

THE 4 C'S TOURISM DESTINATION COMPETITIVENESS MATRIX VALIDATION THROUGH THE CONTENT VALIDITY COEFFICIENT

Diamantino Ribeiro^{1*}, Luiz Pinto Machado², Pedro Henriques³

¹ Universidade de Évora; CEFAGE-UE

² Universidade da Madeira, CEFAGE-UE luispintomachado@gmail.com

³ Universidade de Évora; CEFAGE-UE pdamiao@uevora.pt

***Corresponding Author:-**

E-mail:-diamantinojribeiro@gmail.com

Abstract:-

The creation of the 4 C's Matrix of Tourism Destination Competitiveness aimed to consolidate and organise research questions about the area or areas in which tourist destinations should concentrate their attention. To consolidate the Matrix, 4 phases (preliminary, preparation, test and evaluation) were completed.

In the preliminary phase, a theoretical review on the Tourism Destinations Competitiveness Matrices was carried out; in the preparation phase we used the Delphi method inviting experts in the area of economy and tourism to contribute with their experiences in the construction of the survey instrument; in the test phase we validated the questionnaire through the Content Validity Coefficient; 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 paper presents the methodology and development of the test phase of the Matrix, using the Content Validity Coefficient (CVC). The contributions received and validated allowed us to create the base matrix with a CVC of 0.8961.

Keywords: - Tourism, Oporto, Matrix, Competitiveness, 4 C's.

1. INTRODUCTION

The theoretical conceptualisation carried out by the authors on tourist destination competitiveness models showed that the fundamental factors for the success of a destination, defended by several authors such as Ritchie & Crouch (1999) and Dwyer & Kim (2003) are: a) the socio-economic prosperity of the destination; b) its contribution to increasing the well-being of the local population (Ribeiro, Machado, & Henriques, 2020).

Based on this assumption, competitiveness analysis models should cover the opinions of tourists, residents and managers/political decision-makers, basically to ensure that the tourist/resident/manager pyramid 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, but it is necessary to define measurement parameters that allow an evolutionary and comparative evaluation between destinations (Enright e Newton, 2004).

The 4 C's Tourism Destination Competitiveness Matrix (4 C's Matrix) was built in order to answer key questions on tourist destination competitiveness and attractiveness, including:

- a. What do tourists think about the destination?
- b. Are the opinions of the tourists in accordance with the intended profile of the destination by the active agents of the city and those responsible for the management and reception of tourists (hotel managers, managers of catering and other infrastructure and equipment)?
- c. Does the opinion of the tourists correspond to that of the residents?

The creation of the 4 C's Tourism Destination Competitiveness Matrix was also aimed at understanding the area or areas that tourist destination managers should focus their attention on. To consolidate the matrix, 4 phases (preliminary, preparation, test and evaluation) were passed.

- In the preliminary phase a theoretical review on Tourism Destination Competitiveness Matrices was conducted (Ribeiro et al., 2020);
- In the preparation phase, the Delphi method was used, inviting experts in the field of Economy 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 (CVC);
- In the evaluation phase, a non-probabilistic approach was used, sampled for convenience to obtain answers from tourists, residents and destination managers.

The objective will be in the future to use the 4 C's Tourism Destination Competitiveness Matrix in an investigative context in different tourist destinations and may also serve as a basis for comparison between similar realities.

The answers to the questions 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 with investigative interest.

At the same time, it allows tourists to cross-check their opinions with residents and those responsible for tourism management in the destinations.

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 study cities, 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. This work only presents the development and methodology of the test phase of the 4 C's Matrix through the Content Validity Coefficient.

2. Matrix Construction

2.1 Preliminary phase

After the theoretical review on Tourism Destinations Competitiveness Matrices, we realised that the dispersion and complexity of the matrices found explains their little or almost nonexistent practical application in research work with application in the destinations (Ribeiro et al., 2020).

This established the starting point in liaising with specialists in the areas of economics and tourism (hotel managers, catering and other tourism equipment, and university lecturers in the areas of economics and tourism) in order to understand the important parameters that each of the specialists considered as a fundamental parameter for assessing a destination.

