

# Sustainability-Oriented Yachting Enterprises: Theoretical Considerations and Empirical Evidence from the Marche Region (Italy)

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## Abstract

In recent years, the global economic crisis and the emergence of the paradigm of sustainability in the world of consumption also involves an industry apparently free from these dynamics, such as yachting, changing the competitive environment. Even Italian companies, leading manufacturers with creativity and technical skills, face new challenges related to the supply system, which require significant technical innovations, and to the relationship with the customer, increasingly driven by issues surrounding sustainability in consumption processes.

This article describes the evolving relationship between the yachting industry and sustainability through an empirical study, based on a group of 30 companies in the Marche region, in order to understand the impact that the sustainability orientation of firms can have on strategies as well as on operational policies.

Despite the limited number of firms included in our sample, this study shows the need for major steps to be taken toward a full awareness of entrepreneurs, and the need to grasp the opportunities related to the current changes in global demand for yachts.

Success in the coming years will have to be built not only on the traditional sources of competitive advantage in the industry but also on the ability to produce watercraft that are on the high end of technological content and design (with customized accessories as well as superior speed and performance features) and are eco-friendly, too, thus minimizing their environmental impact in every phase of their life cycle.

**Keywords** yachting industry; eco-design; sustainable development; sustainability orientation; competitive advantage; innovation

## Introduction

*From Sustainable Development to Sustainability Orientation of yachting enterprises*

Although sustainable development has been under discussion among scholars and policy makers for years, it has recently assumed particular importance in the value system of the yachting industry (Ferrero and Fortezza, 2005; Fortezza, 2008, 2009). To date there is no specific and organic legal framework, but we can observe a number of measures taken by the European

Union<sup>[1]</sup> aimed at protecting natural resources (Mariani and Viganò, 2002; Antonelli *et al.*, 2005). These are particularly interesting in terms of their impact on the management of enterprises.

Through the program approved by European Commission in 2010, called *The EU strategy for smart, sustainable and inclusive growth*<sup>[2]</sup>, the EU suggests concrete measures that set new targets for 2020 in terms of a greener and more competitive economy, greater energy efficiency, etc.

The EU strategy aims to direct European society towards a model of sustainable economic development and low CO2 emissions through a wide range of tools and rules. These include: the *Integrated Product Policy* – IPP, the requirements of Eco-design - *Energy-using Products* - EuP, the *Waste of Electric and Electronic Equipment* – WEEE), the *Eco-Management and Audit Scheme* – EMAS and the 2003/44/EC Directive on the approximation of the laws, regulations and administrative provisions of the Member States relating to recreational watercraft.

Although not referred only to the yachting industry, the actions undertaken by the European Union as a whole promote the dissemination of the concept of eco-design in all categories of business, stimulating the adoption of innovative behaviour, of systems of self-government and of new logics in production processes.

The term ‘eco-design’ implies a dynamic and broad approach (Tamborrini, 2008; Thackara, 2008; Zuccon, 2009; Di Maria and Bettiol, 2009) that goes beyond the product's environmental impact by creating a “context of strong interaction between scientific discovery, technological application, good design and positive social effect” (Koenig, 1983).

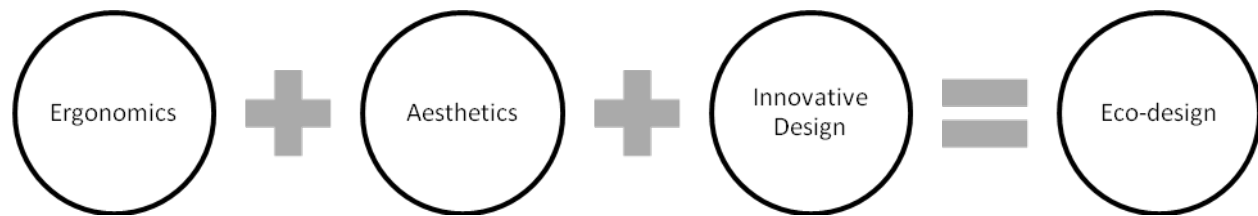
The theme, therefore, takes on a strong social connotation not only as a protection of the local community (Benevolo, 2011) but also through the introduction of cultural and technological innovations able to ensure maximum accessibility to persons with disabilities.

