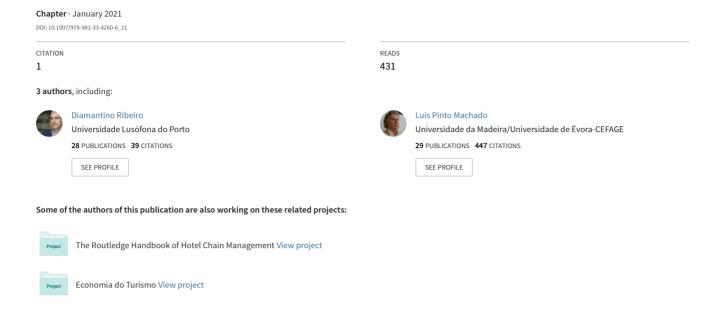
# The 4 C's Tourism Destination Competitiveness Matrix the Construction of the Matrix Through the Delphi Panel



## The 4 C's Tourism Destination Competitiveness Matrix The construction of the matrix through the Delphi panel

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**Abstract** The creation of the "4 C's Tourism Destination Competitiveness Matrix" aimed to consolidate and organise questions about the area or areas in which tourist destinations should focus their attention, from the point of view of competitiveness analysis. To consolidate this new model, or matrix, 4 phases were completed: preliminary, preparation, test and evaluation.

In the preliminary phase, a literature review was carried out on the main theoretical models for TDC analysis. In the preparation phase, the Delphi method was used, inviting experts in the field of economics and tourism to contribute with their experiences in the construction of the survey instrument; in the test phase, the questionnaire was validated through the Content Validity Coefficient or CVC; in the evaluation phase, a non-probabilistic approach was used, i.e., a convenience sample to obtain answers from tourists, residents and destination managers.

This article presents the development of the referred matrix preparation phase using the Delphi method. Based on properly structured surveys, the new matrix allows for the information collected to be divided into 4 sets or dimensions: capacity, competence, communication and creativity. It is considered that the use of the Delphi panel was one of the fundamental steps for the successful creation of the "4 Cs Tourism Destination Competitiveness Matrix". This new instrument is intended as an agile and less complex approach in the analysis of tourism destination competitiveness.

Keywords: Tourism, Oporto, 4 Cs Matrix, Competitiveness.

#### 1. Introduction

Theoretical conceptualisation performed by the authors [1] on models of competitiveness of tourist destinations, showed that the key factors for the success of a destination, defended by several authors such as [2] and [3], are the socio-economic prosperity of destination and its contribution to increasing the well-being of the local

population. On this basis, competitiveness analysis models should cover the views of tourists, residents and managers/policy makers, basically to ensure that the pyramid, tourist/resident/manager, remains sustainable for both the tourist and the destination and naturally for the resident; at the same time, the competitiveness of the tourist destination should not be seen as an abstract element, and measurement parameters need to be defined to allow for an evolutionary and comparative assessment between destinations [4].

The complexity of existing theoretical models led to the creation of the 4 C's Tourism Destination Competitiveness Matrix

The 4 Cs Tourism Destination Competitiveness Matrix (4 Cs Matrix) was built in order to answer several questions about the competitiveness and attractiveness of the tourism destination, among which: a) What is the tourists' opinion about the destination? b) Are the tourists' opinions in line with the intended profile of the destination on the part of the city's active agents and those responsible for the management and reception of tourists (hotel managers, managers of catering and other infrastructure and equipment)? c) Are the tourists' opinions in line with the residents' opinions?

The creation of the "4 C's Tourism Destination Competitiveness Matrix " was also aimed at understanding the area or areas on which those responsible for tourist destinations should focus their attention.

Another objective of the work carried out is that, in the future, it will be possible to use the "4 C's Tourist Destination Competitiveness Matrix" in an investigative context in other tourist destinations, and it can also serve as a basis for comparison between similar realities.

To consolidate the matrix, 4 phases [preliminary, preparation, testing and evaluation] were completed:

- in the preliminary phase a theoretical review was carried out on tourism destination competitiveness matrices [1].
- in the preparation phase, the Delphi method was used, inviting experts in the field of economics and tourism to contribute with their experiences in the construction of the survey instrument.
- in the test phase the questionnaire was validated through Content Validity Coefficient (CVC).
- in the evaluation phase, a non-probabilistic approach was used, through a convenience sample, to obtain responses from tourists, residents, and destination managers.

In this paper we present only the development of the designated phase of preparation of the matrix through the Delphi methodology. Before presenting the new tool, we summarize the conceptualization of tourism destination competitiveness and identify the Tourism Destination Competitiveness (TDC) models that usually stand out in the scientific literature.

#### 2. Tourism Destination Competitiveness Models

The Tourism Destination Competitiveness (TDC) conceptual approach is proving to be problematic among scholars.

The presence of factors of attraction (physical, resources, natural landscape, or social factors such as the language spoken and the friendliness of the local population) are considered necessary conditions, but not sufficient to transform a territory into a tourist destination. Tourism competitiveness is based on the level of productivity determined by the set of tourist destinations, policies, environmental factors and competitive advantages [5][6].

