts of Smart Tourism to other types of destinations.

One sutdy of (Gretzel, 2019) specifies exactly these points affirming that the «urban heritage» of smart tourism might conceptually limit its applicability if rural destinations or tourism regions get taken into account; moreover, to enlarge the focus to which urban biases come into analysis, the same researcher mentions 4 specific areas (Connectivity, Mobility, Built Infrastructure and Governance) that actually have been addressed exclusively into the city analysis but which could not be similarly applied into a regional or rural context for the particular tourism characteristic of these areas.

Still, ICT plays a fundamental part in every sphere of tourism, as well as rural tourism, given the social exchanges among users and producers. On the contrary, the usability of the rural destinations increases the role of the inseparability of the tourist that in this way it can experience a territory with ease and confident on a smart, interconnected, and real-time technology platform (Mugica, Berné & Garcia-Gonzales, 2013).

Nowadays, the trend sees entrepreneurs that are able to add value to the experiences of tourists, allowed by offering new ICTs approaches. Indeed, in rural destinations ICTs provides the possibility to achieve greater visibility, communication, integration into tourist flows, marketing of products, and services of higher quality (Garau, 2015).

According to (Bethapudi, 2015) rural tourism visitors are very are very proactive in looking for information, and many places, about rural destinations and for these reasons, the label of rural tourism can be tagged on someone who is well informed, sophisticated, and aware of the importance of their active role in rural tourism (Rodrigues & Virtudes, 2019). Thus, it triggers that the Smart Tourism's postulation must overcome the limitations of smart cities to start creating in all tourist spaces.

Following this path, a degree of smart specialization of a territory has been tackled in some study (Ballina, 2020; Weindenfeld, 2018). In this sense, these have been the first researches to indicate that territories should specialize in specific sectors to better compete with other tourism destinations. Overall, smart specialization regards developing innovative solution in a given field, that would permit generating knowledge regarding the future value of a direction of change.

Moreover, there have been other initatives like the Smart Islands, as evidenced by the yearly held (Smart Island World Congress, 2019), including Tasmania in Australia and Cozumel in Mexico, and some regional Spanish areas, South-east Queensland, Australia and the Bay of Plenty region in New Zealand.

But also Smart Regions which have been studied by (Cocchia, 2014), which are not just a mere mass of individual smart destinations or a cluster of individuals; whereas, they are gifted with unique distinctiveness characters that then get reflected on the challenges and particular management, infrastructure and improvements needs.

While, within this context of smart specialization, the EU launched Smart Village initiatives in 2017. It can be generally said that their pillars and targets follow the same of smart tourism applications: applying traditional and innovative networks relying on digital innovations, innovative technology and better management of knowledge (Zavratnik, Kos & Stojmenova, 2018). Still, the particularities of the territory let face challenges concerning scalability for all the spheres and elements of smart tourism.

However, the most important contrast falls into the fact that these are specialized smart projects. Indeed, according to (Shen and Wang, 2018), the only way to exploiting rural tourism is developing Smart Village Tourism, as a mix of traditional rural customs and the ICT tools where the target is balancing competitiveness with social and

environmental sustainability. In table 4 there are mentioned few initiatives that have been pushed in some European countries.

Table 4: Examples of Smart Villages in Sustainability and Tourism

Nation	Field	Project
Germany	Sustainability	Digital Dorfer
Italy	Sustainability	Smart Basilicata
	Cultural Tourism	Tuscany
	Rural Tourism	Sardinia
Hungary	Sustainability	Hungarian Turistvandi
Norway	Sustainability	Artic Smartness Project
Portugal	Tourism	Calheta
Slovenia	Sustainability	Youth Drain

Source: Zavratnik, Kos & Duh (2018).

Taking everything into account, the consequence of adding the attention of smart tourism from a regional standpoint is bringing some ramification, and, for this reason, the distinctive features of regions have to be taken into account to better conceptualize the discussion.

Plus, many times tourism regions suffer from the marketing conceptualizations at the eyes of a tourist of the area, while there are no policy structures supporting them, or, when regional tourism administrative structures actually exist, then they are not so powerful at local levels, where actually smart tourism should be implemented.

Overall, smart tourism at regional level mostly needs multi-level governance strategies that spread diverse local DMOs approaches. (Herrera-Priano, Armas & Guerra, 2016) specified how greater coordination degrees between several stakeholders and across jurisdictions are needed to implement intelligent solutions at regional.

Also, one of the problems that get mentioned is that local governance can be influenced to different degrees, and, thus, it may not be able to mutually profit from smart

infrastructure initiatives, affecting so the stimulus to be involved in a participatory and governance processes which can heavily differ.

To sum up, the missing part inhere is a regional-level perception of smart tourism milestones, starting from its physical infrastructure to the pertinent technological solutions, until analyzing the several types of data needed to be collected for the modernization and regional business ecosystems it requires.

To conclude, and relevant as this last above mentioned point, a very important task on which smart tourism regions have to focus is on the definition of what a smart regional tourism experience implies, which not only requires an understanding of the experiences that a tourist may possess about a given destination, but also considering all those events from and towards a given territory within the region and the people and businesses living in it.

5 CASE STUDY ANALYSIS - CO-CREATING A S-TLSS IN RURAL AREAS

The purpose of this thesis is to contribute to a better understanding of smart tourism practiies with particular attention to those co-created by stakeholders in rural areas. For this reason, a literature review has been carried out and got presented in the previous chapters. In next paragraphs, I will provide information on the sample of participants interviewed and on the methodology employed to analyze the sample. Furthermore, information regarding Vallo di Diano, the Southern Italian territory object of analysis, will be shortly given. To continue, data will be analyzed and the results of the interviews will be furnished and insights deriving from this process will be contextualized.

5.1 Research Methodology and Sample

To tackle the challenges in question, a qualitative research is proposed, by employing an exploratory single case study. The reason behind this choice lies in the possibility for an in-depth investigation of a specific phenomenon, and given the theoretical and empirical character of this thesis, the qualitative and quantitative approach is presented as the most appropriate method to be used to achieve the proposed objectives. In fact,

qualitative research does not employ statistical tools as the basis for analyzing a problem, and thus does not intend to measure or number categories (Wang, 2017).

However, quantitative research is characterized by the use of quantification, both in the modalities of data gathering and in its treatment by statistical techniques, from the simplest to the most complex ones (Wang, 2017). As for the objectives, this investigation is characterized as an exploratory and descriptive study.

Exploratory research provides a closer and more general view of a given fact, which will result in the formulation of more accurate and operable hypotheses and hypotheses for further studies (Sung, Kim & Chang, 2015).

While descriptive research aims to identify the factors that determine or contribute to the occurrence of phenomena and deepens the knowledge of reality (Chauhan & Agarwal, 2016).

Furthermore, case study is an empirical approach investigating a current phenomenon within its context of reality, where the boundaries between the phenomenon and the context are not clearly defined and in which various sources of evidence are used (Harrison, Birks, Franklin & Mills, 2017).

Concerning the methodology used in this paper, an integration between S-D logic and Service will be employed. The case study takes into account a rural territory in South Italy. The reason why this specific territory is selected is because of the direct involvement between the author of the thesis and the territory.

Overall, the study will be conducted using some techniques based primarily on the analysis of primary sources (semi-structured interviews to stakeholders involved in the tourism field of the area) and secondary sources (bibliometric study, official statistics), visiting websites, identifying smart tourist destination models, etc.), and in the case study for validation and application of the proposed model.

The technique used for selecting the sample is non-probability purposive sampling, as it provides a possibility to interview information-rich cases (Saunders et al., 2018). Respondents are chosen in such a way that will cover differences in gender, generation, and educational background. Details about the sample have been summarized and are presented below in Table 5.

Table 5: Sample's characteristics

Number of participants in the interview process:		
20		
Gender:		
Female		**Male**
50%		50%
Generation:		
18-35 Years	**36-60 years**	**> 60 Years**
12%	63 %	25%
Education level:		
High School Diploma	**Bachelor's degree**	**Master's Degree**
20%	40%	40%

Source: Own work.

Twenty participants have produced their contribution for this case study. Both genders are equally represented. Participants have been divided into three generational clusters, as visible in Figure 11, where almost 9 out of 10 interviewees result in being over 35 years old. Regarding the distribution on their educational level, 80% has at least a degree while the 20% left holds a high-school diploma.