2.2 Preparation phase

In the preparation phase, the base matrix was created in line with the contributions received from 10 experts, through the Delphi methodology. After the 3 rounds, the 4 major dimensions of the instrument analysis were created:

- 1) The first dimension that we call "Capacity" systematises the opinion of the participants on the conditions of the destination regarding infrastructures, equipment and places to visit;
- 2) The second dimension, "Competence", brings together questions about the training/education of human resources for attending, welcoming and accompanying tourists;
- 3) The third dimension, "Communication", integrates issues related to communication and marketing initiatives, as well as internal and external dissemination of the destination;

4) The fourth dimension, “Creativity”, seeks to gather answers about the novelties and attractiveness that the destination provides to those who visit it, and which distinguish it from other destinations and make it unique.

Figure 1, summarises the matrix:

Figure 1 – 4 C's Tourism Destination Competitiveness Matrix



2.3 Test phase

At this stage the aim was to validate the survey regarding the relevance, clarity, and coherence of the issues. We used the Content Validity Coefficient (CVC). Four guests from the previous Delphi Panel participated in the jury. The values of the Content Validity Coefficient were satisfactory, relevance (CVCT=0.99), clarity (CVCT=0.83), coherence (CVCT=0.88). The overall CVC of the instrument was 0.8961.

2.4 Evaluation phase

In the evaluation phase of the matrix, a first operational test of the 4 C's Tourism Destination Competitiveness Matrix was intended; a non-probabilistic approach was used, sampled for convenience to obtain answers from tourists, residents and destination managers. We collected 100 responses from tourists, 100 responses from residents and 10 responses from hotel and restaurant managers.

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 1):

OPINION ABOUT THE CITY REGARDING...

Rate your satisfaction 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

Transportation; 1 2 3 4 5 6 7

Communication routes (roads, highways, etc.); 1 2 3 4 5 6 7

Hotels; 1 2 3 4 5 6 7

Restaurants; 1 2 3 4 5 6 7

Museums and cultural sites; 1 2 3 4 5 6 7

Theme parks, venues for events, etc.; 1 2 3 4 5 6 7

Nightlife spots; 1 2 3 4 5 6 7

Accessibility for people with reduced mobility. 1 2 3 4 5 6 7

COMPETENCE [Training and availability of Human Resources]

Airport; 1 2 3 4 5 6 7

Public transport; 1 2 3 4 5 6 7

Taxis; 1 2 3 4 5 6 7

Other transport (Uber, Cabify, etc.); 1 2 3 4 5 6 7

Hotels; 1 2 3 4 5 6 7

Restaurants; 1 2 3 4 5 6 7

Museums and cultural sites; 1 2 3 4 5 6 7

Tourist information services; 1 2 3 4 5 6 7

Public authorities (police, SEF, etc.); 1 2 3 4 5 6 7

Contact with the public. 1 2 3 4 5 6 7

COMMUNICATION [Publicity and promotion]

Signposting in public transport and airport; 1 2 3 4 5 6 7

Signposting in streets and roads; 1 2 3 4 5 6 7

Printed and virtual maps; 1 2 3 4 5 6 7

Promotion of events (cultural, gastronomy, etc.); 1 2 3 4 5 6 7

Promotion and advertising of Oporto in your country; 1 2 3 4 5 6 7

Promotion and advertising of Oporto in other Countries. 1 2 3 4 5 6 7

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

Sporting events (national/international comp.); 1 2 3 4 5 6 7

Gastronomic and wine-related events; 1 2 3 4 5 6 7

Restaurants and places of entertainment; 1 2 3 4 5 6 7

Communication and promotion of the destination Oporto. 1 2 3 4 5 6 7

3. The 4 C's Tourism Destination Competitiveness Matrix

In the test phase we aim to validate the survey in terms of relevance, clarity and consistency of issues. We use the Content Validity Coefficient. 4 experts from the 10 of the previous Delphi Panel participated in the jury.

