ENVIRONMENTAL STATEMENTS ISSUED BY SPANISH CERTIFIED HOTELS

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ABSTRACT

As of June 2005, Spain was the second country in the number of sites and companies certified by the Eco-Management and Audit Scheme (EMAS) and it was, more specifically, the hospitality industry that led in the number of Spanish sites certified by this standard. The purpose of this paper is to analyse environmental statements issued by Spanish hotels which have been certified by EMAS to determine whether or not they are useful. Those statements have been reviewed in order to ascertain whether these environmental reports are comparable among hotels so that stakeholders can make informed decisions about companies.

The question of whether to adopt environmental practices and join an environmental accreditation scheme seems to be no longer relevant for hotels. The reasons behind the adoption of sustainable practices are currently being explored, particularly in the context of hospitality firms, and involve cost benefits, perceived quality, improvement of the hotel’s image, etc. (see Tzschentke et al., 2004; Brown, 1996; Fletcher, 2003; Cespedes et al., 2003).

However, there are some facts which are undoubtedly relevant for the hospitality industry. Firstly, there is a public awareness of concerning the damage the environment is suffering and a growing recognition of tourism to have a negative impact on the environment (United Nations Environmental Programs -UNEP Tourism). Hotels generate a great portion of resource consumption and the sector is one of tourist’ basic expectations. As was suggested in the “Sustainable Hotels for Sustainable Destination” conference, hotels mark and distinguish destinations as sustainable hotels lead to sustainable destinations, which in turn lead to successful hotel businesses (Marin and Jafari, 2002).

Secondly, the tourism sector represents 5% of the European Union Gross Domestic Product (GDP) (EMAS, 2005). The tourism industry depends on a rich and diverse, natural and built environment for its economic well-being. Thus, the tourism industry cannot ignore environmental issues in its management and has much to gain from being a leader in the implementation of both environmentally and economically sustainable practices (World Tourism Organization, 2004). By examining a number of hospitality and hotel association websites from around the world, Duncan (2005) found that environmental issues are one of the areas these associations currently feel to be significant for their members.

The main conclusions of this research can be described along with the two main objectives suggested at the beginning of this text. On one hand, we have reached the objective of obtaining more knowledge about what the most common environmental aspects reported by Spanish certified hotels were. The first remarkable idea is that hotels more often disclose information concerning Operational Performance Indicators than Management Performance Indicators. Among the first group, those most often disclosed are, as mentioned, energy consumption, water use, and generated wastes. What could explain this is that OPI are ratios obtained after easy measures and most of them are supported by documents, for instance, an invoice. Moreover, EMAS requires companies to disclose Operational Performance Indicators, whereas it merely recommends companies to inform on Management Performance Indicators.

Although most of the hotels report on the same environmental aspects, the information is not wholly comparable and it is not possible to rank hotels according to their environmental behaviour. This is because we do not have information about how data are measured, and when hotels use the same indicators they do not always use the same reporting units. The set of indicators proposed by the Global Reporting Initiative is not used by these hotels in their environmental reports.

There is a need for the standardisation of data, so it would be interesting to know who the main users of the environmental reports issued under EMAS regulation are, and if they really allow external and internal benchmarking. So environmental reporting will serve its function as long as it satisfied certain conditions. Hotels as well as stakeholders need to agree about what information the organizations should disclose and about the units of measurement.
On the other hand, we proposed as an objective of this research the identification of what factors could be influencing the choice of environmental indicators. As a rule, the results derived from this research do not contribute to supporting the suggested hypotheses concerning the existence of differences between hotels disclosing environmental information and specific variables such as size, type of tourism, ownership, and years having environmental certifications. More precisely, we could conclude that the size of a hotel, measured by the number of rooms, seems to play no significant role in the amount of environmental information disclosed, though further research should be dedicated to analyse the influence of size when working at the company level. Also, there is no dependence between the type of tourism and the environmental information reported by a hotel. Urban hotels disclosed the same amount of environmental information as hotels located in sunny tourist places or in the mountains. Concerning the fact of belonging to a hotel chain, we could conclude that hotels which do not belong to a chain generally disclose more Operational Performance Indicators than hotels that belong to a chain, but this conclusion cannot be extended to Management Performance Indicators. Finally, there is no relationship between the experience in being environmentally certified and the amount of indicators disclosed.

We have found some difference in EMAS reports issued by hotels. It makes comparison so difficult for customers interested in environmental care and in knowing whether or not hotel behaviour is sustainable enough. We point at the need of elaborate a more useful and comparable report. Whether hotels use that, they would be marked and distinguished as sustainable hotels, which will turn them to successful hotel businesses.