It is possible to identify three perfectly integrated main issues that characterize the eco-design process applied in the yachting industry (Figure 1):

- *Ergonomics*, namely the capacity to enhance the interaction between people and technology, that promotes experiencing a fuller relationship with nature and with the sea, allowing the boat to create a nice continuum with the mainland (Zuccon, 2009);
- *Aesthetics*, defined as the degree of artistic customization of internal and external areas.
- *Innovative Design*, according to the following perspectives/goals:
  - To reduce resource consumption, by restricting the materials used for construction and using eco-efficient products and services with the same performance;
  - To reduce energy consumption, improving the energy efficiency of sea crafts;
  - To realize a modular design in order to facilitate the reuse of materials and their eventual disposal;
  - To design “for everyone,” providing space and services for the needs of people with disabilities.

<sup>1</sup> Cf Mariani *et al.*, 2002.

<sup>2</sup> [www.europa.eu](http://www.europa.eu).

**Figure 1: The conceptual dimensions of eco-design**

Source: our data

In line with this philosophy of production, it is worth mentioning the program called “LIFE+,” promoted by the EU with the overall objective of contributing to the implementation, updating and development of environmental policy through the co-financing of pilot projects, as in the case of the ENA Project<sup>3</sup>, developed in the Marche Region of Italy.

The growing attention to sustainability that emerges from European policies converges with recent trends in the purchasing behaviour of new niches of buyers of recreational craft (cf. Pencarelli and Forlani, 2007; Bevenolo, 2010).

While they are indicative of the emergence of a widespread “ethical mind” (Gardner, 2007), these trends are also particularly affected by contingent factors, such as the increasing cost of fossil fuels and the effects of the economic crisis which has reduced purchasing power (Bruni and Carcano, 2009; Quildon and Pun, 2011; Green Italy, 2012).

On the other hand, according to the Green Italy Report<sup>4</sup> (2012, 2011, 2010), Italian yachting companies seem to have perceived the need to refocus on new critical success factors such as sustainability. These must be added to “traditional” ones like technology, aesthetics and functionality of products. The sustainability of products, in other words, can be a differentiating factor capable of building a new source of competitive advantage on international markets.

Thus, from this perspective, the ability to manufacture something following to the eco-design logic is critical in order to produce innovative products geared not only towards improved performance and on-board comfort but also towards energy savings, ergonomics to improve the sailing experience, the use of non-polluting materials and efficient and low noise motors; also included in this scope is the increasing attention to activities which up until a few years ago were not taken into consideration at all, such as the “sustainable disposal” of watercrafts<sup>5</sup>. This ability could allow the company not only to diversify its product portfolio, but also to position itself at the leading edge, as the ‘first mover’ (Thompson *et al.*, 2009; Rispoli, 1998) with products already designed according to forthcoming regulations.

<sup>3</sup> ENA project (Eco-design per la Nautica), as part of the European program called LIFE +, aims to realize an eco-boat (expected launch for 2014). The project is focused on the Life-Cycle Evaluation (LCA) by calculating the Ecological Footprint (Carbon Footprint). In addition to the environmental aspects, the ENA project aims to apply the best technological innovations to allow the highest accessibility to people with disabilities. The results will support the creation of guidelines for the development of European environmental policy and regulations for Yachting Industry. Within the project, the University of Urbino is working on the evaluation of the ecological footprint.

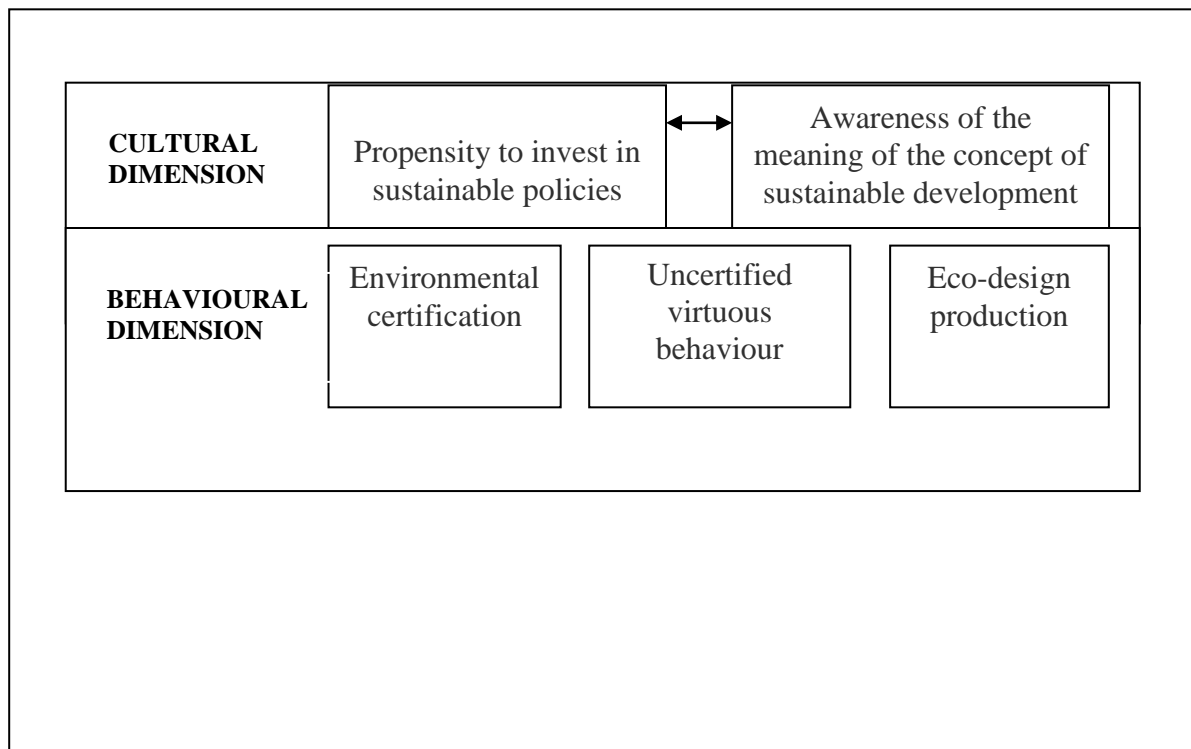
<sup>4</sup> The “GreenItaly” report is produced by the Symbola Foundation and Unioncamere. The goal of the report is to map Italian companies which implement green strategies (www.symbola.net).