3.1 Literature review on CVC

Content assessment is an essential step in building and developing data collection tools.

Content assessment is an essential step in building and developing data collection tools. It is a methodology widely used in the literature to measure the agreement of a panel of experts in a given field, on certain aspects of a questionnaire (Alexandre & Coluci, 2018; Silveira et al., 2018; Souza, Alexandre, & Guirardello, 2017a; Yang, 2002; Yao, Wu, & Yang, 2008).

Some researchers use the CVC to measure the representative importance of questions on a given topic; others use the method when translating questionnaires from other languages, thus ensuring clarity of translation (Silveira et al., 2018). In the case of the 4 C'S Matrix, the intention was to create a uniform and balanced instrument as regards the number of questions, clear in terms of the formulation of each of the questions, and coherent with the objectives of the size and the questionnaire.

Some researchers use the CVC in two distinct parts. The first part in order to develop the instrument and the second part in order to evaluate it. They want to ensure that the validity of the instrument is guaranteed by the procedure for its development. To assess the content, it is also recommended to use quantitative and qualitative procedures (Yang, 2002).

In the case of our instrument, the options, first by personal interviews and then the use of the Delphi panel in the construction phase of the survey, provided greater flexibility and collaboration of the experts invited, because at that stage the intention was not to measure or to quantify, but to build.

The literature recommends that the researcher should initially define the construct of interest and its dimensions through bibliographic research and consultation with experts in the area and representatives of the population of interest (Yang, 2002; Yao et al., 2008). The development of instruments should involve three phases: identification of the areas, training of the items and construction of the instrument (Silveira et al., 2018; Rigon, Nora, Zoboli, & Vieira, 2017; Souza, Alexandre, & Guirardello, 2017b; Cunha, De Almeida Neto, & Stackfleth, 2016).

3.2 Application of the CVC

In the case of the 4 C's TDC Matrix, the identification of the areas was defined still in the preparation phase, through individual interviews and with the collaboration of several actors and specialists in the area of economy and tourism. The training of the items was built through the Delphi panel of 10 specialists. The final organisation of the instrument represents and synthesises the contributions of all the stakeholders throughout the process.

Through the use of the CVC, we first analyse each item individually, and then the questionnaire as a whole. This method employs a Likert type scale (Retnawati, 2016). In our assessment we used a Likert scale from 1 (not at all relevant) to 5 (very relevant) for the relevance of the issue; from 1 (not at all clear) to 5 (very clear) for the clarity of the issues, and finally from 1 (nothing coherent) to 5 (very coherent) for the coherence of the issue.

In table 1, we present the evaluation matrix organised according to the dimensions “Capacity”,

“Competence”, “Communication” and “Creativity”. Each judge rated each of the 30 final questions on a scale from 1 to 5, according to their opinion on relevance for the study, clarity of the question and coherence.

In the last CVC column of each question, we find the overall rating of the 4 judges for each of the questions, calculated by adding together the rating of each of the judges, dividing by 4 judges (average) and then dividing by the highest point on the Likert scale used (5).

Equation 1 - CVC formula for each parameter evaluated

$$M_x = \sum x / J$$

Média de cada item: soma dos valores obtidos
na escala de Likert (x) pelo número de juízes (J)

We obtained the following values for each of the evaluated parameters: Relevance=0.99; Clarity=0.83; Coherence=0.88. For the CVC of each judge for the scale as a whole we start by calculating the CVC of each question regarding relevance, clarity and coherence by adding together the assessments and dividing by 4 to obtain the average. Then it was divided by the number of questions (30) and we obtained the CVC of each judge for each question. Applying the formula,

Equation 2 - Calculation of the CVC of each judge on the scale as a whole

$$CVC_j = \frac{\sum_j^e}{V_{max_e}}$$

the sum of the assessments of each of the judges was added up and divided by the Likert's scale maximum (5). We obtained the following evaluations for the scale as a whole: Judge 1= 0.891; Judge 2=0.902, Judge 3=0.864; Judge 4=0.942.

