



Article The Willingness of Tourism-Friendly Cities' Representatives to Share Innovative Solutions in the Form of Open Innovations

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Abstract: The tendency of enterprises to use open innovations can be seen in the literature in many areas of research and practical application. However, the use of the concept of open innovation in local administration entities is less noticeable. The research gap in this area prompts the authors to examine such a tendency among city representatives in the example of the Tourism Friendly Cities (TFC) group. TFC is a group of nine tourism destinations that are also European cities struggling with the impact of modern tourism. They take part in the URBACT program under the European Territorial Cooperation program. The goal of the article is to identify the basic problems of TFCs with the impact of the COVID-19 pandemic and to assess the propensity of TFC representatives to transfer innovative solutions in the form of open innovation. The article presents findings based on interviews with 104 experts from these cities, consisting of representatives of the public and private sectors. Research results indicate that the key problems of modern tourism in TFCs include constraints related to the lack of parking spaces, high rents and high prices of land, and short-term rental housing. The experts recommend measures to increase resilience and competitiveness initiated by business owners and at the initiative of the local administration. Key tools in this regard include and local community communication and engagement, creating attractions that benefit both residents and visitors, and measuring and monitoring tourism. In all, 92.8% of the experts believe that the right solution for the development of methods and tools for stakeholder cooperation in TFCs is to share the developed solutions in the form of open innovation.

Keywords: open innovation; tourism; overtourism; tourism friendly cities; experts; qualitative research

1. Introduction

The literature on the subject of open innovations indicates many examples of their use in the modern economy, especially in cooperation between enterprises. The subjects of the exchange are often product innovations, but also process innovations in the field of solutions to various business problems. However, there is a noteworthy research gap in the use of open innovations in state administration units, and especially in the exchange of solutions between cities struggling with similar problems. Often these solutions fall within the definition of process innovation. An example of such processes are the methods of solving problems involving excessive tourist traffic in tourist destinations.

The problems of modern tourism take very diverse forms. Some destinations are struggling with the negative consequences of overtourism, which is not only the cause of congestion, noise, and gradual degradation of the attractiveness of the tourist area, but also conflicts with permanent residents of the place and gentrification of fragments of neighborhoods. Others, in turn, are looking for solutions to the problem of low popularity of the area (undertourism) caused, for example, by the COVID-19 pandemic or improving



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Copyright: © 2022 by the authors. Licensee MDPI, Basel, Switzerland. This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (https:// creativecommons.org/licenses/by/ 4.0/). governance. Although the problems of many cities are similar, the solutions are very diverse. Some of them take the form of innovations, which, however, due to mutual competition, are difficult to reapply in other destinations. Taking up the topic of the tendency towards the mutual exchange of process and product innovations (as open innovations) between tourist cities seems to be a good example in the discussion of the implementation of the concept of open innovations in local state administration.

One of the successful ways of exchanging knowledge and experiences is by undertaking mutual co-operation between similar cities. Cooperation based on partnerships gives city authorities the opportunity to influence their surroundings more effectively and to deal with the problems of visitors and inhabitants better than if they solved them on their own. The idea of Tourism Friendly Cities (TFC) [1] is based on partnerships where the key objective is a tourism-friendly approach to a city. The TFC project is carried out in the framework of the EU program Urbact III [2]. The project will result in an Action Plan for each city, aimed at identifying ways to achieve sustainable tourism in cities by reducing the negative impacts of tourism activities and other tourism-related impacts. The plans should be co-produced with local stakeholders to identify a concrete and coherent set of actions to address a local policy challenge. The objective of the network is to undertake an integrated strategy to balance the needs of the local community in terms of quality of life and available services with the promotion of sustainable urban development at environmental, social and economic levels. In turn, the city network allows for a process of exchange and learning with peers across European cities, from the perspective of improving local policies through concrete action-planning.

The Tourism Friendly Cities (TFC) cooperating cities are: Braga, Cáceres, Druskininkai, Dubrovnik, Dun Laoghaire, Genoa, Kraków, Rovaniemi, and Venice (Figure 1).



Figure 1. Tourism Friendly Cities. Source: on the basis and with the consent of URBACT [3].

However, cooperation within the partnership takes place not only at the level of tourism city authorities (public sector), but also through the integration of stakeholders in

the URBACT Local Group (ULG) formula that gathers together all relevant stakeholders to address the focus of each city. The ULG members are a group of stakeholders coming from local or other public authorities, private enterprises, community groups, and the business sector [3].

