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Proposal of an assessment scale in competitive intelligence applied to the tourism sector

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ABSTRACT Companies operate in uncertain environments, where decision-making is a complex task. Thus, one of the key elements to take into account in the aforementioned decision-making is the environment in which the business operates. This is where competitive intelligence (CI) makes sense, understood as the process of establishing the environmental information needs, information acquisition and its analysis, transforming it into intelligence and putting it at the service of decision-makers in the company. This paper focuses on the proposal of a CI model that can be applied in the tourism sector, specifically in hotels, due to the relevance of this sector in many economies worldwide. In order to build the model a deep review of the CI literature was made and subsequently the content validation method was applied, for the purpose of identifying the most important items in the two first stages of the CI cycle: planning and collection.

KEYWORDS Competitive intelligence cycle, decision-making, hotel management, tourism

1. INTRODUCTION

Nowadays, companies develop their activity in more and more uncertain and complex everyday environments (Zhang et al., 2010). The nature of that environment makes it a difficult task for the companies to maintain a competitive advantage (Shih et al., 2010), as well as carry out decision-making. According to Jiménez-Quintero & Aldeanueva-Fernández (2016), a country’s political situation, together with their way of visualizing international business, has an important impact on decision-making. Consequently, management systems are now becoming more dynamic and less predictable, i.e., more sophisticated.

In order to make decisions that guarantee the maintenance of a competitive advantage and business survival, companies not only have to take into account their internal environment, but also what has happened, is happening or could happen in their external environment. It is the latter point that competitive intelligence (CI) processes are focused on.

CI can be defined as the art of collecting, processing and storing information to be made available to people at all levels of a firm to help shape its future and protect it against current competitive threats. It should be legal and respect codes of ethics. It involves a transfer of knowledge from the environment to the organisation within established rules (Rouach & Santi, 2001). As Seileen (2015) states, the growing importance of CI in academics brings it closer to become a relevant discipline in the social sciences.

The tourism sector is a key element for socioeconomic progress, because of the enterprise and job creation that comes with it. Its growth has been practically uninterrupted and it is expected to continue with this trend
until 2030, according to the World Tourism Organization (2015).

Tourism growth is, therefore, essential to achieve GDP increments. This has been proved by extensive research undertaken in several countries: Sweden, Norwegian, Denmark and more (Lee & Chang, 2008); United Kingdom, Croatia and Spain (Pérez-Rodríguez et al., 2015); Hungary, Romania, France and Spain (Zurub et al., 2015); Brazil, Chile, Colombia, Ecuador, Peru and other Latin-American countries (Eugenio-Martín et al., 2004); Taiwan and South Korea (Chen & Chiou-Wei, 2009); China, Pakistan, Russia and India (Tiwari, 2011).

Given the importance that tourism has acquired worldwide, and its prominent role in the GDP of many economies, we decided to conduct research that linked, on the one hand, one of the key agents in tourism: hotels; and on the other hand, CI, understood as a tool for decision-making, and hence, business survival.

In this context, the main objective of this paper is to elaborate on an assessment scale of the CI process applied to the tourism sector using a content validation method. This is because, apart from the aforementioned, a literature review about CI between 2011 and 2016 has been conducted, finding a lack of CI research in tourism.

2. LITERATURE REVIEW ON COMPETITIVE INTELLIGENCE

CI is based on the environmental school of strategic management (Casado-Salguero & Jiménez-Quintero, 2016) and plays a very important role in the development and deployment of corporate strategies (Dishman & Calof, 2008). The proof of this is in the significant number of proposals present in specialised literature that incorporate CI in several countries and fields. For instance, Šperková et al. (2015) in the banking sector of Czech Republic, Bisson (2014) in public agricultural organisations in France, and Fatti & du Toit (2013) in the pharmaceutical industry in South Africa, etc.

A traditional definition of CI is the one that Porter (1980) presented in his book “Competitive Strategy: Techniques for Analysing Industries and Competitors”, where he explains that CI includes the early recognition of threats and opportunities through gathering and analysing information related to the environment of the company to support managers in the business decision-making process.

