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Innovation in tourism and startups in Brazil, Spain and Portugal

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ABSTRACT

The present study aims to analyze innovative initiatives related to the promotion of startups in Brazil, Spain and Portugal, in the context of smart tourism destinations (DTI). Based on an exploratory and descriptive study with a qualitative approach, programs related to innovation and entrepreneurship were identified in the countries under analysis, as well as concrete initiatives of innovation in tourism related to startups. Therefore, 60 new items per country, out of a total of 180, were selected on the Google platform. The results of the research show that there are guidelines linked to startups in the three countries. In general terms, it was possible to observe that from startups. It is possible to promote the development of ITD, since the initiatives identified contribute, among other aspects, with experiences.

Keywords: innovation; tourism; startups; smart tourism destinations; Brazil; Spain; Portugal

1. Introduction

The tourism activity faces important structural changes in which technology plays a decisive role. In order to face these changes, tourist destinations are adopting new planning and management perspectives, seeking to boost innovation, competitiveness and sustainability. In this context, initiatives linked to the smart city approach stand out in the political[1] and academic spheres.

The smart city concept emerged in the 1990s in a context of increased environmental concern (Kyoto protocol) and the popularization of the use of smartphones. The California Institute for Smart Communities used the concept for the first time, relating communities that could be designed to use information and communication technologies-ICT[2].

According to the authors Caragliu, a smart city is a city in which investments in human and social capital, and in infrastructure (diverse and ICT) favor sustainable economic development and promote the quality of life of residents, from a participatory and efficient government management. A smart city should act on the following pillars: economy, society, governance, mobility, environment and quality of life[3].

The smart city perspective is incorporated by the tourism activity and the concept of Smart Tourism Destination-ITD emerges. The adoption of the concept by the tourism activity is considered appropriate, as it integrates the approaches of strategic planning, technological evolution, sustainability policies and innovation (Valencian Institute of Tourism Technologies). And there is also a growing number

of studies that relate the smart city concept to tourism [4].

According to the Sociedad State Mercantile para la Innovation Management and Tourism Technologies-Segittur, a smart tourism destination is an innovative, widely accessible space that uses state-of-the-art technology in pursuit of sustainable development and a quality tourism experience. The planning of an ITD should take into account the following areas of action: governance, sustainability, connectivity and use of sensors, and information and innovation system, considering that governance, sustainability and innovation are elements of the strategic-relational level[5]. In general terms, the smart cities or smart destinations approach aims to increase the sustainability and competitiveness of cities, and in this process innovation and technology are key.

Innovation can be categorized as disruptive/radical, or incremental, or open. These concepts are thus defined by Arbix, Tidd and Bessant, (i) disruptive/radical innovation that generates the creative destruction of already existing products and consequently generates profound changes in the market and society, (ii) incremental that brings improvements and increases goods or services, either through an adaptation, refinement or improvement of an already existing product, (iii) open that is an open network that connects various stakeholders in an innovation process that can be incremental or radical.

In this context, startups emerge, a term that refers to initiatives with scalable and repeatable business models in which the innovation factor is essential. One of the fundamental characteristics of startups is their ability to gain scale in a short period of time. Startups can originate in the most variable areas and sectors of the economy and are mostly technology-based. According to Cordoba Leiva (2014) a large part of the technological startups in tourism are aimed at providing personalized, contextualized and real-time local information.

According to the Informe Tourism Innovation in Spain[6], the main innovation experiences in the tourism sector have been developed in the following fields: (i) marketing: online advertising and boosting the direct relationship with customers, (ii) technologies: IT equipment and for service improvement, (iii) cost reduction: improvement in processes and optimization of human resources, (iv) brand improvement: space and ambience of establishments and experiences offered, (v) people management: technical training and human resources skills, (vi) business model: market expansion and analysis of the market and competition.

Considering the importance of innovation in smart destinations and the central role played by startups in this process, the aim of this article is to analyze innovative initiatives related to the promotion of startups in Brazil, Spain and Portugal. For this purpose, the following specific objectives have been defined:

Identify programs linked to innovation and entrepreneurship in Brazil, Spain and Portugal.