To obtain the CVC of the scale as a whole, we calculated the average of the 4 judges and arrived at the value of 0.90. The literature recommends the calculation of the instrument error using the formula:

Equation 3 - Error calculation

$$Pe_j = \left(\frac{1}{N_j} \right)^{N_j}$$

We have come to an error of 0.0039. Finally subtracting the error=0.039 from the CVC of the scale as a whole =0.90, we get to the CVC of the instrument as a whole =0.8961.

Table 1 - Content Validity Coefficient

Tourist Destination Competitiveness 4C's Matrix																						
CVC - Coefficient of Validity of Content																						
R= Relevance / Cl=Clarity / Co=Coherence				Specialist 1				Specialist 2				Specialist 3				Specialist 4				CVC of each question		
				R	Cl	Co	CVC	R	Cl	Co	CVC	R	Cl	Co	CVC	R	Cl	Co	CVC	R	Cl	Co
City's opinion on:																						
CAPACITY																						
1	Airport	5	5	5	0,17	5	5	5	0,17	5	5	5	0,17	5	5	5	0,17	1	1	1		
2	Transport	5	4	4	0,14	5	4	5	0,16	5	4	4	0,14	5	5	4	0,16	1	0,85	0,85		
3	Roads of communication (roads, motorways, etc)	5	4	4	0,14	5	4	5	0,16	5	5	5	0,17	5	4	4	0,14	1	0,85	0,9		
4	Hospitality	5	5	5	0,17	5	5	4	0,16	5	5	4	0,16	5	5	5	0,17	1	1	0,9		
5	Restoration	5	5	5	0,17	5	5	4	0,16	5	5	4	0,16	5	5	5	0,17	1	1	0,9		
6	Museums and cultural sites	5	4	4	0,14	5	5	4	0,16	5	4	4	0,14	5	5	4	0,16	1	0,9	0,8		
7	Theme Parks, Event Venues, etc.	4	4	4	0,13	5	3	5	0,14	5	5	3	0,14	5	4	5	0,16	0,95	0,8	0,85		
8	Nightlife Places	5	4	5	0,16	5	4	5	0,16	5	4	5	0,16	5	4	4	0,14	1	0,8	0,95		
9	Accessibility for people with reduced mobility.	5	5	5	0,17	5	5	5	0,17	5	3	5	0,14	5	5	5	0,17	1	0,9	1		
COMPETENCE																						
10	Airport	5	4	5	0,16	5	4	5	0,16	5	3	3	0,12	5	4	4	0,14	1	0,75	0,85		
11	Public transportation	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	1	0,8	0,8		
12	Taxis	5	5	5	0,17	5	5	5	0,17	5	5	5	0,17	5	5	5	0,17	1	1	1		
13	Other transport (Uber, Cadify, etc)	5	5	5	0,17	5	5	5	0,17	5	5	5	0,17	5	5	5	0,17	1	1	1		
14	Hospitality	5	5	5	0,17	5	5	5	0,17	5	4	4	0,14	5	5	5	0,17	1	0,95	0,95		
15	Restoration	5	5	5	0,17	5	5	5	0,17	5	3	4	0,13	5	4	4	0,14	1	0,85	0,9		
16	Museums and cultural sites	5	3	4	0,13	5	3	3	0,12	5	3	4	0,13	5	4	4	0,14	1	0,65	0,75		
17	Tourist information services	5	5	5	0,17	5	5	3	0,14	5	4	4	0,14	5	3	4	0,13	1	0,85	0,8		
18	Public authorities (police, SEF, etc)	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	5	4	5	0,16	1	0,8	0,85		
19	Contact with the population	5	3	4	0,13	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	1	0,75	0,8		
COMUNICACION																						
20	Signage on public transport and airport	5	4	4	0,14	5	3	5	0,14	5	3	4	0,13	5	5	5	0,17	1	0,75	0,9		
21	Signage on the streets and roads	5	4	4	0,14	5	3	5	0,14	5	3	4	0,13	5	5	5	0,17	1	0,75	0,9		
22	Printed and virtual maps and itineraries	5	4	4	0,14	5	3	5	0,14	5	3	4	0,13	5	5	5	0,17	1	0,75	0,9		
23	Promotion of events (cultural, gastronomy, etc)	5	3	4	0,13	5	3	5	0,14	5	3	4	0,13	5	5	5	0,17	1	0,7	0,9		
24	Promotion and advertising of destination Porto in your country	5	3	4	0,13	4	3	5	0,13	4	3	4	0,12	5	5	5	0,17	0,9	0,7	0,9		
25	Promotion and advertising of destination Porto in other countries	4	3	4	0,12	5	3	5	0,14	4	3	4	0,12	5	5	5	0,17	0,9	0,7	0,9		
CREATIVITY																						
26	Cultural events and shows (theatre, music, etc)	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	5	4	5	0,16	1	0,8	0,85		
27	Sports events (national and international competitions)	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	5	4	5	0,16	1	0,8	0,85		
28	Gastronomic events and vinícolas	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	5	4	5	0,16	1	0,8	0,85		
29	Restaurants and entertainment venues	5	4	4	0,14	5	4	4	0,14	5	4	4	0,14	5	4	5	0,16	1	0,8	0,85		
30	Communication and dissemination of the destination Porto	5	3	3	0,12	5	4	4	0,14	5	4	4	0,14	5	4	5	0,16	1	0,75	0,8		
CVC of each Judge for the scale as a whole				0,891				0,902				0,864				0,942				0,99; 0,83; 0,88		
CVC of the scale as a whole				0,9000																		
Error Calculation				0,0039																		
Calculation of the CVC as a whole				0,8961																		