Figure 11: Clusters of Interviewees
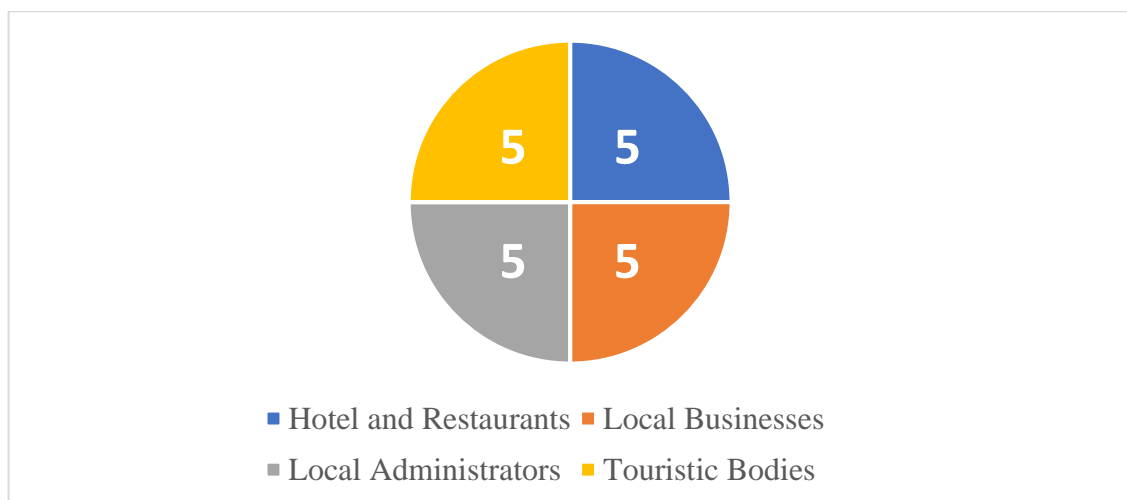
Source: Own work.

5.2   General information about the territory under analysis

The 28th Rural Territorial System "Vallo di Diano" has a territorial surface of 925.1 square km, equal to 7% of the regional territory and 18.8% of the Salerno area, including territories of 20 municipalities, all falling within the province of Salerno. What Figure 12 shows is the distribution and contrast between the urban and rural areas in Campania region, showing the rural characterization of this territory. 62% of the System's territory falls in areas of the medium and high limestone mountains (Regione Campania, 2013).

Figure 12: Urban vs Rural Areas in Campania and localization of Vallo di Diano
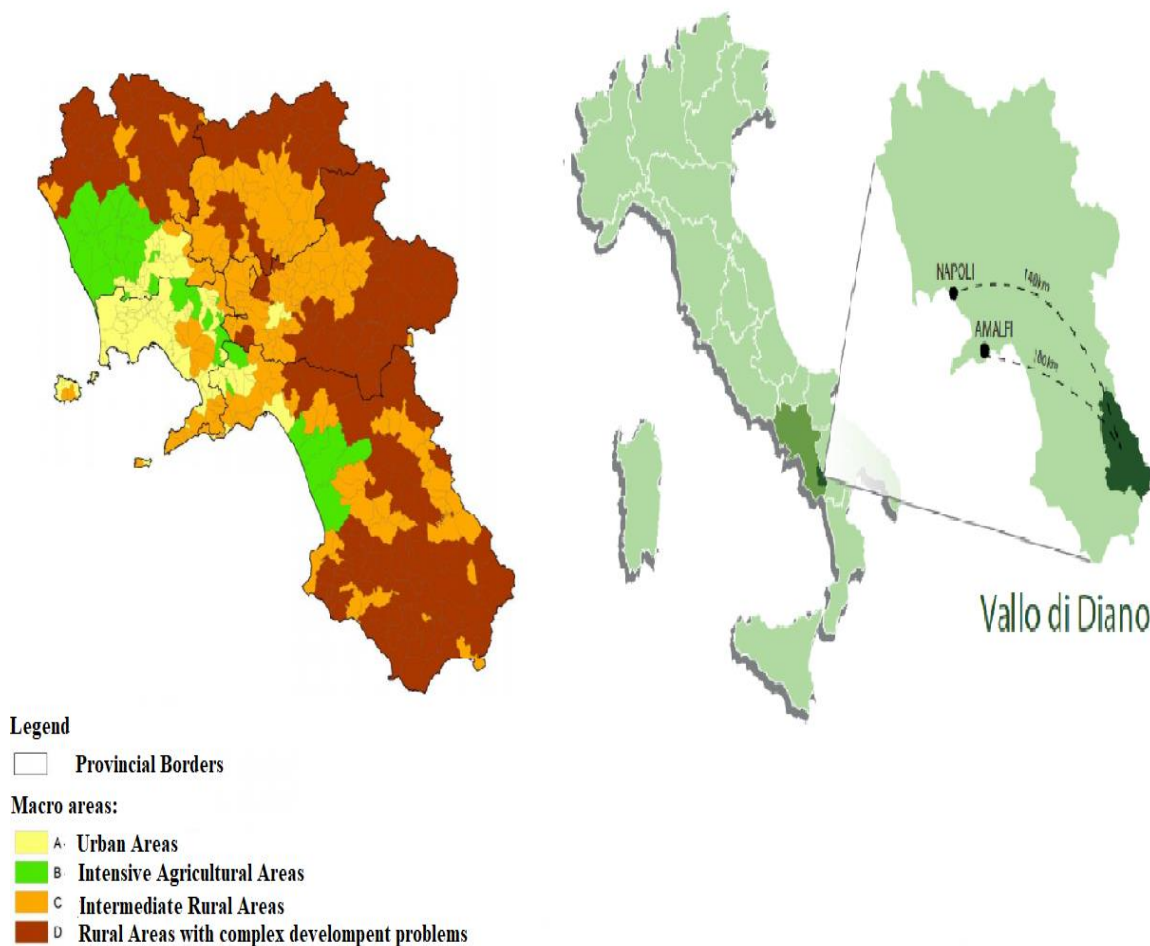
Source: Regione Campania (2013).

Land use is characterized by the typical altitudinal succession of the rooms of the Campania Apennines, with the beech woods and the prairies of the peaks and the extensive highland sand summit karst plateaus; while the middle slopes and lowlands are dominated by sub-Mediterranean deciduous forests and xerophilous grasslands.

The slopes foothills connecting with the plain, with a minimum slope on the debris of groundwater and cones, are mainly for agricultural use, with a dense mosaic of olive groves, vineyards, arable land, fodder crops, small strips of oak woods and locally fruit chestnut trees, located at fresh exposures on deep pyroclastic soils. The hilly areas, arranged on clayey or flysch lithologies, at the foot of the multi-limestone relieves high energy, affecting 17% of the surface (Regione Campania, 2013).

They are characterized by a complex mosaic of meadows, arable land, olive groves and oak woods. About 18% of the system's surface includes the floodplain and terraced areas, with the ancient Pleistocene lake which has been reclaimed since Roman times (Regione Campania, 2013). The plain, crossed longitudinally by the Tanagro river, is characterized, in the northern portion, by soils with fine texture, with limited drainage, intended for cultivation and cereal growing. The southern portion of the plain is instead characterized by medium to moderately fine soils with good or moderate drainage.

In these areas one passes from the landscape to open fields of the northern clay plain, with units' wider cultivation, to that thickly placed, with simple or arboreal vegetable gardens and arable land, or cultivated with permanent meadows and alternate fodder. Overall, the forest formations cover about 50% of the territorial surface of the system; those of prairie (permanent meadows, pastures) on 16%. Urbanized areas, which made up 0.3% of the land area in 1960, today have increased to 2. 1%, a phenomenon linked to the expansion of residential areas and production areas in the plain of Vallo di Diano (Regione Campania, 2013).

For what regards infrastructure and communications, the territory is linked with the main city, Salerno, about 80 km, reachable by the national highway, as nearly 30 years ago railway connection has been cut by regional administration, leaving weaker infrastructural systems to this territory.

While for what concerns Internet coverage, ADSL cover's the 100% of the houses of each villages, while FTTH and FTTC technologies is currently being installed, with some municipalities already at almost full availability, differently, other more remote locations are in the installation phase and trying to reduce the gap. Vallo di Diano gets considered as a geographical subregion of Cilento, boundary between the Greek colonies of Magna Graecia and the indigenous Etruscan and Lucanian peoples, and it is

nested into "Cilento and Vallo di Diano National Park", World Heritage Site from 1998. Figure 13 shows the two main tourism attractors that ths region offers.