The goal of the article is to assess the propensity of TFC representatives to transfer innovative solutions in the form of open innovation. However, the first step to determining this goal is to identify the basic problems of TFCs with the impact of the COVID-19 pandemic. To realize the aim of the article it was necessary to conduct research in the literature, as well as empirical research among experts of the public and private sectors related to tourism from the cities of the TFC group.

2. Innovative Solutions to Tourism Problems

2.1. Problems of Tourist Destinations and Attempts to Solve Them

Urban tourism is one of the fastest growing segments of the global tourism market [4,5]. In the second decade of the 21st century, cities have become important tourist destinations because the city as a material, immaterial and social space becomes a cultural commodity in the mind and imagination of the tourist [6]. The increase in tourism, but also in investment in urban tourism, has caused its contestation among the inhabitants of many cities, who see it as a source of tourist gentrification [7] and tourist hypertrophy, known as overtourism.

Overtourism is a complex phenomenon that strongly influences the quality of life in a city or part of a city, as well as the experience of residents and visitors. Gentrification, which also occurs, refers to a change in function, it refers to a neighborhood that was originally inhabited by a community of tenants which become dominated by residents of higher social and property status, and it can also be triggered by a concentration of tourism [8]. It has become particularly apparent in areas where tourism has significantly worsened the conditions and quality of life of local communities. There is no doubt that the growing number of tourists is conducive to the development of cities, raising their budgets and distinguishing them on the tourist market, but the question is-what kind of burden does it put on the inhabitants? Undoubtedly, the occurring processes contribute to lower quality of life as well as disintegration of social ties and weakening of local identity. Inhabitants lose their subjectivity in their small homelands, and their place is taken by tourists, and it is to their needs that the public space begins to be adjusted, thus making the local community feel estranged [8]. The above phenomena have been noticed in numerous research works, and the proposals for solutions in the pandemic period have accelerated considerably. The literature describes examples of Venice, Barcelona, Dubrovnik, Amsterdam, and Berlin [9-11], and in Poland-Kraków [12], Wrocław [13], and Poznań [14]. Maintaining a balance between the needs of various stakeholders, especially visitors, residents, entrepreneurs, and investors, is important. The need for a balance of interests is particularly important in times of increasing quality of life and limitations caused by the pandemic. The areas and consequences of conflict between residents and visitors were defined in research in Kraków [15,16].

Today's cities face many challenges and at the same time are becoming increasingly complex systems that are difficult to manage. The enormous technological progress in recent years has given rise to the development of a variety of solutions and products that make it possible to implement smart city projects. This is linked to different concepts of urban development (e.g., sustainable city, resilient city) [17,18]. The smart city focuses on the use of both advanced technologies (including information technology) and the activity and creativity of citizens. In spite of their different emphasis on the dimensions of city functioning, Kourtit and Nijkamp [19], for example, expose creativity and knowledge and assume that a smart city is "a city that aims to improve socio-economic, environmental, logistical performance and increase competitiveness".

The examples, not only from TFC cities, reflect the different scale of the problems and ways to solve them, and the challenges of an urban sustainable tourism policy, resulting from scale, effectiveness of management, and prioritization of funding. The selection of

activities and indicators of sustainable tourism must be embedded in the realities (depending on the stage of development of the destination, the most important challenges, strategic goals).

The most common examples of strategies for managing the increase in the number of visitors to cities are [20]:

- Promotion of the dispersal of visitors within the city and beyond,
- Promotion of time-based dispersal of visitors,
- Stimulation of new visitor itineraries and attractions,
- Reviewing and adapting regulations,
- Enhancing visitors' segmentation,
- Ensuring local communities benefit from tourism,
- Creating city experiences that benefit both residents and visitors,
- Communicating with and engaging local stakeholders,
- Communicating with and engaging visitors,
- Setting up monitoring and response measures.

An attempt to develop a sustainable strategy for solving the problems of tourism impact requires defining a form of mutual exchange of knowledge and experience. The concept of open innovation seems to be one of the important ways of accomplishing such a task, especially since the underlying features of urban tourism are in contradiction to the idea of sustainable tourism (selectiveness, repetitiveness, suddenness, fickleness) [6]. The term "sustainable tourism" refers to making all types of tourism more sustainable. It is a continuous process of improvement. Sustainable tourism is a choice between acceptable, common values that guide entrepreneurs in business as well as the behavior of visitors who respect the visited places and the inhabitants, and limiting number of visitors while introducing barriers to entrepreneurship in historical zones [21].

