



INTEGRATING INDUSTRIAL TOURISM INTO ACTIVE INDUSTRIAL COMPANIES: ADVANTAGES, BARRIERS, AND STRATEGIC APPROACHES USING THE DELPHI METHOD

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ABSTRACT

Objective: This article explores how to incorporate industrial tourism into active industrial companies, whose main focus is industrial production rather than tourism. In contrast to most of the research on industrial tourism, this article focuses on the point of view of active industrial companies, the so-called "living industry", to identify the impact of this product on industrial companies, as well as strategies and barriers to its implementation.

Theoretical Framework: Industrial tourism includes visits to industrial sites that have ceased their operations, industrial companies currently in operation and future industrial establishments, as well as visits to other destinations with an industrial theme, such as industrial technology hubs, museums, industrial tourist routes, educational institutions with industrial programs, laboratories and similar sites.

Method: The Delphi methodology was employed, involving 27 experts, both academics and practitioners, with different backgrounds, such as Anthropology, Tourism, Business Sciences, Marketing, Economics, International Public Relations, History, Museology, Cultural Heritage, Art and History.

Results and Discussion: The results provide new knowledge on the advantages, weaknesses, strategies and barriers to implementing Industrial Tourism in active industrial companies, promoting the development of business strategies and future studies on this subject.

Implications of the Research: The research contributes to understanding the challenges to implementing this tourism product, offering a basis for analyzing and formulating successful business strategies.

Originality/Value: The study proposes a practical approach to the applicability of industrial tourism to industrial companies, providing relevant information for industrial companies, government bodies and other stakeholders.

Keywords: Industrial Tourism, Industrial Companies, Delphi Method, Strategies, Barriers.

INTEGRAR O TURISMO INDUSTRIAL EM EMPRESAS INDUSTRIAIS ATIVAS: VANTAGENS, BARREIRAS E ABORDAGENS ESTRATÉGICAS UTILIZANDO O MÉTODO DELPHI

RESUMO

Objetivo: Este artigo explora como incorporar o turismo industrial em empresas industriais ativas, cujo foco principal é a produção industrial e não o turismo. Em contraste com a maior parte da investigação sobre o turismo industrial, este artigo centra-se no ponto de vista das empresas industriais ativas, a chamada "indústria viva", para

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identificar o impacto deste produto nas empresas industriais, bem como estratégias e barreiras à sua implementação.

Referencial teórico: O turismo industrial inclui visitas a locais industriais que cessaram as suas operações, empresas industriais atualmente em funcionamento e futuros estabelecimentos industriais, bem como visitas a outros destinos com um tema industrial, como centros de tecnologia industrial, museus, rotas turísticas industriais, instituições de ensino com programas industriais, laboratórios e locais semelhantes.

Método: A metodologia de Delphi foi empregue, envolvendo 27 especialistas, tanto académicos como profissionais, com diferentes origens, como Antropologia, Turismo, Ciências Empresariais, Marketing, Economia, Relações Públicas Internacionais, História, Museologia, Herança Cultural, Arte e História.

Resultados e conclusões: Os resultados fornecem novos conhecimentos sobre as vantagens, os pontos fracos, as estratégias e as barreiras à implementação do Turismo Industrial em empresas industriais activas, promovendo o desenvolvimento de estratégias empresariais e estudos futuros sobre esta temática.

Implicações da pesquisa: A investigação contribui para a compreensão dos desafios da implementação deste produto turístico, oferecendo uma base para a análise e formulação de estratégias empresariais de sucesso.

Originalidade/valor: O estudo propõe uma abordagem prática da aplicabilidade do turismo industrial às empresas industriais, fornecendo informações relevantes para as empresas industriais, os organismos governamentais e outros stakeholders.

Palavras-chave: Turismo Industrial, Empresas Industriais, Método de Delphi, Estratégias, Barreiras.

INTEGRACIÓN DEL TURISMO INDUSTRIAL EN EMPRESAS INDUSTRIALES ACTIVAS: VENTAJAS, BARRERAS Y PLANTEAMIENTOS ESTRATÉGICOS MEDIANTE EL MÉTODO DELPHI

RESUMEN

Objetivo: Este artículo explora cómo incorporar el turismo industrial a las empresas industriales activas, cuyo foco principal es la producción industrial y no el turismo. A diferencia de la mayoría de las investigaciones sobre turismo industrial, este artículo se centra en el punto de vista de las empresas industriales activas, la denominada «industria viva», para identificar el impacto de este producto en las empresas industriales, así como las estrategias y barreras para su implantación.

Quadro teórico: El turismo industrial incluye visitas a emplazamientos industriales que han cesado su actividad, empresas industriales actualmente en funcionamiento y futuros establecimientos industriales, así como visitas a otros destinos con temática industrial, como centros tecnológicos industriales, museos, rutas turísticas industriales, instituciones educativas con programas industriales, laboratorios y emplazamientos similares.

Método: Se empleó la metodología Delphi, en la que participaron 27 expertos, tanto académicos como profesionales, con diferentes formaciones, como Antropología, Turismo, Ciencias Empresariales, Marketing, Economía, Relaciones Públicas Internacionales, Historia, Museología, Patrimonio Cultural, Arte e Historia.

Resultados y discusión: Los resultados aportan nuevos conocimientos sobre las ventajas, debilidades, estrategias y barreras para la implantación del Turismo Industrial en empresas industriales activas, promoviendo el desarrollo de estrategias empresariales y futuros estudios sobre esta materia.

Implicaciones de la Investigación: La investigación contribuye a comprender los retos de la implantación de este producto turístico, ofreciendo una base para analizar y formular estrategias empresariales de éxito.

Originalidad/Valor: El estudio propone un enfoque práctico de la aplicabilidad del turismo industrial a las empresas industriales, proporcionando información relevante para las empresas industriales, los organismos gubernamentales y otras partes interesadas.

Palabras clave: Turismo Industrial, Empresas Industriales, Método Delphi, Estrategias, Barreras.