Figure 13: Charterhouse of Padula,and the Caves of Pertosa-Auletta

Source: Own work.

The most important is the Unesco Heritage Padula's Charterhouse, the second biggest monastic structure in the world, and the Pertosa's Caves, one of the most suggestive caves in South Italy. Besides there is the medieval city of Teggiano, the Roman Bridge and Saint Anthony Convent in Polla, the Paleo-Christian Baptistery in Sala Consilina, and the WWF natural waterfall of "Capelli di Venere" in Casaletto Spartano.

Besides, it relies on strong culinary traditions, which has generated successful wine-gastronomical festivals. Indeed, the so-called Mediterranean Diet takes birth in the south province of Salerno for the particularity characteristics of its products, and, especially during summertime, many people visit these inner areas to discover recipes, ingredients and tastes at the local food fairs.

5.3   Data analysis

In order to respect the two research questions proposed, this paper tries to develop the underlying scheme for the environment of Vallo di Diano's tourism sector:

● the principal actors or groups (people-activities).
● the type of asset taken as an object of exchange (resources integration).
● the most adopted types of (technology).
● the social rules enabling exchange (extant institutions) and deriving from exchange (production of new institutions).

Coherent with the system orientation embraced, users are seen as nested and interrelated systems (Vargo & Alaka, 2012), which reflects the entire tourism system as vast sets of stakeholder categories that are related to the various dimensions of our society (Sigala, 2015). More in detail, the identified actors of the model are:

● Economic stakeholders, such as tourists, travel agencies, hotels and all the groups included in the tourism supply chain.
● Private businesses (restaurants, pubs, stores, etc.).
● Public activites (museums, cultural events).
● Auxiliary services (examples: transit, telecommunications, payment providers).
● Regulative agencies (tourism or local administration) and NGOs

For what regards technology, confident of the enhancing driving power in redefining user's co creating experiences (Neuhofer, Buhalis, & Ladkin, 2012), the work seeks to considering several value co-creation enablers in the tourism system taking every phase of service supply, from pre-order to post-sales into account (Tommasetti, Troisi & Vesci 2015). Thus, the plausible social networks strategies, reviews aggregators website, and other platforms will be object of investigation considering three different stages:

● Before-delivery: online platform reservations systems (for example, TripAdvisor, Expedia, etc.)
● Service delivery: applications for instant communication allowing arrangers to keep contact with travelers all over the journey.

- After-delivery: social networks, blogs, enabling actors to review and evaluate the service (instances can be TripAdvisor, Facebook, Booking.com, etc.).

Next, thirdly, resources can be seen as material and immaterial elements that users share in the smart tourism ecosystem, determing reciprocally operand and operant assets in S-D logic (Vargo & Lusch, 2016). The difference between the two resides on the fact that operand assets are physical and material, while operant resources are intangible assets directly linked with successful value co-creation and for gaining competitive advantage (Barile, Pels, Polese, & Saviano, 2012). As explained below, these two types of propositions get re-intended as follows.

- Operand: physical materials that actors intentionally deliver to clients (information linked to basics or "extras" of a service, etc.).
- Operant: data, know-how, competencies knowledge, feelings, experience, reviews and all the relational attributes that tourists share before, during and after the travel.

To continue, another value co-creation enabler as important as technology can be considered institutions, meaning all those aspects lined with norms, symbols, values, law, traditions, etc), which works as coordinator of the behaviors of the users (Barile, Lusch, Reynoso, Saviano & Spohrer, 2016). Considering this, institutions are practiced by applying the concept of normalizing the representational procedures taken into account to consider implicit or explicit laws and practices that affect markets exchanges and then are employed to the S-D context to investigating the divers value co-creation processes happening along the process of integration (Vargo & Lusch, 2016). As much it concerns on this feature, two different areas of institutions go under analysis:

- Formal Rules: linked with check-in and check-out programs, payments, or tourism general policies.
- Informal and social rules: beliefs, traditions, cultural propositions and social praxis, by which users exploit interactivity as means to provide understanding and communication to itself, and, at the same time, produce newer contents and affect the ways these meanings and symbols get commonly perceived.

Shortly, smart tourism ecosystems are groups of users (identifiable both as tourists and citizens, companies operating in the tourism industry, buesines operating in other fields,

systems infrastructure, local administration, local entities, etc.) merging material and immaterial assets simultaneously:

- Relying on already available technology and institutions as means to co-creating value in the short period.
- Developing new innovations or institutions (praxis, social rules, customs, etc.) in the long period.

It has been hypothesized that the combination among users with other organizations (socio-political or economic bodies) generates mutual information and value co-creation in the short period where the acting of technology is embodying, as it empowers and facilitates resources integration extending itself horizontally towards other dimensions.

On the other hand, the production of value co-creation can generate innovation by renovating knowledge exchanges continuously to develop newer capabilities, skills and experiences in the long term obtained by the reformulation of implicit knowledge at given time and, therefore, this integrated scenario offers a ground where efficient procedures of value co-creation can support new solutions to existing or newer problems and generate innovation (Yoo, Sigala & Gretzel, 2016).

To provide a more detailed overview, innovation can be understood according: service innovation, the advancements of the service offered, processes, management, architecture or application (at a micro-level of SS); or social innovation, creating new value propositions and harmonization of new solutions that drive towards sustainable and viable forms of value co-creation in the long term. As a matter of fact, the exchange of assets at a given time generates co-created value which may enable the production and improvements of knowledge, and cooperation for constantly increasing competitive advantage in a sustainable and viable way.

What can be brought in this context derives from a research according to which businessmen should manage value co-creation absorbing the skills to strategically choose the fair counterparts furnishing the best combination of resources, and entertaining constant relations to favor the birth of win-wins solutions, and a fair distribution and access of socio-economical value throughout the network of users (Yoo, Sigala & Gretzel, 2016).

Once having presented from a theoretical background, a brief overview of every dimension of the ecosystem and, having underlined the subsets for every category, the macro-fields (users, technology, asset combination, and institutions) have been used as macro-classes for elaborating the interview layouts.

5.4   Research results

The results will be shown in the next paragraphs. Basically, I will provide a brief introduction on the dimensions explored, with tables introducing the objectives of the questions submitted; then, the outcome resulting from the responses of the people interviewed with some short references at their responses to highlight particular insights and comparisons witnessed by this research is presented and on which limitations and conclusion paragraphs will be based on.

5.4.1   Actors

Following the assumptions of (Vargo & Lusch, 2016), the tourism system gets considered as a nested and interconnected set of stakeholders, belonging to the economic sphere, social one, and political. Therefore, different questions have been structured according the following objectives, understandable from Table 6. It turns out that people interviewed in the sample develop informal relationships with other local stakeholders.

Even though formal collaborations among them are not established, there is an overall trend of sharing information and activities by the majority of the actors. With regards to informal collaborations, these get set with restaurants, museums and local buses; formal economic collaborations instead come into play with parking services and travel agencies to obtain discounts related to exhibitions or excursions.

Regarding the political environment there is some evidence of the integration and participation of the local administration in developing touristic projects and ideas. In this dimension have been discovered many political interventions helped the territory to grow up. However, there are also who believe that local administrators lack of a global vision, and that have not implemented the right tools to foster tourism on digital platforms, which get addressed more by the young generations.

Table 6: Target of Questions for Actor's Dimension

Dimension	Objective of questions
Economic	understanding if formal or informal arrangements were made with other tourism-related entities, or with other local actors offering complementary services, and if services or promotional activities get co-created with local members offering subsidiary services.
Social	investigating the setting of commercial agreements and/or informal partnerships with local cultural associations or museums and/or creation of collateral events to promote a given activity.
Political	analyzing if it has established formal and/or informal relationships with local administration (municipalities, tourism entities, etc.) and what is the degree of cooperation between local business or touristic organization with local administrators.

Source: Own work.

- *"I believe that touristic administration lacks effective communication and management [...] it does not support nor integrate the building of networks with other systems [...] from customers negative opinions pop out when comparing the infrastructures and connections present here, with those that Salerno, Naples or other cities in other regions can offer"*

To finish, about cooperation among the stakeholders of the tourist system, the majority of the interviewed sees it as a good approach, but they also highlight the fragmentation of the territory and jealousies between distinct touristic bodies that during the years have always competed against each other. One interviewee highlighted: *"I was able to get an investor to create a network for electric car mobility into our territory, but the most difficult part is to find an optimal solution for everyone involved, and this becames frustrating because some people lack of vision on sustainability and innovation"*. While there is also who criticizes touristic networks pre-existing, pointing to the absence of a direct interactions with visitors in all the phases of the travel, meaning in all the processes involved from the reservation to the permanence and returning home.