Often, governments and local governments use mechanisms to promote innovation [22,23], funding, infrastructure provision, technology, and dissemination that stimulates the diffusion of knowledge and the translation of research results into commercial products, such as startup support and legal frameworks, including intellectual property legislation [24]. Tourism-specific tools are needed to increase the effectiveness of support activities [25]. Maráková and Medved'ová [26] note that further research on the use of innovation in tourism is needed, they suggest that tourism should be represented in the research conducted by the Innovation Research Center of the European Commission, as there is a lack of data on the effectiveness of various tools used in innovation policy.

Business systems in tourism regions that are predisposed to creating open innovation systems are analyzed by Gusakov, Haque, and Jogia [27]. This analysis of existing mechanisms for supporting open innovation in tourism and identification of new trends aimed at improving the practice of tourism destination management. Using Cohen's list [28], the authors studied seven of the top fifteen tourism cities in Europe and the top eight tourism companies in Europe as case studies. These results show that authorities and companies in smart tourism destinations create incubators, gas pedals, and organize hackathons. It concludes with new arguments that Destination Management Organizations (DMOs) of tourism destinations should consider fundamental changes in tourism resulting from digital transformation, platform-based business models, and open innovation platforms [28].

2.2. Open Innovations

The listed problems of tourist destinations and the ways of solving them effectively lead us to ask a question—should the dissemination of effective and innovative solutions to these problems be based on the principles of open access? Therefore, it is a question about the validity and dissemination of innovative solutions.

The concept of open innovation, elaborated and still being developed by H. Chesborough [29–35], is an example of a solution that seems to be extremely useful in thoughtful partnerships between tourist destinations. It is about both destinations using innovations made available by other market players and making their own innovation solutions available in open access. This process, however, will in this case involve not only similar entities in terms of business profile, but also stakeholders.

The rationale for using open innovation is explained by J. J. Yun [36–39], who, based on a review of the literature, indicates its key advantages. The first is that they enable the acquisition of modern technologies and business models in a simple and low-cost manner. The second advantage is that the global economy regains the energy of growth. Open innovation can also increase the competitiveness of new and growing companies. Finally, the use of open innovation can initiate a creative combination of the market and technology.

Notably, although this topic is not popular in the tourism literature, a few studies in this area can be found. B. Pikkemaat and M. Peters [40] published a study conducted in the Austrian Tyrol among tourism entrepreneurs. They see a high potential for innovation and indicate three big areas of potential support in this area. These include, first of all, knowledge, know-how, and entrepreneurial processes. These issues are used especially in the fields of cooperation and communication, but also in initiating mutual projects. According to their research, the scope for open innovation is limited to traveling to new markets and destinations, cooperation and networking, and talking to guests. The study authors also note that open innovation is not adequately focused on employees and guests or strategic management. Therefore, the innovation process in tourism needs to be more open, particularly by using customer and guest feedback, which should be treated as a valuable source of product and service improvement. They also note that the open innovation orientation of modern management requires a focus on measuring the fit of innovations with the overall destination value chain and the assessment of market reactions.

Therefore, the aforementioned research confirms the thesis that participation in open access to innovative solutions should concern the companies that are both creators and beneficiaries of these solutions, but also other stakeholders, including customers (tourists).

The need for research into new inbound open innovation practices is noted by S. Brunswicker [41], with his conclusions concerning solutions based on enterprise collaboration. He performed his empirical research on small and medium-sized enterprises (SMEs) of tourism. However, early on in the literature survey, he found that one of the main findings of researchers is that strategic alliances and partnerships with large companies enable SMEs to innovate, and the multi-stakeholder partnerships were thus able to expand their competencies and enable access to critical resources.

Naturally, there are also concerns about the weakening of competitive advantage as a result of the dissemination of effective solutions to their problems. However, the results of the discussed research contradict this, and in fact become unfounded when considering that the main problems of tourist destinations concern too many tourists. This means that businesses that are unable to increase their potential due to local law restrictions, for example, will look for ways to increase the popularity of other destinations in order to preserve the tourism value of their destination for as long as possible. This can therefore also be helpful for destinations that are facing the problem of insufficient tourism.

The development of the concept of open innovation is unusually dynamic. An example is the work of J. J. Yun [36–39], who proposes, among other things, a "compass" based on thought experiments. The research is concerned the rectangular compass concept model, and was based on a group of patents of seventeen business models. The result of the study concluded that open innovation can stimulate the innovation dynamics in a sustainable business model. Then, dynamic open innovations are also noticed, which are particularly visible in the literature on culture. Some authors also formulate the term 'culture for open innovation dynamics' [42].