<sup>5</sup> Cf Grande (2009).

The adoption of an eco-design oriented production, therefore, requires a reconfiguration of the entire value system, starting with the revision of the offer, or supply, and then spreading among the various companies involved in the process of value creation. This re-orientation of yachting firms is very complex and full of obstacles, not only because of the need for a cultural change in entrepreneurs' views but also because of the strongly negative contingent moment<sup>6</sup>.

Therefore, a company's adherence to the principles of sustainability should be evaluated according to a multidimensional approach able to analyze both the cultural dimension of the entrepreneur - or management - and the policies actually adopted (cf. Pencarelli and Splendiani, 2012). The model is represented in Figure 2.

**Figure 2: Dimensions and components of the sustainability-oriented yachting enterprise**



The cultural dimension regards the principles and beliefs held by the entrepreneur and aims to capture his/her predisposition to implementation of policies geared towards sustainability. At first glance it could be understood as a necessary but insufficient prerequisite to effective commitment to sustainable policies. The relationship between the two dimensions, however, is much less linear and deterministic. The variables chosen to measure this dimension are awareness of the meaning of orientation to sustainability and the propensity to invest in sustainable policies.

The behavioural dimension, however, aims to assess the effective implementation of sustainable policies on three levels:

<sup>6</sup> European producers, in this context, showed a strong decrease in the share of the world market, dropping from 17% of 2008 to 11% of 2010. In Italy, the total turnover of the Yachting Industry dropped from 4,986 millions of Euros of 2007 to 2,857 million of 2011, marking a decrease of 43%. According to data provided by UCINA (National Union of Shipyards and Nautical Industries), the order backlog of the yachting company in all over the world in 2010 had 653,142 units compared to 848,348 of 2008 (-23%).

- Adoption of conduct aimed at obtaining environmental and quality certification, which, in addition to benefits in the operational management of the company, aim to strengthen the firm's brand in the eyes of stakeholders;
- Uncertified virtuous behaviour, that is, the actions in favour of sustainable development but not directly related to environmental certification (technological equipment for energy and water savings, energy production from renewable sources, tools for separate waste collection, etc.);
- Production according to eco-design principles, with the involvement of all actors in the supply chain and value system.

Based on this conceptual framework, the study is designed to assess the degree of sustainability orientation of yachting businesses in the context of the Marche Region.

### Objectives and research methodology

The objective of the study is to evaluate the degree of sustainability orientation of a sample of yachting firms through exploratory research focused on three research questions:

- What is the role and the degree of awareness that the entrepreneurs show vis-à-vis sustainability issues? (cultural dimension) (§4.1)
- What sustainability-oriented policies do they adopt? With what results? (Behavioural dimension) (§4.2)
- What is the impact on strategic management of adopting sustainable policies? (§4.3)

The study tries to answer to the research questions through the use of three different - but integrated - investigation tools (Yin, 1994; Bryman, 2006). The first, a questionnaire (cf. Corbetta, 1999), was administered to 30 yachting companies<sup>[7]</sup> with a registered office or operating headquarters in the Marche Region. The non-probabilistic sampling procedure adopted attempted to represent the entire universe of yachting enterprises, both end-user sales companies and subcontractors.