1. INTRODUCTION

The question of whether to adopt environmental practices and join an environmental accreditation scheme seems to be no longer relevant for hotels. The reasons behind the adoption of sustainable practices are currently being explored, particularly in the context of hospitality firms, and involve cost benefits, perceived quality, improvement of the hotel’s image, etc. (see Tzschentke et al., 2004; Brown, 1996; Fletcher, 2003; Céspedes et al., 2003).

However, there are some facts which are undoubtedly relevant for the hospitality industry. Firstly, there is a public awareness of concerning the damage the environment is suffering and a growing recognition of tourism to have a negative impact on the environment (United Nations Environmental Programs -UNEP Tourism). Hotels generate a great portion of resource consumption and the sector is one of tourist’ basic expectations. As was suggested in the “Sustainable Hotels for Sustainable Destination” conference, (held in Gran Canaria, 2000) hotels mark and distinguish destinations as sustainable hotels lead to sustainable destinations, which in turn lead to successful hotel businesses (Marin and Jafari, 2002).

Secondly, the tourism sector represents 5% of the European Union Gross Domestic Product (GDP) (EMAS, 2005). The tourism industry depends on a rich and diverse, natural and built environment for its economic well-being. Thus, the tourism industry can not ignore environmental issues in its management and has much to gain from being a leader in the implementation of both environmentally and economically sustainable practices (World Tourism Organization, 2004). By examining a number of hospitality and hotel association websites from around the world, Duncan (2005) found that environmental issues are one of the areas these associations currently feel to be significant for their members.
2. TURISM ECO-LABELS

There has been a proliferation of voluntary schemes setting up guidelines for good practice and there are over one hundred eco-labels for tourism, hospitality and eco-tourism, with many of them overlapping (Font, 2002).

However, although there is a general increase in public environmental awareness, this increase may not necessarily translate to a higher response to tourism eco-labels. It is not easy to define what parameters an eco-label should incorporate to be successful, that is, to be accepted by tourists as a reliable and useful guide in making a choice; otherwise it would not be so complicated to design a single global tourism eco-label.

The reasons for this are several. For instance, relevant environmental information on competing tourism products may be more difficult to obtain and less clear cut than for retail manufactured products, and this makes it more difficult for an individual eco-tourist to choose between competing products on environmental grounds (Buckley, 2002: 185). Yet customers also need to be confident on the procedures adopted to ensure that the label is only used where the organisation observes the criteria set in the standard.

Thus, part of the critical components are application, assessment and audit procedures, along with the need of reliable information about the environmental management and performance of the organisation, and this requires companies to report on their environmental management and performance (Buckley, 2002).

By far, the greatest proliferation of tourism eco-labels is in Europe, and although it has been considered that Ecomanagement and Audit Scheme (EMAS) and the International Standard Organization (ISO) are only feasible for larger companies and that the tourism industry has usually preferred to work with its own system -usually a much softer approach (Synergy, 2000)- it is possible to appreciate a growing number of hotels registering their environmental management systems according to the Ecomanagement and Audit Scheme.

This scheme is a voluntary instrument which acknowledges organisations that improve their environmental performance on a continuous basis. EMAS registered organisations are legally compliant, run an environmental management system and report on their environmental performance through the publication of an independently verified environmental statement. They are recognised by the EMAS logo, which guarantees the reliability of the information provided.

The objective of EMAS will be accomplished by the establishment and implementation of environmental management systems; the systematic, objective and periodic evaluation of the performance of such systems; and by the provision of information on environmental performance. Another important issue in favour of EMAS is that registered organisations are supposed to promote continual improvements in their environmental performance and not only in their environmental management system within the framework of other schemes. Therefore, we may say that EMAS provides transparent criteria and procedures as well as requiring organisations to prepare an environmental statement and facilitate its access to any interested stakeholder, enhancing a company’s transparency.

It is crucially important to link the EMS to a report about the environmental performance of the company. Adopting an environmental management system can not be considered an indicator of the environmental performance of an organisation (Rowland-Jones et al., 2005). An environmental performance evaluation is based on the adage, “What gets measured gets managed” and companies should evaluate their performance against their environmental policy, objectives, targets and other criteria set within the management system, and to report their performance to external stakeholders. This is why as environmental management models evolved, environmental performance evaluation systems started to be developed.
However, performance evaluation systems show a large diversity with regard to the indicators used in the measurement of environmental performance, the method of data collection, etc. There is a lack of agreement on what, how and where to measure (Kolk and Mauser, 2002).

