

Article

Industrial Tourism as a Factor of Sustainability and Competitiveness in Operating Industrial Companies

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Abstract: This paper presents a systematic literature review (SLR) about industrial tourism and intends to show how this product can increase sustainability and competitiveness in operating industrial companies. It uses bibliometric analysis with data from 32 journal articles that address this topic. Through this sample of articles, we do not intend to generalize conclusions but rather to concretely identify factors of sustainability and competitiveness based on a set of scientific studies that met a very specific set of criteria. Industrial tourism is categorized as a form of tourism encompassing excursions to industrial locations spanning the spectrum of contemporary, historical, or prospective significance. This encompasses venues that have ceased their industrial operations, presently functioning industrial enterprises, and forthcoming industrial establishments. Additionally, it involves visits to other destinations with an industrial theme, such as industrial technology hubs, museums, industrial tourist routes, educational institutions with industrial programs, laboratories, and analogous venues. The focus of this article is to analyze the literature on industrial tourism from the point of view of active industrial companies, the so-called “living industry”, to identify how this type of tourism can contribute to enhancing these companies. Industrial tourism allows industrial companies to achieve environmental, social, and economic benefits and can be seen as a marketing tool and a promoter of innovation within companies.

Keywords: industrial tourism; systematic literature review; innovation; diversification; marketing



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1. Introduction

Industrial tourism has been garnering growing attention as an alternative form of tourism. It is based on the touristic exploration of industrial heritage [1] and can occur in deactivated production facilities (e.g., company museums), in operational production units, or even in those projected for the future [2] that, due to their specificity, arouse interest because of their educational and touristic attractions [3]. Thus, industrial tourism can encompass all types of tourist activities whose primary motive for visiting is related to both material and immaterial industrial knowledge.

Although recognizing that industrial tourism encompasses both visits to industrial sites of the past and operational production units, scholars need to pay more attention to the latter type of industrial tourism. Moreover, the existing studies usually need to consider the perspective of the industrial enterprise offering this tourist product. The studies that deal with the topic suggest that the impact of opening industrial enterprises to tourism depends on the strategies adopted by the companies, namely in terms of innovation and marketing [4,5].

According to Zhang et al. [6], through a meta-analysis of studies on industrial tourism, the main research contents addressed in Europe are related to heritage and community-

building of industrial heritage, the exploitation of tourism, the protection of industrial heritage, and the use of new technologies. This study reinforces the importance of carrying out an analysis from the point of view of industrial companies.

This article aims to address this gap and contribute to understanding how industrial tourism can contribute to strengthening the sustainability and competitiveness of industrial companies. The paper has two main objectives:

1. Map the literature on industrial tourism in active industrial companies, analyzing its evolution;
2. Explore the relevance and challenges of developing industrial tourism activities in the context of business strategies in these companies.

Analyzing the extant literature enables us to identify different strategies companies adopt and potential effects on their sustainability and competitiveness. Therefore, the article contributes to increasing the knowledge of the processes and outcomes of introducing industrial tourism in the portfolio of activities of operating industrial companies.

This article is organized into seven sections. The following section presents the research framework, outlining the research approach employed, including the procedures adopted in the systematic literature review. The results are presented in four different sections. Section 3 presents the findings of the bibliometric analysis conducted on the scientific production related to industrial tourism in active companies. It examines the evolution of publications and citations over time, identifies the countries contributing to the literature, explores the types of studies and methodologies employed, and highlights the journals in which the articles were published. Sections 4–6 present the results of the content analysis, organized into three categories: Sustainability and Innovation through Industrial Tourism (Section 4), Marketing and Industrial Tourism (Section 5), and Critical Success Factors of Industrial Tourism (Section 6). The final chapter presents the main conclusions of the study.

2. Research Framework

2.1. Systematic Literature Review Model

Systematic literature review (SLR) is used to locate scientific studies in each area of knowledge, select and assess contributions, analyze and synthesize data, and end with an evidence report that allows for reasonably clear conclusions about what is known and what is not known about a given topic or area of knowledge [7]. Performing an SLR in the field of industrial tourism is particularly challenging given the fragmented nature of the topic. In this paper, Denyer and Tranfield's model was followed. The model includes five essential steps [7]:

1. Formulation of the research question;
2. Location of the studies to be included;
3. Selection and evaluation of the selected studies;
4. Analysis and synthesis of the selected information;
5. Description and use of the results achieved in the previous steps.

The first stage is of utmost importance. By clearly elaborating the research question, the criteria for inclusion of primary studies in the review become clear. The research question addressed in the study is: How can industrial tourism contribute to the sustainability and competitiveness of industrial companies?

Considering this research question, locating, selecting, and assessing scientific articles was necessary. The procedures adopted are explained in the following sections.

2.2. Location, Selection, and Evaluation of Articles

For this study, we searched the Scopus database for articles that could answer the proposed research question. The search was made in June 2022, applying subsequent keywords and search conventions, and adopting and combining Boolean operators with complex investigations, as shown in Table 1.

Table 1. Structure of search criteria.

Selection Criteria	Research
Database	Scopus
Search field	Article title, Abstract, Keywords
Search words	Industrial Tourism; Industrial Heritage Tourism; Factory Tourism; Factory Visit
Search date	8 June 2022
Years	all
Initial number of articles	266
Document Type	Article and conference paper
Number of articles	239
Search Fields	Social Sciences/Business, Management and Accounting, Economics, Econometrics and Finance
Number of articles	146
Language	English, Portuguese, and Spanish
Number of articles	138
Unavailable articles	16
Number of articles	122
Abstract did not reflect the topic	90
Final number of articles	32

Given the focus of the research, we searched for different words that could be related to the central concept of the research: “Industrial Tourism”, “Industrial Heritage Tourism”, “Factory Tourism”, and “Factory Visit”. As a result of the search string, we obtained a comprehensive listing of articles (primary contributions). A total of 266 articles were located, making it possible to analyze 122 published or available in the Scopus database between 1996 and 2022. According to the defined search criteria, the list of articles analyzed represents the catalogue of studies considered most relevant to the theme.

We collected and stored the articles located using the EndNote Online citation software tool, which allowed the identification and ordering of the articles. Then, we proceeded to read and analyze the abstracts of all articles to ensure their relevance to the objectives of our study. At this stage, we identified some articles that needed to fit the intended theme, considering exclusion criteria regarding the explanation provided by the article and whether it contributed to answering the research objective. Thus, 32 articles published between 1996 and 2022 were selected and considered for the following stages of the SLR. Appendix A lists all the articles analyzed, indicating the authors, year of publication, and journal.