To analyze specific initiatives related to startups in tourism in Brazil, Spain and Portugal.

To identify the main objectives of the initiatives linked to innovation in tourism in Brazil, Spain and Portugal.

2. Methodology

An exploratory and descriptive study was conducted with a qualitative approach. Initially, the Programs or Strategies linked to the promotion of startups in Brazil, Spain and Portugal were identified. Subsequently, concrete initiatives of innovation in tourism related to startups were identified. For this purpose, news was selected on the Google platform between May 6 and June 14, 2018 with the following words "innovation" + "tourism" + "Brazil" or "Spain" or "Portugal". Then, new selections were made with the words, (i) "startup" + "tourism" + "country of reference" and (ii) "smart tourist destinations" + "country of reference". Sixty news items per country have been collected, in a total of 180 news items.

The information was selected, considering only the news that dealt with practical cases of innovation in tourism (cases of startups, awards and successful public or private actions), and excluded dissemination of courses, advertisements and other data about the topic. It is important to underline that new searches were made to obtain detailed information and to verify if they were still in operation. The news data were transcribed and a descriptive analysis was performed.

The countries chosen for the analysis were Brazil, Spain and Portugal. In choosing these destinations, it was considered that Spain is one of the destinations that occupies a leading position in terms of DTI; Portugal also stands out in this area with innovative initiatives, and Brazil, despite being in the initial phase of development, already shows successful experiences. The three countries are at different levels of innovation and maturity of the tourism activity, and are inserted in different socio-political and economic contexts. Despite the differences, the three countries have some similarities, since they wish to increase tourism competitiveness through (i) public and private investment; (ii) public policies for tourism, innovation, sustainable development and consolidation of local governance; (iii) actions to promote the creation of a favorable environment for innovation in tourism; (iv) incentive programs for startups; and (v) the use of technologies to increase the tourist experience.

3. Results

The study analyzed the programs and strategies linked to innovation and entrepreneurship in Brazil, Spain and Portugal. Regarding the promotion of innovation and entrepreneurship, programs/actions related mainly to the promotion of entrepreneurship were identified. Priority was given to the search for programs linked to a public sector organization.

In Brazil, initiatives of the Ministry of Industry, Foreign Trade and Services stand out, together with the Brazilian Micro and Small Business Support Service, which together develop the Inova Activa Brasil

program. It deals with a large-scale acceleration program for innovative business[7]. There is also a national startup acceleration program (Brazil), which is a public initiative with private management. According to study conducted by the Getulio Vargas Foundation (FGV)，there are 45 Startup accelerators in Brazil[8].

In the Spanish case, it is worth noting the existence of a National Smart Cities Plan that signals the integration of the DTI strategy. The objective of the plan is to contribute to economic development, maximizing the impact of public policies in ICT to improve productivity and competitiveness, transform and modernize the economy, through the effective and intensive use of ICT. In addition, there are programs aimed at promoting SMEs in various fields and some have European funding[9,10].

Already in the Portuguese case, it has been identified that the Tourism 4.0 Plan is integrated to the national strategy Start-Up Portugal and with the creation of the Tourism Innovation Center. The objective of the center is to promote the acceleration and creation of Startups in an articulated way with the incubator network. It should be noted that the national strategy includes 15 measures to support entrepreneurship. Its scope is the whole country and all sectors of the economy.

In the following, some innovative initiatives in tourism identified in the three countries of analysis will be presented. Initially we will discuss the cases of Brazil, followed by those of Spain and Portugal.

4. Innovative tourism initiatives in Brazil

In Brazil, initiatives linked to ITD are incipient, but there are some innovative experiences underway. The Brazilian Service of Support to Micro and small enterprises[11] and the Brazilian Association of Tourism Operators have promoted in 2017 an award entitled "Innovation Challenge: Smart Tourism" that involved all regions of the country. The objective

was to promote the emergence of startups with encouragement for new ideas and models of tourism.