Furthering that, although EMAS regulation requires making available to the public to inform on their action and progress, it does not specify a structure for the environmental statement or the order in which items should be presented. That is subjected to the decisions of the organization, according to the guidelines on the EMAS environmental statement. Even so, the regulation does include some questions about what the company must report and encourages the use of environmental indicators. At this point, the guidelines take into consideration that the use of environmental performance indicators helps to increase clarity, transparency and comparability of the information provided by an organisation. These indicators must fulfil the requirements set by EMAS regulation. They are supposed to give an accurate appraisal of the organisation’s performance; to be understandable and unambiguous; to allow comparisons in time, comparisons within sectors, national or regional benchmarks, and comparisons with regulatory requirements as appropriate.

However, the guidelines for environmental reporting within EMAS regulation are so flexible that is not easy to compare the information from one company to another. Unless there are exact rules for corporate environmental reporting (see the guidelines by the Global Reporting Initiative) the reports will not present a valid base for environmental evaluation (Freimann and Walther, 2001; Marshall and Brown, 2003).

Given these circumstances as well as the growing number of Spanish hotels registering with EMAS, we have considered it relevant enough to examine two issues. Firstly, to analyse, from the point of view of comparability, which are the environmental aspects most commonly reported, and the indicators most commonly used. As we focus on environmental reports issued by hotels, we avoid discrepancies when comparing reports from companies operating in different industries.

Secondly, we identify some factors that might influence (at some extent) the choice and use of environmental indicators such us the size, the type of tourists the hotel focuses on, the experience in reporting about environmental issues and the type of firm.

3. METHODOLOGY TO SELECT PARAMETERS OF COMPARABILITY ANALYSIS

To develop the comparability analysis, the environmental reports were scrutinized by way of a checklist that was elaborated and that contains environmental indicators considered relevant for hotels. In order to select these indicators, a double revision was performed. One, revision of different environmental guidelines that are flourishing in the hospitality industry. For example, the International Hotel Association (IHA), the International Hotels Environmental Initiative (IHEI), as well as the United Nations Environmental Programs Industry and Environment (UNEP/IE), have all edited some manuals or guidelines concerning good environmental practices for hotels. The Center for Environmental Leadership in Business and the Tour Operators Initiative has edited a practical guide to managing environmental and social issues in the accommodation sector. It provides an overview of ten environmental and social issues that are critical to the long-term success of this sector. These questions are: energy management, water use management, wastewater management, waste management, chemical use, purchasing, contribution to biodiversity and nature conservation, contribution to community development, and social issues in the workplace. According to ISO 14001, when selecting the environmental aspects of hotels, it is important to consider the emissions and effluents, solid waste, special and toxic waste, odours, natural resource use (air, water, raw materials) and noise.

The second one, is the revision of different categories of environmental indicators proposed in the literature. Recent initiatives include the International Standardisation Organization’s (ISO) 14031 standard (1998), the Global Reporting Initiative (GRI) guidelines, the framework proposed by Ditz and Ranganathan (1997), The World Business Council for Sustainable Development initiative, as well
as the indicators developed in the scope of the Measuring Environmental Performance of Industry (MEPI) project (Tyteca et al., 2002). Obviously, each approach has its different strengths and weaknesses, but all of them have been taken into account.

After this analysis the indicators were grouped as Operational Performance Indicators (OPI) or Management Performance Indicators (MPI). OPI are indicators that provide information about the environmental performance of an organization’s operations (ISO 14031). As stated in the EMAS regulation, the environmental statement must include “a summary of the data available on the performance of the organisation against its environmental objectives and targets with respect to its significant environmental impacts. The summary may include figures on pollutant emissions, waste generation, consumption of raw material, energy and water noise as well as other aspects indicated in Annex VI”. For the hospitality industry, suggested operational performance indicators are the following: “% materials used that are post-consumer recycled material; fuels and gas consumption; normalised energy consumption; normalised water use; location and size of land owned, leased or managed in biodiversity habitats; Greenhouse gas emissions; Quality of wastewater; normalised toxics wastes; normalised toxics wastes and destination; and measurement of noise”.

On the other hand, Management Performance Indicators provide information about the management’s efforts to influence an organization’s environmental performance (ISO 14031). Olsthoorn, et al. (2001) consider two broad categories of management indicators that are referred to as “qualitative, subjective” or “quantitative, objective”. In the first group they try to measure perceptions, attitudes, and strategies towards the environment, and it is not easy to find a relationship between them and the environmental performance of the company. The second group of indicators is based on quantified and verifiable information as they describe concrete and specific efforts of environmental management. These indicators are also considered in this research. We have chosen “Environmental training hours; Degree of compliance with regulation; number of complaints from public or employees; and green procurement as part of the environmental policy of the hotel”.

Additional information is also recorded as it is considered important to identify what the factors are that may influence the disclosing of information, such as size, type of tourism, experience in environmental management systems, etc.

