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Smart 'Tourist Cities' Revisited: Culture-Led Urban Sustainability and the Global Real Estate Market

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Abstract: Smart tourism destinations have received increasing attention during the last few years. Digital technologies have reshaped the smart city paradigm in terms of both resilience and sustainability, capitalizing cities' cultural and historical components while providing unique potential for growth in the real estate industry. Real estate, in particular, is considered a main asset to the tourist experience, whether it is in the form of hospitality accommodation facilities, urban landscapes, or cultural heritage hotspots. In addition, the effect of cultural sites and overall destination attractiveness on real estate dynamics (land/housing prices and building activity) is well established. Thus, uncovering how enhanced technological throughputs and synergies, culture-led urban sustainability initiatives and the real estate dimension are directly (or indirectly) associated could support cities to better delineate policies for their promotion as international, sustainable, and resilient tourist destinations. With this perspective, the present study focused on four particular cities' successful smart initiatives, namely Amsterdam, Barcelona, Seoul, and Stockholm, in an attempt to identify how developers and local authorities will need to transform in order to offer better services to residents and visitors. This work reveals that smart projects alone cannot secure the transition of existing (European) cities into smart and sustainable tourism destinations. In addition, this study also contributes to public policy by demonstrating how challenging it is to be smart without the support and involvement of the local community, highlighting the significance of public awareness. The empirical findings suggest that local authorities are of critical importance when shaping a well-structured and practically effective strategy for the integration of sustainable and technologically advanced smart features. Results are promising, and final reflections provide insights for tourism destinations policymakers, city authorities, and real estate professionals.

Keywords: smart cities; urban sustainability; local growth; regional cities; cultural heritage; real estate; intelligent regions; innovation systems; circular economy; regional policies

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1. Introduction

By 2030, megacities or dense metropolitan regions will house almost 60% of the world's population [1,2]. However, urban growth has a price. Many metropolitan cities across the globe have begun to focus on sustainable growth through regulated urban expansion in response to a variety of infrastructural issues, together with social and environmental constraints [3]. Indeed, during the last decades, inner cities around the world have been involved in multifaceted initiatives to improve urban infrastructure and services, with the

target of a healthier and more resilient environment [4]. These initiatives were also aimed at reaching social and economic prosperity [5], improving local competitiveness [6], and making cities more appealing [7], with a view to benefiting from tourism [8]. However, it is the smart city concept that outlines how cities might attain such long-term development objectives; therefore, the smart city notion is earning popularity amongst governments and local/regional authorities [9].

The development of smart cities of interest for tourism purposes is likely to generate significant effects on real estate sustainability, as it may add value to assets and therefore exponentially increase profit yields, customer trust, and strong market rivalry [10,11]. Indeed, information technologies (see [12]) include tools for offering better services to residents, as well as tourists, on the one hand, and the necessary means to endorse global real estate growth within smart city perspectives, on the other hand [13,14]. However, given (i) the demographic, social, and technological developments' effects on the built environment, which are becoming increasingly prominent in property investment decisions and development trends, and (ii) the real estate sector's high uncertainty and unpredictability, the smart city plan should also emphasize improvements in the economic, social, cultural, ecological, and governance dimensions. This specific aspect of the literature is relatively poorly developed in recent studies, despite the direct linkage to a specific sustainability target of the Agenda 2030 (see [15]), namely Sustainable Development Goal (SDG) 11, facing 'sustainable cities and communities' and the indirect linkage to other sustainability targets such as SDG 9, 'industry, innovation and infrastructure', and SDG 15, 'life on land'. The policy and planning implications of such studies are clearly useful when implementing a comprehensive strategy for sustainable and resilient tourism-specialized cities, reducing the environmental impact of economic activity and improving the economic viability of investments, settlements, and infrastructure [16–18]. Faced with this situation, the current work will seek to understand and determine how advanced digital technologies within and without, culturally driven sustainable development and growth, and real estate planned or unplanned development can be considered expressly or by implication inextricably inalienable and inseparable, and at the same time how these components can empower cities of the future in effectively establishing a unique framework towards branding themselves as growing, smart, resilient, and sustainable tourist destinations. The present study is articulated in sections, delineating the most relevant and updated literature review in the field of tourism-specialized cities (Section 2), the methodology used in the present contribution (Section 3), and a thorough description of relevant case studies, in accordance with the main limitations emerging from the literature review (Section 4). Section 5 discussed the main findings of the present contribution in light of sustainable planning and policy for resilient city regions oriented toward an economic specialization in tourism. Section 6, finally, concludes the work by specifying the need for future studies and novel approaches to urban complexity.

2. Literature Review

Several definitions of the 'smart city' exist in the scholarly literature [19]. Earlier studies argue that the smart city concept arose as a result of the goals set by the 1997 Kyoto Protocol (see [20]), which qualify certain initiatives and plans for urban development as 'smart' [21]. A predominant view sees a smart city when investments in human and social capital and in traditional and modern communication means and infrastructure fuel sustainable economic growth as well as high quality of life, while managing natural resources, as achieved by participatory governance. Another definition notes that a smart city is considered a city that performs a number of fundamental functions, such as smart economy, intelligent mobility, smart environment, smart people, smart living, and smart governance, based on the 'smart' combination of endowments and activities of self-regulating, independent and sensitive citizens. A more technical definition states that a smart city is an urban space that combines information and communications technology, as well as participatory web and social web technologies, and includes other organizational, planning, and scheduling efforts

to dematerialize and expedite bureaucratic processes and assist in identifying innovative solutions for better city management and increased living standards [22].

The notion of the 'smart city' was initially introduced in the early 1990s in the book entitled *The Technopolis Phenomenon*, by [23]. This source predicted the emergence of a basic linkage between technology and urban development, which would contribute towards ensuring quality living. The development process would take place through collaboration between academia, governments, and industry, using faster networks capable of supporting the innovative smart city model globally [24]. A few years later, this concept was analyzed assuming the central role of cities in controlling and integrating the conditions from all infrastructures, including transport networks, communications, water resources, energy, and structural wealth [25]. The primary goal was to strengthen resources, provide a more comprehensive framework for their maintenance and upkeep, monitor security provision, and improve citizen services [26]. A smart city is also identified as a well-functioning and integrated urban landscape, looking to the future in the economy, people, governance, mobility, and livelihoods, built on a smart combination of skills and activities of a community-independent and self-sustaining environment [27]. Other scholars have examined the term from the user's point of view, proposing a new framework and defining the adaptability of technology as user-friendly [28]. In general, the smart city model extends beyond the physical boundaries of the structured networks and describes an environment of networks that connect virtual and physical spaces to meet the various challenges that a modern city has to face [29].

The smart city model is approached as the evolution of city models such as the creative city, the digital city, the city of knowledge, the living city, the smart green or the sustainable, the cultural, and the smart city [30–32], which were developed with the aim of achieving urban sustainability based on technological infrastructure. An 'intelligent community' that uses technology directly and effectively to meet its social and business needs will inevitably build high-speed internet infrastructure. An alternative approach is to improve urban functioning through the use of data, information, and information technologies in order to provide more efficient services to citizens, in order to achieve the control and optimal operation of infrastructure, increase cooperation between different economic actors and promote the creation of innovative business models in both the public and private sector [33].

In addition to academia, a number of public sector institutions have also worked on the smart city issue. For instance, the city of Barcelona defined a smart city as an intensive and advanced high-tech city that connects people, information, and city elements with the use of new technologies to create a sustainable, green city, with competitive and innovative trade and increased quality of life. In recent planning documents, the city of Amsterdam claimed that the smart city uses innovative technology and intends to change consumption behavior in order to meet climate targets [34]. Towards this approach, the Amsterdam Smart City is a city project designing and developing an environmentally and economically viable context that will reduce the city's carbon footprint [35]. Earlier in the city life cycle, the first version of the smart model of Singapore was introduced, the transformation of which into a new information economy using technology would be successful due to the lack of natural resources and the need to review the traditional industrial base of the regional economy [36]. In 2001, the Edinburgh government invested in technology infrastructure to turn the city into a pilot technology center based on smart governance. Trikala digital city in Greece hopes to become a digital data prosumer and promote smartness and resilience, developing an e-Government environment that offers more than administrative services, benefiting both residents and the administrative authorities [37].

It follows that integrating information and communication technologies (e.g., the internet of things) in urban environments is of particular interest, as it responds to the strong push (see also [38]) of many administrative authorities to tackle everyday challenges with practical solutions, thus realizing the general idea underlying smart cities [39]. Urban governance can, in fact, benefit the management and optimization of traditional public

services, such as transportation and parking, lighting, surveillance and maintenance of public spaces, preservation of cultural heritage, waste collection and sanitation, hospitals, and schools [40,41]. In addition, the availability of various types of digital data, collected by widespread urban information and communication technology, can be used to increase transparency and promote local government action to citizens, to raise public awareness of the state of their city and, consequently, boost the active participation of citizens in the management of public administration, as well as the creation of new services [42]. On the other hand, information and communication technologies can be used as a successful matching of push and pull motives for an online marketing strategy in destination areas, for example by placing significantly greater importance on social media content about the destination's cultural heritage and historical sites [38,43,44]. Therefore, the application of the information and communication technologies scheme is particularly attractive to local and regional administrations [45]. With this perspective, smart cities are commonly thought to be about new technologies; however, they are much more. The smart city is an expression of a very contemporary drive to envisage and influence the city's and urban society's future; a city featuring efforts for economic development, governance, transportation, and sustainable housing (see [46,47]). Unsurprisingly, the 'smart' initiatives could not be applied horizontally, and are—to a large extent—dependent on local governments and cultures, possibly unraveling how the development of smart cities has remained mostly heterogeneous [48]. However, economic growth and other conceptual issues are considered influential in determining the 'smart' development and planning of any city [49]. Attractiveness, for example, is a basic characteristic of smart cities, beyond tourist destinations. Developments with smart technology in cities, and/or particular sites, towards functioning more efficiently, are more attractive to residents and visitors considering the lower operating costs and the higher value retention [50,51].

Tourism and Smart Cities

Tourism is occasionally cited as one of many services that may be developed using smart city concepts, although it is rarely regarded as a core component in smart city development plans [52]. In addition, notwithstanding large expenditures in upgrading urban services under smart city development, tourism professionals have largely overlooked smart city projects, which are generally absent from tourism development plans. In particular, according to recent studies, smart tourist destinations simply integrate information and communication technologies to speed up the creation and production of tourism-related operations [53]. In other words, they engage with the tourists to co-create value, leisure, and experiences using the technologies already accessible [54]. Connecting local stakeholders through a centralized channel/platform, in order to ensure community engagement, is crucial for bringing a smart interface to tourism destinations [55]. Smart tourism destinations enable valuable information sharing between tourism companies and visitors.

This exchange is beneficial at all levels for all sides involved, namely by increasing the quality of life of the citizens, competitiveness through attractiveness for the city, profit for the tourist sector business, and leisure, pleasure, and experiences for the tourist. However, the boundaries between residential neighborhoods and tourism zones are blurred by smart tourism, which takes inspiration from smart city development [56]. Historically, urban settings have been quite separated when it comes to tourism, with many cities creating designated tourist areas that virtually solely serve visitors [57]. Residential areas were zoned out and away from tourist accommodation facilities, while additional tourist infrastructure, including gift stores, tourist-friendly eateries, sightseeing buses, and nightclubs, were built next to the hotels or near transit hubs, or within reach of heritage cultural sites or structures [58–60]. This division is put into question by the integration of smart technology into urban settings, which is a powerful driver for the merging of touristic and residential uses of urban space. Therefore, smart cities with a growing tourist industry, inevitably have an evolutionary impact on the real estate industry (e.g., real estate tourism model [61]) well beyond the environmental sustainability part offered by smart buildings. On top

of that, second-home tourism [62], a special aspect of tourist destinations, is a socioeconomic phenomenon that develops and grows almost concurrently with tourism [63], which is nevertheless supported by a variety of complex driving forces for development [64], including—but not limited to—the potential for real estate profitability [65].