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1 INTRODUCTION

Industrial tourism has been recognized as a niche market, offering an alternative to traditional mass tourism. This form of tourism is based on the exploitation of industrial heritage, as highlighted by (Pardo Abad, 2017), ranging from decommissioned production facilities, such as company museums, to fully operational production units, and even projects in development for the future, as noted by (author, 2022).

In this way, Industrial Tourism encompasses a wide range of tourist activities in which industrial knowledge, both tangible and intangible, plays a central role. Due to their uniqueness, such activities are arousing interest both for their educational and tourist value, as indicated by (Moral-Moral & Fernandez-Alles, 2019). Regional enhancement, as well as the enhancement of other tourism products can be considered as driving forces to its growth. In particular business tourism could benefit from the existence of differentiating tourist attractions (Marques & Santos, 2016), which include industrial attractions.

Although it is recognized that Industrial Tourism encompasses visits to production units that are still in operation, this specific branch of industrial tourism remains under-examined in the academic sphere, revealing a significant gap in the approach from the perspective of the industrial company. Previous literature suggests that the impact of opening up industrial companies to tourism is strongly influenced by the strategies adopted by these companies (author, 2020,2021). According to Zhang, Cenci, Becue, Koutra & Ioakimidis (2020), whose research included a meta-analysis, the main research topics on industrial tourism in Europe are related to industrial heritage and the formation of communities around this heritage, tourist exploitation, the protection of industrial heritage and the adoption of new technologies. This panorama highlights the urgent need to develop more studies from the perspective of industrial companies.

This paper focuses on industrial tourism of the production or factory type and seeks to understand the advantages, disadvantages, strategies and barriers to implementing this tourism product in industrial companies. The main aim is to present proposals for the implementation of industrial tourism in active industrial companies, and to address how these two different economic sectors - the secondary sector (industry) and the tertiary sector (services) – can



complement each other in this context.

Therefore, this research has two main objectives:

1. To explore the main development strategies and proposals related to the implementation of industrial tourism in active companies;
2. To develop a SWOT analysis related to the implementation of industrial tourism in active companies.

The paper is structured as follows: the next section presents the framework of the research, followed by a presentation of the methodology adopted and the respective characterization of panel of experts. The results section discuss the advantages, disadvantages, barriers and strategies for implementing industrial tourism in industrial companies and the main partnerships needed. The presentation and analysis of the results ends with an integrative analysis of the previous approaches. Finally, the main conclusions, limitations and future lines of research are presented.

2 THEORETICAL FRAMEWORK

Over the years, several articles have been published which, in a scattered way, identify various possible objectives to be achieved with Industrial Tourism, namely presenting the quality of its products (McBoyle, 1996); promotional opportunity (Chow, Ling, Yen, & Hwang, 2017; Otgaar, 2012; Otgaar, Bergm & Ferg, 2008); building relationships with customers (Chow et al., 2017; Endo & Kurata, 2015); increasing brand loyalty (Chow et al., 2017); company recruitment strategies (Nielsen, 2012); showing environmental integrity and green attitude (McBoyle, 1996; Rudd & Davis, 1998); developing a differentiation strategy (Endo & Kurata, 2015), increasing profits (Rudd & Davis, 1998); and gaining a greater market share (Rudd & Davis, 1998). The different articles adopt various perspectives, whether in terms of the development of countries, regions and/or companies.

From the point of view of companies, it is acknowledge that they use tourism as part of their business operations to boost profits, increase their market share, relieve economic stress, affirm environmental integrity (Edwards & Llurdés I Coit, 1996; McBoyle, 1996). Some case studies present examples where companies have chosen to donate all tourism revenues to social causes (Rudd & Davis, 1998). Visits to industrial attractions allow visitors to come into contact with the quality of products and their environmental integrity, making industrial tourism a way of obtaining a return on environmental investments made (McBoyle, 1996).



According to Otgaar (2012) and Nielsen (2012) company visits can be useful for maintaining or improving the image of companies and industries. A marketing event in an industrial company can meet consumers' demand for authenticity and satisfy their curiosity about the origin of a brand (Endo & Kurata, 2015). In fact, visits to production facilities can provide customers with an opportunity to familiarize themselves with the origins of a brand, making this an effective way for companies to reinforce their brand and develop differentiation strategies (Endo & Kurata, 2015).

However, responsibility and security concerns have led some companies to consider their form of exposure, changing factory visits to visits to "museum companies" (Lukas, 1999; Botella, 2018). Other issues that lead companies to look more negatively on Industrial Tourism are development costs, and the threat of theft and industrial espionage (Botella, 2018).

The success of industrial tourism in active industrial companies is not always guaranteed and, as an example, a study carried out by Chow et al. (2017) reports that not all industrial tourism sites are thriving, with some facing problems such as a lack of attractiveness for visitors, not receiving enough visitors to support their operating costs. This highlights the idea of the uncertainty of how the brand can be promoted (Chow et al., 2017).

In general, factories that receive tourists not only compete in the tourism industry, but also compete in the specific manufacturing industry where they make and sell their products, and it is imperative and significant to link in-factory experiences to perceptions or attitudes towards tangible products (Lin, 2020).

Given this duality of tourism and industry, the literature offers several suggestions on how industrial tourism proposals can be presented to the public. These include the using thematic "identifiers" (Kerstetter, Confer & Bricker, 1998) where different proposals are grouped by themes, thus creating promotional schemes that encourage visits to all locations under the same theme; promoting cooperation agreements with agencies that offer similar services or products (Kerstetter et al., 1998); encouraging the development of experiential tourism proposals (Mitchell & Mitchell, 2001); and creating interactive experiences (Chow et al., 2017) to foster a stronger connection with visitors. Botella (2018) states that "living" the active industry can disseminate it by allowing the first-hand transmission of experiences and processes.

According to Otgaar (2012) the success of industrial tourism depends on the attractiveness of the company(ies), the offer of company visits, the quality of the facilities for visitors and good promotion. The attractiveness of the production process was also found to be a relevant factor (Swarbrooke, 2002)



In addition to the company characteristics, there are other important factors for success related to its location, such as attractiveness and accessibility of the site (Lee, 2015; Otgaar, 2008); accommodation and catering facilities (Lee, 2015); nearby attractions (Lee, 2015); security and emergency systems (Lee, 2015); information services (Lee, 2015).