The contributions received and validated allowed us to create the base matrix with a CVC of 0.8961.

4. Conclusions

The validity of content consists of subjective judgement by a committee of experts, who evaluate the proportion in which the items of a measure determine the same content and, whether these are relevant and representative of a given construct (Cunha et al., 2016). In the 4 C's Tourism Destination Competitiveness Matrix, we intended to ensure that the content of the instrument was relevant, clear, and coherent.

The validation of content by experts is the judgment made by a group of experts experienced in the subject area of the instrument, who are responsible for assessing the correctness, consistency and adequacy of content (Souza et al., 2017b). The validation of content by experts seeks to improve the content of the instrument, making it more reliable, precise, valid and decisive in what it proposes to measure. The validation of content is crucial in the development of a questionnaire, because it allows us to verify to what extent the items included correspond to the theoretical construction that serves as a basis for the instrument, with the aim of enabling the evaluation of the phenomenon of interest. That is, it allows for the verification of whether the items included in the instrument are representative and relevant to cover the phenomenon, taking into account the possibilities of questions about the subject studied (Rigon et al., 2017). The choice of the 4 experts to apply the CVC was based on the contributions and availability of the 10 judges participating in the preparation phase of the questionnaire.

Since content validation consists of a subjective evaluation, the selection of the panel of judges should be incredibly careful, especially with regard to the qualification of members. For this, they must take into consideration the characteristics of the instrument, the training, the qualification and the availability of the professionals indicated (Cunha et al., 2016). The literature suggests that the judges have experience, are researchers in the thematic area of evaluation and know the methodological process used in the construction and/or adaptation of measurement instruments (Cunha et al., 2016). In the case under examination, the initial 10 participants were selected based on this assumption (experience in the areas of economy and tourism), and the reduction to 4 judges for this test phase was made taking into account the experience of methodological processes in the areas of economy and tourism and the availability expressed by each of the guests.

In the 4 C's Tourism Destination Competitiveness Matrix, the first phase of research (the preliminary phase - theoretical revision) became fundamental, because it allowed for the research questions to be defined, which facilitated the approach in the first round of the panel - interviews; the participants could immediately organise their ideas and opinions on the construction of the instrument of analysis in an objective and systematic way, which allowed us to organise and systematise the questions according to the contributions received; finally, the purpose of the test phase that we present in this work is the validation of the instrument through methodology accepted by the research in the areas of study (economics and tourism).