Thus, amid the smart city revolution and the commonly acknowledged added value offered by cultural (heritage) sites or buildings (e.g., seen as tourist resources) [66,67], real estate has inevitably become an integral part of the urban smart transformation. Since technology establishes a digital—now—connection between human behavior and surroundings (see 'design theory' [68] and 'actor-network theory' [66]), both the transformation of urban space into user-centric and existential space, way beyond the Cartesian notion of space in Euclidian planes (see [69]), and the rising tendency of preserving built heritage (see, e.g., adaptive reuse [70] under the 'authenticity' spectrum [71]), in particular, provide an intriguing possibility for the Internet of (Cultural) Things and its applications, which are shifting the real estate nature, perhaps leading to the emergence of 'smart real estate'. Indeed, using the contemporary digital means available creates sufficient space to set or improve interconnections among information technology (e.g., referring to 'blockchain technology' [72]), urban cultural (heritage) sites and structures, city operations, services, space, and people (either residents or visitors), and enables a response to the global desire (or better yet necessity) for sustainable development in its broadest sense.

Against this background, the focus of the present work is on attempting to realize how enhanced technological throughputs and synergies, culture-led urban sustainability initiatives, and real estate are directly (or indirectly) related in practice, and how can these dimensions help contemporary metropolises better establish policies for promoting themselves as internationally sustainable and resilient tourist destinations. In this perspective, centered on four specific cities' successful smart efforts, the current study goes forward with the development of a matrix illustrating strengths, weaknesses, opportunities, and threats (namely, the SWOT matrix [73–75]). This will allow the ultimate discovery of how all players involved and local authorities will need to transform in order to offer better services to residents and visitors.

3. Methodology

To contribute to an in-depth understanding of the economic and developmental issues in a tourism-specialized context, a comparative, narrative analysis of representative cases of smart cities worldwide was developed here. The selection of the relevant cases was based on three main criteria: (i) cities where tourism is the primary component of the local culture and economy, (ii) cities that are prevailing in the global scholarly published literature as success stories or leading examples of destinations embracing smart technology, cultural backdrop, and catching-the-interest real estate, and (iii) cities where the data required to address the overarching objectives of the current study were available. Furthermore, the selection went through the examination of additional criteria, some of which seem essential to distinguish each city. This interpretative scheme may highlight the originality of the model that each city has followed and on what 'smart' features it is based. Examples include how the city approaches mobility, and what makes it special compared to other smart cities, or innovations supporting the objectives that the city has set, with the relative residents' acceptance. A multiple set of criteria were therefore considered (Table 1)—in accordance with the theoretical background (see Section 2)—and provided a suitable final selection.

As an initial source, the list of the world's smartest cities in the 2021 Smart City Index was used (Appendix A Table A1).

Additionally, the present study moves forward with the development of a matrix collecting the strengths, weaknesses, opportunities, and threats (SWOT) of the smart city concept, in order to encapsulate the essential points made in the earlier analysis of the case studies. This illustrative summary attempts to identify how developers and local governments will need to change in order to deliver better services to residents and

visitors. In other words, how to maximize strengths, avoid weaknesses, and capitalize on opportunities while minimizing dangers.

Table 1. A candidate list of smart city criteria following [76,77].

Smart Economy	Smart People	Smart Governance	Smart Mobility	Smart Environment	Smart Living
• innovative spirit • entrepreneurship • economic image and trademarks • productivity • flexibility of labor market • international embeddedness • ability to transform	• level of qualification • ability for lifelong learning • social and ethnic plurality • flexibility • creativity • cosmopolitanism • open-mindedness • participation in public life	• participation in decision making • public and social services • transparent governance • political strategies and perspectives	• local accessibility • international accessibility • availability of ICT infrastructure • sustainable innovative and safe transport system	• attractiveness of natural conditions • pollution • environmental protection • sustainable resource management	• cultural facilities • health conditions • individual safety • housing quality • education facilities • touristic attractiveness • social cohesion

Study Cases

Basic information about the four cities investigated for the scope of the current research, namely, Amsterdam, Barcelona, Seoul, and Stockholm, are provided in an attempt to become acquainted with their key aspects. Tables 2–5 present data in three time periods, particularly 2005, 2015, and 2020, which typically reflect the beginning and the progression of significant acts in the course of each smart city's development. In total, the Amsterdam metropolitan region (Figure 1) has developmental potential in terms of size and economy, as well as a reasonably high quality of life [78].

Figure 1. (**Left**): Amsterdam (navigation) map. (**Right**): Amsterdam population change 1990–2015. Decline (red) vs. growth (green). Authors' collaboration using www.pudding.cool.

Over the time period under examination, Amsterdam's total population and population density grew and still remain relatively low, while unemployment rose in the first time point but declined in the second (Table 2).

Table 2. Amsterdam key quantitative features.

Amsterdam	2005	2015	2020
Population of metropolitan area (individuals)	2,156,348	2,275,130	2,406,043
Total Area (km^2)	2819.84	2819.84	2819.84
GDP (million USD)	110,110	119,352	122,149.2
Unemployment as % of national size	14.49	14.60	14.50

Seoul's profile differs significantly from that of European metropolises. The population is quite high, and the economy is dynamically upward but with a lower per capita income (compared to European cities) and a significant unemployment rate (Table 3) [79].

Table 3. Seoul key quantitative features.

Seoul	2005	2015	2020
Population of metropolitan area (individuals)	20,190,367	22,244,241	25,562,729
Total Area (km^2)	4673.13	4673.13	4673.13
GDP (million USD)	22,252.20	28,543.58	30,989.72
Unemployment as % of national size	46.36	55.23	57.13

In general, due to the large size and low density (Figure 2), the city faces challenges in the quality of life as well as the environment [80]. Significant unemployment and relatively low incomes also reflects a possible orientation of the city to the economy and entrepreneurship [81].

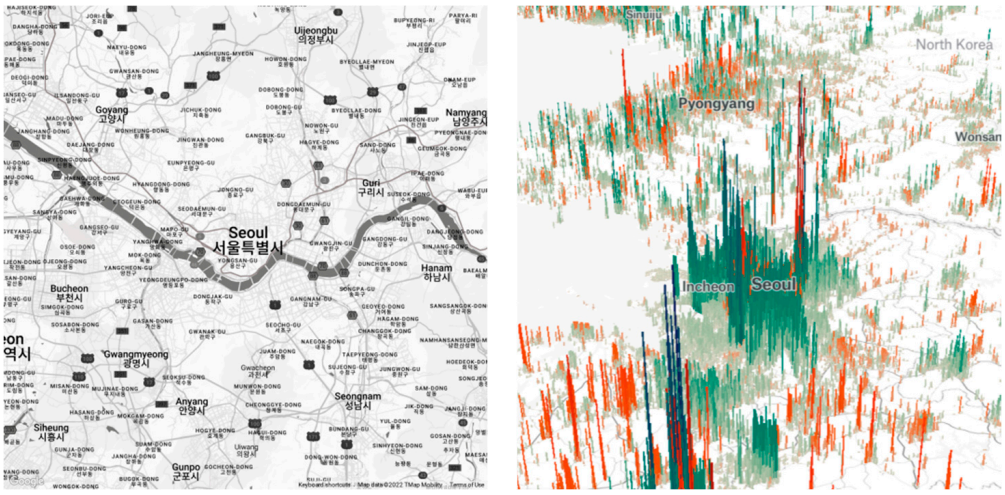

Figure 2. (**Left**): Seoul (navigation) map. (**Right**): Seoul population change 1990–2015. Decline (red) vs. growth (green). Authors' collaboration using www.pudding.cool.

Stockholm's urban economy is growing dynamically (Table 4) and is based on innovation and entrepreneurship [82,83]. The Stockholm metropolitan area presents an economic and population potential, with a relatively good quality of life without significant problems of administrative fragmentation [84].

Table 4. Stockholm key quantitative features.

Stockholm	2005	2015	2020
Population of metropolitan area (individuals)	1,825,377	1,924,078	1,969,310
Total Area (km^2)	7106.87	7106.87	7106.87
GDP (million USD)	91,135.32	107,609.7	123,274.12
Unemployment as % of national size	13.27	19.29	20.18

Stockholm has a small (for a metropolitan area) population size, with increasing trends but a relatively low population density (Figure 3).

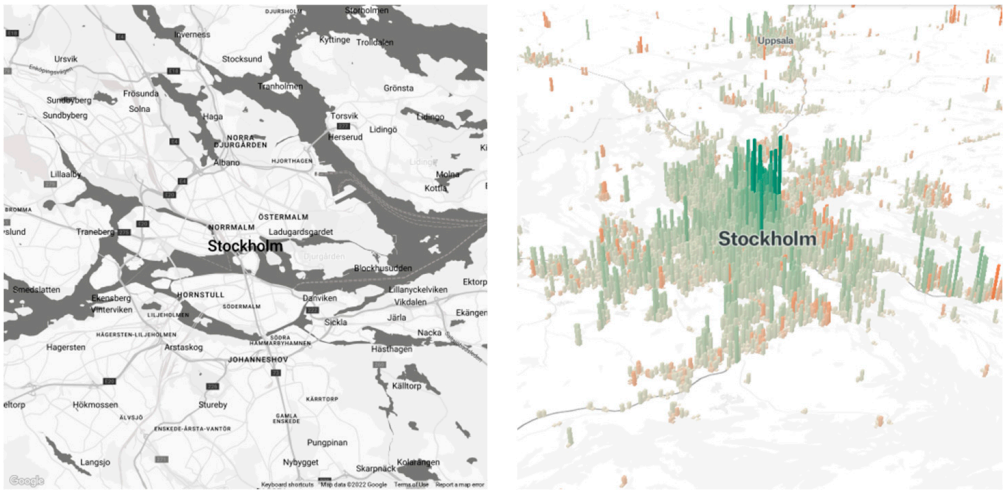

Figure 3. (**Left**): Stockholm (navigation) map. (**Right**): Stockholm population change 1990–2015. Decline (red) vs. growth (green). Authors' collaboration using www.pudding.cool.

Finally, Barcelona's economy is booming, with a particularly high gross domestic product but also a higher unemployment rate (Table 5) [7].

Table 5. Barcelona key quantitative features.

Barcelona	2005	2015	2020
Population of metropolitan area (individuals)	1,481,937	1,598,534	1,621,537
Total Area (km^2)	100,234	100,234	100,234
GDP (million USD)	91,135.32	105,503.5	125,477
Unemployment as % of national size	8.9	10.6	11.7

The population and density of Barcelona's metropolitan wider area are at relatively low levels (with small upward trends) (Figure 4).

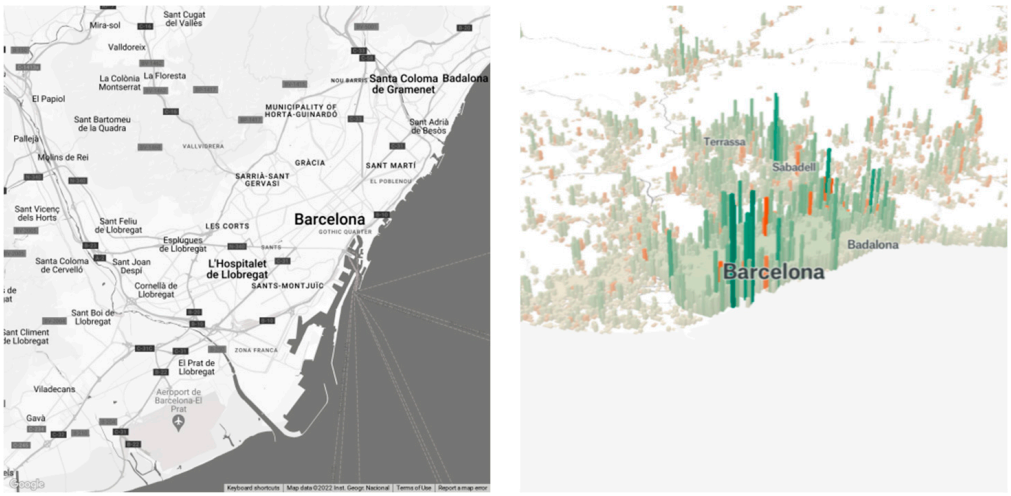

Figure 4. (**Left**): Barcelona (navigation) map. (**Right**): Barcelona population change 1990–2015. Decline (red) vs. growth (green). Authors' collaboration using www.pudding.cool.