The design and implementation of a strategic plan is of paramount importance for the success of Industrial Tourism, as it allows for the meticulous and comprehensive articulation of actions, considering the variables and challenges inherent in the proposals in question (Botella, 2018). This approach aims to harmonize heritage resources with the dynamics of the industry in activity, with the aim of strengthening the dissemination of relevant information, promoting accurate signage to facilitate location, ensuring accessibility and developing proposals of a continuous nature, capable of attracting a diversity of visitors (Botella, 2018).

The same author emphasizes the importance of effective dissemination, highlighting the need to make the visit comprehensible to both guides and employees. This implies the production of informative guides and the integration of the industrial tourism aspect into the mobile applications in use, demonstrating the progress made in this sphere at trade fairs and seeking its inclusion in the offers of tour operators (Botella, 2018). In the context of active companies, it is also suggested that it would be feasible to set up a tax incentive program for those who join this initiative (Botella, 2018).

Digital promotion emerges as a key element for the success of industrial tourism, as highlighted by Cristobal-Fransi, Daries & Montegut-Salla (2020). These authors noted that the establishments analyzed still lack a robust digital presence and need to implement online booking and payment systems. In addition, it is recommended to establish a closer connection with users, seeking to generate reciprocal feedback between them and visitors. Cristobal-Fransi et al. (2020) also suggest the inclusion of more informative content, both about the services offered and the tourist resources available in the region.

In turn, a study conducted by Bugarin, D., Veličković, S. K., & Tucović, M. (2021) in Serbia points out that the media has not adequately informed potential tourists about the attractions of industrial tourism and the potential of the associated tourist offer. Targeted investments in the marketing and development of industrial tourism could stimulate additional demand, resulting in the expansion and improvement of the tourism offer as a whole (Bugarin et al., 2021).

All in all, the literature review offers relevant insights on the advantages and drawbacks of integrating tourism activities in active industrial companies, as well as on the factors and



strategies relevant for its success. The empirical analysis will assess their relevance by gathering insights from experts in the field.

3 METHODOLOGY

3.1 CONTEXT OF THE DELPHI METHOD

The study adopts a qualitative approach and uses the Delphi Methodology, which has allowed to obtain information from the interviewees about what they freely think about the topic of industrial tourism in active industrial companies.

The Delphi method is widely recognized and adopted as a scientific research approach, whose validity and effectiveness have been extensively proven, for collecting qualitative data from experts in a particular field of study (Hsu & Sandford, 2007). This method is particularly relevant in initial theory building, providing a framework for identifying critical variables and generating pertinent hypotheses (Okoli & Pawlowski, 2004). The Delphi technical methodology has been used in different areas, namely in the areas of tourism (Lin & Song, 2015) and management (Hsu & Sandford, 2007).

According to Landeta (2006) the main characteristics of this methodology are: it is a repetitive process; maintains the anonymity of the participants; allows controlled feedback and statistical response from the group; and all opinions are part of the final response.

The Delphi method stands out as a robust and effective approach for building consensus and making informed decisions. The method is based on the principle that the decisions of a structured group of individuals are more accurate than those of unstructured groups (Rowe and Wright, 2001). Participants respond to questions without direct interaction. Panel members remain anonymous to each other throughout the study, and their comments are consistently anonymized at each stage of the investigation. This process effectively eliminates interpersonal dynamics inherent in face-to-face decision-making scenarios.

As for the size of the panel, there no consensus among the scholars; it ranges from seven to more than a thousand participants (Hasson, Keeney & McKenna, 2000; Walker & Selfe, 1996; Linstone & Turof, 1975). De decision on the number of participants may be influenced by the complexity of the issue under analysis and the resources available (Delbecq & Gustafson, 1975; Hasson et al., 2000).



It is important to note that the Delphi method does not require the panel of experts to be representative of a sample, unlike statistical studies, since the validity of the results depends on the quality, not the quantity, of the panel members (Powell, 2003).

3.2 SELECTION OF PARTICIPANTS

In this study, the choice of participants was guided two eligibility criteria that they should cumulatively satisfy: (i) possess professional or academic experience in the industrial and/or tourism sector; (ii) have extensive knowledge of the topic under discussion. After a thorough analysis of potential stakeholders who met the eligibility criteria, invitations to participate were made via telephone or email. In composing the panel, an effort was made to include various stakeholders who could influence the industry-tourism relationship.

Twenty-seven individuals agreed to participate, thus constituting the initial panel. These experts were strategically chosen because of the wide knowledge in the subject and/or area of research and constitute what is called the Delphi panel (Landeta & Barrutia, 2011; Landeta et al., 2011; Paré, Cameron, Poba-Nzaou & Templier, 2013). This panel comprises specialists from six distinct areas: five academics; five representatives from industrial companies; five individuals from industrial museums; four individuals from Regional Tourism Associations/Entities; four travel agents and four members from public entities. The majority of the specialists (99.97%) had completed higher education, with around 22% having a PhD. Table 1 shows the different scientific background of the panel of experts, reflecting a broad and diverse approach to the subject. The average age of the experts is 51, with ages ranging from 27 to 71. There were 9 men and 18 women.

Table 1

Delphi panel background areas

General area	Specific área
History and heritage	Museology
	History
	Anthropology
	Archaeology
	Cultural Heritage
Business sciences	Business Sciences
	Economics
	Project Management
	Management
	Marketing
Engineering	International Relations
	Mining Engineering



	Electrical and Computer Engineering / Informatics Electromechanical Engineering
Tourism	Hotel Management and Tourism Tourism
Other	Geography Sociology Translation Sport

The composition of the panel meets the recommendations of the literature, maintaining a high level of expertise while also ensuring diversity in its composition. Delbecq & Gustafson (1975) argued that the diversity of personalities and perspectives among panel members would result in higher quality consensus than in homogeneous groups. Rowe & Wright (1999) support this approach, recommending the selection of experts from different fields to ensure a broad knowledge base.