4. EMPIRICAL ANALYSIS

4.1 Methodology

As was previously mentioned, this research is focused on the analysis of the EMAS certification usefulness through the study of the information supplied. With the aim of acknowledging what sort of information is imparted by the tourism industry in order to get this certification, research into the last Environmental Statement reported by hotels in Spain was carried out during 2005.

More precisely, the sample used in this research is all of the hotels in Spain that are registered sites in the EMAS system. At the beginning of 2005, 178 hotels were registered across the European Union and 139 of them were in Spain (EMAS, 2005).

The methods used to get the last statements that were audited by an EMAS verifier from the hotels have been relatively varied. First, the hotel’s Internet website was researched. If the statements were not found there, a fax was sent to the hotel asking for this information. We gave the hotels three possibilities to send back the reports: by e-mail, by fax, or by ordinary mail. After one month of delay, we called those hotels that had not sent the report by phone. Two of them explained that they had given up the EMAS accreditation system and this is why they did not send the environmental statement.

This process ended in September, 2005, and the number of Environmental Statements for our research was 34, which represents 49.3% of the total. This represents 50% if we exclude the two hotels which have abandoned EMAS.
A Chi-square test was performed to compare respondents to non-respondents, and no apparent pattern emerged in the type of companies that did not respond, or in the reason given for not responding. On the whole, it does not appear that a particular type of company was more likely to send the environmental report, although they are obliged to respond to queries for this kind of information.

4.2 Hypotheses

In this research, we aim to analyse the usefulness of the Environmental Statements verified by EMAS, and also to know if there are significant differences between companies with regard to variables; Size, Type of tourism, Ownership and Years having an environmental certification.

These independent or explicative variables have been chosen following three criteria. Firstly, we have considered the empirical evidence found in other literature in the field; secondly, we have taken into consideration the different economic theories that could explain the firm’s behaviour; and lastly, we have also used common sense or intuition when it could be reasonably thought that a certain variable might explain the differences between companies.

We have studied whether these independent variables have some influence on the dependent variable Number of Indicators that hotels report on. We have also considered in the study differences between the two types of indicators, defined Operational Performance Indicators (OPI) and Management Performance Indicators (MPI). In this sense, the hypotheses that will be contrasted in this research are related in the next paragraphs.

Size. Concerning the relationship that could exist between size and quantity of environmental information, it would be reasonable to think that the bigger the company is, the more the company will benefit from the voluntary disclosure of information.

As stated by Ytterhus and Aasebo (1996), size is a determinant of environmental action since it is more visible to stakeholder groups. Therefore, larger organizations are generally more likely to issue environmental reports. Company size is consequently related to environmental disclosure (Gray, Javad, Power and Sinclair, 2001). However, these authors noted that the various measures of size and the various measures of disclosure were not consistent and more research is needed to investigate this relationship.

According to Agency Theory, the information asymmetries existent between principal and agent produce what it is known as agency costs, which will be reduced when the information disclosed increases. These asymmetries are markedly superior in big companies and also when the number of shareholders is high, so in these cases the associated agency costs will consequently be high. Summing up, agents will have more incentives to disclose a greater quantity of information in bigger companies in order to reduce agency costs.

Another perspective of the relationship between these variables is that big companies usually have more resources committed to research into and development of environmental protection (Álvarez, Burgos and Céspedes, 2001), which could be a sign of the influence of size on the environmental information disclosed.

A company’s size could be measured with many variables. In the hospitality sector it is very common to use the “number of rooms” as an indicator of size and that is the variable we have chosen in this research.

The hypothesis to contrast in this research, then, will be the following:

*H1: The bigger a hotel is, the more environmental information it will disclose.*

Type of tourism. The predominant type of tourism among hotel customers is a strategic issue basically linked to the establishment’s location. The type of tourism could affect the environmental management system used by a company and it would be expected that hotels located close to a beach in sunny
places or rural hotels located in mountains would have deeper conviction on environment preservation than hotels located in urban places (Álvarez et. al., 2001).

In this regard, the hypothesis of this research will be the following:

**H2: Hotels specialized in “sun-beach tourism” and “rural hotels” will disclose more environmental information than “urban hotels”.

Ownership. There are many hotel chains in the world and in the last years these chains have followed an increasing tendency to grow by acquiring small independent hotels in holiday places. That has been the case in Spain: while in 1997, 1,123 out of 5,744 hotels belonged to a hotel chain, accounting for 19.55 percent of the industry (Buj and Guerrero, 1997), only a couple of years later, in 1999, this figure rose to 27.02% (1.646 hotels out of 6.092) (Spanish Hotel Chains Association ACHE).