5.4.2 Technology

For what concerns technology, the questions were made with the purpose of understanding what technology is used and what tools are employed to interact with tourists before, during and after the travel. More specifically, Table 7 addresses the questions' purpose. It turns out from the results that common platforms adopted in pre-delivery are online reservation websites like Airbnb, Booking, Expedia.

Table 7: Target of Questions for Technology's Dimension

Phase	Objective of questions
Pre Delivery	understanding on which technological platforms online reservations were made and what were the social networks or applications used to get in touch with users before the journey.
During Delivery	understanding which messaging services and platforms were employed to keep in contact with customers during the journey
After Delivery	discovering which platforms, social networks or applications are mostly employed for staying in touch with customers after the journey.

Source: Own work.

As one interviewee mentioned: *"I know people in the area as well who use Airbnb as well to rent their houses, so all the communication processes happen on their platform or on once having exchanged mobile contacts [...] My hotel reservation system integrates requests from platforms as Booking and Expedia, but we have our own personal website where we have developed a little bot to interact with tourists"*.

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Nevertheless, few interviewees also integrated their own ICT solutions in their websites as the Certosa Charterhouse or the Pertosa's caves as it was claimed that *"On our website people are enabled to buy tickets, retrieve information, and access multimedia contents [...] Since a couple of years we have developed an AR project which allows tourists to have a real idea of what is going to find once it enters in Pertosa's caves even before arriving here"*

Instead, for what concerns during the travel, local activities keep in touch with tourists mainly via WhatsApp and phone calls, allowing a real-time communication, where WhatsApp results the most used one by the whole sample of interviewee.

- *"In the last years communication has drastically changed in our sector [...] Now, everybody uses WhatsApp and since we use it in our activity, it actually changed the responsiveness we can offer to our clients. "*

Lastly, the relationship with tourists after the travel is kept by answering to reviews on web platforms and keeping updated travelers regarding discounts and events through social networks, with Facebook, Instagram, and TripAdvisor playing a leading role. One interviewee revealed: «*Many ignore its potentiality, but I have always invested in marketing campeing on Instagram to promote my activity, and I can tell you that I have reached many people came to my restaurant after some of their freind shared a photo of a pizza and they found it on their feed news... if you look at that photo, it makes you want to eat that pizza* »

However, there is also who mentioned that has difficulties in maintaining a relationship with tourists, as stated by one interviewee who claimed that: *"It is difficult to maintain relationships, as visitors here just spend just a couple of days in our territory and there is not so much time to create connections. Moreover, most of those who come visiting*

our places are less digitally educated and so we have difficulties to relate with them once they left".

5.4.3   Resource Integration

To follow, results on the institution dimension are exposed. As explained before, operand assets are physical and material, while operant resources are intangible assets such as data, experiences, know-how. Both are used in the value co-creation process, and therefore are used as guidelines for the resource's integration process understanding as Table 8 shows.

Overall, the replies highlighted how mostly the material provided are those furnished by the municipalities and the Tourism Local Authority: maps with the monuments to visit, brochures of other places, booklets with the history of the city, informative material such as bus timetables, and examples of gadgets as well have been encountered.

As example, it has been explained by an interviewee who admitted: **"*We furnish them with booklets containing all the information they need, from the timetables of the company buses to move within Vallo di Diano or to get to the main cities [...] to other possible activities that can be done in the area as excursions, horse-riding, local cuisine tasting.*"**

Table 8: Target of Questions for Resource Integration's Dimension

Asset Type	Objective of questions
Operand	discovering if informative material and/or merchandise customers (or other tangible things) were delivered to visitors.
Operant	achieving an understanding on the virtuous word-of-mouth among local stakeholders in suggesting collateral offers; analyzing the impact of the suggestions received from visitors to improve the service or to involve them into business strategies.

Source: Own work.

Instead for what concerns operant resources, the received answers considered providing information about everything the tourists need, but suggestions on other services can be influenced by the personal knowledge of other businesses. Most of the suggestions given to consumers relies on the quality of the business being recommended as the overall satisfaction is given by the whole set of the travel experience.

Regarding information provided by tourists, the trend looks like they share opinions and assessments on the service experienced. The sharing of experience becomes useful to those local businesses as they can identify issues to improve. Interestingly, one interviewee highlights the importance of exchange by stating that he prefers physical feedback rather than online reviews, as a problem can be clarified immediately.

- " *I have run a hotel since more than 30 years [...] layouts have changed, the overall service we provide has become smarter [...] We are totally open to accept suggestions and match tourists' needs; the insights from digital tools are useful [...] I think in the tourism field physical feedback is more important than the digital one.[...] I personally ask if their permanence satisfied their expectations and needs [...] because there is the possibility to better intervene if they encountered a problem.*"

Overall, tourists seem to leave a positive review for local business, while another said that it is often more difficult to match tourists' expectations as they compare this territory with others with different characteristics. Information is linked not exclusively with reviews but also with culture of origin both of locals and visitors. Indeed, an exchange of information about differences among diverse cultures and acquiring and learning of new practices and customs both for visitors and providers comes out from the interviews.

- "*There are several museums in the area, for example the one in Teggiano showing the tools used by our grandparents to harvest, or the one in Polla showing the typical folkloristic dresses [...] These museums testify the roots and traditions of our territory[...] tourists seem to appreciate [...] I had hundreds of conversations where I compared visitors ' customs, traditions. *"

As a matter of fact, locals can benefit not just merely for their culture but as well their knowledge and therefore innovative ideas can be realized to improve the services

offered. 4 interviewees declared as well receiving small gifts from visitors. To finish, the information exchanged with other local stakeholders is both formal and economic in some cases, but informal in other cases.

5.4.4   Institutions

Questions for the institution's dimension have been divided into three areas as it can be seen below in Table 9. Specifically, the type of rules can be divided and summarized into 3 categories: formal, informal and social.

Table 9: Target of Questions for Institutions' Dimension

Type of Rule	Objective of questions
Formal	discovering if tourists had to follow some special rules during permanence, or if there were any kind of prepared or unplanned moments with people; understanding if activities was restricted exclusively to working hours or was beyond working hours as well.
Informal	understanding if any recreational times happen with visitors and if these are organized or unplanned or if business values, propositions, philosophy, lifestyles are shared with tourists and local culture get shared to customers or guests (habits, lifestyle, food, local people, language, etc.)
Social	investigating if strong relationships with users have been established during and after the journey, and if they are willing to establish relationships with locals, or if some special rituals are happening with visitors.

Source: Own work.

For what concerns formal rules, mostly they are linked with check-in and check-out time, regulations on-site and pricing on the website, as explained by an interviewee who claimed: "*Since the moment of their arrival, we have to obligation to check IDs, explain the rules of the hotel like breakfast moment, check-out obligations and so on*". Also,

other responses highlight advice to avoid vandalism, waste as stated by an interviewee who told: **"***What I do is always explain the regulations especially now after COVID we have to put more emphasis on this aspect [...] but also not leaving lights on, not be noisy during night hours [...] or trash differentiation collection* "**

Instead, on the other hand, social and informal norms questions were made to have an understanding of knowledge and culture acquisition of the place through stories or anecdotes. The majority said that the information provided changes according to the travelers' culture and the reason behind their travels.

Anyways, locals try to share the culture of the Vallo di Diano, by providing them information on the customs of this area of South Italy. Interestingly, the whole set of respondents affirms that the offers aim to spread the culture of this territory and to actively push travelers to discover places.

Later, in two interviews, some locals claimed to have had experiences with visitors not interested at all in the culture of the territory and that were not happy with the overall opening hours of attractions and the closing days of business' activities.

- **"***Most tourists come here to explore the culture of the territory [...] there are also who just come here to explore nature or to hunt which are less interested in cultural events.[...] I had cases of foreigner visitors which were complaining about the poor transportation to reach the area and for the closing time of supermarkets.* "**

On the creation of leisure moments with tourists, the replies have been different. Some said having spontaneous and informal moments, and mostly get affected by the length of stay and by the age of the visitors. Cases of rituals happening among local and visitors have been found, such as a welcome drink, or taking pictures with travelers.