3.3 PROCEDURES AND DELPHI ROUNDS

Data collection was conducted through questionnaires sent to the panel, to be answered anonymously in successive rounds and as independently as possible to obtain a final consensus (Hsu & Sandford, 2007; Rowe & Wright, 1999).

The study involved two rounds of web-based questionnaires, all conducted via email between February and June 2023. The individual responses of each expert were collected using Google Forms, thus allowing for better response rates and anonymity of the members' responses.

In the first round, participants were asked four open-ended questions related to tourism in industrial companies, specifically addressing the advantages, disadvantages, barriers, and strategies. In the second round, the lists of opinions and suggestions obtained in the first round were compiled and organized based on their frequency. In the second round, participants were asked to indicate, from the provided list, the five options they considered most important or relevant for each question.

It should be noted that the sample size decreased between rounds. From the first to the second round, there were four dropouts, resulting in 23 participants.



4 RESULTS

4.1 STRATEGIC MANAGEMENT OF INDUSTRIAL TOURISM IN SMEs

According to the panel's answers, it is possible to identify several advantages and disadvantages regarding the implementation of industrial tourism in active industrial companies.

Regarding the advantages, Table 2 shows that the experts valued different areas, however. It is visible that the main advantages of industrial tourism for industrial companies are centered on marketing (including product and brand promotion) and social aspects. The analysis of the experts' comments reveals that the associated benefits can vary depending on the size and type of company. For example, the GALP refinery's advantages are primarily related to social responsibility and the demystification of prejudices concerning the activity and its impacts, particularly environmental ones. In contrast, for Viarco, a family business SME, these benefits are related to revenue's source and a means of promotion.

Table 2

The main advantages of industrial tourism for companies

Áreas	The main advantages of industrial tourism for companies	Frequency	Percentage of experts
Marketing	Enhancement and promotion of the brand and its products	22	95,65%
	Promoting an emotional connection with customers	9	39,13%
	Contact with new customers and stakeholders	9	39,13%
	Visibility among professionals in the sector	2	8,70%
Social	Participation in the tourist and economic dynamics of the area in which they operate	15	65,22%
	Practicing social responsibility	8	34,78%
	Sharing knowledge with the public outside the company,	8	34,78%
	Openness and connection to society	8	34,78%
Strategy	Business diversification (tourism)	8	34,78%
Human Resources	Motivating and valuing employees - internal marketing	7	30,43%
	Job creation	1	4,35%
Financial	Extra source of revenue,	4	17,39%
	Access to funding to improve infrastructure and equipment	2	8,70%
Innovation	Source of creative and innovative inputs	5	21,74%
Logistics	Decrease in seasonality	5	21,74%



Table 3 shows the disadvantages for industrial companies resulting from the implementation of Industrial Tourism identified by the experts. The experts pointed out disadvantages in different areas, mainly associated in logistics (31%), finance (22%) and human resources (17%), including the potential for disruptions to the company's operations and production chain, the need to allocate more human resources, the initial investment and implementation costs and the additional costs for facility maintenance and adaptation. According to one expert, companies do not face disadvantages from the introduction of industrial tourism activities as long as best practices are followed and implemented.

Table 3

The main disadvantages of industrial tourism for companies

Areas	The main disadvantages of industrial tourism for companies	Frequency	Percentage of experts
Logistics	Disruptions to the production chain and the operation of the company	13	56,52%
	Seasonality and visiting times	8	34,78%
	Difficulty in implementation	7	30,43%
	Increased bureaucracy	5	21,74%
Human Resources	Need for more human resources to allocate to industrial tourism	13	56,52%
	Human resources exposed to outside eyes	5	21,74%
Financial	Initial investment and implementation costs	12	52,17%
	Increased cost of maintaining and adapting facilities	12	52,17%
Safety and Hygiene	Extra care with safety and hygiene	8	34,78%
	Industrial espionage	7	30,43%
Marketing	Risk of companies becoming artificialized and staged spaces	5	21,74%
	Little buy-in	4	17,39%
	Trivialization of processes through constant presentation	2	8,70%
	Risk of negative perception of the production process	2	8,70%
	Loss of focus on core business	4	17,39%
Social	Environmental damage	1	4,35%

There are areas shared by the advantages and disadvantages pointed out by the experts. This is the case of Marketing and Social Benefits, where the advantages seem to outweigh the disadvantages, and of Logistics, Finance, Human Resources and Health and Safety, where the disadvantages seem to outweigh the advantages.

In terms of Human Resources, companies will need to take into account whether or not opening doors to people outside the company will be beneficial, depending on the type of people



working there. While this external exposure could be viewed negatively by employees, it could also serve as a source of motivation and appreciation for them.

The same is true of business strategy, where industrial tourism may help diversify a company's offerings or, conversely, may work against it by drawing attention away from the core business. Companies should consider and evaluate all these factors.

4.2 THREATS AND OPPORTUNITIES FOR IMPLEMENTING INDUSTRIAL TOURISM IN SMEs

A number of strategies and actions were suggested by the experts to promote industrial tourism in companies. The most widely agreed upon (Table 4) were those that dealt with promoting industrial tourism in different markets and through different media, establishing or joining an industrial tourism network, and having a single platform for the promotion of this travel commodity.

Table 4

Main opportunities or specific actions to boost industrial tourism in companies

Areas	Main strategies or specific actions to boost industrial tourism in companies	Frequency	Percentage of experts
Marketing	Promotion of Industrial Tourism on the national and European market and in different communication channels	14	60,87%
	Existence of a single platform for promotion/branding with the various tour operators	12	52,17%
	Drawing up a manual of good practices with examples of success (national and international)	5	21,74%
	Creation of a factory store	4	17,39%
	Benchmarking actions in mature industrial tourism destinations	2	8,70%
	Internal investment by companies to publicize their proposals	1	4,35%
Partnerships	Creation/association with a national and international industrial tourism network	12	52,17%
	Establishing partnerships with tourist agents and hotels	6	26,09%
	Public-private partnerships	5	21,74%
	Simplicity and proximity in relations with municipalities and government bodies	4	17,39%
Training and support in	Promotion of training activities in companies on Industrial Tourism	10	43,48%



setting up the activity	Support for defining itineraries and guided tours	7	30,43%
	Creating a storytelling about the company	5	21,74%
	Industrial tourism offer based on experience tourism	5	21,74%
	Use of technology to create immersive and interactive experiences	4	17,39%
	Creation of a regional team to coordinate investment and practical implementation of Industrial Tourism in companies	3	13,04%
	Implementation of Industrial Tourism proposals following the Portuguese Quality Standard 4556:2017	2	8,70%
	Visits in more than one language	2	8,70%
	Creation of incentives, tax benefits and financing programs	11	47,83%
Finance			

If we look at the areas of action, we can see that the opportunities and actions proposed by the experts are essentially in the areas of Marketing (33%) and training and support for companies in the practical implementation of Industrial Tourism (33%). Partnerships are also highly valued by experts (26%).