The goal of the analysis and synthesis phase is directly related to how we break down individual articles into compatible parts and the extent to which each part relates to the other, and thus to be able to gauge associations between data [7]. We carefully reviewed the articles in our database to identify critical contributions before summarizing each one. Additionally, based on the nine-ball technique approach [8], we considered enriching this analysis by integrating two articles not identified during the search process. These two articles, presented in Table 2, were published in journals indexed in the Web of Science database and meet our study on the evolution of the literature.

The methodology employed in this study involves a systematic delineation of the criteria governing our sample selection and provides a comprehensive explanation of the procedures followed. Although the sample of articles is small, the aim is not to generalize conclusions but rather to concretely identify factors of sustainability and competitiveness in operating industrial companies based on a set of scientific studies that met a particular set of criteria.

Table 2. Articles indexed in Web of Science added to the analysis.

Title	Authors	Source Title	Year
Botella, M.D.P. [9]	The heritage of the industry: a tourist referent to explore in the Region of Murcia.	Cuadernos De Turismo	2018
Hospers, G. [10]	Industrial Heritage Tourism and Regional Restructuring in the European Union.	European Planning Studies	2002

2.3. Analysis and Synthesis of Articles

The goal of the analysis and synthesis phase is directly related to how we broke down individual articles into consistent parts and the extent to which each part relates to the other, and thus, to be able to gauge associations between the data [7]. Two types of analysis were performed: bibliometrics and content analysis.

We used the VOSviewer 1.6.18 software for the bibliometric analysis for citation, co-citation, and bibliographic coupling analysis.

Content analysis was performed manually. We carefully analyzed the articles in our database to gauge key contributions before summarizing each one. An inductive approach was used, and the following categories of analysis emerged:

Sustainability and Innovation through Industrial Tourism;

Marketing and Industrial Tourism;

Critical Success Factors of Industrial Tourism.

3. Scientific Production on Industrial Tourism as a Source of Sustainability and Competitiveness

This theme has been addressed over the past 26 years, maintaining an empirical and somewhat fragmented trend. Publications related to tourism and industry have been growing, and the number of publications in this area is expected to increase in the coming years.

The word cloud presented in Figure 1 shows the wide variety of terms most referred to in the analyzed articles. This allows us to stratify the immense variety of themes studied or that could be studied in more depth. Even in this analysis, oriented towards business valorization, the word “company” does not appear in the word cloud presented. This demonstrates the scarce scientific production on the theme addressed in this article.



Figure 1. Word cloud of the research (software: NVivo 11).

3.1. Evolution of Publications and Citations

Several articles have been published over the last 22 years. Figure 2 shows the number of articles published per year, which reflects an increasing trend over the years, noting

that between 2002 and 2011, these themes were less relevant. Although there was a first publication in 1996, in the following two decades, there was a reduced number of publications, with an average of only 0.88 per year, which varied between 0 and 4. With eight publications, 2021 was the year with the most production on this topic. Figure 2 also shows that 1998 has the most citations, with the publication of only two articles.

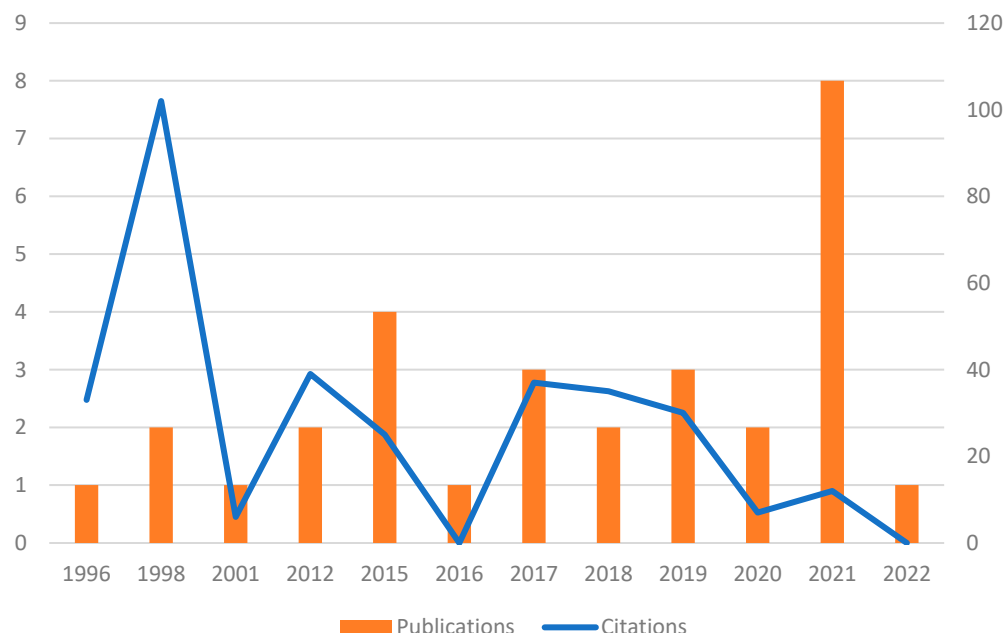


Figure 2. Distribution of publications and citations per year.

The growing interest of researchers in the topic is also demonstrated by the constant evolution of the number of publications over the last decade (Figure 3). The year 2021 has eight publications, showing that more attention has been paid in more recent years.