Another initiative that deserves highlighting, as it contemplates several areas, among these the tourism sector, is Start-Up Brasil which is the National Startups Acceleration Program. This is a federal government initiative, created by the Ministry of Science, Technology, Innovations and Communications (MCTIC), managed by Softex and in partnership with accelerators, to support technology-based startups.

Finally, another Brazilian program that deserves to be highlighted is the international program 100 Open Startup. It is an annual ranking (country and segment) with the 100 most attractive businesses in the market vision to receive investment, and contemplates 10 segments, including "Cities, Tourism and Events". The Ranking 100 Open Startups Brazil 2017, highlights seven companies (100 Open Startups Brazil). All the initiatives mentioned to startups in Brazil are systematized in the **Table 1**.

Table 1. Startups related to tourism in Brazil

Startups	Description	Target
Ticket phone	Platform for tourism activity management and event promotion. Tour operators and agencies can manage their processes and activities in real time, and use the information to strategically plan their actions and offer a better experience to customers. Site: www.licketDhone.com.br	Marketing, management and visitor experience improvement
Brazil Food Safaris	Promotion of experiential tourism through gastronomic circuits in the off-season, with the aim of enhancing local culture and strengthening the identity of the destination. The objective is to create a unique experience for tourists with activities linked to the local food heritage. Site: www.brasilfoodsafari.com	Improve the visitor's experience and enhance the value of local culture
Guiya Editor	Application aimed at the LGBT public, promoting circuits and events for this segment, with options for the sale of tourist packages. The company has been operating in the market for 4 years and is present in seven major cities: Rio de Janeiro, São Paulo, Recife, Belo Horizonte, Brasília, Salvador and Florianopolis. Site: https://issuu.com/auiva-editora	Marketing
Experience infinity	Platform aimed at experience tourism in various tourism segments. Site: www.exoerienceinfinitv.com.br.	Improve the visitor experience
What's Good about Marketing Consulting	Interactive guide oriented to professionalize tourism marketing. Site: www.oauetemdebom.com	Management
Paytour	Web platform that offers a more agile reservation system with the objective of improving the commercialization of tourism products and services. Site: www.pavtour.com.br	Marketing
Trip 4x	Platform specialized in adventure tourism that includes the possibility of post-trip storytelling. Site: www.trio4x.azurewebsites.net	Improve the experience, commercialization and experience sharing
Tourism experience	Web platform and application for destination promotion. Site: www.turismoexoerience.com.br	Promotion
Brasil by bus-currently called bus	It is a company that aims to revolutionize road transportation in Brazil through technological innovation. From a platform with 140 linked companies, it seeks to facilitate the sale of bus tickets for Brazilian and foreign tourists. Accelerator: Accelerated Site: https://deonibus.8m/ or https://www.startuDbrasil.ora.br/network/brasil-bv-bus/	Marketing
Emotion.me	It is an online platform for brides and grooms and wedding service providers. It has been developed with the intention of being a "virtual ceremonialist", which includes the planning of all stages of the event, it also allows guests to share the wedding experience. Accelerator: Wayra Website not currently available.	Management and experience sharing