In terms of who should take action and implement the proposals to promote industrial tourism in companies, 70% of the responses refer to actions that are the responsibility of the government, local authorities and associations. The remaining 30% are the responsibility of companies.

As for the threats to the development of Industrial Tourism in companies, the experts identified a wide range, with the greatest consensus on the main barriers being the cost of implementation (52%), limited visiting hours (43%), the scarcity and need for specific training of human resources (43%) and the lack of knowledge about what Industrial Tourism is (43%), as can be seen in the Table 5.

Table 5

Main threats to the development of industrial tourism in companies

Areas	Main threats to the development of industrial tourism in companies	Frequency	Percentage of experts
Financial	Implementation costs	12	52,17%
	Lack of incentives and difficulty in obtaining bank financing	4	17,39%
Logistics	Limitations on company timetables	10	43,48%
	Difficulty in creating and implementing visit routes and guides	7	30,43%



	Nature of industrial activity makes visits impossible (dust, noise, danger)	6	26,09%
	Shortage of human resources and need for training	10	43,48%
Human Resources	Employee resistance and discomfort (exposure vs. privacy)	2	8,70%
	Visits conducted in only one language	2	8,70%
	Non-involvement of employees in the process	1	4,35%
Lack of knowledge about industrial tourism	Lack of knowledge about industrial tourism	10	43,48%
	Industrial tourism is not part of the company's strategy and culture	9	39,13%
	Need for confidentiality of internal processes and risk of industrial espionage	9	39,13%
Business strategy	Size of the company	4	17,39%
	Failure by the company to comply with some legal requirements (e.g. environmental sustainability)	2	8,70%
	Little marketing of Industrial Tourism through private agents	7	30,43%
Marketing	Poor promotion of industrial tourism activities	2	8,70%
Safety and Hygiene	Extra security procedures	5	21,74%
Bureaucracy	Excessive bureaucracy	4	17,39%
Partnership	Lack of receptiveness to partnerships	4	17,39%
Acessibility	Location and accessibility of the company	2	8,70%
Assets	Lack of attractiveness of the company's industrial assets	2	8,70%

Looking at the areas of activity, it can be seen that the most significant threats relate to the areas of the company's business strategy (21%), logistics (20%), finance (14%) and human resources (13%). It's interesting to note that almost half of the experts (43%) consider that a lack of knowledge about what industrial tourism is can be a significant barrier to its implementation.

The experts identified both opportunities and threats to the adoption of industrial tourism in industrial companies in the areas of partnerships, marketing, and finance. Regarding marketing, it is evident that the strategies outweigh the barriers that have been identified; however, in finance, a balance exists between the two. As a result, there is duality in the analysis of the financial component, which can be viewed as both a opportunity and a threats.

4.3 KEY PARTNERSHIPS FOR THE SUCCESS OF INDUSTRIAL TOURISM

An analysis of the most important partnerships mentioned by the experts shows that they value the role of the government and associated bodies in boosting industrial tourism, which



was mentioned by more than 73% of the experts. Experts also value partnerships between companies and travel agencies and tour operators, with 17 experts indicating them as fundamental to the success of industrial tourism.

Table 6

Key stakeholders for the success of industrial tourism in companies

Key stakeholders for the success of industrial tourism	Frequency	Percentage of experts
National public administration (e.g. Turismo de Portugal, Ministry of Economy, Directorate General for Cultural Heritage, IAPMEI)	19	82,61%
Portuguese Industrial Tourism Network	19	82,61%
Regional public administration (e.g. town halls, parish councils, regional tourism bodies, regional tourism boards)	17	73,91%
Travel agencies and tour operators	17	73,91%
Companies	7	30,43%
Schools, Universities and Research Centers	7	30,43%
Company employees	6	26,09%
Museums, technology and industrial sites	6	26,09%
Industrial Heritage Protection Associations	5	21,74%
Tourism associations	4	17,39%
Local hotels and restaurants	4	17,39%
Funding bodies	3	13,04%
Business associations	2	8,70%
Local community	2	8,70%

This analysis shows that there is a strong expectation of government action for the implementation and success of Industrial Tourism in industrial companies, although other entities are also relevant.

4.4 SWOT ANALYSIS

Table 7 shows a SWOT analysis derived from the answers given by more than 30% of the experts in relation to the various categories of analysis. The aim is to summarize the results found above, enabling a more global analysis of the study carried out.