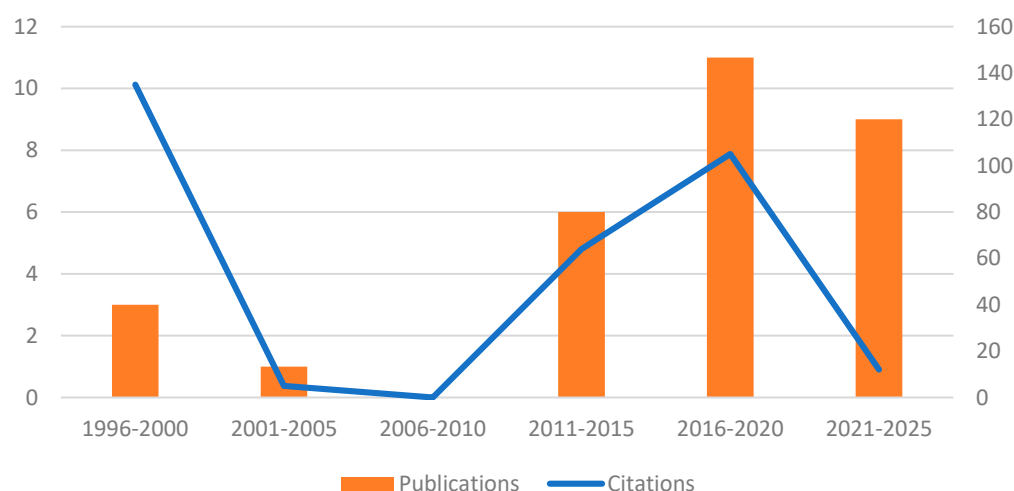


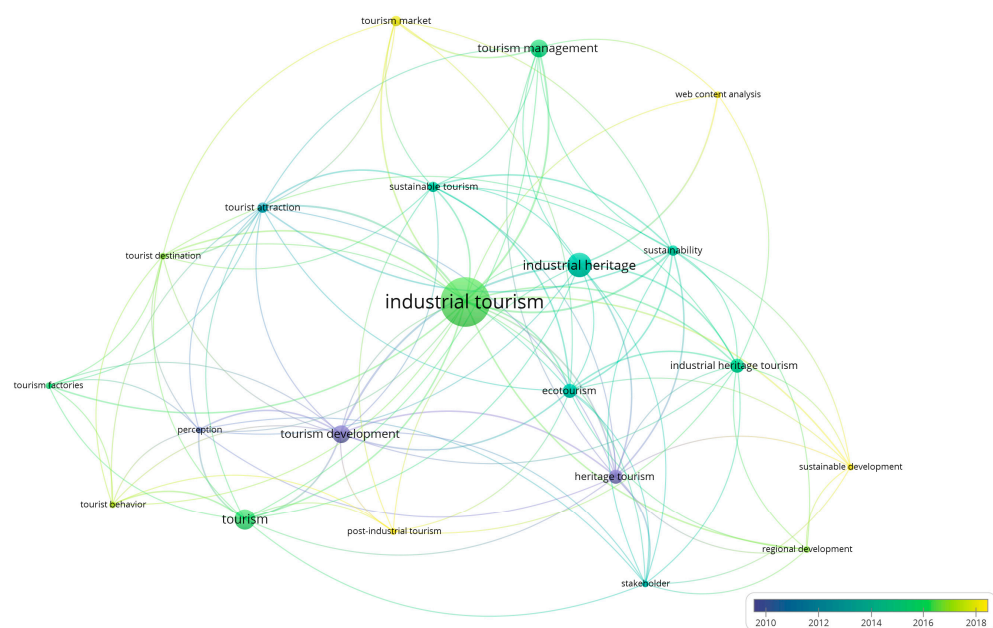
Figure 3. Publications by 5-year periods.

Table 3 presents the most cited articles, and we can see that the two articles with the most citations were published 24 years ago.

Table 3. Articles with most citations.

Authors	Title	Year	Source Title	Cited by	Average Quotes/Year
Kerstetter D., Confer J., Bricker K. [11]	Industrial heritage attractions: Types and tourists	1998	<i>Journal of Travel and Tourism Marketing</i>	60	2, 50
Rudd M.A., Davis J.A. [12]	Industrial heritage tourism at the Bingham Canyon copper mine	1998	<i>Journal of Travel Research</i>	42	1, 75
Otgaar A. [13]	Towards a common agenda for the development of industrial tourism	2012	<i>Tourism Management Perspectives</i>	39	3, 90
McBoyle G. [14]	Green tourism and Scottish distilleries	1996	<i>Tourism Management</i>	33	1, 27
Chow H.-W., Ling G.-J., Yen I.-Y., Hwang K.-P. [15]	Building brand equity through industrial tourism	2017	<i>Asia Pacific Management Review</i>	21	4, 20
Beer M., Rybár R., Kaľavský M. [16]	Renewable energy sources as an attractive element of industrial tourism	2018	<i>Current Issues in Tourism</i>	16	4, 00
Perfetto M.C., Vargas-Sánchez A. [17]	Towards a Smart Tourism Business Ecosystem based on Industrial Heritage: research perspectives from the mining region of Rio Tinto, Spain	2018	<i>Journal of Heritage Tourism</i>	14	3, 50
Lee C.-F. [18]	Tourist satisfaction with factory tour experience	2015	<i>International Journal of Culture, Tourism, and Hospitality Research</i>	14	2, 00
Szromek A.R., Herman K. [19]	A business creation in post-industrial tourism objects: Case of the industrial monuments route	2019	<i>Sustainability</i>	13	4, 33
Yang X. [20]	Industrial heritage tourism development and city image reconstruction in Chinese traditional industrial cities: a web content analysis	2017	<i>Journal of Heritage Tourism</i>	12	2, 40

By analyzing Figure 4, we can see that, more recently, the themes addressed are the tourism market, web content analysis, post-industrial tourism, and sustainable development, which demonstrates the evolution of the themes of the published articles towards greater specificity in areas such as marketing and sustainability.

**Figure 4.** Evolution and relation of the main words addressed over time (software: VOSViewer 1.6.19).

3.2. Countries

Regarding the countries that are researching more about tourism in industrial companies, indicated in Table 4, the country with the most publications is China (5), followed by Spain (4) and the United States of America (4).

Table 4. Distribution per country (with 2 or more published).

Country	Articles	%
China	5	16.67%
Spain	4	13.33%
USA	4	13.33%
Germany	3	10.00%
Japan	3	10.00%
Poland	3	10.00%
France	2	6.67%
Italy	2	6.67%
The Netherlands	2	6.67%

Considering regions, Europe has the most publications, representing 53% of the existing publications, followed by Asia with 32%. Oceania and Africa are not represented.

3.3. Types of Studies and Methodology

The first published articles date from 1996 and 1998, both being case studies—two qualitative and one quantitative. Different authors wrote all three articles. About 77% of the articles are case studies. Thus, the topic has been mainly explored qualitatively (Table 5). There need to be more studies that analyze the topic in a more general and conceptual manner. To date, there is no literature review on the theme addressed.

Table 5. Types of study.

Type of Study	Articles	%
Literature review	0	0.00%
Mixed approach	2	6.67%
Quantitative approach	9	30.00%
Qualitative approach	19	63.33%
	30	100%

3.4. Journals

The analyzed articles are published in 24 different journals. Table 6 presents the journals with two or more publications, identifying the number of articles published in journals in the different quartiles.