On the other hand, J. J. Liburd and A. M. Hjalager [43] propose to use the second generation of web 2.0. Their task is to initiate the processes of development and knowledge transfer. An example of an exchange platform is the INNOTOUR platform, which acts as a knowledge center for various groups of recipients interested in innovation in tourism, including researchers, entrepreneurs, students, and educators.

In the literature [44] we also encounter the term Open Innovation 2.0 (OI2) as a new paradigm and methodology of Digital Innovation. It is a "primordial soup" related to the digital, facilitated by the digital, and driven by the digital, according to M. Curley and B. Salmelin. All actors in business and society have the ability to swiftly generate transformation solutions thanks to the usage of agile methodologies. This is a paradigm centered on integrated cooperation, co-created shared value, nurtured innovation ecosystems, unleashed exponential technologies, and quick adoption owing to network effects.

3. Materials and Methods

The realization of the objective of the study required conducting qualitative empirical research. The research concept was based on interviews with experts representing the Tourism Friendly Cities. However, given that the populations of these cities are diverse, a stratified division of the expert community was also made. The Pearson's linear correlation coefficient for the relationship between the populations of the cities and the number of their representatives (experts) was r = 0.79.

The study sample consisted of a total of 104 experts, representing an equal proportion of public sector representatives and private sector representatives related to tourism (city authorities and tourism entrepreneurs). Fourteen experts did not indicate their city of origin and therefore could not be considered in the analyses. The distribution of the number of experts from each city is presented in Figure 2.



Figure 2. Distribution of the TFC population and the number of experts. Source: Own study.

Interviews were conducted using an online questionnaire in the last quarter of 2021. The link to the questionnaire was sent to lead partners in each city, and through them to ULG representatives implementing their TFC tasks.

The interview questionnaire contained 22 questions, divided into three topics. The formulation of the questions was based on the phenomena and recommendations described above, the results of which were compared with the formal declarations included in the so-called Integrated Action Plan [45]. The first topic taken up was issues related to the reaction of the city government and tourism entrepreneurs to COVID-19. The second topic was a reference to conflicts between stakeholders in the city. The third topic focused on open innovation in addressing urban tourism issues. Due to the wide scope of the research conducted, this paper mainly discusses the third part of the research. The validity of the questionnaire was assessed by the Alpha–Cronbach coefficient [46], which was 0.9170,

meaning that the constructed questionnaire should be considered reliable. The Alpha– Cronbach coefficient allows an assessment of the reliability of the research questionnaire. According to the literature, the critical value of the coefficient is 0.7, which means that the developed questionnaire is very reliable. The quantitative analysis of the collected data was also supported by the current achievements of scientists in this field [47–49].

In the process of analyzing the collected data, diverse quantitative methods were used, including correlation analysis, significance analysis of differences between fractions, as well as our own analysis tools. To test the consistency of experts with opinions, the following \hat{E} index form was used:

$$\acute{\mathsf{E}} = \frac{1}{N} \sum_{i=1}^{5} n_i \cdot \omega_i \tag{1}$$

where:

 n_i —number of indications for the *i*-th variant of the answer (*i* = 1, 2, 3, 4, 5), ω_i —weight assigned to the *i*-th variant of the answer (*i* = 1, 2, 3, 4, 5) according to Table 1.

Table 1. Table of weights assigned to response options.

2	
1	
0	
-1	
-2	
	2 1 0 -1 -2

Source: Own study.

The indicator of general compliance of experts with opinions [\hat{E} index] is the proprietary analysis tool adopted for the quantification of the experts' responses. It assumes values in the range $-1.0 \div 1.0$, where a negative value means that all experts are against the presented opinion, and a positive value means that the experts fully agree with their opinions. In this way, the authors changed the ranking to quantitative measures, enabling the average assessment of compliance with the opinions to be drawn. Table 1, which defines the adopted weights, was used in the quantification of the assessments. Similar forms of weighting responses are observed in many scientific reports presenting methods of scale transformation [50–52].

The intention of the authors was to make it easier for readers to receive the results obtained on the five-point Likert scale, where the answer positively (hard to say) would be assigned a value of 3. However, thanks to this simple transformation, it is easy to notice that negative values indicate a response contrary to the given opinion, and positive values are assigned to responses that are consistent with the opinion submitted for judgment.

4. Results

The results obtained can be divided into two main issues. The first one concerns the identification of problems occurring in TFC cities and the ways of solving them. The second concerns the form of sharing the developed solutions. Considering the subject matter, the research was limited to the method of knowledge transfer through open innovation.