According to Calof (2008), CI helps the company maintain and create competitive advantages by using information from the environment about clients, competitors, and technologies. Fleisher & Bensoussan (2007) define this term as the process whereby a company legally gathers and interprets the environmental information, to make it available to decision-makers. In this case Søilen (2016) shows that the internet and mobile telephones allow access to a wider range of knowledge about companies’ and people’s activities. Therefore, it is necessary to enable secure encryption to preserve confidential electronic information. Casado-Salguero & Jiménez-Quintero (2016) explain that CI in the organisation is the set of practises aimed at gathering information from the business environment ethically and legally, in order to transform it into intelligent information useful for strategic decision-making and, therefore, leading to business success and survival.

Table 1 Concepts under which CI has been studied, based on Dishman & Calof (2008)

<table>
<thead>
<tr>
<th>Concept</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental scanning</td>
<td>Aguilar, 1967; Fahey &amp; King, 1977; Fahey &amp; Narayanan, 1982; Hambrick, 1982; Sashittal &amp; Jassawalla, 2001; Saxby et al., 2002</td>
</tr>
<tr>
<td>Business intelligence</td>
<td>Cleland &amp; King, 1975; Benjamin, 1979; Pearce, 1976</td>
</tr>
<tr>
<td>Strategic intelligence</td>
<td>Aaker, 1983; Montgomery &amp; Weinberg, 1979</td>
</tr>
<tr>
<td>Competitor analysis</td>
<td>Ghoshal &amp; Westney, 1991; Rothschild, 1979</td>
</tr>
<tr>
<td>Competitive technical intelligence</td>
<td>Albagli et al., 1996; Brockhoff, 1991</td>
</tr>
<tr>
<td>Market intelligence</td>
<td>Chonko et al., 1991; Maltz &amp; Kohli, 1996</td>
</tr>
<tr>
<td>Peripheral vision</td>
<td>Day &amp; Schoemaker, 2006</td>
</tr>
<tr>
<td>Competitive analytics concept</td>
<td>Davenport, 2006</td>
</tr>
</tbody>
</table>
Despite its presence both in academic and professional areas, a single generally accepted definition of CI does not exist (Fleisher & Wright, 2009). In fact, as can be seen in Table 1, there are different CI perspectives approached by several authors in the literature.

Examining the literature, in last five years we can find empirical research about CI in different sectors, including tourism. However, studies about CI in hotels are scarce, which is a strong argument to conduct this paper.

To reach that conclusion a literature review in two databases was undertaken: Coordenação de Aperfeiçoamento de Pessoal de Nível Superior (CAPES) and Web of Science (WOS). These databases contain the highest impact journals in the indexed literature. The keyword in the search was “competitive intelligence”, and in order to select the sample of papers the following criteria where established: a) papers had to include the keyword “competitive intelligence”, either in the title or in the keywords; b) they had to follow empirical research; c) they had to belong to the field of business and economics; and d) they had to be published between 2011 and 2016. Thirty-six papers were obtained in all, which constitute the analysis base used in this paper.

The analysed papers were classified, as shown in Table 2, within the following industries: exploitation of natural resources, public sector, technology-based companies, manufacturing, service sector, and finally, hotel sector.

Research in CI during the last five years can be summed up as follows: research is mostly focused on service sector companies (33% of the selected papers), followed by technology-based companies (31%) and manufacturing (16.7%). Note the scarce research on the public sector (2.4%) and natural resources exploitation (11.9%), but it is especially important to highlight the poor participation of CI research in hotels, which comprises only 4.8% of selected papers.