It is quite reasonable to assume a link between belonging to a hotel chain and the amount of environmental information disclosed. Main hotel chains in the world pursue a strategy of uniformity among their hotels and environmental preservation is one of the main points of their strategies. Moreover, the company can benefit from economies of scale when implementing an Environmental Management System. In other words, an independent hotel has fewer incentives to obtain a certification validated by a European organism.

So another hypothesis to consider in this research will be the following:

**H3: Hotels which belong to a hotel chain will disclose more environmental information than independent hotels.

Years having an environmental certification. The last independent variable of this work will be the number of years having an environmental certification by an official organism. The experience effect indicates that companies learn by doing, so being certified for many years is a sign of doing it better than companies redacting reports for the first time. Taking this experience effect into consideration, the last hypothesis of this research will be the following:

**H4: The more years a hotel has been environmentally certified by any official organism, the more environmental information the hotel will disclose.

### 4.3 Statistical analysis

As mentioned above, there are four independent variables taken into account in this research; Size, Type of tourism, Ownership and Years having an environmental certification.

Size. It is possible to measure the size of a company by many variables, such as the number of employees or market capitalization, for instance. However, in the literature in this field, the hotel industry, it is quite common to use variables such as the number of rooms or the number of beds because any other variable would not be as significant as these.

In this research we have chosen the number of rooms. In most cases, this information has been extracted from the Environmental Statement, but in a few cases we have had to ask for it by phone.

We have to test the hypothesis that information disclosed by companies in the fourth group is more important than the third quartile, this one more than the second, and, lastly, this latter more than the first quartile, which would be the companies that disclose the least amount of environmental information. In order to determine whether or not to accept the null hypothesis, we have compared the group means. Size is defined as the independent variable while the total amount of environmental indicators, the number of Operational Indicators, or the amount of Management Indicators disclosed by hotels are defined as dependent variables. If the means of the populations are similar, we could conclude that the groups do not differ in the dependent variable, so the independence between variables is demonstrated.
Type of tourism. According to Garcia-Falcon and Medina-Muñoz (1999), two huge categories of tourism absorb 90% of all trips and, consequently, the hotel customers: holidays and business.

In Spain, the predominant type of tourism is related to holidays due to its natural attractiveness, its climate, and its rich historical patrimony. In this category we could distinguish between hotels located in littoral places (sun-beach tourism) and those located in urban areas (cultural tourism)—though these hotels are frequently the same used for business trips—and hotels located in the mountains or rural places, which is a category that has grown considerably over the last decade.

Therefore, in this study we can distinguish three main categories of tourism from among the customers of the hotels selected for this research: sun-beach, mountain or rural, and business-cultural tourism. As the importance of environmental preservation would be greater for the first two categories, sun-beach and mountain rural, we have to test the hypothesis that the information disclosed by the 25 Sun-beach hotels and the one classified as Mountain-rural will be more important than the information disclosed by the 8 hotels located in urban places.

While the independent variable is dichotomous, we considered a student’s t-test of difference of means. In this case, the means of the variables—Amount of Indicators in total, Management Indicators, and Operational Indicators—were considered to be different from the mean of the variable, Type of tourism.

Ownership. As mentioned above when explaining the hypothesis, some of the establishments of this sample belong to a hotel chain and some are independent. The importance of environmental preservation would be greater for the second category, Hotel Chains, so we have to test the hypothesis that the information disclosed by these 23 hotels will be more important than the information disclosed by the 11 independent hotels.

The independent variable, Ownership, is dichotomous, so the considered test was a Student’s t-test of difference of means. In addition, the size is large enough to be tested with this method. In this case, the means of the dependent variables, Amount of Indicators in total, Management Indicators, and Operational Indicators, were considered to be different from the mean of the independent variable.

Years having an environmental certification. In order to get the value of this variable, we had many ways to represent the experience acquired by a company in carrying out environmental management systems and being certified by official organisms. The first one is taking into consideration the EMAS registration date. This variable could be useful, but it could also confuse, leading to a misunderstanding of the results, because between this registration date and the date of the first verified statement there is a considerable gap that varies from one hotel to another. Secondly, we could take the EMAS first verified statement date. This variable would solve the problem of inconsistency mentioned above, but it would not consider the fact that many hotels had experience in being certified by other institutions before the registration in EMAS. The last one is taking the first environmental certification date given by any organism. This would solve the two problems in the abovementioned variables, but it does not appear on the statement. Consequently, we decided to use the third variable and when it was not included specifically in the EMAS statement, we phoned each hotel and asked for the date.