Sustainability (Switzerland) has five publications, followed by the *International Journal of Culture, Tourism, and Hospitality Research* and the *Journal of Heritage Tourism*, with two publications each, totaling 30% of the analyzed publications. In turn, 70% of the published articles are dispersed, with each article corresponding to a different journal, and 26.67% of the analyzed articles were published in journals in the 1st quartile. The selected articles are dispersed among numerous journals from different areas.

Table 6. Journals with more publications, types of studies, and quartile.

Source Title	Qualitative	Quantitative	Mixed	Case Study	Research Paper	Number of Articles	%	Q
<i>Sustainability</i> (Switzerland)	3	2		5		5	16.67%	2
<i>International Journal of Culture, Tourism, and Hospitality Research</i>		2		2		2	6.67%	2
<i>Journal of Heritage Tourism</i>	2			1	1	2	6.67%	2
Journals with 1 published article	5	2	1	6	2	8	26.67%	1
	1			1		1	3.33%	2
	8	3	1	8	3	12	40.00%	Other Q and unclassified
Total	19 63.33%	9 30.00%	2 6.67%	23 76.67%	6 20.00%	30 100.00%	100.00%	

4. Sustainability and Innovation through Industrial Tourism

The first category of analysis that emerged from the content analysis of selected papers was the benefits for operating companies that extend their activity to industrial tourism. These benefits are related to increased sustainability and competitiveness of the businesses.

Contrasting with the trend of studies related to all types of industrial tourism, where the main articles reflect the concern of regions with industrial heritage, innovation is a salient topic in the studies that consider active companies.

Competitiveness depends mainly on innovation [21]; this is also true of tourism [22]. However, these themes, associated with industrial tourism, have had little attention from researchers until 2015. Accordingly, innovation and sustainability are present in some articles, primarily through case studies. Several examples are presented as ways to innovate in companies, and the proposals are presented to the public.

The so-called “living industry tourism” is considered an innovative modality that “leads to diversification from its basic activities to enter new markets and generate synergies” (Periáñez et al., 2012, cited by Ruíz et al. [23]). For example, Lin [24] presents the economic development of Taiwan, which gradually shifted from manufacturing to the service sector. According to Lin [24], tourism has been adopted as a form of industrial transformation in Taiwan. In recent years, many conventional industrialists in Taiwan have begun transforming production-oriented manufacturing and their production facilities into tourism facilities [24]. This trend promotes industrial transformation and helps industrial operators rethink how to create business value through service innovation and determine future development directions for manufacturing [12].

According to Perfetto and Vargas-Sánchez [17], the management of industrial heritage requires a new approach that involves factors such as creativity, flexibility, networking, dynamism, promotion and information and knowledge technologies that are difficult to reconcile with a traditional system made by a high bureaucratization, static conservation, and unilateral management. It should be integrated with broader tourism that would include, for example, providing training and mentoring to the local community, designing industry-linked marketing programs, forming alliances that promote complementary attractions nearby or even between regions that share a similar history [25].

Zhao and Liu [26] agree that industrial tourism is inseparable from industrial and technological innovation, giving an example of Kitakyushu (Japan), where industrial tourism combines local industrial heritage with emerging and new technologies.

According to Lopez de Avila [27], a smart tourism destination (smart destination) is considered an innovative destination built on a state-of-the-art technology infrastructure that ensures the sustainable development of tourism areas, accessible to all, which facilitates the interaction and integration of visitors in the surroundings, increases the quality of the experience in the destination, and improves the quality of life of residents [17]. On the

other hand, sustainability in this context refers to addressing the needs of tourists and local communities today without compromising the needs of future generations. For the World Tourism Organization, sustainable tourism fully considers its economic impacts, current and future social and environmental issues, meeting the needs of visitors, industry, environment, and host communities [28]. Pardo Abad [29] reinforces the importance of sustainability in achieving local development, with coordination between the various government administrations, the promotion of private initiative, and the promotion of the sustainable use of heritage wealth being absolute objectives. Integrating “smart tourism” and sustainability concepts is crucial to ensure that the growth of the tourism sector does not harm destinations and that the economic benefits are distributed equitably.

Kozak [22] notes that public policy in practice more often employs “substitution objectives” rather than complex and demanding objectives (e.g., modernization or renewal rather than urban regeneration or culture or tourism). In contrast, the tourism sector is more product-oriented, in line with the new post-industrial paradigm. Introducing innovations is more complex and largely depends on their ability to adopt the new tourism paradigm suitable for the knowledge-based economy and information society [22].

The analyzed papers also mention the target public of the industrial tourism product. Some authors consider it as being directed to a niche market [30,31]. However, others believe it can attract the attention of a wide variety of publics. According to Rudd and Davis [12] and Mitchell and Mitchell [32], younger generations view manufacturing with curiosity because they have never experienced factory work. On the other hand, older generations view the industrial era with nostalgia because they remember the “good old days”, creating a desire to know more about the different industrial processes. Visitors perceive a significant connection between the factory visit and remembrance, transferring the affections and beliefs of the in-factory experience to memory [33].

Also related to the customers and their experiences, ref. [24] suggests that industrial tourism operators should increase customers’ technical knowledge [34,35] and improve customers’ cultural communication and identity of sustainable industrial tourism. Moreover, visits to production facilities can allow customers to become familiar with the origins of a corporate brand, which can be an effective way for a company to strengthen its brand and develop a differentiation strategy [36].

In Japan, proposals are presented for night tours in coastal areas to observe old, illuminated factories [37,38], with digital effects changing and enriching the viewer’s experience of industrial factories. With the assistance of a guide, these tours also offer a brief overview of the local industry, geography, and function of the facilities [37].

Renewable energy sources can also be attractive to industrial tourists, mainly due to their modern design, proportions, eco-image, and—in certain regions—their uniqueness [16].

The content analysis also revealed that industrial tourism allows industrial companies to achieve various benefits at the environmental, social, and economic levels, but mainly as a marketing tool and as a promoter of innovation within companies.

According to McBoyle [14], industrial attractions allow visitors to be confronted with the quality of the products but also with the environmental integrity [39], and industrial tourism is an effective means of return on environmental investments made by companies.