For some authors, one key factor for the rise and continued development of a tourism destination lies in the quality and effectiveness of relations between service providers and, between them and the environment of the destination. Effective relations can offer the tourist destination the basis for agility in dynamic and turbulent market conditions. Offering an ever more demanding tourist an integral, flexible and personal experience, as a result of interactions between specialised service providers, can be a winning strategy for the tourism destination to develop in a sustainable way and emerge in global competition [7][8][9].

According to several authors, the level of competitiveness is the main determinant of a destination's performance in the global tourism sector [10]. To maintain the competitiveness of a destination, stakeholders need to continuously improve tourism offers by developing new services and products. This is a key challenge for tourism destinations to strengthen and even maintain their competitive positions in an increasingly competitive global market [11].

The assessment of the competitiveness of a destination also depends directly on the policies adopted, especially with regard to resource management. For this reason, the issue of tourism destination competitiveness has become essential for strategic planning and for researchers of tourism destination issues [12].

The competitiveness applied to tourism and in particular to tourist destinations refers to the ability of a given destination to provide goods and services considered by tourists as superior to other competing destinations [13].

Competitiveness has been associated in tourism literature as a critical element for the success of tourist destinations; thus, several concurrent approaches are admitted, and several models of analysis of the competitiveness of tourism destinations have been developed over the years. The TDC models that in our opinion have stood out in scientific literature in recent years are: the Calgary model from Ritchie and Crouch [2]; the Dwyer & Kim model [3]; the Enright & Newton model [4]; the Gooroochurn & Sugiyarto model [14]; the World Economic Forum 2007 model [11]; the Mazanec, Wöber and Zins model [15]; the Hong model [16]; the Kim model [17]; the Cvelbar & al. model [18].

Ultimately, a destination must remain competitive to optimise its full potential and sustain and control a large part of the rapidly growing tourism market [10], with the use of modern analysis in line with the ecosystem reality being essential.

#### 3. The 4 C's Tourism Destination Competitiveness Matrix

#### 3.1. Preparation phase

In the preparation phase, the Delphi methodology was used, inviting 10 experts in the field of economics and tourism (hotel managers, restaurant managers, university lecturers in the fields of economics and tourism) who contributed in the selection and organisation of the issues.

#### 3.2. The Delphi technique

The Delphi technique was first used in the 1950s by the RAND Corporation to help the US Air Force identify Soviet capability to destroy US strategic targets. This technique became popular a decade later for its use in technology forecasting and organisational planning studies. The Delphi technique is a way to structure the communication process of a group, allowing a set of people as a whole to deal with a complex problem. It is a method that allows for the discovery of the opinions of a group of experts — called the Delphi panel — through the realisation of a series of questionnaires, each one of them called a "round". In each round the participants are presented with a series of specific propositions so that each one of them, individually, can order them according to a given established criterion. The results are then aggregated and handed over to the experts, so that they can reformulate their opinion on the proposals presented. The number of rounds conducted varies according to the degree of consensus reached by the experts [19].

This method is essentially distinguished by three characteristics: anonymity, interaction with controlled feedback and statistical responses of the group. In other words, the Delphi method employs a panel of experts to gain knowledge. Participants do not confront their opinions face to face, there is a guarantee of anonymity of the responses given by participants, and it uses simple statistical tools to identify patterns accordingly. Indeed, one of the great advantages of this method is to allow people who do not know each other to develop a common project, without having to reveal their personal opinions to each other and reach a general agreement on a given area of interest [20–22].

### Delphi method rounds

Three rounds were held: the first round consisted of a face-to-face interview with each of the 10 experts in order to obtain suggestions on questions to be put on the questionnaire; the suggestions received were integrated into the webQDA qualitative research software in order to organise, structure, compare and homogenise the proposals [23–29].

Table 1 summarises the 52 items suggested, with the respective indication of the items cited by each expert. This organisation allowed us to understand how often each of the items was mentioned by each of the participants in the panel and thus understand the weight of each of these items.