Table 7

Strengths, weaknesses, opportunities and threats of Industrial tourism to companies

STRENGTHS	WEAKNESSES
• Enhancement and promotion of the brand and its products • Participation in the tourist and economic dynamics of the area in which they operate • Promoting an emotional connection with customers,	• Disruptions to the production chain and the operation of the company • Need for more human resources to allocate to industrial tourism • Initial investment and implementation costs



• Contact with new customers and stakeholders • Business diversification (tourism) • Practicing social responsibility • Sharing knowledge with the public outside the company, • Openness and connection to society • Motivating and valuing employees - internal marketing,	• Increased cost of maintaining and adapting facilities • Seasonality and visiting times • Extra care with safety and hygiene • Industrial espionage • Difficulty in implementation
OPPORTUNITIES	THREATS
• Promotion of Industrial Tourism on the national and European market and in different communication channels • Creation/association with a national and international industrial tourism network • Existence of a single platform for promotion/branding with the various tour operators • Creation of incentives, tax benefits and financing programs • Promotion of training activities in companies on Industrial Tourism • Support for defining itineraries and guided tours	• Implementation costs • Limitations on company timetables • Shortage of human resources and need for training • Lack of knowledge about industrial tourism • Industrial tourism is not part of the company's strategy and culture • Need for confidentiality of internal processes and risk of industrial espionage • Difficulty in creating and implementing visit routes and guides • Little marketing of Industrial Tourism through private agents

The experts identified various positive (strengths) and less positive points (weaknesses), and also proposed various strategies. In this table we can see the most relevant points in the relationship between industry and tourism, where the main strengths of Industrial Tourism are in the areas of Marketing, Social and Human Resources. Strategy, corporate culture and company logistics can be considered barriers or weaknesses to the implementation of industrial tourism in industrial companies. The same area can be found in more than one quadrant, and these can have positive and negative points simultaneously, such as human resources (strength, weakness and threat) and marketing (strength, opportunity and threat).

The advantages of marketing for an industrial company are many. In this area, it was possible to identify some less positive points, which are accompanied by a wide range of opportunities aimed at minimizing or even eliminating them, such as the establishment of partnerships, the creation of a factory store, the creation of attractive proposals for visitors and the analysis of other existing proposals, as well as the company's own investment in publicizing its proposals. These results are in line with the literature already presented, where, for example, Kerstetter et al (1998) suggested partnership agreements to boost industrial tourism; Mitchell & Mitchell (2001) proposed experience tourism and Chow et al (2017) interactive experiences. On the other hand, there are proposals not identified in the literature on industrial tourism, such as the need for the company itself to invest in promoting its tourism offer.



On a social level, the experts presented many advantages to boosting industrial tourism within industrial companies, where it is possible to stimulate a close relationship with society, benefits that have also been identified in the literature, namely by Pavlakovič et al. (2021), Moral-Moral & Fernandez-alles (2019) and Prat & Valiente (2012). The disadvantage identified was the possibility of environmental damage from industrial tourism. We believe that, despite this possibility, Industrial Tourism is currently considered a niche tourism, not promoting the mass influx of tourists in the regions that promote this tourism product, and is even considered a way of presenting the environmental integrity and green attitude of companies to the outside world (Pavlakovič et al., 2021).

In the Human Resources area, it is important that employees are involved in the dynamics of industrial tourism and feel comfortable. They will be the main actors, where they will be able to pass on all their industrial knowledge and experience in the first person. It is through this contact that the company will be able to differentiate its offer, creating a close relationship with visitors, potential consumers and brand ambassadors. Industrial tourism can be considered a motivating factor for some employees, but at the same time, for other employees it can be an inhibiting and uncomfortable factor, as they feel exposed to unwanted external gazes (author, 2020). Managers of the company should handle this relationship with consideration for the individuality of their employees. The lack or absence of human resources specialized in tourism within the company could be a strong barrier to the implementation of Industrial Tourism.

On a financial level, Industrial Tourism allows companies to have an extra source of income, either through the sale of entrance tickets or through the sale of their products. Although experts have identified the need to make initial investments in adapting the company to receive visitors, whether in terms of marketing, logistics, security and accessibility, companies can analyze the possibility of obtaining incentives, financial support and tax benefits from the state. The companies must examine the scales and to determine how they weigh and how they can minimize the cost of implementation. The need for state support is mentioned by several authors, mainly in the context of regional development through Industrial Tourism (Alonso et al., 2010; Givental et al., 2019; Price, 2021).

The logistics and adaptation of an industrial company to receive visitors requires the company to analyze its reality and try to understand how it can receive people from outside its day-to-day operations without jeopardizing the company's functioning. In the search for the perfect relationship, Portuguese Standard 4556 - Industrial Tourism Services, published in 2017, aims to guide and set quality service standards for Industrial Tourism, in all its aspects,



namely also in the Living Industry aspect, which is the case of industrial companies. Industrial tourism could be a way of reducing the seasonality of the industrial process, making it possible to receive visitors all year round, while at the same time facing the challenge of organizing visits, adjusting them to everyday factory life without them being considered a nuisance.

Strategy and corporate culture can be a barrier to the implementation of industrial tourism (author 2020, 2021), but when implemented, it allows the company to diversify through industrial tourism, also allowing new knowledge to enter, stimulating business innovation. Although no particular strategy linked to corporate strategy and culture is suggested, we believe it is important for managers to think about ways of capturing the new ideas that visitors may bring, stimulating sharing and defining strategies for capturing knowledge (such as workshops, completing a questionnaire at the end where visitors present their ideas, activities throughout the visit that stimulate visitors' creativity, among others).

Companies should look at themselves, their characteristics, their capabilities, where, through the resource-based view (RBV), the company's resources and capabilities are sources of competitive advantage (Helfat & Peteraf, 2003). According to their characteristics (which include corporate culture and strategy), their capabilities and their resources, companies should look at industrial tourism and analyze how it can be an asset for the company, trying to find a healthy cross between its strengths and weaknesses.

In order to stay focused on their core business, the industry, managers will need to think carefully about how to best incorporate this tourism offer into the organization. Another major business concern is espionage and the need to protect industrial secrets, which may or may not be a top priority for a given company. Hence, managers will need to figure out how to safeguard the most private data while only revealing to the public what is necessary.

It is essential that the government and other organizations support efforts to increase industrial tourism in industrial companies. They can engage with businesses at the outset by serving as a source of information about industrial tourism and how businesses can promote it within their own industries. They can also assist with the planning stage by providing financial support, assistance in creating specific routes and tours, assistance with recruiting employees or providing training, and assistance with logistics, promotion, and distribution. The social benefits are extremely important, not only for the companies but also for the regions that host them, allowing the preservation of the culture and history of the region (Khaleghi et al (2020), promoting the participation of the population (Metsaots et al (2015), disseminating knowledge, values and industrial traditions (Moral-Moral & fernandez-alles (2019); revitalizing the local economy (Copic & Tumaric (2015), among others.