The second tool used for data collection was the semi-structured interview with two members of trade associations and the scientific director of the ENA project (Footnote 4).

Finally, we used document analysis, through the websites of the companies in the study in order to investigate some aspects that emerged from the interviews.

### Characteristics of the sample

The sample represents the entire business chain of recreational sea crafts in the Marche region. We interviewed five end-user sales companies and twenty-five subcontractors (Table 1).

**Table 1: Sample of firms by typology**

Typology	Frequency	Subcontractors – End-user sales companies
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<sup>7</sup> The interviews were conducted by the authors within the ENA project (see note n.4), during the phase that aims to know the “training needs of yachting companies in the Marche Region”. For a detailed analysis see the report of the research available at [www.progettoena.it](http://www.progettoena.it).

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Tertiary sector yachting and testing research	10	Subcontractors
Furniture and exhibition design	5	Subcontractors
Yacht design	4	Subcontractors
Production service providers	3	Subcontractors
Boat builders (hull and moulds)	3	Subcontractors
Terminal yacht builders	5	End-user sales companies

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Source: our data

With regard to turnover, in 66% of the cases it does not exceed two million Euros, in 17% it is between two and ten million, while the remaining 17% of the companies stood at over ten million.

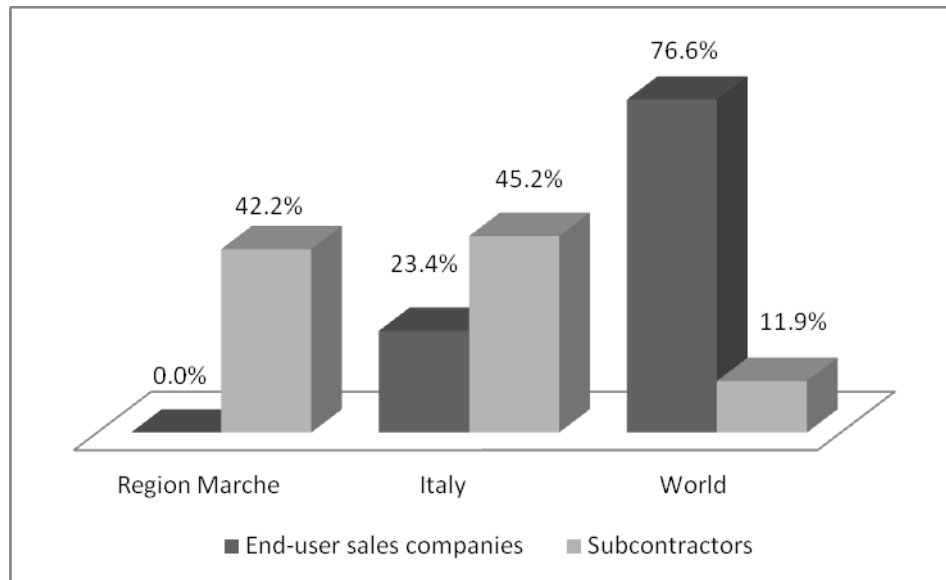
With reference to the number of employees, 69% of the companies surveyed reported less than ten employees, 17% rank among the 10/50 category, while only 14% report more than 50 employees. Therefore, micro enterprises prevail<sup>[8]</sup>.

Companies on the upper end (in terms of balance sheet and number of employees) tend to be end-user sales companies, while subcontractors are almost all located on the lower end of the spectrum.

The turnover is mainly made on the domestic market (88.1%), although this only concerns subcontractors, while end-user sales companies (76.6%) make a large part of their sales abroad (Figure 3).

### Figure 3: Markets in which turnover is generated

<sup>8</sup> According to Eurostat, micro-enterprises are those with less than 10 employees. Cf Tunisini, in Di Bernardo *et al.*, 2009, p. 67.