### Table 2 Empirical research on CI by industries (2011-2016)

<table>
<thead>
<tr>
<th>Sector of Activity</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exploitation of natural resources</td>
<td>Rothberg &amp; Erickson (2013); Sewdass &amp; du Toit (2014); Ramírez et al. (2013); Guimaraes (2011); Jin &amp; Ju (2014); Johns &amp; Van Doren (2010)</td>
</tr>
<tr>
<td>Public sector</td>
<td>Sewdass (2012)</td>
</tr>
<tr>
<td>Technology-based companies</td>
<td>Adidam et al. (2012); Dos Reis et al. (2013); Yap et al. (2013); Ramírez et al. (2013); Mariadoss et al. (2014); De Carvalho &amp; Janissek (2014); Sewdass &amp; du Toit (2014); Guimaraes (2011); Samtani &amp; Capatina (2012); Capatina et al. (2013); Nemutanzhela &amp; Iyamu (2011); Sun &amp; Wang (2015); Jin &amp; Ju (2014); Opait et al. (2016); Ahearne et al. (2013); Johns &amp; Van Doren (2010)</td>
</tr>
<tr>
<td>Manufacturing</td>
<td>Adidam et al. (2012); Pellissier &amp; Nenzhelele (2013); Yap et al. (2013); Dos Reis et al. (2013); Sewdass &amp; du Toit (2014); Guimaraes (2011); Jin &amp; Ju (2014); Shih et al. (2010)</td>
</tr>
<tr>
<td>Service sector</td>
<td>Faust &amp; Gadotti (2011); Nemutanzhela &amp; Iyamu (2011); Adidam et al. (2012); Zheng et al. (2012); Pellissier &amp; Nenzhelele (2013); Dos Reis et al. (2013); Yap et al. (2013); Tută et al. (2014); De Carvalho &amp; Janissek (2014); Sewdass &amp; du Toit (2014); Trong (2013); Guimaraes (2011); García-Alsina et al. (2013); Fernández &amp; Tañski (2011); Rapp et al. (2015); Zambon &amp; Anunciação (2014); Ahearne et al. (2013); Hughes et al. (2013); Guarrochena &amp; Paul (2013); Erickson &amp; Rothberg (2013); Gatsorius (2012); Pelissari et al. (2012); Safarnia et al. (2011); Fernández &amp; Tañski (2011)</td>
</tr>
</tbody>
</table>
| Hotel sector                           | Faust & Gadotti (2011); Rapp et al. (2015); Calero et al. (2010)
adopted structured processes to gather and analyse information from the environment (Bose 2008; Groom & David, 2001; Pepper 1999; Vedder et al., 1999; cited by Hughes et al., 2013). Furthermore, companies with a higher standard in CI activities also show better financial performance (Adidam et al., 2012).

Due to the above, and the relevance of the tourism sector in many economies, we propose a CI model that can be applied by hotels. We focus on the first two stages of the CI cycle, based on a comprehensive literature review to establish the items belonging to each stage, items that have subsequently been validated by a committee of experts in the tourism sector. The result is a CI model applicable to hotels (and even to other sectors, with the appropriate modifications), which will allow to organisations to implement a CI process.

But in practice, how is a CI process applied? There are several authors that talk about the so-called “CI cycle”, in other words, a set of successive phases that help us obtain the necessary intelligence for decision-making. In the various CI cycles that we can find in the literature, there are common elements among them. However, the name and number of the stages can be different (Cloutier, 2013).

Figure 1 shows one of the most widely accepted CI cycles among professionals and academics. We are referring to the one proposed by the Strategic and Competitive Intelligence Professionals (2014). This cycle consists of the following five stages: a) planning (recognition of the information needs); b) gathering (needed information and choosing a source to obtain it); c) analysis (turning information into intelligence); d) dissemination (making the obtained intelligence available for decision-makers); and e) feedback (setting a mechanism to validate the reliability of the obtained intelligence to determine the potential variances in any stages of the cycle).

4. METHODOLOGY

To build the assessment scale of the CI practices, a content validation by a panel of judges was applied, according to Hernández-Nieto (2002) and Pasquali (2010). To measure the content validation coefficient (CVC) of each item in the questionnaire, the following criteria were adopted: a) clarity of language; b) practical relevance; and c) theoretical relevance.