| Tourist Destination Competitiveness 4C's Matrix                    |          |           |          |   |               |                      |          |          |          |          |           |
|--|----------|-----------|----------|---|---------------|----------------------|----------|----------|----------|----------|-----------|
| Delphi Panel - 1st Round Results                                   |          |           |          |   |               |                      |          |          |          |          |           |
| Items suggested in the 1st interview                               | E1       | E2        | E3       | E4  | E5            | E6                   | E7       | E8       | E9       | E10      | Dimension |
| Accessibility for people with reduced mobility.                    | 1        |           |          | 1   | $\overline{}$ | 1                    | 1        | 1        | 1        | 1        | 7         |
| Airport - Conditions and Capacity                                  | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 10        |
| Airport - Organization of services                                 | 1        | 1         | 1        |   | 1             | 1                    |          |          |          | 1        | 5         |
| Airport - Routes and Airlines                                      | 1        | 1         | 1        |   | 1             | 1                    | 1        | 1        | 1        |          | 8         |
| Airport - Transport to and from the city                           | 1        | 11        | 1        | 1   | 1             | 1                    | 1        | 1        | 1        |          | 8         |
| Public authorities (police, SEF, etc)                              | 1        | 1         |          | 1   | 1             |                      | 1        |          | 1        | 1        | 7         |
| City - Dimension   | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 10        |
| City - Cleaning  | F-       |           | _        |   | 1             |                      | 1        |          | 1        | 1        | 4         |
| City - Organization  | 1        | 1         | 1        |   | 1             | $\vdash$             | 1        |          | <u> </u> | -        | 5         |
| Climate  | <u> </u> | ╟╧╢       | 1        | 1   | 1             | 1                    | -        | $\vdash$ |          | 1        | 3         |
| Cultural events and shows (theatre, music, etc)                    | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        |          | 1        | 8         |
| Sports events (national and international competitions)            | 1        | ╟┷┤       | 1        | <del>                                    </del> | 1             | $\vdash\vdash\vdash$ | 1        | 1        | 1        | 1        | 7         |
| Gastronomic events and vinicolas                                   | 1        | $\vdash$  | 1        | $\vdash$  | 1             | 1                    | 1        | -        | 1        | 1        | 7         |
| Rent-a-car fleet   | 1        | ╢         | 1        | -   | 1             | -                    | 1        | $\vdash$ | 1        | 1        | 4         |
|  | _        | 1         | _        | -   | 1             | 1                    |          | -        | 1        | 1        | 10        |
| Hostels and other lodgings - service and care                      | 1        | ╟┷┤       | 1        | 1   | _             | _                    | 1        | 1        |          | 1        |           |
| Hostels and other accommodations - quality                         | 1        | -         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | -        | 8         |
| Hostels and other accommodations - quantity                        | 1        | 1         | 1        | 1   | 1             | 1                    | 1        |          | 1        | 1        | 9         |
| Hotels - service and support                                       | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 10        |
| Hotels - quality   | 1        | $\square$ | 1        | 1   | 1             | 1                    | 1        | 1        | 1        |          | 8         |
| Hotels - quantity  | 1        | 1         | 1        | 1   | 1             | 1                    | 1        |          | 1        | 1        | 9         |
| Nightlife Places   | 1        |           | 1        | 1   |               |                      | 1        | 1        | 1        | 1        | 7         |
| Entertainment venues   | 1        | 1         | 1        |   | 1             | 1                    | 1        |          |          | 1        | 7         |
| Venues for major events (music, conventions. Etc)                  | 1        |           |          | 1   | 1             |                      |          | 1        | 1        | 1        | 6         |
| Printed and virtual maps and itineraries                           | 1        |           | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 9         |
| Museums and cultural sites   | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 10        |
| Parks for leisure and sport  | 1        |           |          | 1   |               | 1                    |          | 1        | 1        | 1        | 6         |
| Theme parks  | 1        | 1         |          |   | 1             | 1                    | 1        |          | 1        |          | 6         |
| Beaches  | 1        | 11 1      |          | 1   |               |                      |          | 1        |          | 1        | 4         |
| Promotion - Communication of destination                           | 1        | 11 1      | 1        |   | 1             | 1                    | 1        | 1        | 1        | 1        | 8         |
| Promotion of events (cultural, gastronomy, etc)                    | 1        | 1         | 1        | 1   | 1             | 1                    | 1        |          | 1        | 1        | 9         |
| Promotion of the destination Port in the country of the tourist of | 1        | 1         | 1        | 1   |               | 1                    |          | 1        | 1        | 1        | 8         |
| Promotion of the destination Port in other countries               | 1        | 1         |          | 1   |               | 1                    |          | 1        | 1        |          | 6         |
| Promotion and Advertising of Destiny in the Media                  |          | 1         | 1        | 1   | 1             |                      |          | 1        |          | 1        | 6         |
| Residents - Behavior   |          | 1         |          | 1   |               | 1                    | 1        | 1        | 1        | 1        | 7         |
| Residents - Hospitality  | 1        | $\vdash$  |          | 1   |               | 1                    | 1        | 1        | 1        | $\vdash$ | 6         |
| Restaurants, cafés and bars  | 1        | 1         | 1        | 1   | 1             | $\vdash$             | 1        | 1        |          | 1        | 8         |
| Restaurants, cafés and bars - service                              | 1        | ╟┷┤       | <u> </u> | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 8         |
| Tourist information services                                       | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 10        |
| Signage on the streets and roads                                   | 1        | ╟┷┤       | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 9         |
| Airport signage  | 1        | 1         | 1        | 1   | <b>-</b>      | ⊢∸⊢                  | -        | 1        | 1        | 1        | 7         |
| Signage in public transport  | 1        | 1         | 1        | 1   | 1             | 1                    | $\vdash$ | 1        | 1        | $\vdash$ | 7         |
| Signs for places of tourist interest                               | 1        | ╟─┤       | 1        | 1   | 1             | 1                    | $\vdash$ | 1        | 1        | 1        | 8         |
| Taxis  | 1        | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 10        |
|  | 1        | 1         | 1        | 1   | 1             | 1                    |          | 1        | 1        | 1        | 10        |
| Transport (Uber, Cadify, etc)                                      | 1        |           |          | _   | _             |                      | 1        | _        | _        |          |           |
| Public transportation  | <u> </u> | 1         | 1        | 1   | 1             | 1                    | 1        | 1        | 1        | 1        | 9         |
| Roads of communication (roads, motorways, etc)                     | 1        | 1         | 1        | $\Box$  | 1             | Щ                    | 1        | 1        | 1        | 1        | 8         |
| TOTALIZERS   | 40       | 25        | 33       | 35  | 36            | 33                   | 35       | 34       | 38       | 37       | 346       |