We have to test the hypothesis that the more experience a hotel has in being certified, the more important the environmental information disclosed. The experience was categorized in three intervals: 0 years experience (6 hotels), 1-5 years (14 hotels), and more than five years (14 hotels).

5. RESULTS

In this section, the results of the research will be explored along with the two objectives considered at the beginning of this paper.
In sum, the first objective focused on the environmental aspects most commonly reported by the hotels and the most commonly used indicators. The second objective proposed was to identify some factors that might influence the choice and use of environmental indicators.

5.1. Environmental aspects most commonly reported

The environmental aspects most commonly referred to by hotels are energy consumption (85%), water use (85%), and generated wastes (79.4%). Energy and water consumption are also more easily comparable, as companies disclose the total amount and the normalised amount (to disclose the total amount of water use does not mean very much without information about the context). With regard to the normalisation factor, most hotels consider the number of occupancies the best way to normalise the consumption data, although three of them use another denominator.

It is very important to know how data are measured and this kind of information is not explained in any environmental report. As for the units of measurement, it must be said that for electric energy consumption and water use, the environmental reports studied used the same units, but the same did not happen for gas and fuel consumption, which are measured in litres or in the number of equivalent kw.

Some companies reported on the weight of wastes (kg.) and others on the volume (number of tanks). As for the toxic wastes, the information was disclosed in different ways. Some companies report the total amount while others give more details about which specific toxic wastes they generate, such as the amount of batteries, solvents, electronic waste, etc.

We found less information related to the use of raw materials. A 62% of the hotels reported the total material use by type, some hotels detailed nearly every kind of material while others referred to only a very few materials.

An analysis of the indicators reported by hotels leads to an analysis of what the main sources of information are. Even if a company did not implement an environmental management system, it might have used the existing data sources, such as regulations, operating permits, reports to government agencies, hazardous waste manifests, suppliers and subcontractors bills, etc. This seems to be what these hotels have done. The information disclosed about effluents and emissions is the information legally required when testing boilers and effluents, and the information disclosed about toxic waste is also required in the hazardous waste manifests. The information disclosed about raw materials is the one that companies can extract from their accounting systems.

It is also worth noting the least frequently reported environmental indicators. Theses are mainly: the percentage of materials used that are post-consumer recycled material (15%), the biodiversity indicator (0%), greenhouse gas emissions in tonnes (2.9%), greenhouse emissions in tonnes of CO2 equivalents (5.8%), and the destination of wastes (0%). These indicators are proposed by the Global Reporting Initiative (which is especially concerned with externally oriented performance measurement), however, the required information to elaborate on these indicators is not always easily extracted from the materials accounting system. This is consistent with the opinion of other authors who state that companies focus on measuring and publishing data they have available rather than what stakeholders would like to know (Tyteca et al. 2002).

There is not so much information about these management performance indicators in the environmental statements that have been reviewed. The main reason might be that this information is not specifically required by EMAS regulation.

Few companies disclose financial information related to the environment and when they do the data disclosed is related to environmental investments (11.7%) rather than environmental expenses (2.9%). Once again we see that it is easier to identify environmental investments than environmental expenses, although Spanish companies must disclose both in the annex of the financial statements.
Something similar occurs with environmental training. Some companies (44%) report the number of environmental training programs taken by employees, but in few cases was the number of environmental training hours detailed (17.6%).

Green procurement is considered by most of the hotels in their environmental policy statements (85.3%), but few practical actions are described in order to report on green procurement strategies. In fact, only 5.8% disclose the number of suppliers or subcontractors with an accredited environmental management system.

The high number of hotels that report concrete measures taken to augment the environmental awareness of guests (88.2%) could lead us to think about the relevance of these stakeholders for hoteliers, as well as the fact that with the cooperation of guests it is easier to reduce consumption.

5.2. Influential factors in reporting on environmental issues

The relationships between factors and amount of environmental indicators have been tested using difference of means tests. The results are described and analysed below, attending to the research hypothesis.

Size influence. The descriptive ratios to explain the dependence or independence of the variables Size and Environmental Indicators are shown in Table 1. At first sight the amount of total indicators used by bigger hotels is below the sample mean. It even occurs in the case of Operational and Management Performance indicators. We can not conclude that the bigger a hotel is, the more environmental information it discloses.

The ANOVA (Table 3) tests the overall significance of the model, assuming a given level of significance of 0.05. The F-ratio is used to test the significance of each main interaction effect. The values that this ratio adopted allow us to conclude that the null hypothesis is true; there are no differences among samples. Size does not influence the amount of environmental indicators disclosed.

Size seems to play no role when working at the site level. This is consistent with the research of Tyteca, et al. (2002). Further research should be dedicated to analysing the influence of size when working at the company level, considering, for example, the size of the whole chain.