Companies use tourism as part of their business operations to supplement profits, gain more significant market share, relieve the economic stress associated with the shift to a post-industrial society, affirm the environmental integrity of an industry, and renegotiate the company’s relationship with the physical environment [12,14,39,40]. Overriding the financial aspect, some companies choose to donate all tourism revenues to social causes [12], as is the example of the company “Corticeira Amorim” [4].

While visits to active industrial companies may not generate direct profit, they can help maintain or improve the company’s image [41]. According to Otgaar [30], these visits can be used to enhance the image of industries and, consequently, the regions in which they are located, allowing the reconstruction of unique images of cities and increasing their competitiveness [10,20,42].

Otgaar [13] notes that industrial tourism can be an effective tool for co-branding the region if the participating companies fit the image the region wants to communicate. Company visits can help demonstrate the excellence or innovation of the region's economic activities [13]. A marketing event at a production facility could meet consumers' demand for authenticity and satisfy demand for the origin of a consumer product brand [24]. For example, the pencil production company "Viarco" is part of the industrial companies network promoted by the tourism of São João da Madeira [4].

However, industrial tourism implies that companies subject themselves to public scrutiny [14], using tourism as a public relations tool [12], promoting not only products and brands but also countering fears about pollution and degradation [12].

Otgaar [13] considers that the development of industrial tourism presents opportunities for industries as a source of income and employment but, more importantly, as a marketing and public relations tool. This facet holds the potential to generate additional revenue, such as entrance tickets and on-site product sales.

Factory visits can also be seen as a recruitment strategy for younger visitors, especially groups of college students [41] who will soon enter the labor market.

Table 7 systematizes the tangible objectives of Industrial Tourism referred to by different authors:

Table 7. Intangible benefits of industrial tourism.

	Intangible Benifits	Authors
Economic	Alleviate the economic stress associated with the shift to a post-industrial society	Rudd and Davis [12]
	Promoting local economic regeneration	Rudd and Davis [12]; McBoyle [14]
Social and Environmental	Educate and motivate the public on an issue	Pavlakovič, Demir, Pozvek, & Turnšek [34]
	Show environmental integrity, green attitude	Ruban [39]; McBoyle [14]; Rudd and Davis [12]
Innovation	Develop a differentiation strategy.	Endo and Kurata [36]
	Increase competitiveness	Hospers [10]; X. Yang [20]
	Build a sustainable relationship with society	Otgaar [13]; Chow, Ling, Yen, & Hwang [15]
Marketing	Present the quality of your products	McBoyle [14]
	Promotional opportunity of brands, products, or regions	Chow, Ling, Yen, and Hwang [15]; Otgaar [13]
	Building relationships with customers.	Endo & Kurata [36]; Chow, Ling, Yen, and Hwang [15]
	Increase brand loyalty	Chow, Ling, Yen, and Hwang [15]
	Public relation tool to generate a positive image of the industry/company/region	McBoyle [14]; Rudd & Davis [12]; Nielsen [41]; Otgaar, [13]; Endo and Kurata [36]; Chow, Ling, Yen, and Hwang [15]
	Company recruitment strategies	Nielsen, 2012 [41]
	Strengthen reputation	Otgaar [13]; 15-Chow, Ling, Yen, and Hwang [15]
	Strengthen reputation	Otgaar [13]
	Opportunity to become familiar with the origins of a corporate brand	Endo and Kurata [36]

The tangible benefits mentioned by the authors are fundamentally economic, as can be seen in Table 8.

Table 8. Tangible benefits of Industrial Tourism.

Tangible Benefits	Authors
Increase profits	Rudd and Davis [12]
Gain greater market share	Rudd and Davis [12]
Support social causes -proceeds from IT donated to charity	Rudd and Davis [12]; Chow, Ling, Yen, and Hwang [15]
Generate additional income	Otgaar [13]

However, some less positive factors are also presented in the literature on the relationship between industrial tourism and companies. Liability and security concerns have led some companies to re-evaluate visits to their operating factories, moving more towards “museum company” type models [33]. Other reasons companies do not invest in industrial tourism are development costs and the threat of industrial theft and espionage [30,34]. Mitchell and Mitchell [32] presented the example of the Kellogg’s Company, which closed its cereal factories to visitors after it became aware of rivals taking photographs during a public tour.

Chow et al. [15] report that in Taiwan, many factories have become involved in industrial tourism by turning their manufacturing factories into tourism factories, which include visits to production plants, company museums, company visitor centers, and branded parks. However, not all industrial tourism sites have thrived. Some need help with problems such as a lack of attractiveness to visitors or insufficient visitors to support their operating costs [15].

Another reason that may cause companies not to organize company visits is the attractiveness of the production process [13], and it can sometimes cause damage to a company’s reputation. On the other hand, companies may also decide to keep their doors closed because they feel they cannot attract visitors [30].

According to Montenegro and Sousa [5] the company’s strategy and culture should be aligned with industrial tourism so that mechanisms (such as specialized human resources, adequate marketing strategies, adjusted production area, factory store, etc.) can be created in its internal dynamics to collect and take advantage of all the added value that this relationship can bring. Since tourism is not the core business of industrial companies, if it is not aligned with their strategy, this activity can be seen as a source of “noise” and “disturbance” to industrial daily life [5].

In summary, the negative points of Industrial Tourism for industrial companies are public scrutiny, development costs, security and security risks, threat of theft and industrial espionage, and source of “noise” and “disruption” to industrial daily life.

5. Marketing of Industrial Tourism

As a tourism product, industrial tourism competes with all the other existing products within national and international markets. Therefore, its promotion is a central aspect of the success of industrial tourism. Several initiatives are suggested to boost industrial tourism, which includes marketing industry travel, encouraging the resource sector to become a member of the regional tourism organization, marketing and beautifying their factories, and developing their tourism capacity and products [43].

In an attempt to define markets for industrial tourism, Kerstetter et al. [11] state that the use of thematic “identifiers” (for example, floods, railroads, battlefields) is a way for visitors to recognize and identify themes and storylines quickly.

On the other hand, Botella [9] mentions another form of organization, grouping tourist actions by zones or areas rather than by types of tourism (thermal, natural, rural, sports, etc.), which would allow them to unify from their diversification and generate new proposals.

Kerstetter et al. [11] state that promotional schemes could be developed that promote the visit of all the sites linked to the various themes, also promoting cooperation agreements

with agencies that offer a similar service or product, resulting in discounts for visitors and ultimately higher revenues for each attraction.