**Table 1** – Delphi Panel – (Round 1)

In the second round, each of the specialists was sent a list of the issues proposed in the 1st round (in alphabetical order), requesting the distribution of the items among the categories created in the meantime in the webQDA, based on the contributions of round 1 (table 2): category a - structures and equipment; category b - human resources; category c - promotion and marketing; category d - identity of the destination.

| Tourist Destination Competitiveness 4C's Matrix   |      |      |      |               |      |     |     |               |     |               |          |
|---|------|------|------|---------------|------|-----|-----|---------------|-----|---------------|----------|
| Delphi P  | anel | - Re | sult | s 2n          | d Ro | und |     |               |     |               |          |
| A=Structures and equipment<br>B=Human Resources C=Promotion<br>and marketing D=The identity of<br>the destination | E1   | E2   | E3   | E4            | E5   | E6  | E7  | E8            | E9  | E10           | Dimensio |
| Accessibility for people with reduced mobility.   | Α    | Α    | Α    | Α             | Α    | Α   | Α   | Α             | Α   | Α             | Α        |
| Airport - Conditions and Capacity   | Α    | Α    | Α    | Α             | Α    | Α   | Α   | Α             | Α   | Α             | Α        |
| Airport - Organization of services  | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| Airport - Routes and Airlines   | Α    | Α    | -    | -             | -    | Α   | -   | -             | -   | -             | -        |
| Airport - Transport to and from the city  | A+B  | A+B  | Α    | A+B           | Α    | Α   | A+B | A+B           | A+B | Α             | A+B      |
| Public authorities (police, SEF, etc)   | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| City - Dimension  | Α    | Α    | Α    | Α             | Α    | Α   | Α   | Α             | Α   | Α             | Α        |
| City - Cleaning   | A+B  | Α    | В    | В             | В    | A+B | С   | Α             | Α   | Α             |          |
| City - Organization   | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| Climate   | -    | -    | -    | -             | -    | Α   | -   | -             | -   | -             | -        |
| Cultural events and shows (theatre, music, etc)   | D    | D    | D    | D             | С    | D   | D   | С             | D   | D             | D        |
| Sports events (national and international competitions)   | D    | С    | D    | D             | С    | D   | D   | С             | D   | D             | D        |
| Gastronomic events and vinicolas  | D    | D    | D    | D             | С    | D   | D   | С             | D   | D             | A        |
| Rent-a-car fleet  | A    | A    | A    | A             | A    | A   | A   | A             | A   | A             | A        |
| Hostels and other lodgings - service and care   | В    | B    | B    | В             | В    | B   | В   | В             | В   | В             | B        |
| Hostels and other accommodations - quality  | A+B  | A+B  | A    | A+B           | A    | A   | A+B | A+B           | A+B | A             | A+B      |
| Hostels and other accommodations - quantity   | A    | A    | A    | A             | A    | A   | A   | A             | A   | A             | A        |
| Hotels - service and support  | В    | В    | В    | В             | В    | В   | B   | В             | В   | В             | B        |
| Hotels - quality  | A+B  | A+B  | A+B  | A+B           | A    | A   | A+B | A+B           | A+B | A             | A+B      |
| Hotels - quantity   | A+B  | A+B  | A    | A             | A    | A   | A+B | A             | A   | A             | A        |
| Nightlife Places  | A    | A    | A    | A             | A    | A   | A   | A             | A   | A             | A        |
| Entertainment venues  | A    | A    | A    | A             | A    | A   | A   | A             | A   | A             | A        |
|   | A    | A    | A    | A             | A    | A   | A   | A             | A   | A             | A        |
| Venues for major events (music, conventions. Etc) Printed and virtual maps and itineraries                        | C    | C    | C    | C             | C    | C   | C   | C             | C   | C             | C        |
| ,   | _    | _    | _    | $\overline{}$ |      | _   | _   | $\overline{}$ |     | $\overline{}$ |          |
| Museums and cultural sites  | A+B  | A+B  | A+B  | A+B           | A    | A   | A+B | A+B           | A+B | A             | A+B      |
| Parks for leisure and sport   | A    | Α    | Α    | Α             | Α    | Α   | Α   | Α             | Α   | Α             | A        |
| Theme parks   | Α    | Α    | Α    | Α             | Α    | Α   | A   | Α             | Α   | Α             | A        |
| Beaches   | Α    | Α    | Α    | Α             | Α    | Α   | Α   | Α             | Α   | Α             | Α        |
| Promotion - Communication of destination  | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Promotion of events (cultural, gastronomy, etc)   | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Promotion of the destination Port in the country of the tourist d   |      | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Promotion of the destination Port in other countries  | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Promotion and Advertising of Destiny in the Media   | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Residents - Behavior  | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| Residents - Hospitality   | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| Restaurants, cafés and bars   | Α    | Α    | Α    | Α             | Α    | Α   | Α   | Α             | Α   | Α             | Α        |
| Restaurants, cafés and bars - service   | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| Tourist information services  | В    | В    | В    | В             | В    | В   | В   | В             | В   | В             | В        |
| Signage on the streets and roads  | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Airport signage   | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Signage in public transport   | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Signs for places of tourist interest  | С    | С    | С    | С             | С    | С   | С   | С             | С   | С             | С        |
| Taxis   | A+B  | A+B  | A+B  | A+B           | A+B  | A+B | A+B | A+B           | A+B | A+B           | A+B      |
| Transport (Uber, Cadify, etc)   | A+B  | A+B  | A+B  | A+B           | A+B  | A+B | A+B | A+B           | A+B | A+B           | A+B      |
| Public transportation   | A+B  | A+B  | A+B  | A+B           | A+B  | A+B | A+B | A+B           | A+B | A+B           | A+B      |
| Roads of communication (roads, motorways, etc)  | Α    | Α    | Α    | Α             | Α    | Α   | A   | Α             | Α   | Α             | А        |