Table 1. Continued

Startups	Description	Target
Hello Universe	It is a telephony system that establishes contact between un interpreter and a foreign tourist. The search algorithm connects the two parties remotely. The foreign tourist, a non-Portuguese speaker, calls a central office and talks to an interpreter. Accelerator: Wayra Site: https://www.st8rtuDbrasil.orQ.br/network/hello-universe/ Website currently unavailable.	Improve the traducian experience
MaxMilhas	Intermediation platform for the purchase and sale of airline tickets through the miles system, which is consolidated as a marketplace for the purchase and sale of miles. The solution allows people to make the steno of traveling through economic packages and for participants to better use their miles. Accelerator: 21212. Site: https://https://www.maxmilhas.com.br/ https://www.startupbrasil.org.br/network/maxmilhas/	Marketing
Mecasei.com Currently called Wedy	It is a platform that aims to facilitate the life of the bride and groom: before, during and after the wedding. On the platform it is possible to put the gift list, keep track of all expenses, have the coπfirmaci0n of presence of the guests and even customize the website of the event. Accelerator: Ventiur.net Site: https://site.wedy.8m/ https://www.startut>brasil.oro.br/network/mecasei-com/	Management
Pick2trip.	It is a platform that seeks to connect travelers with their travel experiences. It has been developed to be a smart and personalized travel solution. It uses a metadata search engine, from the selecoi6n of photos that represent the emotions and sensations desired by the tourist. At the same time, it generates a list of leads, online travel agencies and market place. Accelerator: Ventiur.net Site: http://pick2trip.com https://www.startuobrasil.ora.br/network/pick2trip/	Share experiences
Razoom	It consists of a platform that helps tour operators to manage their bookings and win new customers. It is possible, from the platform, to control schedules, analyze passenger information and connect to major sales portals. Accelerator: 21212 Site: https://www.startupbrasil.org.br/network/razoom/ Website currently unavailable.	Commercialization and management
Events	Platform to assist event organizers in hotel selection and booking. Site: http://evnts.com.br/	Marketing
Pick me App	Urban mobility app that provides clients with transportation to commercial establishments/events. Site: https://www.oickmeaop.com.br/	Marketing and transportation
Near bee	App that uses a satellite location system in search of security and interaction between communities. Site: https://www.nearbee.com.br/	Security and enhance the experience.
Menu for Tourist	Application for foreigners that allows the translation of restaurant menus in their language. Site: https://seed.ma.aov.br/member/menu-for-tourist/	Improve experiential/translation
VM9	Platform that integrates technology for application creation in areas such as smart cities. Site: https://www.vm9it.com/	Innovation management and promotion
Beer or coffee	Coworking spaces in 75 Brazilian cities to generate business and connect people. Site: https://beerorcoffee.com/coworkino.	Managing and fostering innovation

5. Innovative tourism initiatives in Spain

In 2018, during the International Tourism Fair, Spain was awarded a prize by the World Tourism Organization (UNWTO) in the XIV Edition of the Awards for Excellence and Innovation in Tourism. In the category of Innovation in Research and Technology, Segittur has received the award for an intelligent tourism system that this Institution has developed with application to Spanish destinations.

A successful initiative in Spain is Telefonica's "Open Future" program. This has a series of actions to foster innovation and entrepreneurship, including startup acceleration programs: Wayra and Crowd working[12]. We present, below, some of the initiatives in the tourism sector. Important to emphasize that this program already supported more

than 40 startups in tourism.

Another innovative initiative is Native, an NGO in the format of a hotel club, which is already, in addition to Spain, in four other countries: Portugal, Italy, Morocco and Mexico. The intention is to improve accessibility for elderly customers or those with any disability, being that accessibility begins in its web platform. With technological resources it is possible, for example, for a tourist with Parkinson's disease to navigate the website of the Native site with small puffs to access the screens. In addition, accessibility is promoted in the hotels with a series of inclusive activities and/or structures suitable for different types of disability. This initiative has already won several awards around the world.

A regional initiative in Spain that deserves to be highlighted is the Andalusia Tourism[13] that develops the Innovative Tourism Projects. This is intended to realize the added value offered by Andalusian tourism companies and thus promote the tourism potential of the region. The following table systematizes the initiatives found in Spain (**Table 2**).