Type of tourism influence. Table 2 shows the descriptive ratios for the sample in order to explain the dependence or independence between type of tourism and amount of indicators disclosed by hotels. As we can see, urban hotels appear to disclose more environmental indicators, not only OPI (operational performance), but also the Management Performance ones, so that we could conclude there is some relationship between the variables.

In order to analyse whether the means of the groups are really similar, and consequently the statistical relationship between the chosen variables, data have been tested by a Student’s t-test. Table 4 illustrates the results obtained.

The observed t is above the critical value t, so that the difference of means is significant at a 0.05 level and the null hypothesis must be accepted. So we must conclude that the type of tourism is not related to the environmental information disclosed by hotels.

Ownership influence. The table below (Table 2) shows some descriptive ratios for the sample, attending to the factor Ownership and Environmental Indicators. From the values shown, we are not able to conclude that the dependent variable could be influenced by the independent one.

There is a significant similarity between the means of the different groups analysed so that we refuse the null hypothesis and conclude that depending on the ownership of a hotel, it will disclose more environmental information (p= 0.008). However, this result can not be applied to MPI (p= 0.807).

Years having an environmental certification influence. Hotels experienced in environmental reporting do not disclose an amount of indicators over the mean sample. That would permit us to accept the null hypothesis (Table 1).
As we can see (Table 3), there is significant similarity between the means of the different groups analysed, which means that the relationship is proven. The research hypothesis must be rejected, while the null hypothesis accepted. There is no relationship between the information a hotel discloses and the years it has had environmental certification.

6. CONCLUSION

The main conclusions of this research can be described along with the two main objectives suggested at the beginning of this text. On one hand, we have reached the objective of obtaining more knowledge about what the most common environmental aspects reported by Spanish certified hotels were. The first remarkable idea is that hotels more often disclose information concerning Operational Performance Indicators than Management Performance Indicators. Among the first group, those most often disclosed are, as mentioned, energy consumption, water use, and generated wastes. What could explain this is that OPI are ratios obtained after easy measures and most of them are supported by documents, for instance, an invoice. Moreover, EMAS requires companies to disclose Operational Performance Indicators, whereas it merely recommends companies to inform on Management Performance Indicators.

Although most of the hotels report on the same environmental aspects, the information is not wholly comparable and it is not possible to rank hotels according to their environmental behaviour. This is because we do not have information about how data are measured, and when hotels use the same indicators they do not always use the same reporting units. The set of indicators proposed by the Global Reporting Initiative is not used by these hotels in their environmental reports.

There is a need for the standardisation of data and, given these circumstances, it would be interesting to know who the main users of the environmental reports issued under EMAS regulation are, and if they really allow external and internal benchmarking. So environmental reporting will serve its function as long as it satisfied certain conditions. Hotels as well as stakeholders need to agree about what information the organizations should disclose and about the units of measurement.

On the other hand, we proposed as an objective of this research the identification of what factors could be influencing the choice of environmental indicators. As a rule, the results derived from this research do not contribute to supporting the suggested hypotheses concerning the existence of differences between hotels disclosing environmental information and specific variables such as size, type of tourism, ownership, and years having environmental certifications. More precisely, we could conclude that the size of a hotel, measured by the number of rooms, seems to play no significant role in the amount of environmental information disclosed, though further research should be dedicated to analyse the influence of size when working at the company level. Also, there is no dependence between the type of tourism and the environmental information reported by a hotel. Urban hotels disclosed the same amount of environmental information as hotels located in sunny tourist places or in the mountains. Concerning the fact of belonging to a hotel chain, we could conclude that hotels which do not belong to a chain generally disclose more Operational Performance Indicators than hotels that belong to a chain, but this conclusion cannot be extended to Management Performance Indicators. Finally, there is no relationship between the experience in being environmentally certified and the amount of indicators disclosed.

As a conclusion, we have found some difference in EMAS reports issued by hotels. It makes comparison so difficult for customers interested in environmental care and in knowing whether or not a hotel behaviour is sustainable enough. We point at the need of elaborate a more useful and comparable report. Whether hotels use that, they would be marked and distinguished as sustainable hotels, which will turn them to successful hotel businesses.
REFERENCE LIST