**Table 2** - Delphi Panel (Round 2)

In the third and last round the instrument containing 10 questions in each of the quadrants (40 in total) was sent to the panel of experts; they were asked to select the 7 most relevant in each of the quadrants. Table 3 shows the results obtained:

| Tourist Destination Competitiveness 4C's Matrix                   |         |      |          |          |                      |          |          |               |          |                |     |
|---|---------|------|----------|----------|----------------------|----------|----------|---------------|----------|----------------|-----|
| Delphi Pai  | nel - I | Resu | lts 3    | rd R     | oun                  | d        |          |               |          |                |     |
| A=Structures and Equipment  |         |      |          |          |                      |          |          |               |          |                |     |
| B=Human Resources   |         |      |          |          |                      |          |          |               |          |                |     |
| C=Marketing and Promotion   | E1      | E2   | E3       | E4       | E5                   | E6       | E7       | E8            | E9       | E10            | SUM |
| D=Destination Identity  |         |      |          |          |                      |          |          |               |          |                |     |
| A=Structures and Equipment  |         |      |          |          |                      |          |          |               |          |                |     |
| Airport   | 1       | 1    | 1        | 1        | 1                    | 1        |          | 1             | 1        | 1              | 9   |
| Accessibility for people with reduced mobility.                   |         | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 8   |
| Venues for events, etc.   | -       | 1    | 1        | 1        | 1                    | $\vdash$ | 1        | 1             | 1        | 1              | 8   |
| Hospitality   | 1       | 1    |          | 1        | 1                    | 1        | 1        | -             | 1        | -              | 7   |
| Museums and cultural sites  | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | $\vdash$       | 7   |
| Restoration   | 1 1     |      | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 7   |
|   | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | $\vdash$ | 1              | 7   |
| Transport Nightlife Places  |         | ı—   | -        | -        | 1                    | -        | -        | $\vdash$      | $\vdash$ | 1              | 6   |
| Nightlife Places  |         | 1    | 1        | 1        | $\vdash\vdash\vdash$ | 1        | 1        |               | 1        | $\vdash$       | 6   |
| Roads of communication (roads, motorways, etc)                    | 1       | 1    | 1        | $\vdash$ | $\vdash$             | 1        | $\vdash$ | 1             | 1        | 1              | 5   |
| Theme parks   |         | -    |          | -        | 7                    | 7        | -        | $\overline{}$ | -        | -              |     |
| B= Human Resources  | 7       | 7    | 7        | 7        | /                    | /        | 7        | 7             | 7        | 7              | 70  |
|   | 1       | 1    | 1        | 1        | 1                    | 1        |          | 1             | 1        | 1              | 9   |
| Airport Tourist information services                              |         | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 9   |
|   | -       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 8   |
| Contact with the population                                       | ╢┈      | 1    | 1        | 1        | 1                    |          | 1        | 1             | 1        | 1              | 7   |
| Hospitality   | 1       | _    | 1        | 1        | -                    | 1        | _        | 1             | _        | 1              | 7   |
| Other transport (Uber, Cadify, etc)                               | 1       | 1    | <u> </u> | -        | 1                    | 1        | 1        | <u> </u>      | 1        | $\vdash$       |     |
| Restoration   | 1       | _    | 1        | 1        | $\vdash$             | 1        | 1        | 1             | 1        | $\vdash$       | 7   |
| Public authorities (police, SEF, etc)                             |         | 1    | 1        | 1        | $\vdash$             | 1        | 1        | _             | 1        | -              | 6   |
| Taxis   | 1       | 1    | -        |          | $\vdash$             | 1        |          | 1             | 1        | 1              | 6   |
| Museums and cultural sites  | 1       | 1    | 1        |          | 1                    | $\vdash$ |          | 1             |          | 1              | 6   |
| Public transportation   | 1       | _    | _        | 1        | 1                    | _        | 1        | _             | _        | 1              | 5   |
| C= Marketing and Promotion  | 7       | 7    | 7        | 7        | 7                    | 7        | 7        | 7             | 7        | 7              | 70  |
| Airport signage   | 1       | 1    | 1        | 1        | 1                    | 1        |          | 1             | 1        | 1              | 9   |
| Virtual maps and itineraries                                      | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 8   |
| Promotion and advertising of destination Porto in your country    | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 8   |
|   |         | _    | -        | -        | -                    | 1        | -        | 1             |          | 1              | 8   |
| Promotion and advertising of destination Porto in other countries | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 7   |
| Signage on the streets and roads                                  | 1       | 1    | $\vdash$ | 1        | 1                    | 1        | 1        | $\vdash$      |          | 1              | 7   |
| Route maps and city guides  | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | $\vdash$       | 7   |
| Promotion of gastronomical events                                 | - 1     |      | -        | -        | $\vdash$             | 1        |          |               | -        | $\vdash$       | 7   |
| Promotion of cultural events                                      |         | -    | 1        | 1        | 1                    | $\vdash$ | 1        | 1             | 1        | 1              | 5   |
| Signage in public transport                                       | ╢┈      | 1    | <u> </u> | -        | $\vdash$             | 1        |          | 1             | 1        | 1              | 4   |
| Promotion of sports events  | 7       | 7    | 7        | 7        | 7                    | 7        | 7        | 1<br>7        | 7        | 7              | 70  |
| D=Destination Identity  | ۲       | ,    | /        | /        | /                    | /        | /        | /             | /        | /              | /0  |
| Communication and dissemination of the destination Porto          | -       | 1    | 1        | 1        | 1                    |          | 1        | 1             | 1        | 1              | 8   |
| Cultural Spectacles   | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 8   |
| Gastronomic events  | 1       | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | -              | 8   |
|   |         | 1    | 1        | 1        | 1                    | 1        | 1        | 1             | 1        | 1              | 8   |
| Places of fun and leisure   |         |      | 1        | -        | 1                    | $\vdash$ | 1        | 1             | 1        | -              | 7   |
| Music Shows   | 1       | 1    | $\vdash$ | 1        | -                    | 1        | 1        |               |          | 1              | 7   |
| National and international sporting events                        | 1       | 1    | H-       | $\vdash$ | 1                    | 1        | H-       | 1             | 1        | 1              | 7   |
| Restaurants   | ╢       | 1    | 1        | 1        | 1                    | 1        | 1        | $\vdash$      | 1        | $\vdash\vdash$ |     |
| International competitions  | 1       | 1    | $\vdash$ | 1        | $\vdash$             | 1        | 1        | <u> </u>      | 1        | $\vdash$       | 6   |
|   |         |      | 1        |          | 1                    | 1        |          | 1             |          | 1              | 6   |
| Wine events Nightlife Places                                      | 1 1     |      | 1        | $\vdash$ |                      | -        | 1        | 1             | $\vdash$ | 1              | 5   |