4. Results

In the following section, the most salient characteristics of the four case studies are discussed, distinguishing the main peculiarities of each city as summarized in Table 6.

Table 6. A comparative list of the key smart features of the metropolitan areas studied here.

City	Application Fields	Results
Amsterdam	• Infrastructures more efficient and environmentally friendly • Power stations for electric cars, smart grids for mobiles, photovoltaics, wind turbines, power stations for recharging electric cars	• Climate change
Seoul	• Used smart distribution program devices • Smart Work Center • Community mapping • Smart Metering Project • Seoul Safety Service • CMS-based Homepage • Promoting Open Governance 2.0 • Disclosing public data • Developing public applications and its current status • Online reservation system for public services	• Climate change • Air pollution • Training of new technologies • Clarity of institutions • Easy access to work
Stockholm	• Waste incineration for energy production • Experimental wireless broadband technology for the collection and use of vehicle tracking information	• Reduction of air pollution • Reduction of traffic congestion • Assisted living for the elderly
Barcelona	• Free car parking system • Special waste system, with special waste bins • Solar panels in large buildings • Central heating (steam from municipal waste incineration and seawater cooling, causing less energy consumption and carbon dioxide emissions) • Increasing citizen participation • Transparency of government	• Find parking • Facilitate the flow of traffic in the city • Reduction of fuel consumption and noise pollution

4.1. Amsterdam

In the Netherlands, a huge effort has been launched for new, more efficient, and environmentally friendly infrastructure, including power stations for electric cars [85], smart grids for mobile phones [86], and interesting proposals for photovoltaic and small wind turbine installations. Today, more than 1000 households have installed an energy-saving system [87] with the aim of reducing environmental benefits and costs. More than 300 power stations exist across the capital city for recharging electric cars (Figure 5).

Figure 5. Charging station for electric cars in Amsterdam (Source: City of Amsterdam, www.amsterdam.nl).

Historic houses of the 17th century are motivated to install photovoltaics in order to resell the energy produced by small wind turbines in the city network. More than EUR 1.1 billion is expected to be invested in environmentally friendly programs, such as the initiative to reduce gas emissions, which will have a significant impact on the fight against climate change. Amsterdam is also working with America, Europe, and Asia to find the best way to reduce carbon dioxide emissions in cities. Supporting the view that the future is remote energy management will develop technologies that will allow households to control the use of their home electricity remotely. Finally, Amsterdam has countless parks and water parks that are visited daily by hundreds of tourists and locals alike. That is why the local authorities have decided to create a sustainable and ecological shopping street with the aim of creating other such boulevards in the future both in Amsterdam and in other Dutch cities. It is worth noting that the local authorities considered that air quality does not have the same measurement result everywhere, so they decided to install tree Wi-Fi which will act as sensors and will be placed in the trees, and when the air quality improves they will have free internet access [88].

4.2. Barcelona

Barcelona is the first city in the Spanish state to be described as a "smart city" [89]. Barcelona has many programs related to the use of information and communication technologies. A typical example is the free car parking system of the city, where special sensors are used in free parking spaces and, in combination with special software applications, allow the collection of information and the management of payments for these spaces [90]. Through this structure, Barcelona has managed to reduce the time lost in finding parking and facilitate the flow of traffic in the city while managing to reduce fuel consumption and noise pollution. In the same context of the development of special applications, the Barcelona Public Transport system has developed and implemented a new rectangular bus network (horizontal, vertical, and diagonal lines), making it the fastest and easiest to use system [91]. The bus system performs sustainable urban mobility, reducing emissions through the use of hybrid vehicles [92]. The bus fleet is the most environmentally friendly in all of Europe, featuring smart bus stations that use solar panels, bus waiting times, and USB ports. It is worth noting that Barcelona has 6000 bicycles, allowing its citizens to travel in an economically and environmentally sustainable way over short distances without consuming energy [93]. The biking program in Barcelona allows the issuance of a card through which the user can pick up a bike from one station, move in any direction they wish and return it to another station. The card is charged and allows the receipt of the bike with a simple scan on a special machine [94].

At the same time, the city uses a special waste system, with special waste bins. The bins are compact dumpsters, which have an underground vacuum network that absorbs debris underground [95]. This automated waste collection system reduces the noise pollution caused by refuse trucks and keeps the public space clean while reducing unpleasant odors. Through radio frequencies and Wi-Fi, the sensors transfer data to a central system, detecting the level of waste. Sewage workers can then plan the optimal route and times to collect them. Since 2000, the Barcelona Solar Thermal Ordinance has regulated all large buildings such as hotels, hospitals, gyms, or swimming pools to produce their own domestic hot water through solar panels (Figure 6), reducing pollutant emissions [96].

The Districlima heating and cooling system, already in use in 78 buildings and expected to be expanded, produces green energy equivalent to planting 548,000 trees, or almost four times the number of trees in Barcelona [97]. Heating uses steam from the incineration of municipal waste and cooling uses seawater, causing less energy consumption and carbon dioxide emissions. In the context of the application of information technologies in a smart and, at the same time, effective way to increase the participation of the citizens and the transparency of the government, the city has adopted several information systems [98].

Figure 6. Solar integration in Barcelona buildings (Source: www.energia.barcelona).

Typical examples are the following:

- Bústia Ciutadana: Citizens can make complaints, report city problems, such as broken street lights, or suggest improvements. The data are sent to a central location and the employees respond immediately to the user [99].
- IDBCN: This application allows citizens to be digitally located remotely. They can obtain a residence permit in Barcelona, check their registration details, or even locate their car [99].
- Open Data BCN: This is public information that is available to everyone. Citizens, businesses, and other institutions can use information such as election results, population, public facilities, or the economy to create new services instead of starting from scratch. For example, according to a Microsoft case study in Barcelona, they can find open data about the Barcelona city festival La Mercè, and find out their interests or places of entertainment. They can then use these data to improve the future events they plan [100].

4.3. Seoul

Another example of the transformation of cities into a more 'smart' configuration is Seoul [101]. In Seoul, there is a whole new city—the Songdo International Business District—which was based entirely on the principles of smart cities [102]. Seoul's development into a smart city has three broad phases of development. The first phase or sub-level of services implements information and communication technologies to improve sub-functions of cities, e.g., transport, security, environment, and culture [103]. The second phase, or the vertical level of services, integrates the relevant processes and services from smart technologies in large areas of a city, allowing the provision of more advanced services [101]. In the field of transport, for example, citizens are provided with information on public transport about their activities in real-time (Figure 7), as well as on road conditions, road repairs, etc. [104]. The third phase, or the horizontal level of service, is the point of smart development of cities at which there is no longer a distinction between different service sectors, with all service departments seamlessly integrated into an efficient smart urban ecosystem. Smart Seoul follows a balanced approach, focusing on smarter city management towards a better quality of life for all, residents and visitors.

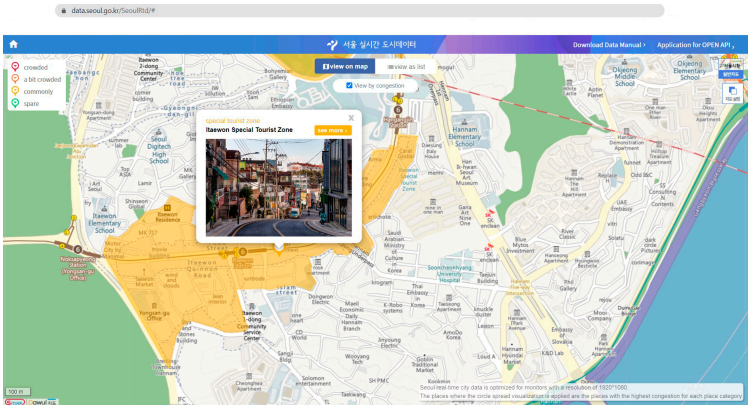

Figure 7. Seoul's real-time data service webpage on tourist destinations, sports stadiums, cultural heritage sites, parks, and major commercial areas, as well as public transportation passenger congestion (Source: Seoul Metropolitan Government, https://english.seoul.go.kr/seouls-50-major-attractions-at-a-glance/).

Smart Seoul is not Korea's first attempt to integrate information and communication technologies into the city's development strategies. In 2004, Korea launched the u-City project, which uses most of the information technologies to enhance the competitiveness of cities [105]. Subsequently, Smart Seoul 2015 was adopted to overcome the u-Seoul restrictions that applied information and communication technologies only to the existing traditional infrastructure of cities. U-Seoul has improved services such as transportation and security, but has failed to produce substantial improvements in the quality of life for Seoul citizens. Smart Seoul 2015, on the other hand, was a more human-oriented project. Seoul aims to implement as many smart technologies as possible, but also to create a more cooperative relationship between the city and its citizens [43]. The three pillars around which the project was developed are summarized below.

Information and Communication Technologies Infrastructure: Ensuring next-generation information and communication technologies infrastructure is critical to the success of emerging smart city services. Efforts to develop information and communication technologies infrastructure must anticipate future service requirements.

Integrated city management framework: A clearly defined integrated city management framework has been defined. The integrated subsystems, meta-systems, and individual building blocks of a smart city will only work harmoniously with the strictest adherence to common standards.

Smart users: information and communication technologies are the tools that enable a smart city, but they are of no use without smart technology users who can interact with smart services. Increasing access to smart devices and education on their use, at income and age group level, must remain one of the top priorities of a smart city. A smart city relies on a complete network of smart devices, with city dwellers creating services. The exclusive network in Seoul includes high-speed broadband optical cables and wireless networks, such as Wi-Fi and NFC technology.

The citizens' views and opinions are seriously considered in this effort, and a key pillar of Smart Seoul 2025 is to enhance access to smart devices by educating new users about their operation [106]. In line with this position, Seoul has managed to increase the number of Koreans using smart devices to 78% of its population. Free Wi-Fi networks are also being installed in parks and other public areas. High-speed internet has been secured through a public–private partnership. The same partnerships were formed for the installation of Wi-Fi in subways, trains, and buses. As part of the above actions, Seoul decided to carry out some more actions, such as the distribution program of used smart devices to low-income families. Citizens are encouraged to donate their old devices to people who cannot afford them. Smart devices have the ability to be handled by older people and

people with disabilities. In this context, even people with hearing difficulties can call the services through a video calling system, which is available as a mobile device application.

Seoul has been providing smart information technology training courses since 2009, offering both city-level and information and communication technologies-funded courses through private educational institutions. In Seoul, there are many different approaches to the development of the city. Briefly, the Smart Work Center allows civil servants to work in specific places that are very close to home [107]. Community mapping that uses information and communication technologies has created a platform where citizens can express their concerns about whatever is troubling them. Another program Seoul has implemented is the Smart Metering Project, which seeks to reduce energy use in the city [108]. The u-Seoul Safety Service uses state-of-the-art services and closed-circuit television technologies to inform authorities and members of families about emergencies involving children, people with disabilities, the elderly, and people with Alzheimer's disease. There is a smart system of devices installed in Seoul for this purpose, and when the individual or patient gets away from a designated safety zone or activates the emergency button, an urgent alert is sent to the police, other pertinent authorities, and closed-circuit television control centers.

4.4. Stockholm

Stockholm, the capital of Sweden, is an important economic center of the wider region. With a population of 870,000 and a metropolitan area population of about 2 million, it has the highest growth and gross domestic product in Scandinavia. With a focus on research and innovation and with the support of one of the largest information and communication technologies teams in the world, the city is now a smart city model in finding green solutions for the functionality of its various areas of activity [109].