4.1. The Problems of Tourist Destinations from the TFC Project

As part of the empirical study, experts were asked to identify the city's key problems regarding tourism before the COVID-19 pandemic. The experts indicated that the biggest problem was the lack of parking spaces ($\hat{E} = 0.338$), high rents ($\hat{E} = 0.264$), high land prices ($\hat{E} = 0.25$), and problems with short-term rental housing ($\hat{E} = 0.236$). Only in the next places did the experts indicate traffic jams ($\hat{E} = 0.203$), depopulation of buildings ($\hat{E} = 0.176$), noise

at night ($\hat{E} = 0.101$), and noisy streets ($\hat{E} = 0.095$). A full summary of the indicated tourism problems is presented in Table 2.

Table 2. Problematic Issue for the City.

Problematic Issue for the City	Ê Index
lack of parking spaces	0.338
high rent	0.264
high land purchase prices	0.250
problems with short-term rental of flats	0.236
traffic congestion	0.203
depopulation of buildings in the district	0.176
noise at night	0.101
excessive noise on the street	0.095
tourism gentrification	
excessive number of places to drink alcohol	-0.054
high prices for services and goods in shops	-0.068
waste pollution (rubbish)	-0.074
high water usage	-0.142
crowded public transport	-0.155
air pollution	-0.223
safety issues (fights, shouting)	-0.223
no local infrastructure (shops etc.)	-0.297

Source: Own study.

It can also be noted that the experts express the greatest opposition to the opinions that the problem is the lack of local infrastructure ($\hat{E} = -0.297$), fights and shouting ($\hat{E} = -0.223$), air pollution ($\hat{E} = -0.223$), and crowding on public transport ($\hat{E} = -0.155$). No differences are seen in the responses between public and private sector representatives. In general, the answers of the experts from these two groups converge. The exception is congestion in public transport, as the Mann–Whitney test showed a significant difference between the experts' agreement in this area (p = 0.016).

The identification of the main issues related to the impact assessment of tourism in the cities participating in the TFC project was only the first issue addressed in this part of the research. In the following section, the experts were asked what measures to increase resilience and competitiveness were observed at the level of local economy actors.

The experts see resilience and competitiveness actions initiated by business owners ($\hat{E} = 0.324$) and at the initiative of the local administration ($\hat{E} = 0.310$). The initiatives of other stakeholders received a much lower score ($\hat{E} = 0.169$). Table 3 shows the distribution of positive and negative expert ratings. Notably, the positive indications in terms of perceived initiatives of business owners and local administration are six times more than the negative indications.

Table 3. Source of initiating activities to increase resilience and competitiveness at the level of local economy actors.

Type of Measures	Positive	Neutral	Negative	Ê Index
Initiated by business owners	69.0%	18.3%	12.7%	0.324
Initiated by the local administration	60.6%	28.2%	11.3%	0.310
Initiated by other stakeholders	52.1%	28.2%	19.7%	0.169

Source: Own study.

The experts also evaluated the effectiveness of tools for sustainable tourism recovery (regardless of the scope of understanding of the phenomenon) after COVID-19. Among the most appreciated tools were communication and involvement of local communities

 $(\hat{E} = 0.701)$, creating attractions that benefit both residents and visitors ($\hat{E} = 0.637$), as well as tourism measurement and monitoring ($\hat{E} = 0.625$) and initiating discussions on development issues and setting common goals for all stakeholders ($\hat{E} = 0.618$). Slightly lower scores were given to activities such as supporting the initiative of new tourist offers, even niche ones ($\hat{E} = 0.59$), encouraging visitors to explore the city outside the historic center and outside the city ($\hat{E} = 0.562$), and intensifying the city's tourist promotion to "win back" tourists ($\hat{E} = 0.542$). The full set of evaluated activities is presented in Table 4.

Table 4. Assessment of the effectiveness of tools for the sustainable reconstruction.