**Table 3** – Delphi Panel (Round 3)

Thus, based on the contributions received in the third round, the new analysis tool [or matrix] was created. The name of each quadrant was adjusted to the dimension, and the following terminology was used to designate each of these dimensions: Capacity,

Competence, Communication, and Creativity. Finally, the tool was given the name: "4 C's Tourism Destination Competitiveness Matrix":

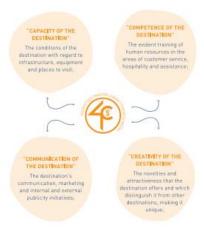


Fig. 1 – 4 C's Tourism Destination Competitiveness Matrix

The Capacity dimension, summarises the items representative of the conditions of the destination in relation to infrastructure, equipment and places to visit, including historical sites such as museums, classified buildings and other points of interest; attractions such as infrastructure for relevant events such as stadiums, arenas, etc.; tourist sites such as beaches, countryside, mountain, river, etc.; places of entertainment and tourist entertainment such as concert halls and cultural events; nightlife spots such as bars, discos, etc.; restaurants and other places of gastronomic importance where wine experiences are included; land and air connections with other cities and countries.

The Competence dimension integrates the items related to the training of human resources to attend, welcome and accompany tourists, in receptions of public buildings [museums, etc.], transport [ticket sales and passenger assistance], and in receptions in various infrastructures such as restaurants, discos, etc.

The Communication dimension incorporates the items related to communication initiatives, marketing and internal and external promotion of the destination such as signposting in the destination, such as on the metro and public transport, at the exit of the airport or at train stations to the city centre or event locations; promotion and dissemination of events in the location, through leaflets, physical and virtual city maps, the relationship between public and private institutions in promoting the destination, communication on social networks, ease of access and acquisition of tickets, at the events, through online ticket offices, specialised sites, and via internet platforms; accessibility of information, contacts, reservations and bookings through the main platforms available on the internet or via apps, such as Tripadvisor, Booking, Momondo, eDreams, Airbnb, Trivago, GetYourGuide, TheFork, among others.

The Creativity dimension includes the items that represent the novelties and attractiveness that the destination provides and distinguishes it from other destinations and makes it unique; namely, the dynamics and innovation in the destination, the differentiation from other destinations, awards received (tourism, gastronomy, etc.); preparation of the destination for events, conferences, etc., differentiation by

segmentation (mountain, beach, etc.), attraction for major events, such as sports finals, world exhibitions, international galas, world meetings, etc.; relationship and development of projects.