The aim of the validation through a panel of judges is to confirm, theoretically, the hypothesis that items properly represent the
construct, by asking people who don’t constitute a representative sample of the population to build that instrument (Pasquali, 2010). Nine judges were selected to be part of the production of the questionnaire content validation coefficient (CVC). CVC calculation was made through the following steps:

a) Each item mean score (MX) is calculated from the judges’ score:

\[ MX = \frac{\sum_{i=1}^{q} X_{ij}}{j} \]

where i=1 represents the total judges’ score and j the number of judges.

b) The initial CVC is obtained from:

\[ CVC_t = \frac{MX}{V_{max}} \]

c) Error is the same for each item, and it is calculated as follows:

\[ P_{ei} = \left(\frac{1}{j}\right)^{j} \]

d) Then, the final CVC is obtained for each item:

\[ CVC_c = CVC_t - P_{ei} \]

e) Finally, the total CVC of the questionnaire is calculated for each assessment criterion (clarity of language, practical relevance and theoretical relevance):

\[ CVC_t = M_{CVC_t} - M_{P_{ei}} \]

where \( M_{CVC_t} \) is the mean of content validation coefficient items and \( M_{P_{ei}} \), the mean of error of the items in the questionnaire. After the calculation, it is recommended that only items with \( CVC_c > 0.8 \) are accepted.

5. ANALYSIS AND RESULTS

The instrument consists of two blocks of items that assess some of the main CI activities found in the literature: planning of the CI needs and information gathering.

For the planning block, 51 items were proposed, although 30 didn’t reach the minimum coefficient required in the literature after the panel of judges’ evaluation and those items had to be removed from the scale. Items with a content validation coefficient below 0.8 were excluded from the proposed scale. Therefore, the block was only composed of 21 items.

Table 3 Items referring to planning of CI activities.

<table>
<thead>
<tr>
<th>Items referring to planning of CI activities</th>
<th>CVC_t</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Competitor price is decisive to fix my price</td>
<td>0.90</td>
</tr>
<tr>
<td>2. There is a management practise to monitor competitor strategy</td>
<td>0.87</td>
</tr>
<tr>
<td>3. There is a management practise to monitor competitor price</td>
<td>0.87</td>
</tr>
<tr>
<td>11. Takes into account guest satisfaction with each department to manage it</td>
<td>0.83</td>
</tr>
<tr>
<td>12. Takes into account guest opinion on the state of the premises</td>
<td>0.92</td>
</tr>
<tr>
<td>13. Provider prices determine if we continue working with them in the future</td>
<td>0.84</td>
</tr>
<tr>
<td>15. We know other existing providers’ prices</td>
<td>0.93</td>
</tr>
<tr>
<td>17. Issuing country’s political stability in long-term concerning decisions is taken into account</td>
<td>0.83</td>
</tr>
<tr>
<td>18. The economical stability of the country in long-term concerning decisions is taken into account</td>
<td>0.81</td>
</tr>
<tr>
<td>20. Our country’s threat of terrorism impacts long-term decisions</td>
<td>0.83</td>
</tr>
<tr>
<td>28. Level of crime and public security affect tourists arrival</td>
<td>0.86</td>
</tr>
<tr>
<td>29. Our country’s infrastructure affects tourist arrival</td>
<td>0.86</td>
</tr>
<tr>
<td>30. Issuing countries’ infrastructure affects tourist arrival</td>
<td>0.81</td>
</tr>
<tr>
<td>33. Unemployment rate affects domestic tourism</td>
<td>0.91</td>
</tr>
<tr>
<td>34. Issuing countries’ unemployment rate affects tourist arrival</td>
<td>0.87</td>
</tr>
<tr>
<td>36. The standard of living in our country impacts domestic tourism</td>
<td>0.93</td>
</tr>
<tr>
<td>37. Issuing countries’ standard of living impacts tourist arrival</td>
<td>0.83</td>
</tr>
<tr>
<td>43. Process automation affects way of working</td>
<td>0.84</td>
</tr>
<tr>
<td>45. Issuing countries’ culture in its management is taken into account</td>
<td>0.87</td>
</tr>
<tr>
<td>46. Countries’ culture in its management is taken into account</td>
<td>0.85</td>
</tr>
<tr>
<td>50. Energy costs affects management</td>
<td>0.87</td>
</tr>
</tbody>
</table>
This way, there is alignment between the assessed dimensions and a coefficient whose extent is 0.13, the accepted rate in the literature.