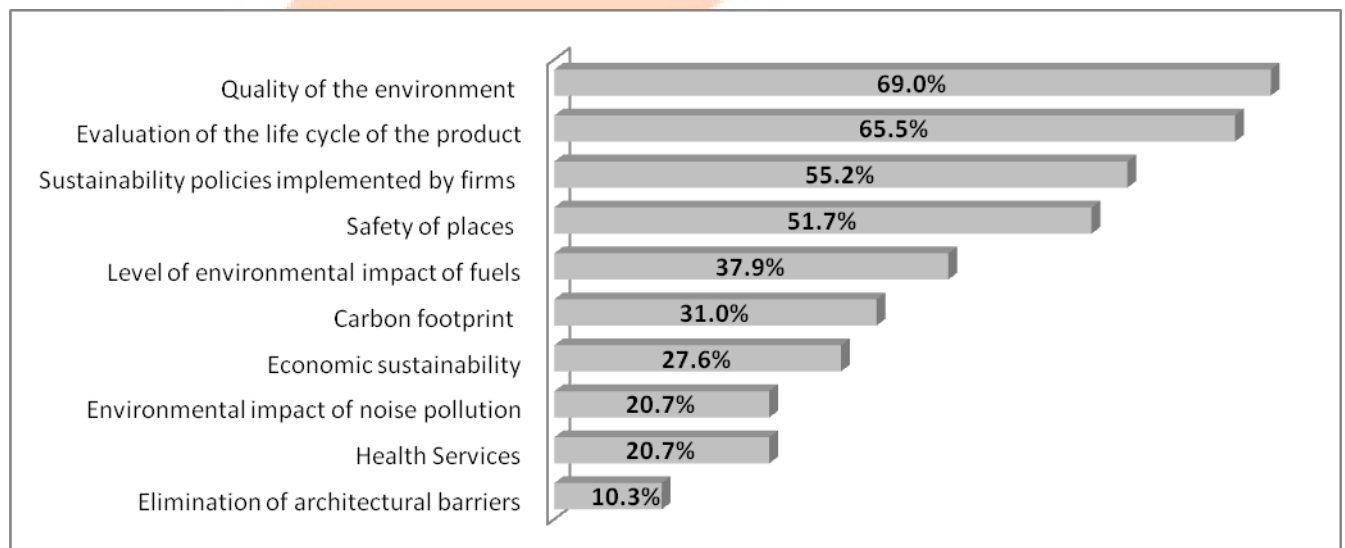
Source: our data

## Findings

### *Cultural dimension*

With regard to the cultural dimension, two different questions were posed in the interview: the first aims to understand whether the respondents are aware of the meaning of sustainable development through the selection of four variables in a proposed set (Figure 4).

**Figure 4: Answers to the question: Which of the following variables are related to the theme of sustainable development?**



Source: our data

The variables that achieved the highest scores are: quality of the environment (69.0%), evaluation of the life cycle of the product (65.5%), sustainability policies implemented by firms



(55.2%) and safety of places (51.7%). Nearly all of the entrepreneurs understand the meaning of sustainable development and interpret it primarily from an ecological point of view.

In the second question we tried to understand the propensity or willingness to implement processes and policies for sustainable development. The majority of respondents (75%), considers it fundamental to plan future strategies in a perspective of sustainability, while 22% of respondents do not have a clear position on these issues, preferring to respond "I don't know." Only one interviewee declared that it was not worth the trouble.

Within the same question, we asked interviewees to specify the reasons for their previous statements. Of those who responded positively, most said "*it is important to invest in sustainable processes because they produce benefits for the future*" (54.2%), while little significance was attributed to "*market pressure*" (16.8%) and only 29.2% of respondents pursue policies aimed at sustainability due to a "*moral obligation*."

An analysis of the categories of those who responded positively did not produce substantial differences.

In general, there was a high level of awareness among respondents regarding the meaning of sustainable development and its possible implications for the behaviour of the company. However, it is worth pointing out that the awareness declared seems to be based on the idea that sustainability is an essential assumption for long-term development but that it is little affected by the trends of market demand (only 16.7% declared that market forces influence their sustainability policies).

#### *Behavioural dimension*

The second level of analysis concerns the behavioural dimension. This analysis is carried out by first checking the commitment shown in terms of obtaining environmental and quality certifications.

Of the thirty companies interviewed, only six possess environmental certifications. Three of these are end-user sales companies and three are subcontractors. Most uncertified companies are subcontractor companies. Twenty-two out of twenty-five of these companies declare no certification. On the other hand, 60% of the end-user supply companies interviewed possess at least one environmental certificate.

In nearly all cases, certification is almost the only tool used to show the company's effort, albeit a weak one, to move towards sustainability. Five companies have ISO 9001 certification and individual companies have ISO 14001, EMAS or OHSAS 18001 certification. Among the certified companies, the most active are end-user sales companies, with five certifications out of a total of eight.

Regarding the second question, we investigated uncertificated virtuous practices, asking the companies to indicate which of the following options they had adopted. The frequency of the responses are shown in parentheses:

- Adoption of technological tools for saving water (6.6%);
- Adoption of technological tools for saving energy (10.0%);
- Separated waste collection (73.3%);
- Use of renewable energy sources (13.3%);
- Green procurement (6.6%);



The sample shows a weak diffusion of uncertified company practices geared towards sustainability. Only separated waste collection is adopted across the board in the great majority of cases (73%). All other options show a low incidence: 13.3% of the cases use energy from renewable sources, 10.0% adopt technological tools for energy savings, while only 6.6% adopt technological tools for water conservation and green purchases.