The 4 C's Tourism Destination Competitiveness Matrix, was later evaluated in the field through a non-probabilistic approach, i.e. a convenience sample, to obtain answers from tourists, residents and managers of the destination – a study that will be the subject of future publishing. The 4 C's Tourism Destination Competitiveness Matrix intellectual property was registered at the INPI - National Institute of Industrial Property.

References

- [1]. Alexandre, N. M. C., & Coluci, M. Z. O. (2018). Content validity in the development and adaptation processes of measurement instruments.
- [2]. Cunha, C. M., De Almeida Neto, O. P., & Stackfleth, R. (2016). Principais métodos de avaliação psicométrica da validade de instrumentos de medida. *Revista Brasileira*
- [3]. *Ciências Da Saúde - USCS*, 14(47), 75–83. <https://doi.org/10.13037/ras.vol14n47.3391> Dwyer, L., & Kim, C. (2003). Destination Competitiveness: Determinants and Indicators. *Current Issues in Tourism*, 6(5), 369–414.
- [4]. Enright, M. & Newton, J. (2004). Tourism destination competitiveness: a quantitative approach. *Tourism Management - Volume 2*, 25, 777–788. Retrieved from *Tourism Management*%0AVolume 25, Issue 6, December 2004, Pages 777-788%0A
- [5]. Retnawati, H. (2016). Proving content validity of self-regulated learning scale (The comparison of Aiken index and expanded Gregory index). *Research and Evaluation in Education*, 2(2), 155. <https://doi.org/10.21831/reid.v2i2.11029>
- [6]. Ribeiro, D., Machado, L. P., & Henriques, P. (2020). Competitiveness of Tourist Destinations - Theoretical Study of the Main Models. *International Journal of Business & Management Science (ISSN: 2208-2190)*, In Press.
- [7]. Rigon, C., Nora, D., Zoboli, E., & Vieira, M. M. (2017). Revista Gaúcha de Enfermagem Artigo Original Validação por peritos: importância na tradução e adaptação de instrumentos. *Revista Gaúcha de Enfermagem*, 1 a 9. <https://doi.org/10.1590/1983>
- [8]. Ritchie, J., & Crouch, G. (1999). Tourism, Competitiveness, and Societal Prosperity. *Journal of Business Research*, 44, 137–152. Retrieved from <http://turismoadministracaoehospitalidade.wordpress.com>
- [9]. Silveira, M. B., Saldanha, R. P., Leite, J. C. de C., Silva, T. O. F. da, Silva, T., & Filippin, L. I. (2018). Construction and validation of content of one instrument to assess falls in the elderly. *Einstein (Sao Paulo, Brazil)*, 16(2), eAO4154. <https://doi.org/10.1590/S167945082018AO4154>
- [10]. Souza, A. C. de, Alexandre, N. M. C., & Guirardello, E. de B. (2017a). Propriedades psicométricas na avaliação de instrumentos: avaliação da confiabilidade e da validade. *Epidemiologia e Serviços de Saúde : Revista Do Sistema Unico de Saude Do Brasil*, 26(3), 649–659. <https://doi.org/10.5123/S1679-49742017000300022>
- [11]. Souza, A. C. de, Alexandre, N. M. C., & Guirardello, E. de B. (2017b). Propriedades psicométricas na avaliação de instrumentos: avaliação da confiabilidade e da validade. *Epidemiologia e Serviços de Saúde : Revista Do Sistema Unico de Saude Do Brasil*, 26(3), 649–659. <https://doi.org/10.5123/S1679-49742017000300022>
- [12]. Yang, W.-C. (2002). Applying Content Validity Coefficient and Homogeneity Reliability Coefficient to Investigate the Experiential Marketing Scale for Leisure Farms.
- [13]. Yao, G., Wu, C. H., & Yang, C. T. (2008). Examining the content validity of the WHOQOL-BREF from Respondents' perspective by quantitative methods. *Social Indicators Research*, 85(3), 483–498. <https://doi.org/10.1007/s11205-007-9112-8>