Assessment of the Effectiveness of Tools for the Sustainable Reconstruction of Tourism after COVID-19	Ê Index
Community participation and communication	0.701
Development of attractions that benefit both locals and visitors	0.637
Tourism measurement and monitoring	0.625
Engaging all stakeholders in conversations about development issues and developing common aims	0.618
Supporting the creation of new tourist attractions, especially if they are niche	0.590
Encouraging tourists to explore the city outside of the historic district and the city limits	0.562
Increase the city's tourism advertising in order to 'recover' tourists.	0.542
Launching efforts to educate tourists about citizens' rights and provide information on local laws, customs, and cultural norms	0.535
The use of integrated online booking systems in the booking processes of tourist facilities, cultural facilities, etc.	0.535
Creating registration requirements for short-term rental.	0.415
Developing mobile applications with unique features	0.394
Striking a consensus among citizens and local service providers in terms of	
tourist development. Stakeholders accepting the potential of sacrificing some of	0.387
their personal benefits for the sake of the city's shared values.	
Introducing a free, voluntary quality accreditation for sustainable development service providers (ecological, sanitary, service)	0.359
Using a local DMO to create or enhance tourist management	0.303
Putting restrictions on the establishment of certain sorts of services in historic or tourist areas	0.225
Creating advantageous tax circumstances for service activities in the city core that preserve local identity	0.222
Limiting the current short-term rental market	0.042
Reduce the quantity of new lodging options in the city core.	-0.092
Increase restrictions on entering the city center	-0.106
Introduce limitations on night gastronomy.	-0.211
Charge greater municipal taxes to service providers who use the city's cultural assets.	-0.338

Source: Own study.

Actions that the experts believe should not be taken into account in solving tourism management problems are higher local taxes for service providers using the city's cultural heritage ($\hat{E} = -0.338$) and numerous restrictions on, for example, the operation of food outlets at night ($\hat{E} = -0.211$), the number of entrances to the city center ($\hat{E} = -0.106$), and the number of new accommodation facilities in the city center ($\hat{E} = -0.092$). Interestingly, and even surprisingly, the thesis of increasing entry restrictions to the city center was met with a preponderance of negative evaluations, being in opposition to the transportation management concepts of many cities.

4.2. How to Transfer Knowledge to Solve Tourism Problems Using Open Innovation

The search for solutions to tourism management problems requires integrated action at different administrative levels, but also between the diverse actors operating in the sector and even the indirect and direct consumers of tourism services. This means that solutions to counter overtourism and its consequences, as well as undertourism that the world has experienced as a result of the global pandemic of the SarsCoV-2 virus, require the cooperation of all stakeholders. However, due to the uniqueness of the situation, which should mobilize all stakeholders, this cooperation cannot be limited by normal "business as usual" trade practices. One of the important solutions may turn out to be making the developed forms and tools of local stakeholders' cooperation available in the form of open innovation. This can serve to increase the effectiveness of tourism management and problem-solving in the industry.

Open innovation in this situation is based on making useful innovations available to stakeholders and using innovative solutions developed and shared by others. Open innovation in this study would therefore be open access to ways of responding effectively to tourism destination problems.

The experts were therefore asked whether the development of methods and tools for stakeholder collaboration should be an open innovation? The survey showed overwhelming support for such a solution by the experts. The vast majority of them, 92.8%, said that such a solution would indeed be highly desirable. Only 7.2% found the idea inappropriate (Figure 3). The difference between the analyzed fractions was highly statistically significant (p < 0.001).





Figure 3. Distribution of answers to the question: 'Should the development of methods and tools for stakeholder cooperation be open innovation'? Source: Own study.

Since the solutions developed by entrepreneurs and local administration should be exchanged in the form of open innovation, it was also important to define the scope of innovative solutions. Almost half of the experts (48.4%) stated that this scope should include tasks for all stakeholders in the city (regardless of the industry), while every fourth expert (25.0%) thought that this scope should include tasks only for tourism entrepreneurs and local authorities (omitting customers). One in five experts (20.3%) agreed that it is sufficient if the responsibilities in this area are carried out by tourism entrepreneurs and tourists, with simultaneous coordination of those activities by local authorities. Only 6.3% of the experts stated that the issue is only about the impact on tourists (Figure 4).



'What should be the scope of innovative solutions?'

Figure 4. Distribution of answers to the question: *'What should be the scope of innovative solutions'*? Source: Own study.

The experts were also asked how they think the developed innovative solutions should be implemented. The research showed that 40.6% of them stated that these innovations should be implemented bottom-up by the private sector, through bottom-up initiatives of stakeholders. Significantly more experts (59.4%) defined the problem by indicating that innovations should be introduced top-down by the public sector, through regulations that have a collective impact on all stakeholders (Figure 5). However, significance level analysis of the differences between the factions showed no significant difference between the percentages (p = 0.1393), meaning that both options have a similar set of supporters.