Particular emphasis has been given to the quality of life of its inhabitants, since every smart activity has as its central goal the optimization of their daily life. The city has funded a large fiber-optic broadband network through Stokab, a city-based company, and sees itself as a testing ground for new technology. Emissions from transport and energy are equivalent to 43.6 tons of carbon dioxide per capita per year. This is significantly lower than other comparable metropolitan areas of the world—and almost half the average for the rest of the country. The telecommunications industry has had a strong presence in Stockholm for the last hundred years or more, specifically led by Ericsson, which is part of the city's heritage. It is followed by Stokab which is a business of the city itself, and which has created a huge network of optical fibers. A huge part of Stockholm's 'smart agenda' was to invest in high-quality, affordable e-government services. As mentioned earlier, with the investment of EUR 70 million since 2007 they have created more than 50 digital services, which have reduced the cost of managing the city. Another field of smart development in Stockholm City is Kista Science City, which is a business incubator in which companies, researchers, and university students work together to help the city grow and prosper. The Green Information Technologies Initiative is a Stockholm city strategy implemented by the city administration and Stadshus. This strategy has been adopted by the Municipal Council and is administered by the Executive Office. The Stockholm city green strategy is a collective body of measures aimed at reducing the environmental impact with the help of information technology (Figure 8).

It includes the use of information technology to reduce the environmental impact, as well as the reduction of energy consumption and the environmental impact of the information and technology sector as a whole. The city sees the internet of things and connected devices as an interesting way forward for the city in terms of economic and physical development. Dealing with people who do not have access to the internet is also a priority. The city is willing to invest in this dimension and enable the participation of all its citizens in the digital society.

Figure 8. Stockholm smart bins (Source: City of Stockholm, www.international.stockholm.se).

4.5. A Summary SWOT Analysis

The aforementioned analysis shows that the widespread application of information and communication activities contributes substantially to the improvement of the quality of life of citizens. In particular, in all the cases previously described the main concern of the 'smart' applications was the protection of the environment and the reduction of carbon dioxide emissions in combination with the reduction of energy consumption. At the same time, these cities are particularly focused on citizens and help to significantly improve the quality of life by encouraging alternative ways of generating energy or transportation. A SWOT analysis matrix illustrates those crucial points (Figure 9).

Figure 9. A matrix summarizing the main results of a SWOT analysis on the basic evidence stemming from the comparative scrutiny of the four cases studied here (Section 4).

5. Discussion

The 'Smart City' model is a new method of urban governance and management, which responds to development challenges and contributes to the sustainable development and sustainability of cities while improving the quality of life of their inhabitants. The consolidation of this new model of city planning, which essentially sets the city as a living laboratory, is a source for the solution to global problems. An important and active role in its development effort was played by the European Union with the financing of Smart Cities projects, implemented by pan-European networks of cities, companies, and organizations. Cities should adopt smart city strategies in their urban and peri-urban planning practices to address key challenges such as climate change, poverty, unemployment, or social exclusion, making them more attractive and competitive. However, for the development of this model of the smart city, the right policies that will lead to successful implementation and will bring positive results are essential [110,111]. In the following two paragraphs, we summarized (i) some key aspects in the debate on smart tourism destinations which emerged from the comparative scrutiny of the four cases studied here (Section 5.1), and (ii) some relevant policy implications of the transition toward intelligent cities with specific regard to smart tourism destinations (Section 5.2).

5.1. Key Aspects in the Debate on Smart Tourism Destinations

The results of our contributions outline some relevant aspects characteristic of the positive and normative debate on smart tourism destinations. First, it is assumed that such destinations may leverage digital technologies to provide more efficient and personalized experiences for visitors and tourists [112], while promoting the sustainable development of the destination as an additional target of policy and planning [113]. This involves the use of technologies such as big data analytics, the Internet of Things (IoT), and mobile applications to gather and process information about tourist behavior, preferences, and patterns. These technologies can be used to enhance the tourist experience by providing more targeted and personalized recommendations for activities, events, and services [54]. At the same time, they can also be adopted to improve the intrinsic sustainability of the tourism sector by reducing the environmental impact of tourist activities, such as energy consumption and waste generation [95,114].

Second, it is important to recognize the role that cultural heritage plays in the development of smart tourism destinations [115]. Cultural heritage sites are often key tourist attractors, providing unique insights into the history and culture of a destination [66]. However, they also present challenges in terms of managing visitor flows, preserving the sites, and minimizing the impact of tourism on the surrounding environment and local communities [116]. To address these challenges, smart tourism destinations can leverage digital technologies to provide more effective management of cultural heritage sites. For instance, augmented reality and virtual reality technologies can be used to enhance the visitor experience by providing interactive and immersive tours of cultural heritage sites [117]. In addition, digital technologies can be used to provide more effective management of visitor flows, helping to reduce overcrowding and ensuring that cultural heritage sites are preserved for future generations.

Third, the 'urban' dimension of sustainability is another critical concept that underpins smart tourism destinations [3]. Sustainable tourism development aims to balance the economic, social, and environmental dimensions of tourism to ensure that it benefits both visitors and local communities [118]. This involves promoting tourism that is environmentally sustainable, socially inclusive, and economically viable. Smart tourism destinations can contribute to urban sustainability by promoting more sustainable modes of transportation, reducing energy consumption, and minimizing waste generation, in turn stimulating public space design and planning oriented toward aesthetics and the valorization of natural amenities [8,19]. Additionally, smart tourism destinations can leverage digital technologies to promote sustainable tourism practices, such as responsible travel and ecotourism.

Fourth, real estate is an important component of smart tourism destinations as it provides the infrastructure for tourism activities [69]. Real estate can take many forms in the context of smart tourism destinations, including hospitality accommodation facilities, attractive public spaces, and cultural heritage sites. The real estate dimension is critical in the development of smart tourism destinations, as it can significantly impact the visitor experience and the sustainability of tourism [4]. Understanding the relationship between cultural heritage, real estate, and smart tourism is definitely important for designing effective policies and strategies regarding the development of sustainable and resilient smart tourism destinations.

5.2. Toward Intelligent Cities? Implications for Policy

From the reference to the practical experience of this model, through the examples analyzed, it appears that, from a design perspective, cities need to develop a strategic framework in which to formulate the local vision, define their goals, evaluate problems, and formulate their programs, initiatives, and actions [119]. The local authorities play a crucial role in the success of the efforts to create smart cities, where the municipal authorities are responsible for shaping the strategy of a city and building its identity [120–122]. In addition, the municipal authorities act as financier and coordinator, in order to make decisions regarding infrastructure and digital applications that will be developed to solve problems and the implementation of the whole smart city idea [123]. A key precondition for the implementation of this model is the public–private partnership, which is crucial for attracting partners, mobilizing funds, launching projects, and developing new programs and initiatives [124]. Citizen participation is also an essential element for the success of smart city building projects. The bottom-up approach enhances collaboration and teamwork, integrating citizens into the design process, while enabling them to participate in their city's development plan [125].

An important factor for the development of this model is the utilization and integration of new information and communication technologies and the development of innovation, which contributes to the promotion of creativity. The flexible way of planning and programming, as well as the introduction of the digital platform in the urban system, enhances the processes of knowledge and innovation. In addition, the recording and collection of useful data, and at the same time its availability to the general public, enhance transparency in matters of the city, enhance citizen participation, and act as a lever for new opportunities for innovative entrepreneurship [126]. The lack of a clear definition of the notion of a smart city means that any city in the future can refer to itself as smart. This results in the absence of a shared vision, common goals, and a common project roadmap, despite the fact that each city is a different case study with its own unique qualities and characteristics. Furthermore, concerns have been raised regarding the social management of private and public life, whether privacy and personal data are safeguarded, and where all of these data are gathered, which, therefore, generates new information, and who ultimately controls all this information [127].

5.3. Smart Cities Philosophy as a Response to Exogenous Shocks

The smart cities model could be a response to tackling the real estate crisis in Europe and beyond. A change of mentality is needed to encourage citizen participation and bridge the digital divide between different groups and regions. The creation of wireless networks will contribute to the integration of citizens in this new digital age. The first stage is to develop a vision, goals, and an integrated plan for sustainable urban management, followed by investments in telecommunications infrastructure, technology penetration, and innovation promotion in numerous industries. European cities, in the current time of crisis, should participate in European programs and initiatives and use European Union funding for the development of smart city projects. Furthermore, a new modern culture, a shift in the school of thought, is required to ensure that enterprises and the private sector are not perceived negatively but instead that positive collaborations and partnerships between the

public and private sectors are developed, partnerships that will work mainly for the benefit of the citizens and, at the same time, of each city itself, following the successful examples presented and analyzed earlier.

Additional examples can also be found. A typical one is the small town of Trikala, Greece, a pioneer city with a complete telecommunications network, use of telematics infrastructure, and a smart transport system. Equally useful and important is the municipal authority web portal, providing many e-government services (such as submitting applications, certificates, etc.), offering the opportunity for the active participation of residents in decision-making action [128–130]. Although various commercial solutions for smart cities are widely available in the market, there is still limited adoption by the municipal authorities' status quo, where the solutions remain in the pilot stages.

5.4. Smart Cities, Technology and Citizens' Participation to Planning

The smart cities model must be seen by citizens as an opportunity to actively participate in city planning, address everyday challenges or persistent problems, and make collective decisions. An example of this approach is the Play Noord project in Amsterdam, where the city's citizens, institutions, and businesses were called upon to jointly challenge the design development of an area [131]. It is also critical to promote the term 'smart' to academic institutions and research centers, which may establish creative projects and efforts to change cities into smart ones in partnership with local agencies and municipal authorities. By applying the right policies, European cities may implement this new model of growth and secure their viability in the face of today's new difficulties.

The examination of the four cases of the current research via each of the pillars of the smart city idea now provides a reasonably thorough picture of what each of these communities has put in place in order to become smart. This was also a method of looking at the smart city concept from a more human-side angle. For example, in terms of mobility, the more human-sided perspective will offer the possibility of getting around in an optimal way, without having to use polluting vehicles. Thus, it is necessary for the public transport network to put in place competitive solutions in terms of possibilities and travel time with these polluting vehicles. This requires quality interconnection between the different means of transport to offer multiple different routes without long interruptions during any trip. The public transport network must, therefore, be designed in a global way and adapt to (human) behaviors to satisfy the majority of citizens. This will make it possible to reduce the modal share of individual vehicles and allow soft transport modes, in addition to the public transport network, to definitively appropriate urban spaces and make them more livable. Proposing alternative solutions to individual polluting vehicles is one thing, but supporting citizens in this transition is also important. This is what Bristol city authorities are trying to do by facilitating the use of bicycles and by informing the citizens about the different transport options. City governance is the factor that is therefore critical for the smartness and sustainability of a city. Indeed, policies cannot be carried out without a global vision of its long-term future and without real convictions. To do this, the city must make sure to raise awareness for active citizens' participation in decision-making, whether budgetary, administrative, or economic. Citizens must become proactive and present ideas themselves.

This is also a way for the city's development policies to be adapted to the expectations of the inhabitants and for the latter to get involved collaboratively towards a single and same objective, thus improving performance. To carry out policies that last beyond political alternations or simple changes of mandate, binding plans seem to be, more than a simple option, an obligation. Thus, long-term actions in any field can be launched without incessant questioning. Ambition and efficiency can, indeed, be contradictory. Recognition and the desire to exist on a global scale can therefore be a trap since it pushes certain cities to want at all costs to become a recognized Smart City and to put in place initiatives that are not thought out enough to be sustainable over time. For instance, the culture of each country seems to have a huge influence on the governance put in place by local authorities.