Regarding establishing relations of friendships among locals and visitors, there have been found evidence of how social networks play a huge role in keeping the contacts and to spread the territory and its attractions; moreover, also cases of retention, with visitors coming back to the visited places have been found.

- **"***Three years ago, I met a girl from another region who spent some summer days with her family in our village and joined the rafting activity [...] we became friend and we have been staying in contact by Instagram.[...] they were impressed so much*

*from the hospitality of the territory [...] she has also came back visiting here and introducing these places also to other friends.***"**

5.4.5 Considerations deriving from the results

Taking everything into account, as shown in Figure 14, the role of technology, which allows the exchanging of information over the whole service provision, gets confirmed as an operand asset; this last one provides those invaluable operant asset that make service effectiveness stronger and to enhance value co-creation and service innovation in the long term (Lim et al., 2018). However, social dimensions get affected as well by institutions, which let service innovation evolve into social innovation seen as co-creation processes boosting new social practices resulting from the integration of experiences. Considering this, the advent of new value propositions and the rising of new informal behaviours, customs, and trends which drive towards the development of the whole entire local rural environment is what social innovation generates as outcome; while the innovative processes and services, which are jointly created with other users, are the results of technological innovation.

Figure 14: Value Co-Creation Process for Smart Tourism in Vallo di Diano
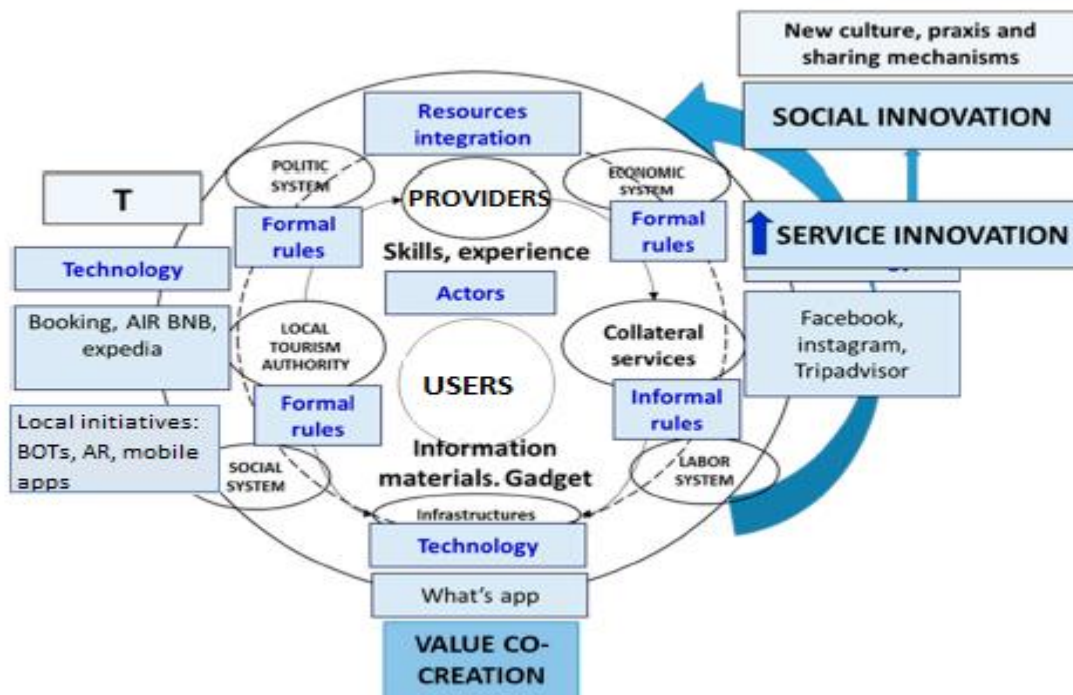
Adapted from: Polese, Botti, Grimaldi, Monta & Vesci (2018).

Nonetheless, the whole process is based on the interaction among actors that together they are able to co-create value for the territory relying on the technological infrastructure. What Figure 10 wants to highlight is the need for a smart multi-level solution:

- **smart,** because it is able to detect innovation factors, align interests, leading the efforts and share a co-creative culture;
- **multilevel** as it linked with a bottom-up approach, which considers every actors of the territory: not exclusively policy makers or local and regional administrators, but tourists, locals, tourist operators and businesses as well.

What also comes out is to design such a solution that would mean implementing a set of actions capable of critically studying the tourist area, not just from a mere structural point of view but as well from a systemic one. Therefore, it is absolutely essential defining the strategic analysis of the entire system and, besides that, knowing interests and expectations of each stakeholder participating in the system.

6   LIMITATIONS AND IMPLICATIONS

The factor limiting this thesis is surely methodology, as adopting a single case study does not empower a generalization of the outcomes; furthermore, also the number of interviews gathered in the data collection process would need a higher participation to improve data validity. Moreover, it must also be said that in the literature sources there are not so many results linking smart tourism system adoption, value co-creation and rural territories. What could be integrated with the interviews to more deeply analyze data and obtain more insights are further qualitative research techniques like observation or content analysis.

Moreover, this research got addressed on local stakeholders involved in tourism and therefore it does not consider travelers' opinions, from which it could be made a comparison analysis between locals and visitors or acceptance and use of technology (Botti, Grimaldi, Monda & Vesci, 2017; Botti, Monda, Pellicano & Torre, 2017). The elaboration of this work has employed a holistic view to support the co-creation. In order to re-interpret smart tourism as a smart local tourism service system and adopting a system view of value co-creation a systematic approach has been used which is able to

furnish an innovative perspective that portray the relationships among asset integration, local administration, technology and progress by establishing important innovations in this field of research (Vargo et al., 2017).

The uniqueness of this paper is based on a reconceptualization of a tourism sector of a rural area, by a comprehensive approach relying on the S-D logic suppositions overtaking the simple theoretical explanation of the service ecosystem's dimension, which enables to better identify stakeholders, technological platforms, and resource integration processes. Overall, this full-comprehensive approach and its four dimensions identified in the system can be used by administrators and businessmen to spot strategies for managing service delivery in a more effective way, and to spread innovation and value co-creation in the long run.

Two implications, one theoretical and one practical, come into analysis when combining service systems and ecosystems models of value co-creation in a systemic view. With regards to the first, the spotting of those key enablers enhancing value co-creation can help to boost the current interpretation of value co-creation and it highlights diverse users' types of actions and collaborations.

The dimensions brought into analysis are useful to analyze a field of study which has not deeply tackled. For these reasons, the practical implications in co-creating value have been faced. What is interesting is that from the observation of the stakeholders composing the system and the way they engage better relational approaches that can improve the complessive quality of the service.

This means also integrating and adopting ICT platforms, through which knowledge exchanges and enhancing of stakeholders' involvement can be obtained. In addition to this, the underestimation of the role played by institutions, found as a gap to fill in the literature, can be undertaken by institutions engagement and newer ones detection acquired from user-providers connections.

Following, by mediating the holistic definitions (common strategies to balance the dimensions of the eco-systems) and the reductionists ones (detection of single stakeholders, asset, technological infrastructure and institutions) strategic views of value co-creation can be adopted in a complex environment as tourism.

Overall, this work follows the aim of reshaping value co-creation according to the adoption of a system view and meta-theory. In order to do that, value co-creation is re-interpreted according to a micro point of view (meaning the spotting of co-creation processes), and following a macro standpoint, linked with the possible generation of newer institutions or the reinforcements of the pre-existing ones.

Moreover, the combination of the two methodological approaches can also contribute for further theoretical developments in service research by inspiring new considerations and by challenging those one in theories which are founded merely on a theoretical level.

What emerges as well from the last advances in S-D logic is that adopting a system views in unstable and fast-changing environments as tourism becomes fundamental in re-considering the definition of value and interdependencies in dynamic contexts. For these reasons, combining different service theories is needed to introduce theoretical consideration for service and value co-creation.

Another important feature to highlight is that by spotting specific mechanisms, stakeholders and the touchpoint tools in smart tourism service ecosystem, those in charge of decisions can be helped to generate strategies to boost asset exchanges, as well as policy makers in setting sustainable interconnections to spread information exchanges and supporting stakeholders involvement and interaction by using ICT tools.

To sum up, the conceptualization of value co-creation for a smart local tourism service system tries to spread the combination of value co-creation practices at the top of the organizational tourism strategies and to reduce the gap in strategy adoption to apply at general management of the tourism system.