The research also took into account the motivations of the experts who did not consider it reasonable to make the developed solutions available in the form of open innovation. The core group of experts (40%) felt that open access did not make sense because each target is different despite similar problems. The same group of experts (40%) believed that open access to solutions of problems of tourist destinations will take away the ability to compete among tourist destinations. One in five experts skeptical about the idea stated that open access to solutions may discourage stakeholders from participating in problem solving (Figure 6).



'Why should innovative solutions not be open innovation?'



Figure 6. Distribution of answers to the question: 'Why should innovative solutions not be open innovation'? Source: Own study.

5. Discussion and Conclusions

While the interviewed experts agree on the tools of innovative cooperation, they are opposed to those that can clearly limit the effectiveness of economic activity, such as reducing the number of new accommodation facilities in the center, increasing entry restrictions to the city center, restricting the night opening hours of gastronomy, or charg higher local taxes for service providers using the cultural heritage of the city. It is likely that these will be long-standing disputes between the public and private sectors. However, some cities are already taking steps in this direction.

The only problem, which is also a research issue, is the analysis of the socio-economic effects of implemented innovative solutions. Nowhere else have such simulations been carried out so far, which does not mean that cities do not undertake such challenges together with their local partners. This is evidenced by the entries in the tasks planned by TFC cities and included in their Integrated Action Plans, presented below. They are largely consistent with the opinions of the experts of this study and the existing literature analysis.

The issue of excessive, destructive exploitation of cultural heritage resources in the historical cities has become a key issue for such cities. Overexploitation is one issue that consumes these resources without adequately recreating and multiplying them. The excessive tourist traffic is the most important, but not the only source of the problem. Even before the current crisis, cities of great tourist success had a growing problem with maintaining the authentic urban landscape. The more they renewed, revitalized, restored, the faster they lost their local addresses, small shops with local products, traditional services, historical bookstores, and antique shops [53]. The distinctions between residents and visitors in the usage of free time services are dissolving, and the sense of belonging begins to become the core axis of the strategic development idea, because it is the most desired value by both residents and visitors today and in the future.

While the COVID-19 pandemic dramatically reduced tourism travel and revenue, it also rapidly became a time for reflection on new management approaches and the search for appropriate tools based on anticipating problems, understanding the consequences of problems and actions, appreciating the interdependence of variables, and preparing for alternative realities and challenges.

Analysts indicate that post-pandemic tourism must be adapted to the current reality. The first focus should be on the availability of services with new technologies and solutions that support sustainability [54–58]. The recovery of the tourism economy after COVID-19 will depend largely on the ability of the tourism supply to adapt to the new conditions and paradigms set in various recommendations. There is even an open coalition of NGOs called 'Future of Tourism' [59], identifying new principles for the tourism economy and changing indicators of success.

Previous trends related to tourism development, phenomena surrounding the pandemic, and forecasts indicate that local DMOs (Destination Management Organizations) should revise their competencies and strengthen the following post-pandemic tourism development activities, including:

- Knowledge transfer and education of tourists on the impact of tourism on the local community, economy, and environment, including campaigns to educate tourists on respecting the so-called right of residents to quality of life.
- Creation of local partnerships, network management, and maintenance of community relationships.
- Identifying the needs and experiences of visitors to the city and communicating that knowledge to local partners.
- Conflict management to ease tensions between space users.
- Strengthening the resilience of places to the possible return of tourist function overgrowth and the return of overtourism.
- Increasing the efficiency of tourism development management under conditions of increasing need to verify the effectiveness and amount of budgets of organizations responsible for tourism management, declining public sector resources, searching for alternative forms of management and financing, and analyzing the extent of necessary public intervention.
- Increasing the role of technology and smart solutions in managing visitor and resident experiences, public safety, local transportation, visitor stream directions, marketing communications, and in achieving an even distribution of benefits from the development of the tourism function, for all stakeholders.

The previously mentioned Tyrolean destination studies by B. Pikkemaat and M. Peters [40] emphasize the importance of cooperation and communication as key success factors in destination innovation management. Collaboration and communication are seen as tools for the development of a tourism destination, because at the same time they are important ways to exchange knowledge and information. The role of open innovation in this regard should be precisely the mutual exchange of innovative solutions to key problems. It is worth noting that a specific partnership of TFCs within the project should adopt the features of open exchange of innovations. Assuming that at least one of the eight cities develops an innovative solution, the other cities will benefit from it in many dimensions. Thus, it will be a benefit not only from obtaining new knowledge, but also in an financial sense from saving the implementation of faulty or ineffective solutions, or in a social sense resulting from solving a social problem or even a political one, connected with the effectiveness of implementing power in the city.