6. Conclusions

Smart tourist destinations have received a lot of attention in recent years [132]. Digital technologies have transformed the smart city paradigm in terms of resilience and sustainability, leveraging cities' cultural and historical components while presenting unprecedented development opportunities in the real estate business. Real estate, in particular, is seen as a key component of the visitor experience, whether in the form of hospitality accommodations, metropolitan landscapes, or cultural heritage locations. Furthermore, the impact of cultural assets and overall destination appeal on real estate dynamics (land/housing prices and construction activity) is well documented. Discovering how improved technical throughputs and synergies, culture-led urban sustainability efforts, and the real estate factor are directly (or indirectly) related might help cities better define policies for their citizens. The current study moves forward with the creation of a matrix containing the strengths, weaknesses, opportunities, and threats (SWOT), concentrating on four successful smart city initiatives, namely Amsterdam, Barcelona, Seoul, and Stockholm, in order to illustrate the key points raised from the prior analysis. This encapsulating reflection and assessment of the preceding analysis also seeks to discover how developers and local governments will need to evolve in order to provide better services to inhabitants and tourists. In other words, how to make the most of the strengths, circumvent the weaknesses, and capitalize on the opportunities by managing the threats.

This paper, as a first theoretical contribution, connects the concepts of smart cities, tourist destinations, and real estate all under the sustainability spectrum. As a second theoretical contribution, this work reveals that smart projects alone cannot secure the transition of existing (European) cities into smart tourism destinations with an appealing real estate market. In reality, some essential concerns, such as the human aspect, are deeply connected and exponentially interrelated, while for countries where environmental, social, political, cultural, economic, and technological sustainability is not given, this argument is even more important. Therefore, examples are to be used for inspiration for customized smart projects appropriate for each individual city. This study makes a valuable addition to practice by highlighting the significance of public awareness. Concerns that should be taken into account include understanding of the pertinent applications that need to be produced, awareness of the desires of the local people, awareness of the technical infrastructures obtainable, and awareness of the cultural characteristics of the community or region, to mention a few. All in all, the results are useful and promising and reflections provide insights to tourism destination policymakers, city authorities, and real estate professionals.

This study also contributes to public policy by demonstrating how challenging it is to be smart without the support and involvement of the local community. To preserve and promote urban sustainability, real estate should combine smart perspectives (e.g., building information modeling, internet of things, blockchain). Since tourism growth should encourage visitors to stay longer and visit more (cultural) sites, therefore expanding the sector's geographic effect, a planned real estate development is definitely essential. According to the analysis, local governments play a vital role in developing a well-structured and practically successful plan for integrating sustainable and technologically advanced smart features.

Naturally, a number of potential week points need to be considered. Despite being insignificant in an argument of sure interest, and built upon a qualitative, exploratory, and positionally grounded broad-scope literature study, identified downsides can pave the way for future research. The first limitation involves the list of criteria set for the list of cities to be shortlisted and analyzed. These criteria are mostly based on the authors' subjective point of view, and therefore do not support the development of an exhaustive list. Although that was never the purpose, in order to avoid extra caution when generalizing the results obtained, future research could invest in setting strong criteria, perhaps by first using in-depth interviews with experts in the field. Including a set of steadfast criteria could produce an exhaustive list of cities to be examined, from which further evidence may arise. Furthermore, the fact that the four cities were not analyzed under structured and comparable indicators could be considered an additional limitation of the current research.

Based on these premises, a long-term reflection is, therefore, appropriate to develop a model of a future city in line with the territory and its users, in order to join each actor towards the same objective.

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Appendix A

Table A1. Smart City Index 2021 (Source Institute for Management Development [www.imd.org] with Singapore University for Technology and Design).

Smart City Rank 2021	City	Smart City Rating 2021	Structure 2021	Technology 2021	Smart City Rank 2020	Change
1	Singapore	AAA	AAA	AAA	1	–
2	Zurich	AA	AAA	A	3	▲ +1
3	Oslo	AA	AAA	A	5	▲ +2
4	Taipei City	A	A	A	8	▲ +4
5	Lausanne	A	AAA	A	NEW	–
6	Helsinki	A	AA	A	2	▼ −4
7	Copenhagen	A	AA	A	6	▼ −1
8	Geneva	A	AA	A	7	▼ −1
9	Auckland	A	A	A	4	▼ −5
10	Bilbao	BBB	A	BBB	24	▲ +14
11	Vienna	BBB	A	BB	25	▲ +14
12	New York	BBB	BB	BBB	10	▼ −2
13	Seoul	BBB	B	A	47	▲ +34
14	Munich	BBB	AA	BBB	11	▼ −3
15	Zaragoza	BBB	A	BB	48	▲ +33
16	Brisbane	BBB	A	BBB	14	▼ −2
17	Amsterdam	BBB	A	A	9	▼ −8
18	Sydney	BBB	BBB	A	18	–
19	Melbourne	BBB	BBB	A	20	▲ +1
20	Dusseldorf	BBB	A	BBB	13	▼ −7
21	Newcastle	BBB	A	BBB	23	▲ +2
22	London	BBB	BBB	A	15	▼ −7
23	The Hague	BBB	A	BBB	28	▲ +5
24	Leeds	BBB	BBB	A	NEW	–
25	Stockholm	BBB	A	BBB	16	▼ −9
26	Manchester	BBB	BBB	BBB	17	▼ −9
27	Rotterdam	BBB	BBB	BBB	29	▲ +2
28	Abu Dhabi	BB	BB	BB	42	▲ +14
29	Dubai	BB	BB	BB	43	▲ +14
30	Riyadh	BB	B	BB	53	▲ +23
31	Los Angeles	BB	BB	BBB	26	▼ −5
32	Bordeaux	BB	BBB	BB	NEW	–

Table A1. *Cont.*

Smart City Rank 2021	City	Smart City Rating 2021	Structure 2021	Technology 2021	Smart City Rank 2020	Change
33	Vancouver	BB	BBB	BB	19	▼ −14
34	Madrid	BB	B	BBB	45	▲ +11
35	Washington D.C.	BB	BBB	BB	12	▼ −23
36	Toronto	BB	BBB	BB	30	▼ −6
37	Busan	BB	B	BBB	46	▲ +9
38	Montreal	BB	BBB	BB	21	▼ −17
39	Lyon	BB	BB	BB	51	▲ +12
40	Hamburg	BB	A	BBB	22	▼ −18
41	Hong Kong	BB	BB	A	32	▼ −9
42	Tel Aviv	BB	B	BB	50	▲ +8
43	Seattle	BB	BB	BB	37	▼ −6
44	Lille	BB	B	BB	NEW	▬
45	Denver	BB	BB	B	35	▼ −10
46	Gothenburg	BB	BBB	BBB	31	▼ −15
47	Hanover	BB	A	BB	33	▼ −14
48	Dublin	BB	BB	BBB	34	▼ −14
49	Glasgow	BB	BB	BBB	NEW	▬
50	Berlin	BB	BBB	BB	38	▼ −12
51	Birmingham	BB	BB	BBB	40	▼ −11
52	Brussels	BB	BB	BBB	60	▲ +8
53	Kiel	BB	BBB	BB	NEW	▬
54	Moscow	B	B	B	56	▲ +2
55	Ankara	B	B	B	57	▲ +2
56	Tallinn	B	B	CCC	59	▲ +3
57	Boston	B	BBB	B	36	▼ −21
58	Barcelona	B	B	BB	49	▼ −9
59	Chicago	B	B	BB	41	▼ −18
60	San Francisco	B	B	B	27	▼ −33
61	Paris	B	CCC	BB	61	▬
62	Phoenix	B	BB	B	39	▼ −23
63	Zhuhai	CCC	CCC	CCC	62	▼ −1
64	Nanjing	CCC	CCC	CCC	66	▲ +2
65	Shenzhen	CCC	CCC	CCC	67	▲ +2
66	Hangzhou	CCC	CCC	CCC	65	▼ −1
67	Chongqing	CCC	CCC	CCC	64	▼ −3
68	Guangzhou	CCC	CCC	CCC	68	▬
69	Beijing	CCC	CC	CCC	82	▲ +13
70	Tianjin	CCC	CCC	CCC	63	▼ −7
71	Shanghai	CCC	CC	CCC	81	▲ +10
72	Chengdu	CCC	CC	CCC	69	▼ −3
73	Medina	CCC	CCC	CCC	NEW	▬
74	Kuala Lumpur	CCC	CCC	CCC	54	▼ −20
75	Warsaw	CCC	CCC	CCC	55	▼ −20
76	Bangkok	CCC	CC	B	71	▼ −5
77	Bologna	CCC	B	CCC	70	▼ −7
78	Prague	CCC	B	CCC	44	▼ −34
79	St. Petersburg	CCC	CCC	CCC	73	▼ −6
80	Krakow	CCC	CCC	CCC	58	▼ −22
81	Milan	CCC	CCC	CCC	74	▼ −7
82	Kyiv	CCC	CC	CCC	98	▲ +16
83	Marseille	CCC	CCC	B	78	▼ −5
84	Tokyo	CCC	B	CCC	79	▼ −5
85	Philadelphia	CCC	CCC	B	52	▼ −33
86	Osaka	CCC	B	CCC	80	▼ −6
87	Hanoi	CC	CC	CC	84	▼ −3
88	Ho Chi Minh City	CC	CC	CC	83	▼ −5
89	Delhi	CC	CC	CC	86	▼ −3
90	Mumbai	CC	CC	CC	93	▲ +3

Table A1. *Cont.*

Smart City Rank 2021	City	Smart City Rating 2021	Structure 2021	Technology 2021	Smart City Rank 2020	Change
91	Jakarta	CC	CC	CC	94	▲ +3
92	Hyderabad	CC	CC	CC	85	▼ −7
93	Bengaluru	CC	CC	CC	95	▲ +2
94	Istanbul	CC	CC	B	NEW	▬
95	Lisbon	CC	CC	CCC	75	▼ −20
96	Bratislava	CC	CC	CC	76	▼ −20
97	Budapest	CC	CC	CC	77	▼ −20
98	Buenos Aires	CC	C	CC	88	▼ −10
99	Medan	C	C	CC	97	▼ −2
100	Makassar	C	CC	C	96	▼ −4
101	Medellin	C	C	C	72	▼ −29
102	Manila	C	C	C	104	▲ +2
103	Rabat	C	C	D	105	▲ +2
104	Cairo	C	D	C	106	▲ +2
105	Cape Town	C	C	C	103	▼ −2
106	Bucharest	C	C	CC	87	▼ −19
107	Sofia	C	C	CC	89	▼ −18
108	Mexico City	C	C	CC	90	▼ −18
109	San José	C	C	C	NEW	▬
110	Santiago	C	C	CC	91	▼ −19
111	Athens	C	C	C	99	▼ −12
112	Rome	C	C	C	101	▼ −11
113	Nairobi	D	D	D	108	▼ −5
114	Abuja	D	C	D	107	▼ −7
115	Lagos	D	D	D	109	▼ −6
116	Bogota	D	D	D	92	▼ −24
117	Sao Paulo	D	D	D	100	▼ −17
118	Rio de Janeiro	D	D	D	102	▼ −16