Table 2. Startups related to tourism in Spain

Startup	Description	
Minube	Social travel platform, made by and for travelers, where it is possible to see the recommendations of tourists and obtain information on various destinations. Site: https://www.miniibe.8m	Share information.
Omnirooms.com	Accessible tourism portal where rooms adapted for people with reduced mobility are offered. Site: https://www.omnirooms.com/en/inicio.html	Marketing and accessibility
Wattacars	Platform of reference for electric rent-a-car with the aim of increasing the supply and demand of electric cars for rent. Site: https://wattacars.com	Marketing, transportation and environmental sustainability
Travelling Assistant	Platform that puts anthuriums and residents in cities around the world in contact with personalized plans, services and/or accompaniment. Site: https://www.travellinaassistant.com	Marketing information and collaborative economy
lmageen	Application whose mission is to recreate the past using virtual and augmented reality, transporting the visitor to another era. Site: https://www.imageen.net/	Enhance the experience
Viajaris	Platform with squad intelligent travel, from a budget and creation of dynamic multi-service packages in real time. Site: https://www.viajaris.es/	Marketing and improving the experience
Playea: your beach search engine	Application that has a base of 3,500 beaches in Spain and 6,000 in the world. The contents are fed by the social network of users. Site: https://www.plavea.es	Share information
Cook Eat Home	Platform that possibility the contact of professional chefs and lovers, with people who want to have a different gastronomic experience. Site: https://www.cookeathome.com/	Share information and enhance the experience
Foodies Andalucía	They are in charge of making gastronomic routes by land, sea and air in Andalusia. It is aimed at foodies who are lovers of gastronomy and like to know the origin of the products, the methods of elaboration, the beneficial properties for health, how to cook it and even where to buy it. Site: https://www.foodiesandalucia.com/	Marketing and improving the experience
Guideo App	It is an application for mobile devices with tourist routes through different cities, currently Cadiz, Malaga and Seville. The great innovation is the possibility of being able to contemplate content in augmented reality at various points along the route. Site: https://quideoapp.com/	Improve the experience
Maritime Tourism	Pioneer project in Andalusia whose mission is the revaluation of the fishing sector, its gastronomy and tradition. It combines culture, tradition and training. Site: https://www.turismomarinero.com/	Commercialization, cultural valorization and experience enhancement
Al Andalus Photo Tour	Its main objective is to offer photographic, hiking or "mixed" routes, providing experiential tours that enable new experiences, sensations and horizons. Site: https://alandalusphototour. com/category/workshops-a-medical	Marketing and enhancing the experience

Table 2. Continued

Startup	Description	
Center for Flamenco Interpretation Center	The Flamenco Interpretation Center offers visitors a walk-through flamenco from its origins, through new technologies. Touch screens, a projection room or a recreation of a typical tavern guide those interested in discovering flamenco. Site: https://www.cadizturismo.com/turismo-cultural/visitas/cadiz/centro-de-interpretacion-del-flamenco/	Improve the experience and cultural valorization
The Sevillian Balcony	Platform focused on the cultural heritage and history of Seville. It proposes routes and visits around the city. The first routes are called "Chromatic Routes" and with them tourists can see the city in a different and novel way, through color. Site: https://twitter.com/BalconSevillano.	Enhancing the experience
Typiqual	Seeks to offer the most representative of each place in Andalusia to put it in value through the internet weaving a close collaboration with artisans and small businesses throughout Andalusia to offer their products with shipments to anywhere in the world. Website not currently available.	Marketing of handicrafts and small businesses
GuideTab	Comprehensive tourist service in tablet format, where the user can find all the information about the city, monuments, gastronomy, audio and video guides, as well as unlimited 3G Internet and Wi-Fi zone to connect their devices. Website not currently available.	Improve the experience
Horus aerial events	Is a company that offers aerial services in Seville such as light aircraft flights, helicopter flights, parachute jumps. It is a way to enjoy the city from a privileged balcony. Site: https://horuseventos5.webnode.es/	Enhance the experience

6. Innovative tourism initiatives in Portugal

The Tourism 4.0 Program[14], mentioned in the previous section, aims to: (i) foster entrepreneurship, (ii) transfer knowledge for companies, (iii) lead innovation processes and (iv) train and qualify human resources to act in innovation area. This Program was a finalist in the XIV Edition of the UNWTO Awards for Excellence and Innovation in Tourism. It should be emphasized that linked to this program, a Tourism Innovation Center was created in 2017. The objective is to promote the country as a global center for innovation and digital development in tourism. The Center will promote startup incubation and acceleration services, support the international promotion of innovation in tourism in Portugal, disseminate best practices, identify international trends, among other activities related to tourism and innovation.