Through Industrial Tourism, the company presents itself to the community as an open company that wants to make itself known, participating in its dynamics, sharing knowledge and connecting with society.

Like any diversification strategy, industrial tourism has its advantages and disadvantages. It is now up to the various stakeholders to figure out how they can minimize the less positive points and what the best strategies are, in order to reap the greatest number of benefits from this partnership between industry and tourism.

5 CONCLUSIONS

In attempting to provide some clarity on the Industrial Tourism product from the perspective of industrial companies, the findings of this research are highly beneficial to them, offering pertinent details on this potential, for a new venture, or established companies, as a way to diversify their sphere of influence, or as a means of obtaining human resources, connections to the community, or as marketing tools.

Rather than presenting conclusions, our aim is to provide food for thought that will enable managers of industrial companies to analyze the potential of this tourism and industrial proposal and its viability within their company. The conclusions are also aimed at the various stakeholders, such as policymakers and regional bodies, researchers and students, tour operators, among others.

Since industrial tourism is different from the main activity of the industrial company, it can be very interesting for industrial companies, leading to diversification of the company, greater proximity to society, greater connection to old, new and potential customers, as a form of recruitment and as a motivating factor for human resources in the manufacturing area, who may feel valued and recognized when presenting their work, going from factory workers to artists/craftsmen who present the art of their work through their hands.

Industrial tourism also has some disadvantages for companies, namely the possibility of logistical difficulties, increased costs, serving as an inhibiting factor and discomfort for human resources and the need for extra attention to hygiene and safety in order to welcome tourists to industrial facilities.

The main threats to implementing industrial tourism are associated with the areas of business strategy and culture, logistics, finance, human resources, marketing and the companies' own lack of knowledge about industrial tourism.



Finally, after presenting the advantages, disadvantages and main threats of industrial tourism in industrial companies, it was possible to identify a range of strategies for boosting this tourism product in industrial companies. The main strategies focus on Marketing, Training and support, Partnerships and Financial.

The main partnerships for the success of industrial tourism in industrial companies are the public administration, tourism bodies and associations; travel agencies; industrial companies and schools and universities.

As industrial tourism is a very different service from the main activity of the industrial company, its integration must be analyzed, weighing up all the advantages and disadvantages for the industrial company, so that industrial tourism is truly integrated, accepted and promoted within the company itself.

6 LIMITATIONS AND FUTURE RESEARCH

Although not considered a limitation, the inclusion of a greater number of experienced experts with knowledge of the area analyzed could have further enriched our study. Although we consider the composition of the panel to be very interesting, its larger size would certainly add even more value to the results found. Although it was not the aim of our study, a third round would define more objectively the main advantages, disadvantages, barriers and strategies of industrial tourism for SMEs, and would make it possible to identify priorities.

As a suggestion for future research, it would be interesting to analyze the relationship between the human resources of industrial companies and industrial tourism. In what way are they open to or would even like to receive tourists in their workplace, and how could they contribute their knowledge and experience to enhancing the company in the context of industrial tourism. On the other hand, carrying out a study in this area with the top managers of industrial companies could provide very interesting information on how industrial tourism is being implemented within industrial companies and how it is perceived by managers.

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REFERENCES

- Botella, M. D. P. (2018). The heritage of the industry: a tourist referent to explore in the Region of Murcia [Article]. *Cuadernos De Turismo*(41), 491-512. <https://doi.org/10.6018/turismo.41.327121>
- Bugarin, D., Veličković, S. K., & Tucović, M. (2021). Potentials of Cultural - Historical and Tourism Heritage for the Development of Tourism in the Timok Region. *Serbian Journal of Management*, 16(1), 201-212. <https://doi.org/10.5937/SJM16-32147>
- Chow, H. W., Ling, G. J., Yen, I. Y., & Hwang, K. P. (2017). Building brand equity through industrial tourism. *Asia Pacific Management Review*, 22(2), 70-79. <https://doi.org/10.1016/j.apmr.2016.09.001>
- Çipi A, L. S., Ferreira FA. (2014). Current situation of corporate governance practices in Albanian joint stock companies: a Delphi-based approach. In (Vol. 110:841–851): *Procedia Social and Behavioral Sciences*.
- Cristobal-Fransi, E., Daries, N., Martin-Fuentes, E., & Montegut-Salla, Y. (2020). Industrial Heritage 2.0: Internet presence and development of the electronic commerce of industrial tourism. *Sustainability (Switzerland)*, 12(15). <https://doi.org/10.3390/SU12155965>
- Delbecq, A. V. d. V., AH, & Gustafson, D. (1975). Group techniques for program planning: a guide to nominal group and Delphi processes. In. Scott Foresman, Glenview, IL.
- Edwards, J. A., & Llurdés I Coit, J. C. (1996). Mines and quarries: Industrial Heritage Tourism. *Annals of Tourism Research*, 23(2), 341-363. [https://doi.org/10.1016/0160-7383\(95\)00067-4](https://doi.org/10.1016/0160-7383(95)00067-4)
- Endo, Y., & Kurata, Y. (2015). Customer communication facilities with tourism: A comparison between German and Japanese automobile companies. In *Advances in Culture, Tourism and Hospitality Research* (Vol. 10, pp. 221-233): Emerald Group Publishing Ltd.
- Fallah, M., & Ocampo, L. (2021). The use of the Delphi method with non-parametric analysis for identifying sustainability criteria and indicators in evaluating ecotourism management: the case of Penang National Park (Malaysia). *Environment Systems and Decisions*, 41(1), 45-62. <https://doi.org/10.1007/s10669-020-09790-z>
- Hasson, F., Keeney, S., & McKenna, H. (2000). Research guidelines for the Delphi survey technique. *Journal of Advanced Nursing*, 32(4), 1008-1015. <https://doi.org/10.1046/j.1365-2648.2000.t01-1-01567.x>
- Helfat, C. E., & Peteraf, M. A. (2003). The dynamic resource-based view: capability lifecycles. In (Vol. 24 pp. pp. 997-1010). *Strategic Management Journal*.
- Hsu, C. C., & Sandford, B. A. (2007). The Delphi technique: Making sense of consensus. *Practical Assessment, Research and Evaluation*, 12(10), 1-8.
- Jones, J., & Hunter, D. (1995). Qualitative Research: Consensus methods for medical and health services research. *Bmj*, 311(7001), 376. <https://doi.org/10.1136/bmj.311.7001.376>