CONCLUSION

The elaboration of this work has employed a holistic view to support the co-creative generation of a structure for smart tourism local service systems. What emerges from the interview results is that the stakeholders' clusters of Vallo di Diano's system are inclined to establish relationships. What strikes also is that collaborative approaches are enabled mostly in a formal way, by offering packages of services and discounts; more informal collaborative initiatives have still been encountered, but less frequently.

Instead, for what concerns technology, the totality of the sample highlighted that fact that ICTs represent core aspects on which managing the activities, and it eases the establishment and continuity of sustainable exchanges among local businesses, local administration and visitors.

Plus, stakeholders share the collaborative approaches, by adopting ICT's instruments to communicate among each other and with tourists and to exchange several types of data. Cases of bots, and of AR applications have been found as well. This approach is commonly perceived by the interviewees as an instrument on which useful advice for enhancement can be extracted and therefore leading to improvements.

Furthermore, the pertinence of the integration of assets gets confirmed too. By focusing on the what comes out of the analysis, the interviewees involved with tourism share information about the services offered, but they do not lack to share other services offered by local stakeholder regarding local markets and for what regards the traditions, customs and culture of the territory.

At the same time, another feature popping out is that locals try to discuss any problematic situation emerging in the time spent in the territory and trying to be helpful for tourists. What is interesting to notice is that the exchange of assets with the visitors generates a connection that overcomes professional interests.

Regarding visitors, it emerged that they are active in sharing and communicating all along the three stages of the experience, both by using technology and through real live meetings and conversations. Moreover, another evidence coming out is that they are active in sharing their judgements, feedbacks both positive and negative, or acknowledgements by online reviews that get used by locals to improve their services, and to generate value in a co-generative approach thanks to visitors suggestions.

Indeed, communicating information online or offline enables creating innovation in the assistance offered. To conclude, and to confirm the interdependence between value co-creation and feasibility, the identified features of resources integration, enabled by ICT, create value as: (1) economic benefit, local businesses can achieve improvements as they develop the service offered; (2) social welfare, by enforcing connections among system stakeholders; (3) environmental gains, this co-creative approach calls for the growth of the whole territory.

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APPENDICES

Appendix 1: Povzetek (Summary in Slovene language)

Po podatkih Združenih narodov (2019) bodo do leta 2050 v mestih živeli več kot trije od štirih ljudi. Aktualni trendi kažejo, da se poseljenost v urbanih predelih povečuje, kar pomeni, da so središča mest manj poseljena. Poslovne dejavnosti se zapirajo, storitve zmanjšujejo in na splošno so slabše ter nekakovostne (Bolay, 2020).

Dandanes se v kontekstu digitalne preobrazbe močno spreminja način življenja, veliko raziskav se ukvarja z napredkom in lastnostmi pametnih mest (Van Dijk & Teuben, 2015), kjer je turizem eno od področij, ki se ga je digitalno preobrazilo s pametnimi mesti (Khan, Woo, Nam, & Chathoth, 2017).

Ena od značilnosti pametnih aplikacij je možnost, da uporabnik postane gonilna sila pri ustvarjanju in skupni rabi vsebin (Kontogianni & Alepis, 2020). Toda eksplozija pametnih rešitev, ki jih omogočajo najnovejše tehnološke inovacije, je bila večinoma podana v kontekst v urbanih okoljih, medtem ko je bilo število rešitev, ki so bila razvita v manj urbaniziranih podeželskih območjih, manjše (Steyn & Johanson, 2010).

Področje pametnega turizma je bilo večinoma raziskano v mestnem okviru, zelo malo študij pa upošteva podeželje. Zato lahko ta raziskava pomaga literaturi, da poveča število študij na tem raziskovalnem področju, ki je v zadnjih fazah. Poleg tega skuša ugotoviti trenutno stanje glede stopnje ozaveščenosti o koristih, ki izhajajo iz ustvarjanja vrednosti.

Cilj uvajanja pametnega turističnega sistema na podeželju je zagotoviti niz rešitev, ki bodo s procesom soustvarjanja izboljšale turizem in kakovost življenja (Buhalis & Foerste, 2015). Odkrivanje orodij IKT za povečanje rasti in širjenje vrednosti lahko spodbudi znanje o praksah ustvarjanja vrednosti in ponudi razlikovanje o več vrstah dejavnosti, ki jih zainteresirane strani proizvedejo med deljenjem storitev.

Bolj podrobno, s pomočjo raziskovalnih vprašanj, ki so si jih postavili Polese, Botti, Grimaldi & Monti (2017) v njihovem delu »Socialne inovacije in pametni ekosistemi v turizmu: Kako tehnologija in institucije oblikujejo trajnostno vrednost kokreacije«, je cilj magistrskega dela prilagoditi in uporabiti njihov pristop vzet iz Salernove analize - Od mest do ruralnih predelov, Vallo di Diano, in odgovoriti na naslednja raziskovalna vprašanja:

● So glavni elementi pametnih turističnih sistemov (akterji, tehnologija, prakse vključevanja virov in institucije) gonilo ustvarjanja vrednosti in inovacij tudi na podeželskih atrakcijah?

● Kakšen je vpliv razsežnosti ekosistema pametnih storitev na nastanek družbenih inovacij v skladu s sistemom in strateškim pogledom na ustvarjanje vrednosti pri obravnavanju podeželskih ozemelj?

Da bi upoštevali predlagana raziskovalna vprašanja, poskuša ta raziskava razviti osnovno shemo za okolje podeželskega ozemlja Južne Italije z upoštevanjem:

glavnih akterjev ali skupine, vrsto sredstva, ki se vzame kot predmet menjave, najpogostejša uporabljena tehnološka orodja in prakse ter družbena pravila, ki omogočajo izmenjavo in izhajajo iz izmenjave.

Za zaključek in potrditev soodvisnosti med ustvarjanjem vrednosti in izvedljivostjo prepoznane značilnosti vključevanja virov, ki jih omogoča IKT, ustvarjajo vrednost kot: (1) gospodarska korist, lokalna podjetja lahko dosežejo izboljšave, ko razvijejo ponujeno storitev; (2) socialna skrb z uveljavljanjem povezav med deležniki v sistemu; (3) okoljske koristi, ta ustvarjalni pristop zahteva rast celotnega podeželskega ozemlja.

Appendix 2: Interview questions

The questions asked during the interview process in order to obtain the results of this study are the following:

Actors

Economic Actors

1. Have you set connections with other bodies involved in tourism?
2. Have you fixed agreements with other local members offering other complementary services?
3. Have you ever offered service packages or join promotional activities with other local stakeholders?

Social Actors

4. Have you set commercial agreements and or informal partnerships with local cultural associations or museums?
5. Have you ever organized or let visitors get involved in cross events or activities to promote special events in the territory of Vallo di Diano?

Politic Actors

6. Have you established some kind of relationships with local administration, like city-halls, tourism authorities, ecc.? Are these positive and useful to growth?

Technology

Before-Delivery

7. Through which technological online platform are your reservations/applications made?
8. Which social networks or applications have you employed to get in touch with users before

During Delivery

9. In order to connect with visitors, what communication channels do you rely on?

After-Delivery

10. After the visit, which communication channels do you employ to keep relationships built with visitors?

Resources Integration

Operand

11. Are you used to providing any kind of informative booklets, or offer particular merchandise to tourists?

Operant

12. With visitors, do you provide information just regarding the service you offer, or do you offer as well advice for other services and places?
13. Do you foster information about local traditions and customs with tourists visiting the territory?
14. According to your experience, are advice and comments left by visitors able to let you improve your service?
15. Do you normally share your business strategies, such as program activities, or updates with those visitors you have entered in contact?

Institutions

Formal Rules

16. Do those visitors entering in contact with your service need to follow particular rules?
17. Is your availability to be contacted by visitors flexible or are you reserving specific hours to be contacted?

Informal Rules

18. Does it ever happen to meet or spend recreational times with tourists? If yes, is it something you organized or is it improvised?
19. Do you try to communicate your values, point of views, or ethics with those one accessing your service?

20. Do you tend to spread local traditions?

21. Do you try to share local culture and traditions such as customs, typical gastronomies, local people, dialects etc.)?