There are no significant differences among the different types of businesses. Regarding the third question on the development of products following aneco-design logic, only seven companies (23% of the sample) said they have already activated processes in this area. A qualitative analysis reveals that 60% of end-user sales companies have already implemented such projects, while only four out of twenty-one subcontractor companies have done so. In order to assess the eco-design of products actually marketed (Figure 1), we analyzed the websites of the companies that responded positively to the question. Only three end-user sales company websites provided information regarding eco-design.

From the analysis of the websites, there emerge different elements that relate to eco-design production (Figure1), specifically:

- Innovative Design aimed at reducing energy consumption through the launch of hybrid engines that reduce both fuel consumption and emissions;
- Aesthetics, through the advice of artists in order to ensure the highest customization;
- Ergonomics, through the research of new forms of design that make it possible, on the one hand, to optimize the interior spaces and on the other, to adopt stabilization systems that make navigation more enjoyable and less turbulent.

On the whole, these actions should be considered incremental innovations through redesigns of the product (Wever *et al.*, 2008)<sup>9</sup>.

Unlike the findings of the cultural dimension, the analysis of the behavioural dimension of sustainability orientation reveals profound differences between micro enterprises supplying subcontractors and larger sales enterprises.

The commitment to produce products according to the eco-design logic, in fact, is present only in the latter. Firstly, this occurs because of the size limitation that prevents the smaller enterprises from investing in research and development, especially in times of crisis<sup>10</sup>.

Secondly, it is due to the fact that the actual product design is often in the hands of larger sales companies and subcontractor companies working on job orders.

### *The impact on strategic management of sustainable policies*

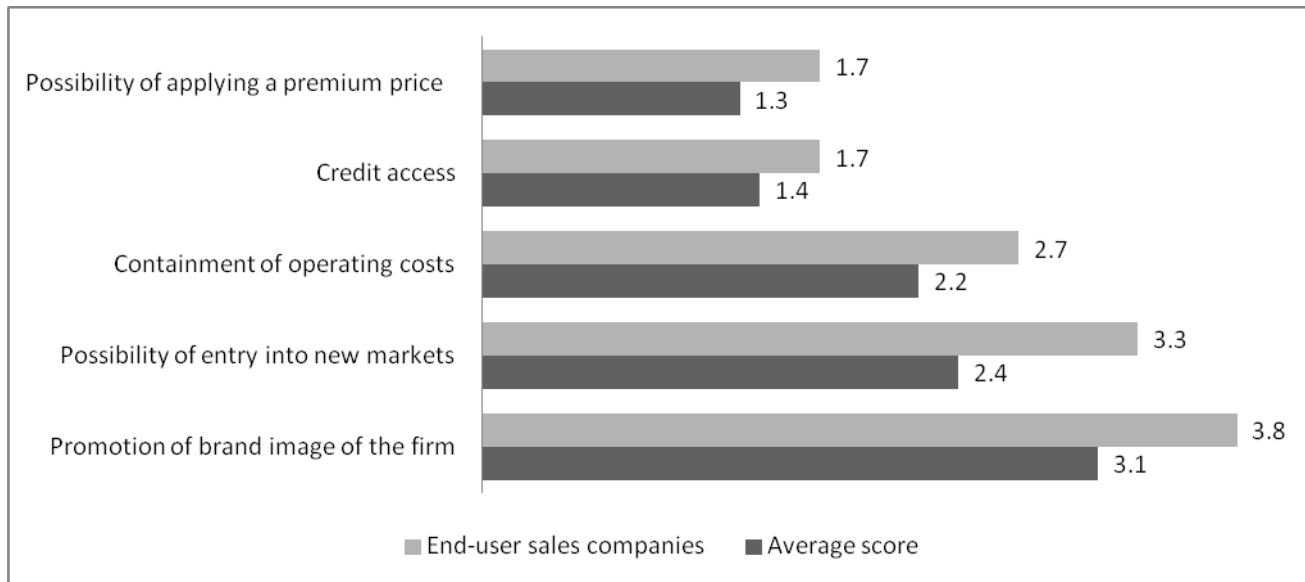
After evaluating of the cultural and behavioural dimensions of sustainability, we have tried to understand what effect sustainable behaviour may have on the competitiveness of businesses. Respondents were asked to assign to five variables a score from 1 to 5 based on actual improvements reported as a result of sustainability policies adopted (Figure 5). The variables are:

<sup>9</sup> Those end-user sales companies that have not activated eco-design processes are superyacht or megayacht producers. Moreno Bordoni and Silvana Della Fornace, directors of the local associations of marine industry companies, suggest that depends on the fact that “high-end luxury clients do not need to save, and the core business is in extreme personalization, therefore green is not a recognized value”.