References

1. Egidi, G.; Salvati, L.; Vinci, S. The Long Way to Tipperary: City Size and Worldwide Urban Population Trends, 1950–2030. *Sustain. Cities Soc.* **2020**, *60*, 102148. [CrossRef]
2. Benassi, F.; Cividino, S.; Cudlin, P.; Alhuseen, A.; Lamonica, G.R.; Salvati, L. Population Trends and Desertification Risk in a Mediterranean Region, 1861-2017. *Land Use Policy* **2020**, *95*, 104626. [CrossRef]
3. Chelleri, L.; Schuetze, T.; Salvati, L. Integrating Resilience with Urban Sustainability in Neglected Neighborhoods: Challenges and Opportunities of Transitioning to Decentralized Water Management in Mexico City. *Habitat Int.* **2015**, *48*, 122–130. [CrossRef]
4. Cortesi, A.; Vardopoulos, I.; Salvati, L. A Partial Least Squares Analysis of the Perceived Impact of Sustainable Real Estate Design upon Wellbeing. *Urban Sci.* **2022**, *6*, 69. [CrossRef]
5. Salvati, L. Simple Geographies for Complex Problems? Revisiting Long-Term Urbanization and Settlement Population Mismatches Using Elasticity Indicators and Context-Based Nonparametric Analysis. *Ann. Reg. Sci.* **2023**. [CrossRef]
6. Egidi, G.; Quaranta, G.; Salvati, L.; Gambella, F.; Mosconi, E.M.; Giménez Morera, A.; Colantoni, A. Unraveling Causes and Consequences of International Retirement Migration to Coastal and Rural Areas in Mediterranean Europe. *Land* **2020**, *9*, 410. [CrossRef]
7. Tombolini, I.; Zambon, I.; Ippolito, A.; Grigoriadis, S.; Serra, P.; Salvati, L. Revisiting "Southern" Sprawl: Urban Growth, Socio-Spatial Structure and the Influence of Local Economic Contexts. *Economies* **2015**, *3*, 237–259. [CrossRef]
8. Shafiee, S.; Rajabzadeh Ghatari, A.; Hasanzadeh, A.; Jahanyan, S. Smart Tourism Destinations: A Systematic Review. *Tour. Rev.* **2021**, *76*, 505–528. [CrossRef]
9. Baggio, R.; Micera, R.; Del Chiappa, G. Smart Tourism Destinations: A Critical Reflection. *J. Hosp. Tour. Technol.* **2020**, *11*, 407–423. [CrossRef]
10. Ullah, F.; Sepasgozar, S.; Wang, C. A Systematic Review of Smart Real Estate Technology: Drivers of, and Barriers to, the Use of Digital Disruptive Technologies and Online Platforms. *Sustainability* **2018**, *10*, 3142. [CrossRef]
11. Apanaviciene, R.; Urbonas, R.; Fokaides, P.A. Smart Building Integration into a Smart City: Comparative Study of Real Estate Development. *Sustainability* **2020**, *12*, 9376. [CrossRef]
12. Lemonakis, C.; Sariannidis, N.; Garefalakis, A.; Adamou, A. Visualizing Operational Effects of ERP Systems through Graphical Representations: Current Trends and Perspectives. *Ann. Oper. Res.* **2020**, *294*, 401–418. [CrossRef]

13. Dimopoulos, T.; Bakas, N. An Artificial Intelligence Algorithm Analyzing 30 Years of Research in Mass Appraisals. *Rel. Int. J. Real Estate L. Plan.* **2019**, *2*, 10–27. [CrossRef]
14. Dimopoulos, T.; Bakas, N. Artificial Intelligence for Mass Appraisals of Residential Properties in Nicosia: Mathematical Modelling and Algorithmic Implementation. In *Proceedings of the 7th International Conference on Remote Sensing and Geoinformation of the Environment (RSCy2019), Paphos, Cyprus, 18–21 March 2019*; Papadavid, G., Themistocleous, K., Michaelides, S., Ambrosia, V., Hadjimitsis, D.G., Eds.; SPIE: Bellingham, WA, USA, 2019; p. 69.
15. Zorpas, A.A. *Sustainability behind Sustainability*; Zorpas, A.A., Ed.; Nova Science Publishers: Hauppauge, NY, USA, 2014; ISBN 9781633215733.
16. Zorpas, A.A.; Voukkali, I.; Navarro Pedreño, J. Tourist Area Metabolism and Its Potential to Change through a Proposed Strategic Plan in the Framework of Sustainable Development. *J. Clean. Prod.* **2018**, *172*, 3609–3620. [CrossRef]
17. Zorpas, A.A.; Lasaridi, K.; Voukkali, I. Tourism Development through Sustainability. In *Sustainability behind Sustainability*; Zorpas, A.A., Ed.; Nova Science Publishers: Hauppauge, NY, USA, 2014; ISBN 9781633215733.
18. Sariannidis, N.; Garefalakis, A.; Ballas, P.; Grigoriou, E. Eco-Efficiency, Sustainable Development and Environmental Accounting in the Tourism Industry during a Crisis. *Corp. Board Role Duties Compos.* **2018**, *14*, 58–64. [CrossRef]
19. Talari, S.; Shafie-khah, M.; Siano, P.; Loia, V.; Tommasetti, A.; Catalão, J. A Review of Smart Cities Based on the Internet of Things Concept. *Energies* **2017**, *10*, 421. [CrossRef]
20. Vardopoulos, I.; Karytsas, S. An Exploratory Path Analysis of Climate Change Effects on Tourism. *Sustain. Dev. Cult. Tradit. J.* **2019**, *Special Volume in Honor of Professor George I. Theodoropoulos*, 132–152. [CrossRef]
21. Schiavo, F.T.; Magalhães, C.F.d. Smart Sustainable Cities: The Essentials for Managers' and Leaders' Initiatives within the Complex Context of Differing Definitions and Assessments. *Smart Cities* **2022**, *5*, 994–1024. [CrossRef]
22. Pozoukidou, G.; Angelidou, M. Urban Planning in the 15-Minute City: Revisited under Sustainable and Smart City Developments until 2030. *Smart Cities* **2022**, *5*, 1356–1375. [CrossRef]
23. Gibson, D.; Kozmetsky, G.; Smilor, R. (Eds.) *The Technopolis Phenomenon: Smart Cities, Fast Systems, Global Networks*; Rowman & Littlefield: Lanham, MD, USA, 1992.
24. Kudva, S.; Ye, X. Smart Cities, Big Data, and Sustainability Union. *Big Data Cogn. Comput.* **2017**, *1*, 4. [CrossRef]
25. Hall, R.E.; Bowerman, B.; Braverman, J.; Taylor, J.; Todosow, H.; Von Wimmersperg, U. The Vision of a Smart City. In Proceedings of the 2nd International Life Extension Technology Workshop, Paris, France, 28 September 2000.
26. Ntafalias, A.; Papadopoulos, G.; Papadopoulos, P.; Huovila, A. A Comprehensive Methodology for Assessing the Impact of Smart City Interventions: Evidence from Espoo Transformation Process. *Smart Cities* **2022**, *5*, 90–107. [CrossRef]
27. Albino, V.; Berardi, U.; Dangelico, R.M. Smart Cities: Definitions, Dimensions, Performance, and Initiatives. *J. Urban Technol.* **2015**, *22*, 3–21. [CrossRef]
28. Gil-Garcia, J.R.; Pardo, T.A.; Nam, T. What Makes a City Smart? Identifying Core Components and Proposing an Integrative and Comprehensive Conceptualization. *Inf. Polity* **2015**, *20*, 61–87. [CrossRef]
29. Anthopoulos, L.G.; Tsoukalas, I.A. The Implementation Model of a Digital City. The Case Study of the Digital City of Trikala, Greece. *J. E-Gov.* **2006**, *2*, 91–109. [CrossRef]
30. Vardopoulos, I.; Stamopoulos, C.; Chatzithanasis, G.; Michalakelis, C.; Giannouli, P.; Pastrapa, E. Considering Urban Development Paths and Processes on Account of Adaptive Reuse Projects. *Buildings* **2020**, *10*, 73. [CrossRef]
31. Hatuka, T.; Rosen-Zvi, I.; Birnhack, M.; Toch, E.; Zur, H. The Political Premises of Contemporary Urban Concepts: The Global City, the Sustainable City, the Resilient City, the Creative City, and the Smart City. *Plan. Theory Pract.* **2018**, *19*, 160–179. [CrossRef]
32. Angelidis, M. Smart Green Just City Actions versus Urban Planning in European Union. *Sustain. Dev. Cult. Tradit. J.* **2021**, *1*, 60–80. [CrossRef]
33. Anthopoulos, L.G. The Rise of the Smart City. In *Understanding Smart Cities: A Tool for Smart Government or an Industrial Trick?* Anthopoulos, L.G., Ed.; Springer: Berlin, Germany, 2017; pp. 5–45.
34. Kramers, A. Smart Cities and Climate Targets: Reducing Cities' Energy Use with ICT and Travel Information. Doctoral Thesis, Royal Institute of Technology, Stockholm, Sweden, 2014.
35. Mora, L.; Bolici, R. How to Become a Smart City: Learning from Amsterdam. In *Smart and Sustainable Planning for Cities and Regions. Results of 2015 International Conference on Smart and Sustainable Planning for Cities and Regions*; Bisello, A., Vettorato, D., Stephens, R., Elisei, P., Eds.; Springer: Cham, Germany, 2017; pp. 251–266.
36. Kempton, Y.; Salvati, L.; Vardopoulos, I. Long-Term Planning and Development for Urban and Regional Inclusion, Safety, Resilience, and Sustainability. Insights from Singapore. *Reg. Peripher.* **2022**, *14*, 59–79. [CrossRef]
37. Xydis, G.; Pagliaricci, L.; Paužaitė, Ž.; Grinis, V.; Sallai, G.; Bakonyi, P.; Vician, R. SMARTIES Project: The Survey of Needs for Municipalities and Trainers for Smart Cities. *Challenges* **2021**, *12*, 13. [CrossRef]
38. Prayag, G.; Ryan, C. The relationship between the 'push'and 'pull'factors of a tourist destination: The role of nationality–an analytical qualitative research approach. *Current Issues Tour.* **2011**, *14*, 121–143. [CrossRef]
39. Alvarez-Campana, M.; López, G.; Vázquez, E.; Villagrá, V.; Berrocal, J. Smart CEI Moncloa: An IoT-Based Platform for People Flow and Environmental Monitoring on a Smart University Campus. *Sensors* **2017**, *17*, 2856. [CrossRef] [PubMed]
40. Allam, Z.; Newman, P. Redefining the Smart City: Culture, Metabolism and Governance. *Smart Cities* **2018**, *1*, 4–25. [CrossRef]
41. Diego, F.-J.; Esteban, B.; Merello, P. Design of a Hybrid (Wired/Wireless) Acquisition Data System for Monitoring of Cultural Heritage Physical Parameters in Smart Cities. *Sensors* **2015**, *15*, 7246–7266. [CrossRef] [PubMed]