Social Rules

22. Have you established any type of rituals with visitors?

23. Are you able to set strong and lasting connections with users during the stages of their stay?

24. In your experience, do visitors try to set connections with locals?

Appendix 3: Interview answers

Actors

      Economic

Respondent 7 replied: "*Lately, Paladianflex lately has hosted national and international artists, hosting their concerts and their shows, becoming one of the most important structures in Southern Italy... Anyways, the achievement of this success could not be reached if we made agreements with Media and Event Management actors... We established formal relationships with bus companies to provide connections and transportation from the surrounding area and from the metropolitan area of Salerno to the place of the event.*"

Respondent 1: "*We of MIDA Foundation thought that it would be good to amplify our offer for tourists... We have made arrangements with the rafting school, providing them a seat in our museum, in order to propose complementary activities... Rather than being an obstacle, this rafting school has found a friendly Foundation... This has generated a virtuous circle as, by following this approach, we have been able to hire 5 new local young people working for us... In the Foundation we established 'Speleo Bar', which offers a series of typical local products. Everyone who cultivates and produces food and beverages in a radius of 50 km from Pertosa's caves has the possibility to access and obtain a special trademark that allows the sale of these products in the bar with a special privilege... By creating this brand, we are now able to better provide those attentions needed by tourists, and at the same time valorize the area.*"

Respondent 15 replied: "*For what concern my municipality, Teggiano, the example I can provide you is linked with Costanza's celebration happening in August for three days... Last edition counted more than 100.000 people in those 3 days... In organizing this event, we cooperate with local artistic associations to give the possibility to those tourists, interested in deepening the history and the art of our territory, to extend their knowledge... We work jointly with the 'Museo degli usi e delle tradizioni del Vallo di Diano', which is a treasure trove of artifacts, kept alive in their original function, that testify our origins and customs... As during those days only the historical center was accessible, we needed to create arrangements as well with transportation companies, to let tourists enter in the city.*"

Respondent 1 replied: "*Actually, I think our example is a kind of anomaly when compared to other local realities. Indeed, MIDA Foundation is a union of public entities characterized by a high entrepreneurial vocation. So, part of the generated incomes get re-invested for the MIDA's mission, which starts from documenting and investigating our territory for analysis purposes, and from this point we seek to valorize our territory by divulgating our studies... Lately we established a project called "3 Grotte e 3 Fiumi", involving other social bodies of the province in order to provide a higher offer... This project aims to enable tourists to walk for 130 kilometers surrounded by different natural views among the caves of Morigerati and the Bussento river, the caves of Pertosa and the Tanagro river, and the caves of Castelcivita and the Calore river.*"

Respondent 19 claimed: "*We are people who live in nature and want to valorize this territory... In our territory there is a runners association that participated in many marathons in several places in Italy and abroad... what they thought was organizing a marathon context in our territory, that recently arrived at its 10th edition, and that years after years it becomes greater and better organized, with an upward rate of participants... All of this became possible only working jointly with many local businesses providing food and drinks for the runners and other services, helping points coordinated by our local administration and the runners association suggesting activities and promoting discounts with the Charterhouse of Padula and the Caves of Pertosa... Overall, I guess it is an example of how local administration co-created with local members an environment that got appreciated and which fosters value for many members of our community.*"

Social

Respondent 1 replied: "*We have made special conventions with local hotels and restaurants, providing them discounts when they sell the tickets to their customers for our attractions... Last November we had a consecutive 4 sundays initiative where we were giving Pertosa's Caves entrance tickets for free to all municipalities in the Vallo di Diano's area and to some other nearby municipalities as well... This action has allowed a stream of more than 500 visitors in low season during these Sundays... It also let restaurants and hotels benefit from the initiative.*"

Respondent 3 replied: "*Our association each first Sunday of the month proposes a free tour of the territory, even though we ask for a voluntary contribution at the end of the activity... During these Sundays, we open museums and some old churches which normally are closed to attract our co-citizens and tourists to experience something not accessible everyday and which belongs to our community.*"

Respondent 16 replied: "*We wanted to have a more digital approach as most of our customer segment is based by young people... We developed our mobile application that offers the possibility to access discounts and special offers when reserving with it.*"

Respondent 19 replied: "*We established conventions with the Charterhouse of Padula and with the Mida's Foundation to sell discounted tickets to our guests.*"

Respondent 19 replied "*Since a couple of years, the hotel has made a partnership with one local excursions group... Each weekend offers outdoor activities in the program such as trekking paths, speleology activities, horse riding, and bicycles exploring spe that shows the natural beauties of Vallo di Diano and our cousins from Cilento... One problem we face in this territory is that we are not so able to let customers spend more than 1-2 days in this territory, despite having such important attractions as the National Park of Cilento and Vallo di Diano... Such partnership has been established with the purpose of increasing the attractiveness of our territory to those people visiting the area.*"

Political

Respondent 16 replied "*We do integrate politics of coordination with the city halls, the Regional Museum Authority and the National Superintendence of Cultural Goods and Touristic Activities... It is vital for us to promote this unique place, which in its genre is the biggest in Italy and Unesco Heritage.*"

Respondent 19 admitted: "*I believe that touristic administration lacks effective communication and management... it does not support nor integrate the building of networks with other systems... I had several conversations with my guests and negative opinions pop out when comparing the infrastructures and connections present here, especially when compared with other regions.*"

Respondent 7 said "*There are many objectives which have been promoted. The brand that we need to exploit is the one of the Cilento and Vallo di Diano's National Park. We are proposing solutions in order that local restaurants need to have on the menu at least 3 typical local wines, for example. Those who will follow these indications can access to particular economic incentives and therefore grow. Moreover, there are many initiatives in our region, lastly, it has been coordinated one with other politicians to let arrive in our territory art exhibitions of a famous Italian painter from '600. The coordination with other local political figures sometimes is difficult but we have been able to realize good initiatives during the years thank to the local administration.*"

Technology

Before Delivery

Respondent 9 replied: "*My hotel integrates booking requests from platforms as Booking and Expedia, but it has its own personal website with its online reservation system... I think my website provides a better idea of the offers on the room and a nicer panoramica of the whole area and its point of interests.. but these systems are most common and accessible... lately in the website we integrated an automatic bot able to reply to the tourists frequently asked questions.*"

Respondent 14 answered: "*When my partners and I were younger, we have started our activity from social networks like Facebook and Instagram to achieve possible targets, and to invite and share and communicate events to our clients... During the years we have grown, and we built a webpage and also we developed our own mobile application, where people are able to buy tickets for concerts and theatre, finding information about location and indications, and accessing further useful information.*"

Respondent 2 instead gave this answer: "*How people enter in contact with us is through our website, where they are enabled to buy tickets, retrieve information, and access to multimedia contents... Since a couple of years we have developed Augmented Reality as well which allows tourists to have a real idea of what is going to find once it enters in Pertosa's caves even before arriving here.*"

During Delivery

This question has obtained the same answer from all the interviewee

Respondent 10 stated: "*The most common platform on which we communicate during the travel with our customers is WhatsApp... Also Facebook is useful because it allows us to immediately give them support to their needs and to communicate special updates on the page of the event.*"

After Delivery

Respondent 3: "*After our tours, we always ask tourists for leaving us feedback on our Facebook page and on TripAdvisor regarding the overall satisfaction of the activity... This is very important for us... because it allows to understand potential features to improve... and it lets spread our territory to other eyes that can discover our roots, culture and traditions.*"

Respondent 9: "*Besides personal and direct questions on the goodness of the stay, Booking automatically asks for reviews about the overall stay in the structure... Our routine is to personally appreciate and reply to the feedback, especially, in rare cases I must say, if the rate was negative to apologize and understand what has not worked, in order then to improve the quality of our service... We send specific celebration messages and particular discounts to those tourists that spent their holidays in the hotel in order to improve customer relationships and to keep them updated on what is happening in the territory.*"

Resources Integration

Operand

Respondent 7 claimed: "*Yes... When they arrive at the event, we provide some fluorescent gadgets, as glasses or bracelets, or face-paint, which is really appreciated by clients... We set some little spaces where they can get pictured in a special framework and the photos will be shared on our social media pages.*"

Respondent 11 "*Totally... at the beginning of the tour we provide each tourist with a map of our city, where the PoIs are tagged, and other informative booklets available also in other languages furnished by the city all providing general information regarding each site to visit.*"

Respondent 20 "*When clients check-in the hotel, we furnish them with booklets containing all the information they need, from the timetables of the company buses to move within Vallo di Diano or to get to the main cities.., to other possible activities that can be done in the area as excursions, horse-riding, local cuisine tasting.*"