<sup>10</sup> According to Ezio Businaro, scientific director of the ENA project, “micro supply companies are constrained by the economic crisis to concentrate totally on ordinary management in order to survive and do not have the necessary resources to invest in research and development.

Promotion of brand image of the firm; Possibility of entry into new markets; Containment of operating costs; Credit access; Possibility of applying a premium price.

**Figure 5: What are the impacts of policies on sustainable business management?**



Source: our data

The results reveal differences between sales companies with respect to the overall average, because of their greater commitment to sustainability policies. As seen in Figure 5, the average values tend to be low. Indicators of higher value are the promotion of the company brand (3.1), the achievement of business benefits and access to new markets (2.4). The three indicators that get the lowest score are: greater access to credit (1.4), and ability to apply premium prices (1.7). If we compare the average scores obtained from the sample with the average scores of companies that cater to consumers, the latter report greater benefits in relation to new markets (3.8, compared to an average of (3.1), communication activities – brand image (3.3 compared to an average of 2.4) and the containment of operating costs (2.7 compared to an average of 2.2). Entrepreneurs in this sector perceive the commitment towards environmental sustainability as a useful tool to enhance the corporate image towards stakeholders and to gain access to new demand segments.

## Conclusion

The study focuses on the relationship between sustainability and yachting enterprises, through the proposal of a conceptual model aimed at assessing the level of sustainability orientation as a synthesis of the declared adherence to the principles of sustainability (cultural dimension) and the actual implementation (behavioural dimension) of sustainability policies based on the principles themselves. With regard to the cultural dimension, empirical analysis shows a high degree of awareness on the part of firms. The most significant results that emerge are the awareness declared followed by the willingness to invest in sustainable policies. However, it is worth pointing out that this awareness is based more on the idea that investing in sustainable policies “*produces benefits for the future*” and not because it “*is a value recognized by the market.*”

Although the study did not reveal significant differences between the various types of company in relation to the cultural dimension, the behavioural dimension presents some very different aspects. For example, with respect to environmental certifications, the study shows that only end-users' sales companies[ATUL—I may be misreading this—does the writer mean the sales companies of end users? If so, it needs an apostrophe: end-users' sales companies] devote adequate attention to this issue, unlike the subcontractors, often characterized by lack of financial and managerial resources, which prevent them from perceiving the benefits of these sustainable practices.

Furthermore, as the interviews with trade associations have revealed, we are talking about micro-enterprises, which not only lack financial and managerial resources but have virtually no contact with the market. Thus, it is clear that they are unable to see the competitive advantages to be had from sustainability-oriented behaviour.

So, while end-user companies show a significant degree of sustainability orientation, by promoting major innovations geared towards sustainability, subcontracting companies are essentially excluded from these processes.

The crucial point is that these micro-enterprises, often resource-deprived both money-wise and competency-wise, will have to look to collaboration as the only route to follow if they are to enact a strategy of this type (Pencarelli, 1995; cf. Penco, 2010). In fact, it is only through integrated efforts and close collaboration that a system of small enterprises can acquire the necessary resources and capabilities to conquer and control critical success factors, such as sustainability, in their sector (cf. Bortoluzzi and Tracogna, 2011). In this regard, some attempts have recently been made to set up network contracts, but so far the results have been uncertain and non-quantifiable.

Regarding the impact of sustainable policies adopted by firms, the research shows that these affect some strategic variables such as corporate image but not others, such as cost management and price policies. In other words, enterprises in the Marche region yachting sector seem to overlook a matter of increasing importance for the future, in our opinion, such as the possible reduction of costs associated with the production and use of watercraft. This is to be seen within the specific context of the emerging need for greater acceptability of yachting in port cities (Pencarelli and Forlani, 2007; Cherubini and Nastasi, 2005; Quagli, 2009), where communities are taking a hard look at the polluting effects of the sector and are pushing for greater sensitivity to, and awareness of, eco-system balances.

Moreover, inadequate consideration is given to the fact that the number of users in the world market who are sensitive to the issues of sustainability and eco-design is growing, especially with reference to ergonomics and ease-of-use by persons with disabilities due to health, age or other types of handicaps. Another point to be taken into account concerns signals coming from worldwide and European regulatory bodies who will most likely issue more and more stringent regulations for producers, pushing them towards production processes that are more in line with eco-design criteria.