- Kalaian, S. A., & Kasim, R. M. (2012). Terminating sequential delphi survey data collection. *Practical Assessment, Research and Evaluation*, 17(5), 1-10.
- Kerstetter, D., Confer, J., & Bricker, K. (1998). Industrial heritage attractions: Types and tourists. *Journal of Travel and Tourism Marketing*, 7(2), 91-104. https://doi.org/10.1300/J073v07n02_05
- Landeta, J. (2006). Current validity of the Delphi method in social sciences. *Technological Forecasting and Social Change*, 73(5), 467-482. <https://doi.org/10.1016/j.techfore.2005.09.002>
- Landeta, J., & Barrutia, J. (2011). People consultation to construct the future: A Delphi application. *International Journal of Forecasting*, 27(1), 134-151. <https://doi.org/10.1016/j.ijforecast.2010.04.001>
- Landeta, J., Barrutia, J., & Lertxundi, A. (2011). Hybrid Delphi: A methodology to facilitate contribution from experts in professional contexts. *Technological Forecasting and Social Change*, 78(9), 1629-1641. <https://doi.org/10.1016/j.techfore.2011.03.009>
- Lee, C. F. (2015). Tourist satisfaction with factory tour experience. *International Journal of Culture, Tourism, and Hospitality Research*, 9(3), 261-277. <https://doi.org/10.1108/IJCTHR-02-2015-0005>
- Lin, C. H. (2020). Industrial tourism: moderating effects of commitment and readiness on the relationship between tourist experiences and perceived souvenir value. *International Journal of Culture, Tourism, and Hospitality Research*, 14(4), 545-564. <https://doi.org/10.1108/IJCTHR-02-2019-0027>
- Linstone, H., & Turof, M. (1975). The Delphi method: techniques and applications. In (Vol. vol 29). Addison-Wesley, Reading, MA
- Lukas, B. A. (1999). Strategic type, market orientation, and the balance between adaptability and adaptation. In (Vol. 45(2), pp. 147–156): *Journal of Business Research*.
- Marques, J., & Santos, N. (2016). Developing business tourism beyond major urban centres: The perspectives of local stakeholders. *Tourism and Hospitality Management*, 22(1), 1-15. <https://doi.org/10.20867/thm.22.1.3>
- McBoyle, G. (1996). Green tourism and Scottish distilleries. *Tourism Management*, 17(4), 255-263. [https://doi.org/10.1016/0261-5177\(96\)00017-9](https://doi.org/10.1016/0261-5177(96)00017-9)
- Mitchell, M., & Mitchell, S. (2001). Showing off what you do (and how you do it). *Journal of Hospitality and Leisure Marketing*, 7(4), 61-77. https://doi.org/10.1300/J150v07n04_06
- author (2020, 2021, 2022)
- Moral-Moral, M., & Fernandez-Alles, M. T. (2019). Perceptions of the local resident to industrial tourism as a sustainable development model [Article]. *Revista De Estudios Regionales*(114), 45-69.



- Nielsen, N. C. (2012). Industrial Tourism: Opportunities for City and Enterprise. *Tourism Geographies*, 14(3), 532-534. <https://doi.org/10.1080/14616688.2011.609902>
- Okoli, C., & Pawlowski, S. D. (2004). The Delphi method as a research tool: An example, design considerations and applications. *Information and Management*, 42(1), 15-29. <https://doi.org/10.1016/j.im.2003.11.002>
- Otgaar, A. (2012). Towards a common agenda for the development of industrial tourism. *Tourism Management Perspectives*, 4, 86-91. <https://doi.org/10.1016/j.tmp.2012.05.004>
- Otgaar, A., Bergm L. V. D., Berger, C. e Ferg, R. X. (2008). Industrial Tourism: opportunities for city and enterprise. In. Roterdão: Erasmus University Rotterdam.
- Pardo Abad, C. J. (2017). Sostenibilidad Y turismo en los paisajes custurales de la industrialización. In (Vol. julio-septiembre, pp. 103-785). *Arbor, Ciencia, Pensamento Y cultura*.
- Paré, G., Cameron, A. F., Poba-Nzaou, P., & Templier, M. (2013). A systematic assessment of rigor in information systems ranking-type Delphi studies. *Information and Management*, 50(5), 207-217. <https://doi.org/10.1016/j.im.2013.03.003>
- Powell, C. (2003). The Delphi technique: Myths and realities. *Journal of Advanced Nursing*, 41(4), 376-382. <https://doi.org/10.1046/j.1365-2648.2003.02537.x>
- Rowe, G., & Wright, G. (1999). The Delphi technique as a forecasting tool: Issues and analysis. *International Journal of Forecasting*, 15(4), 353-375. [https://doi.org/10.1016/S0169-2070\(99\)00018-7](https://doi.org/10.1016/S0169-2070(99)00018-7)
- Rudd, M. A., & Davis, J. A. (1998). Industrial heritage tourism at the Bingham Canyon copper mine. *Journal of Travel Research*, 36(3), 85-89. <https://doi.org/10.1177/004728759803600310>
- Swarbrooke, J. (2002). The development and management of visitor attractions In: Burlington: Butterworth-Heinemann.
- Walker, A. M., & Selfe, J. (1996). The delphi method: A useful tool for the allied health researcher. *International Journal of Therapy and Rehabilitation*, 3(12), 677-681. <https://doi.org/10.12968/bjtr.1996.3.12.14731>
- Zhang, J., Cenci, J., Becue, V., Koutra, S., & Ioakimidis, C. S. (2020). Recent evolution of research on industrial heritage in Western Europe and China based on bibliometric analysis. *Sustainability (Switzerland)*, 12(13 C7 - 5348). <https://doi.org/10.3390/su12135348>