Industrial tourism is referred to by several authors who relate it to Experience Tourism. Mitchell and Mitchell [32] state that a consumer who witnesses the production of his favorite products may become a more loyal consumer to the brand and a credible spokesperson for the company as he shares the excitement of his experience. These authors consider consumer experience tourism as a strategic tool used to strengthen the connection between consumers and the brands they consume, and there is a growing number of companies maintaining factory visits to satisfy the intellectual curiosity of consumers as well as to create personal ties with the various stakeholders. According to Chow et al. [15], companies should offer tourists experiences that help increase brand loyalty.

According to Tynan and McKechnie [44], consumers are increasingly seeking holistic, authentic, multisensory, and memorable experiences that are associated with the product or service in question, leading to a rapid increase in the number of marketing efforts known as experience marketing, which attempts to establish a personal and meaningful interaction with the consumer.

Seeing active industry can be a means of dissemination by making it possible to transmit the experiences and processes that go from the production phase to the consumption of the product in person [9]. This interactive engagement is a significant determinant of the perceived value of mementoes, wherein the encounter within the manufacturing premises becomes seamlessly intertwined with the assessment of the keepsake [45]. This perceived value of mementoes possesses the capacity to transition into habitual purchasing behavior [45]. Consequently, the priority lies in creating hedonically appealing settings and, more crucially, in transforming initial tourists into dedicated, loyal customers through adept relationship management strategies.

In general, factories that host tourists compete in the tourism industry and the specific manufacturing industry where they manufacture and sell their products, and it is imperative and significant to link in-factory experiences to perceptions or attitudes towards tangible products [45]. According to Lee [18], the higher the satisfaction of visitors, the more likely they are to recommend and participate in in-factory tourism activities again.

Consumer goods companies often have communication platforms to attract visitors and advertise their products and business philosophies. Such platforms include corporate showrooms, museums, and factory tours [36].

Cristobal-Fransi et al. [46] report that although in some cases there is a lack of data on the websites about some of the services offered by companies linked to industrial tourism or the destination, the results confirm that this type of establishment, in general, meets the basic information needs of users in choosing their industrial tourism destination, which helps to reduce the uncertainty generated before a trip. On the other hand, the same authors mention that the sites analyzed use mainly traditional means of communication with their users, such as e-mail or telephone. Some sites also have more interactive features, such as social networks, blogs, or image and video exchange platforms, although to a lesser extent [46]. For the e-commerce dimension, Cristobal-Fransi et al. [46] concluded that the analyzed establishments still have a long way to go. With the implementation of online booking and payment mechanisms, they should also provide a greater connection with the users who access them and seek to generate feedback between themselves and their visitors, which will help improve the organization's management. It is also advisable to incorporate more informative content regarding the services offered and the tourism resources of the area [46].

Another study conducted by Bugarin et al. [47] states that the media in Serbia needs to sufficiently inform potential tourists about industrial tourist attractions and the potential of the tourism offer. The investment of specific resources in the marketing and development of industrial tourism would create additional demand, which would improve the tourism offer [47].

Amirkhani et al. [48], who studied oil industrial tourism and appropriate strategies for its promotion, make some recommendations—namely, local involvement; cooperation of tour guides from schools/educational institutions to train tour guides in industrial tourism; working with other regions to establish a network of oil and gas museums in the Middle East; cooperation of the various ministries and the private sector to organize tours; fairs and exhibitions on industrial tourism; cooperation of Petroleum Public Relations to attract and guide visitors and tourists; and the establishment of a network to promote industrial tourism. These authors also suggest a diversification strategy by integrating ecotourism with industrial tours; integrating archaeological tours with industrial tours; organizing industrial tours for people from the oil sector and schools; creating an oil and natural gas eco-museum; creating augmented reality for the introduction of natural gas and oil industry activities in existing museums; and creation of a petroleum industrial heritage route involving various regions.

Through a web content analysis, Yang [20] studied how old Chinese industrial cities promote industrial heritage tourism and post-industrial image reconstruction and found that heritage and industrial tourism are rarely promoted or mentioned on these websites. Traditional Chinese industrial cities tend to seek opportunities to participate in global competition rather than reflect and preserve their past through the process of urban development, suggesting to Yang [20] that more attention should be paid to the integration of culture into Chinese urban development in the future both in academic research and practice.

Bugarin et al. [47] report the statistically significant impact of digital marketing on post-industrial tourism development, noting that digital marketing catalyzes post-industrial tourism development and that implementing digital marketing tools in promoting post-industrial tourism services is necessary. Thus, cloud technologies and artificial intelligence would be the main drivers of individualization of post-industrial tourism services, eco-consciousness, computerization, and modernization of tourism business [49].

In summary, the literature identifies the following critical points for the promotion and dissemination of Industrial Tourism:

- “Thematic identifiers”: floods, railroads, etc.;
- Group tourism actions by air zones;
- Promotional programs involving several locations;
- Cooperation agreements with travel agencies. Include IT in the tour operators’ offer;
- Experience tourism as a strategic tool in the consumer/brand connection;
- Interactive experiences;
- Attach a “story” or “theme” to reflect the authenticity of the factory work;
- Consulting with specialized companies that make the connection between companies/tourists;
- Inventory and preliminary studies to identify the most attractive tourist spots;
- Elaboration of a strategic plan;
- Participation in trade fairs;
- Digital marketing (websites, mobile applications, etc.);
- Production of guides about the places/themes;
- Program of fiscal and economic incentives by the government.

6. Critical Success Factors of Industrial Tourism

The final category of analysis that emerged is related to the critical success factors of industrial tourism.

Swarbrooke [50] states that modern and traditional production processes can attract visitors. Different authors also mention other factors as being necessary for success, such as the attractiveness and accessibility of the site, accommodation and catering facilities, nearby attractions, provision of safety and emergency systems, and provision of information services [18].

Xie [51] states that it is necessary to analyze the feasibility of industrial tourism by identifying essential points where potential analysis (industrial screening), stakeholders and site authenticity are included.

According to Lee [52], accessibility is a critical issue that determines tourism potential, stating that no matter how attractive an industrial tourism destination is, if it is not accessible, both externally and internally, demand will drop to zero. Considers accessibility as the accessibility by public and private transport, connections to nearby attractions, opening days and hours, carrying capacity parking and capacity, entry fee, and internal transport facilities [52].

Satisfaction with providing safety and emergency systems should be recognized as the “basic sector-specific infrastructure” that ensures the overall factory visit experience is more enjoyable and rewarding [18]. Factory visits often require booking to enable visitors to minimize production interference and overcome potential safety and security issues. This issue is significant for those touring manufacturing facilities with heavy machinery and where the production of goods and services remains in operation [18].