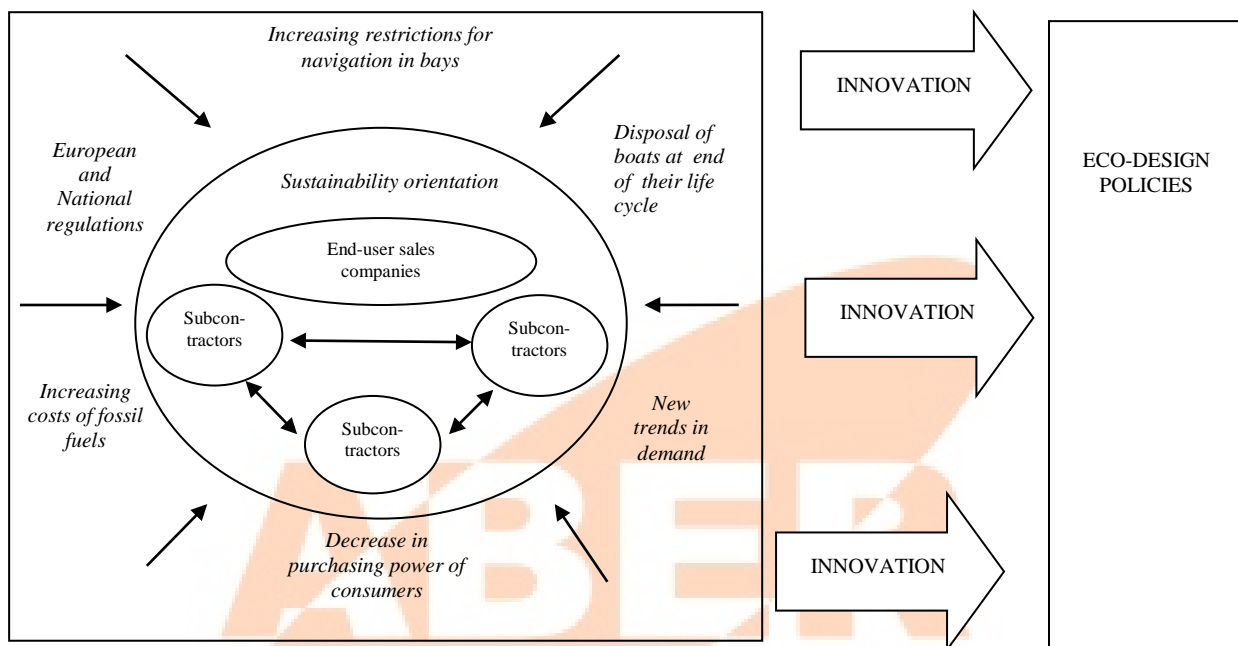
### **Managerial implications**

Important managerial implications emerge from the empirical analysis. First of all, future strategic choices of yachting companies must not ignore the initiation of processes of technological innovation led by sustainability, especially in light of the rapid evolution of the European regulatory context, which seems to be moving towards increasingly more stringent measures in this sense. Sustainability therefore represents an important new factor for success in the yachting industry and can be pursued by companies as a means of differentiating themselves,

adding to the traditional factors of sector competitiveness, such as technology, aesthetics, functionality and performance.

In a long-term perspective, it is necessary that end-user sales companies involve all the traditional extended value chain (value system), turning it into a "Green supply chain," requiring the application of sustainable standards of supply chain production (Figure 6).

**Figure 6: Eco-design policies as output of innovative processes emerging from "Green supply chain"**



Source: our data

Different forces external to the enterprises such as new rules and regulations on the production of watercraft, the cost of fossil fuels, the problem of disposing of the boats at the end of their life cycle, etc. act in favour of this new orientation of the value chain. These external inputs, together with cultural dimension factors within the firm, stimulate innovations in production processes that are in line with the "eco-design philosophy."

Success, in the coming years, will have to be built not only on the traditional sources of competitive advantage in the industry but also on the ability to produce watercraft that are on the high end of technological content and design (with customized accessories as well as superior speed and performance features) and eco-friendly, too, thus minimizing their environmental impact in every phase of their life cycle. The challenge is not for just end-user sales companies but also for subcontractors, which individually will have a lot of difficulty entering into these kinds of relational circuits. This will depend mainly on the quality of resources and expertise, as well as the ability to use the "language of networks" (Pencarelli, 1995).

In keeping with these lines of thought, research must continue to further deepen our knowledge and understanding of the real dynamics of market supply and demand with a view to fully grasping and taking advantage of the possible inter-relationships and competitive synergies that the regional yachting system can forge with other systems and sectors within the context of a new "system of greater value" (Ferrero and Fortezza, 2005) geared towards sustainability.

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