Portugal has been graced with an award in the category Innovation in Public Policy and Governance in the XIV Edition of Awards for Excellence and Innovation in Tourism, promoted by UNWTO in 2018. The winning project was the Tourism Training Talent promoted by Turismo de Portugal, which has 12 public tourism schools around the Portuguese territory, with 3,030 students in initial level, and 3,800 students in continuous training process[15]. A project that was born from Tourism Training Talent is the Tourism Creative Factory[16]. In the 2018 edition of the Tourism Creative Factory, the "push4tourism" project was created, which is an initiative to accelerate ideas for future tourism entrepreneurs with support from the Turismo de Portugal network of schools, in addition to specialized mentors.

Turismo de Portugal and Fabrica de Start-up[17], promote Tourism Explorers which is a program that aims to potentiate the development of innovation and entrepreneurship in the country. The focus is on ideation and acceleration for the creation of new companies with innovative products and services in the tourism sector. The program is implemented in 12 cities simultaneously: Porto, Lamego, Aveiro, Covilha, Coimbra, Castelo Branco, Caldas da Rainha, Abrantes, Lisbon, Beja, Faro and Angra do Heroísmo. The methodologies for accelerating companies consider nine stages: design the business model, know the customer, create value, create

relationships, generate revenue, produce value, plan the finances, plan the execution and make the pitch. Turismo de Portugal and Fabrica de Startups, in cooperation with Nos are developing the Discoveries: Travel and Tourism Startup Accelerator[18] program created in 2015 with focus on technology-based tourism startups.

Another successful experience is The Journey which is a program fostered by Turismo de Portugal in cooperation with Grupo Barraqueiro, Geo Star, Pestana Hotel Group and Sata Azores Airlines, in addition to partners in technological area: Nos and Bulding the Innovation Ecosystem. It intends to promote innovation in tourism globally. The proposed challenges are in four areas: hospitality, travel services (agencies), tours and activities, and air transportation and ground transportation, which is related to transportation between the airport and the lodging place. In the first edition, 136 startups from 27 countries applied for the program and 11 were chosen to be accelerated, being 5 from Portugal: Airbot Technology, Doinn, Ecocubo, Ground Control Studios and Visor AI; 3 from Italy: Busrapido.com, Find My Lost and Round stay; 1 from UK: Firefly Experience; 1 from Sweden: Han

discover and 1 from the Netherlands: Secret City Trails.

The Madeira Start-up Retreat[19], a program that selected 10 startups, from about 60 proposals from 25 countries, is another initiative in the country. Promoted by the Regional Government of Madeira, with the support of Turismo de Portugal and the Nova School of Business and Economics, it intends to associate a mature tourism ecosystem with new technologies.

Portugal Tourism, in the second half of 2017, selected from a universe of almost 50 startups, 20 that will go to represent Portugal in international fairs for a period of 6 months[20]. These startups are: Infraspeak, Hijiffy, Snap City, Work zebra, Hotelvoy, Farmer Experience, Go2Nature, Tandem Innovation, Helppier, Climber Revenue Strategy, YnnovBooking, Portugal 4all Senses, myportugalforall, Portuguese Table-Experience Gastronomicas, Marisa Maganinho, Upstream-Vlorizaçao do Territorio, travel & experiences, City Guru, Green Stays and Social Impactrip[21–23]. In **Table 3,** we describe some of them.