Some companies certify their company according to a quality system related to Industrial Tourism. According to Martínez Carballo et al. [53], the reasons that lead companies to adopt these quality systems are internal or proactive causes (search for organizational and control benefits, search for improvements in competitive position, search for improvements in productivity and costs), and external or reactive causes (normative and legal aspects, market demands, incentives from public administrations).

Otgaar [13] suggests using the term “potential industrial tourism” to analyze the ability of an individual company and a region to attract industrial tourists. The potential power of industrial tourism depends on at least four factors: (1) the attractiveness of the company; (2) the supply of company visits; (3) the quality of the location and facilities for visitors; and (4) good promotion [30]. It is essential to conduct inventories and preliminary studies to identify the most attractive tourist spots and make their implications known completely and comprehensively [9].

As stated by Otgaar [13], good promotion is essential for an excellent ability to attract tourists; they state that the ability to attract industrial tourists depends on promotional activities, such as distributing brochures, posting posters, advertising, cooperation with local tourism services and word-of-mouth communication. Lee [18] reports that the main priority for industrial tourism factories is to focus on enriching and diversifying on-site attractions, both tangible (e.g., showroom) and intangible (e.g., observation of the production process, do-it-yourself experience).

Visited factories should differentiate themselves from the competition by creating a personalized experience on a physical level, demonstrating how complicated it is to produce the product and how the product can be used, physically engaging visitors in a series of production and personal activities by interacting with guides/employees, and most importantly, attaching a “story” and “theme” to reflect any authentic factory work experience [18]. Chow et al. [15] suggest that companies involved in industrial tourism should focus on offering tourists interactive experiences that enhance brand associations and on ensuring that operations (e.g., assembly line operations) are visible to visitors during visits to emphasize the high quality of whatever is being produced, thus eventually contributing to greater brand loyalty.

Botella [9] suggests partnering with stakeholders specializing in promotion and dynamism, promoting interaction between different venues. He presents as an example the emergence of a company, “Turinde-Visita a Industrias y Empresas,” that intends to respond to this gap: it works as an intermediary to bring together companies and visitors, but it is not limited only to this aspect, making specialized consulting in this area in compliance with the UNE 302001 standard for industrial tourism; it can carry out the study, analysis, planning, and realization of visits to companies as well as explanatory videos and adds to this a guide service, management of the dissemination, promotion of the activity, and the transfer of visitors.

The preparation of a strategic plan is essential for the success of industrial tourism to allow the decomposition of actions in a coordinated and complete way, framing the possibilities and difficulties of the proposals to be made, combining the heritage with the active industry to strengthen the information, generating correct signage to facilitate its location, taking care of accesses, and working on non-seasonal proposals that allow attracting different visitor profiles [9]. The same author mentions the importance of dissemination. For this, it is necessary to make the visit understandable, training both the guides and the workers who take on this task, producing handbooks and adding the aspect of industrial tourism to mobile applications, showing what has been done in this area in trade fairs and managing to include it among the offers of tour operators [9]. In the case of active companies, along with these points, it would be feasible to create a tax incentive program for those who join this initiative [9]. All this would be more easily channeled through creating a specific center or entity that would coordinate the actions and a program for rescuing industrial elements at risk [9].

All in all, according to the literature, we were able to identify the following critical success factors for industrial tourism:

- Attractive production process;
- Site accessibility;
- Accommodation and catering facilities;
- Nearby attractions;
- Security and emergency systems;
- Provision of information services;
- Visitor offers;
- Good promotion;
- Quality of location of facilities for visitors;
- Industrial tourism aligned with the strategy and culture of the companies.

7. Conclusions

This paper addressed a still-under-researched topic and intended to contribute to understanding how industrial tourism can contribute to strengthening the sustainability and competitiveness of companies. It therefore focused on industrial tourism in active industrial companies and how diversifying into this type of tourism could benefit them.

The concept of “industrial tourism,” often called “living industry tourism,” constitutes an innovative paradigm that fosters diversification among enterprises employing tourism to augment profitability and expand market influence. This approach encompasses multifaceted objectives such as recruitment endeavors, enhancement of corporate image, and bolstering public relations initiatives. However, considerations surrounding liability, security implications, and the specter of industrial espionage have prompted certain corporations to contemplate the feasibility of accommodating such visits.

The allure of this production process is a pivotal factor in determining the viability of granting access to tourist excursions. Interlinked with consumer experience tourism as a strategic instrument, industrial tourism fortifies the nexus between consumers and brands. This facet facilitates the cultivation of personal affinities with consumers and personnel, investors, residents, and other stakeholders.

Industrial tourism bestows various advantages upon industrial enterprises, encompassing environmental, social, and economic dimensions. Of paramount significance is its role as a powerful marketing tool and a catalyst for innovation within corporate entities. Instances of guided tours through production facilities proffer patrons the occasion to acquaint themselves with the genesis of a corporate marque. This mechanism substantiates itself as a productive means through which a company can fortify its brand equity and craft a distinctive strategic position. As a tourism product, industrial tourism competes with all other existing products in different national and international markets.

Marketing is presented in the literature on industrial tourism through two perspectives—marketing as a tool at the disposal of industrial tourism linked to the promotion and

dissemination of this tourism product and another perspective, industrial tourism as a marketing tool for industrial companies. Digital marketing and experience marketing appear in the literature as two essential tools for industrial tourism.

According to the literature, several factors need to be present for the industrial tourism proposals to be successful, namely factors related to the production process, accessibility, and safety. Apart from these factors, establishing partnerships and promotion are fundamental for industrial tourism's success. All these factors involve different areas within the companies and stakeholders, making industrial tourism in companies challenging.

The analysis showed that the literature has explored the theme qualitatively, mostly resorting to single-case studies. Researchers have focused more on regions, territories, heritage, and tourism demand, and active industrial companies need more case studies. Future studies should also analyze the topic in question more broadly and theoretically. Within the scope of the categories presented, more theoretical studies should be carried out, particularly on topics such as the management and implementation of industrial tourism in companies. Empirical studies and case studies are always critical, reinforcing the practical application of industrial tourism in different parts of the world, and it is interesting to maintain dialogue with companies and listen to their needs, which may provide helpful information for future research. We also suggest supporting and encouraging an analysis in which there is sharing between different disciplines and perspectives.