42. Gajdošík, T. Big Data Analytics in Smart Tourism Destinations. A New Tool for Destination Management Organizations? In Proceedings of the Smart Tourism as a Driver for Culture and Sustainability. Fifth International Conference IACuDiT, Athens, Greece, 28–30 June 2018; Katsoni, V., Segarra-Oña, M., Eds.; Springer: Cham, Germany, 2019; pp. 15–33. [CrossRef]
43. Myeong, S.; Kim, Y.; Ahn, M.J. Smart City Strategies—Technology Push or Culture Pull? A Case Study Exploration of Gimpo and Namyangju, South Korea. *Smart Cities* **2020**, *4*, 41–53. [CrossRef]
44. Vardopoulos, I. Instagram Users Survey Research and Data Analysis Anent Adaptive Reuse Tourism Potential. In *Restarting Tourism, Travel and Hospitality: The Day after. In Proceedings of the 4th International Conference TOURMAN, Thessaloniki, Greece, 21–23 May 2021. Book of Abstracts*; Christou, E., Fotiadis, A., Alexandris, K., Eds.; International Hellenic University: Thessaloniki, Greece, 2021; pp. 228–230.
45. Zanella, A.; Bui, N.; Castellani, A.; Vangelista, L.; Zorzi, M. Internet of Things for Smart Cities. *IEEE Internet Things J.* **2014**, *1*, 22–32. [CrossRef]
46. Garcês, P.; Pires, C.P.; Costa, J.; Jorge, S.F.; Catalão-Lopes, M.; Alventosa, A. Disentangling Housing Supply to Shift towards Smart Cities: Analysing Theoretical and Empirical Studies. *Smart Cities* **2022**, *5*, 1488–1507. [CrossRef]
47. Ivan, L.; Beu, D.; van Hoof, J. Smart and Age-Friendly Cities in Romania: An Overview of Public Policy and Practice. *Int. J. Environ. Res. Public Health* **2020**, *17*, 5202. [CrossRef]
48. Singh, P.; Nayyar, A.; Kaur, A.; Ghosh, U. Blockchain and Fog Based Architecture for Internet of Everything in Smart Cities. *Futur. Internet* **2020**, *12*, 61. [CrossRef]
49. Golubchikov, O.; Thornbush, M. Artificial Intelligence and Robotics in Smart City Strategies and Planned Smart Development. *Smart Cities* **2020**, *3*, 1133–1144. [CrossRef]
50. Ferrara, R. The Smart City and the Green Economy in Europe: A Critical Approach. *Energies* **2015**, *8*, 4724–4734. [CrossRef]
51. Dabeedooal, Y.J.; Dindoyal, V.; Allam, Z.; Jones, D.S. Smart Tourism as a Pillar for Sustainable Urban Development: An Alternate Smart City Strategy from Mauritius. *Smart Cities* **2019**, *2*, 153–162. [CrossRef]
52. Belli, L.; Cilfone, A.; Davoli, L.; Ferrari, G.; Adorni, P.; Di Nocera, F.; Dall'Olio, A.; Pellegrini, C.; Mordacci, M.; Bertolotti, E. IoT-Enabled Smart Sustainable Cities: Challenges and Approaches. *Smart Cities* **2020**, *3*, 1039–1071. [CrossRef]
53. Huertas, A.; Moreno, A.; Pascual, J. Place Branding for Smart Cities and Smart Tourism Destinations: Do They Communicate Their Smartness? *Sustainability* **2021**, *13*, 10953. [CrossRef]
54. Garcia-Haro, M.A.; Martinez-Ruiz, M.P.; Martinez-Cañas, R.; Ruiz-Palomino, P. Benefits of Online Sources of Information in the Tourism Sector: The Key Role of Motivation to Co-Create. *J. Theor. Appl. Electron. Commer. Res.* **2021**, *16*, 2051–2072. [CrossRef]
55. Buhalis, D.; Amaranggana, A. Smart Tourism Destinations. In *Information and Communication Technologies in Tourism 2014*; Springer International Publishing: Cham, Switzerland, 2013; pp. 553–564. [CrossRef]
56. Gretzel, U.; Koo, C. Smart Tourism Cities: A Duality of Place Where Technology Supports the Convergence of Touristic and Residential Experiences. *Asia Pac. J. Tour. Res.* **2021**, *26*, 352–364. [CrossRef]
57. Karytsas, S.; Vardopoulos, I.; Theodoropoulou, E. Factors Affecting Residents' Attitude toward Sustainable Tourism Development. *Tourismos* **2019**, *14*, 1–40. [CrossRef]
58. Coccossis, H.; Delladetsimas, P.-M.; Katsigianni, X. Disaster Recovery Practices and Resilience Building in Greece. *Urban Sci.* **2021**, *5*, 28. [CrossRef]
59. Terkenli, T.S.; Georgoula, V. Tourism and Cultural Sustainability: Views and Prospects from Cyclades, Greece. *Sustainability* **2021**, *14*, 307. [CrossRef]
60. Lalchali, P.; Sdrali, D.; Mitoula, R.; Apostolopoulos, C. Exploring Visitor Motivations at Religious Tourism Sites towards Sustainability on the Region of West Thessaly, Greece. *Tourismos* **2019**, *14*, 171–199. [CrossRef]
61. Hof, A.; Blázquez-Salom, M. The Linkages between Real Estate Tourism and Urban Sprawl in Majorca (Balearic Islands, Spain). *Land* **2013**, *2*, 252–277. [CrossRef]
62. Stergiou, D.P.; Papatheodorou, A.; Tsartas, P. Second Home Conversion during the Economic Crisis: The Case of Artemida, Greece. *Soc. Cult. Geogr.* **2017**, *18*, 1129–1151. [CrossRef]
63. Vagena, A. Second Home Tourism Present and Future. The Case of Greece. *Int. J. Sci. Res. Manag.* **2021**, *9*, 2745–2753. [CrossRef]
64. Cuadrado-Ciuraneta, S.; Durà-Guimerà, A.; Salvati, L. Not Only Tourism: Unravelling Suburbanization, Second-Home Expansion and "Rural" Sprawl in Catalonia, Spain. *Urban Geogr.* **2017**, *38*, 66–89. [CrossRef]
65. Karayiannis, O.; Iakovidou, O.; Tsartas, P. Historic, Symbolic Aspects and Policy Issues of the Second Home Phenomenon in the Greek Tourism Context: The Cyclades Case Study. In *Second Home Tourism in Europe: Lifestyle Issues and Policy Responses*; Roca, Z., Ed.; Routledge: London, UK, 2013; pp. 201–234. ISBN 9781317058519.
66. Vardopoulos, I.; Theodoropoulou, E. Theoretical Considerations and Pilot Findings on the Adaptive Reuse Potential for Tourism and Sustainable Urban Development. In *Tourism, Travel and Hospitality at Crossroads: The Way ahead. In Proceedings of the 3rd International Scientific Conference TOURMAN, Thessaloniki, Greece, 24–27 October 2019. Conference Proceedings*; Christou, E., Fotiadis, A., Alexandris, K., Eds.; International Hellenic University: Thessaloniki, Greece, 2019; pp. 374–376.
67. Manola, M. Contribution of the Venetian Monuments of Rhodes to Cultural Tourism and the Local Development of the Island. *Open J. Res. Econ.* **2022**, *5*, 35–42. [CrossRef]

68. Anastasiadou, P.; Sarantakou, E.; Maniati, E.; Tsilika, E. Exploring Stakeholders' Perspectives on Hotel Design. In *Transcending Borders in Tourism through Innovation and Cultural Heritage. In Proceedings of the 8th International Conference, IACuDiT, Hydra, Greece, 1–3 September 2021. Springer Proceedings in Business and Economics*; Katsoni, V., Şerban, A.C., Eds.; Springer: Cham, Switzerland, 2022; pp. 239–255. [CrossRef]
69. Lecomte, P. New Boundaries: Conceptual Framework for the Analysis of Commercial Real Estate in Smart Cities. *J. Prop. Invest. Financ.* **2019**, *37*, 118–135. [CrossRef]
70. Vardopoulos, I. Adaptive Reuse for Sustainable Development and Land Use: A Multivariate Linear Regression Analysis Estimating Key Determinants of Public Perceptions. *Heritage* **2023**, *6*, 809–828. [CrossRef]
71. Vardopoulos, I. Industrial Building Adaptive Reuse for Museum. Factors Affecting Visitors' Perceptions of the Sustainable Urban Development Potential. *Build. Environ.* **2022**, *222*, 109391. [CrossRef]
72. Trček, D. HeriLedger—A New Generation of Blockchains for Cultural Heritage Preservation. *Sensors* **2022**, *22*, 8913. [CrossRef]
73. Vardopoulos, I.; Tsilika, E.; Sarantakou, E.; Zorpas, A.; Salvati, L.; Tsartas, P. An Integrated SWOT-PESTLE-AHP Model Assessing Sustainability in Adaptive Reuse Projects. *Appl. Sci.* **2021**, *11*, 7134. [CrossRef]
74. Eliades, F.; Doula, M.K.; Papamichael, I.; Vardopoulos, I.; Voukkali, I.; Zorpas, A.A. Carving out a Niche in the Sustainability Confluence for Environmental Education Centers in Cyprus and Greece. *Sustainability* **2022**, *14*, 8368. [CrossRef]
75. Vardopoulos, I.; Theodoropoulou, E. Adaptive Reuse: An Essential Circular Economy Concept. *Urban. Inf.* **2020**, *289*, 4–6.
76. Giffinger, R.; Fertner, C.; Kramar, H.; Kalasek, R.; Pichler-Milanović, N.; Meijers, E. *Smart Cities: Ranking of European Medium-Sized Cities*; Centre of Regional Science, Vienna University of Technology: Vienna, Austria, 2007.
77. Faraji, S.J.; Jafari Nozar, M.; Arash, M. The Analysis of Smart Governance Scenarios of the Urban Culture in Multicultural Cities Based on Two Concepts of "Cultural Intelligence" and "Smart Governance". *GeoJournal* **2021**, *86*, 357–377. [CrossRef]
78. Savini, F.; Boterman, W.R.; van Gent, W.P.C.; Majoor, S. Amsterdam in the 21st Century: Geography, Housing, Spatial Development and Politics. *Cities* **2016**, *52*, 103–113. [CrossRef]
79. Kwon, K. Polycentricity and the Role of Government-Led Development: Employment Decentralization and Concentration in the Seoul Metropolitan Area, 2000–2015. *Cities* **2021**, *111*, 103107. [CrossRef]
80. Sung, H.; Oh, J.-T. Transit-Oriented Development in a High-Density City: Identifying Its Association with Transit Ridership in Seoul, Korea. *Cities* **2011**, *28*, 70–82. [CrossRef]
81. Schuetze, T.; Chelleri, L. Urban Sustainability Versus Green-Washing—Fallacy and Reality of Urban Regeneration in Downtown Seoul. *Sustainability* **2015**, *8*, 33. [CrossRef]
82. Bobkova, E.; Marcus, L.; Berghauser Pont, M.; Stavroulaki, I.; Bolin, D. Structure of Plot Systems and Economic Activity in Cities: Linking Plot Types to Retail and Food Services in London, Amsterdam and Stockholm. *Urban Sci.* **2019**, *3*, 66. [CrossRef]
83. Bibri, S.E.; Krogstie, J. Smart Eco-City Strategies and Solutions for Sustainability: The Cases of Royal Seaport, Stockholm, and Western Harbor, Malmö, Sweden. *Urban Sci.* **2020**, *4*, 11. [CrossRef]
84. Johnson, G. Stockholm 2030. In *The Future of Cities and Regions*; Bazzanella, L., Caneparo, L., Corsico, F., Roccasalva, G., Eds.; Springer: Dordrecht, The Netherlands, 2012; pp. 65–98.
85. Van den Hoed, R.; Helmus, J.R.; de Vries, R.; Bardok, D. Data Analysis on the Public Charge Infrastructure in the City of Amsterdam. *World Electr. Veh. J.* **2013**, *6*, 829–838. [CrossRef]
86. Baron, G.; Brinkman, J.; Wenzler, I. Supporting Sustainability through Smart Infrastructures: The Case for the City of Amsterdam. *Int. J. Crit. Infrastruct.* **2012**, *8*, 169. [CrossRef]
87. Machorro-Cano, I.; Alor-Hernández, G.; Paredes-Valverde, M.A.; Rodríguez-Mazahua, L.; Sánchez-Cervantes, J.L.; Olmedo-Aguirre, J.O. HEMS-IoT: A Big Data and Machine Learning-Based Smart Home System for Energy Saving. *Energies* **2020**, *13*, 1097. [CrossRef]
88. Bons, P.C.; Buatois, A.; Schuring, F.; Geerts, F.; van den Hoed, R. Flexible Charging of Electric Vehicles: Results of a Large-Scale Smart Charging Demonstration. *World Electr. Veh. J.* **2021**, *12*, 82. [CrossRef]
89. Noori, N.; Hoppe, T.; de Jong, M. Classifying Pathways for Smart City Development: Comparing Design, Governance and Implementation in Amsterdam, Barcelona, Dubai, and Abu Dhabi. *Sustainability* **2020**, *12*, 4030. [CrossRef]
90. Zambanini, S.; Loghin, A.-M.; Pfeifer, N.; Soley, E.M.; Sablatnig, R. Detection of Parking Cars in Stereo Satellite Images. *Remote Sens.* **2020**, *12*, 2170. [CrossRef]
91. Mejía-Dorantes, L.; Montero, L.; Barceló, J. Mobility Trends before and after the Pandemic Outbreak: Analyzing the Metropolitan Area of Barcelona through the Lens of Equality and Sustainability. *Sustainability* **2021**, *13*, 7908. [CrossRef]
92. López, I.; Ortega, J.; Pardo, M. Mobility Infrastructures in Cities and Climate Change: An Analysis Through the Superblocks in Barcelona. *Atmosphere* **2020**, *11*, 410. [CrossRef]
93. Winslow, J.; Mont, O. Bicycle Sharing: Sustainable Value Creation and Institutionalisation Strategies in Barcelona. *Sustainability* **2019**, *11*, 728. [CrossRef]
94. Buehler, R.; Pucher, J. Cycling through the COVID-19 Pandemic to a More Sustainable Transport Future: Evidence from Case Studies of 14 Large Bicycle-Friendly Cities in Europe and North America. *Sustainability* **2022**, *14*, 7293. [CrossRef]
95. Wilts, H.; Garcia, B.R.; Garlito, R.G.; Gómez, L.S.; Prieto, E.G. Artificial Intelligence in the Sorting of Municipal Waste as an Enabler of the Circular Economy. *Resources* **2021**, *10*, 28. [CrossRef]