The assumption to be made for the formulation of possible ways of exchanging open innovations comes from the research results obtained. Notably, the experts were afraid of open innovation due to differences in problems in particular cities, but also due to mutual competition for tourists. Nevertheless, notably, city partnerships and thus open innovation exchange networks are usually formed by cities with similar characteristics, e.g., tourist cities, in addition to those of similar size and identical importance for the country, continent, or world (e.g., association of European capitals, or association of G7 countries, etc.). They often face the same problems in different spheres of administration. They can indeed be competitors for tourists at the same time, as cooperation on a competitive basis allows for this. Thus, they will still remain competitors when it comes to attracting new segments of tourists, but, for example, when it comes to solving problems regarding lack of parking spaces, they can cooperate closely.

However, there is still the question of the profitability of sharing the knowledge developed by cities and their stakeholders because, as already mentioned, the concept of open innovation involves exchange and not one-sided philanthropy. Cities forming a network should therefore develop an object of mutual exchange. Such an object can take the form of the simplest exchange, but at the same time the most difficult to estimate, namely the financial form. Then, the innovative solution is valued and purchased by another city. However, a barter exchange is also possible, in which various innovations are exchanged, transferred exclusively to a specific city or the whole network. In such an exchange of open innovations it can be assumed that the list of problems is divided among the individual partners of the network of cities and each of them deals with finding a solution for one of the problematic topics and then the developed solutions are applied in all partner cities (Figure 7).



Explanation: OI - Transfer of open innovations



It may also involve the exchange of a particular technology or business model in exchange for the infrastructure necessary to run it. Such cities then become partners in the implementation of an innovative idea that benefits both communities.

Such an exchange, which is spread over time, should not be overlooked, either. Then, one city transfers innovative solutions at one point in time, and the city receiving the new knowledge returns with a similar transfer at a later time. The exchange, however, is difficult to enforce due to the fact that the city authorities are exchanged. Therefore, it should be based on formal agreements concluded by superior authorities.

However, it is worth noting that informal exchanges are also possible, based on the participation of cooperating cities in mutual rescue operations during humanitarian crises. The discussion on this topic has been going on in the literature for a long time, but already in the first decades of the 21st century there are many opportunities for such exchanges. It is worth citing here not only the consequences of COVID-19, but also the war going on in Ukraine after being invaded by Russia. Many technologies that had previously been closed innovations were transformed into open innovations within a short period of time, through their transfer or use in aid of the invaded nation. These are not just military technologies, but also humanitarian ones. These will be, for example, container housing for refugees, or social solutions related to the temporary integration of refugees into the health systems of neighboring countries. Figure 8 presents the above relationships and forms of exchange.



Explanation: OI - Transfer of open innovations



5.1. Research Key Findings

Key findings from the research indicate that open innovation is an extremely promising and novel solution for collaboration between cities and their stakeholders. As many as nine out of ten experts support such a solution. They generally state that the scope of cooperation based on open innovation should include tasks for all stakeholders in the city (regardless of sector). However, there are also supporters that the scope should include tasks only for tourism entrepreneurs and local authorities (omitting tourists). The vast majority of representatives of the surveyed cities stated that innovations should be introduced top-down by the public sector, through regulations that have a common impact on all stakeholders. This means that the primary responsibility for working on the regulation of mutual cooperation of cities facing similar problems should lie with the administration of these cities and their stakeholders, including tourists.

5.2. Limitations and Future Research Trends

When setting the direction of future research in this field, it is worth taking into account the guidelines obtained here and taking action to develop model solutions of open innovation in partner cities. These solutions, including those of an open innovation nature,

should be preceded by broad scientific research in several networks of partner cities and of a diversified typology of problems they are facing, as partnerships are not always created in a symmetrical way in terms of size or type of key economic function performed by the city.

The research has several weak points. The first one concerns the selection of cities that qualified for TFC. It should be noted that the authors had no influence on the selection of cities participating in the TFC project, but used it in accordance with the methodology adopted by the project organizers. Hence, the difficulty in conducting a broader study (on a larger sample of experts). Secondly, it was noted that it is necessary to make city authorities (public sector) and tourism entrepreneurs (private sector) more widely aware of the possible benefits for local communities from such cooperation and knowledge exchange. It is also necessary to raise awareness among residents and tourists themselves that unregulated expansion of tourism in the long term can do more harm than good to tourists and the tourist destination. The research did not address this issue, as it did not examine the awareness of tourists and their willingness to accept limitations resulting from the mutual exchange of innovative solutions.

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