For the gathering block, 41 items were proposed, although 24 didn’t reach the minimum coefficient required in the literature after the panel of judges’ evaluation and those items had to be removed from the scale. Items with a content validation coefficient below 0.8 were excluded from the proposed scale. Therefore, the block was only composed of 17 items.

For items referring to information gathering, the extent of the CVCt was 0.18, as recommended in the literature. That was possible due to the fact that in about 35% of the items, the CVCt was between 0.9 and 1. At least one item, one out of the three assessed dimensions, had a maximum concordance qualification among the panel of judges.

Table 4 Items referring to gathering of the information.

<table>
<thead>
<tr>
<th>Items referring to gathering of the information</th>
<th>CVCt</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. There is a management practise to identify main competitors</td>
<td>0.97</td>
</tr>
<tr>
<td>2. There is a management practise to monitor competitor strategy</td>
<td>0.84</td>
</tr>
<tr>
<td>3. There is a management practise to monitor competitor price</td>
<td>0.96</td>
</tr>
<tr>
<td>4. There is a management practise to monitor new competitor services</td>
<td>0.84</td>
</tr>
<tr>
<td>5. There is a management practise to monitor competitor scores on search engines</td>
<td>0.88</td>
</tr>
<tr>
<td>7. There is a management practise to segment the market</td>
<td>0.93</td>
</tr>
<tr>
<td>8. There is a management practise to determine each segment’s characteristics</td>
<td>0.87</td>
</tr>
<tr>
<td>9. There is a management practise to monitor guests’ suggestions</td>
<td>0.93</td>
</tr>
<tr>
<td>11. There is a management practise to monitor the information obtained about guests in each department</td>
<td>0.99</td>
</tr>
<tr>
<td>12. There is a management practise to monitor the information obtained about competitors in each department</td>
<td>0.84</td>
</tr>
<tr>
<td>20. There is a management practise to monitor environmental legislation</td>
<td>0.84</td>
</tr>
<tr>
<td>21. There is a management practise to monitor the level of crime and public security</td>
<td>0.81</td>
</tr>
<tr>
<td>31. There is a management practise to monitor labour qualification</td>
<td>0.84</td>
</tr>
<tr>
<td>33. There is a management practise to monitor new ICTs</td>
<td>0.87</td>
</tr>
<tr>
<td>34. There is a management practise to monitor the life cycle of the products</td>
<td>0.86</td>
</tr>
<tr>
<td>39. There is a management practise to monitor energy costs</td>
<td>0.90</td>
</tr>
<tr>
<td>41. There is a management practise to cooperate with strategic alliances to develop new products and services</td>
<td>0.84</td>
</tr>
</tbody>
</table>

6. CONCLUSIONS AND FUTURE RESEARCH

If a company wants to survive and be successful, it has to be accomplished by means of least bias decision-making. Nowadays, it is a difficult duty as far as the environment is concerned due to its instability and turbulence, consequently it is indispensable to have a wide knowledge of it, in such a way that the environment information can be incorporated into decision-making.

For decades, companies have understood this, and many well-known companies, even the most limited in size and resources, are applying CI processes that allow them to have a better understanding of their environment.

In this paper we present a study of how CI processes should be applied in one of the most important sectors in many economies: tourism. Specifically, this work focuses on the proposal of a CI assessment model for hotels, on the basis of the two first stages of the CI cycle described by the Strategic and Competitive Intelligence Professionals (2014).

After a comprehensive literature review, in the first stage (planning), 51 items were obtained, and in the second one (gathering), 41. In each stage, Hernández-Nieto (2002) and Pasquali’s (2010) content validation method was applied, and items were reduced to 21 in the first stage and 17 in the second.

The aim of this research is that the first two assessed stages of the CI cycle can be of used for hotels' decision-makers to get to know how their company applies CI processes, or to help them to establish structured CI process. Furthermore, we pursue an increase in scientific knowledge in business management.

In this line of research, and in accordance with the topic, we keep the possibility of completing the assessment of the CI cycle open,
following the methodology applied herein. Once the cycle has been completed, one may analyse its degree of implementation in hotels and examine their profitability, to be able to determine (as has already been done in the literature) the relationship between CI and profitability, but focusing exclusively on the hotel sector.

7. REFERENCES


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