Table 3. Startups related to tourism in Portugal

Startup	Description	Target
Hijiffy	Platform that possibility virtual assistance in the hotel's Facebook Messenger. It uses artificial intelligence, is a 24/7 open communication channel and allows direct hotel booking. Site: https://hiiiffv.com/	Marketing
City Guru	An application that offers tourist routes around Lisbon, including Lisbon Music Scene, Lisbon Secret Gardens and Street Art. Site: https://thecitvauru.com/en/	Enhance the experience
Portuguese tables.	Platform that promises gastronomic experience. By accessing the site, it is possible to search for a host and make a reservation to have a gastronomic moment with this one. Site: https://portuguesetable.com/	Marketing, collaborative economics and experience enhancement
Impact trip	Platform that promotes solidarity tourism experiences with the possibility of volunteering. Site: https://www.imDactriD.8m/	Enhancing experience and solidarity tourism
Portugal 4 all senses	Inclusive tourism platform with themed experiences and vacation packages for travelers with reduced mobility or visual impairment. Site: https://portugal4allsenses.pt/	Marketing, experience enhancement and accessibility
Doinn	Management system that boosts sales of cleaning and laundry companies. In addition, it provides services to welcome and accommodate guests, as well as check out. It is present in more than 50 cities and in 4 European countries. Site: https://doinn.co/	Management
Live electric tours	Provides the tourist the rental of electric cars equipped with GPS, audio guide, free Wi-Fi and a live camera to share this experience live on the social network. Site: https://www.liveelectrictQurs.pti	Transportation, enhancing the experience and environmental sustainability

7. Discussions

The results of the research make it evident that there are guidelines linked to startups in the three countries, although in Brazil there is no program at the national level linked, specifically, to the tourism sector. However, there is a favorable scenario for innovation in the country with several actions promoted by private companies, public institutions and universities (incubators, accelerators, programs to stimulate startups, contests and calls for proposals). In Portugal and Spain, it is important to consider that they can count on European funding programs.

Initiatives with the following objectives were identified: commercialization; management; promotion of innovation; improvement of the experience; cultural valorization; environmental preservation; accessibility; promotion; exchange of experiences; translation; transportation; safety; collaborative economy; solidarity tourism and commercialization of handicrafts and small businesses.

In general terms, the initiatives are present in all three countries, except that in Brazil startups have been identified with the objective of assisting in transportation, translation, improving security and promoting innovation, while in Spain and Portugal startups have been identified with the objective of preserving the environment and promoting the collaborative economy. In the Portuguese case, the theme of solidarity tourism has also been identified.

In the Portuguese case, based on the news data collected, it is important to highlight the international attraction of entrepreneurs in the tourism sector to the country, such as The Journey Program, which operates at the national level, and the Madeira Startup Retreat, at the regional level, which stimulate tourism innovation and attract foreign participants.

8. Final considerations

The study made it possible to observe that Brazil, Spain and Portugal are betting on strategies linked to the promotion of innovation in the tourism sector. It was observed that in the three countries there are several successful innovative initiatives in tourism, among them: experiences of private and public companies, startups created and awards granted. In general terms, it was possible to observe that it is possible to promote the development of ITD based on startups. The initiatives identified, in addition to promoting marketing, information exchange and improving tourism management and experience, also encourage a more sustainable development, promoting accessibility, the marketing of local products, the enhancement of local culture and the use of renewable energies.

As a limitation of the research it is important to mention that it was not possible to compile all the existing experiences, however, a significant sample has been obtained that allows characterizing the environment of innovation in tourism in the countries analyzed. As a recommendation for future studies, there are several areas in which they can be developed, among them: to deepen the survey and evaluation of innovative initiatives in tourism and to analyze the cities that are implementing strategies for conversion in DTI.

Finally, it is important to emphasize that there are many gaps between traditional destinations and smart destinations. Consequently, there is a need for strategic tourism planning based on the pillars of DTI, in addition to targeted investment, stimulus to market intelligence and involvement of tourism stakeholders. This is so that tourism destinations are increasingly sustainable, connected, physically and digitally accessible, self-managed by local or regional governance bodies and, fundamentally, that they are spaces for promoting memorable tourism experiences.

Conflict of interest

The authors declare no conflict of interest.