This study's limitations are related mainly to the scope of the analyzed articles, as it was based exclusively on scientific journals written in English, Spanish, or Portuguese—not contemplating articles in other languages—as well as documents in other formats (e.g., books, brochures). It would be important to carry out a study that covered a larger sample that met the specific criteria we defined for our study. However, the limitation of the sample further highlights the need for further research in this area.

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Appendix A

Table A1. Articles analyzed.

Title	Authors	Year	Source Title
Green tourism and Scottish distilleries	McBoyle G.,	1996	<i>Tourism Management</i>
Industrial heritage tourism at the Bingham Canyon copper mine	Rudd M.A., Davis J.A.,	1998	<i>Journal of Travel Research</i>
Industrial heritage attractions: Types and tourists	Kerstetter D., Confer J., Bricker K.,	1998	<i>Journal of Travel and Tourism Marketing</i>
Showing off what you do (and how you do it)	Mitchell M., Mitchell S.,	2001	<i>Journal of Hospitality and Leisure Marketing</i>
Exploring the sustainability of mining heritage tourism	Cole D.,	2004	<i>Journal of Sustainable Tourism</i>

Table A1. Cont.

Title	Authors	Year	Source Title
Developing industrial heritage tourism: A case study of the proposed jeep museum in Toledo, Ohio	Xie P.F.,	2006	<i>Tourism Management</i>
Industrial Tourism: Opportunities for City and Enterprise	Nielsen N.C.,	2012	<i>Tourism Geographies</i>
Towards a common agenda for the development of industrial tourism	Otgaar A.,	2012	<i>Tourism Management Perspectives</i>
Analysis of demand of olive tourism in Andalusia [Análisis de la demanda del oleoturismo en Andalucía]	Morales P.M.C., Guzmán T.J.L.-G., Cuadra S.M., Agüera F.O.,	2015	<i>Revista de Estudios Regionales</i>
Customer communication facilities with tourism: A comparison between German and Japanese automobile companies	Endo Y., Kurata Y.,	2015	<i>Advances in Culture, Tourism and Hospitality Research</i>
Key success factors on the implementation of the une 302001 standard on industrial tourism in the autonomus region of galicia [Factores chave de implantación/certificación da norma une 302001 de turismo industrial na comunidade autónoma de galicia]	Martínez Carballo M., Guillén Solórzano E., Portela Maquieira S.,	2015	<i>Revista Galega de Economía</i>
Tourist satisfaction with factory tour experience	Lee C.-F.,	2015	<i>International Journal of Culture, Tourism, and Hospitality Research</i>
In praise of iron grandeur: the sensibility of kōjō moe and the reinvention of urban technoscape	Amano I.,	2016	<i>Contemporary Japan</i>
An investigation of factors determining industrial tourism attractiveness	Lee C.-F.,	2016	<i>Tourism and Hospitality Research</i>
Building brand equity through industrial tourism	Chow H.-W., Ling G.-J., Yen I.-Y., Hwang K.-P.,	2017	<i>Asia Pacific Management Review</i>
Industrial heritage tourism development and city image reconstruction in Chinese traditional industrial cities: a web content analysis	Yang X.,	2017	<i>Journal of Heritage Tourism</i>
Flaming smokestacks: Kojo Moe and night-time factory tourism in Japan	Orange H.,	2017	<i>Journal of Contemporary Archaeology</i>
Renewable energy sources as an attractive element of industrial tourism	Beer M., Rybár R., Kal'avský M.,	2018	<i>Current Issues in Tourism</i>
Towards a Smart Tourism Business Ecosystem based on Industrial Heritage: research perspectives from the mining region of Rio Tinto, Spain	Perfetto M.C., Vargas-Sánchez A.,	2018	<i>Journal of Heritage Tourism</i>
The coexistence of tourism and mining: a strategic framework for cross-sectoral interaction	Moyle B.D., Moyle C.-L.J., Bec A.,	2018	<i>Current Issues in Tourism</i>
A business creation in post-industrial tourism objects: Case of the industrial monuments route	Szromek A.R., Herman K.,	2019	<i>Sustainability (Switzerland)</i>
The analysis of sustainable development strategies for industrial tourism based on IOA-NRM approach	Lin C.-L.,	2019	<i>Journal of Cleaner Production</i>

Table A1. Cont.

Title	Authors	Year	Source Title
Three rising tourism directions and climate change: Conceptualizing new opportunities	Ruban D.A., Molchanova T.K., Yashalova N.N.,	2019	<i>e-Review of Tourism Research</i>
Industrial Heritage 2.0: Internet presence and development of the electronic commerce of industrial tourism	Cristobal-Fransi E., Daries N., Martin-Fuentes E., Montegut-Salla Y.,	2020	<i>Sustainability</i> (Switzerland)
Industrial tourism: moderating effects of commitment and readiness on the relationship between tourist experiences and perceived souvenir value	Lin C.-H.,	2020	<i>International Journal of Culture, Tourism, and Hospitality Research</i>
Future strategies for promoting tourism and petroleum heritage in Khuzestan Province, Iran	Amirkhani S., Torabi Farsani N., Moazzen Jamshidi H.,	2021	<i>Journal of Tourism Futures</i>
Industrial heritage tourism as a driver of sustainable development? A case study of steirische eisenstrasse (Austria)	Harfst J., Sandriester J., Fischer W.,	2021	<i>Sustainability</i> (Switzerland)
Post-industrial tourism as a driver of sustainable development	Kuzior A., Lyulyov O., Pimonenko T., Kwilinski A., Krawczyk D.,	2021	<i>Sustainability</i> (Switzerland)
Potentials of Cultural—Historical and Tourism Heritage for the Development of Tourism in the Timok Region	Bugarin D., Veličković S.K., Tucović M.,	2021	Serbian Journal of Management
Role of tourism in promoting geothermal energy: Public interest and motivation for geothermal energy tourism in slovenia	Pavlaković B., Demir M.R., Pozvek N., Turnšek M.,	2021	<i>Sustainability</i> (Switzerland)
Managers' perception of the effects of creative and industrial tourism on industrial companies	Montenegro Z., Sousa C.,	2021	<i>Proceedings of the International Conference on Tourism Research</i>
The underground city: The tourism potential of water and sewage infrastructure: The example of Poland	Dębczyńska K., Piasecki A.,	2021	<i>Bulletin of Geography. Socio-economic Series</i>

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