The final survey contains 30 questions in total: 9 in the Capacity dimension; 10 in the Competence dimension; 6 in the Communication dimension and 5 in the Creativity dimension (table 4):

| OPINION ABOUT THE CITY REGARDING  |  |  |  |  |  |  |  |  |
|---|--|--|--|--|--|--|--|--|
| Rate your satisfac  | tion level from 1 to 7, with 1 being the lowest and 7 being the highest. |  |  |  |  |  |  |  |
| CAPACITY (Infrastructure, equipment,)   |  |  |  |  |  |  |  |  |
| Airport;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Transportation;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Communication routes (roads, highways, etc.);                                 | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Hotels;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Restaurants;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Museums and cultural sites;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Theme parks, venues for events, etc.;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Nightlife spots;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Accessibility for people with reduced mobility.                               | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| COMPETENCE (Training and availability of Human Resources)                     |  |  |  |  |  |  |  |  |
| Airport;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Public transport;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Taxis;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Other transport (Uber, Cabify, etc.);   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Hotels;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Restaurants;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Museums and cultural sites;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Tourist information services;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Public authorities (police, SEF, etc.);                                       | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Contact with the public.  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| COMMUNICATION (Publicity and promotion)                                       |  |  |  |  |  |  |  |  |
| Signposting in public transport and airport;                                  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Signposting in streets and roads;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Printed and virtual maps;   | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Promotion of events (cultural, gastronomy, etc.);                             | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Promotion and advertising of Oporto in your country;                          | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Promotion and advertising of Oporto in other Countries.                       | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| CREATIVITY (Innovation and identity of the destination which makes it unique) |  |  |  |  |  |  |  |  |
| Cultural events and shows (theatre, music, etc.);                             | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Sporting events (national/international comp.);                               | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Gastronomic and wine-related events;  | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Restaurants and places of entertainment;                                      | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |
| Communication and promotion of the destination Oporto.                        | 1 2 3 4 5 6 7 No opinion   |  |  |  |  |  |  |  |

 $\textbf{Table 4}-Dimensions \ of \ the \ question naire$ 

#### 4. Final considerations

The Delphi Method is possibly one of the most used in recent times by researchers for different situations and problems, emphasising the importance of the methodology for the foundation of research, enabling the selection of several variables [30].

In the case under examination, the option of a panel made up of 10 specialists in common areas, but with diverse professional experiences, allowed for the instrument to be improved throughout the three phases, as suggested and highlighted in the literature, with emphasis on the individual experience of each participant in the final result of the instrument recognised by the participants; these represent exclusively the synthesis of the opinions of a group, justifying why the Delphi method is the technique that best suits the exploration of elements that involve the joining of scientific evidence and social values [31].

The answers to the questions defined by the selected panel will allow us to understand the respondents' opinion regarding the various dimensions of the matrix, compare it with other destinations visited by the respondents and finally answer questions specific to each location or according to investigative interest. In parallel, it is possible to cross-reference the opinions of tourists with residents and those responsible for tourism management in the destinations.

The 4 C's TDC Matrix was later evaluated and validated through the Content Validity Coefficient - CVC method (work that will be published soon).

One of the objectives of the creation of this new instrument is that, in the future, it will be possible to use the "4 C's Tourism Destination Competitiveness Matrix" in an investigative context in other tourist destinations, and it can also serve as a basis for comparison between similar realities. In macroeconomic terms, the systematisation and homogenisation of the structure of the instrument will allow research teams spread over several cities in the world to use the same matrix in the cities under examination, in a collaborative way, analysing the results of the city itself or being able to compare them with results obtained in other cities and by other researchers.



Fig. 2 – 4 C's TDC Matrix

The final version of "4 C's of CDT Matrix" was registered at the INPI - Instituto Nacional da Propriedade Industrial, the Portuguese public entity that manages intellectual property.