References

1. Córdoba Leiva JL. La revolución silenciosa del turismo [The silent revolution in tourism]. International Journal of World of Tourism 2014; 1(1): 9–16.
2. Albino V, Berardi U, Dangelico RM. Smart cities: Definitions, dimensions, performance, and initiatives. Journal of Urban Technology 2015; (1): 3–21.
3. Giffinger. Smart Cities: Ranking of European medium-sized cities. Research Institute for Housing, Urban and Mobility Studies–Delft University of Technology 2007; (1): 5–21.
4. Soares JC, Conceição RB. A aplicação do Conceito de Cidade Inteligente no Turismo [The application of the smart city concept in tourism]. Ponta de Lança 2016; 10(9): 253–261.
5. Ivars Baidal JA, Monzonís JS, Sánchez DG. Gestión turística y tecnologías de la información y la comunicación (TIC): El nuevo enfoque de los destinos inteligentes [Tourism management and information and communication technologies (ICT): The new approach to smart destinations]. Documents Anàlisi Geogràfica 2016; 62(2): 327–346.
6. Esade. Informe Innovación Turística en España. Available from: https://www.slideshare.net/ESADE/informe-innovacin-turstica-en-espaa-2015
7. InovaAtiva. O que é a aceleração InovaAtiva. Available from: https://www.inovativabrasil.com.br/programa-de-aceleracao/
8. Abreu PRM, Campos Neto NMD. O panorama das aceleradoras de Startups no Brasil [The outlook for startup accelerators in Brazil]. Fundação Getúlio Vargas–FGV 2016; (2): 16–34.
9. España. Eurostars 2 Ministerio de Economía, Industria y Competitividad. Available from: https://eshorizonte2020.es/mas-europa/grandes-iniciativas/integracion-de-programas-nacionales-art.-185/eurostars-2
10. España. Red.es. Ministerio de Economía y Empresas. Available from: http://www.red.es/redes/es/quienes-somos/redes
11. Sebrae, Braztoa. Desafío de Innovación: Turismo Inteligente. Available from: http://www.Sebrae.com.br/sites/PortalSebrae/artigos/desafio-de-inovacao-turismo-inteligente-conheca-os-participantes,67426ca28e87e510VgnVCM10000004c00210aRCRD
12. Telefónica. Open future. Available from: https://www.openfuture.org/pt/info/about
13. Turismo de Andalucía. Proyectos Turísticos Innovadores. Available from: http://www.andalucia.org/es/profesional/proyectos-turisticos-innovadores/
14. Turismo de Portugal Programa Turismo 4.0. Available from: http://business.turismodeportugal.pt/pt/Conhecer/Inovacao/Turismo4/Paginas/default.aspx
15. Turismo de Portugal. Tourism Training Talent. Available from: http://cf.cdn.unwto.org/sites/all/files/docpdf/tourismtrainingtalentturismoportugal.pdf
16. Turismo de Portugal. Tourism Creative Factory. Available from: http://push4tourism.com/
17. Turismo de Portugal; Fábrica de Startups. Tourism Explorers. Available from: https://www.tourismexplorers.pt/
18. Turismo de Portugal, Startup Madeira, Nova School of Business and Economics. Madeira Startup Retreat. Available from: https://retreat.startupmadeira.eu/
19. Turismo de Portugal, Fábrica de Startups, Nos. Discoveries: Travel and Tourism Startup Accelerator. Available from: https://www.startupdiscoveries.com/
20. Caragliu A, Del Bo C, Nijkamp P. Smart cities in Europe. Journal of Urban Technology 2011; (18)2: 65–82.
21. Turismo de Portugal. Participação em Feiras Internacionais. Available from: http://www.turismodeportugal.pt/SiteCollectionDocuments/Media/notas-de-imprensa-2017/16-10-2017-turismo-portugal-integra-20-startups-representacao-nacional.pdf
22. Brasil. Start-up Brasil. Available from: http://www.startupbrasil.org.br/
23. Native Hotels [2018]. La Accesibilidad en los Hoteles Native. Available from: https://www.nativehotels.org/accesibilidad/