Operant

Respondent 4 answered: "*Sharing this kind of information is basically our job, and we need to be very prepared in knowing how to answer every visitors' questions... For sure we suggest collateral activities, and most of the time we introduce visitors to local business activities or local people which are very appreciated by tourists for their warmness, availability and hospitality... Many times, then, I have received messages of visitors thanking me for having suggested a restaurant where they have eaten or a place they have visited.*"

Respondent 17 said: "*This question basically is the ultimate scope of our activity, and what visitors coming here are most interested in... There are several museums in the area, for example the one in Teggiano showing the tools used by our grandparents to harvest or the one in Polla showing the typical folkloristic dresses... These museums have a discrete success and they testify the roots and traditions of our territory, which people of this area are very proud of... tourists seem to appreciate and most of time they tells us about their customs and traditions comparing it with what we propose.*"

Respondent 6 told: "*We always try to share our local traditions, and the most frequently asked question is linked to the best places to eat ... We often suggest 'agriturismi', one of the features of Italian rural tourism, making homemade meals made with local products. Our territory has one of the best culinary offers in the world, and many people are attracted by the quality of our products... Therefore, we also suggest local farmers producing typical products and businesses making handicrafts products with particular tissues and raw materials of the area.*"

Respondent 8 said: "*It is very important for us to receive feedback from users to improve our tours... I can tell you that from some feedback we decided to not propose a given activity to highlight another one that seemed to attract more the eyes of visitors, and which became one of our aces... I am inclined to believe that constantly receiving*

feedback will lead us to offer better activities, so it is important to internally analyze what is worth offering and what needs to be improved after suggestions."

Respondent 9 said: "*I do believe so. I have run a hotel for more than 30 years, and some renovations have been during the years, for example layouts have changed, the overall service we provide has become smarter... We are totally open to accept suggestions and match tourists' needs, but I think that physical feedback is more important than the digital one, even though this last one cannot be underrated... For me it is more important to personally ask if their permanence satisfied their expectations and needs. This is because there is the possibility to better intervene if they encounter a problem*."

Respondent 4 affirmed: "*We try to not lose contact with people that visited us... We share our latest updates, new available excursions. We share a program of activities each season and we advertise it through social network campaigns and reminders through emails... Overall, by doing so, we have noticed as many people have returned to the area and participated in other activities proposed, and many became active members of our association*."

Respondent 9 claimed was: "*One of the issues we face is to offer an integrated experience and activities to let visitors stay with more area… Personally I am in contact with several local stakeholders to collect all the events happening in the area and propose them in the board of our reception where it can be visible to our clients, and we update our website with this information and address toward our potential clients... However, it is a difficult task given the fragmentation of our territory and jealousies among our small villages, and because it involves coordination between entities which is one of the weaknesses of our tourism*."

Institutions

Formal Rules

Respondent 19 said: "*Definitely… During our excursions we ask people to not get too far from the rest of the group and to keep the line… For example, when we do speleology activities and visiting caves people have to wear particular helmets and lights… Moreover, we ask to not throw on the ground any stuff in the environment, as*

these places we visit are protected areas… There happen many unplanned situations, for example, if someone gets injured or feeling dizzy during an long walk… but as well surprising moments, when you find animals like foxes or wild horses."

Respondent 20 claimed: "*What I do is always explain the regulations… I am inclined to repeat advice to guests like not leaving lights on, not be loud after night hours... We are a community, so it is more a sort of informal hospitality... guests can cook the food they bring, but then they have to clean once finished to use the kitchen… or they can store food into the fridge but they have to label their stuff.*"

Respondent 20 said "*Totally, and it is part of my responsibilities… I also rent apartments for short-term… I have experienced getting called late in the night by clients that for a reason or another had the necessity to call me to solve some issues.*"

Respondent 11 stated: "We have predefined working hours where our helping point is available… However, we developed a bot in our website with the purpose of addressing customers when physically we cannot support them."

Informal Rules

Respondent 19 mentioned "*There are plenty of recreational moments during our excursions… Normally, we share a meal at certain points of our activities where we are more able to create friend relationships... Personally, I met many interesting and nice people, and with some of those I still keep myself in contact… Overall, all the excursion experience is recreational activity, normally planned to guarantee safety standards, but sometimes unplanned events happen, like heavy rain or meeting of wild animals, which we experience together with the tourists.*"

Respondent 20 claimed "*Many times I invite my guests to eat together or have drinks together… Hospitality is one of most appreciated among our values… visitors, especially foreigners, are surprised by these behaviors… I remember many times that interesting topics have popped out by chatting with clients, and personally I learned many things from them… Let us say that most of the time these moments are not planned, and it depends also on the mood of tourists, their age, the length of their permanence… but I shared many nice moments with visitors, and I try to repeat it with other people visiting the area to spread our hospitality.*"

Respondent 13 said: "*The whole value propositions of our offers reflect the intention of spreading the culture of the territory and our hospitality… I always encourage visitors to discover places, try local food and talk with the people of the villages... I always give my availability to be contacted or to be pinged so I can help them, and I can suggest to them what to experience.*"

Respondent 5 mentioned: "*What I perceive from tourists' feedback at the end of the tour is that they actually understood the values which reign this area and that they are enthusiastic about the information they received… Many of them always mention in their reviews that the tour was entertaining, and that many information have been provided on local habits and customs… When I read this kind of comment it makes me happy because we were able to match tourists expectations but at the same time we were able to let them enjoy a remote and beautiful area of our beautiful country.*"

Respondent 20 said "*Yes, and it is part of the mission of our Hostel… It is one of the nicest jobs I have ever done because I met many people from different parts of Italy and also many foreigners... We normally cook local homemade meals made with the seeds cultivated and with them every-day we propose a dinner hour where typical food is served, and everyone is free to join.*"

Respondent 15 "*Lately I was reading a statistic by SWG and it was interesting because it mentioned that local food is what interests me the most when they discover a new place. And if fact I totally agree with it… When proposing our tours, tourists coming here are very curious about our traditions, especially culinary habits... For more than 20 years we have organized a festival, 'Arte e Mestieri', with the purpose of showing the traditions, the customs, the dresses of our territory, and integrating a gastronomic offer which proposes several typical dishes of our local cuisine.*"

Social Rules

Respondent 5 answered: "*During our free walking tour, we always offer to have a toast with the local liquor made with local herbs of our Park… while we do this we teach them the local motto of toasting… I have to recognize that this is a moment that is particularly enjoyed by tourists… and we offer the possibility to let them buy it in shops that we can indicate, so we can foster also for tourists...*"

Respondent 12 answers: "*I think nowadays it has become easier with the advent of social networks… lately, for lunch a very famous Italian singer passed by… I took a photo with him and I shared it on the restaurant's Facebook page… during that day my page obtained a lot of visualization… but when I started my agritourism 30 years ago, it was not that easy to interact with clients… I have a wall in the hall with all the letters and postcards I received all over the years from tourists who visited us… I think this is the demonstration for me that I was able to establish good relationships with customers… Many people keep coming back here when they pass in this part of Italy when they go on holidays... It is one of the satisfactions of running this activity.*"

Respondent 18 revealed: "*I always try to establish connections with people… our territory is not so known, and they are a vehicle to spread our beautiful natural places and our great culture out of our territory… During the tours I always try to be the more empathic I can, and to be just simple and helpful with people… Three years ago I met a girl from another region who spent some summer days with her family in our village and joined one rafting activity… we stayed in contact through Instagram, and she came back the following summer with other friends… we are now friends and I also visited her when I passed through Tuscany.*"

Respondent 12 stated: "*For my experiences, I can tell you that there are many people with different needs…. Overall, those visiting this area get flabbergasted by its beauty and they do not lack to ask me questions regarding the area, the best places to discover beside the most known ones… but also regarding my life, my family … sometimes, especially with foreigners, there is the language barrier that makes communication more difficult… However, I have heard from many of them telling me that the persons they met here are different from those living in the context of big cities because people from this area are very available, responsive, and kind.*"

Respondent 18 claimed was "*During our activities we have met people from all the regions of Italy and many foreigners… Some of them often come in a little group and tend to stay more on their own… some others are very funny and more social… Anyways, overall I can tell you that they are very curious about our culture, our territory, food… I also got invited many times by visitors for having dinner together and getting to know each other more.*"