#### References

- Ribeiro, Diamantino, Luiz Pinto Machado, and Pedro Henriques. 2020.
   Competitiveness of Tourist Destinations Theoretical Study of the Main Models.
   International Journal of Business & Management Science (ISSN: 2208-2190): In Press.
- 2. Ritchie, J., and G. Crouch. 1999. Tourism, Competitiveness, and Societal Prosperity. *Journal of Business Research* 44: 137–152.
- 3. Dwyer, L., & Kim, C. 2003. Destination Competitiveness: Determinants and Indicators. *Current Issues in Tourism* 6: 369–414.
- Enright, M. & Newton, J. 2004. Tourism destination competitiveness: a quantitative approach. *Tourism Management - Volume 2* 25: 777–788.
- Cucculelli, M., & Goffi, G. 2016. Does sustainability enhance tourism destination competitiveness? Evidence from Italian Destinations of Excellence. *Journal of Cleaner Production* 111: 370–382.
- Koo, C., Shin, S., Gretzel, U., Hunter, W. C., & Chung, N. 2016. Conceptualization of smart tourism destination competitiveness. *Asia Pacific Journal of Information* Systems 26: 561–576.
- 7. Ammirato, Salvatore. Alberto Michele Felicetti. Marco Della Gala. 2014. Tourism Destination Management: A Collaborative Approach. *IFIP Advances in Information and Communication Technology*: 208–216.
- Dunn Ross, E., Iso-Ahola, S. 1991. Sightseeing tourists' motivation and sat isfaction. *Annals of tourism research* 18(2): 226–237.
- 9. Buckley, R. 1994. Framework for ecotourism Annals of: 661–669.
- 10. Hanafiah, M., Hemdi, M., & Ahmad, I. 2016. Tourism destination competitiveness: Towards a performance-based approach. *Tourism Economics* 22: 629–636.
- 11. Forum, World Economic. 2013. The Travel & Tourism Competitiveness Report 2013.
- Mendola, D., & Volo, S. 2017. Building composite indicators in tourism studies: Measurements and applications in tourism destination competitiveness. *Tourism Management* 59: 541–553.
- Abrham, J. 2014. Competitiveness of the Tourism Destination in the Global Economy.
   In Paper presented at the 8th International Days of Statistics and Economics. Prague.
- 14. Gooroochurn, N., & Sugiyarto, G. 2005. Competitiveness indicators in the travel and tourism industry. *Tourism Economics* 11: 25–40.
- 15. Mazanec, J. A., Wöber, K., & Zins, A. H. 2007. Tourism Destination Competitiveness: From Definition to Explanation? *Journal of Travel Research* 46: 86–95.
- 16. Hong, W. C. 2008. Competitiveness in the Tourism Sector. A Comprehensive Approach from Economic and Management Points. Physica. Verlag.
- 17. Kim, N. Tourism Destination Competitiveness, Globalization and Strategic Development from a Development Economics Perspective.
- 18. Cvelbar, L. K. et al. 2016. Drivers of destination competitiveness in tourism: a global investigation. *Drivers of destination competitiveness in tourism: a global investigation* 55: 1042–1050.
- 19. Grime, Megan M., and George Wright. 2016. Delphi Method. In *Wiley StatsRef: Statistics Reference Online*, 1–6. John Wiley & Sons, Ltd. https://doi.org/10.1002/9781118445112.stat07879.
- Rozados, Helen Frota. 2015. O uso da técnica Delphi como alternativa metodológica para a área da Ciência da Informação. *Em Questão* 21. Faculdade de Biblioteconomia Comunicacao: 64. https://doi.org/10.19132/1808-5245213.64-86.
- 21. Marques, Joana Brás Varanda, and Denise de Freitas. 2018. Método DELPHI: caracterização e potencialidades na pesquisa em Educação. *Pro-Posições* 29. FapUNIFESP (SciELO): 389–415. https://doi.org/10.1590/1980-6248-2015-0140.

- Martins Cunha, Cristiane, Omar Pereira de Almeida Neto, and Renata Stackfleth.
   2016. Principais Métodos De Avaliação Psicométrica Da Validade De Instrumentos De Medida Main Psychometric Evaluation Methods of the Validity of Measuring Instruments. Rev. Aten. Saúde 47: 75–83.
   https://doi.org/10.13037/rbcs.vol14n47.3391.
- Costa, António Pedro. 2016. Cloud Computing em Investigação Qualitativa: Investigação Colaborativa através do software webQDA. Fronteiras: Journal of Social, Technological and Environmental Science 5: 153. https://doi.org/10.21664/2238-8869.2016v5i2.p153-161.
- Costa, António Pedro, and João Amado. 2018. Content Analysis Supported by Software. Aveiro: Ludomédia.
- Costa, António Pedro, Francislê Neri de Sousa, António Moreira, and Dayse Neri de Souza. 2017. Research through Design: Qualitative Analysis to Evaluate the Usability. In , 1–12. https://doi.org/10.1007/978-3-319-43271-7\_1.
- Costa, António Pedro, Francislê Neri de Souza, António Moreira, and Dayse Neri de Souza. 2018. webQDA 2.0 Versus webQDA 3.0: A Comparative Study About Usability of Qualitative Data Analysis Software. In , 229–240. https://doi.org/10.1007/978-3-319-58965-7 16.
- 27. Costa, António Pedro, Ronaldo Linhares, and Francislê Neri de Souza. 2014. Possibilidades de Análise Qualitativa no webQDA e colaboração entre pesquisadores em educação em comunicação. In *Infoinclusão e as possibilidades de ensinar e aprender*, ed. Ronaldo Linhares, Simone de Lucena Ferreira, and Fabricia Teixeira Borges, 205–215. Universidade Tiradentes, Aracaju Brasil: Editora da Universidade Federal da Bahia.
- Costa, António Pedro, António Moreira, and Francislê Neri Souza. 2019. webQDA Qualitative Data Analysis. Aveiro Portugal: Aveiro University and MicroIO.
- Costa, António Pedro, Luís Paulo Reis, and Francislê Neri de Souza. 2014.
   Investigação Qualitativa para Sistemas e Tecnologias de Informação. RISTI Revista Ibérica de Sistemas e Tecnologias de Informação. https://doi.org/10.17013/risti.e2.ix-xii.
- Cabero-Almenara, Julio, and Alfonso Infante Moro. 2014. Empleo del método Delphi y su empleo en la investigación en comunicación y educación. Edutec: Revista electrónica de tecnología educativa 0: 3. https://doi.org/10.21556/edutec.2014.48.187.
- Álvarez, Mercedes Reguant, Mercedes Reguant Álvarez, and Mercedes Torrado-Fonseca. 2016. El método Delphi. REIRE. Revista d'Innovacion i Recerca en Educacion 9. Edicions de la Universitat de Barcelona: 87–102. https://doi.org/10.1344/reire2016.9.1916.