96. Bagheri Moghaddam, F.; Fort Mir, J.M.; Navarro Delgado, I.; Redondo Dominguez, E. Evaluation of Thermal Comfort Performance of a Vertical Garden on a Glazed Façade and Its Effect on Building and Urban Scale, Case Study: An Office Building in Barcelona. *Sustainability* **2021**, *13*, 6706. [CrossRef]
97. March, H.; Ribera-Fumaz, R. Smart Contradictions: The Politics of Making Barcelona a Self-Sufficient City. *Eur. Urban Reg. Stud.* **2016**, *23*, 816–830. [CrossRef]
98. Mancebo, F. Smart City Strategies: Time to Involve People. Comparing Amsterdam, Barcelona and Paris. *J. Urban. Int. Res. Placemaking Urban Sustain.* **2020**, *13*, 133–152. [CrossRef]
99. Vitunskaite, M.; He, Y.; Brandstetter, T.; Janicke, H. Smart Cities and Cyber Security: Are We There yet?A Comparative Study on the Role of Standards, Third Party Risk Management and Security Ownership. *Comput. Secur.* **2019**, *83*, 313–331. [CrossRef]
100. Diaconita, V.; Bologa, A.-R.; Bologa, R. Hadoop Oriented Smart Cities Architecture. *Sensors* **2018**, *18*, 1181. [CrossRef] [PubMed]
101. Wang, B.; Park, S.D.; Lee, J.Y.; Campbell, J.W. Smart, Sustainable and Citizen Centered: A Network Analysis of Urban R&D Trends in Seoul, South Korea. *Sustainability* **2020**, *12*, 5933. [CrossRef]
102. Doost Mohammadian, H.; Rezaie, F. Blue-Green Smart Mobility Technologies as Readiness for Facing Tomorrow's Urban Shock toward the World as a Better Place for Living (Case Studies: Songdo and Copenhagen). *Technologies* **2020**, *8*, 39. [CrossRef]
103. Lee, P.; Hunter, W.C.; Chung, N. Smart Tourism City: Developments and Transformations. *Sustainability* **2020**, *12*, 3958. [CrossRef]
104. Lee, M.; Jeon, I.; Jun, C. A Deterministic Methodology Using Smart Card Data for Prediction of Ridership on Public Transport. *Appl. Sci.* **2022**, *12*, 3867. [CrossRef]
105. Chang, J.; Kim, Y.S.; Song, A.J. Differing Government Discourses on Korean U-City and Smart City: Cases of Songdo, Sejong City and Seoul. In Proceedings of the 8th Conference of the International Forum on Urbanism (IFoU), Incheon, Republic of Korea , 22–24 June 2015; p. 463. [CrossRef]
106. Oh, J. Smart City as a Tool of Citizen-Oriented Urban Regeneration: Framework of Preliminary Evaluation and Its Application. *Sustainability* **2020**, *12*, 6874. [CrossRef]
107. Park, S.; Kim, Y.; Park, G.; Na, O.; Chang, H. Research on Digital Forensic Readiness Design in a Cloud Computing-Based Smart Work Environment. *Sustainability* **2018**, *10*, 1203. [CrossRef]
108. Gretzel, U.; Ham, J.; Koo, C. Creating the City Destination of the Future: The Case of Smart Seoul. In *Managing Asian Destinations*; Wang, Y., Shakeela, A., Kwek, A., Khoo-Lattimore, C., Eds.; Springer: Singapore, 2018; pp. 199–214. [CrossRef]
109. Evertzen, W.H.N.; Effing, R.; Constantinides, E. The Internet of Things as Smart City Enabler: The Cases of Palo Alto, Nice and Stockholm. In *Digital Transformation for a Sustainable Society in the 21st Century. In Proceedings of the 18th IFIP WG 6.11 Conference on e-Business, e-Services, and e-Society, I3E 2019, Trondheim, Norway, 18–20 September 2019, Proceedings*; Pappas, I.O., Mikalef, P., Dwivedi, Y.K., Jaccheri, L., Krogstie, J., Mäntymäki, M., Eds.; Springer: Cham, Germany, 2019; pp. 293–304. [CrossRef]
110. Coccossis, H.; Delladetsimas, P.M.; Niavis, S. The Challenge of Incorporating Smart City Activities in Medium-Size Cities: The Case of Greece. *Int. J. Serv. Technol. Manag.* **2017**, *23*, 381. [CrossRef]
111. Razmjoo, A.; Gandomi, A.; Mahlooji, M.; Astiaso Garcia, D.; Mirjalili, S.; Rezvani, A.; Ahmadzadeh, S.; Memon, S. An Investigation of the Policies and Crucial Sectors of Smart Cities Based on IoT Application. *Appl. Sci.* **2022**, *12*, 2672. [CrossRef]
112. Rossidis, I.; Belias, D.; Papailias, S.; Tsiotas, D.; Niavis, S.; Vasiliadis, L. The Use of Customer Relations Management's Digital Technologies from Greek Hotels. In *Strategic Innovative Marketing and Tourism. In Proceedings of the 7th ICSIMAT, Athenian Riviera, Greece, 2018. Springer Proceedings in Business and Economics*; Kavoura, A., Kefallonitis, E., Giovanis, A., Eds.; Springer: Cham, Germany, 2019; pp. 77–84. [CrossRef]
113. Katsoni, V.; Upadhya, A.; Stratigea, A. (Eds.) *Tourism, Culture and Heritage in a Smart Economy*; Springer Proceedings in Business and Economics; Springer: Cham, Germany, 2017; ISBN 978-3-319-47731-2. [CrossRef]
114. Zorpas, A.A.; Tsartas, P.; Aristidis, G.; Theoharous, O. Mediterranean Standard for Sustainable Tourism (MESST)-General Requirements, Objectives and the Philosophy of MESST. In *Sustainable Tourism III*; Pineda, F., Brebbia, C., Eds.; WIT Transactions on Ecology and the Environment: New Forest, UK, 2008; Volume 115, pp. 85–94. ISBN 9781845641245.
115. Sabbioni, A.; Villano, T.; Corradi, A. An Architecture for Service Integration to Fully Support Novel Personalized Smart Tourism Offerings. *Sensors* **2022**, *22*, 1619. [CrossRef] [PubMed]
116. Katsoni, V.; Segarra-Oña, M. (Eds.) *Smart Tourism as a Driver for Culture and Sustainability*; Springer Proceedings in Business and Economics; Springer: Cham, Germany, 2019; ISBN 978-3-030-03909-7. [CrossRef]
117. Poux, F.; Valembois, Q.; Mattes, C.; Kobbelt, L.; Billen, R. Initial User-Centered Design of a Virtual Reality Heritage System: Applications for Digital Tourism. *Remote Sens.* **2020**, *12*, 2583. [CrossRef]
118. Mak, B.K.L.; Cheung, L.T.O.; Hui, D.L.H. Community Participation in the Decision-Making Process for Sustainable Tourism Development in Rural Areas of Hong Kong, China. *Sustainability* **2017**, *9*, 1695. [CrossRef]
119. Degbelo, A.; Granell, C.; Trilles, S.; Bhattacharya, D.; Casteleyn, S.; Kray, C. Opening up Smart Cities: Citizen-Centric Challenges and Opportunities from GIScience. *ISPRS Int. J. Geo-Inf.* **2016**, *5*, 16. [CrossRef]
120. Tsilika, E. The Creation of Civic Identity in Post-War Corporate Architecture: Marcel Breuer's Bijenkorf in Rotterdam, 1953–1957. In *Shopping Towns Europe*; Gossey, J., Avermaete, T., Eds.; Bloomsbury Academic: London, UK, 2017; pp. 183–196.
121. Gohari, S.; Baer, D.; Nielsen, B.F.; Gilcher, E.; Situmorang, W.Z. Prevailing Approaches and Practices of Citizen Participation in Smart City Projects: Lessons from Trondheim, Norway. *Infrastructures* **2020**, *5*, 36. [CrossRef]
122. Kyvelou, S.S.; Bobolos, N.; Tsaligopoulos, A. Exploring the Effects of "Smart City" in the Inner-City Fabric of the Mediterranean Metropolis: Towards a Bio-Cultural Sonic Diversity? *Heritage* **2021**, *4*, 690–709. [CrossRef]

123. Preston, S.; Mazhar, M.U.; Bull, R. Citizen Engagement for Co-Creating Low Carbon Smart Cities: Practical Lessons from Nottingham City Council in the UK. *Energies* **2020**, *13*, 6615. [CrossRef]
124. Kyvelou, S.; Marava, N.; Kokkini, G. Perspectives of Local Public-Private Partnerships towards Urban Sustainability in Greece. *Int. J. Sustain. Dev.* **2011**, *14*, 95–111. [CrossRef]
125. Bastos, D.; Fernández-Caballero, A.; Pereira, A.; Rocha, N.P. Smart City Applications to Promote Citizen Participation in City Management and Governance: A Systematic Review. *Informatics* **2022**, *9*, 89. [CrossRef]
126. Elahi, H.; Wang, G.; Peng, T.; Chen, J. On Transparency and Accountability of Smart Assistants in Smart Cities. *Appl. Sci.* **2019**, *9*, 5344. [CrossRef]
127. Allam, Z. The Emergence of Anti-Privacy and Control at the Nexus between the Concepts of Safe City and Smart City. *Smart Cities* **2019**, *2*, 96–105. [CrossRef]
128. Mitoula, R.; Kantzoura, E. Cultural Tourism and Cultural Routes. As a Case Study: The City of Trikala. *Sustain. Dev. Cult. Tradit. J.* **2016**, *1*, 80–94. [CrossRef]
129. Chatzimichail, A.; Chatzigeorgiou, C.; Tsanousa, A.; Ntioudis, D.; Meditskos, G.; Andritsopoulos, F.; Karaberi, C.; Kasnesis, P.; Kogias, D.G.; Gorgogetas, G.; et al. Internet of Things Infrastructure for Security and Safety in Public Places. *Information* **2019**, *10*, 333. [CrossRef]
130. Feidakis, M.; Chatzigeorgiou, C.; Karamperi, C.; Giannakos, L.; Xefteris, V.-R.; Ntioudis, D.; Tsanousa, A.; Kogias, D.G.; Patrikakis, C.; Meditskos, G.; et al. Smart Interconnected Infrastructures for Security and Protection: The DESMOS Project. *Computers* **2021**, *10*, 116. [CrossRef]
131. Tan, E. The Evolution of City Gaming. In *Complexity, Cognition, Urban Planning and Design. Post-Proceedings of the 2nd Delft International Conference*; Portugali, J., Stolk, E., Eds.; Springer: Cham, Germany, 2016; pp. 271–292. [CrossRef]
132. Karachalis, N.; Deffner, A. City Breaks. In *Encyclopedia of Tourism Management and Marketing*; Buhalis, D., Ed.; Edward Elgar: Cheltenham, UK, 2022; pp. 499–501. [CrossRef]