### Table 1: Descriptive Report (Size and Years having an environmental Certification)

<table>
<thead>
<tr>
<th>Size</th>
<th>N</th>
<th>Total Indicators</th>
<th>OPI</th>
<th>MPI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Mean</td>
<td>SD</td>
<td>Mean</td>
</tr>
<tr>
<td>0 – 120 rooms</td>
<td>8</td>
<td>13.75</td>
<td>2.87</td>
<td>10.38</td>
</tr>
<tr>
<td>121 – 240 rooms</td>
<td>10</td>
<td>13.30</td>
<td>2.63</td>
<td>10.30</td>
</tr>
<tr>
<td>241 – 360 rooms</td>
<td>8</td>
<td>14.00</td>
<td>1.77</td>
<td>11.38</td>
</tr>
<tr>
<td>&gt; 360 rooms</td>
<td>8</td>
<td>11.63</td>
<td>5.97</td>
<td>9.38</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>13.18</td>
<td>3.56</td>
<td>10.35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Years having an environmental Certification</th>
<th>N</th>
<th>Total Indicators</th>
<th>OPI</th>
<th>MPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>0- N. A.</td>
<td>6</td>
<td>14.17</td>
<td>12.04</td>
<td>11.50</td>
</tr>
<tr>
<td>1 – 5 years</td>
<td>14</td>
<td>12.36</td>
<td>4.65</td>
<td>9.50</td>
</tr>
<tr>
<td>&gt; 5 years</td>
<td>14</td>
<td>13.57</td>
<td>2.77</td>
<td>10.71</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>13.18</td>
<td>3.56</td>
<td>10.35</td>
</tr>
</tbody>
</table>

### Table 2: Descriptive Report (Ownership and Type of tourism)

<table>
<thead>
<tr>
<th>Owner</th>
<th>N</th>
<th>Total indicators</th>
<th>OPI</th>
<th>MPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belong to a hotel chain</td>
<td>26</td>
<td>10.91</td>
<td>4.83</td>
<td>8.09</td>
</tr>
<tr>
<td>Do not belong to a hotel chain</td>
<td>8</td>
<td>14.26</td>
<td>2.03</td>
<td>11.43</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>13.18</td>
<td>3.56</td>
<td>10.35</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of tourism</th>
<th>N</th>
<th>Total indicators</th>
<th>OPI</th>
<th>MPI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sun–beach-rural hotels</td>
<td>26</td>
<td>12.96</td>
<td>3.92</td>
<td>10.31</td>
</tr>
<tr>
<td>Urban hotels</td>
<td>8</td>
<td>13.88</td>
<td>2.03</td>
<td>10.50</td>
</tr>
<tr>
<td>TOTAL</td>
<td>34</td>
<td>13.18</td>
<td>3.56</td>
<td>10.35</td>
</tr>
</tbody>
</table>

### Table 3: ANOVA Test results (confidence level= 95%) (Size and Years having an environmental certification)

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>df</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Total Indicators</td>
<td>1</td>
<td>0.986</td>
<td>0.329</td>
</tr>
<tr>
<td></td>
<td>OPI</td>
<td>1</td>
<td>0.128</td>
<td>0.723</td>
</tr>
<tr>
<td></td>
<td>MPI</td>
<td>1</td>
<td>4.884</td>
<td>0.350</td>
</tr>
<tr>
<td>Years having an</td>
<td>Total Indicators</td>
<td>1</td>
<td>0.001</td>
<td>0.979</td>
</tr>
<tr>
<td>environmental</td>
<td>OPI</td>
<td>1</td>
<td>0.017</td>
<td>0.897</td>
</tr>
<tr>
<td>certification</td>
<td>MPI</td>
<td>1</td>
<td>0.054</td>
<td>0.818</td>
</tr>
</tbody>
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Table 4: Student’s t-test Test results (confidence level= 95%) (Type of Tourism and Ownership).

<table>
<thead>
<tr>
<th>Independent variable</th>
<th>Dependent variable</th>
<th>t</th>
<th>df</th>
<th>Sig (2-tailed)</th>
<th>Mean difference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>Total Indicators</td>
<td>-3.125</td>
<td>32</td>
<td>0.004</td>
<td>-3.344</td>
</tr>
<tr>
<td></td>
<td>OPI</td>
<td>-2.824</td>
<td>32</td>
<td>0.008</td>
<td>-3.352</td>
</tr>
<tr>
<td></td>
<td>MPI</td>
<td>-0.246</td>
<td>32</td>
<td>0.807</td>
<td>-0.095</td>
</tr>
<tr>
<td>Type of tourism</td>
<td>Total Indicators</td>
<td>-0.628</td>
<td>32</td>
<td>0.534</td>
<td>-0.913</td>
</tr>
<tr>
<td></td>
<td>OPI</td>
<td>-0.143</td>
<td>32</td>
<td>0.887</td>
<td>-0.192</td>
</tr>
<tr>
<td></td>
<td>MPI</td>
<td>-1.569</td>
<td>32</td>
<td>0.126</td>
<td>-0.644</td>
</tr>
</tbody>
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